



The Role of the Military in Mine Action



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**Geneva International Centre for
Humanitarian Demining
Centre International de
Démunage Humanitaire - Genève**



The **Geneva International Centre for Humanitarian Demining** (GICHD) supports the efforts of the international community in reducing the impact of mines and unexploded ordnance (UXO). The Centre provides operational assistance, is active in research, and supports the implementation of the Anti-Personnel Mine Ban Convention.

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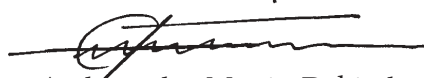
The report was laid out for publication by Françoise Jaffré.

Foreword

The most appropriate role for the military in mine action has been the subject of controversy in both military and civilian circles. Stockpile destruction has long been a largely (though not exclusively) military activity, whereas the involvement of the military in mine risk education has been more contested. For some, the military expertise in breaching minefields is not easily transposed to humanitarian demining, where nothing less than 100 per cent clearance of mines and unexploded ordnance is the objective if land is to be returned safely to the civilian population. For others, the command of logistics, technical knowledge and equipment make the military ideally suited to demining, where operational coordination, management and standing procedures are of a sufficiently high standard.

The mandate of the Geneva International Centre for Humanitarian Demining (GICHD) is to support the international community in reducing the impact of mines and unexploded ordnance. This study, *The Role of the Military in Mine Action*, which was requested by the United Nations Mine Action Service (UNMAS), is a contribution to the ongoing efforts to identify the most effective and efficient means to conduct mine action programmes. Based on in-depth research in Bosnia and Herzegovina, Cambodia, Ethiopia, Lebanon, and Nicaragua, the study looks at where serving military units and individuals — local and visiting — can best be used in the context of a national mine action programme.

The study conclusions and recommendations were discussed at a meeting of the Study Advisory Group and other experts hosted by UNMAS in New York and additional written comments were received subsequently. I should like to thank the Study Advisory Group and all those who provided comments and input into the study. I would also like to thank the United Kingdom Department for International Development, the French Ministry of Foreign Affairs and UNMAS for funding the study.



Ambassador Martin Dahinden
Director
Geneva International Centre for
Humanitarian Demining

Introduction

Problem statement

Despite the involvement of military personnel in many mine action programmes¹ (in some of which they represent the core assets),² military units have not been deployed consistently within national programmes. Furthermore, organisations such as the European Union (EU), the United Nations (UN) and the World Bank, as well as many individual donor governments, have policies that do not readily support military capability, humanitarian or not.³ The funding policies of major donors and many donor governments may even have been key factors in the marginalisation of military mine action efforts.

It is possible, therefore, that the full potential of military or joint mine action programmes has not been appreciated, either by the programme organisers or the donor community. However, a comprehensive review of the comparative advantages and disadvantages of the use of the military in mine action tasks has not yet been carried out.

Study objectives

The Role of the Military in Mine Action seeks to determine the comparative advantages of the use of serving military (visiting military forces, local military forces, and individual military personnel) in mine action programmes. Not considered part of visiting military forces for the purpose of this study are personnel not actively serving

1. For instance, to date most of the destruction of national stockpiles of landmines has been carried out under military or joint civil/military programmes.

2. For instance, in the Americas, Chad, Jordan, Nicaragua, Rwanda, Thailand, and Yemen.

3. Donor policy towards the use of the military in mine action is the policy shown by donor governments and major organisations on the funding of humanitarian demining by national or regional authorities, when they intend to use military organisations as minor or major components of the humanitarian programme. It also includes policy towards the export of mine action equipment for use by military forces in a humanitarian role.

in the armed forces or former military personnel, both of whom make a significant contribution to mine action.

The study considers a range of operational mine action tasks (survey, marking, mapping, clearance, stockpile destruction, mine risk education and mine victim assistance) in situations of emergency, transition and development, taking into account the International Mine Action Standards (IMAS), lessons learnt in military humanitarian activity as a whole, and the policies and practices of donors and contributing States. The study offers recommendations to the international community on the appropriate roles, benefits, limitations and responsibilities for the military in mine action.

Study audience

This study has been requested by the United Nations Mine Action Service (UNMAS), located within the Department of Peacekeeping Operations (DPKO), which wishes to review generally the role of the military in mine action, but the conclusions, findings and recommendations are also directly relevant to other UN bodies and agencies, such as the United Nations Development Programme (UNDP), the United Nations Office for Project Services (UNOPS), and the United Nations Children's Fund (UNICEF).

An equally important audience is States that decide to set up national mine action programmes, allowing them to consider what parts of the national programme can be assigned partly or wholly to their national military staff, and what assistance to this staff might be necessary. The study aims to provide such States with a systematic approach which can help in the selection, use and management of military capabilities.

Similarly, military forces of donor States (visiting military forces) that may wish to offer assistance in mine action programmes or international peacekeeping operations should benefit from the study. It should enable the best selection of training to suit the requirements of mine action, and provides instances of successful operations to act as guidelines.

Other beneficiaries are donors, seeking cost-effectiveness in the programmes that they fund. But the ultimate beneficiaries, as with any effort to increase the effectiveness and capacity of mine action, should be the local communities in countries affected by mines and unexploded ordnance (UXO).

Study methodology

The study has been managed by Eric M. Filippino, Head of the Socio-Economic Section at the Geneva International Centre for Humanitarian Demining (GICHD). Field research was conducted by consultants in five States which were selected to represent the broad range of mine action contexts. These were: Bosnia and Herzegovina (Ted Paterson), Cambodia (Nick Cumming-Bruce), Ethiopia (Alistair Craib), Lebanon (Nick Cumming-Bruce), and Nicaragua (Almachiara D'Angelo and Sonia Cansino). Background research in Cambodia was conducted by Phil Bean, and in Lebanon by Adrian Wilkinson.

To assist the study, a Study Advisory Group (SAG) was established, composed of mine action programme managers, core UN mine action agencies, military mine action personnel, donors and representatives from affected states. A list of SAG members is included in Appendix 1 to this report. The SAG was invited to discuss current policies towards the use of the military in mine action, and critically review the draft study report.

Background

The definition of mine action

According to the IMAS, mine action refers to “activities which aim to reduce the social, economic and environmental impact of mines and UXO”. It is noted that mine action “is not just about demining; it is also about people and societies, and how they are affected by landmine contamination. The objective of mine action is to reduce the risk from landmines to a level where people can live safely; in which economic, social and health development can occur free from the constraints imposed by landmine contamination, and in which the victims’ needs can be addressed”.⁴

Mine action comprises five complementary groups of activities: (a) mine risk education; (b) humanitarian demining, that is, mine and UXO survey, mapping, marking and (if necessary) clearance; (c) victim assistance, including rehabilitation and reintegration; (d) stockpile destruction; and (e) advocacy against the use of anti-personnel mines. A number of other enabling activities are required to support these five components of mine action, including: assessment and planning, mobilisation and prioritisation of resources, information management, human skills development and management training, quality management and the application of effective, appropriate and safe equipment.⁵

Local and visiting military forces

Two main types of military personnel have the potential to carry out mine action tasks: the members of the national armed forces of the affected State in a mine-affected country (“local military forces”) and military units or individuals from armed forces other than those of the affected State (“visiting military forces”). Local military forces may be carrying out a national programme, either as the acting national authority, or as a component of a national programme, or may be acting as trained deminers under a “military-to-military” training scheme.

Visiting military forces may be formed as military units and individuals deployed under a UN or other peacekeeping mission, or on a mine-specific mission or other arrangement, or serving as technical advisers. Visiting military forces include individual instructors or technical advisers assisting in UN-sponsored mine action programmes, instructor teams under bilateral “train the trainer” programmes, or specialists in support of specific parts of national programmes, such as teams establishing mine dog detection projects, mine risk education projects, or information management systems.

4. IMAS 04.10, Second Edition, 1 January 2003, Standard 3.124.

5. *Ibid.*

The use of the military in humanitarian affairs

A number of bodies and institutions have looked at the role of the military in humanitarian affairs over the past decade. In January 1994, for instance, the UN Department of Humanitarian Affairs (now the Office for the Coordination of Humanitarian Affairs) and the International Committee of the Red Cross (ICRC) jointly hosted a conference on the use of military assets in humanitarian operations. This conference produced a set of guidelines for when and under what conditions these assets should be used:⁶

- Military assets should be used for life-saving and life-supporting operations;
- They should be used only at the request of the Government of an affected State, or at the request of the UN Department of Humanitarian Affairs with the agreement of that State;
- The assets should integrate with and support existing disaster relief response;
- They should operate under an integrated civilian management;
- They should be at no cost to the receiving state;
- They should be, in principle, unarmed.

In 1997, the Development Assistance Committee (DAC) of the Organisation of Economic Co-operation and Development (OECD) called for efforts to “*seek to reduce institutional, budgetary and functional barriers between relief assistance, rehabilitation and development cooperation planning, that can produce contradictions, gaps and obstacles to well coordinated assistance. Reform of the economic and social sectors of the United Nations system — working with the political, military and humanitarian arms and the international financial institutions — must in future strengthen the synergies in the total international response*”.⁷

The following year, the DAC issued a report on the findings of a policy study commissioned by the informal OECD/DAC Task Force on Conflict, Peace and Development Co-operation on the comparative advantages and costs of civilian and military means of providing and supporting humanitarian assistance during conflict.⁸

The report states that:

“It is possible to identify two common motivations for the involvement of the military in humanitarian operations. The first is the understanding that adequately addressing humanitarian crises often requires means beyond those of the actors and agencies whose province has been humanitarian assistance. It is often argued that the capacities of traditional humanitarian agencies are simply inadequate for addressing the massive and sudden human need that has accompanied many recent complex emergencies. Second, the presence of severe humanitarian need in conflictual environments has produced a further rationale for the military’s involvement: its ability to provide security. In many complex emergencies, warfare between factions or pervasive chaos can make delivery of humanitarian assistance through traditional means nearly impossible. The military seems to offer a solution. Concerns about logistical capacity and security are therefore at the heart of the military’s expanded role in humanitarian assistance operations.”⁹

6. The Oslo Guidelines for the Use of Military Assets in Humanitarian Assistance.

7. Conflict, peace and development co-operation on the threshold of the 21st century, Policy Statement of the Development Assistance Committee, Paris, May 1997, available at www.oecd.org.

8. Civilian and military means of providing and supporting humanitarian assistance during conflict, comparative advantages and costs, DAC, OECD, Paris, 1998.

9. *Ibid.*, p. 6.

It notes, however, that “the military’s involvement in the provision and support of humanitarian assistance is not a subject that lends itself to simple or universal answers.”¹⁰ It tentatively concludes that the military “has a few unique capabilities (including the ability to provide security) and it has the capacity to respond more quickly to large-scale need. The civilian sector is more competent and experienced with most relief tasks, is more reliable (by being more free from political constraints), and is more effective at connecting relief to longer-term development work”.¹¹

In terms of cost, the report finds that “on a task-by-task basis, the military is generally more costly than civilian means”. It also asserts that “the costs of national militaries providing security for large humanitarian assistance operations will far exceed the costs of providing the aid itself”, though notes that “when military assets are already deployed (either for humanitarian assistance or for peacekeeping), the marginal cost of using these personnel and resources will be low... [so] in these cases ... the military can be a cost-effective means of delivering and supporting humanitarian assistance”.¹²

The report specifically discusses the issue of demining, stating that in the “end phase” (transition to development):

*“Development personnel should become more engaged in ongoing tasks, including some tasks typically considered under the rubric of humanitarian assistance, like demining and the reintegration of demobilised soldiers. Especially in the case of demining, it is essential that the society itself develop capacities to continue the work once international relief personnel have departed. In many conflict zones, adequate demining can require decades of persistent work.”*¹³

Military capacities in mine action

Wherever there is a mine and UXO problem, humanitarian and developmental initiatives of necessity involve a high degree of contact and interaction between military personnel, non-military mine action personnel, and local communities. Military capabilities, if properly directed and controlled, can bring important skills and organisational assets to complement many mine action activities. Military organisations are normally trained to be mission-oriented, and to complete these missions as quickly and efficiently as possible. This works well for almost all military problems, and indeed for many humanitarian problems like infrastructure repair, but establishing national mine action programmes under post-conflict conditions normally requires a longer-term approach.

The component activities of mine action have to be tightly coordinated if they are to work at all and military staff are used to the concept of the many interlocking components that make up a plan. Mine action plans require a similar degree of integration, but this planning has to take place with a number of different agencies, both military and non-military, which often have different perspectives and agenda. All the actors must be prepared to submit to overall coordination and direction.

A number of States have significant military mine action capacities. Indeed, many armed forces possess considerable expertise in managing and overseeing humanitarian

10. *Ibid.*, p. 7.

11. *Ibid.*, p. 20.

12. *Ibid.*, p. 16.

13. *Ibid.*, p. 22.

demining and explosive ordnance disposal (EOD) programmes, especially in emergency situations. On 17-19 January 2001, the Defense Security and Cooperation Agency of the DoD sponsored a conference, *Military Contributions to Humanitarian Demining*, which was organised by the Mine Action Information Center of James Madison University. The conference included representatives from 25 countries, most of whom noted that the roles of their respective militaries were relatively new and similar, but still evolving.

According to the conference report, the most widely performed duty was that of training; most States had institutionalised a demining centre or school. Several of these schools allow for training of civilians, and others are considering that option. Managing mine action information was another trend, which seemed to correspond to greater external coordination and communications with civilian — either host nation or NGO — demining organisations.¹⁴ The following are just a few examples, based on a request by the GICHD for information from major mine action donors.

In **Denmark**, the Danish Ministry of Defence is the Danish Defence focal point for mine action. The Danish Demining Centre under the Danish Ministry of Defence offers training support and advice to Danish non-governmental organisations (NGOs).¹⁵ As described in a 2001 policy paper, there have been cases of civil-military cooperation between Danish peacekeeping troops and NGOs on mechanical mine clearance in Afghanistan and Eritrea.¹⁶ As a matter of principle, though, responsibility for humanitarian mine action activities rests with the Danish NGOs.¹⁷

In **France**, the MINEX centre of the College of Engineering Applications (ESAG), located in Angers, provides training for high-level engineering personnel on mine clearance techniques, as well as “customised” classes involving some 100 foreign trainees every year. Similar training is provided for EOD personnel. French army personnel also carry out operational mine clearance missions. In addition to their specific defence missions, they assist organisations in charge of humanitarian mine clearance on issues such as training and technical advice.¹⁸

In **Germany**, the Federal Ministry of Defence does not carry out any humanitarian demining programmes of its own, but focuses on supporting the activities of the Federal Foreign Office’s Humanitarian Aid Task Force as well as of other stakeholders involved through:

- Providing military experts to support national and international programmes;
- Carrying out tests and trials of equipment;
- Carrying out training programmes;
- Making available surplus equipment from the stocks of the Federal Armed Forces;
- Forwarding documentation available at the Mine Documentation Centre; and

14. Mine Action Information Center, *Military Contributions to Humanitarian Demining, Global Conference Proceedings*, U.S., 2001. 16. E-mail communication from Department for Humanitarian Assistance, Danish Ministry of Foreign Affairs, to the GICHD, 3 September 2002.

15. E-mail communication from Department for Humanitarian Assistance, Danish Ministry of Foreign Affairs, to the GICHD, 3 September 2002.

16. See Danida, *Policy Paper on Denmark’s Support to Humanitarian Mine Action*, Danish Ministry of Foreign Affairs, Copenhagen, August 2001.

17. E-mail communication from Department for Humanitarian Assistance, Danish Ministry of Foreign Affairs, to the GICHD, 3 September 2002.

18. Ministry of Defence, *French action in the fight against anti-personnel mines*, Délégation à l’Information et à la Communication de la Défense, undated.

- Financing research and development activities for mine clearance.¹⁹

In **Sweden**, the Swedish EOD and Demining Centre (SWEDEC),²⁰ which forms part of the Swedish Armed Forces, was formally established in 1996 “to provide a consolidated and comprehensive institution for all military countermine and EOD training, EOD equipment and doctrine research and development, and the provision of technical advice in the development of national mine action policy”.²¹ As the national Centre of Excellence for EOD and Mine Action, SWEDEC coordinates and directly supports the National Police Board (RSP), the emergency services within the Swedish Rescue Services Agency (SRSA), the Defence Material Administration (FMV), the Defence Research Agency (FOI), the Swedish International Development Agency (SIDA) and all land-based military explosive ordnance clearance and related activities, both nationally and abroad.

Initially established around the nucleus of the Swedish EOD and Military Engineering Centre, SWEDEC’s role was further expanded by the addition of a Research and Development Section and granted responsibility for the coordination and management of an international pool of qualified Mine Action personnel in support of rapid deployment initiatives. SWEDEC conducts mandatory training relating to the application of the IMAS for all personnel prior to deployment on mine action or related operations. According to SWEDEC, it is one of the very few military establishments in the world capable of providing such a comprehensive approach to all explosive hazards, including mine action, within a single organisation. In addition, SWEDEC attained ISO 9002:1994 accreditation for “Training, Information and Development in EOD and Mine Clearance” in January 2001.

Although not directly mandated to directly participate in the implementation of EOD or mine action operations, SWEDEC has a long-established programme for the secondment of staff to United Nations, NGOs, commercial and entity army mine action programmes and projects. Swedish staff are currently serving with UN and NGO programmes in Afghanistan, Bosnia, Cambodia, Croatia, Eritrea, , Iran, Iraq, Kosovo, southern Lebanon, Mozambique, Serbia and Montenegro, Sri Lanka and Sudan.

The **United Kingdom** (U.K.)²² has developed course training plans for basic humanitarian demining, EOD, and mine awareness, and has a policy of gifting obsolete or surplus military demining equipment to non-profit organisations.²³ In addition, the Ministry of Defence pays for the Mine Information and Training Centre (MITC). It was established in November 1997 at a reported annual cost of GB£125,000 (US\$203,750). The Centre had provided mine awareness training to more than 50,000 people by March 2002.²⁴ The Ministry of Defence was said to be “currently reviewing the terms of reference for the MITC, with a view to possibly enhancing their mines awareness training role, for humanitarian mine action”.²⁵

19. Letter from the Permanent Representative of the Federal Republic of Germany to the Conference on Disarmament, dated 3 September 2002.

20. See generally www.swedec.mil.se

21. Communication from SWEDEC dated 28 April 2003. The information on SWEDEC has been adapted from this communication.

22. Fax from Lieutenant-Colonel A. M. Cliffe, Directorate of Military Operations, Ministry of Defence, U.K., London, 12 September 2002.

23. U.K., *UK Demining Seminar for Outreach Countries*, April 2002, p. 6.

24. Convention on Certain Conventional Weapons Amended Protocol II Article 13 report, October 2001, Form E.

25. Information contained in International Campaign to Ban Landmines, *Landmine Monitor Report 2002: Toward a Mine-Free World*, Human Rights Watch, Washington DC, August 2002, p. 514.

The **United States** (U.S.) Department of Defense (DoD) Humanitarian Demining Programme²⁶ has four explicit goals:

1. To assist host nations in establishing long-term, sustainable, indigenous humanitarian demining programmes;
2. To exploit the synergism between the DoD Humanitarian Demining Programme and other similar international, regional and U.S. efforts;
3. To establish a comprehensive approach to providing the appropriate equipment, technical data, and other support to conduct mine awareness and mine clearance training programmes and, whenever possible, equipment for newly trained personnel to the field; and
4. To support U.S. foreign policy and security interests.

The U.S. DoD programme favours work with the military of the host nation, and focuses on manual demining, although in a number of contexts the U.S. Department of State (DoS) also provides support for mine detection dogs through the RONCO consulting corporation, as well as support for other mine action activities. U.S. legislation prohibits any member of the armed forces from engaging in the physical detection, lifting or destroying of landmines. It is also government policy that this restriction applies to DoD civilian employees.

DoD funds training conducted by the U.S. Special Forces personnel assigned to various commanders. DoD also supports mine risk education initiatives and, through separate funding (approximately US\$12 million in Fiscal Year 2001), research and development of promising mine detection and removal techniques.²⁷

A revised U.S. Government Interagency Humanitarian Demining Strategic Plan was issued on 21 January 2001, setting three primary goals for U.S. government interventions in landmines: to assist nations to alleviate the threat of landmines to innocents, to promote U.S. foreign policy and national security, and to encourage international participation to eliminate the threat of landmines to civilians around the world by 2010. The Strategic Plan was developed, coordinated, and approved by the Interagency Working Group (IWG) on Humanitarian Demining. The IWG develops and coordinates U.S. humanitarian demining policy and programmes, though it has no permanent staff or separate funding. It meets quarterly or as required. IWG members include: the National Security Council, the DoS (Chair), the DoD (Vice-Chair), USAID, and the Central Intelligence Agency (CIA). A subgroup addresses policy, plans, research and development initiatives, with the goal of providing a recommendation to be formally approved at the IWG.

Existing guidelines on the use of the military in mine action

In 1999, a set of guidelines concerning UN involvement with the militaries of mine-contaminated countries for mine action activities were developed to complement the UN mine action policy adopted the previous year. The guidelines, as set out below, were approved by the Inter-Agency Coordination Group on Mine Action during a meeting chaired by the Under-Secretary-General for Peacekeeping Operations on 25 January 1999.²⁸

26. See humanitariandemining.org

27. According to the DoS, since Fiscal Year (FY) 1993, the U.S. (i.e. DoD, DoS and USAID combined) has committed more than US\$500 million to global mine action initiatives, including research and development. DoD funds humanitarian demining activities from its Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) account. OHDACA funds for FY01 totalled US\$25.5 million. OHDACA funding is provided principally to support training and equipment.

28. See www.mineaction.org/standards_n_documents

1. International assistance in mine action is often required in countries which are either still torn by internal conflicts to varying degrees (e.g. Afghanistan, Angola, Sudan), or have recently emerged from a conflict situation (Bosnia and Herzegovina, Croatia, Nicaragua). Even when they respond to the authority of a legitimate government, the armed forces of those countries often operate along party lines and are major political instruments, if not political players themselves.

2. To ensure neutrality, the United Nations has therefore determined that training or support for mine action will not, in principle, be provided to the militaries of mine-contaminated countries. This principle is part of the United Nations policy on mine action (A/53/496, Annex II, para. 10, dated 14 October 1998) which the General Assembly welcomed at its fifty-third session (A/RES/53/26 dated 13 November 1998).

3. The United Nations recognises nonetheless that the militaries of mine-contaminated countries could contribute to humanitarian mine action. They often have the technical expertise and knowledge required for that purpose, as well as operational and logistical capacities. In a number of countries such as Bosnia and Herzegovina, Jordan and Nicaragua they are already engaged in mine-clearance endeavours.

4. The United Nations recognises also that the primary responsibility for taking action against the presence of landmines lies with the concerned State. Thus, in principle, the government of the affected country should assume overall responsibility for the coordination and management of a national mine action programme, and determine which implementing mechanisms and arrangements should be established.

5. Even though the United Nations prefers providing assistance to mine action under civilian auspices and civilian implementation mechanisms, there are circumstances where it would be prepared to support government mine action programmes which include collaborative arrangements with the militaries. Such circumstances and support should be considered on a case-by-case basis within the context of the Inter-agency Coordination Group on Mine Action and will adhere to the following guidelines:

5.1. The United Nations will not engage, directly or indirectly, in cooperative or collaborative arrangements with militaries when such arrangements hinder its neutrality and impartiality.

5.2. Unless provided in peace treaties, arrangements with militaries should be restricted to circumstances where the militaries are not party to any conflict, open or latent, local or regional, and they do not have the potential to become party to such conflicts.

5.3. The overall structure of a mine action programme, including its coordination, control and priority-setting mechanisms, should be agreed upon prior to engaging into arrangements with militaries.

5.4. The overall coordination, control and priority setting of mine action should be the responsibility of civilian authorities in country. In particular, priorities for mine action should be established in the context of the humanitarian, reconstruction and development requirements, and result from a concerted effort involving all parties concerned, including the United Nations when its assistance is requested.

5.5. When they are deemed appropriate, arrangements with militaries should be the object of formal memoranda of understanding (MOU) among all parties concerned clearly outlining roles, responsibilities and guiding principles.

5.6. All mine-clearance operations conducted with the support of the United Nations should respect the International Mine Action Standards.

5.7. When and where appropriate, collaboration with militaries can include tasking, quality control, information sharing and logistical support. However, the United Nations will not interfere with established military chains of command and will not provide funding for the salaries of military personnel.

In addition to this policy document, *United Nations Mine Action and the Use of the Militaries*, the UN Special Committee on Peacekeeping has called for mine action activities to be implemented during the peacekeeping phase “*in such a manner that their viable continuity is guaranteed to the maximum extent possible*”, and has specifically recommended that troop-contributing countries follow national and international standards for mine action, including IMAS.²⁹

29. See the section on mine action in the fifty-seventh session of the C34 *Comprehensive Review on Peacekeeping*, paras. 145-149.

Study conclusions and recommendations

This section details the principal conclusions and recommendations based on the five case studies and broader research undertaken for the study. For ease of reference, they are divided into three groups: general (applicable to all militaries), local militaries and visiting militaries (including peacekeepers).

General conclusions and recommendations

Conclusion 1.

Military forces, both local and visiting, have made a significant contribution to mine action. Their effectiveness is greatly enhanced when they are employed within, and under the auspices of, a planned national mine action programme.

Recommendation 1.

The use of military forces in mine action should be subject to the relevant national authorities and their coordinating mechanisms, and should be given clear tasks to perform.

Conclusion 2.

In general, military forces are well placed to issue warnings related to mine and UXO hazard, but have not represented current trends in mine-risk education (MRE), for example in using participatory communication approaches or community-based methodologies.

Recommendation 2.

Military forces should continue to develop and expand their provision of warnings prior to, during and after conflict. They should however, refrain from involvement in broad-based MRE campaigns until they have acquired the ability to develop MRE communication strategies that minimise the use of one-way communication channels, such as lectures and printed media, and emphasise the active participation of the community in the programme.

Conclusion 3.

The linkages between demobilisation and the creation of a long-term mine action capacity have been insufficient.

Recommendation 3.

The possible roles and use of demobilised combatants should be given careful consideration within any mine action programme.

Conclusion 4.

The International Mine Action Standards (IMAS) have resulted in the lowering of accident rates among military deminers, although there has sometimes been a perception, especially among militaries, that the IMAS may also affect the speed of clearance. However, casual "mine lifting"³⁰(or a failure to adhere strictly to a 100 per cent humanitarian clearance policy) cannot guarantee safety.

Recommendation 4.

The United Nations should make every effort to persuade troop-contributing countries to adapt and use the IMAS. This is particularly important where several militaries are engaged in a single mine action context.

Conclusion 5.

The timely provision of military minefield records following the cessation of hostilities has contributed positively to humanitarian demining. But, as indicated in the *UN Mine Action Guidelines for Ceasefire and Peace Agreements*, too often in the past, essential mine-related issues have either not been addressed at all in cease-fire agreements and peace accords, or addressed too late and inadequately.

Recommendation 5.

Whenever the impact of mines and unexploded ordnance (UXO) justify a mine action programme, ceasefire agreements and peace accords should consider and address mine contamination and mine action activities, including measures for their enforcement. The issues to be covered include exchange of technical information between parties to the conflict, minefield marking and mine and UXO clearance, an end to the use of anti-personnel mines and stockpile destruction, and international cooperation and coordination. As soon as a civilian coordinating authority has been established, this authority should take over responsibility for mine action.

Conclusion 6.

Local military forces, often with technical support from visiting militaries, have played a significant role in the destruction of stockpiled mines. To date, some 55 countries either have destroyed or are in the process of destroying their mine stockpiles. In the vast majority of these cases it is the host country's military that has conducted the destruction processes.

Recommendation 6.

Local military forces should continue to perform stockpile destruction in accordance with obligations of the Anti-Personnel Mine Ban Convention. Visiting military forces should continue to provide expertise in current methodology, as well as logistical assistance, when requested to do so.

30. The term was used in Bosnia and Herzegovina to denote removal of emplaced mines by the respective parties to the conflict. It is not to be considered a suitable method of humanitarian demining without a secondary method to guarantee that all mines and UXO have indeed been cleared from a given area.

Conclusion 7.

In general, military forces have not been engaged in technical survey for mine action.

Recommendation 7.

Military forces could give greater consideration as to whether they could play a more active role in technical survey and area reduction.

Conclusions and recommendations: local military forces

Conclusion 8.

The appropriate role and use of local military forces in mine action, especially humanitarian demining, will depend on the individual context.

Recommendation 8.

Other than in response to an emergency or where security considerations are paramount, the use of military forces in mine action should be integrated into, and under the coordination of, an overarching institutional framework. Furthermore, any decision to use local military forces in mine action should take into account troop morale, the existing level of training and equipment and civilian perceptions of the military.

Conclusion 9.

Local military forces deployed to do humanitarian mine clearance with little training and equipment directly following conflict, have typically suffered high accident rates.

Recommendation 9.

Local military forces must be properly equipped and trained prior to deployment, if they are to perform demining to internationally-recognised standards of safety and quality. The international community should not assume that local military forces are capable of carrying out humanitarian demining safely and effectively merely because they have an engineer contingent.

Conclusion 10.

Problems have typically been encountered when military forces have control of mine action in a country and have established a quasi-independent military structure to direct operations. In particular, priority-setting by the military has tended to focus on mine clearance, and has not always taken into account socio-economic criteria and the views of the affected communities themselves.

Recommendation 10.

It is recommended that mine action be directed and controlled by a civilian authority, with the local military forces playing a supporting role in certain technical areas. If the decision is taken to give control to local military forces, they should exert such control on the basis of close cooperation with civilian actors, and follow currently-recognised best practices in strategic planning, prioritisation, community liaison and integration within mine action.

Conclusion 11.

The provision of assistance to local military forces for mine action purposes, in the form of training and/or equipment, has sometimes been controversial as these can also enhance combat capacity.

Recommendation 11.

The international community must carefully consider the potential ramifications of supplying training or equipment to a military force. The current historical evolution of the conflict, the current peace and reconciliation developments as well as the nature of the military structure and deployment must all be weighed against the potential benefits of military support for mine action prior to the provision of assistance.

Conclusion 12.

Evidence from both Bosnia and Herzegovina and Nicaragua suggests that external quality control and assurance can be successfully applied to the process by civilian or military organisations.

Recommendation 12.

National authorities, whether civilian or military, should include external quality assurance of the demining process in its operational framework. This should be required by donors as a matter of course.

Conclusion 13.

The use of local military forces in humanitarian demining tasks can contribute positively to community confidence in them. This has been the case, for example, in Nicaragua and Thailand. This contribution is strengthened by the integration of a community liaison component.

Recommendation 13.

When local military forces are tasked with humanitarian demining projects a built-in community liaison capacity should be included in order to ensure the local communities fully understand, and are able to contribute to, successful mine action.

Conclusion 14

The operational cost-effectiveness of using local military forces over local organisations remains unclear. Operating costs for local military forces are not necessarily lower.

Recommendation 14.

Before deciding whether or not to use any local military force in mine action, the relative costs and benefits involved in using local military forces, local or international NGOs, commercial firms or combinations of all three will need to be carried out.

Discussion

Armed forces begin with some advantages in mine clearance. They typically have experience with landmines and other UXO, their salaries are already paid, they possess a logistics support system, including communication and medical back-up, and are organised to operate as a team. Local military forces may have the necessary equipment

for demining, but if not, this can be provided by visiting forces bilaterally or multilaterally.

Thus, in many contexts, military forces have been widely used in mine action, including humanitarian demining, although with varying degrees of success. This variety is reflected in the case studies and in the diversity of capabilities in various countries and military organisations. In Nicaragua, for instance, all demining has been carried out by the Nicaraguan army, and its effectiveness has been greatly enhanced by support from visiting military forces, operating under the auspices of the Organization of American States (OAS).

On the other hand, in Bosnia and Herzegovina, the use of entity armed forces (EAF) in demining has been expensive, and demining accidents unacceptably high, when compared to commercial companies and NGOs. In Cambodia, for instance, the armed forces have made a relatively limited contribution to humanitarian demining, though the case study recommends that their role and contribution be reviewed.

Military forces often operate in environments where information is restricted and controlled, and may be reluctant to provide data and information to others. This makes coordination difficult, if not impossible, and duplication and gaps likely. In many contexts, local military forces are reluctant to accept coordination or instruction from a civilian authority. This appears to be the case in Cambodia, for example. In Lebanon, the military has seemed reluctant to take external advice on mine action, although information sharing has reportedly improved. Similarly, in Nicaragua, after early difficulties, coordination with the National Demining Commission and visiting military forces seems to have significantly improved.

Clearing mines for humanitarian purposes demands specific expertise, which may not be gained as a result of ordinary military training or experience. This has been noted in such places as Bosnia and Herzegovina and Cambodia. Thus, morale among deminers serving in local military forces may be low, depending on salary and conditions, and conscripts do not make the best deminers. Military deminers are first and foremost soldiers and as such will be used as combat engineers if hostilities break out. Similarly, in the aftermath of an internal armed conflict, the national army may not be perceived as neutral and may not be welcomed by affected communities.

Conclusions and recommendations: visiting military forces

Conclusion 15.

Coordination and cooperation are central to effective mine action. Yet visiting military forces, including peacekeeping forces, have not always worked in conjunction with established civilian mine action structures.

Recommendation 15.

Visiting military forces, including peacekeeping forces, engaged in any aspect of mine action should accord high priority to working relationships with the national mine action centre and authority and should work to at least the level of any extant national standards. A formal memorandum of

understanding (MOU) should help to clarify respective obligations, and to ensure good coordination and exchange of relevant information, a visiting military force may wish to consider assigning a liaison officer in the host country's mine action centre in accordance with such an MOU.

Conclusion 16.

Visiting military forces and seconded military personnel given a mine action role have not always had relevant expertise or have sometimes been insufficiently versed in recent developments relating to humanitarian demining, or more broadly, mine action. Personnel have been committed to mine action for a variety of reasons.

Recommendation 16.

Donors and troop-contributing countries should be encouraged to consider carefully the skills necessary for effective mine action when committing personnel to any programme. The UN and other employers, particularly mine action centres, should provide clear terms of reference and tasks for technical or other advisers.

Conclusion 17.

Visiting military forces, including UN peacekeeping forces, have generally not been tasked to undertake large-scale mine clearance. Visiting military forces can play a useful role in, among others, overseeing clearance operations, supporting training programmes, ensuring adherence to international standards and guidelines, especially the IMAS.

Recommendation 17.

UNMAS should continue to work through the Department of Peacekeeping Operations (DPKO) to ensure that military forces deployed for mine action operations as part of a peacekeeping operation operate in accordance with the IMAS.

Conclusion 18.

On occasion, visiting military forces have exploited a local mine action context to trial machines, equipment and personnel outside the auspices of the national mine action programme. Further, as is the case in the broader aid world, there have been instances of supply-driven donations of inappropriate equipment and material by foreign military forces.

Recommendation 18.

Testing and trials of mine action equipment should only be conducted with the express permission of the national mine action centre or authority. Similarly, equipment provided to a national mine action programme should be consonant with its needs, and thought given to the feasibility of its long-term maintenance, including the availability and suitability of spare parts and service agreements.

Discussion

In mine-affected countries where there is both military and civilian involvement in the mine action process, visiting military forces tend to view their mission as fulfilling a rather narrow service. Cooperation and coordination with civilian structures are

not always accorded adequate priority, which can lead to compartmentalisation of the assets being delivered. Certain missions may even be undertaken without any direct knowledge of the civilian organisations operating in the same theatre.

Bilateral arrangements between militaries can often be appropriate when the local military is largely or entirely in charge of a country's mine action programme. Such agreements, however, may not provide an adequate planning and programming framework when there are multiple local and international actors involved, as programming complexity increases geometrically as the number of actors increases.

As an example, it is possible that a UN Mine Action Centre or a National Mine Action Authority may be working in conformity with their locally-adapted standing operational procedures (SOPs) and standards and a visiting military force may be training on a different interpretation. The IMAS represent an international set of standards that may be adapted and interpreted differently by each host country, making no two countries technical procedures or SOPs exactly alike. Often, such disparities will become evident only late in the programme cycle as an increasing amount of operational responsibility is assumed by the national authority.

UN peacekeepers have rarely engaged in large-scale humanitarian demining or EOD (Kosovo being a notable exception). Thus, although UN peacekeepers have been present in Lebanon for more than two decades, they have typically conducted only mine clearance to support their own operations. Though this may be consistent with the obligations of parties to a conflict under international law to be responsible for mines, booby-traps and other explosive devices laid by those parties, it does not necessarily lead to substantial remediation of the problem in humanitarian terms. In fact, throughout the more than 20-year experience in Lebanon of the United Nations Interim Force in Lebanon (UNIFIL), as seemingly simple a task as the handover of records between incoming and outgoing contingents appears not to have been accomplished.

In a number of the case studies, however, notably Bosnia and Herzegovina and Nicaragua, demining accidents have been reduced by training and oversight from visiting military forces. Indeed, as discussed in the introduction above, many armed forces possess considerable expertise in mine action, including managing and overseeing humanitarian demining and EOD programmes, especially in emergency situations.

As referred to in Conclusion 2 above, the conversion in Bosnia and Herzegovina from "mine-lifting" to humanitarian demining standards led to a dramatic drop in deminer casualties. On the other hand, the concern is expressed in the Cambodia case study that slow progress in demining will result in higher numbers of civilian casualties, as frustration may lead to so-called "village demining".

Conclusion 19.

A good technical background does not, in and of itself, necessarily make an individual suitable for mine action. Of equal importance is the ability to pass on that knowledge to the national mine action programme and its staff and to work in difficult conditions with multinational partners and to promote the programme's objectives.

Recommendation 19.

Beyond the emergency phase of an operation, personnel provided by in-kind contributions or secondment to mine action programmes, including visiting military forces, should already possess the requisite skills and experience to develop local capacity. Military secondments should be governed by job descriptions with attendant minimum qualification criteria, as is the case with seconded civilian personnel, and the civilian authority should be allowed to select from a number of candidates. In addition, training of local counterparts should be an integral part of the terms of reference and such personnel should be prepared to remain until their tasks have been completed. They should also be given clear reporting lines.

Discussion

A number of visiting militaries have assigned military personnel to serve as technical advisers to the various mine action centres and project implementation units. Many of these have performed admirably, and the secondment of serving military personnel appears to have been a successful strategy for getting the mine action programme up-and-running in an emergency phase. However, the overall contribution of these secondment programmes has been modest either because their tours of duty have been too short, and/or because most of the personnel assigned had no experience in advising counterparts to build local capacities. It has also been claimed that coordinating authorities have sometimes failed to exploit fully their skills and potential contributions to the programme.

In addition, a different framework for employment would allow for the termination of the assignment of an employee whose performance proved to be unsatisfactory — something that can not readily be done with personnel seconded on a temporary basis from a visiting military force. Finally, the incremental costs associated with any foreign duty assignment of personnel from visiting military forces may be at least as high as the full cost of engaging equally well-qualified civilian personnel for the same assignment.

Seconded military Technical Advisers (TAs) can certainly be an asset to a national mine action programme, and may, in particular, play highly specialised roles, such as EOD. Yet, there have also been criticisms of the role of some TAs, on the basis of unclear chains of command and reporting lines, and confused terms of reference.

Thus, a number of the case studies, while acknowledging an important role for in-kind military advisors at the outset of a mine action programme, express concern about their contribution over the longer-term in a development context. This is the case in Bosnia and Herzegovina and Cambodia in particular, where TAs may not necessarily be equipped with the skills needed to sustain mine action.

TAs can represent a very high cost for a mine action programme. In 1999, in Cambodia, for instance, the Cambodian Mine Action Centre hosted 76 TAs, both military and civilian. A review by UNDP concluded that, “while the military has made an impressive contribution in developing capacity within the Cambodian Mine Action Centre (CMAC), particularly technical capacity, in general military advisers are less suited to meet the training needs and capacity demands CMAC now faces”. Indeed, TAs may end up learning more about mine action than do their national counterparts. These difficulties are

compounded by tours of duty — typically six months — that are often too short for the individuals to make an effective contribution to the programme.

The case of Bosnia and Herzegovina

Introduction

The case study is based on a number of field visits to Bosnia and Herzegovina in 2001 and 2002.

The first section of this case study gives the background to the Bosnia's landmine and UXO problem and the evolution of the mine action programme. It includes a discussion of the governance problem arising from ethnic enmities, a dysfunctional constitutional framework, and the role of the International Community (IC), as this governance problem has greatly complicated the task of devising and managing an effective mine action programme.

The second section examines the role in mine action played by local militaries – the three entity armed forces (EAFs) — since the Dayton Peace Agreement. Included in this section is a description of the assistance provided by foreign militaries to build the capacities of the EAFs for humanitarian demining and to supervise their clearance activities.

The third section examines the other forms of assistance provided by foreign militaries to the humanitarian mine action effort in Bosnia and Herzegovina. This includes mine survey and clearance undertaken directly by foreign military units, assistance provided via the UN to the mine action centres, and assistance to other organisations involved in mine action.

Background

Bosnia and Herzegovina and the 1992-95 war

Bosnia and Herzegovina (BiH) was one of the six constituent republics in the Socialist Republic of Yugoslavia formed after the 1939-45 war. By 1991, its population had reached an estimated 4.3 million, divided into three main ethnic groups: 44 per cent

Bosniak (i.e. Bosnian Muslim), 31 per cent Serb (Eastern Orthodox Christians), and 17 per cent Croat (Roman Catholics), with the remainder classified as “other” or simply Yugoslav. Although BiH was one of the less-developed Yugoslav republics, its economy was fairly diversified, with a state-owned large industry sector built on substantial energy, mineral, and forestry reserves. Although a significant proportion of the population was rural, the country’s rugged terrain meant that agriculture remained largely undeveloped, accounting for only 10 per cent of gross domestic product (GDP) and 18 per cent of employment. While life in the cities led to considerable intermingling, rural areas were characterised by mono-ethnic but adjacent communities.

The Bosnian war, initiated in March 1992 by the Serb-dominated Yugoslav National Army in conjunction with Serb irregular forces, was the major conflict arising from the break-up of Yugoslavia. During the war, Bosnian Serbs and Croats — supported by Serbia and Croatia respectively — sought to partition BiH and established ethnically pure States,³¹ while Bosniaks claimed to support a unified, multi-ethnic BiH. The course of the 1992-95 war was extremely complex, with rapid shifts in the intensity of fighting, alliances,³² and conflict locations, plus widespread activity by local militias who attacked rival communities to effect ethnic cleansing. Efforts by the UN³³ and other international mediators to stop the fighting were unsuccessful until intense NATO bombing began in July 1995 in response to atrocities committed by the Bosnian Serb forces. This, coupled with a joint Bosniak-Bosnian Croat-Croatian offensive, led to a ceasefire in October 1995, followed by negotiations near Dayton on the General Framework Agreement for Peace in BiH (GFAP),³⁴ signed formally in Paris on 14 December 1995.³⁵ While this ended the fighting, the aims of none of the warring parties had been achieved, and the motives underlying the conflict remained potent. The country’s pluralistic society was shattered with the three principal groups occupying, in the main, distinct regions. Ethnic identity largely dictated where one might safely live, as well as one’s political allegiances and employment opportunities.

Governance after the Dayton Peace Agreement

The GFAP stopped an unresolved war, leaving in power many of those responsible for the conflict. It included agreements relating to, *inter alia*, boundaries, elections, the constitution, human rights and the return of refugees. The GFAP confirmed BiH as a single, confederal country with a very weak central government (the State³⁶) headed by a three-person presidency (Bosniak, Croat, and Serb) responsible for “common institutions”, plus two “entity” governments — the Federation of Bosnia and Herzegovina (hereinafter, Federation) with a Bosniak majority and a significant Croat

31. Republika Srpska and Herzeg-Bosna.

32. The Bosnian Croats originally were in alliance with the Bosnian government, but fighting between their two armies erupted in April 1993. In March 1994, U.S.-led mediation resulted in a ceasefire between the Bosniak and Bosnian Croat armies, which continued to fight against the Bosnian Serb forces (assisted at times by Croatian forces) and an agreement to establish a Bosniak-Bosnian Croat political federation, eventually to be linked in a looser confederation with Croatia.

33. The UN Security Council sent peacekeepers from the United Nations Protection Force (UNPROFOR) to BiH to facilitate the delivery of aid and establish a “no-fly zone” (enforced by NATO) over BiH, and declared Sarajevo and five Muslim enclaves as “safe areas”.

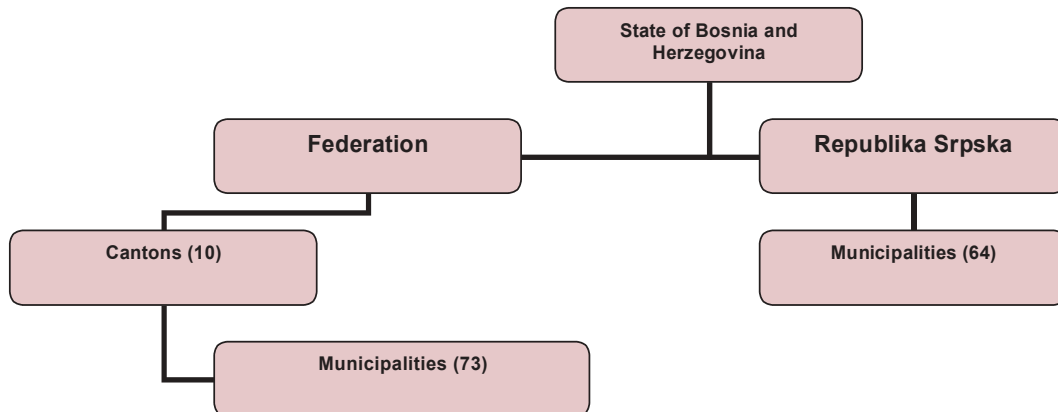
34. Commonly called the Dayton Agreement.

35. This was signed by the Federal Republic of Yugoslavia (now Serbia and Montenegro) and the Republic of Croatia, as well as the Republic of Bosnia and Herzegovina.

36. In BiH the term “nation” is frequently used to refer to the three national ethnic groups (Bosniak, Croat Serb) so “State” is used to refer to BiH as a whole and the national level of government.

minority, and the Republika Srpska (RS) with a Serb majority.³⁷ This structure was subsequently reflected in constitutions adopted by the State and the two entity governments. That of the RS provides for a strong government at the entity level, with municipalities responsible for the provision of local services. However, in recognition of its multi-ethnic character, the Federation constitution explicitly provides significant authority to cantons and municipalities.³⁸

Post-Dayton Structure of Governments



The set of constitutions is notable in three ways. First, the authority of the central BiH government is remarkably circumscribed. A minimal range of powers is specifically assigned to the centre, with greater authority (including for defence) reserved for the entity governments, which also hold any residual powers (i.e. covering items not mentioned explicitly in the BiH Constitution). Second, the central government has no distinct fiscal authority that would allow it to discharge even its minimal powers without subventions from the entities.³⁹ Third, the Federation's constitution also provides for substantial decentralisation, with significant authorities reserved for the cantons or shared between the entity and cantonal levels. Croat politicians missed few opportunities to assert autonomy from the Federation including maintaining an army (Croat Defence League — HVO) that remained, essentially, separate from the Federation army (ABiH).

The minimalist authority of the central government vis-à-vis the entities recognised — and allowed — the coexistence of two vastly different interpretations of the intent of the Dayton Agreement. The first saw it as a precursor to the division of BiH into three ethnic territories, two of which would eventually join their “mother” countries (Serbia and Croatia). The second school of thought saw Dayton as the best agreement possible under the circumstances and an intermediate step to a reintegrated, multi-ethnic state with its pre-war borders preserved. The weak governance mechanisms

37. The Federation has 51 per cent of the land, with 61 per cent of the population. As well, the RS was left with 58 per cent of the agricultural land suitable for intensive agriculture.

38. This was to provide the Bosnian Croats, who are a minority within the Federation, an assured degree of self-government authority in areas (cantons or municipalities) in which they were the majority. It also requires that, where urban areas are multi-ethnic, a sub-cantonal city government will be created to establish a degree of coordination among contiguous municipalities.

39. The GFAP only states that the Federation shall provide two thirds and the RS one third of the financing required for the central budget (Annex 4, Article VIII: 3). See also Fox and Wallich (1997).

put in place by the GFAP might have been barely adequate to cope in a situation in which the political leaders of the ethnic groups had broadly similar objectives and displayed mutual goodwill. In fact, their objectives were often diametrically opposed and cooperation between the two entities — and between the Bosniaks and Bosnian Croats within the Federation — has been poor, hindering the development of coherent policies and programmes for reconstruction and, hence, reintegration.

The BiH peace operations programme

In signing the Dayton Agreement and related side agreements,⁴⁰ political leaders of the country's three major ethnic groups pledged to: (1) provide security for the people of BiH; (2) create a unified, democratic BiH within internationally-recognised boundaries; (3) rebuild the economy; and (4) ensure the right of people to return to their homes. Given the ambiguous nature of the Dayton Agreement and the fact that many of the politicians in power were those who had promulgated the conflict, there was widespread concern the war would resume unless the international community remained actively engaged in the country. Therefore, the international community established the BiH Peace Operation, with the following goals and agreements:⁴¹

Broad goals	Specific agreements
Provide security for the people of BiH	Maintain ceasefire and separate forces; undertake arms control; participate in train and equip programme; maintain civilian police that provide security for all people in jurisdiction and respect human rights.
Create a unified, democratic BiH within internationally-recognised boundaries	Implement national constitution that calls for the creation of national institutions; create functioning Federation institutions; ensure conditions exist for free and fair elections that would be a step in country's democratic development; secure highest level of human rights for all persons; cooperate with the international war crimes tribunal.
Rebuild the economy	Rehabilitate infrastructure and undertake economic reconstruction; create a central bank; economically integrate the Federation by unifying the payments systems, activating the Federation Customs and Tax Administrations, and preparing a Federation budget.
Ensure the right of people to return to their homes	Allow all refugees and displaced persons the right freely to return to their homes; take actions to prevent impediments to safe return; cooperate with international organisations; establish an independent property commission.

At the time of the cease-fire, BiH's three militaries had more than 400,000 personnel, including armed civilian militia and police who often fought in conjunction with the armies. The bulk of the forces were deployed along lines of fortified bunkers and trenches arrayed behind extensive minefields, which formed a nearly continuous front line over 1,100 kilometres long, splitting the country into two separate entities.

40. The Bosniaks and Bosnian Croats signed a side agreement on the development of economic and governmental institutions for the Federation, while the U.S. signed an agreement to train and equip a "unified" Federation army, thus offsetting the Republika Srpska's military superiority while remaining within the arms control limits specified in the GFAP (GAO,1997b: Appendix II, 82-88).

41. This summary is from GAO (1997b:23).

Annex 1A of GFAP provided for a multilateral military force — the Implementation Force (IFOR)⁴² — to ensure (1) continued compliance with the cease-fire, (2) the separation of the three Bosnian militaries and their withdrawal from the zone of separation⁴³ to their respective territories, (3) the collection of heavy weapons into cantonment sites and troops into barracks, and (4) the demobilisation of remaining forces. After securing its military mandate and within its resource constraints, IFOR would also seek to maintain secure conditions to allow the international community's other organisations accomplish their responsibilities outlined in the civilian programme. These secondary responsibilities included to: (1) help maintain secure conditions for the conduct of civilian implementation tasks, such as elections; (2) assist international organisations in their humanitarian missions; (3) facilitate the movement of civilians, including refugees and internally displaced persons, and respond to deliberate violence; and (4) monitor the clearing of minefields and obstacles.

The GFAP also established the position of the High Representative⁴⁴ representing the international community, to *“coordinate the activities of the organisations and agencies involved in the civilian aspects of the peace settlement”*. However, the High Representative did not have authority over the IFOR or the international community's civilian organisations; rather *“The High Representative shall respect their autonomy within their spheres of operation while as necessary giving general guidance to them about the impact of their activities on the implementation of the peace settlement”*.⁴⁵

Following the negotiation of the GFAP, a Peace Implementation Conference was held in London on 8-9 December 1995 to mobilise support for the Agreement. The meeting resulted in the establishment of the Peace Implementation Council (PIC) comprising 55 countries and agencies that support the peace process in various ways, which has held five subsequent meetings, most recently in May 2000. A smaller PIC Steering Board works under the chairmanship of the High Representative as the executive arm of the PIC.⁴⁶

The resulting organisation structure for the international community's peace operations was extremely decentralised. The major organisations and their lead responsibilities are depicted in the table below.

IFOR had a one-year mandate, with an authorised size of 60,000 personnel.⁴⁷ IFOR achieved its primary military objectives: the ceasefire was maintained, and the three Bosnian armies demobilised about 300,000 personnel and placed their remaining troops and heavy weapons within IFOR-monitored sites. Civilian operations were, therefore, able to proceed, but progress remained slow because of the intransigence of many local political leaders.

42. Technically, this was a NATO-led force established under authority of UN Security Council Resolution 1031 on 15 December 1995 to *“help ensure compliance with this Agreement.”* (GFAP, Annex 1A, Article 1(1))

43. This was a belt two kilometres wide on each side of the inter-entity boundary line.

44. This was endorsed by the UN Security Council in its Resolution 1031 of 15 December 1995.

45. GFAP, Annex 4, Article I: 2.

46. The Steering Board members are Canada, France, Germany, Italy, Japan, Russia, U.K., U.S., the Presidency of the European Union, the European Commission, and the Organisation of the Islamic Conference, which is represented by Turkey. The Steering Board meets at the level of political directors every four to eight weeks and at the level of Foreign Ministers once each year.

47. In July 1996, IFOR had about 54,000 troops from 15 NATO members and 19 other countries.

Parent organisation	Organisation in BiH	Responsibilities
NATO (via SHAPE)	IFOR (later, SFOR)	<ul style="list-style-type: none"> • Ground operations • Air operations • Naval operations • Civil Military Cooperation (CIMIC)
Peace Implementation Council (PIC) Steering Board OSCE	High Representative OSCE Mission	<ul style="list-style-type: none"> • Joint Civilian Commission (JCC) • JCC working groups • Interagency task forces • Elections • Human rights • Arms control
United Nations	UNMIBH UNHCR	<ul style="list-style-type: none"> • International Police Task Force (IPTF) • Civil affairs • Mine Action Centre (MAC) • Refugee returns
World Bank IMF European Union EBRD Bilateral donors	Missions and embassies	<ul style="list-style-type: none"> • Priority reconstruction and recovery programme

Frustrated with slow implementation of the peace provisions, the international community (via the PIC meetings in Bonn, 1997 and Madrid, 1998) granted additional executive authority to the High Representative to accelerate progress; in effect turning BiH into a quasi-protectorate of the international community.⁴⁸ Because Bosnian reconciliation and, hence, the basis for lasting security clearly had not been achieved after one year, the international community recognised the continued need for an international military force. In December 1996, NATO authorised a new mission — the Stabilisation Force (SFOR) — initially for an 18-month period with a mission to deter renewed hostilities and consolidate the peace. SFOR's initial authorised force level was 31,000 troops.

The mine and unexploded ordnance problem in BiH

The war resulted in 200,000 fatalities, 1.2 million refugees, and massive internal displacement. By mid-1995, the population had fallen by half to an estimated 2.7 million, the majority of whom were no longer resident in their former homes. The country sustained severe damage to infrastructure (transportation lines, energy, telecommunications, hospitals, schools, water, sanitation, etc.), housing stocks (56 per cent of the housing in the Federation was destroyed or damaged, as was 29 per cent in the RS), and farming assets (70 per cent of farm equipment and 60 per cent of livestock were lost). The Government of BiH estimates the cost of the total economic damage from the war at US\$65 billion or more. The World Bank estimated that simply replacing destroyed assets could amount to US\$20 to US\$25 billion.

The task of reconstruction was also complicated by extensive mine contamination. Combatants left an estimated 750,000 landmines or more in 30,000 minefields,⁴⁹

48. Dahrendorf and Balian (1999:21).

49. The large number of landmines reflects in part the fact that the Yugoslav government maintained a number of munitions factories in BiH, which were relatively inaccessible to foreign invaders. Landmines were, therefore, widely available.

particularly in bands of contamination along former confrontation lines and around housing, public buildings, and key infrastructure.⁵⁰ The total area suspected of contamination was 3,243 square miles, or 16 per cent of the country's land mass,⁵¹ although it is believed that only about 10 per cent of the suspected area will ultimately prove to contain landmines.⁵² In 1996, civilian casualties averaged in excess of 42 per month.⁵³

No comprehensive general or landmine impact survey has yet been conducted.⁵⁴ Under the GFAP, ex-combatant forces were required to provide minefield maps and records as well as to "lift"⁵⁵ their mines from the Zone of Separation and other areas from which their forces were withdrawn, and to mark other minefields.⁵⁶ Mine "lifting" did not meet international humanitarian clearance standards, and resulted in a reduced, but still unacceptable residual hazard to civilians. As a result, BiH was left with extensive but low density minefields in urban, suburban, and rural areas, as well as considerable quantities of UXO. Few of the minefields are adequately marked.⁵⁷ As well, minefield maps and records provided by the local militaries often were unreliable, the entity armies did not hand over all their records of minefields, and other contaminated locations, including landmines laid since the war,⁵⁸ have never been mapped. Records have been compiled for just over 18,000 of the estimated 30,000 minefields. The minefield data submitted by the entity armed forces records over 255,000 anti-personnel mines and more than 50,000 anti-tank mines.⁵⁹

The evolution of the mine action programme in BiH

Mine action in BiH has gone through three principal phases:

1. The initial rush to respond, when a number of donors established programmes to address humanitarian and "priority reconstruction" requirements, and to build long-term capacity;
2. The first efforts by the donor community and local authorities to create Bosnian structures to oversee and coordinate a more integrated mine action programme, which ended in crisis;
3. More recently, a second effort to establish an adequate legal framework and programme management structure, both to restore donor confidence and to

50. These were sometimes for defensive purposes, but often were laid to deny access to other ethnic groups.

51. GAO (1998a, Annex VII).

52. Landmine Monitor (2001:625).

53. There were also 112 casualties recorded among military personnel. The Bosnia and Herzegovina Mine Action Centre (BHMACH) database shows no accidents among military demining personnel for 1996, but the entity armies may not have reported such incidents separately at that time.

54. The Survey Action Center has initiated a Landmine Impact Survey, and the Federation Mine Action Centre has completed a "systematic survey" of suspected areas already recorded in the MAC database. This latter effort was intended to get a better gauge of what percentage of the suspected contaminated land will eventually require clearance, rather than obtaining a comprehensive list of all minefields.

55. "Lifting" refers to clearance to military standard in which deminers remove the landmines listed on minefield records and any unlisted landmines they encounter.

56. GFAP (Annex 1A: Article IV: 2e and 3b, and Article V: various paragraphs).

57. Temporary markings (tape, temporary fencing, etc.) are often removed in BiH, and little permanent marking and fencing has been done to date.

58. "The deployment of landmines was a common skill among the populace, most of them having learned to do so as a part of the school curriculum." (Mitchell, undated:2-3)

59. Landmine Monitor (2001).

provide a foundation for devising and executing a strategy to make BiH free from the worst impacts of mine contamination within the foreseeable future.

The post-Dayton phase — building local capacities

Mine action began immediately following the Dayton Agreement with a number of separate initiatives that were only loosely coordinated. The various armies commenced mine lifting under the supervision of IFOR. In May 1996, the UN set up the Mine Action Centre (UNMAC) to coordinate mine action, supervise the establishment of national bodies, and develop local capacities, initially by equipping and directly managing a number of survey and clearance teams.⁶⁰ The World Bank, the European Commission (EC), and other donors commissioned a significant amount of mine survey and clearance in support of the “priority reconstruction” projects designed to restore essential infrastructure, financing this from the budgets of each of the reconstruction projects. In July 1996, the World Bank approved a large⁶¹ stand-alone Emergency Landmines Clearance Project to support clearance in support of priority reconstruction and resettlement projects, as well as institutional development administered through Project Implementation Units (PIUs) working with the MACs in both entities.⁶² A number of international NGOs initiated mine action programmes, with both Norwegian People’s Aid (NPA) and Hilfe zur Selbsthilfe (HELP — a German NGO) establishing mine clearance programmes. In 1997, the Office of the United Nations High Commissioner for Refugees (UNHCR) established a six-team demining programme to support its own refugee return efforts.⁶³

Donors also provided a significant amount of assistance to build local demining capacities. In 1996, the EU provided equipment to demining authorities in both entities and, the following year, financed equipment, training, and initial salaries for deminers and EOD teams.⁶⁴ Subsequently, the EU championed the use of civil protection forces for demining and UXO clearance, usually for small tasks on a “rapid response” basis. The EU provided equipment, training, and other assistance to the Civil Protection forces in both entities via HELP.

Also in 1996, the U.S. State Department established the U.S. Demining Coordination Centre (USDCC) in Sarajevo in April, and issued a US\$3.5 million contract to RONCO Consulting Corporation to (1) assist with the initial MAC installation and data processing facilities, (2) establish three regional MAC centres and a landmine clearance training school, train local personnel in mine survey and clearance, and (3) introduce an explosives detection dog (EDD) programme. In October of that year, the State Department issued a second contract to RONCO to initiate full demining operations as a means for developing additional demining capacity. The firm trained and

60. Capacity-building focused principally on mine survey and clearance. Concerning victim assistance, BiH had significant capacity for physical rehabilitation, prosthesis, etc., in part to care for war victims, who vastly outnumber mine victims. There were an estimated 3,000-5,000 amputations during the war, while there are perhaps 40 persons seriously injured by landmines each year. (Figures from Mitchell, undated:18, 27.)

61. The approved financing plan called for US\$67 million of which US\$7.5 million was to be from the Bank’s concessional lending arm and US\$17 million was a “funding gap” (i.e. only US\$50 million was raised). In reality, about half the US\$50 million was provided by separate initiatives (e.g. parallel-financing) while the Bank managed a total of US\$25.5 million via its Demining Trust Fund.

62. The PIUs awarded contracts only to commercial firms based on competitive tenders.

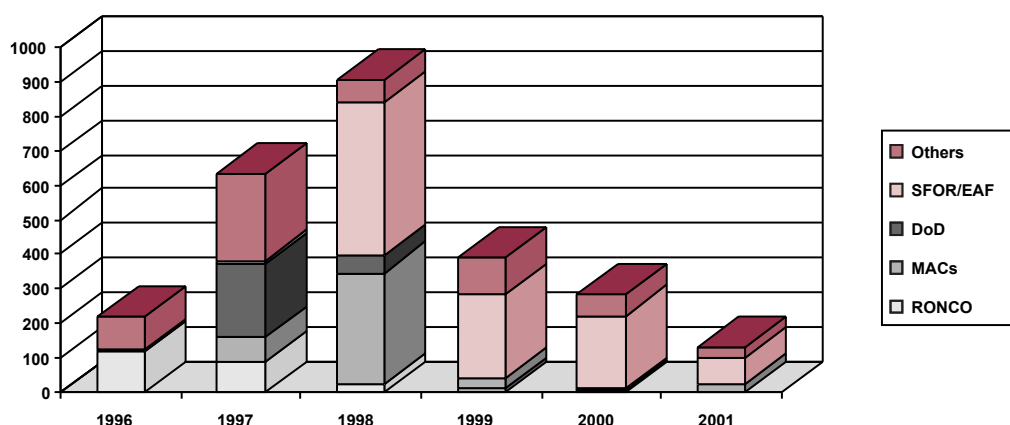
63. In 2000, the teams were transferred to NPA and HELP.

64. It contracted (a) BACTEC International to train and establish nine EOD teams (four persons each) and (b) DSL to train and establish 18 demining teams (12 persons each).

equipped 165 local personnel (55 from each ethnic group) in survey, clearance, dog handling, and site supervision, formed these into three regionally-based teams, and directly supervised their work until May 1997. At this point, the equipment and deminers located at the regional centres were transferred to respective Bosnian Serb, Bosnian Croat, and Bosnian representatives of the Bosnia-Herzegovina Commission for Demining.⁶⁵ Subsequently, the BiH Demining Commissioners authorised the assets for which they have individually accepted responsibility to be used by local commercial demining firms — SI/Oktol (Bosniak), Unipak (Bosnian Serb), and Decop (Bosnian Croat), engaged in joint ventures with international demining organisations.⁶⁶

These efforts led to a rapid build-up in the numbers of qualified deminers. Those holding basic humanitarian demining qualifications rose from near zero at the start of 1996 to more than 200 by the end of the year and well over 1,200 by the end of 1998, by which time most of the basic training was being offered by the entity armies. By comparison, there are approximately 420 qualified deminers in Croatia, which also has a massive contamination problem and which has cleared more contaminated land than BiH has achieved.⁶⁷

Graduates from demining courses



Note: The figures are from the BHMACE database on certified deminers and should be treated with care as the records contain numerous errors and are almost certainly incomplete. There also are multiple records for individuals who have completed multiple training courses.

The slide to crisis

While the rush to establish programmes to cope with the humanitarian emergency and the priority reconstruction effort was understandable and led to the rapid expansion in mine survey and clearance capacities within the country, the donor community quickly recognised that continued piecemeal responses would not be adequate to deal with the scale of contamination in BiH. This would take decades to

65. In total, equipment valued at approximately US\$3 million was turned over to Bosnian authorities.

66. Early in 1999, the Demining Commissioners, after consulting with State Department officials, decided to create local NGOs and turn the U.S.-purchased demining equipment over to them. Accordingly, three local NGOs were created: STOP-Mines (Bosnian Serb), BH Demining (Bosniak), and Pro Vita (Bosnian Croat).

67. In 2001, Croatia reported clearance of 13.6 million square metres, compared to less than 7 million square metres for BiH. (Landmine Monitor, 2002, accessed at www.icbl.org/lm/2002/croatia.html)

address and required the evolution to a more coordinated programme under Bosnian control.

To reinforce the need for Bosnian authorities to assume responsibility for the long-term task of addressing the country's mine contamination problem, the PIC, at its December 1996 meeting in London, stressed the requirement to establish a national authority to channel donor resources to the entity Mine Action Centres, maintain a central database and mapping facility, and set standards for mine clearance operations.⁶⁸ Accordingly, the Council of Ministers appointed a three-member Demining Commission in January 1997⁶⁹ and, in October of that year, the government entered into an agreement with the Board of Donors to establish the Bosnia and Herzegovina Mine Action Centre (BHMIC) to assume the roles played by the UNMAC.⁷⁰ At the same time, the entity governments agreed to “ensure that the Entity Mine Action Centres (EMACs) and Project Implementation Units (PIUs) are integrated within a defined legal framework ... acceptable to the Board of Donors” to direct the mine action resources made directly to each government and adopt “the priority programme for presentation to the Board of Donors”.⁷¹

Problems were legion. The entity governments initially were unwilling to expend funds on foreign contractors, insisting that local firms had adequate capacity, which delayed the award of clearance contracts via commercial tenders during the 1996 demining season. The UN and World Bank disagreed on the strategy for building local capacity in the MACs.⁷² Cooperation among the BH, Federation, and RS MACs remained poor.⁷³ The original mechanisms established to effect donor coordination in mine action proved inadequate. This lack of coordination led to significantly higher costs. Hundreds of deminers were enrolled in training programmes without addressing whether they would be employed after training.⁷⁴ In addition, salaries for civilian deminers and related personnel were set at remarkably high levels relative to local wages,⁷⁵ significantly increasing clearance costs.⁷⁶ Competition among commercial firms, and between the commercial and not-for-profit sectors, was intense, leading to numerous allegations of unethical and, in some cases, criminal behaviour,⁷⁷ as well to

68. The London Conference also emphasised the need for the BiH authorities to “use their military forces for demining according to internationally-recognised standards”.

69. Earlier, the BiH Government had established the Mine Protection and Removal Agency (MPRA) to coordinate with the World Bank and the MAC, but without a clear legal basis as the country's supreme authority with respect to mine action.

70. Handover of responsibility from UNMAC to the Demining Commission and BHMIC did not occur until July 1998.

71. *Demining in Bosnia Herzegovina after 1 January 98 – Agreed Principle*, 30 October 1997.

72. The UNDP sought to build a fully functioning UNMAC and then hand this over to local authorities, while the Bank advocated working with the authorities from the beginning, building their capacity (World Bank, 1998:43).

73. BHMIC had the responsibility to “coordinate” the entity MACs, but had no direct authority over their funding, staffing, or operations.

74. The 18 teams (approximately 215 deminers) trained and equipped in 1997 by DSL with EU funding were left idle for the 1998 season. Such “over-capacity” has continued to this day. In recent years fewer than half of the accredited deminers have been employed for extended periods.

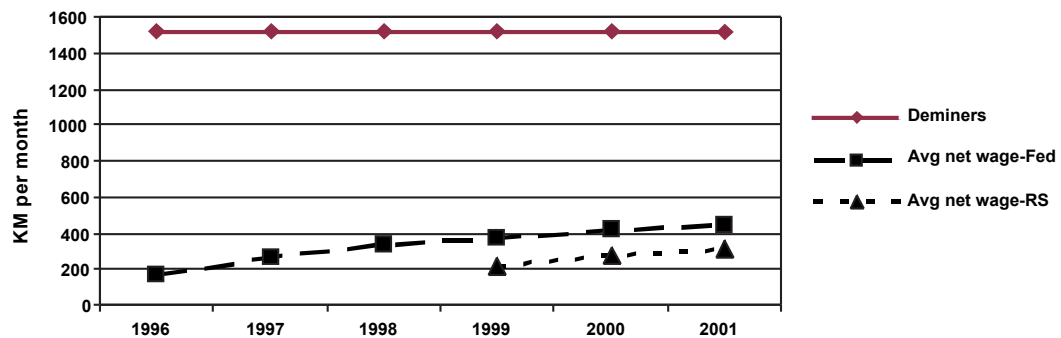
75. Under an apparent agreement by the major clearance organisations, basic deminers salaries were standardised at around KM1,500 (Bosnian Marks, equivalent to DM1,500 or about US\$750) per month, five times those of medical doctors and seven to 10 times typical salary levels. The stated rationale for such salary rates — to ensure trained deminers did not leave for other employment — is difficult to understand with unemployment rates, both in general and for deminers, of 40 to 45 per cent!

76. Local labour costs, including life and disability insurance coverage, comprise the bulk of mine clearance costs. With more reasonable salaries, but the existing insurance coverage, 15 to 20 per cent additional land might reasonably have been cleared with the monies expended to date.

77. Allegations included burying meat on test sites for explosives detection dogs to distract competitors' dogs during accreditation trials, and re-laying landmines on sites cleared by competitors.

conflicting and often spurious claims concerning efficiency and effectiveness, which generally brought the mine action sector into disrepute. In 1997 the World Bank suspended the award of two demining contracts in the Federation following violations to its procurement regulations. Following a review of the case between the State Department and World Bank officials in Washington DC, the U.S. State Department withdrew its grants to the Bank's landmine clearance project and issued the contracts directly.⁷⁸ The U.S. grant to the Bank for demining in the Republika Srpska remained in effect.

Deminers wages vs average net wages



There were also numerous allegations of corruption, including clearance tasks undertaken to benefit specific individuals or in pursuit of the chauvinist objectives of the nationalist parties, as well as kickbacks for the award of contracts. In addition, claims were made that some Bosnian authorities, including police and civil protection units, were laying new mines to prevent the return of ethnic minorities.⁷⁹

Such problems led to the early closure of the World Bank's Emergency Landmine Clearance Project.⁸⁰ Eventually, there was a crisis in donor confidence which culminated in the High Representative's dismissal of the Demining Commissioners in October 2000 for conflict of interest.⁸¹

In retrospect, there seem to be three principal reasons for the crisis:

- Many groups were involved with overlapping (and, in some cases, multiple) mandates, often with distinct objectives and motivations;
- The difficulty in establishing a demining authority and programme management structure from scratch in a country that lacked a constitutional framework for effective governance and which remained profoundly divided along ethnic lines;
- The desire by some donors to build commercial demining capacity in a country

78. Communication from U.S. Embassy to A. Cerkez, 12 May 2000, and clarification from U.S. State Department, April 2003.

79. Quoting from the U.S. Department of State Country Reports on Human Rights Practices for 2000, Landmine Monitor (2001) notes two suspected cases in which mines were laid in 2000 to prevent minority returns.

80. The role of the World Bank in commissioning demining through competitive tender was filled by the International Trust Fund for Demining and Mine Victims Assistance (ITF). In March 1998, the Government of Slovenia established the ITF and in November 1998 the U.S. agreed to provide up to \$28 million in funding via the ITF, both to match funds channelled through the fund by other donors and, subsequently, to finance the demining operations of three local NGOs established with U.S. assistance.

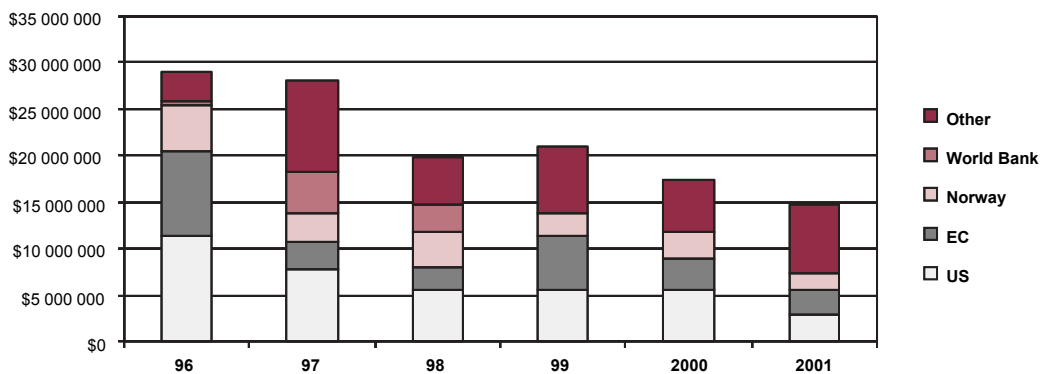
81. Charges have never been laid. A preliminary investigation by lawyers in the Office of the High Representative (OHR) has recommended charges against one of the Commissioners and another individual with respect to misuse of funds and equipment, but this report has not been made public as yet.

that lacked either (i) a sound public procurement system or (ii) governance traditions that drew a clear distinction between the state and the party in power.

The impact of the crisis

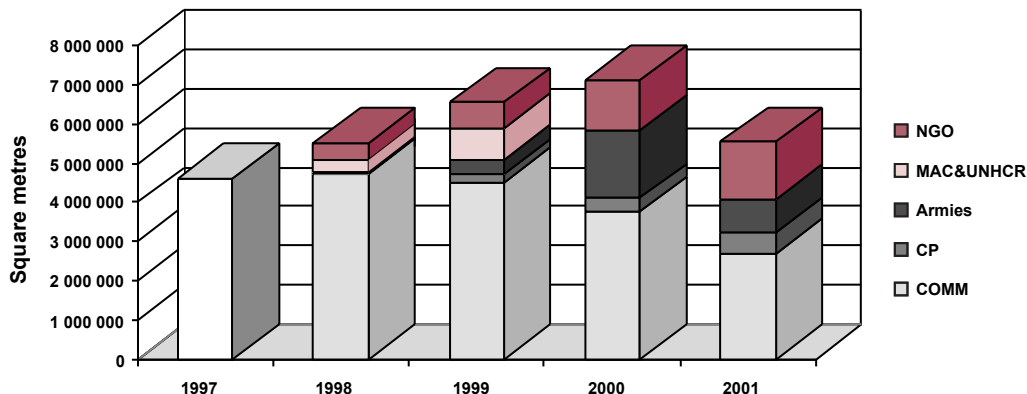
The crisis in confidence also led to a significant decline in donor funding, particularly via the ITF. While complete data on funding is impossible to obtain, it appears donor expenditures reached US\$25-\$30 million per year in 1996 and 1997, when significant demining was conducted in support of priority reconstruction projects. Funding then seemed to drift down to about US\$20 million per year for 1998 and 1999, perhaps \$17 million in 2000 and US\$15 million in 2001.⁸²

Estimated donor funding for mine action



The drop in donations resulted in a dramatic slowdown in clearance operations, particularly by commercial firms.⁸³

Clearance 1997-2001

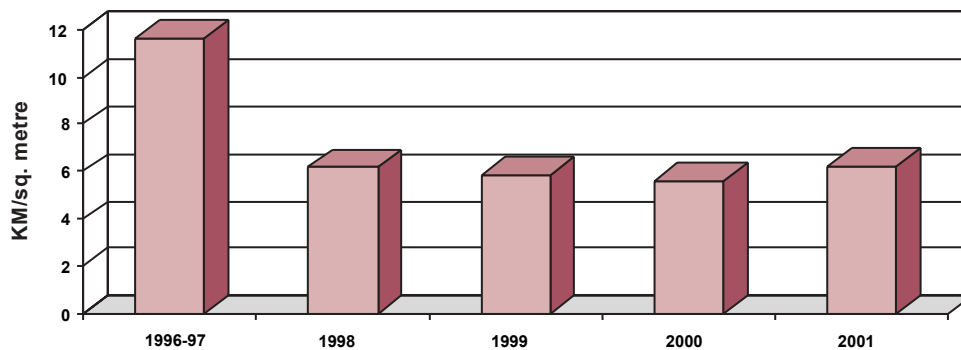


82. Expenditure data was obtained from a variety of sources including Landmine Monitor (various years), the Mine Action Investments data base (webapps.dfa.it-maeci.gc.ca/mai), U.S. Department of State (2000), *To Walk the Earth in Safety*, ITF annual reports, newsletters, and press releases, World Bank project documents, and GAO reports. Estimates do not include expenditures by the BiH and entity governments, which would have been significant in 2000 and 2001 because of salaries and bonus payments to civil protection personnel and entity army demining units.

83. Clearance by entity armies also fell dramatically in 2001 because of persistent funding problems experienced by the ministries of defence in both the Federation and the RS.

The fall in the level of activity almost certainly resulted in the ratio of expenditures to area cleared to rise in 2001,⁸⁴ mainly because the programme is operating so far below its capacity (i.e. the overhead costs of running the MACs and the remaining projects still directly financed by donors remained relatively constant, while direct expenditures on clearance fell sharply).⁸⁵

Estimated expenditure per area cleared



Recovery from crisis

Following the High Representative's dismissal of the original Demining Commissioners, the Council of Ministers appointed three new Commissioners, responsible to the Ministry for Civil Affairs and Communication, and submitted a draft Demining Law to the legislature designed to clarify mine action responsibilities and bring the entity MACs under the responsibility of the BHMIC rather than the entity governments (i.e. a unified mine action administration). As is common in BiH, passage of the new legislation took far longer than anticipated, and it was not until February 2002 that the Demining Law cleared the legislative hurdles. In the meantime, the BH and entity MACs made the transition to near-complete local management,⁸⁶ increased local funding,⁸⁷ and continued to make incremental improvements in their operations, including refinements to the process by which "priority lists" of clearance tasks are established and adopted by the entity governments for approval by the Ministry of Civil Affairs and Communications.⁸⁸ The Entity MACs have also encouraged municipalities and cantonal governments to appoint "demining coordinators" as the main point of contact between the local government and the MAC.⁸⁹ Clearance by entity armies rose dramatically from under 400,000 square metres in 1999 to over 1.7 million square metres in 2000.

84. This is not equivalent to the unit cost of clearance because it (a) includes expenditures for other forms of mine action (although these are modest) and (b) makes no adjustment for costs that should be capitalised (e.g. equipment and capacity-building activities such as training). Regardless, it is clear that the oft-quoted figures for average clearance costs (DM2.5-3.5) do not represent the full costs, including: depreciation of equipment; overheads for survey, quality assurance, contract administration, etc.; and various local cost elements.

85. As well, the drop in funding via the least-cost channels — ITF contracts to commercial firms and local NGOs — was more pronounced than the overall drop in funding.

86. The number of international advisers fell from 40 in July 1998 to three in 2002.

87. The bulk of the 2002 operating costs for the MACs will be financed by subventions from the entity governments.

88. Clarification from U.S. State Department, April 2003.

89. These are generally, but not always, Civil Protection officers, who retain their other civil protection responsibilities.

However, a large proportion of the country's demining capacity has remained idle for lack of finance, and more decisive measures are required in order to obtain additional funding from both local and donor sources. Perhaps the most critical step is the formulation and adoption of a long-term mine action strategy for BiH to free the country from the most debilitating impacts of mine and UXO contamination.⁹⁰ This strategy will then provide a basis for more concerted efforts by the Demining Commission to obtain more local and donor finance, and establish a framework in which mine action priorities can be linked more concretely to the country's development objectives.

Entity armed forces (EAF) and demining

Entity armies and mine lifting: 1995 to July 1998

The Dayton agreement required the armed forces of the three factions, supported by UNPROFOR, to initiate mine lifting immediately following the ceasefire in late 1995, which worked reasonably well in areas where the lines of conflict had been static.⁹¹ The coming into force of the GFAP in mid-December 1995 then required the three armed forces to withdraw from the zone of separation and "...(1) to remove, dismantle or destroy all mines, unexploded ordnance, explosive devices, demolitions, and barbed or razor wire from the Agreed Cease-Fire Zone of Separation or other areas from which their Forces are withdrawn; (2) mark all known mine emplacements, unexploded ordnance, explosive devices and demolitions within Bosnia and Herzegovina; and (3) remove, dismantle or destroy all mines, unexploded ordnance, explosive devices and demolitions as required by the IFOR Commander".⁹² However, the first priorities of the international community were to maintain the ceasefire and reduce the capacities of the EAF via weapon reductions and demobilisation.

While there remained pressure to have the forces demine, in this environment quality control was inadequate. A number of civilian casualties resulted from landmine accidents in "lifted" areas, so the lifting operations lost credibility and were stopped for a time.⁹³ Rapid demobilisation also dramatically reduced the capacities of the EAF, including those for demining. More fundamentally, many political leaders were far from committed to the use of their armed forces to clear minefields: "In December 1996, a senior IFOR officer told GAO that the political leaders of BiH's three major ethnic groups do not want to remove landmines because they believe the ceasefire is only a temporary cessation of hostilities".⁹⁴

However, the London Peace Implementation Conference of December 1996 required BiH authorities to "use their military forces for demining according to internationally recognised standards". Widespread reticence remained, though, on the part of the international community to finance the rebuilding of military capacity in any form. As well — and in spite of the statement issued by the London Peace Implementation

90. A first draft of a strategy was developed in early 2002.

91. Interview with Lieutenant-Colonel Passmore, Chief, Countermines/EOD, SFOR, 5 December 2001.

92. GFAP (Annex 1A: Article IV: 2e). In addition, the ex-combatants were to provide IFOR with "positions and descriptions of all mines, unexploded ordnance, explosive devices, demolitions, obstacles, weapons systems, vehicles, or any other military equipment which cannot be removed, dismantled or destroyed..." (GFAP, Annex 1A: Article V: 1)

93. Interview with Lieutenant-Colonel Passmore, *op. cit.*

94. GAO (1997b:10).

Conference — not all in the mine action community within BiH saw the entity armies as an integrated part of the long-term solution to Bosnia's landmine contamination problem.⁹⁵ Therefore, the original effort at training and re-equipping EAF demining units was undertaken through a U.S. bilateral military-to-military arrangement and delivered by U.S. Special Operations forces rather than via SFOR.⁹⁶

Demobilisation and troop levels in the entity armed forces		
Date	Total EAF troop levels	Source
October 1995	Over 400,000	GAO, 1997b:18
May 1997	100,000	GAO, 1997b:6
October 1997	55,000	GAO, 1998a: 9
December 1998	48,100	World Bank, 2000b:3

The transition from lifting to humanitarian demining

Initial U.S. Department of Defence training for the EAF

Following two short assessment missions, Defence Department funds were transferred to the State Department to finance an extension to its contract with RONCO to provide on-the-ground support for the Special Operations trainers. Early in 1997, RONCO purchased basic demining and training equipment and established three temporary training sites in preparation for the arrival of Special Operation forces to upgrade the demining skills and standard operating procedures used by local armed forces to humanitarian standards.⁹⁷ Three of the newly-developed DSS-2 Demining Support Systems⁹⁸ were sent to BiH in February 1997 — the first field deployment of this system.⁹⁹

The actual training was conducted by 55 Special Operations forces troops, assisted by RONCO personnel, from March to June 1997, during which time 450 EAF personnel (15 ten-man teams from each of the forces) received basic demining training. Following the training, the equipment (mine detectors, protective clothing, etc.) was donated to the local armed forces.

95. There were rivalries among the international community organisations with mine action roles and fierce competition among international and local demining firms, and between the commercial and NGO sectors. Many of these organisations would not have wanted funds allocated to mine action to flow to the entity forces.

96. Plans by the U.S. Department of Defence to provide such assistance began about May 1996, when President Clinton announced the new U.S. anti-personnel landmine policy including a commitment to "expand significantly its humanitarian demining programme to train and assist other countries in developing their own humanitarian demining programmes" (DoD, 1997).

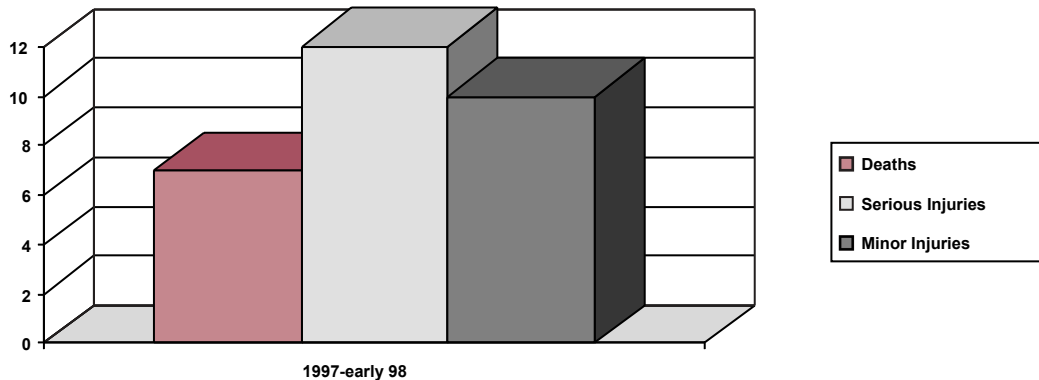
97. One training site was established for each of the entity armies in Banja Luka (for the VRS, Republika Srpska forces), Mostar (for the HVO, Bosnian Croat forces), and Tuzla (for the VF, Bosniak forces).

98. The DSS "was designed to be shipped to the host nation and utilized by the U.S. Army Special Operations Forces (SOF) who establish and support demining and mine awareness programmes, and conduct demining training for indigenous personnel. The DSS, an electronic performance support system, was created for use as a demining instructor's workstation for the development and production of classroom and field training materials in demining, medical, mission planning, and mine awareness, and as a platform for delivering classroom presentations" (DoD, 1999:2).

99. U.S. DoD (1999:2).

This initiative appears to have had little effect. In spite of the training, UNMAC did not accredit the EAF for humanitarian demining¹⁰⁰ and did not certify the land cleared by mine lifting procedures for civilian use. Productivity remained low. Motivation was one problem. EAF personnel often were not paid by the entity governments and, more generally, were aggrieved at their low pay and lack of insurance coverage relative to civilian deminers.¹⁰¹ As well, demining deaths and injuries continued at an unacceptable rate in 1997 and early 1998.

EAF demining casualties to July 1998



Note: The BH-MAC data base records no demining accidents among EAF personnel prior to 1997. The SFOR 'Incidents' data base suggests that the demining units of the EAF did suffer deaths and injuries prior to 1997, but their records are so incomplete it is impossible to determine the number.

Given the lack of insurance coverage and the number of demining accidents, it was unsurprising that military personnel were unenthusiastic about mine clearance. In this environment, the entity armies gave minimal attention to demining and were found by SFOR to be “*non-compliant with their Dayton obligations*” on a number of occasions.

(a) SFOR assistance to build EAF demining capacities

In spite of the disappointing performance of the entity armies in demining, by early 1998 the view that the EAF should clear to humanitarian standards and constitute part of the country's overall mine action effort began to dominate within the international community.¹⁰² From this point, SFOR began to focus more systematically on capacity building for the demining units of the EAF, and played a more central role in identifying assistance requirements, soliciting funds or in-kind contributions to meet these requirements from SFOR militaries and donor agencies, coordinating the delivery of training, managing the mechanical demining assets and — critically — working with senior commanders of the EAF demining units to improve operations

100. The three armed forces were not accredited for humanitarian demining until July 1998. However, it appears the soldiers who received the training from U.S. Special Operations Forces in early 1997 have been accredited, even though the training programme itself was not itself officially recognised.

101. GAO (1998a, Appendix VII). Insurance coverage for deminers by commercial providers is only available to personnel in organisations that are accredited to international humanitarian standards, and so was unavailable for local military personnel until July 1998.

102. The international community remained far from unanimous on this question (or on most other mine action issues). It appears the U.S. DoD and the other foreign militaries contributing to SFOR were in favour of humanitarian demining by the EAF, while commercial firms and many of the donors that supported the development of a commercial tendering approach to mine clearance were opposed.

planning and management. A series of British officers assigned to the Chief, Countermine position in SFOR also gave greater attention to liaison with civilian authorities and international organisations involved in the national mine action programme and pushing the three entity armies to establish some capacity for joint planning.

As the armies were comprised mostly of conscripts and the demobilisation programme was continuing, it was believed that the bulk of the 450 personnel equipped and trained by the U.S. in 1997 had left active service or, at least, the demining units. The U.S. DoD — working this time with SFOR and with UNMAC trainers¹⁰³ — returned to deliver a second round of training from late 1997 to May 1998. This was a series of train-the-trainers courses (again, separate courses were delivered for each of the entity forces) in basic humanitarian demining for 71 military demining instructors from the EAF, ending in January and May 1998.¹⁰⁴ The U.S. also financed the establishment of three demining training schools (in Travnik for the ABiH, Mostar for the HVO, and Banja Luka for the Army of Republika Srpska — VRS).¹⁰⁵ The newly-trained instructors then trained 4310-person entity army demining teams — 19 ABiH; 8 HVO; 16 VRS — starting in May 1998.

The EAF instructors were trained to deliver three-part training programmes. The first part covered general demining skills; the second provided training in three areas of specialisation for deminers, medics, and team leaders; the third was a three-day practical exercise.¹⁰⁶ SFOR provided a tutor to monitor the subsequent training delivered in each of the training schools.¹⁰⁷

The establishment of the three demining training centres, coupled with the train-the-trainers programme covering basic demining skills, provided the entity armies with the capacity to train local military personnel to conduct mine clearance operations to humanitarian standards. Accordingly, in July 1998 UNMAC accredited the three armed forces for humanitarian demining, and SFOR arranged for donations from Canada and Norway to pay for insurance coverage for deminers.¹⁰⁸ However, the armed forces remained poorly equipped, with no mechanical ground preparation equipment or explosives detection dogs, and were limited to low-productivity manual demining.¹⁰⁹ As well, they had not had training in the recognition and safe handling of UXO, which further hampered productivity.¹¹⁰ Site management and logistics management

103. UNMAC provided humanitarian demining training guidelines to U.S. SOF, who also observed a training programme provided by UNMAC for civilian deminers (“Academies ensure future deminers”, *SFOR Informer*, No. 34, 22 April 1998).

104. Confusingly, the joint Defence and State Departments report to Congress on Foreign Military Training for fiscal years 1999 and 2000 shows for Bosnia 76 local beneficiaries of humanitarian demining training at a cost of \$1,566,000 in FY 1999.

105. The U.S. provided financing to SFOR to provide demining equipment, upgrading facilities, supply office, and classroom equipment (“Academies ensure future deminer”, *SFOR Informer*, No. 34, 22 April 1998) Each training school received four complete sets of demining equipment (“Entity de-mining schools”, *SFOR Informer*, No. 36, 20 May 1998).

106. See the references to ‘training in a simulated minefield’ and ‘Experience in medical and simulated casualty drills’ in DoD, 1999:29, table 11.

107. “Academies ensure future deminers”, *SFOR Informer*, No. 34, 22 April 1998.

108. These donations, which have continued to date, came from development assistance or foreign affairs departments in Canada and Norway, and not from their military budgets.

109. International commercial firms and NGOs had by this time adapted integrated mine clearance approaches (mechanical ground preparation, EDDs, and deminers) to a range of conditions in BiH, dramatically raising productivity.

110. About one third of the devices found by military demining teams were UXO (“Entity Armed Forces UXO Training”, *SFOR Informer*, No. 65, 7 July 1999).

remained weak. A series of initiatives coordinated by SFOR have targeted these weaknesses.

In September 1998, the SFOR Engineering unit acquired a number of Bozena light mechanical mine clearance machines, a “mini-flail” system from the Czech Republic.¹¹¹ Subsequently, training has been provided in the operation and mechanical maintenance of the Bozena,¹¹² and SFOR now has six of the machines for EAF use. Funding for these in recent years has been provided by Canada and Norway.¹¹³

From June 1999, SFOR provided an initial round of two-week UXO training courses in the three EAF demining schools.¹¹⁴ This was followed in October–November 1999 by a three-week train-the-trainers EOD disposal course at the United Kingdom Defence Explosive Ordnance Disposal School for 29 personnel from the three EAF (12 ABiH, 9 VRS, 8 HVO).¹¹⁵

In March 2000, the SFOR Countermines Unit ran a train-the-trainers programme in house clearance for eight EAF instructors (3 ABiH, 3 VRS, and 2 HVO) at Camp Butmir near Sarajevo.¹¹⁶ Again, SFOR then had a representative observe the initial training given by these instructors at the entity army demining training centres. Also in 2000, Norwegian funding was used to procure six EDDs and provide six months training for both the dogs and handlers at the Canadian International Demining Centre in Bihac.¹¹⁷

Thus, by the end of the 2000 demining season, the EAF had a full range of assets (manual, mechanical, dog) to conduct integrated demining operations, and had the training to deal with UXO and the clearance of buildings.¹¹⁸ The three forces also had the capacity to meet their own requirements for additional training (except for training new dogs and handlers).¹¹⁹ Collectively, the three forces had a significant portion of the total demining capacity in the country — perhaps 40 per cent of all certified deminers and associated personnel, as well as the mechanical and dog assets.¹²⁰ An agreement between SFOR, the entity governments and armed forces, and the BiH Demining Commission also required the entity governments to “... issue specific regulations to govern the pay-scale of military deminers, conforming to those of civilian deminers”.¹²¹ This was done by adding (1) a skill bonus for personnel who had

111. Funding for the initial machines appears to have come from Greece, Norway, Spain and Turkey (SFOR Countermines Unit, 2002, *Financial Situation Point*).

112. “Bozena Flail Course”, *SFOR Informer*, No. 81, 16 February 2000.

113. “Bozena makes de-mining safer”, *SFOR Informer*, No. 45, 23 September 1998.

114. “Entity armed forces UXO training”, *SFOR Informer*, No. 65, 7 July 1999.

115. “UK explosive ordnance disposal course for EAF”, *SFOR Informer*, No. 74, December 1999.

116. “EAF house clearance training”, *SFOR Informer*, No. 83, 15 March 2000.

117. “Explosive Detecting Dog Team (EDDT) training”, *SFOR Informer*, No. 91, 5 July 2000.

118. EAF medics had also received significant amounts of training and, in 2000, Canada provided five ambulances, bringing the EAF total to 23.

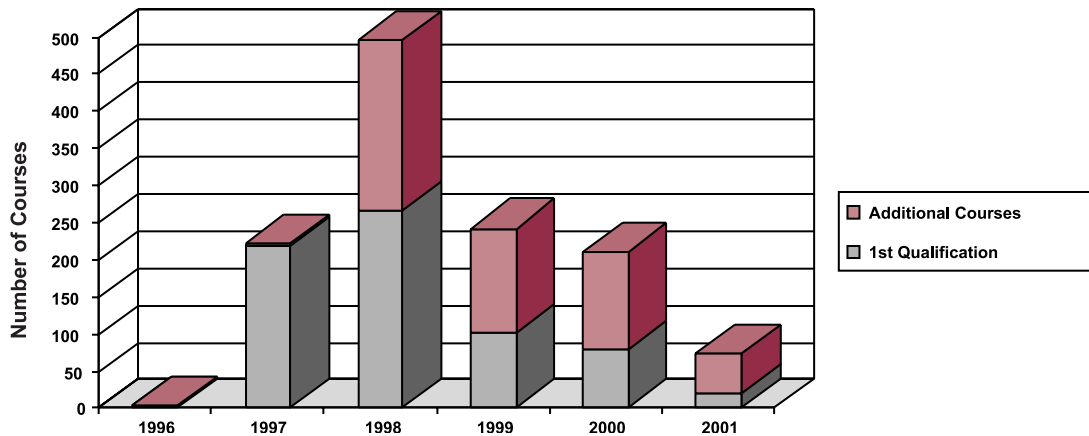
119. At its meeting of 30 March 2000, the Interagency Working Group on Humanitarian Demining endorsed the DoD’s assessment that the BiH demining programme had reached the “sustainment level”.

120. Records in the BHMIC database contain numerous errors, but there appear to be about 1,960 individuals with some type of training relevant to demining (about 1,600 qualified as deminers *per se*), while SFOR records show 972 EAF personnel with certification of some sort. This implies almost 50 per cent of all qualified personnel are in the armed forces, but SFOR records are not up to date because the HVO and VRS often do not send data on new trainees or other changes in status (e.g. personnel leaving the army).

121. *Memorandum of Agreement ... Concerning the Entity Army Demining Schools and the Integration and Operation of the Entity Armies within the National Demining Plan*, 6 July 1998. Annex A, Item 35b.

completed accredited demining courses (in the ABiH and HVO) and (2) a duty bonus for personnel while actively demining (all forces).¹²²

Demining training by and for the EAF



Notes: (1) This includes all personnel who have completed a course while in the entity armed forces, whether offered by the EAF or SFOR, the U.S. DoD, the U.K. army, etc.
 (2) BHM MAC records are not complete. For example, records exist for only about 220 individuals who likely were EAF in 1997, when the U.S. SOF trained 450 EAF personnel in that year.
 (3) "1st qualification" refers to a course completed by an individual who has not previously completed a course accredited by BHM MAC. "Additional courses" refers to training completed by individuals who have previously completed at least one course accredited by BHM MAC.

(b) The EAF and humanitarian demining: July 1998 to present

The entity armed forces were accredited for humanitarian mine clearance by UNMAC in July 1998,¹²³ — just before responsibility for the national MAC was transferred to the BiH government — and they commenced humanitarian demining on 13 July 1998.¹²⁴ The conversion of entity armies operating procedures to humanitarian standards coincided with a dramatic reduction in demining accidents.¹²⁵

The increased attention by, and assistance channelled via, SFOR also resulted in substantial increases in the areas cleared by entity army demining units through 2000. In 2001 however, the area cleared by entity armies and certified by BH-MAC fell precipitously, due principally to the failure of the entity governments to meet bonus payment obligations and, on occasion, basic salaries, leading demining units to refuse to work.¹²⁶ As a result, SFOR found the entity armies non-compliant for almost 25 per

122. In addition to their basic salaries, soldiers receive an extra KM17.50/day when they are demining, plus a "skills bonus" for being a certified deminer, plus living expenses.

123. Prior to that point in the 1998 demining season, the armies had continued with "lifting", fielding their full complement of 43 demining teams as required by the SFOR Commander's 'Instruction to the Parties' for summer 1998 ("Entity de-mining schools", *SFOR Informer*, No. 36, 20 May 1998).

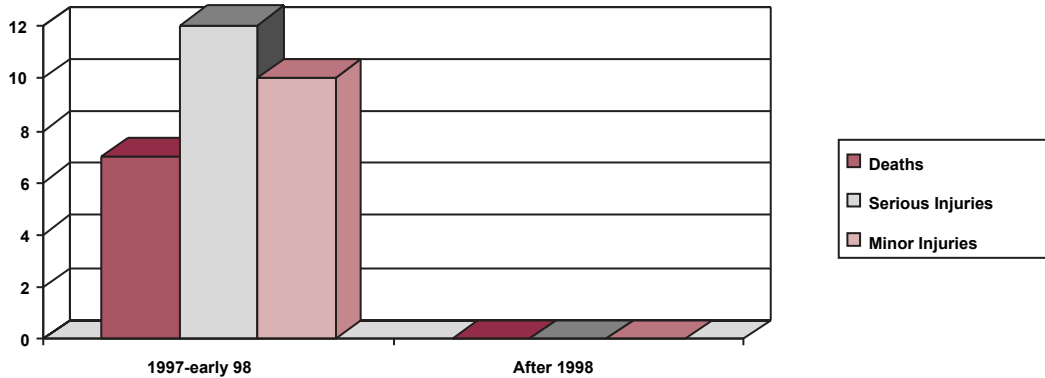
124. According to SFOR at the time, "...they will be the first military de-miners in the world to undertake demining at International Standards for Humanitarian Mine Clearance" ("Memorandum on de-mining signed", *SFOR Informer*, No. 40, 15 July 1998).

125. It remains unclear why the training offered in early 1997 did not lead to a reduction in demining accidents. Possible factors include: a fault in the training provided; problems in site management; absence of the requisite complementary training (e.g. training offered in 1997 did not include EOD or procedures for house clearance); the fact that the forces continued with mine lifting rather than humanitarian demining; and general ill discipline.

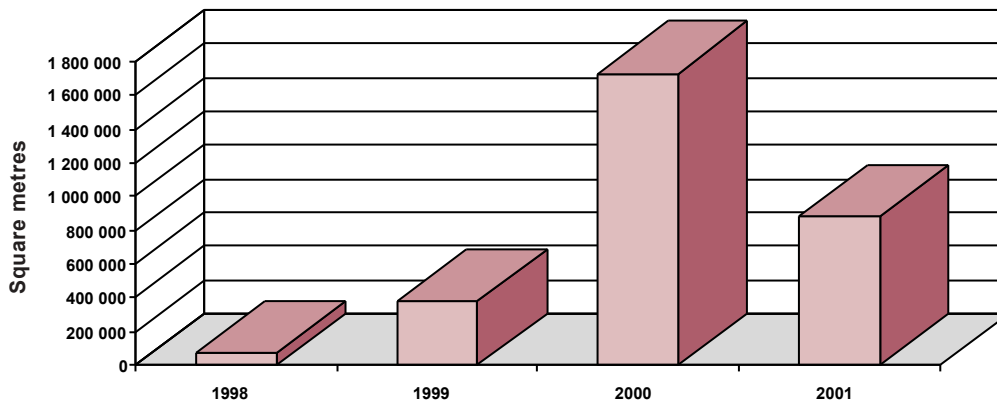
126. The entity armies also experienced periodic fuel shortages, and sometimes senior commanders refused to allocate fuel and transportation to the demining units.

cent of the 2001 demining season.¹²⁷ Many clearance tasks initiated in 2001 were left incomplete by the end of the year.¹²⁸

EAF demining casualties: 1997 to date



Clearance by EAF: 1998-2001 (BH MAC data)



For 2002, SFOR hoped the international community would keep pressure on the entity governments to provide the requisite funding to meet their EAF demining commitments. It also took steps to improve the management of mine clearance by the armies. The three forces agreed to establish a Demining Coordination Centre on the BHM MAC site for joint control of demining assets and joint work planning.¹²⁹ In February 2002, the SFOR Countermine Unit organised a project management course for team leaders and other military personnel with management responsibilities for mine action. Also in February 2002, the senior demining officer for the VRS was one of four Bosnians sent to the senior mine action managers' course delivered in Slovenia by Cranfield University.¹³⁰ With better management and funding for additional mechanical and dog assets on a contract basis, SFOR believes the EAF could clear — via actual clearance

127. The problems were worst in the VRS (39.3 per cent non-compliant) and HVO (36.4 per cent non-compliant). The ABiH was non-compliant only 16 of 532 team weeks, or 3 per cent.

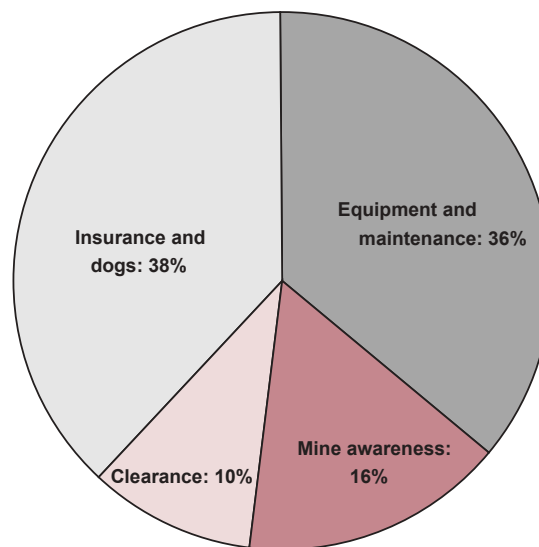
128. BHM MAC data credits clearance only once an entire task has been completed. Including areas only partially cleared, SFOR estimated a decline of about 20 per cent compared to 2000 (Meeting with Lt.-Col. Passmore, Chief, Countermines/EOD, SFOR, 5 December 2001). This also suggests that BHM MAC records for 2000 credit the EAF with clearance of significant areas which had, in fact, been started in 1999.

129. Interview with Lieutenant-Colonel Passmore, Head, SFOR Countermines/EOD Unit.

130. That individual will subsequently head the EAF Demining Coordination Centre.

and by area reduction using machines and EDD teams — four million square metres in the 2002 season, compared to 890,000 square meters in 2001.

As of June 2002, SFOR had obtained funding commitments of about US\$900,000 to support its own activities and EAF demining for the year. Donations from non-military budgets came from Canada and Norway (38 per cent of the total) and the U.S. State Department (10 per cent), while military budget support came via the Supreme Headquarters, Allied Powers in Europe (SHAPE) (52 per cent). The breakdown by purpose of funding is given below.

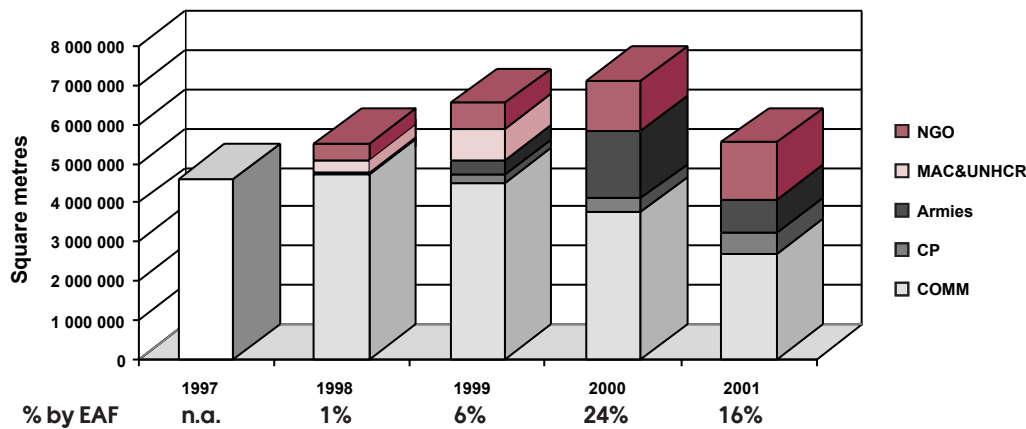


Performance by the entity forces demining units improved significantly in early 2002. Most teams worked nearly all their scheduled days and productivity increased due to improved application of integrated clearance techniques (i.e. use of ground preparation flails, EDD teams, and manual deminers in combination).¹³¹ As well, the establishment of a single Demining Coordination Committee appears to have enhanced operational planning to make more effective use of key assets, such as ground preparation machines. Still, it remained unclear whether the entity armed forces can raise their performance levels to those attained by other demining organisations in Bosnia. Even in past years when the entity army demining units have operated credibly, their performance lagged significantly behind that of commercial companies and most NGOs. With perhaps 40 per cent of the country's qualified deminers,¹³² the EAFs have never accounted for more than 24 per cent of the total area cleared in a year.

131. Commander, SFOR, *Demining Fact Sheet* (undated, but issued around mid-June 2002).

132. Each of the entity armies has many more trained deminers than they are obliged to field at any time. In any week, they need 430 troops engaged in demining as deminers, medics, drivers, and team leaders. Each force also has a number of instructors, dog handlers, machine operators and mechanics, and senior commanders, implying a total of about 500 troops assigned to demining activities at any time. As of March 2002, SFOR records showed 971 troops with relevant qualifications. SFOR depends on the three forces to advise them of any changes, so there are delays in recording that an individual has left military service. However, it seems safe to assume the entity armies had over 900 personnel qualified for demining work in early 2002, or about 80 per cent in excess of their minimum requirements. However, there is a similar amount of excess capacity in the country as a whole.

Clearance 1997-2001



Outlook for the future

While the combined efforts of SFOR and the donors have significantly augmented the clearance capacities of the entity armed forces, performance by these demining teams remains mediocre. Some of the problems lie in the failure of the entity governments to pay their military deminers on a prompt and regular basis, but even if this were resolved, management at the site level and higher by military officers remains weak, and there is little evidence that senior EAF commanders are committed to the involvement of military personnel in humanitarian demining — indeed, they have often withheld the fuel and vehicles necessary to transport demining units to their tasks. Donors have shown a willingness to provide funds to rent additional equipment and EDD teams to enhance safety and productivity, but weak management means these additional assets often are not employed to full effect. Given that funding is the binding constraint on mine clearance in BiH, donor financial support now provided to the EAFs would almost certainly accomplish more if channelled to commercial firms or to local NGOs.

As well, since early 2002 there has been new pressure on the entity governments to expand and accelerate the armed forces demobilisation programmes. Following audits of the 1999 entity defence department budgets, the Organization for Security and Cooperation in Europe (OSCE) is seeking force reductions in the range of 50 per cent by June 2002 (i.e. about 10,000-15,000 from the ABiH and HVO combined, and perhaps 5,000 for the VRS).¹³³ The ultimate impact of this accelerated demobilisation programme on EAF demining capacities remains unknown.

There have been proposals to encourage the EAF deminers to transfer to a distinct “demining corps” in order to retain the existing capacity in some coherent form. If this operated as a public body outside the military, the proposal would also promote the demobilisation effort. However, the civil protection organisations already provide a public sector demining capacity and it is unclear why the BiH governments would wish a second such organisation. As well, it is doubtful that such a demining corps would run as efficiently as the existing commercial and not-for-profit demining organisations, most of which are operating far below their capacities due to lack of funding. If more funds were allocated to the commercial and NGO channels, these organisations could easily expand, hiring ex-military deminers when necessary.

133. OSCE, *Affordable Armed Forces in the Federation*, Presentation, 25 February 2002.

Another purported reason for supporting humanitarian demining by the local armed forces is that the entity governments cover a significant proportion of the costs of the demining units.¹³⁴ If EAF demining stopped, this contribution to the overall mine action programme might be lost. Again, the merits of this argument are modest. A very rough estimate suggests that the international community is covering perhaps one quarter of the full costs of the EAF demining operations.¹³⁵ But mine clearance by the EAF appears to be approximately three times as expensive per square metre as clearance by commercial firms and local NGOs.¹³⁶ As illustrated in the calculations below, these figures imply that every KMmillion in international funding diverted from the commercial or NGO channel to support EAF demining results in an *increase* of KM3 million in demining expenditures (i.e., by leveraging funds from the entity governments in support of EAF demining units), but an increase in the area cleared of only around 110,000/m²! In effect, KM3 million in additional funding is 'buying' additional clearance at a cost of KM27/m² — hardly an effective investment of funds regardless of their source.

	Cost/m ² (KM)	Area cleared
KM1 million to commercial firms or local NGOs	3	333,333m ²
KM1 million to EAF from international community	9	111,111m ²
Plus (75%/25%) *KM1 million = KM3 million from entity governments to EAF demining	9	333,333m ²
Total for EAF demining per KM1 million from the IC		444,444m ²
Additional area cleared for additional KM3 million		111,111m ²
Effective cost of additional area cleared	27	

Foreign militaries and humanitarian demining in BiH

Many foreign militaries have been involved in Bosnia since the Dayton Peace Agreement. Thirty-four countries¹³⁷ have contributed troops to IFOR or SFOR. Both IFOR and SFOR conducted their own demining operations, but only in support of

134. This is not the only contribution by BiH governments to mine action. The entity governments also pay the salaries of personnel in BH MAC and the mine clearance and EOD units in the Civil Protection organisations. As well, a number of municipalities have been commissioning mine clearance within their territories.

135. International community demining contributions via SFOR appear to have been in the order of KM2 million per year, exclusive of depreciation charges on equipment donated in previous years or the costs of supervision and programme management by SFOR personnel. Contributions probably were far higher in 1998 and 1999, when the U.S. DoD and SFOR provided significant training programmes for EAF personnel. The major contribution by the entity governments is the payment of salaries, allowances, and bonuses to EAF demining personnel. With remuneration in line with that of civilian deminers, and with 43 teams operating for a demining season of 32 weeks, these would amount to KM5 million/year and more if, in fact, all the payments were made. Allowing just KM1 million/year for operations and supplies costs born by the EAFs gives a minimum cost estimate of KM8 million/year just for direct and incremental costs. This implies direct, incremental clearance costs of KM9/square metre in 2001. Full costs would be significantly higher. An international official with extensive experience in mine action in Bosnia has calculated the clearance costs for the EAF at not less than KM10/square metre (interview with Robert Strazisar, 11 December 2002).

136. ITF data indicates an average clearance cost of about KM3/square metre for commercial firms and local NGOs in 2001 (BHMACH, Demining Strategy for Bosnia and Herzegovina, draft, Annex 4, p. 2). See also, Paterson, "The Case of Bosnia and Herzegovina" in *The Role of Indigenous Organisations in Mine Action*, GICHD, forthcoming.

137. All 17 NATO members (Iceland, the only NATO member without armed force, contributes medical personnel) and 17 non-NATO countries, two of which (Australia and New Zealand) contributed via a "special arrangement with the United Kingdom." The entire list is provided in Annex 1.

their military objectives. Some of these militaries have also provided personnel, equipment, or training to build local capacities — both civilian and military — for mine action. In addition, SFOR has also solicited non-military funds from donor governments to enhance its support to EAF demining efforts. Thus, mine action assistance by or from foreign militaries has come through the following four channels:

- IFOR/SFOR;
- Assistance to the Entity Armed Forces;
- Assistance to the Mine Action Centres; and
- Assistance to other mine action organisations.

The assistance provided to the Entity Armed Forces was discussed in the previous section. The other three channels of mine action assistance from foreign militaries are discussed in turn below.

The IFOR/SFOR mandate in mine action

IFOR: 20 December 1995 – 20 December 1996

The principal mandate of IFOR was ensuring the implementation of the military aspects of the peace, contained in Annex 1A of the GFAP. These goals were achieved by June 1996. For the remainder of the year IFOR continued to patrol the Inter-Entity Boundary Line, inspected the over 800 sites containing heavy weapons and other equipment (including landmine stockpiles¹³⁸), and monitored the troop demobilisation. IFOR did not have a direct demining responsibility except in support of its principal mandate. IFOR cleared mines and UXO from its own facilities and from key infrastructure needed for troop movement. It opened 2,500 km of roads, repaired or replaced over 60 bridges, and secured Sarajevo airport and key railway lines.¹³⁹

Part of the secondary mandate for IFOR was to monitor mine clearance operations conducted by the entity armies. Under the GFAP, ex-combatant forces were required to provide minefield maps and records as well as to “lift”¹⁴⁰ their mines from the Zone of Separation and other areas from which their forces were withdrawn, and to mark other minefields.¹⁴¹ However, the entity armies were in significant disarray due to the mass demobilisations, and their troops lacked the motivation and leadership to effectively discharge mine lifting assignments. Focusing on its primary mandate and — in the run-up to the initial elections in September 1996 — maintaining general security (in the context of widespread concern about possible attacks against IFOR and civilian offices of the international community), IFOR did not place a high priority on requiring the entity armies to fulfil their mine lifting obligations, or to ensure all military mine records were submitted to civilian authorities.¹⁴² As well, IFOR troops

138. On 6 June 1997, the SFOR Commander instructed all parties to declare the extent of their landmine stockpiles and move these to official cantonment sites (Landmine Monitor, 1999:554.).

139. *History of the NATO-led Stabilisation Force in Bosnia and Herzegovina*, available at: www.nato.int/sfor/index.htm

140. “Lifting” refers to clearance to military standard in which deminers remove the landmines listed on minefield records and any unlisted landmines they encounter.

141. GFAP, Annex 1A: Article IV: 2e and 3b, and Article V: various paragraphs.

142. It must also be recognised that neither IFOR nor SFOR has ever truly operated as a cohesive force. The bulk of its forces operate within three multinational divisions, led by commanders from the U.S. (MND North), Britain (MND South-West), and France (MND South-East). These countries have often held different interpretations of the GFAP and the priorities for IFOR/SFOR, including the level of effort that should be expended to ensure entity armies are “compliant” with their mine action responsibilities laid-out in the Dayton Peace Agreement.

did not ensure that clearance was done to international humanitarian standards as this was not part of their mandate or training. While large numbers of mines and UXO were cleared and destroyed, military demining accomplished little of true importance in 1996 because of the residual, but still unacceptable risk of contamination on land subject to mine lifting operations.¹⁴³

SFOR: 20 December 1996 to present

Following an assessment of post-IFOR security options, NATO Foreign and Defence Ministers concluded that a reduced military presence was needed to provide the stability necessary for consolidating the peace and agreed that NATO should organise a Stabilisation Force (SFOR). This was subsequently authorised by UN Security Council Resolution 1088 on 12 December 1996, and activated on 20 December 1996, the date the IFOR mandate expired. It provided for an initial force of up to 32,000 troops, charged with the following:

- To deter or prevent a resumption of hostilities or new threats to peace;
- To promote a climate in which the peace process can continue to move forward;
- To provide selective support to civilian organisations within its capabilities.

As was the case with IFOR, the smaller SFOR had no responsibilities for humanitarian demining, and only a secondary mandate relating to any form of mine action except where clearance was necessary for security of its own operations.¹⁴⁴ However, the London Peace Implementation Conference in December 1996 called on BiH authorities to “use their military forces for demining according to internationally-recognised standards” and to formulate a plan by October 1997 to reduce anti-personnel mine stockpiles. Accordingly, intermittent pressure was applied on SFOR commanders by civilian authorities of the international community to give priority to mine action.

The Countermines Unit within the Engineering Branch at SFOR Headquarters has the primary responsibility for coordinating mine action within SFOR, for linking with local and international civilian organisations on mine action matters, and for ensuring the compliance of entity armed forces with respect to their mine clearance responsibilities is adequately monitored.^{145,146} As well, the Mine Information Coordination Cell (MICC) includes a specialist responsible for the delivery of mine awareness training to all new SFOR contingents,¹⁴⁷ as well as three-day train-the-trainers courses for contact people in the different contingents, plus specialised courses

143. A number of civilian casualties resulted from landmine accidents in “lifted” areas (interview with Lieutenant-Colonel Passmore, *op. cit.*).

144. As of January 2002, the combined IFOR/SFOR toll from mines and UXO was 14 killed and 133 injured, but this includes all incidents and not just demining accidents (“Beware! Mines!”, *SFOR Informer*, No. 130, 17 January 2002). See also “Russian engineers ready to help”, *SFOR Informer*, No. 90, 21 June 2000; “Demining the Long Bypass Road”, *SFOR Informer*, No. 91, 5 July 2000; “Demining with French paratroops”, *SFOR Informer*, No. 110, 4 April 2001.

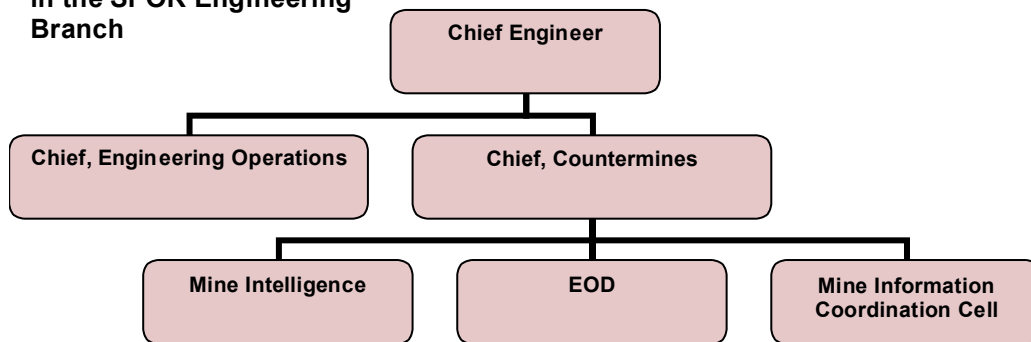
145. The SFOR monitors of EAF demining operations are provided by military engineers in various units within the three Multinational Divisions after they have received training in the EAF Standard Operating Procedures from the Countermines Unit (see: “Danish de-mining”, *SFOR Informer*, No. 50, 9 December 1998; “South West EAF de-mining”, *SFOR Informer*, No. 65, 7 July 1999; “Mine Monitors”, *SFOR Informer*, No. 123, 3 October 2001; “Co-operative de-mining efforts”, *SFOR Informer*, No. 138, 9 May 2002).

146. SFOR continued to monitor 100 per cent of EAF demining activity until the 2000 demining season, when monitoring dropped to about 20 per cent (“EAF house clearance training”, *SFOR Informer*, No. 83, 15 March 2000).

147. “Mines Information Coordination Cell”, *SFOR Informer*, No. 94, 16 August 2000, and “Beware! Mines!”, *SFOR Informer*, No. 130, 17 January 2002. “This perfect soldier can kill you”, *SFOR Informer*, No. 145, 15 August 2002.

for interpreters.¹⁴⁸ Specialists in the MICC also provide mine awareness sessions to civilians on occasion,¹⁴⁹ as do military engineers in the various units within the Multinational Divisions,¹⁵⁰ but this depends on individual initiative which is difficult to sustain given the SFOR contingents rotate every six months. Recently, the Republic of Ireland has agreed to continue posting Irish military engineers to the Mine Awareness Training position in the SFOR Countermines Unit in an attempt to maintain continuity and enhance the programme.¹⁵¹

Countermines Unit Structure in the SFOR Engineering Branch



From early 1998, the Countermines Unit initiated far more systematic efforts to build the capacities of the entity armed forces for humanitarian demining; efforts which are described in the previous section.¹⁵²

SFOR also has a Civilian-Military Cooperation (CIMIC) Unit. This does not have specific mine action responsibilities but has on occasion brokered assistance from SFOR military engineers or mine awareness trainers in support of CIMIC-sponsored small infrastructure or community development projects.¹⁵³

The SFOR mandate also embraced oversight of the destruction of landmine stockpiles after BiH signed the Mine Ban Treaty on 3 December 1997. At the signing ceremony, the government pledged to destroy its anti-personnel landmine stockpiles and dismantle its production facilities within four years.¹⁵⁴ Subsequently, the SFOR Commander directed the entity armies to complete the stockpile destruction by 1 August 1999. This deadline was achieved in the Federation, but not by the RS, which took until 15 November 1999.¹⁵⁵

In a related initiative, SFOR has supported the EAF in its “Operation Harvest” programme to collect illegally held weapons and explosive ordnance, which began in 1998. SFOR provides technical expertise, paying particular attention to mines (e.g.

148. Interview with Master Sergeant Sean Whyte, 25 June 2002.

149. “Mine awareness course for physicians”, *SFOR Informer*, No. 70, 15 September 1999, and “Mines Information Coordination Cell”, *SFOR Informer*, No. 94, 16 August 2000.

150. “Mine Awareness Class for school children”, *SFOR Informer*, No. 50, 9 December 1998.

151. The position had been vacant for three months prior to the appointment of the incumbent (interview with Master Sergeant Sean Whyte, 25 June 2002).

152. See the section *SFOR assistance to build EAF demining capacities*.

153. On CIMIC operations more generally, see Eriksson (2001) and Gordon (2001).

154. *Landmine Monitor* (1999:552).

155. “VRS complete anti-personnel mine destruction”, *SFOR Informer*, 15 November 1999.

those found by farmers working their fields). SFOR engineers remain on standby during periodic Operation Harvest campaigns to remove or destroy devices in situ, to reduce the risks of civilians bringing in aging and unstable items.¹⁵⁵

Foreign military assistance via the UN to the Mine Action Centres

The UNDP established its Mine Action Centre in Sarajevo in May 1996 and the entity governments subsequently established separate Mine Action Centres in Sarajevo (for the Federation) and Banja Luka (for Republika Srpska) in conjunction with the Project Implementation Units created to administer the World Bank's Emergency Landmine Clearance Project.¹⁵⁷ In October 1997 the BiH government entered into an agreement with the Board of Donors (the coordination group of all donors and international organisations supporting mine action in Bosnia) to establish the Bosnia and Herzegovina Mine Action Centre (BHMIC) that would assume the roles played by the UNMAC. At the same time, the BiH and entity governments signed an agreement with the Board of Donors outlining the principles that would govern the mine action programme in Bosnia (termed the "Agreed Principles").¹⁵⁸ The UNDP played three roles over this period:

- From May 1996 to June 1998 —direct management of the MAC;
- July 1998 to March 1999 — support for the transition to three mine action centres operated by and under the authority of the State and entity governments;
- April 1999 to date — further capacity building for the three MACs.

From the beginning, the UNDP Mine Action Programme was staffed by a mixture of UN personnel on contract to UNOPS and serving military personnel contributed by a number of foreign militaries,¹⁵⁹ supported by local personnel.¹⁶⁰

We were unable to obtain concrete figures for international personnel assigned to the UNDP Mine Action Programme prior to July 1998 when the handover of responsibilities to national authorities took place, but anecdotal evidence suggests the numbers peaked at 40 or more, the majority of whom would have been in-kind contributions from foreign militaries. During this period the UNMAC facilities were constructed, the landmines data base was created and populated, quality control procedures were designed and put into effect, basic training programmes were established and delivered¹⁶¹ and, in general, the national programme was cobbled together, bringing some degree of coordination to the dozens of commercial firms and NGOs engaged in demining.¹⁶²

156. "Project Harvest", *SFOR Fact Sheet*, November 2001.

157. Six regional offices were also established.

158. *Demining in Bosnia Herzegovina after 1 January 98 – Agreed Principles*, 30 October 1997.

159. Most were contributed on an "in-kind" basis, in which the foreign military covered the individual's basic pay and benefits, plus the costs of mobilisation and demobilisation, and the UN paid a "mission subsistence allowance" of US\$90/day to cover accommodation, meals, etc. In a few cases, the foreign military would also cover local subsistence costs.

160. The U.S. State Department also provided significant assistance via RONCO, which employed, in the main, recently retired U.S. military engineers.

161. The MACs began the delivery of training programmes in mine clearance, surveying, and inspection during 1997. These expanded in 1998, when over 300 qualifications of various types were awarded.

162. The UNMAC appears not to have had authority over the entity armies, which were monitored by SFOR, or the civil protection forces, which operated under existing civil protection laws.

The numbers of international personnel from July 1998 to June 1999 (the transition period) are given in the following table:¹⁶³

	BHMAC	FEDMAC	RSMAC	Total
1 July 1998 – UNOPS personnel	4	4	2	10
In-kind military personnel	4	12	7	23
Total internationals July 98	8	16	9	33
31 March 1999 – UNOPS personnel	3	1	2	6
In-kind military personnel	2	7	4	13
Total internationals March 1999	5	8	6	19
30 June 1999 – UNOPS personnel	3	1	2	6
In-kind military personnel	2	6	4	12
Total internationals June 1999	5	7	6	18

In-kind contributions during this period came from, at least, the British, Canadian, Dutch, German, French, and Swedish militaries. These officers provided management and technical support for:¹⁶⁴

- Ø Managers of regional offices of the entity MACs;
- Ø The BH and entity MACs on operations planning and management;
- Ø The BH and entity MACs on quality control and quality assurance;
- Ø The BH and entity MACs on financial management;
- Ø The BH MAC on the national mines data base.

It is clear that a number of the in-kind military personnel were not effective as advisors. One problem was that the tour of duty was too short:

*“The six-month tour of duty (in some cases less) that advisers provided by donors as in-kind contributions serve within the programme is less than satisfactory. Continuity is of prime importance and it is impossible to achieve with such a short-term attachment.”*¹⁶⁵

As well, however, some of the in-kind personnel simply did not have the requisite qualifications and experience, leading one senior technical adviser to write:

*“At this stage of the development of the MACs it is important that candidates proposed by donor countries to serve as technical advisers have appropriate qualifications and experience to fulfil the terms of reference before they are accepted by UNDP and by the MAC Directors.”*¹⁶⁶

Such modest performance is particularly distressing given that the cost of using military personnel is so high. Incremental costs associated with military operations are often assumed to be modest because the basic salaries, benefits, and support costs of soldiers are paid regardless of whether they are deployed to an operation. However, U.S. studies have calculated the incremental costs of peacekeeping operations at US\$200,000 to US\$250,000 per soldier.¹⁶⁷ Incremental costs of military personnel fielded as technical

163. UNDP Office in Bosnia and Herzegovina (2000), *Terminal Report: Assistance to the Mine Action Programme of BiH*; UNDP et al. (1999), *Assistance to the Mine Action Programme of Bosnia & Herzegovina: Report of the Tri-Partite Review (1 July 1998 – 31 March 1999)*; BiH Commission for Demining (1998?), *Work Plan 1999*.

164. The UNMAC and, subsequently, the BHMAL, has done little in the way of mine awareness for the general public, restricting itself principally to mine awareness training for members of the international community.

165. *Terminal Report: Assistance to the Mine Action Programme of BiH*, not paginated.

166. UNDP et al., *Report of the Tri-Partite Review*, Part A, para. 16.

167. See William Nordhaus, “Iraq: The Economic Consequences of War”, *The New York Review of Books*, 5 December 2002 (available at: www.nybooks.com/articles/15850) and (November 2002), *The Economic Consequences of a War with Iraq*, p. 20.

advisers may be somewhat lower than those associated with personnel serving in regular units, and costs for military personnel from other NATO countries are almost certainly lower than for the U.S. Assuming the incremental costs of NATO military technical advisers averaged only two-thirds of that for a U.S. peacekeeper, these costs still would range from US\$135,000 to US\$165,000 per year per adviser — as much or more than appropriately qualified, experienced, and motivated civilian personnel would cost (including recruitment and administrative support costs) if recruited directly.¹⁶⁸

After June 1999, the number of international personnel dropped significantly, although they continue to be used. As of June 2002, there were three in-kind military personnel as well as a single remaining senior advisor on contract to the UN.

	BHMAC	FEDMAC	RSMAC	Total
30 June 1999 – UNOPS personnel	3	1	2	6
In-kind military personnel	2	6	4	12
Total internationals June 1999	5	7	6	18
31 August 1999 – UNOPS personnel	3	1	1	5
In-kind military personnel	2	2	1	5
Total internationals August 1999	5	3	2	10

Other foreign military assistance to humanitarian demining

Although the vast bulk of the foreign militaries contributions to mine action in Bosnia have been channelled through SFOR or UNDP, two other types of assistance deserve mention.

Many countries have assigned military personnel to work in international community organisations in Bosnia — in particular, the Office of the High Representative (OHR) and the OSCE. Most of those assigned to the OHR are paid for by their own country. Some of these in-kind contributions work at least part time on mine action issues. For example, the Military Adviser to the High Representative — usually a senior British officer — is co-chair of the Board of Donors and spends significant amounts of time on mine action matters.

The Norwegian Army has also contributed an explosive detection dog specialist to work on NPA Mine Action Programme in Bosnia. Unusually, the same individual has been allowed to remain in that assignment for well over a year, which has allowed him to significantly enhance the effectiveness of NPA's EDD teams.

168. See also Development Assistance Committee (1998) for a more complete review of the comparative costs and benefits of using military and civilian personnel for humanitarian assistance.

Annex 1.

Contributors to IFOR & SFOR

	Includes IFOR/SFOR Troops in Croatia where known		
	IFOR, March 1996	SFOR, August 1998	SFOR, January 2001
Albania	0	35	100
Argentina	0	68	50
Australia	0	0	50
Austria	Transport company	460	50
Belgium	300	850	50
Bulgaria	0	58	50
Canada	1,000	1,250	900
Czech Republic	600	640	400
Denmark	800	747	300
Egypt	Mech. infantry battalion	270	0
Estonia	0	41	50
Finland	Engineer battalion	341	100
France	10,000	2,500	2,400
Germany	4,000	2,470	2,050
Greece	1,000	560	100
Hungary	Engineer battalion	620	200
Ireland	0	50	50
Italy	2,100	1,970	1,550
Latvia	0	39	50
Lithuania	0	40	50
Luxembourg	Transport company	36	0
Malaysia	Mech. infantry battalion	0	0
Morocco	650	650	300
Netherlands	2,000	1,080	1,000
New Zealand	0	0	50
Norway	Logistics battalion	615	50
Poland	Air infantry battalion	400	200
Portugal	900	320	323
Romania	Engineer battalion	221	100
Russia	2 air infantry battalions	1,400	1,200
Slovakia	0	0	50
Slovenia	0	57	50
Spain	2 mech. infantry battalions	1,550	1,100
Sweden	Mech. infantry battalion	510	50
Turkey	1,200	1,520	1,050
Ukraine	Helicopter company	380	0
United Kingdom	13,000	5,000	1,100
United States	16,500	7,400	3,600
Total	About 60,000	33,338	18,773

Annex 2.

Assistance from foreign militaries to mine action in BiH

Assistance to Entity Armed Forces (EAF)		Other assistance from militaries	
Via IFOR/SFOR	Other	To MACs	Other
<p>March to June 1997: Training of 450 troops (150 from each EAF) in humanitarian demining by 55 Special Operations Forces personnel.</p> <p>January to May 1998: train-the-trainers courses for 71 EAF personnel by U.S. Special Operations Forces assisted by SFOR Countermines personnel and Canadian Forces trainers on secondment to UNIMAC.</p> <p>January (?) to May 1998: Provision of equipment for 3 military demining schools (Mostar, Travnik, Banja Luka) by U.S. DoD via the State Department.</p> <p>January (?) to May 1998: Funds to SFOR for upgrading facilities and supplying offices and classrooms at 3 military demining schools by U.S. State Department (?).</p> <p>July 1998 to date: Canada and Norway provide funding via SFOR for 5 Bozena mini-flails.</p> <p>July-August 1999: 3 courses in UXO disposal given by SFOR instructors.</p> <p>October to November 1999: 3 week EOD train-the-trainers course at U.K. Defence EOD school for 29 personnel from EAF.</p>	<p>March to June 1997: Training of 450 troops (150 from each EAF) in humanitarian demining by 55 Special Operations Forces personnel.</p>	<p>1996 to 1997: Military demining experts provided as in-kind technical advisers to UNIMAC — various countries, total number unknown.</p> <p>1998: Military demining experts provided as in-kind technical advisers to MACs (various countries). As of 1 July 1998, total 23: 4 at BH-MAC; 12 at FEDMAC; 7 at RSMAC.</p> <p>1999: Military demining experts provided as in-kind technical advisers to MACs (various countries). As of 31 March 1999, 2 at BH-MAC; 7 at FEDMAC; 4 at RSMAC — total 13. As of 30 June 1999, 2 at BH-MAC; 6 at FEDMAC; 4 at RSMAC — total 12.</p>	<p>1996 to date: Military personnel on secondment to international organisations (OHR, OSCE, etc.) assigned responsibility (generally part time) for mine action.</p>

<p><i>February 2000:</i> Bozena mini-flail maintenance course delivered by SFOR for 10 EAF mechanics.</p> <p><i>February 2000:</i> Canada provides funding for 5 Toyota Land Cruiser ambulances (US\$215,000).</p> <p><i>March 2000:</i> Train-the-trainers house clearance course delivered by SFOR for 8 EAF personnel.</p> <p><i>2000 and 2001:</i> U.S. State Department provides funds via ITF earmarked for demining by EAF.</p> <p><i>2000 to 2002:</i> Funding from Canada and Norway to purchase and train dogs, maintain Bozena mini-flails and insure EAF deminers.</p> <p><i>2002:</i> Funding from SHAPE for purchase and maintenance of demining equipment, including mechanical and dog teams, and for "retaining critical mine intelligence capacity": Total ca. US\$450,000.</p>		<p><i>2000:</i> Military demining experts provided as in-kind technical advisers to MACs (various countries). Start of year, total 6 (?); End of year, total 4 (?).</p> <p><i>2001:</i> Military demining experts provided as in-kind technical advisers to MACs (various countries). Start of year, total 4 (?); End of year, total 3 (?).</p> <p><i>2002:</i> Military demining experts provided as in-kind technical advisers to MACs Total 3 (U.K., Netherlands and Sweden).</p>	<p><i>2000 to date:</i> 1 dog trainer on secondment from Norwegian Army to NPA.</p>
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The case of Cambodia

Background

Three decades of war stretching into the late 1990s left Cambodia among the world's poorest, most socially devastated and most mine-contaminated countries. Nearly five years have passed since the last chapter of conflict petered out but Cambodia, now with a population of about 11.5 million people, still contends with a significant mine and UXO problem and a rate of casualties that remains one of the highest in the world. Their clearance remains essential to the country's hopes of social and economic revival.

Cambodia's slide into conflict started with the advance of communism in Indochina. Although dubbed a "sideshow" to the war in Vietnam, Cambodia found itself dragged disastrously into that conflict. As North Vietnam stepped up infiltration of men and materiel to the South along supply routes of the Ho Chi Minh trail running through eastern Cambodia, the U.S. launched one of the most intensive bombing campaigns in the history of aerial warfare on Cambodia and its northern neighbour, Laos. Between 1965 and 1975, the U.S. launched 150,000 air strikes against Cambodia¹⁶⁹ and is estimated to have dropped more than half a million ton of bombs,¹⁷⁰ most of it in areas east of the Mekong River.¹⁷¹

The resulting physical destruction and social dislocation contributed to the victory of the Khmer Rouge in 1975. In the next three years, the Khmer Rouge's communist fanatics led by Pol Pot emptied cities, banned the currency, and systematically destroyed the country's institutional and economic infrastructure in pursuit of a Maoist rural utopia. More than one million Khmers died in mass executions and purges, starvation or sickness out of a population of around six million. Moreover, the Khmer Rouge's ferocious chauvinism plunged Cambodia into a border war with their erstwhile Vietnamese allies.

169. U.S. official records made available to Geospatial Inc. for Cambodia's national Landmine Impact Survey.

170. Robert Keeley, *The History of War in Cambodia and UXO Contamination*, 1969, cited by Geospatial.

171. See map compiled by Geospatial Inc. for Cambodia's national Landmine Impact Survey.

Vietnam invaded Cambodia in 1978, overthrowing the Khmer Rouge regime and setting up a new government propped up by 200,000 Vietnamese troops and advisers. Khmer Rouge leaders regrouped in strongholds on Cambodia's border with Thailand and, with strong support from China, started a dogged guerrilla resistance they would sustain for almost two decades. By 1980, they were joined on the border by two non-communist factions, the Khmer People's National Liberation Front and the Armée Nationale Sihanoukiste, setting up a coalition backed by the Association of South-east Asia Nations (ASEAN)¹⁷² and the West.

The new conflict brought intensive mine warfare. In 1985, Vietnam and its protégées in Phnom Penh embarked on a project to choke off infiltration by the resistance coalition by building a barrier of minefields, ditches and fences stretching almost the entire length of the 600-kilometre Thai-Cambodian border. The Khmer Rouge, and to a lesser extent the two other factions, also used mines extensively. In border areas the three factions planted mines defensively to protect bases, and further inside Cambodia they used mines to harass Vietnamese and Cambodian government communications and supply routes.

Vietnam, worn down by decades of war, pulled the bulk of its troops out of Cambodia in 1989 clearing the way for substantive peace talks with the resistance coalition and its backers. One result of their pull-out, however, was to clear the way for infiltration by the Khmer Rouge and its resistance partners deeper into Cambodia. Cambodian People's Armed Forces (CPAF) troops laid substantial quantities of mines to try to pin resistance groups at the border. As the Khmer Rouge pushed deeper into the country, they left numerous nuisance minefields in a bid to inhibit CPAF troop movements and to maintain a general state of insecurity.

In September 1990, Phnom Penh and the three resistance coalition factions reached a UN-brokered agreement to set up a Supreme National Council (SNC) under the chairmanship of the former Head of State, Prince Norodom Sihanouk. The SNC in turn placed Cambodia under the administration of the UN until elections that were to provide the basis for forming a new government. The deal, signed in Paris in October 1991 led to the creation of the UN Transitional Authority in Cambodia (UNTAC). In addition to organising the elections, UNTAC was charged with demobilising combatants of all factions, integrating the remainder into a national army and repatriating more than 360,000 Khmers displaced by the conflict from camps along the Thai border. Heavy mine contamination in western border provinces where many returning Khmers had elected to stay made mine action an immediate UN concern.

A month after signing of the peace accords, the United Nations Advanced Mission in Cambodia (UNAMIC) arrived to prepare the ground for the arrival of UNTAC and a multinational force of 20,000 troops sent to provide security. The UN Secretary-General's Special Representative, Yasushi Akashi, and the UNTAC Force Commander, Lieutenant-General John Sanderson, arrived in Phnom Penh in March 1992 and repatriation of displaced people started the same month.

Soon after, the peace agreement hit serious snags. In June, the Khmer Rouge said it would not demobilise troops unless the administration of the Phnom Penh government was dismantled to ensure political neutrality. UNTAC rejected the demand as impractical and in November the Khmer Rouge withdrew from the electoral process.

172. At that time ASEAN included Indonesia, Malaysia, the Philippines, Singapore and Thailand.

That decision ultimately would lead to the isolation and progressive marginalisation of the Khmer Rouge. The immediate effect, however, was to put the biggest and best armed of the three guerrilla factions outside and effectively in opposition to the UN peace process, starting a new phase in Cambodia's civil war and raising doubts about the ability of UNTAC to provide sufficient security or organise free and fair elections. Khmer Rouge attacks on UN personnel, Cambodians and ethnic Vietnamese soon followed, along with a campaign to intimidate voters.

The election in May 1993 vindicated the UN peace process, drawing an enthusiastic turnout by around 89 per cent of voters. The royalist party (Front Uni National pour un Cambodge Indépendant, Neutre et Pacifique et Coopératif — FUNCINPEC) under Prince Norodom Ranariddh won 45 per cent of the vote, followed by the Cambodian People's Party led by former prime minister Hun Sen. FUNCINPEC's inability to run a government machinery created by Vietnam and the Cambodian People's Party (CPP) prompted it to form a coalition government led by Prince Ranariddh and Hun Sen as co-prime ministers. UNTAC started to dismantle itself, completing its exit from Cambodia by the end of 1993. Its departure cleared the way for a new phase of conflict as the Khmer Rouge, now politically on the defensive, stepped up violence and intimidation.

In the ensuing two years, FUNCINPEC and the CPP proceeded with pulling together a joint administration, drafting a constitution and setting up a national assembly in an atmosphere often marked as much by mutual suspicion and rivalry as by any sense of common purpose against the Khmer Rouge. International donor support for the new government gave new impetus to economic activity but in large parts of western and northern Cambodia the lack of security and heavy mine contamination inhibited either mine action or development. Army offensives against the Khmer Rouge in 1994-96 also brought a sharp rise in the number of mine casualties.

In 1996, mass defections to the government from some Khmer Rouge divisions spelled the imminent collapse of the guerrilla group's resistance. Instead of spurring concerted action by the two parties in government, it intensified the rivalry and mistrust between them, stalling the emergence of a bureaucracy focused on socio-economic needs. At that time, FUNCINPEC had more seats in the national assembly, but the CPP, by virtue of its grip on security and much of the government bureaucracy, had remained politically dominant. Disturbed by signs of FUNCINPEC's attempts to recruit Khmer Rouge military muscle, the CPP staged a pre-emptive coup in 1997. In brief but bloody fighting, CPP loyalist forces crushed FUNCINPEC's military units. Many politicians fled from the country as Hun Sen's security apparatus hunted down and liquidated scores of FUNCINPEC supporters in the military.

The Khmer Rouge, already weakened by defections, also went through a spasm of bloody internal conflict. Pol Pot, pushed out of leadership, died in 1997. The commander of what was left of the Khmer Rouge then reached an agreement with Hun Sen, formally ending Cambodia's civil war and opening its first chapter of peace in 30 years. Hun Sen organised new elections in 1998. He emerged as sole prime minister with the blessing of the international community, ensuring continued aid flows to a country now free to focus on social and economic development and clearing the detritus of war.

Mines and UXO in Cambodia

A decade after the start of mine action operations in Cambodia, untold numbers of mines and UXO continue to take a heavy toll in casualties and pose a serious constraint to economic and social development. With a total of 813 casualties in 2001 — 761 of them civilians — Cambodia ranks second in the world behind Afghanistan in the number of mine/UXO victims it still suffers. Although Cambodia's headline casualty numbers have dropped sharply from a peak of 4,151 in 1996, the biggest fall has been in military casualties. The number of civilian casualties has also dropped, but it has remained fairly steady since 2000 and still averages more than two a day.¹⁷³ Although mines continue to pose the biggest impediment to opening up land for agricultural or other use, UXO have this year started to account for more than half the casualties.

The persistently high level of casualties appears to stem less from a lack of awareness of the dangers posed by mines and more from the economic pressures on a still impoverished population. The pressure to exploit land or resources drives people to claim, settle and attempt to access or clear land even when it is known to be unsafe. It also encourages villagers to tamper with ordnance, either to extract explosives, which are often used for fishing, or to collect the metal which can be sold as scrap. Such pressures will only increase. About 80 per cent of Cambodians live in rural areas and the country's 11.5 million population is growing by 2.5 per cent a year. That will add around 1.7 million people by 2006, fuelling the already strong demand for land.

A national Landmine Impact Survey (LIS) completed by Geospatial International Inc. in April 2002 provides a sobering assessment of the extent of Cambodia's mine/UXO contamination. The Geospatial survey, which covered all but two of Cambodia's 13,910 known villages, estimates that 46.2 per cent of them, and some 4,466 square kilometres of land, or 2.5 per cent of Cambodia's total surface area, are contaminated. Those figures are significantly worse than previous estimates. In 2000, CMAC had put the total area of contamination at 2,500 square kilometres. Geospatial's survey also identified 11,430 EOD tasks, including 2,776 villages — a fifth of the total — that are contaminated with a mixture of mines and UXO, including scores of U.S. cluster bombs.

Moreover, in relation to this level of mine/UXO contamination, the pace at which humanitarian clearance is proceeding appears glacial. In 2001, the four mine clearance agencies active in Cambodia reported clearing a total of 21.9 square kilometres of land.¹⁷⁴ This brought the reported total amount of land cleared between 1993 and 2001 to 166 square kilometres for an average of about 18 square kilometres a year. About a million people have benefited from access to cleared land.¹⁷⁵ But at this rate it would take more than a century to clear the problem.

As an impact survey based on verbal evidence of local inhabitants, the LIS almost certainly exaggerates the problem in terms of the area actually mined, particularly in areas where residents had recently arrived from other parts of the country and were unfamiliar with the terrain. In accordance with international mine action standards, Geospatial added a 250-metre buffer zone to areas suspected of mine/UXO

173. Landmine Monitor 2002, *Cambodia Mine/UXO Victim Information System Monthly Report*. In the first nine months of 2002, CMVIS recorded 678 mine/UXO casualties for a monthly average of 75.3 in 2002. That is higher than the monthly average for 2001 (68.9) or 2000 (71.7).

174. *Ibid.* The figures include results reported by CMAC, HALO Trust, Mines Advisory Group and Royal Cambodian Armed Forces (RCAF).

175. *Ibid.*

contamination. Furthermore, by the time the LIS appeared, mine clearance agencies already had more detailed information of specific areas where they worked which in some instances contradicted the LIS data.¹⁷⁶ However, one result of the LIS is to sharply increase the area that should now be checked for contamination.

At the same time Geospatial acknowledges the LIS does not present a clear picture of levels of contamination in sparsely-populated areas, notably the north-eastern provinces of Mondolkiri, Stung Treng and Rattanakiri, which were heavily bombed by the U.S. during the Vietnam War. These areas are not a current priority for mine/UXO action precisely because of their small populations, but they are likely to become more of a concern in future as roads are built opening them to more settlement.¹⁷⁷

In the meantime, CMAC is starting to work on a technical survey to follow on from the LIS. It has hired a consultant to develop terms of reference for the survey, expected to be complete by the end of the year. It plans to test the survey methodology with two survey teams in the first half of 2003 and to expand the number of teams to five in the second half of the year. The number of teams committed to the survey will ultimately depend on financial support from donors.

The role of foreign militaries in Cambodia's humanitarian demining

From the start of mine action in Cambodia in 1991 until the late 1990s, foreign militaries played a decisive role, first through UNTAC and later as advisers to CMAC. Military technical advisers shaped not only the structure of CMAC's organisation but also its character. That provided CMAC strong impetus in its early years but became more problematic as the demands of mine action changed.

UNTAC's mandate provided for demining primarily to clear key roads essential to its mission and to provide training. In its initial planning, UNAMIC had estimated UNTAC would train 5,000 deminers even before any mechanism had been worked out for deploying them. In the event, UNTAC laid down standard procedures and undertook programmes in most areas of mine action, from clearance for road construction to surveys, minefield marking and mine awareness.

In addition, the Mine Clearance and Training Unit (MCTU) used units from half a dozen national military contingents (including France, India, the Netherlands, New Zealand, Pakistan, and the United Kingdom) to provide training in mine clearance. Most of their trainees then found employment with CMAC, the HALO Trust or the Mines Advisory Group (MAG). Recognising the threat posed by UXO, MCTU added an EOD course early in 1993. UNTAC units also gave basic medical training and operated a "medevac" system until the withdrawal of UN helicopter support brought it to an end.

UNTAC's engineers, however, were more focused on tackling short-term issues related

176. CMAC's Demining Unit 6, deployed in northern Siem Reap province, found that in one area of its operations 18 of 20 minefields identified in the LIS had already been cleared.

177. U.S. military records supplied to Geospatial identified 115,000 strike spots, concentrated in provinces east of the Mekong River.

to their mission than on addressing a longer-term strategy for mine action in Cambodia, and made no effort to train staff for management of demining operations. As a result, when UNTAC withdrew in late 1993, CMAC was unable to operate on its own and became both dependant on and largely run by foreign military technical advisers and a UNDP project coordinator.

After March 1994 and the creation of a UNDP Trust Fund as a conduit for donor financing, CMAC requested and received some 30 military advisers, led by a chief technical adviser (CTA) who operated as de facto director. Canada supplied the biggest contingent comprising the CTA and 11 other TAs who handled development and management of the programme, clearance (planning and procedures), information and mine awareness. So strong was their presence that it was joked that the 'C' in CMAC stood for Canadian. The CTA role was transferred to UNDP only in 1998 and Canadian advisers would remain with CMAC until 2000.

Strong support also came from Australia, which provided up to seven advisers from 1994 until 2000, and smaller teams were sent by Belgium, Finland, the Netherlands, New Zealand, and Sweden. The U.S. does not post technical advisers to Cambodia but it provides CMAC with US\$1.2 million a year to finance demining in the western district of Pailin, a former Khmer Rouge stronghold and one of the most contaminated areas of the country.¹⁷⁸ It also sends teams to provide EOD and basic medical training and may allocate funds to send an engineer officer to the U.S. for training. In addition to its support for CMAC, the U.S. has provided limited assistance to Cambodia's armed forces.¹⁷⁹

The assistance of some governments has been tied to specific programmes testing mechanical and other means of mine clearance intended to help raise productivity. The Finnish government in 1998 provided four military TAs and two flails which, it was hoped, would achieve rapid preliminary clearance. After initial trials, the flails were set a target of preparing 720,000 square metres of mined land for manual clearance. In the event, they achieved only 60 per cent of the target and destroyed a total of just 11 anti-personnel, 5 anti-tank mines, and 5 items of UXO.¹⁸⁰ These poor results were not helped by the fact that an anti-tank mine explosion put one of the flails out of action for the last three months of the year. But the flails, originally designed for an Arctic environment, proved much too heavy to use effectively in Cambodia's waterlogged rainy season countryside and in a country with its weak road and bridge infrastructure. The flails returned to Finland in February 2002.

More success was achieved by a Swedish programme to develop the use of mine detection dogs in Cambodia. From mid-1996, Sweden provided four military TAs, reduced to two in mid-2001. The programme suffered a series of costly setbacks and delays. Attempts to train Cambodian dogs in Sweden proved unsuccessful. Dogs imported from Europe and initially trained for area reduction, did not work effectively in Cambodia's vegetation. However, they have since proved effective and productive in area reduction and detection working in combination with brush cutters and were

178. The U.S. is the only donor which requires independent quality assurance in Cambodia. Under a US\$170,000 contract, believed to be the first of its kind in international mine action, UXB (Asia) Ltd. monitors and reports on CMAC operations in Pailin. Under the terms of the contract, which is for one year and started in mid-May, UXB has a Khmer observer monitoring CMAC demining units full time and a foreign observer who spends two weeks a month in the field. UXB draws up a weekly review and compiles these into monthly reports filed to CMAC, the U.S. Embassy in Phnom Penh and the Department of State.

179. See below, *The Role of Local Armed Forces in Mine Action*.

180. CMAC Annual Report, 2001.

deployed operationally in 2001. CMAC now has some 50 dogs, of which 30 are in the field.

Belgium initially provided up to five military TAs to support mine clearance but most came from EOD units in Belgium and their support, later reduced to three TAs, now concentrates on EOD training. This programme is due to continue for the foreseeable future, although consideration is also being given to providing training in Belgium for RCAF officers detached to CMAC. In the meantime, CMAC has emerged as the main EOD operation in Cambodia. By 1999, it had built up 25 EOD teams but then had to lay off 20 because of funding shortages after the 1999 crisis. By mid-2002, its EOD strength had returned to 16 teams and CMAC plans to increase that number to 30 or 35 teams but has yet to secure donor funding.

In the early years as CMAC was being set up, visiting military TAs provided an invaluable injection of expertise at a time Cambodia was struggling to rebuild its government and economy after the devastation of prolonged conflict and Khmer Rouge rule. The foreign military TAs appear to have been particularly effective in getting demining teams on the ground. In less than two years CMAC was able to build up its operating capacity to 41 platoons engaged in humanitarian demining and one platoon funded by contract demining, all supported by medics, transport and communications. CMAC also operated 18 mine-marking teams which had marked 270 minefields and were engaged in verification of minefields previously marked but on the basis of suspect data. In addition, it undertook mine awareness programmes and ran a training school.¹⁸¹

Most of the foreign military TAs involved in CMAC mine awareness programmes were regular army engineers and lacked experience in cross-cultural education. U.S. military Psychological Operations units which also made occasional visits, similarly used posters and designs that were untested in Cambodia and were seen to have little positive impact.¹⁸² Still CMAC activities in this area quickly developed strongly with the addition of Khmer staff, including many ex-teachers, and by 1999 its field units were rated *"as good as any in the world"*.¹⁸³

The organisation created and largely run by military TAs also revealed early on some of the weaknesses that were to bedevil CMAC throughout the 1990s and contribute to the crisis it encountered in 1999. It was soon clear that the focus of most military advisers was on mine clearance and was not matched by their attention to, or qualifications for, management. At the time, it should be stressed, UN experience of humanitarian demining was limited, international standards and best practice had yet to be codified and military TAs at CMAC had few external reference points to guide them.

Thus a UNDP end-1995 evaluation found CMAC focused almost exclusively on day-to-day operations. Given the extent of Cambodia's mine contamination problem, clearance continued on an emergency basis and forward or strategic planning was at best weak. The evaluation concluded leadership arrangements had proved effective for starting operations but were *"less suited for a stable or mature organisation"*.¹⁸⁴

181. UNDP (1995:19-27).

182. UNHHA (1997).

183. CMAC (1999).

184. UNDP (1995:28).

The problems were compounded by three factors. First, the donors' system of making annual pledges hampered longer-term planning. Second, operations were not helped by the short-term deployment on six-month contracts of many military TAs and the limited qualifications of some of them. Since 1994, more than 360 different visiting military personnel have rotated through CMAC, a number that proved an obstacle to continuity. It may be one reason why CMAC, a decade after starting work, is only now completing a Khmer language version of its mine clearance SOPs.

Canadian advisers, who remained with CMAC until 2000, came for one-year tours and the last CTA served two years (1996-98). Many others worked on six-month contracts, some had never been out of their countries before and some had limited demining experience or expertise. Short-term contracts often left insufficient time to become familiar with the country or CMAC or to make a contribution to its work. A perception widely held in Cambodia's demining community is that secondment to CMAC provided some military TAs more of an opportunity to pick up experience of mine action than to contribute to it. A further observation from advisers with military backgrounds is that as the commitment to provide advisers wore on and the novelty wore off, the standard of personnel released from donor countries' armed forces to work in Cambodia became more variable.

The third factor was vague terms of reference for some visiting military and confused lines of command. Different detachments were generally required to report to the UNDP Resident Representative but do not appear to have observed that requirement strictly. Anecdotal evidence suggests some military TAs reported more regularly to their own national armed forces.

By late 1995, it was apparent that CMAC management structure needed reinforcing with more senior executives to improve coordination and to avoid management bottlenecks that weakened control.¹⁸⁵ This was already evident in some areas. The UNDP evaluation commented on "conspicuous" weaknesses in administration of procedures relating to, among others, procurement, tendering, bid evaluation and inventory control.¹⁸⁶

The evaluation found other shortcomings that would return to trouble CMAC. Little attention was paid to selection of demining sites — even according to the organisation's own priorities, the evaluation report noted. Measuring the social and economic impact of demining operations also was not a CMAC priority. It should be noted that issues of site selection, prioritising land for clearance and monitoring its later use continue to be subjects of debate today for all agencies engaged in mine action in Cambodia. Arrangements with government authorities for selecting land and checking its end use were slow to develop. By 1999, however, weak management and systems for monitoring were again apparent when it was found that cleared land had been disposed of inappropriately. A report by one of CMAC senior technical advisers which was leaked to the press cited allegations that a demining unit had sold cleared land for profit and undertaken contract demining on behalf of the military and police, and that these security forces had also forced civilians off land cleared by CMAC.¹⁸⁷

Foreign military TAs were also responsible for testing new or different technologies that might accelerate mine clearance and raise productivity. A Technical Development

185. *Ibid*, p. 40.

186. *Ibid*, p.10.

187. *Phnom Penh Post*, 14 August 1998.

Unit, set up by CMAC, developed Statements of Operational Requirements for Cambodian and international distribution. This operation, which was staffed exclusively by foreign military TAs until 1999, when it hired a Khmer engineer, suffered from poor coordination with other parts of the organisation. Its staff were found to have high levels of technical expertise but CMAC top executives accepted donor equipment for trial without consulting them.

CMAC had already started to address some of the management issues when the evaluation mission visited it. It had introduced a requirement for preparation of annual workplans by demining units. In December 1996, it set up a section in the planning department to work on socio-economic issues, although early staffing problems delayed it becoming operational. New management posts were created and an adviser assigned to planning. However, such steps came at a point when CMAC operations were rapidly expanding and even with extra staff appointments management remained stretched thin and weaknesses persisted.

A 1999 capacity review carried out for UNDP still found that *“CMAC needs to develop a vision for itself that transcends daily operational details and moves closer to a role associated with the overall development of Cambodia”*.¹⁸⁸ CMAC still lacked a comprehensive system of evaluating personnel or effective human resource management, it still needed to develop its capabilities in areas such as office management, information, contract monitoring and, particularly, planning. In short, CMAC needed to strengthen its management and organisational skills *“or suffer the consequences”*.

In the last three years CMAC has faced the challenge of both redressing these management weaknesses and sharply reducing the number of its TAs, both military and civilian. In 1999, CMAC employed 76 TAs, about half of them military, but since then the number has fallen to 11, including six military, and this number will shortly drop further (though this future decrease is largely cosmetic).¹⁸⁹ At a time of more critical donor scrutiny of costs, the system of TAs has come to be seen as a highly expensive and a less than optimum method of building capacity.¹⁹⁰ The necessary evolution in CMAC's role from emergency and reactive demining to a more developmental approach to mine action has also brought a more critical assessment of the contribution of military TAs.

The UNDP Capacity Review concluded that *“while the military has made an impressive contribution in developing capacity within CMAC, particularly technical capacity, in general military advisers are less suited to meet the training needs and capacity demands CMAC now faces”*. Foreign militaries can provide training in management, administration and support functions, but increasingly it appears that training geared to the needs of armed forces is less appropriate for an organisation taking on a more developmental role than the training which is available from development agencies, the private sector and universities or other educational institutions.

188. UNDP (1999:30). It is noteworthy that CMAC has published a 2003-2007 Strategic Plan, which demonstrates that, at least in this area, the government is responding positively to donors' criticisms.

189. The further reduction in military TA numbers represents a change in title, not a cut in capacity. The military component now comprises three Belgian officers developing CMAC's EOD capacity, two Swedish officers working with the mine detection dog (MDD) programme and a New Zealand officer, formally assigned to oversee training but also performing a quality control role. At the end of the year the two Swedish officers will leave the army but continue the MDD programme as civilians.

190. UNDP (1999:30). The review estimated the international community spent between US\$7.5 million and US\$13 million a year on TAs to train CMAC's Cambodian staff.

There are also suspicions that the reduction in the number of CMAC's military TAs may have been too rapid at a time of far-reaching management change, contributing to a fall-off in standards in the field and to a rise in the number of accidents. CMAC deminers reported 13 accidents in the first nine months of the year. This compares with 14 in the whole of 2001 and a much lower figure in previous years.¹⁹¹ The numbers also are substantially higher than those reported by HALO or MAG, even allowing for the smaller size of their demining operations.

A detailed analysis of the accidents was not immediately available, giving rise to differing interpretations. An official CMAC view is that the increase reflects the fact deminers are working in areas heavily contaminated with Chinese Type 72B anti-personnel mines, which accounted for nine of the injuries. These are among the hardest to detect, especially in laterite and metal-contaminated land. According to that view, the accidents would have happened with or without the presence of TAs in CMAC.¹⁹² Another expert view is that the rising accident rate reflects a need for more of the monitoring and quality control formerly provided by TAs, together with refresher courses for deminers and leadership training for middle managers in the field.

The role of local armed forces in mine action

The Royal Cambodian Armed Forces (RCAF), given their manpower resources, countrywide deployment and extensive experience of the problems involved, represent a key potential option for long-term and sustainable humanitarian mine and UXO clearance in Cambodia. Hitherto they have been little used in this capacity and little attention is being paid to a possible army role.

For more than five years after the UN-initiated mine action in Cambodia in 1991, Phnom Penh government forces were still engaged in hostilities with the Khmer Rouge. As RCAF advanced against guerrilla strongholds in the west and north its troops incurred heavy mine casualties¹⁹³ and the focus of their mine action in those years was to support military operations or clear land for military use. Only since 1998 and the collapse of the last Khmer Rouge remnants has RCAF become involved in mine clearance for non-military purposes.

With the arrival of peace, RCAF's initial priority was to downsize and reorganise. It currently maintains an estimated 120,000 to 140,000 troops, far beyond the force size it needs or can effectively maintain on an annual military budget currently totalling about US\$70 million, most of it absorbed by fixed costs like salaries. With the help of US\$42 million provided by the World Bank and other donors, it is due to complete demobilisation of 15,000 soldiers in 2002 and another 15,000 in 2003. As that process advances, RCAF is also reducing and amalgamating units. The reform provides a large pool of manpower for recruitment by mine clearance agencies.

In the past two years, however, the government has started to focus more on ways to broaden the role of the military. A defence White Paper entitled *Security and Development*

191. Both years are significantly higher than previously: CMAC mine accidents numbered five in 2000, six in 1999, and four in 1998.

192. Interview with Khem Sophoan, Director-General, CMAC, 17 October 2002.

193. These peaked in 1996 when the Landmine Monitor reports the armed forces suffered 2,434 mine and UXO casualties, including 436 fatalities.

prepared with help from Australia and released by the government in February 2001, underlined the military's role in supporting national development objectives.¹⁹⁴ A draft *Strategic Review 2002* which updates the White Paper and looks likely to be released before the end of the year explicitly, if vaguely, assigns the armed forces responsibility for demining.¹⁹⁵

RCAF engineers are clearly keen to follow through, not least because of the revenue-generating potential in commercial mine clearance. What they are able to deliver, however, is more difficult to pinpoint. RCAF, a powerful institution politically, has hitherto kept aloof from other organisations and NGOs engaged in mine action. As a largely communist-trained security agency, commanders are wary of disclosure, unfamiliar with concepts of transparency and have not encouraged approaches from Cambodian officials of other agencies for opportunities to observe their operations.¹⁹⁶ The information provided in official briefings is often confusing and difficult to confirm.

RCAF's core engineering capacity consists of the Engineering High Command, which is headquartered just outside Phnom Penh, and the engineering components of infantry units deployed under provincial commands. The Engineering Command, made up of the 79th Engineering Brigade, claims to have more than 700 deminers.¹⁹⁷ The main mine action component, however, is a battalion of some 290 deminers deployed in nine 32-man platoons.¹⁹⁸ The chief of the Engineering Command, Lieutenant-General Kwann Seam, says his brigade is expanding in size to cope with the work it now undertakes. In the meantime, it also draws on engineers of provincial commands. Up to 10,000 soldiers in other units of the armed forces also have mine clearance experience, of whom about 4,000 are available to 79th Brigade.¹⁹⁹

In terms of manpower, RCAF therefore represents much the biggest agency engaged in mine action in the country.²⁰⁰ The levels of competence in mine and UXO clearance, however, are less clear. Many soldiers have on-the-job experience of laying or clearing mines, and some evidently have significant expertise, but the levels of formal training, together with operating procedures and standards are unknown and probably vary.

Prior to 1990, CPAF troops were largely trained by Vietnam and its former Soviet bloc supporters. After the deployment of UNTAC, assistance in training and capacity building became available from other sources, including the Mine Clearance Training Unit. Visiting U.S. Special Forces trained about 160 deminers but suspended the programme in 1997 after the coup. Some officers were also sent to Malaysia for training. At the same time, the armed forces started to absorb troops of the former resistance

194. The White Paper states: "Military expenditure must be targeted at the primary security objectives and be maintained at a level compatible with overall national objectives. The capacity of the armed forces to contribute to those wider development objectives and to support the people in an emergency is a priority".

195. The draft review states: "engineering capability must gradually be extended to the military regions where many responsibilities — border infrastructural developments, demining, assisting communities in rural development and disaster relief, other constructions for the interests of the military regions themselves — are RCAF responsibilities".

196. Interview with a member of the governing council of Cambodian Mine Action Centre.

197. Interview with Lieutenant-General Kwann Seam, Commander, Engineering Command, RCAF, 10 October 2002.

198. Interview with Lieutenant-Colonel Tuon Kong, Deputy Chief of Staff, 79th Brigade, 17 October 2002.

199. Interview with Lieutenant-General Kwann Seam, *op. cit.*

200. CMAC employs 2,400 personnel, including about 1,500 deminers, most of them in 48 platoons; HALO has 950 staff, including 702 deminers in 88 sections; MAG has 800 deminers in 22 mine action teams.

factions, some of whom had received training from China on the Thai-Cambodian border.

The Engineering Command acknowledges it has more severely limited EOD capacity and lacks adequate equipment. In some instances, RCAF calls other mine clearance agencies to tackle specific UXO tasks or to help with detection in areas where units lack appropriate or sufficient equipment, another significant constraint on the quality if not the quantity of RCAF clearance.

Apart from bulldozers for road construction, the Engineering Command has no specialised mechanical mine clearance equipment or mine detection dogs. Senior officers say most deminers operate shallow-search Schiebel detectors supplied by CMAC or the U.S. Most date back to the early or mid-1990s, although Schiebel has upgraded some equipment. In the past year, 79th Brigade also has invested significant sums in small numbers of a range of Ebinger equipment, including ground compensation detectors, UPEX 740 M large loop detectors, which operate to a depth of four metres, Magnex 120s, capable of detecting to a depth of six metres and underwater detectors. The supplier²⁰¹ provides training and maintenance support.

Despite such constraints, RCAF reports clearance rates far in excess of anything achieved by other mine action agencies in Cambodia. It also claims to have had zero casualties in mine and UXO clearance.²⁰² These reports cannot be verified and in the civilian mine action community are considered unreliable.²⁰³

RCAF mine/UXO clearance, 1993-2002				
Year	Area cleared (m ²)	Mines/UXO destroyed		
		APM	ATM	UXO
1993	1,303,447	10,929	0	0
1994	364,683	3,041	936	0
1995	2,576,148	5,053	560	0
1996	4,972,500	46,232	1,605	0
1997	1,674,000	13,458	727	0
1998	3,040,000	16,302	131	0
1999	2,432,000	30,104	3,213	11,729
2000	20,011,000	1,168	186	6,290
2001	6,482,356	2,581	15	4,060
2002	17,118,994	1,935	266	3,680
Total	59,975,128	130,803	7,639	25,759

Figures supplied by Engineering High Command.

The figures underline the extent to which the primary focus of RCAF engineers is road clearance and construction. Engineering Command says the area reported cleared includes roads such as Route 1 (Phnom Penh to Vietnam), Route 5 (Phnom Penh to Battambang, south of the Tonle Sap) and Route 6 (Phnom Penh to Siem Reap, north of the Tonle Sap). These roads have been under intensive use for years and it is unclear how much mine surveillance or clearance RCAF found it necessary to undertake or to what standard it conducted its operations.

201. UXB Asia (Ltd).

202. Interview with Lieutenant-General Kwann Seam.

203. RCAF is understood to have lost three men killed last year in one incident on Route 5 in which two children also died. It lost one bulldozer in 2001 when it detonated an anti-tank mine on Route 7 in an area previously declared low risk.

RCAF's figures, together with anecdotal evidence of local and foreign demining personnel who have observed its operations, leave little doubt that the military's engineers often do not work to international standards. At the same time, NGOs point out, they perform a valuable service to the community. RCAF engineers completed clearing of a now heavily-used 54-kilometre road between Anlong Veng and the northern town of Samrong in three months, a fraction of the time that would have been taken working strictly to international standards.

RCAF describes its road development work as humanitarian but engages in road clearance and construction either in response to government directives or on a commercial basis. The government pledged to pay some US\$750,000 to mine action in Cambodia in 2001 and 2002, including US\$200,000 towards RCAF. It is unclear if payment was made. The Engineering Command also estimates it earned about US\$200,000 from commercial road projects but no details were available.

RCAF operates commercially as a subcontractor to construction companies competing for contracts which are awarded by the Ministry of Public Works and Transport (MPWT) and funded by the World Bank or the Asian Development Bank. RCAF's key advantage in commercial clearance is its low cost. The Engineering Command quotes a standard charge at US\$0.38 per square metre, between about one third to one half of the cost of other agencies, including non-profit-making NGOs. That rate is made possible mainly by the low level of military salaries.

Bidding procedures are not transparent and standards both of road construction and mine clearance are low. The MPWT employs consultants both for engineering and mine clearance to develop the terms of reference of contracts, evaluate bids and monitor implementation. However, neither MPWT nor their consultants accept liability for mine/UXO clearance, which puts responsibility for accepting cleared land as safe on the prime contractor. On the basis of current practice, the contractors' main concern in hiring subcontractors for mine clearance is cost. Independent quality assurance has not been pursued.

Against this background, donors show little interest in directly engaging RCAF in humanitarian demining. They cite concerns that political issues may interfere with RCAF's participation and its work will not be subject to any transparency or accountability. They also cite allegations widely heard that senior military figures have grabbed cleared land and that some roads have been built or exploited by RCAF engineers for lucrative and illegal logging.²⁰⁴ Donors point out there is no compelling reason to work with RCAF when they can work instead with CMAC, a national organisation which is subject to some independent quality assurance and independent audits.

Yet RCAF's Engineering Command also demonstrates a concern to raise standards and expand capacity. For the first time, CMAC has sent instructors at RCAF's request to train 250 deminers in what is due to be the first of regular annual training courses. RCAF also has sent eight officers to attend an EOD course given by U.S. military engineers at CMAC's training school in Kompong Chnnang.²⁰⁵ RCAF has also contacted other mine clearance agencies about the possibility of receiving training. At a time

204. Australia withheld delivery of a engineering survey equipment for road building this year over links between the Engineering Command and illegal logging in Pursat province.

205. Interview with Lieutenant-General Kwann Seam, *op. cit.*

when the capacity of existing demining agencies is dwarfed by the scale of contamination, RCAF's apparent interest in training its deminers to recognised international standards warrants more serious attention than it has hitherto received.

Under licensing and accreditation procedures CMAA is in the process of introducing for all agencies engaged in mine action, RCAF's role and performance should come under increasing scrutiny. It remains to be seen whether RCAF, a powerful institution, will submit to the authority of a civilian organisation. RCAF has attended CMAA discussions on emerging standards and procedures but to date has taken the role more of observer than participant. In practice, implementation of the new rules and procedures is likely to prove a more severe test of the CMAA's ability to fulfil its mandate as an independent regulator of mine action than of RCAF operating standards.

The case of Ethiopia

Introduction

This study is based on field visits to Ethiopia on 26-27 June 2002. Information used in this report has come from a number of sources: briefing notes for the Donor Mission that visited Eritrea and Ethiopia on 19-24 May 2002; *Landmine Monitor Report 2001 and 2002*, research on the Internet, and in-country meetings with key informants, though as the Donor Mission found, most government officials were unavailable. Discussions were therefore held mainly with UN officials and NGOs. This was not particularly satisfactory but was unavoidable.

Background

Cessation of hostilities between Eritrea and Ethiopia

To end the two-year conflict between Eritrea and Ethiopia (1998-2000), an *Agreement on Cessation of Hostilities (ACH)* was reached between the two countries in Algeria on 18 June 2000. In terms of mine action, the ACH requires that the two countries undertake the following:

“Upon signing of the present document, both parties shall conduct demining activities as soon as possible with a view to creating the conditions necessary for the deployment of the Peacekeeping Mission, the return of civilian administration and the return of the population as well as the delimitation and demarcation of their common border. The Peacekeeping Mission, in conjunction with the UN Mine Action Service (UNMAS), will assist the Parties’ demining efforts by providing technical advice and coordination. The Parties shall, as necessary, seek additional demining assistance from the Peacekeeping Mission.”

The ACH led to the deployment of a peacekeeping mission —United Nations Mission to Ethiopia and Eritrea (UNMEE),²⁰⁶ which in turn eventually led to establishment of

206. UN Security Council Resolution 1312 (2000), 31 June 2000.

the Temporary Security Zone (TSZ). One of UNMEE's responsibilities is to coordinate and provide technical assistance for mine action in the TSZ and adjacent areas. The ACH and UN Policy for Mine Action provide the framework for both emergency and long-term activities conducted by national and international mine action entities.

Boundary Commission²⁰⁷

The ancient empire of Abyssinia, later to become Ethiopia, has historically included the territory that now comprises Eritrea, except during Italy's period of colonial rule. As a colonial power, Italy tried to expand its influence beyond present-day Eritrea, but Ethiopia successfully resisted Italy's expansionist policies. Ethiopia and Italy entered into boundary agreements in 1900, 1902 and 1908. Even so, Italy still wished to expand its territory beyond the areas agreed under these treaties. Ethiopia consistently resisted Italy's demands and disputes regarding the boundary's actual location were the result.

Italy ultimately invaded and occupied the whole of Ethiopia by force in 1935. However, Italy's defeat in 1939-45 war led to it relinquishing its African colonies.²⁰⁸ Thereafter, Eritrea and Ethiopia were reunited until 1991. Emperor Haile Selassie led the unified Ethiopia until he was overthrown by a military regime in 1974. This regime itself was overthrown in 1991 and a transitional government was established in Eritrea and Ethiopia.

In 1991, following 30 years of conflict, Eritrea become an independent State and reasserted claims to boundary regions that Italy had claimed earlier. Ethiopia rejected these claims but urged that the dispute be solved peacefully through negotiation. The two countries set up a formal, bilateral boundary commission to resolve the issue, but in May 1998 war broke out between the two States. The conflict lasted two years until June 2000 when the ACH was signed, and on 12 December 2000 a final agreement was reached which called for the peaceful settlement of the boundary issue.

To this end, a Boundary Commission of five people was established in summer 2001 to define and demarcate the boundary through binding arbitration and in accordance with the relevant colonial treaties and applicable international law. On 13 April 2002, the Boundary Commission issued its decision with respect to the boundary.²⁰⁹ The Commission is now responsible for the physical demarcation on the ground.

UNMEE

Following the Security Council resolution that established UNMEE, a further resolution²¹⁰ gave it the mandate to:

- Monitor the cessation of hostilities;
- Assist in ensuring the observance of the security commitments agreed by the parties;
- Monitor and verify the redeployment of Ethiopian forces from positions taken after 6 February 1999, which were not under Ethiopian administration before 6 May 1998;

207. See www.waltainfo.com/Boundary/Ethio_Eritrea/Boundary/Background.htm.

208. Eritrea also came under control of Great Britain for some time.

209. Eritrea-Ethiopia Boundary Commission, *Decision Regarding Delimitation of the Border between the State of Eritrea and the Federal Democratic Republic of Ethiopia*.

210. UN Security Council Resolution 1320 (2000), 15 September 2000.

- Monitor the positions of Ethiopian forces once redeployed;
- Simultaneously monitor the positions of Eritrean forces that are to redeploy in order to remain at a distance of 25 kilometres from positions to which Ethiopian forces shall redeploy;
- Monitor the TSZ to assist in ensuring compliance with the Agreement on Cessation of Hostilities;
- Chair the Military Coordination Commission (MCC) to be established by the United Nations and the Organization of African Unity (OAU) in accordance with the Agreement on Cessation of Hostilities;
- Coordinate and provide technical assistance for humanitarian mine action activities in the TSZ and areas adjacent to it;
- Coordinate the Mission's activities in the TSZ and areas adjacent to it with humanitarian and human rights activities of the United Nations and other organisations in those areas.

The Security Council emphasised that the ACH linked the termination of the United Nations peacekeeping mission with the completion of the process of delimiting and demarcating the Ethiopian-Eritrean border.

A later Security Council Resolution²¹¹ amended the UNMEE mandate in order to assist the Boundary Commission in the “*expeditious and orderly implementation of its Delimitation Decision*”, to include: demining in key areas to support demarcation, and administrative and logistical support for the Field Offices of the Boundary Commission.

Temporary Security Zone (TSZ)

The TSZ is a 25-kilometre-deep buffer zone separating the two armies of which 95 per cent is within Eritrea.²¹² The TSZ is an area out of bounds to both Eritrean and Ethiopian troops²¹³ but is open to UNMEE forces and international NGOs. The “adjacent areas” to the TSZ have been defined as 15 kilometres either side of the entire TSZ boundaries.

Mine and UXO contamination

Landmine Impact Survey

Immediately after the hostilities ceased, the HALO Trust was funded by the U.K. and U.S. governments to undertake a rapid assessment survey in the border area, including Ethiopian positions. The survey was not completed for a variety of reasons, including restrictions on the disclosure of relevant information and difficulty in obtaining accurate minefield data.

A Landmine Impact Survey (LIS) is currently ongoing in Ethiopia, which is being implemented by NPA. Funding has been provided by Norway and the Netherlands through UNDP, to buy the necessary equipment. Germany assisted in facilitating the agreement between NPA and the Ethiopian Mine Action Office (EMAO) and provided start-up funds for accommodation and office equipment. It is anticipated that more

211. UN Security Council Resolution 1430 (2000), 14 August 2002.

212. Patrick Gordon, Mine Information Officer (UNDP Addis Ababa), *Presentation to the Mine Action Information Systems Interoperability Workshop*, James Madison University, 14-15 June 2001.

213. BBC news item, 12 June 2000, available at news.bbc.co.uk/1/hi/world/africa/787602.stm.

funding will be required to complete the survey and the U.S. has indicated that it will provide bridging funds.

Extent and documentation of contamination²¹⁴

Landmine and UXO contamination in Ethiopia is concentrated in the areas of confrontation along the borders with Somalia and Sudan and along the border with Eritrea. Significant numbers of mine and UXO incidents have been reported in these areas, particularly in the Tigray region. This contamination poses a threat to the resident and returning populations and to associated humanitarian relief efforts.

In the longer term, these same threats, unmitigated, will constitute an obstacle to post-emergency rehabilitation and reconstruction efforts. Support from the international community is required to strengthen Ethiopia's present capacity further so that it may address this challenge in a more efficient and cost-effective way.

Ethiopia has a major landmine/UXO contamination problem as a result of successive conflicts over 70 years and it is understood that 45 different types of landmines have been used in the country. The Italian occupation in the 1930s, the events of the 1939-45 war, the Ogaden War in 1977-78 and the civil war have all added to the problem. Of most recent interest is the conflict between Ethiopia and Eritrea in 1998-2000.

The threat from this latter conflict is largely is primarily confined to the "no man's land" between the trenches along the confrontation lines. Dense minefields containing a mix of anti-tank and anti-personnel mines are thought to have been laid in a conventional pattern. However, unmarked and unrecorded nuisance minefields are expected to lie outside the trench lines throughout the conflict area.

Both sides claim to have removed large numbers of mines but there have been concerns about the humanitarian standards being applied.

There is an Information Management System for Mine Action (IMSMA) database in Addis Ababa which is being populated with information but which, at present, is under the management of UNDP technical advisers pending the recruitment and training of Ethiopian staff. The NPA LIS will be the major input in due course.

Landmine casualties

Over the period 1998-2000, there were 314 mine-related accidents (114 killed and 200 injured) in Tigray region alone.

Ethiopian mine action capacity

Capacity pre-UN assistance

In 1994-95, the U.S. undertook military-to-military mine action training using Special Forces. This led to the creation of the Ethiopian Demining Project (EDP) — a non-

214. See Landmine Monitor (2001), and E-MINE at www.mineaction.org.

combat unit of the Ethiopian army. This ceased immediately the conflict with Eritrea started and all but five of the people in the EDP (who remained to run the office) were moved to combat units. It was recognised that the EDP did not achieve international humanitarian standards and that a national capacity was needed that could meet such standards. There are no known plans for military-to-military training to recommence.

UN mine action support

In June 1998, UNMAS, in conjunction with UNDP, UNICEF, WHO (the World Health Organisation), UNHCR and WFP (the World Food Programme), made a preliminary assessment of the situation of landmines and UXO in Ethiopia. The mission identified the need for UN involvement in the development of a national capacity for mine action if certain preconditions could be met. Obviously, the most fundamental condition was the cessation of the conflict with Eritrea. Another was the creation of a civil mechanism to coordinate mine action. Following this UN visit, UNICEF initiated a mine awareness programme in the Tigray Region, in collaboration with a local NGO, the Rehabilitation and Development Organization (RaDO).

Following the signing of the ACH, the way was open for the UN to provide direct capacity-building assistance in mine action to the Government of Ethiopia. On 5 December 2000, the World Bank approved an Emergency Recovery Programme (ERP) to be executed through the Ministry for Economic Development and Cooperation (MEDaC). The approved ERP included a budget of US\$30 million for urgent demining in the former conflict zones of Tigray and Afar. In September 2001, UNDP finalised its Project Document (ETH/01/001) with the government.

The Ethiopian Mine Action Office (EMAO) was established in February 2001 and began to develop a field capacity and a management centre by May 2001. In June, the Director and Deputy Director were named and the Director attended the UNDP-sponsored Senior Mine Action Manager's course at Cranfield University in the U.K. EMAO is not yet fully staffed at the more junior levels.

Two companies of the Ethiopian army were demobilised and contracted by EMAO for training as deminers. The two companies comprise 200 men in total. They have been trained to international standards by RONCO technical advisers with the support of the U.S. Two RONCO advisers remain with each company to provide ongoing training and supervision.

In January 2002, EMAO signed its first contract with the Ministry of Finance and Economical Development (MoFED) to begin mine action in Ethiopia. By mid-March 2002 the two companies were fully equipped and then deployed to the priority areas in northern Tigray. After some additional training, accreditation and practice in medical evacuation procedures, real demining started in mid-May 2002.

World Bank funding ceases at the end of 2003 after which it is likely that Ethiopia will have to look for funding from other donors to continue the demining programme. Even with the present World Bank funding, following a joint World Bank-UNDP mission in June 2002, it is likely that some of the US\$30 million agreed for mine action may be diverted to support road construction.

UN strategy for the future²¹⁵

The UN strategy for support to mine action in Ethiopia in 2002 has three main components.

UNDP support

To develop an Ethiopian national capacity for mine action. Within this initiative, the following points have been recognised as a priority:

- Training of two additional companies of deminers;
- Conduct of a Landmine Impact Survey in collaboration with the Survey Working Group;
- Training and deployment of rapid response assets;
- Testing and deployment of possible additional assets (mine detection dog teams and mechanical assets).

UNICEF support

To develop and implement effective mine awareness education programmes.

World Bank

Financial assistance, drawing on the credit to Ethiopia, for an emergency project and subsequent contract procedures developed to implement Ethiopian Mine Action.

Ottawa Convention

Ethiopia signed the Convention on 3 December 1997 but has not ratified it and there is no indication when this is likely to happen. Ethiopia has claimed that it is unwilling to ratify the Convention when other States in the region retain the right to use anti-personnel landmines. This could affect its own national security. It believes that *“the international community [should] put pressure on those states in the region to expeditiously adhere to the letter and the spirit of the treaty ... in the absence of such a comprehensive approach ... nations like my own may be left with very little choice other than reconsidering their commitment to the treaty”*.²¹⁶

Ethiopia strongly denies the use of anti-personnel landmines during the conflict with Eritrea. However, the Landmine Monitor believes there is information to support the view that Ethiopia *“used significant quantities of anti-personnel mines in the border war”*.²¹⁷ Ethiopia is steadfast in its rejection of this statement.

Contribution by Ethiopian military

The Ethiopian army, through its combat engineers, has a mine clearance capability and it retains that capability. It is not involved in any humanitarian mine action and has no plans to get involved. Indeed, it has been stated that the Ministry of Defence sometimes asks EMAO for assistance.²¹⁸

215. See E-MINE, at www.mineaction.org.

216. Landmine Monitor (2001:208).

217. *Ibid*:208-210.

218. Discussion with UNDP Chief Technical Adviser, 25 June 2002.

Government of Ethiopia financing of its own military mine action

As stated above, the Ethiopian army does not participate in humanitarian mine action. With the assistance of World Bank loans, the government claims to have provided the bulk of funding for humanitarian mine action. This rather ignores the contributions of Canada, the Netherlands, Norway, the U.S., and the UN itself.

Visiting military forces

Contribution by visiting military forces

The only real foreign military intervention has been the military-to-military training by U.S. forces discussed above. This was so long ago as to be largely now irrelevant. There are, however, military personnel in-country as “contributions-in-kind”. At present this seems to be limited to one Swiss national, although the Netherlands may send a few military personnel to assist with demining training.

It is not easy to assess the value of this limited military contribution. Certainly there are benefits from the skills being transferred but whether the skills are exclusive to the military — or could have equally well been provided by civilians — is uncertain. Some of the donor nations are keen to find a role for their military, particularly those with few civilians with experience in mine action.

Monitoring and evaluation

EMAO has a contract with MoFED to spend the World Bank funding for mine action and this has to be monitored. UNDP is providing a technical assistant to oversee operational quality control and to supervise the control of the contract. A UNDP Quality Assurance adviser is in place to training a national QA capability.

Non-military mine action

EMAO is the only agency in Ethiopia undertaking humanitarian mine action and the government seems content to keep it that way. Exceptions to the near total exclusion of outside mine action agencies are:

- HALO Trust and the very early rapid assessment survey;
- RONCO in training the two demining companies of EMAO and its limited ongoing work in support of them;
- NPA is assisting EMAO with the LIS; and
- RaDO MRE activities with support from UNICEF.

At least for the present, the government is not intending to allow international NGOs or commercial organisations to work in the country. This might change if the support of international donors is required.

The case of Lebanon

Introduction

This report was written by Nick Cumming-Bruce on the basis of a visit to Lebanon on 9-19 December 2002. It draws on data collected in an earlier visit by Adrian Wilkinson on 29 July-5 August 2002.

Background

Mine and UXO contamination

Lebanon faces landmine and UXO contamination resulting from three decades of conflict and occupation which continues to obstruct the country's economic and social reconstruction and to cause casualties.

Mine clearance agencies still find mines in working order dating back to the period of the French mandate (1923-43) and the 1939-45 war, but the most significant forms of contamination are:

- Landmines laid by rival factions during the civil war (1975-90)
- Landmines and booby traps laid by Israel's army or its ally, the South Lebanon Army, during its occupation of the south (1978-2000).
- Cluster bombs resulting from Israeli aerial bombardment in the years after Israel's 1982 invasion and in the 1990s, particularly in the Bekaa valley.

Lebanon's Armed Forces know of some 3,200 minefields estimated to hold between 600,000 and 550,000 landmines. These include 11 types of anti-personnel mine and 15 types of anti-tank mines. The estimates of minefields and mines have actually risen in the past two years with the gradual release of information by Israeli Defence Forces.

The Lebanese Armed Forces (LAF) report they have cleared about 1,100 of the 3,200 minefields, half of them in South Lebanon, the other half located north of the area formerly occupied by Israel. In the process they have removed some 150,000 mines.

But of the remainder, around 1,800 minefields estimated to hold some 450,000 mines are in the south.²¹⁹ Lebanon has asked Israel through the United Nations Interim Force in Lebanon (UNIFIL) to hand over aerial bombardment data but so far has received no response.

The LAF estimate the total area of land affected by landmines and UXO at some 80 - 100 million square metres, 50 per cent of it in South Lebanon, 25 per cent between Mount Lebanon and North Lebanon, 10 per cent in Mount Lebanon and the rest in other parts of the country.²²¹ However, the nature and extent of contamination varies significantly between regions.

South Lebanon has the densest contamination, including an estimated quarter of a million landmines in more than 900 minefields laid along the Blue Line.²²³ Most Israeli Defence Forces (IDF) minefields were laid in military patterns and recorded. In response to requests submitted through UNIFIL, the IDF supplied records for many minefields detailing the number of mines and layout. There are additionally smaller numbers of mines laid by other groups, including Israel's ally, the South Lebanon Army.

The IDF records are incomplete and sometimes unreliable but rates of clearance achieved by commercial demining companies working in Operation Emirates Solidarity indicate that the records have facilitated clearance. In seven months, Mine-Tech cleared more than two million square metres and 18,000 anti-personnel mines. BACTEC in six months cleared 726,287 square metres and 3,266 anti-personnel mines.²²²

Areas outside the South Lebanon region represent a smaller part of the problem quantitatively but may prove to be a more long lasting problem. During the civil war, factions laid mines to protect positions along demarcation lines, often in conditions of conflict and no records was kept of what was laid. Moreover demarcation lines shifted in the ebb and flow of the conflict, leading to mine removals and additions. The LAF has received no response to requests to Israel submitted through UNIFIL for data on aerial strikes.

The context for mine action

The UN does not assess Lebanon's landmine problems as a humanitarian emergency but calls for urgent assistance to address the economic and social fall-out from landmines.²²³ The number of civilian casualties has fallen sharply from 106 in 2000, including 14 fatalities, to 21, including three killed, in 2002.²²⁴ However, mine and UXO contamination continues to complicate and delay Lebanon's economic revival and social reintegration. Only seven per cent of contaminated land is classified as unproductive and most is agricultural.²²⁵ Most of the mines and mine accidents occur in the South, one of the poorest and least developed regions.

219. Information provided by the NDO, Beirut, 9 December 2002.

220. Information provided by Lieutenant-Colonel Roland Abou Jouade, Commander of the LAF Engineer Regiment, and the NDO, 14 December 2002. NDO figures also indicate that 2,135 minefields remain to be cleared, 75 per cent of them in South Lebanon province, 18 per cent in Mount Lebanon, 4.5 per cent in North Lebanon, 2.3 per cent in Bekaa and 0.5 per cent in Beirut.

221. Information supplied by UNIFIL's Ukrainian Mine Action Task Force, 13 December 2002.

222. Information supplied by UNMACC, 12 December, 2002.

223. UNMAS (2000); UNMAS/UNDP (2001).

224. Victim statistics as of 18 December 2002, compiled by the Landmines Resource Centre, University of Balamand.

225. Briefing by the LAF Engineer Regiment, Beirut, 13 December 2002.

Moreover, Lebanon, a middle income country of more than 3.2 million people, has not attracted the same level of international donor interest as other severely mine-impacted countries. The country is in economic crisis and the government paralysed by debts equal to 170 per cent of GDP, which consume 90 per cent of public revenue and leave scant resources free for developing the country's mine action capacity.

Sustained mine action in Lebanon only became possible after the end of the civil war in 1990 and even then, only north of the Litani River outside the area occupied by Israel. In this fragile security environment, the Engineering Regiment of the Lebanese Armed Forces was the only agency available to undertake mine and UXO clearance but even today it lacks manpower with the proper training and equipment, severely curtailing the scope of its mine clearance activities.

In the immediate aftermath of the civil war, the LAF's priority was to clean up Beirut, devastated by the war between factional militias, and restore basic services — power, water and telecommunications — as a prerequisite for restoring government and reviving the economy. Beirut remained the main focus of mine action by the LAF Engineer Regiment for about the next five years in which it demolished some 5,000 war-damaged buildings. Even now, Beirut still has some 10-15 areas believed to have mines or UXO's awaiting clearance.²²⁶ As normality returned to the capital, the LAF widened the scope of its demining activities to other areas, including Mount Lebanon province, another area of intense factional conflict in the civil war.

The end of the Civil War, however, did not mark an end to conflict. Cross-border fighting with Israel involving Hezbollah and other armed elements continued and in 1993 and 1996 Israel launched heavy aerial bombardments of Lebanon striking targets in the Bekaa Valley and Beirut.

In May 2000, Israel withdrew its troops from South Lebanon and in 2001 UNIFIL deployed along the Blue Line, theoretically opening the area to reoccupation. Expectations of a mass return by up to 300,000 displaced people and an influx of reconstruction proved misplaced. Many did return, causing a brief spike in the number of mine casualties,²²⁷ but most returned only for temporary visits. Insecurity, the presence of landmines and the lack of basic services continued to deter settlers — and donors.

Since 1998, Lebanon has developed the institutional framework to support humanitarian demining and the pace of clearance has accelerated. In that year, the Council of Ministers established a National Demining Office (NDO) to coordinate and manage all areas of mine action, including clearance, mine awareness and victim assistance. In November 2001, the government established an International Support Group (ISG) for Mine Action in Lebanon, chaired by the Minister of Defence, to coordinate donor support. By the end of 2002 the ISG had 27 members and had set up working groups to develop project and funding proposals for mine awareness, victim assistance, humanitarian demining and socio-economic development and rehabilitation.

In 2000, the Landmines Resources Centre of Balamand University in Beirut, with U.S. funding, completed a national survey of the landmine problem based on casualty

226. Information provided by NDO Operations Officer Lieutenant-Colonel Kassem Jammoul, Beirut, 13 December 2002.

227. The Landmine Resources Centre recorded 17 casualties in the first five days after the Israeli withdrawal.

data and the LAF has also assembled extensive data in its own database. These sources, however, fell short of a full impact survey and in early 2002 the EU contracted MAG to undertake a Landmine Impact Survey. MAG started work in May and is due to complete the survey by mid-2003. It is also conducting a technical survey of minefields on the Blue Line.

A major boost to humanitarian demining came in 2001 when the United Arab Emirates (UAE) agreed to provide up to US\$50 million for mine clearance in South Lebanon, the most heavily-mined province. The NDO designated areas for demining, the project was placed under the supervision of the UN's Mine Action Coordination Centre (UNMACC) and in 2002 the UAE awarded contracts to two commercial companies, Mine-Tech International of Zimbabwe and BACTEC International of the U.K. Mine clearance has proceeded quickly and consideration is being given to expanding the scope of the project.

Lebanon has not signed the Mine Ban Treaty and was one of 19 countries that abstained from UN General Assembly Resolution 56/24M in November 2001 calling for universal application of the treaty. Officials say, however, that Lebanon supports and will comply with the treaty. Military officials acknowledge the LAF has small stockpiles of landmines but they say Lebanon does not and will not produce landmines. They add the LAF does not use landmines operationally and any landmines cleared or retrieved by other means are destroyed. Canada and Norway, after a joint mission, said in March 2001 that Lebanon is abiding by the treaty without actually joining it.

The role of foreign militaries

The UN set up and deployed UNIFIL in southern Lebanon in 1978, making it one of the UN's longest running military operations, but it has seen mine action as peripheral to its role and its contribution accordingly has been marginal.

UN Resolution 425 mandated UNIFIL to *"restore international peace and security and assist the Government of Lebanon in ensuring the return of its effective authority in the area"*. It also required UNIFIL to *"use its best efforts to prevent the recurrence of fighting and ensure that its area of operation is not utilized for hostile activities of any kind"*. However, Lebanon was not as heavily mined in 1978 as at the end of the Israeli occupation and little attention was focused on the issue. The mandate made no reference to mine clearance and successive force commanders have engaged only in operational and emergency mine clearance.

Since UNIFIL's arrival, contingents from Finland, France, Ireland, Norway, Poland, Sweden and Ukraine deployed with demining and EOD capabilities but UNIFIL did not keep records of its mine clearance activities. In the absence of any Force SOPs for demining, contingents apparently did not pass on mine data to replacement units, even to replacements from the same national force.²²⁸

Israel's withdrawal in May 2000 and UNIFIL's deployment to the Blue Line focused attention on South Lebanon and its landmine problems. Mine clearance was seen as an urgent need to avoid casualties from the expected influx of an estimated 300,000

228. Information provided by UNMACC and Ukraine Mine Action Task Force, December 2002.

former inhabitants displaced by the conflict and to open up land for cultivation or development that would help to repopulate, stabilise and reintegrate the south.²²⁹

Finding a UN role in demining acceptable to the Government of Lebanon, however, has not been easy. UNDP hired a Mine Action Adviser in mid-2000 and offered to assist the government in developing a “National Humanitarian Mine Action Plan”. It also recommended the creation of a “*high level national coordinating mechanism*” which would have authority over the NDO.²³⁰ The proposal was never taken up and the UNDP adviser’s position lapsed in 2002.

The UN Security Council, in Resolutions 1337 and 1391 dated January 2001 and January 2002, respectively, “*encourages further assistance in mine action by the United Nations to the Government of Lebanon in support of both the continued development of its national mine action capacity and emergency demining activities in the south*”. In practice, UNIFIL remains focused on operational mine clearance and is not involved in humanitarian demining.²³¹

An UNMAS mission in mid-2000 concluded that UNIFIL’s mine action capacity was insufficient to support its implementation of Resolution 425. It called for the UN to seek reinforcements to expand UNIFIL’s engineering capacity and to propose to the Government of Lebanon the creation of a coordination cell within UNIFIL.²³²

In June 2000, UNMAS set up a Mine Action Coordination Cell within UNIFIL to coordinate with the NDO, LAF units and other organisations active in UNIFIL’s area of operation. A plan of action drawn up early in 2001 proposed that UNIFIL assist the development of a national mine action capacity by helping to set up a national data base, “train the trainers” in mine clearance and area reduction and undertaking minefield surveys, marking, fencing and expanded emergency demining in South Lebanon.²³³ However, UNIFIL never followed through with this plan, even though it was approved in the Department of Peacekeeping Operations in New York.

At that point, UNIFIL did not acquire extra demining resources and did not undertake to broaden the scope of force mine action. The Ukraine Engineer Regiment, including three 42-man companies, arrived in July 2000 and provided emergency action and operational support, including mine and UXO clearance around UNIFIL positions, technical surveys and marking and fencing of minefields in UNIFIL’s area of operations, mine risk education of UNIFIL personnel and minefield rescues. The regiment created UNIFIL’s first computer database recording details of border minefields and reported it had completed surveys of 765 minefields and destroyed more than 2,500 landmines.²³⁴ No independent evaluation has been undertaken to assess the quality of its mine action operations or database.

From July 2002, the Ukrainian regiment was joined by a Mine Action Task Force (MAF) from Ukraine consisting of a 75-man team of former military employed by a commercial company, Ukroboronservice. It engaged in marking the forward edge of border

229. Interview with Staffan de Mistura, UN Assistant Secretary-General and Personal Representative of the Secretary-General for South Lebanon, 17 December 2002.

230. 2000 annual report of the UN Resident Coordinator in Lebanon.

231. Interview with UNIFIL Force Commander Maj.-Gen. Lalit Tewari, 13 December 2002.

232. UNMAS (2000).

233. UNIFIL (2001).

234. Information provided by Ukraine Engineer Regiment, 13 December 2002.

minefields. By the end of 2002 the UNIFIL had decided to discontinue MATF, reportedly because its activities did not fulfil expectations. Ukroboronservice did not accredit itself for humanitarian mine action in Lebanon and a tender it submitted for mine clearance under Operation Emirates Solidarity was unsuccessful. It was expected to leave Lebanon in early 2003.

UNIFIL's contribution to national capacity building came through the MACC which now works as a semi-autonomous unit from its own operations base in Tyre. MACC introduced IMSMA to Lebanon, providing the hardware and software for the NDO in Beirut. Training in use of the system has come from MAG, which is using the system to compile data from its national Level One Survey. MACC has also set up a decentralised system of IMSMA database in its operations centre in the south to which NDO has "read only" access. It updates the NDO database every month.

Operation Emirates Solidarity

The UN's most significant contribution to mine action in Lebanon has been through MACC's role coordinating and supervising Operation Emirates Solidarity (OES). It is the country's biggest single demining operation to date and has laid down something of a benchmark for the LAF in planning and implementing humanitarian demining.

The project came about after the United Arab Emirates agreed in 2001 to provide up to US\$50 million for landmine and UXO clearance in the area of South Lebanon formerly occupied by Israel. The UAE, *to ensure IMAS standards and productivity*, insisted on UN management and supervision of the project and for demining operations awarded contracts to two commercial companies, BACTEC International of the U.K. and Mine-Tech International of Zimbabwe. Their contracts require them to clear all known, reported or encountered minefields. The UAE also contracted ArmorGroup of the U.K. to carry out external quality assurance (QA) on their operations. MACC's mission is *"to coordinate all clearance activities ... and to ensure that all mine clearance and QA is carried out in accordance with international mine action standards"*.²³⁵

The NDO assigned OES an area of 472 square kilometers and 360 known minefields which records showed contained some 58,000 mines. NDO split the operating area into four segments which the UAE divided between BACTEC and Mine-Tech. OES does not incorporate the densest concentration of Lebanon's mines which is along the Blue Line where the NDO says some 956 minefields are located.

The first phase, carried out by BACTEC between mid-December 2001 and early May 2002, involved verification and clearance of 288 known Israeli booby traps. In May 2002 BACTEC and Mine-Tech started what was expected to be a two-year second phase clearing mines and UXO in zones designated by the NDO. As of the end of November, OES had cleared 23,000 mines and 224 minefields covering nearly 2.6 million square metres of land and Phase Two looked set for completion a year ahead of schedule.

A fifth area, smaller in size than any of the first four, but more densely contaminated with 127 known minefields, may be included under OES. This option is being reviewed by the UAE. Once cleared, OES would have removed about a quarter of the more than 1,800 known minefields in the UNIFIL area of operations.²³⁶

235. Briefing by UNMACC Operations Officer Kerei Ruru, Tyre, 10 December 2002.

236. Information provided by NDO Operations Officer, Lieutenant-Colonel Kassem Jammoul, Beirut, 14 December 2002.

As part of its contribution to LAF mine action capacity building, MACC is training six LAF Engineer Regiment officers on QA, planning and operations. To build up the NDO's QA capacity, three officers are training with ArmorGroup on monitoring and sampling. The LAF's intention is that these officers will form the core of a QA team to carry out accreditation of foreign mine clearance companies and NGOs working in Lebanon as well as QA checks on the LAF Engineer Regiment's mine action.

The role of the local military

The LAF's Engineer Regiment is the only national agency engaged in mine and UXO clearance and operated alone from the end of the civil war in 1990 until 2001 when foreign organisations arrived to work in Lebanon. It emerged from the civil war with a capacity variously remembered at between 100 and 150 deminers working in three under-strength companies facing the task of cleaning up a devastated capital city infested with mines, improvised explosive devices and an assortment of Israeli bombs ranging in size up to 1,000 pounds.²³⁷ The work has not been independently evaluated.

As the work in the capital progressed, the regiment turned its attention to demining further afield, notably around Mount Lebanon, an area of intense factional strife. Its operational priorities are clearance of urban areas, infrastructure, particularly utilities, roads and areas attractive for tourism, and land needed for agriculture. After Israel's withdrawal in 2000, the LAF moved only slowly to deploy in the still politically volatile South and showed no interest in clearing the border but as of 2002 the Engineer Regiment now says it will clear minefields along the Blue Line.

In 1998, the Council of Ministers set up the National Demining Office with financial support from the U.S. to manage and coordinate planning and implementation of mine action. The government is not considering the creation of a civilian agency to direct demining. Lebanon's recent history of factional conflict, the roles of external and internal political forces ranging from Syria and Israel to Hezbollah and Amal, strategic considerations in tackling minefields along the border with Israel and the volatile security environment in the region combine to ensure that the government will maintain the NDO as the controlling authority in mine action.

The NDO coordinates all areas of mine action, from planning and implementing clearance to mine awareness and victim assistance.²³⁸ It also operates the IMSMA database which will be the principle source of national mine action data on completion of the Landmine Impact Survey by MAG due in 2003. The NDO also has become the principal point of contact for donors and foreign mine clearance NGOs or companies, which need NDO accreditation and licences to work in Lebanon. The Engineer Regiment appears to liaise closely with the NDO but its mine clearance operations are decided by Army headquarters.²³⁹

The LAF is expanding its mine action capabilities. In 1999, the regiment added a fourth company and now puts its capacity at 300 deminers and one EOD team of four officers and 23 men. The regiment maintains one company based in Beirut with platoons located in Batroun and Al-Madfoun, north of the capital and in Souk al-Garb to the

²³⁷. *Ibid.*

²³⁸. Briefing by the NDO, Beirut, 9 December 2002.

²³⁹. Information provided by Lieutenant-Colonel Roland Abou Jouade, Commander of the Engineer Regiment, Beirut, 13 December 2002.

east. The other companies are deployed in West Bekaa, Jezzine and Nabatiyeh, which are among the most mine-contaminated areas. These companies are reinforced by a Syrian contingent consisting of 16 officers and 146 soldiers split between three companies. They are equipped for manual clearance but also have four mechanical rollers.²⁴⁰ The Syrian companies work alongside the LAF.²⁴¹

With growing foreign interest since Israel's May 2000 withdrawal from southern Lebanon, the LAF has acquired other assets. These include three MDD teams with 14 dogs, due to rise to 18 dogs by mid- or end-2003, under a programme managed by RONCO Consulting Corporation and funded by the U.S. State Department as part of assistance totalling US\$6 million since 1998.²⁴² The regiment also took delivery from the U.S. of an Armtrac 100 flail and received training for operators by RONCO.

The NDO and Engineer Regiment both acquired new leadership in 2002 which is keen to expand and improve standards but are constrained by a lack of resources, material and financial. The Engineer Regiment has only 150 metal detectors received from a wide variety of sources. The LAF budget for mine action amounts to about US\$5 million a year but 90 per cent of that is accounted for by salaries and maintaining infrastructure. The budget has suffered from government cuts in 2001 and 2002 reflecting Lebanon's currently difficult financial circumstances.²⁴³ As a result, the NDO says any expansion is dependant on donor support for essential basic demining equipment, such as detectors, personal protective equipment, communications and vehicles.

The LAF, confident it has the requisite skills and experience, is frustrated by the lack of resources. Although officers express appreciation of donor support for mine clearance by other agencies they also believe that the LAF represents a more price-competitive option, capable of clearing mines at between a quarter and a third of the cost of foreign NGOs or commercial companies.

At the start of 2001, the NDO wanted to raise the size of the Engineer Regiment to 1,200 people but scaled back the figure to take account of Lebanon's difficult financial circumstances. The present NDO target is to increase the number of deminers to 800 in five to seven years. The lower figure takes account of the significant contribution that OES is making to cleaning up mines in Lebanon.²⁴⁴ Meanwhile the regiment's commander would like to double the manpower over three years by adding 50 people every six months.²⁴⁵ The regiment also seeks to build new base facilities at Nabatiyeh to replace facilities destroyed by Israeli bombing.

Plans to add 100 deminers in 2001 did not materialise because neither government funding nor donor support was forthcoming.²⁴⁶ UN projects under consideration for 2003 include training and equipping another 100 deminers to clear mines, booby-traps and UXO along the Blue Line.²⁴⁷

240. Landmine Monitor (2002).

241. Information provided by the NDO, Beirut, 9 and 14 December 2002.

242. U.S. Department of State website.

243. Information provided by the NDO, Beirut, 9 and 14 December 2002.

244. *Ibid.*

245. Briefing by Engineer Regiment Commander Lieutenant-Colonel Roland Abou Jouade, 13 December 2002.

246. *Ibid.*

247. UN Portfolio of Mine-Related Projects, 2003, Country Programmes.

This regiment also seeks donor support to strengthen its EOD company and to add another company. Among the immediate EOD needs it identifies is an underwater capability to deal with coastal contamination. This includes underwater mines in the south, Israeli cluster bombs dropped on the northern town of Tripoli and large amounts of munitions that fell or were dumped along the coast. EOD officers, however, also point to shortages of equipment.

Plans to increase the LAF's demining capacity, however, also appear somewhat ad hoc and linked only loosely, if at all, to an assessment of Lebanon's medium- or long-term mine action needs. The NDO and Engineer Regiment may acquire the equipment now used in MACC and MAG projects but it has no plans or apparent interest in exploiting the skills of more than 300 locally-hired staff who will be laid off when their projects are completed.

In addition to growing the size of the Engineer Regiment, the NDO and LAF also express interest in developing its operating standards and procedures. The regiment has built up a strong foundation of mine clearance know-how based on practical experience and training. In the 1980s officers received training from visiting British and French teams. In recent years it has sent officers for training in France, Italy, U.K. and U.S. A protocol with France provides for training of 20 officers and soldiers a year for five years. It also acknowledges that the demining companies in the past have applied military operational rather than humanitarian demining procedures.

Lieutenant-Colonel Abou Jouade, who took over as the Engineer Regiment's Commander in 2002, refers to his aim to convert the regiment to humanitarian demining. To make the transition, Lieutenant-Colonel Abou Jouade says that in 2002 he issued revised SOPs which conform to IMAS.²⁴⁸ Since their introduction the number of accidents in clearance operations has fallen and productivity has risen, he reports.²⁴⁹ The regiment now says 90 per cent of its operations are already humanitarian, but it appears to use the term to indicate that the beneficiaries of these interventions are civilian.

It remains unclear, however, to what extent humanitarian standards are understood by Army command or applied by demining units in the field. The layout and procedures described by the officer supervising a manual clearance site visited in the course of researching this case study indicated awareness of IMAS. Anecdotal evidence by mine action specialists with experience in Lebanon raise doubts about the criteria and standards applied in selection of mine clearance tasks, routine management of demining sites, clearance reports and the extent and quality of community liaison. Copies of the revised SOPs have not yet been made available for independent evaluation. In 2002, the NDO issued national technical standard guidelines drafted with the help of the MACC, but these apply only to foreign NGO's and commercial companies that work in Lebanon.

The NDO and Engineer Regiment have shown interest in learning the QA standards and procedures applied in the OES, assigning junior officers for training by MACC and ArmorGroup, the company contracted to undertake external QA. The trainees are supposed to provide the LAF with a core QA competence both to train its own personnel and to take over ArmorGroup's QA tasks.

248. *Ibid.*

249. The LAF reports seven casualties in 2000, nine in 2001 and one in 2002, as of mid-December.

In addition to mine clearance, the NDO acts as the coordinating authority for mine risk education undertaken by local NGOs with support from international agencies including UNICEF. The NDO perception is that before 2001 NGOs and other organisations involved in mine awareness acted too independently and without proper coordination. In that year the NDO set up a national steering committee and launched a national campaign.²⁵⁰

In the aftermath of Israel's withdrawal from southern Lebanon the MRE priority was to try to avert the casualties feared from the return of displaced people. Particular emphasis was placed on schools in South Lebanon, West Bekaa and the suburbs of Beirut housing families that had fled from the South. The NDO reports that the campaign reached 784 schools, over 270,000 students and 27,000 teachers.²⁵¹ Since then additional campaigns have targeted more villages in the south and in 2003 the NDO is broadening the campaign to several hundred towns in north and central Lebanon.²⁵² In addition, the NDO printed substantial quantities of pamphlets, posters, banners and children's games to promote awareness.

The NDO and army headquarters now maintain control over mine awareness activities. Every leaflet or poster and every campaign or specific activity by NGOs or international agencies requires approval at every step from concept to implementation. In mid-2002, the government suspended television spots dealing with mine risks for fear of deterring foreign investment and tourists. It was planning to release an action plan for mine awareness for 2003 by February 2003.

The NDO cites the sharp fall in mine-related casualties in the past two years as evidence of the success of its campaign.²⁵³ Despite extensive surveying of different communities there is no evidence that a needs assessment survey, which should form the basis for moving the campaign forward, has been carried out. Similarly, there has been reporting on the scope of different activities but no qualitative analysis of reaction to them. Attempts to promote more interactive community based approaches have not yet been acted on.

250. Information provided by Lieutenant-Colonel Takieddine El-Tanir, Beirut, 18 December 2002.

251. *Ibid.*

252. *The mine awareness campaign in Lebanon, Draft Action Plan 2003*, Mine Awareness Section, NDO.

253. Victim statistics cited by the NDO Mine Awareness Section differ from those provided by the Landmines Resource Centre (see above). The NDO reports 72 civilian victims (including 12 fatalities) in 2000, 67 (10 fatalities) in 2001 and 24 (two fatalities) in 2002.

The case of Nicaragua

Introduction

This case study was researched and written by Almachiara D'Angelo and Sonia Cansino based on research in Nicaragua in August - October 2002.

Background

Nicaragua is a State Party to the Anti-Personnel Mine Ban Convention. In 1999, the government adopted national legislation to implement the Convention in Law 321, prohibiting the production, stockpiling, transfer and use of anti-personnel landmines.

Demining operations were initiated in Nicaragua in 1989 as a response to the mine and UXO contamination resulting from almost 10 years of armed conflict. In December 1998, the President sanctioned Decree 84-98, which created the National Demining Commission (NDC) to coordinate and implement mine action.²⁵⁴ In accordance with the decree, the Commission is tasked with promoting activities to support Nicaragua's national demining programme, which is led by the Ministry of Defense through the Nicaraguan Army.

Prior to the passing of the decree creating the NDC, demining operations had been limited to the physical clearance of mines by the army. In 2000, with the aim of integrating and emphasising the humanitarian aspect of demining, the NDC adopted a more integral structure, involving several government institutions in the humanitarian demining tasks.

The president of the Commission is the Minister of Defence, José Adán Guerra, who draws up the national demining policy; the Commission is made up by the Deputy Minister of Defense, María Auxiliadora Cuadra, who performs the tasks of Executive Secretary, supported by a technical secretariat led by Mr. Juan Umaña. Several government ministries participate in the NDC as does the OAS Humanitarian

254. Although this decree has the force of law, it may be abolished or amended by the President of the Republic, without the need for approval by the legislative assembly.

Demining Programme — PADCA — which plays a key role in the overall process. Its precise role is discussed later.

The Commission's main powers and responsibilities include promoting demining, encouraging dissemination, information and preventive education programmes, supporting rehabilitation and social reintegration programmes for mine victims, fundraising, and reporting to the international community on the progress of the national demining programme.

To broaden the involvement in the Commission, three sub-commissions were created: Demining; Medical Care and Rehabilitation; and Preventive Education, Marking and Socio-economic Reintegration. By decree, these are led by the Deputy Ministers of the respective institutions to guarantee a better capability in promoting actions; various government agencies, international organisations and civil society organisations participate in them.²⁵⁵

In the early years, there was a significant difference between the operation of the Demining Sub-Commission, which always worked with established funds, plans, programmes, goals, and objectives, and where the Army has had a leading role, and the other two Sub-Commissions, which are poorer as far as resources, initiatives, and leadership are concerned.²⁵⁶

On the other hand, as progress is made in the tasks of removal and destruction of mines, possibilities have been opened to encourage the humanitarian component of the programme, ranging from care and social reintegration of mine victims to social development of the villages in mine-affected areas. The NDC has set up a programme for this purpose and that is why it is attempting to raise US\$8.5 million. It must be borne in mind that the NDC does not have any funds. Up to date, the cost of such operation has been charged to the Ministry of Defense budget. However, most of the funds from foreign donors are allocated to demining activities.

Since the new administration took office in January 2002, efforts at greater involvement of the Deputy Ministers in the Commission and Sub-Commissions have been attempted. At present, the Demining Sub-commission is coordinated by the Deputy Minister of Defense, who plans demining operations jointly with the Army. The Medical Care and Rehabilitation Sub-Commission is coordinated by the Deputy Minister of Health, Margarita Gurdíán, the Education, Prevention, Marking and Socioeconomic Reintegration Sub-Commission is coordinated by the Deputy Minister of Education.

Several civil society organisations have shown an active interest in the NDC, as they have wanted to mobilise a debate on mines among public opinion. However, their ability to influence others is minimal and in general they are left out of the decision-making process. In 2001, in order to be able to have a more effective influence, the

255. The structure of and participation in the NDC is set out in Annex 1 to this case study.

256. This can partly be attributed to the fact that by the time the decree creating the National Demining Commission was enacted, the Army had already been developing a demining programme in Nicaragua for several years. On the other hand, a large part of the cooperation had focused specifically on the process of mine removal and destruction, neglecting the humanitarian component. These circumstances are determining factors to define the emphasis given to the operational-military portion of mine removal and destruction.

Nicaraguan Mine Action Coalition, which is currently made up of 16 organisations,²⁵⁷ was set up.

In a seminar held in November 2001 with the support of the UNDP and the participation of government and civil society organisations involved in activities against mines, the *Strategies for actions against anti-personnel mines in Nicaragua within the period 2001-2005*, were analysed; the leadership and commitment of the Ministry of Defence was acknowledged as the coordinator of the Commission and it was recommended, among other things, to strengthen the NDC, which needs to have its own resources to be autonomous and enforce institutional laws and mandates.

In general, there has been a greater consolidation of the NDC. The Army itself acknowledges that its work is being performed in closer cooperation with the NDC. For instance, the Army is regularly meeting with the NDC, submitting progress reports to it, and sending its operational plans.

Mine action in Nicaragua

Information gathering

One of the first tasks of the NDC is recording demining activities and mine victims. The progress on demining activities has been followed up by the Army itself, which every three months meets with the NDC, reports on progress and plans upcoming activities. This information is recorded on a centralised database updated by the OAS through its Programme of Assistance to Demining in Central America (PADCA/OAS),²⁵⁸ using the IMSMA, where three main variables are stressed: progress in demining, demining objectives and victims. In particular, the database shows danger areas in the various regions, and reports on mine accidents (including the date, place and name of the victims, their sex, age, and occupation, and whether they are military or civilian).

Before the existence of this database, information on the incidents and victims was scattered and there was contradictory data of the various organisations that have directly assisted victims. Based on the system, within the last year, progress has been made in the unification of the register, training all of the organisations that receive and report information on mine victims in order for it to be entered into the database. Institutions may use this information. There is a terminal of the database at the Secretariat of the NDC.

Assistance to mine victims

Assistance to victims is the specific task of the Sub-Commission for Medical Care and Rehabilitation of Mine Victims coordinated by the Ministry of Health (MINSA). The Sub-Commission is composed of the Ministry of Defence, the Ministry of the Family,

257. CIEETS, CISAS, Association of Christian Churches of Nicaragua, National Council of Evangelic Churches, SERVISIMA, CEI, CEEN, Christian Medical Action, Center for Human and Autonomic Rights of the Atlantic Coast, Council of the Elderly for the Atlantic Coast, Association for the Development of Sustainable Local Initiatives, FECONORI, Joint Association of Madriz Disabled, Association of Volunteer Surgeons.

258. Interview with Carlos Orozco, National Coordinator of PADCA/OAS, Managua, October 2002.

the Army, PADCA/OAS, the Secretariat of Foreign Cooperation, the World Health Organisation (WHO), the Nicaraguan Institute of Social Security, the Nicaraguan Red Cross, the International Committee of the Red Cross (ICRC), the Joint Committee of Disabled for Peace and Reconciliation of the Madriz Department, Handicap International, Walking Unidos and FECONORI.

The Engineer Corps of the Army has a health division at the Office of the Joint Chief of Staff, which provides medical assistance to people in the area of operations. Each Operation Front has a doctor and a paramedic, supplies and ambulances to transfer the wounded. The activities of this division in the operation fronts have been funded by Danish cooperation in Fronts 1 and 2, and by PADCA/OAS in Fronts 3, 4, and 5. The Red Cross has been eventually supporting demining operations with two ambulances and paramedic staff.

MINSAs has health care centres in the territories where the demining teams are unable to provide assistance to the victims. MINSAs provides physical rehabilitation to civilians and military through the National Prosthetics and Orthotics Centre (CENAPRORTO). The Centre is specialised in the care of victims of all types of accidents, including mine incidents that involve amputations. It has a structure for diagnosis and therapy and can fit both lower and upper prostheses. It coordinates with OAS/PADCA on all matters regarding care for victims who require prosthesis and with the Red Cross with which cooperation agreements are signed periodically. The work of CENAPRORTO is fully supported by external funding.

The problem in providing assistance is due to the very high costs of care, particularly those for prosthesis and orthosis, due to the fact that it is necessary to renew them every three years. For the time being, while the demining programme is ongoing, these costs are financed through donations. However, national agencies are not in a condition to pay for them once the international assistance comes to an end.

PADCA has taken on the assistance responsibility since 1997 and efforts are being undertaken to make it sustainable. It has committed to continue with this component even after demining is completed, until the government is able to take it on.²⁵⁹ There are international organisations for the handicapped which support MINSAs in developing capacities.

The scope of assistance to victims has expanded over the past few years and is not restricted to prosthesis and orthosis, but has become much more integrated from the standpoint of medical care since eye and ear problems are taken care of, as well as the supply of medicines.

However, the most complex subject continues to be social reintegration of victims, which is the task of the Sub-Commission for Education, Prevention, Marking and Socioeconomic Reintegration. Mine victims are not considered as war victims, according to the legislation in force. The Executive Secretariat of the NDC has been promoting an amendment to the law on war victims, but recent changes with the privatisation of the Pension Plan system, have impeded this effort. For this reason, the Secretariat has been reorienting its efforts to the search of programmes that may help in the reintegration of victims to economic and social life through job training,

259. Otherwise, it has been difficult to persuade donors to support mine victim assistance in Nicaragua. There are very few countries that provide funding for this: Canada and Sweden for instance.

and by providing them with the tools that may allow them to become self-sufficient.²⁶⁰

Another existing problem in the National Demining Programme concerns the resettlement of displaced people in the territories contaminated by mines, as evidenced in the psycho-social, socio-economic and environmental impact study conducted by the Danish cooperation programme. There are very poor rural areas affected lately by the coffee crisis, which represents one of the main crops of the northern area in the country, with a very limited presence of social infrastructure and essential basic services. Despite the safe conditions present in the territories after the mines have been cleared, there are limitations because of the lack of economic resources to rehabilitate the houses of people affected and other necessary requirements for them to resettle.

An agreement was signed with the Ministry of Agriculture to include mine victims in the “Pound by Pound” Programme, which distributes food and seeds in exchange for production and work. However, government programmes in support of peasant population have a very limited scope and there is insufficient institutional support to economic reactivation of those affected by mines.

Prevention, marking and awareness

Another element in the Nicaraguan demining programme is prevention. Since September 2000, an effort has been made to strengthen the preventive aspects of the programme, giving overall direction and establishing basic principles, and to clarify the role of the NDC in certifying awareness materials for use.

Initially, marking of mined areas was conducted directly by the Army. In 2000, the Marking Detachment was set up with the participation of the Army Engineer Corps. The training was conducted by military of the U.S. Special Forces in January 2001. Before the Operation Fronts were set up, marking and awareness tasks for the population were performed in the areas where these Fronts were operating.

The Marking Detachment is comprised of 50 members, which includes three officers, three teams of deminers, two awareness teams, one logistics team, and a medical crew (one general doctor and two paramedics).²⁶¹ Its main tasks are to destroy cleared or stockpiled landmines that used to be performed by operation fronts, respond to reports from the local population about the presence of mines and UXO,²⁶² mark mined areas, and carry out accident prevention campaigns.

The European Union funds this small unit through PADCA, which performs its material technical assurance through its administrative process. The OAS/IADB

260. Interview with Dr. Umaña, NDC Technical Secretariat, September 2002.

261. A mobile detachment goes to the locations where the call comes from, regardless of where the operation fronts are. The operations headquarters is Managua, from where the detachment goes to all departments across the country to receive reports, mark mined fields, etc. Likewise, some demining work is performed in the case of confirmed reports of mines or items of UXO.

262. The population reports to the police, to the military facilities and to the people having access to telephones, directly to the chief of staff of the Army Engineer Corps at telephone number 18.60, where an officer who is on shift 24 hours a day receives reports. The Marking Detachment goes and mark the device for subsequent destruction. This allows the population to obtain an immediate answer to its needs, which otherwise would not be heeded, since operation fronts work based on planning.

Support Mission for the Removal of Mines in Central America (MARMINCA) certifies such tasks.

The Marking Detachment participates in the Sub-Commission for Prevention and Awareness of the National Demining Commission and is coordinated by the Ministry of Education, with the participation of the following institutions and agencies: the Ministry of Defense, the Army, PADCA/OAS, the Ministry of Agriculture and Forestry, the Ministry of Foreign Affairs, the Governor's Office, the Police and the Fire Department, the Secretariat of Foreign Cooperation, the Ministry of the Family, the National Technological Institute (INATEC), the Nicaraguan Institute for Municipal Promotion (INIFOM), the Center for Strategic Studies of Nicaragua (CEEN), the Joint Committee of the Madriz Disabled, Handicap International, the Nicaraguan Red Cross, PAHO/WHO, Marshall Legacy and Christian Medical Action.

At the Commission, education campaigns are planned through the radio, newspapers and, directly, at schools, through the students' sector. Several awareness materials, copybooks, pencils, posters and audiovisual material are used.

In 2001, with the assistance of PADCA/OAS and UNICEF, a workshop "A Single Voice" for the preparation of educational materials was held. The outcome of the workshop was a guide with a general orientation and basic guidelines on messages for accident prevention. A Certification Committee, which is made up of nine institutions, was set up within the NDC to review all materials prepared by the various institutions involved in awareness. This initiative allowed for the unification of education and prevention criteria and for the establishment of minimum standards for teaching and dissemination materials to ensure that messages would be consistent and appropriate.

The materials used in the education component include a flipchart prepared by the Center of Strategic Studies of the Army, CEEN, and other teaching materials prepared with the cooperation of several organisations such as UNICEF, Christian Medical Action, the Army, the Nicaraguan Red Cross, the OAS, and the Austrian Technical Cooperation Programme.

In 2002, a certification process reviewed materials for three different initiatives: the PADCA/UNICEF campaign, the Christian Medical Action campaign, and the Red Cross campaign. NDC is responsible for making sure that efforts are not duplicated and, therefore, must orient the process. In 2002, the PADCA and UNICEF campaign focused on two municipalities, S. Fernando and Jalapa, in order to reduce risk by instilling safe behaviour in at-risk population.²⁶³

This has been a very productive campaign, which has been well developed, and is the first exercise done by providing the community with a central role. The programme establishes links with local leaders and officers retired from the Army and the resistance. In total, work has been done with 177 leaders in Jalapa and 50 in S. Fernando, for them to take on a role as main characters. They have leadership skills, have been sensitised on the subject and may guarantee sustainability once the campaign is ended. A flipchart is being prepared with a standardised message for the various realities of the country, to be given to each community leader in order for the process to be sustainable.

263. Interview with Dr. Wanda Obando, Project Coordinator, September 2002.

Likewise, work is being done at the schools and with children and youngsters outside the school atmosphere. Fifty-five young promoters have been trained, working on a house-by-house basis, sometimes accompanied by the Army. They are working with a child-to-child methodology in 46 communities at risk, 39 in the Jalapa municipality and seven in the S. Fernando municipality.

The role of external military forces in mine action

Historical background to demining

In July 1979, the period known as “the insurrection” ended, and the Sandinista Front for National Liberation (FSLN) took power. Subsequently, a new opposition group known as the Contras came into being, based on the border between Nicaragua and Honduras. During this phase of the war, there was extensive use of artillery and laying of mines.

As a result, in the 1980s, Nicaragua became the most severely mine-affected country in Central America. The exact number of devices used is unknown, though more than 135,000 are contained in Nicaraguan Army maps. However, the total number and precise location of all mines planted by the resistance is still unknown. This led to a significant number of accidents, killing and maiming both civilians and soldiers. Already in 1989, the Nicaraguan Army started demining operations with their own resources in several areas of the country, especially those with economic possibilities.

Phase I (1989-1992)

Demining in Nicaragua has had at least four phases: the first started in 1989 with the first demining operations and lasted until 1992. Operations were concentrated on the departments of Jinotega, Chontales, and Chinandega. In this phase, 11,819 mines were destroyed.

Mine clearance

During this phase, the Nicaraguan Army, through their Engineer Corps, performed demining tasks without any supervision using their own technical knowledge. Captain Marvin Núñez, who participated in the demining activities during this first phase states that: *“In 1989, we used to demine manually without special techniques or equipment. The area used to be cleaned up with shovels and explosives in a rudimentary way and according to the Army’s maps... There were quite a lot of accidents due to the rudimentary way in which demining was performed... By the mid-90s, the demining process was suspended because of the accidents we had suffered. However, between 1990 and 1993, some concrete demining operations were carried out.”*²⁶⁴

Medical support

Medical support for demining was scarce. It was provided by the Army but was not specialised and the medical resources were not adequate for the scale of the clearance operations so there were large numbers of fatalities.

264. Interview with Captain Marvin Núñez, Nicaraguan Army Engineer Corps, Managua, September 2002.

Quality assurance

During the initial phase, the Army performed demining without international supervision. This, plus other events led the Nicaraguan Government to ask in 1991, for the support of the OAS and the Inter-American Defense Board (IADB) to assess the level of mine contamination in Nicaragua. The idea was to use the results of the assessment to assist in setting up and implementing a General National Demining Plan.

The Plan stated that:

- There are around 150,000 emplaced landmines, of which 87 per cent are registered in the records kept by the Army (135,645 mines).
- It had been decided that engineer units of the Nicaraguan Army for demining operations should be set up, trained, and equipped.
- The OAS was asked to support the training, equipment and supervision through an International Officers Corps.

Phase II (1993)

The second phase, which began with the support of the OAS and the Inter-American Defense Board, saw the creation of MARMINCA and involved outside assistance and oversight for demining operations. MARMINCA was initially composed of 15 officers from Latin American countries whose task was to train and supervise demining operations. As a result, the Special Demining Unit, made up of five platoons of deminers was set up and the Checking Table (based on international standards), which contained methods and procedures for demining operations, was used.

This phase resulted in equipment being obtained for the special demining unit, and the establishment of formal relations between the IADB and the OAS to follow up the demining activities. It was interrupted as a result of a lack of funds in November 1993, after having destroyed 2,373 mines and having cleared an area of nearly 30,000 square metres.

Mine clearance

According to the testimony of Captain Marvin Núñez, *“we went out to the field to see how to demine the towers, the electrical layout. During this phase, 25 per cent of the targets were completed thanks to the donations and cooperation of the OAS. This process was suspended in March 1994 for lack of funds and the international staff left. However, we kept the means to carry out demining...”*²⁶⁵

Medical support and quality assurance

During this phase, with the support of international forces, demining was always conducted with medical assistance and quality assurance.

Phase III (1994-1995)

When international funding ended, there was another period of mine clearance without any international support or supervision. All efforts were made by the National Army

265. Interview with Captain Marvin Núñez, Nicaraguan Army Engineer Corps, Managua, September 2002.

using their own resources (including the equipment and the standards that international forces had left for them) and using the budgets of several government agencies.

The Army continued operations with the Special Demining Unit, without international assistance but with a minimum budget and the help of the Ministry of Transportation and Infrastructure and the National Electric Power Company. According to information obtained, during this Phase, some 13,577 mines were cleared and an area of approximately 145,000 square kilometres was made safe. There were no accidents during this phase as *“we saw that with safety measures and following the standards that had been given to us, we could demine...”*.²⁶⁶

Mine clearance, medical support and quality assurance

During this phase, mine clearance was carried out without any support or supervision, but the experience obtained by the Army during Phase I and especially thanks to the standards and equipment that international forces left to the country, proved to be helpful to limit accidents. Safety measures thanks to the health support obtained in this phase were completely taken by the Nicaraguan Army. On the other hand, there was no external quality assurance of the clearance operations.

Phase IV (1996-1999)

Phase IV saw the presentation of the National Demining Plan and other international arrangements. The initiative obtained a positive response from a number of governments including some that were members of the OAS.²⁶⁷ Operations started with bilateral financing initially from Germany, which funds two US\$534,450 projects with which detection and protection equipment is purchased to acquire ambulances. Supervision is carried out by MARMINCA/OAS.

Once the cooperation commitments were secured, both bilaterally as well as with the PADCA/OAS Programme, and the oversight of IADB/MARMINCA agreed, tasks such as training and certification of deminers were organised and the demining operations implemented.

Mine clearance

Demining in this phase included the destruction of some 33,000 mines and the clearance of an area of 1,142,400 square metres. Similarly, a review was conducted of the programme plan to 2004, and detection methods were diversified and improved.

The National Demining Commission, as executor of the National Demining Plan, proposed a plan in 2001 to complete the clearance of emplaced mines by 2004 (now likely to be 2005). In addition, the plan foresaw the destruction of stockpiled anti-personnel mines by 2002.²⁶⁸

266. *Ibid.*

267. The countries that are incorporated as donors in the bilateral cooperation with the Army, U.K., Germany and the European Union, and through the OAS: the EU, Argentina, Australia, Canada, France, Japan, the Netherlands, Norway, Russia, Spain, Sweden, and U.K. Through organisations, Japan, the ICRC Ambulance Programme and Educational Prevention Campaign and National Marking Plan, Prevention Campaigns of the OAS, CEEN.

268. Nicaraguan Ministry of Defence (2001:3).

Medical support

During this phase, medical support was the responsibility of international forces and international standards were part of the activities; air support was also organised.

Quality assurance

MARMINCA was responsible for quality assurance and certification of clearance activities.

“The organized approach to mine action in Central America results in a uniform, controlled and highly organized method in demining. All aspects of demining operations are supervised by MARMINCA and carried out by the national armies/ securities forces. Once a country is approved for demining operations through the OAS, supervisors are trained, dispatched and placed in a supervisory role over the local army at various fronts of operation in each country.”²⁶⁹

Demining from 1999 to 2001

The National Humanitarian Demining Programme in Nicaragua, carried out by the Nicaraguan Army through the Engineer Corps has continued to operate to achieve the target proposed for 2004: to declare Nicaragua a country free of emplaced mines.

This programme is conducted with the support and under the auspices of the national Demining Commission led by the Ministry of Defense and the contribution and effective cooperation of the OAS, and particularly, that of the European Union, Denmark, Norway, the U.S., and Canada. The Nicaraguan Army Engineer Corps (CIEN) has devoted its main efforts to the clearance of emplaced mines, the destruction of stockpiles, accident prevention campaigns, and assistance to civilian victims. During 2000, a total of 20,000 stockpiled mines and 6,155 emplaced mines were destroyed in different places of the national territory.

Another objective was to eliminate the risk to civilians, avoid civilian victims and make affected areas productive once again, thereby contributing to economic development. CIEN, worked on five operations fronts, the fifth front being created in June 2000 for the autonomous region of North Atlantic. To increase the work of Demining Operation Fronts a donation of three mine clearance machines was obtained from the Japanese government, by direct contact of the Commander-in-Chief, Army General Javier Alonso Carrión. This gave rise to a mechanical clearance platoon for mine destruction in areas easy to access.

In 2002, the demining of 10 bridges on international highways across Nicaragua was certified. Furthermore, the demining of areas in a highly dangerous situation located close to Mulukukú, Waspán and San Francisco Libre was prioritised. Out of 992 targets to be demined, the Army was able to comply with 61 per cent, leaving 379 tasks outstanding.

Progress of the National Humanitarian Demining Programme achieved by the Nicaraguan Army is highly positive. Recently the destruction of 944 items of ordnance

269. Buse (2001).

located in Waspán village, in the Autonomous Region of North Atlantic, can be added to these achievements.

Demining units in Nicaragua

Special Demining Unit of the Army Engineer Corps

Since 1989, the Army had been conducting demining operations in the Chontales and Chinandega departments. In 1993, with the support of the OAS, it created a Special Demining Unit headed by the Army Engineer Corps made up of five demining platoons who have received special training, equipment, and a methods and procedures manual for demining operations. It is worth noting that the deminers are, for the most part, civilians trained for demining operations.

Several fronts were set up for demining operations according to the territories to be demined. In the beginning, two fronts were created: one in Chinandega and another in Rivas and San Juan River with bilateral support from the Danish and U.K. governments. Successively, with the support of the OAS through the PADCA programme, three more fronts were organised; Front 3 in the Rama, which continues on the Honduran border, Front 4 in Madriz, which continues in Nueva Segovia, and Front 5 in the mining triangle. At present, the whole humanitarian demining programme is carried out with international assistance channelled through the PADCA programme.

The Engineer Corps has kept an accurate record of the mine victims among its deminers since it was created. From 1993 to late 2002, there were 33 victims of whom five were killed and the rest wounded. In the territories, reports are also gathered. In 2000, 14 reports were made, the most serious of them in Waspán where four girls found an anti-tank mine and started to heat it: two died and the other two were injured.

The Engineer Corps has a health division that provides comprehensive assistance to personnel in the operations area and, with the marking platoon, is responsible for marking the mined areas and informing the population about demining operations.

Army marking platoon

Within this period, the Army set up the marking platoon responsible for marking all mined territories. However, this task is not always effective because of (a) the lack of knowledge about mines buried by the resistance and (b) the displacement of mines as a result of natural phenomena, i.e. rain.

Finally, many mines explode as a result of actions of the local inhabitants, e.g. land burning and fence removal to allow cattle to cross. Sometimes accidents are provoked by rudimentary demining, especially on the borders, because people are no longer afraid of explosive devices. Sometimes they want to use the land and pay boys or ex-combatants to demine an area.

At the National Demining Commission, the subject of prevention is a key topic. However, full operational coordination among the various agencies involved in this task has not yet been attained. The agency in charge is the Education Ministry which

has not yet fulfilled its orientation and coordination role. Various organisations have been involved, starting with the Army itself.

In each operational front, commanders and the doctors and paramedics team must talk to the population. An educational campaign with the civilian population is developed in schools, markets, health centres, etc. The Army awareness team is teaching people to respect the warnings of the mined zones and gives information on the demining plans. At various times, this Army campaign has been funded bilaterally (Germany, Denmark, U.S.) and multilaterally (EU, OAS). There is a red telephone line (18.60) for immediate intervention to mark mined areas reported by the population. The platoon is also responsible for destroying stockpiled mines; on 29 August 2002, 18,313 mines that were still in a depot were destroyed in Xiloa (Managua).

Dog detachment

There is a dog detachment to certify demined areas.

Current operations

At present, there are five Operational Fronts in Nicaragua, with approximately 115 men in each front. This includes four demining platoons and logistics support (medics, paramedics, and ambulance). Details are included in the table below:

Table 1. Staff working in demining operations	
Deminer platoons	
Command staff	Officer (Chief of Platoon) Supervisor (national or international) Chief of squad
Deminers	Detector Prober Explosives expert
Logistics support (at 100m)	Deminers Relief team Nurse
Logistics support (vehicle parking)	Doctor Nurse Ambulance
Air support	Helicopter

Source: Operational Procedures for Humanitarian Demining in Central America, "Checking Tables".

Operational fronts

In total, 550 people have been employed in the demining process on the five fronts, including the marking detachment. Of these, 20 per cent are medical and logistics staff.²⁷⁰

270. Interview with Colonel Spiro Bassi Aguilar, Managua, September 2002.

For the purposes of this study, Operational Fronts 2 (in Abissinia) and 4 (at El Corzo, 4 kilometres from the Honduran border) were visited. The military officer in charge, a major and deputy chief, Captain Nelson Villegas, explained the working procedures and methodology.

Table 2. Operational Fronts of the Nicaraguan Army Engineer Corps (2002)

Operation front	Working sector
First Operation Front	The Peñas Blancas Massif, Matagalpa
Second Operation Front	Abissinia, Jinotega Department
Third Operation Front	Maniguas, successively heading to the north border
Fourth Operation Front	Jalapa, Nueva Segovia Department and Madriz
Fifth Operation Front	Mulukuku completed, deployment to Puerto Cabeza Autonomous Region of North Atlantic (RAAN) completed in October 2002.

Source: Interview with Colonel Espiro Basa Aguilar, Managua, September 2002.

Front 2 came into being in 1992. This Front was located on the North border, i.e. Somotillo. Operations were completed after having demined 96 kilometres on the border using Danish funding. Later, Front 2 moved to Abissinia, 215 kilometres from Managua, where operations have been conducted since April 2002.

Currently, mine clearance on Front 2 is performed via mechanical and manual techniques, as the machines cannot be used in the more rugged landscapes.

However, activities are carried out exclusively with manual techniques at Front 4. Neither front uses dogs although they do know how to use them. All five fronts each have four doctors and four paramedics. There are two ambulances in Front 2, donated by Denmark and Germany, and three in Front 4.

Command headquarters have clinics. Such clinics are equipped to tackle the first phases of any landmine accident. After the patient has been stabilised he is evacuated via aircraft. The Army also provides other assistance to the civilian population in the fronts. According to a local source: *"They have assisted us in setting up a medical care centre and have made an ambulance available for patients and pregnant women close to giving birth. Security in the area has improved thanks to their presence."*

Today, supervision in Front 2 is undertaken by national supervisors who are military personnel trained jointly with international MARMINCA supervisors, who monitor and certify the work of platoons. General procedures for internal quality assurance are based on a set of standards established by the IADB. This procedure is aimed at ensuring that the area is 100 per cent clear, after which it will be mapped showing the location of the certified area and a copy sent to MARMINCA. Finally, the size of the cleared area is defined through a table adapted from the IMAS.

Data collection and management of mine centres

Older information on minefields was filed in the Nicaraguan Army archives. These fields are located mainly on the border with Honduras, in addition to the existing

information on mined military targets such as bridges, power pylons, etc. This information was used as the baseline to start mine clearance operations.

However, information on minefields from the “Contra” areas was more inaccurate since records were incomplete, although during the peace building process they provided as much information on the location of minefields as they could recall.

Currently, all data and information are centrally managed at the IMSMA database established in Nicaragua under the framework of the OAS Demining Programme. The objective of this programme is to monitor the demining process from the various spheres where information is processed. The Engineer Corps report to the High Command and information is then addressed to IMSMA:

“People file the report with the Police and the Military headquarters. Those who have access to telephone lines address their reports directly to the Staff department of the Engineer Corps by calling telephone number 1860 where a 24 hour call centre is serviced by one of our officers whose responsibility is to receive such reports. Reports are sorted and followed up to the extent possible. The location is visited, the type of ordnance is confirmed and subsequently destroyed. For example: we received a report today at the Experimental Agricultural and Animal Breeding Research Centre... This information centre is considered a core element to us since it makes it possible for those involved to use standard information and data. Additionally, it is a work tool that anyone can feed in.”²⁷¹

Awareness

Empirical evidence shows that it was the Nicaraguan Army that initially undertook — indirectly — the first preventive activities through its minefield marking operations. But no national strategies for prevention or awareness were designed or implemented before 1996.

These began in 1996 through the initiative of the ICRC and UNICEF who jointly launched a programme called “Child to Child” in mine-affected departments. The campaign involved broad participation of local agents and was based on a cartoon where the main characters were Superman and Wonder Woman. But these materials were highly criticised and later withdrawn. Nonetheless, preventive campaigns continued to be implemented with the communities by placing higher emphasis on local capacities.

A second stage in prevention and awareness came with the campaign called “Peace and Development Builders” (*Promotores de Paz y Desarrollo*) developed by the Strategic Studies Centre. The Centre’s work involved the participation of the armed forces, combatants and former members of the “Contras”. This effort obtained the support of the local stakeholders.

The third and most recent effort was consolidated through the PADCA/OAS–UNICEF “Prevention Project against Mines and Explosive Ordnance”. The project is based on a communication and educational strategy aimed at reducing the number of mine-related accidents using community leaders and school children. This project focuses on prevention and is supported by the Engineer Corps operating in the affected regions. Some members of the Corps participate in the training. A pilot plan is currently

271. Interview with Captain Cristobal Ríos, Head of the Location Department, Managua, September 2002.

implemented in the Jalapa and San Fernando regions. A total of 104 reports had been filed by civilians in the areas in the first four months of the project.

Boys and girls visit the various affected communities accompanied by a teacher and a soldier to raise awareness about the presence of landmines. The materials used are pamphlets, games and storybooks, which are being currently updated. Operations Front 4 plays an active role in this effort. In Abissinia, Front 2, the Army Engineer Corps raises awareness jointly with the coordination bodies and schools, the Mayor's Office and other community leaders. Teaching materials are furnished by PADCA/OAS. The "Child to Child" methodology is applied and demonstration workshops with adults are held to make them aware about the type of mines that they may find in the fields, together with posters that contain dummy natural size mines as a visual aid for children and adults to become familiar with the type of ordnance they may encounter.

Mine action coordination and quality assurance

Of the 550 people involved in demining operations, a fifth of the total are medical and logistics support staff. There is a mine detection detachment that operates with resources donated by Japan through the Ministry of Transport. Front 2 is the only front among those visited that uses the mechanical demining equipment.

MARMICA certifies clearance efforts and monitors the national supervisors trained for demining operations. It also organises and regulates all activities carried by international supervisors who in turn supervise the actual operations. A "check list" develops a Standard Operational Procedure that prompts reading of other materials that make up the demining integrated procedure: medical evacuation, mine destruction, communication operations, etc.

Expenses allocated to mine action

There is no specific budgetary provision in the national budget for demining. However, some operations are funded by the Army's budget, for example provisions and supplies for the Demining Operation Front platoons. Each member of a platoon is paid a salary by the Army plus some additional benefits paid through funds contributed by countries such as Denmark and the OAS member countries.

These are considered as counterpart funds. Colonel Spiro Bassi states: "No accurate calculation of the actual sums involved has been made, but here we are dealing with personnel who receive a salary paid by the State, military facilities, military repair work, vehicles, communication media, clothing, military hospital services, health centre services close to military units, support to the Air Force, movement and transport of the wounded, weaponry for field protection, leadership and command for the demining operations".²⁷²

The following section describes the main donors contributing to the Nicaraguan Demining Plan:

- Front 1 and Front 2 are financed by Denmark until 2005, by when it is considered that the demining operations should be completed;

272. Interview with Colonel Spiro Bassi Aguilar, Managua, September 2002.

- Front 3 is funded by Sweden, through PADCA, until 2005;
- Front 4, is pending a covenant with the EU, through PADCA, in order to secure funding for the next few years;
- Front 5, funded by the U.S. through PADCA. There is an Agreement which is approved annually by the U.S. Congress, whereby funding is foreseen until 2005;
- The Marking detachment has so far been funded by the U.S., although this commitment expires in 2003.

It is suggested by some that bilateral cooperation is smoother as concerns the supply of equipment and materials used in the demining work. Likewise, some remarks were made concerning the fact that the Nicaraguan Army is technically capable of assuming directly the demining operations. On the other hand, funding continues to be indispensable to be able to continue the demining tasks.

Table 3. Comparative table of mines certified as destroyed in 2002

Month	DOF n° 1	DOF n° 2	DOF n° 3	DOF n° 4	DOF n° 5
January	80	10	132	7	43
February	68	3	219	10	360
March	22	38	117	58	65
April	107	232	248	569	175
May	49	342	303	1,483	226
June	126	82	74	299	438
July	136	52	101	42	601
August	59	43	1	14	n/t
Total	647	803	1,194	2,482	1,608
Monthly average	202	263	139	269	246
% compliance	30	17	0.78	5.21	-
Planned for 2002	2,423	3,160	1,671	3,228	2,935
% annual compliance	26.70	25.38	71.45	76.98	54.79

Source: Nicaraguan Army Engineer Corps

The role of visiting military forces in mine clearance

Background

The IADB was the agency responsible for organising the international supervisor task force in the four countries initially participating in the programme: Costa Rica, Guatemala, Honduras and Nicaragua. The mission was initially called MARMHON in 1993. Subsequently the mission moved to Nicaragua and was named MARMINCA. Costa Rica was declared "mine safe" in December 2002 and was dropped from the programme. The IADB continues to be in charge of the supervisor task force in the three remaining countries. The main functions of its mission are:

- Training for deminers and supervisors;
- Provision of technical assistance in mine clearance and use of explosives;
- Supervision of demining operations in the sectors covered by the programme through Certification Minutes attesting that the removal work has been

performed as per the methodology and techniques set out by the international standards on humanitarian demining.²⁷³

Military hierarchy in the mission

Colonel Zambra confirms that “the Mission is made up by a commander whose rank is Colonel, a personnel and logistics officer who must be either a major or a captain, a personnel officer who must be a major or a captain, coordination of the various countries in the sectors who must be a major or a captain (in Nicaragua each Operations Front must have a coordinator) and the remaining portion of the military personnel are captains or sergeants who act as international supervisors. Currently we are 30 supervisors”.²⁷⁴

All mission members are from the military forces (Army, Navy or National Guard) of the following countries: Bolivia (3), Brazil (10), Colombia (3), Guatemala (2), Honduras (4), Salvador (4), and Venezuela (4).

OAS – IADB coordination

PADCA was created by the OAS in 1991 at the request of Central American countries where landmines had been laid. Since 1995, the Unit for the Promotion of Democracy (*Unidad para la Promoción de la Democracia*) has been responsible for coordinating action, with the collaboration of the Inter-American Defense Board.

The IADB is responsible for organising the international supervisor task force. It acts at the same time as an advisory body to the OAS. The IADB has a staff and its own internal military structure to which MARMINCA, the Central American demining section, reports. The relationship between PADCA and MARMINCA is mainly financial since it involves funding of the demining activities in Nicaragua.

Coordination between MARMINCA and the Army

Coordination between the Mission and the Army takes place through meetings held by the staff of the Nicaraguan Army, the Staff Commander in Chief of MARMINCA and the Army Engineer Corps Commander. Policies and work targets are set in the meetings and coordinated by their subordinates.

Coordination between MARMINCA and the heads of operations of the various Fronts takes place directly through implementation of the by-laws that govern the humanitarian demining or the check table and the standard operational and administrative procedures. To this date, there have been no problems between the international supervisors and army members.

MARMINCA does not receive any orders from local military command. There is just a coordination relationship among them because MARMINCA has its own military hierarchy, its own disciplinary rules and its own demining standards. For example, an international supervisor has the authority to bring demining work to a stop.

273. “An exception is those fields where mines were laid years ago and which have suffered changes due to atmospheric problems and man-made changes. We cannot certify that there are no mines left behind after they have been demined, there may be more mines, however we do certify that demining has been accomplished in full compliance with the international standards and regulations.” Interview with Head of MARMINCA, Managua, 31 October 2002.

274. Interview with Head of MARMINCA, Managua, 31 October 2002.

Assessment by a commander may be different because he is pressed by the need to meet targets. In this regard, international supervision is essential because the assessment required is made from a neutral military standpoint.

At Fronts supervised by MARMINCA and PADCA, national supervision is not allowed. At Fronts 1 & 2, funded by other countries, there is national supervision under international monitoring. Demining activities in Fronts 1 and 2 have an organisational structure that involves one chief and six national supervisors monitored by two international supervisors. Denmark, for example, has asked the IADB, through its representative, to consider having national supervisors carry out the supervision. MARMINCA has permitted national supervision under international monitoring.²⁷⁵

Technical contribution of MARMINCA's international supervision

MARMINCA's chief is said to be responsible for programming, managing and training international supervisors, demining units' commanders and individual deminers. One important function of the MARMINCA's chief is to see that the information provided is of high quality. The Director-General of the IADB's staff coordinates training support for the armed forces from contributing countries, so as to build on the existing capacity.²⁷⁶

The following is an outline of some of the courses given by MARMINCA:

Basic course for deminers. This course is offered to all personnel members participating in the clearance operations. Supervision is provided by PADCA and no national supervision takes place. As required by MARMINCA, national supervision must be monitored internationally so as to comply with the international standards. Regarding technical contribution, two training courses have been given to national supervisors on device deactivating procedures, mined fields and paths, marking ordnance deactivating procedures, eight-hour first aid training, basic communication procedures and medical evacuation requests.

Advanced course for deminers. This is a two-week course for deminers chosen from the demining teams, members of the unit corps and international supervisors having specialised training in safe mine and ammunition deactivation procedures and higher power device detonation without placing the local population or fauna at risk. The instruction is given by specialised technicians from the contributing countries assisted by international supervisors. The subjects covered are advanced detonation of explosives, UXO detection techniques, and landmine detection in roads and trails.

Training courses for mine detection unit commanders. This is a two-week course teaching how to lead mine and UXO removal operations to all officers, non-commissioned officers, deminers, platoons, unit commanders and other assistants who take part in operations or in clerical and support activities. The main instructors are international supervisors and also members of the training teams from contributing countries. The subjects dealt with are: mines characteristics and identification, basic outline of the principles that govern ordnance detonation, terrestrial navigation and cartography techniques (including use of GPS — Global Positioning System), mine marking and mapping procedures, demining procedures (detection, probes, identification, placement of explosive charges and procedures for detonating wires),

²⁷⁵. *Ibid.*

²⁷⁶. Inter-American Defense Board Newsletter, available at: www.jid.org/programs/demining

safety standards, check list for international supervisors, communication procedures, administrative and logistics procedures.

General training course for supervisors. This is a one-week course to harmonise the basic knowledge of all international supervisors who teach specialised demining techniques or have experience on the matter, for purposes of ensuring full and strict compliance with IADB and international demining standards. The instructors team includes MARMINCA members who have previous experience in the OAS demining programme and other demining experts or expert instructors in other relevant disciplines. Subjects covered include: basic outline of the principles governing ordnance detonation, terrestrial navigation and cartography techniques (GPS), detailed mine marking and mapping, demining procedures, safety standards, checklist for international supervisors, communication procedures, administrative and logistic procedures, first-aid training, guidelines of the OAS-IADB Demining Assistance Programme, including organisation and programme operability knowledge.

According to Colonel Zambrana, there are 30 national supervisors. The demining activities in Fronts 1 and 2 have an organisational structure that involves one chief and six national supervisors who are monitored by two international supervisors. Attendance in the training, which lasts for two weeks, is mandatory. In the training, international supervisors act as the main trainers and are assisted by the demining corps, training teams and the experience of contributing countries. The subjects are demining equipment, operation and maintenance, mine and other ordnance identification, mine detection by use of visual media and mine detection by use of equipment and probes.

Medical support for clearing operations

One of the key aspects of the initial demining operations is the safety of individuals involved in removal and clearing tasks. The programme sees that the medical care provided is of the highest quality and also that medical evacuation be secured. Countries receiving support for demining actions are responsible for ensuring medical support and evacuation. *“Given the trauma involved in the wounds associated with the accidents caused by the demining operations, MARMINCA’s supervisors abide strictly by the rules concerning medical evacuation. Medical evacuation support is planned and implemented in conforming to the one-hour standard for injured personnel to be transported from the site where the injury occurred to a surgical trauma treatment centre. Under no circumstances will a two-hour-long transport be allowed. This rule is verified via periodical tests of the comprehensive medical evacuation system.”*²⁷⁹

With this aim in mind, *“Routine treatment for the demining unit’s personnel is provided for ordinary illnesses or injuries. The receiving country is responsible for providing routine medical care. International supervisors may receive standard medical care in a clinic, hospital or by the physician of their choice in the receiving country. Emergency medical treatment involves three levels of care ranging up to the seriously ill or wounded/injured”*.²⁸⁰

Field inspection in demined locations

Table 4 gives a general chronology of mine clearance operations implemented in Nicaragua.

277. *Ibid.*

278. *Ibid.*

Table 4. Chronology of landmine destructions in Nicaragua.

Destr. no.	Place	Date	Number	Observers
1	"Andrés Castro" Sergeants School, Managua	04/1999	5,000	With the participation of the OAS Secretary-General Meeting on Demining in Central America.
2	"Andrés Castro" Sergeants School, Managua	08/1999	5,000	With the participation of the OAS Secretary General
3	"Andrés Castro" Sergeants School, Managua	12/1999	10,000	PADCA and the OAS Secretary-General invited as special guests
4	ENABI, Cóndega, Estelí	02/2000	10,000	Canada certifies under the framework of the OAS Programme
5	ENABI, Cóndega, Estelí	02/2000	10,000	OAS certifies destruction
6	ENABI, Cóndega, Estelí	03/2000	15,000	OAS certifies and endorses the process
7	ENABI, Cóndega, Estelí	06/2000	15,000	OAS certifies and endorses the process
8	"Andrés Castro" Sergeants School, Managua	09/2000	20,000	OAS certifies and endorses the process
9	Nicaraguan Army Base	03/2002	15,000	OAS certifies and endorses the Villanueva - Chinandega process
10	"Andrés Castro", Sergeants School Managua	06/2002	10,000	OAS certifies and endorses the process

Source: Nicaraguan Army Engineer Corps

Table 5 provides data on mine clearance in Nicaragua as well as data concerning observation and certification of the mine detonation actions, as by the IADB.

Table 5. Mines destroyed: IADB data

Country	Destroyed mines	UXO	Swept areas(m ²)	Date
Costa Rica	334	4,761	131,903.0	10 July 2002
Guatemala	321	1,966	8,259.0	10 July 2002
Honduras	2,265	56,033	417,685.0	10 July 2002
Nicaragua	17,172	260,730	77,378.0	10 July 2002
Totals	20,090	323,490	1,336,225.0	

Source: Inter-American Defense Board Newsletter (www.jid.org/programs/demining)

A progress report on the demining operations from 1 January to 31 August 2002 confirms the above data. This is set out in Table 6 below.

On 29 August 2002, the Nicaraguan Army declared that the country was free of stockpiled mines after 18,313 landmines were destroyed that day. A total of 133,331 stockpiled mines had been destroyed in 11 operations over a four-year period.

Table 6. Progress in the demining operations

Nº	Denomination	Annual planning	Targets met to 31 August 2002	Progress %
1	Bordering kilometres to be demined in the Northern border	73.5.	nd	nd
	DOF 1	31.0		
	DOF 3	9.0	40.0	129.0
	DOF 4	21.5		
	DOF 5	12.0	9	41.86
2	Special targets	2	1	50
3	Demining of towns, settlements and cooperatives	5	3	60
4	Bordering mined fields and groups. Northern Border	105		
	DOF 1 (Chinandega and Madriz)	41	41	100
	DOF 3	8	-	-
	DOF 4 (Nueva Segovia Depart.)	43	21	48.83
	DOF 5	13	-	-
5	Internal targets to be demined	10	-	-
	Bridges	7		
	• To be demined(RAAN)	2		
	• Certify (mechanised) DBM	5		
	• ACI A TAT(Matagalpa and Jinotega)	192		
	• TAT to be demined (DOF no. 5 en RAAN)	2		220
6	Destroyed mines	-	2,676	
	Destroyed in operations	-	1,798	
	Destroyed by other causes	-	3,482	
	Certified non-existence	14,917	7,596	53.33
	Total Mines (Annual Plan2002)	-	773	
	Destroyed mines beyond Plan			

Source: Nicaraguan Army Engineer Corps

The last collective destruction took place on the occasion of a “hemispheric” meeting and was witnessed by the President of the Republic, Engineer Enrique Bolaños, Chief of the Army, General Javier Carrión, Defense Minister, José Adán Guerra and other high OAS representatives, ambassadors from donor countries and representatives from the National Demining Commission —*in plenum*.

Data collection and information management

Information is channelled via the IMSMA established in Nicaragua under the framework of the OAS Demining Programme. Communities have become key informants for locating landmines. This information is gathered by each Front and is subsequently furnished to IMSMA.

Mine awareness

In mine awareness, all Fronts have played a key role in making the various affected communities aware of the presence and danger of mines. The contribution by the civilian population and local coordination levels attained by PADCA/OAS have been remarkable.

Additionally, since 2000, efforts have been made to standardise prevention terminology and other related subjects in close coordination with the National Demining Commission, which is responsible for certifying the materials prepared on the subject. During this year, the materials for three campaigns have been certified: OAS-UNICEF, *Campaña de Acción Médica Cristiana* (Christian Medical Action Campaign) and an ICRC campaign. There are three agencies working on prevention campaigns: the Joint Committee of the Madriz Disabled (with the support of PDCA), the OAS-UNICEF campaign (located this year in San Fernando and Jalapa), and the ICRC campaign, which, as stated above, has certified the materials to be used in other areas to be demined.

Quality assurance of the Fronts²⁷⁹

The Fronts' quality assurance is ensured through coordination between the Nicaraguan Army and MARMINCA. In order to ensure full compliance with the international standards, support and oversight of supplies (including storage), maintenance, transport and facilities are required.

Assessment

According to the Embassy of Denmark for Central America, *"Danish cooperation has tackled two phases, the first has already been completed and the second opened this year with a US\$6 million contribution for a four-year period. Danish aid focuses on specific demining operations carried by the Nicaraguan Army, no assistance is provided to victims, as this is done through an OAS programme. Danish funds help finance demining operations in Fronts no 1 and 2"*.²⁸⁰

The Army is responsible for managing the funds and submits a quarterly report to the Embassy. After each report, a meeting is held where the Army explains the progress attained and also the action plan together with the budget and the sums requested for the following three months. As previously mentioned, an outside audit is conducted every six months. The Army is responsible for implementing the project.

An assessment by Denmark found no problems concerning progress in demining operations. The lag is only five per cent compared with the plan. This percentage can be explained by the rugged geography where the Army must work. Cooperation with the Army is long-term and makes it feasible to expand demining actions and ensure that work can be accomplished even under extreme circumstances.

Currently the Danish cooperation is conducting a psycho-social, socio-economic and environmental impact study of the National Demining Programme.²⁸¹ Concerning psycho-social aspects:²⁸²

- The main impact concerns the preservation of the physical and psychic integrity of individuals. People express the high value they place on demining for their lives to be preserved as well as their physical integrity and emotional stability.
- Gradual recovery of the ability to move freely and securely. Recovery is only partial. People still feel fearful and uncertain that all mines have been eliminated.

279. *Ibid.*

280. Interview with Counsellor Minister of the Royal Embassy of Denmark for Central America, Wagn Winkel, Managua, August 2002, and Danish Cooperation (2002).

281. Danish Cooperation (2002).

282. *Ibid.*

These feelings should disappear over time.

- Return to the place of origin of the affected population. Although safe conditions exist, there are many constraints that prevent them from returning, including lack of economic resources to rebuild their homes.
- Effective restitution of land ownership, use and exploitation to old owners. Generally speaking, land has been returned to old owners. There are some specific cases where ownership conflicts exist.
- Generalised access to basic utilities. Minor impact since utility provision was and still is deficient or non-existent.

Socio-economic aspects

- The security of citizens has been enhanced in demined areas. However, economic re-insertion of the mine-impacted population is hindered by the lack of sufficient institutional support. There is no systematic ongoing attention after initial aid and assistance. The scarce support received has been contributed by international organisations, NGOs and religious institutions.
- Population resettlement. Social progress in terms of spontaneous resettlement by the displaced population driven away by mines.
- Support for cattle breeding farms in the demined areas.
- Insufficient institutional support for the economic reactivation of the population affected by mine planting. Positive impact on farming and animal breeding production. However, the population lacks the resources needed in order to develop productive use in their land. Farmers have benefited only partially. Economic reactivation has not been sufficiently strong due to the economic crisis facing the country. More comprehensive institutional support is required.
- Low impact on the promotion of tourism. It was not and is still being not promoted.
- Rehabilitation of the economic and social infrastructure. Impact has been minor during the current phase because demining had already taken place during the first phase.

Environmental aspects

- Mine contaminated soils were cleared.
- Wild flora protection was enhanced.
- Wild fauna threats were eradicated

Other positive impacts

- Links between the Army and the beneficiary population were strengthened. Inhabitants have expressed gratitude for the mine removal operations.

No further information could be obtained concerning the OAS assessment missions.

The role of civil society in demining operations

***Joint Committee of the Madriz Disabled*²⁸³**

The Joint Committee of the Madriz Disabled believes that the demining process in Nicaragua has involved active participation by different stakeholders of the

283. Interview Uriel Carazo, Joint Committee of the Madriz Disabled, Somoto, Department of Madriz, August 2002.

Nicaraguan society. Hence, participation by the state agencies, civil society and international cooperation agencies has been active and the results attained are highly positive. *“Setting up of the National Demining Commission has been a key factor for the demining work and has also brought about positive psychological impact in terms of national reconciliation and a peace-building culture.”*²⁸⁴

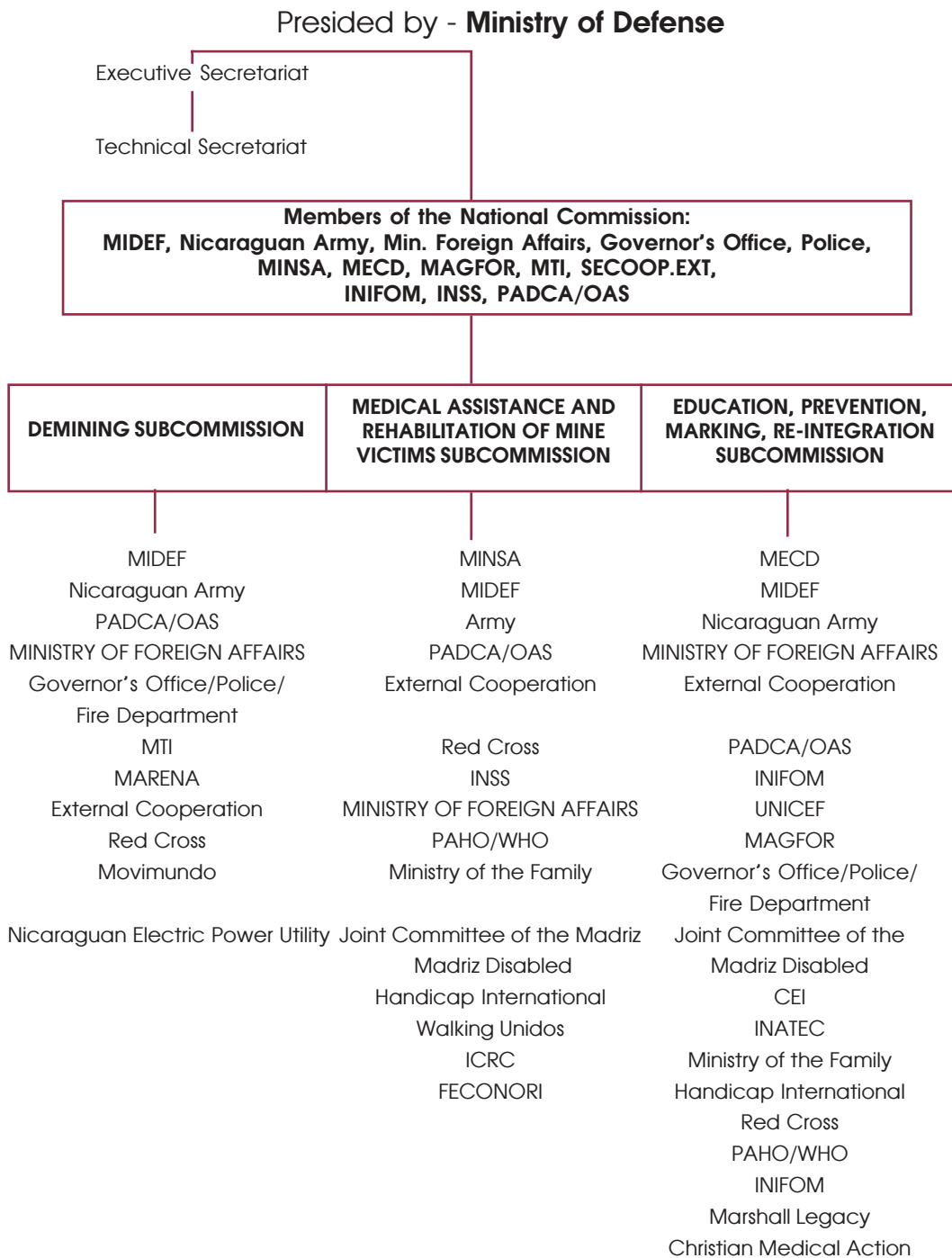
The Joint Committee has supported demining activities. One of the first contributions was the holding of Departmental fora on landmines that resulted in a national forum held in Managua in 2001. It has also implemented awareness campaigns in seven municipalities of Madriz and two in Nueva Segovia. These campaigns include messages for affected communities. Campaigns have also been implemented in 49 rural schools, involving radio broadcasting including a survey on target audience. As a result, 4,976 people and 3,393 school children affected have been trained.

Support for the mine-injured population through the provision of 84 prostheses, three tricycles, 34 wheel chairs and 43 canes and crutches has been coordinated with the OAS, the ICRC, and FBC/FENIX, a Canadian NGO. Members of the Joint Committee affected by mines have attended professional training workshops in Somoto, where a carpentry shop has been established and also in Telpaneca where a bakery shop is operating. These shops receive financial support from PAHO and operate under INATEC’s leadership. Thirty-two individuals, eight of whom were affected by mines in Madriz, are currently receiving training on several productive activities through funding provided by the OAS and implemented by INATEC.

284. *Ibid.*

Annex 1.

The structure of the National Demining Commission



Bibliography

General

- DAC (Development Assistance Committee/OECD) (1998)
Civilian and Military Means of Providing and Supporting Humanitarian Assistance during Conflict, Conflict Peace and Development Cooperation Report No. 1, OECD, Paris.
- Danida (2001),
Policy Paper on Denmark's Support to Humanitarian Mine Action, Danish Ministry of Foreign Affairs, Copenhagen, August.
- E-MINE
www.mineaction.org
- Government of France, Ministry of Defence (undated)
French action in the fight against anti-personnel mines, Délégation à l'Information et à la Communication de la Défense, Paris.
- Landmine Monitor (International Campaign to Ban Landmines) (2000)
Landmine Monitor Report 2000: Toward a Mine-Free World, Human Rights Watch, August.
- ____ (2001)
Landmine Monitor Report 2001: Toward a Mine-Free World, Human Rights Watch, August.
- ____ (2002)
Landmine Monitor Report 2002: Toward a Mine-Free World, Human Rights Watch, August.
- Mine Action Information Center (2001)
Military Contributions to Humanitarian Demining, Global Conference Proceedings, U.S.
- Government of the United Kingdom (nd)
Peace Support Operations, Joint Warfare Publication 3-50, U.K.
- ____ (2002a)
UK Demining Seminar for Outreach Countries, April.
- ____ (2002b)
UK EOD Training Course Programmes for Foreign and Commonwealth Countries.

Bosnia and Herzegovina case study

- Bosnia and Herzegovina Commission for Demining (1997?)
National Mine Action Plan 1998, mimeo.
- ____ (1998?)
Work Plan 1999 Incorporating: Bosnia & Herzegovina Mine Action Centre, Federation of Bosnia & Herzegovina Mine Action Centre, Republika Srpska Mine Action Centre, mimeo.
- Bosnia and Herzegovina Mine Action Centre (2002)
Demining Strategy for Bosnia and Herzegovina, Draft, BH-MAC, Sarajevo.
- ____ (2001a)
Bosnia and Herzegovina: Mine Action 2001, BH-MAC, Sarajevo.
- ____ (2001b)
Report on Mine Action in Bosnia and Herzegovina: August 2001, BH-MAC, Sarajevo.
- Council of Ministers of Bosnia and Herzegovina (2001)
Demining Law in Bosnia and Herzegovina, Draft, August 2001, Sarajevo.
- Dahrendorf, N. and H. Balian (1999)
The Limits and Scope for the Use of Development Assistance Incentives and Disincentives for Influencing Conflict Situations – Case Study: Bosnia and Herzegovina, Development Assistance Committee, Informal Task Force on Conflict, Peace and Development Cooperation, OECD, Paris.
- Eriksson, P. (2001)
 “Civil-Military Coordination in Peace Support Operations – An Impossible Necessity?”, *Journal of Humanitarian Assistance*, 16 April 2001, available at www.jha.ac.
- European Commission and World Bank (1999)
Bosnia and Herzegovina – 1996-98 Lessons and Accomplishments: Review of the Priority Reconstruction and Recovery Program and Looking Ahead Towards Sustainable Economic Development, available from the World Bank - Bosnia website.
- Federal Mine Action Centre (2001)
Annual Bulletin: Mine Action in Federation of Bosnia and Herzegovina, Federal MAC, Sarajevo.
- ____ (2002)
Prioritisation of Demining in F BiH, Federal MAC, Sarajevo.
- Fox, W. and C. Wallich (1997)
Fiscal Federalism in Bosnia-Herzegovina: The Dayton Challenge, Policy Research Working Paper no. 1714, World Bank, Washington, DC.
- General Accounting Office (1996a)
Bosnia: Costs Are Uncertain but Seem Likely to Exceed DOD’s Estimates, GAO/NSIAD-96-120BR March 1996.
- ____ (1996b)
Contingency Operations: DOD’s Reported Costs Contain Significant Inaccuracies, GAO/NSIAD-96-115 Contingency Operations, May 1996.
- ____ (1997a)
U.N. Peacekeeping: Issues Relating to Effectiveness, Cost, and Reform, GAO/T-NSIAD-97-139, 9 April 1997.
- ____ (1997b)
Bosnia Peace Operation: Progress Toward Achieving the Dayton Agreement’s Goals, GAO/NSIAD-97-132 Bosnia Peace Operation, May 1997.

- ____ (1997c)
Bosnia: Cost Estimating Has Improved, but Operational Changes Will Affect Current Estimates, GAO/NSIAD-97-183 Bosnia, March 1996.
- ____ (1998a)
Bosnia Peace Operation: Pace of Implementing Dayton Accelerated As International Involvement Increased, GAO/NSIAD-98-138, June 1998.
- ____ (1998b)
Bosnia Peace Operation: Mission, Structure, and Transition Strategy of NATO's Stabilisation Force, GAO/NSIAD-99-19 Bosnia Peace Operation, October 1998.
- ____ (2000a)
Bosnia Peace Operation: Crime and Corruption Threaten Successful Implementation of the Dayton Peace Agreement, GAO/NSIAD-00-156, July.
- ____ (2000b)
Testimony – Bosnia Peace Operation: Crime and Corruption Threaten Successful Implementation of the Dayton Peace Agreement, GAO/T-NSIAD-00-219. 19 July 2000.
- Gordon, S. (2001)
“Understanding the Priorities for Civil-Military Cooperation (CIMIC)”, *Journal of Humanitarian Assistance*, 16 April 2001, available at www.jha.ac.
- Mitchell, S. (n.d.)
Death, Disability, Displaced Persons and Development: The Case of Landmines in Bosnia and Herzegovina, unpublished manuscript.
- Nordhaus, W. (2002)
“Iraq: The Economic Consequences of War”, *The New York Review of Books*, 5 December 2002 (available at www.nybooks.com/articles/15850).
- ____ (November 2002)
The Economic Consequences of a War with Iraq, available from www.econ.yale.edu/~nordhaus/homepage/homepage.htm
- Office of the High Representative (various)
Report by the High Representative for Implementation of the Peace Agreement to The Secretary-General of the United Nations, available at www.ohr.int/reports, accessed on 1 May 2001.
- Peace Implementation Council (various)
PIC Conclusions, available at www.ohr.int/reports/
- RONCO Consulting Corporation (2002a)
Humanitarian Land Clearance: Bosnia and Herzegovina (BiH) Mine Action Program, available at www.roncoconsulting.com/land_mine_clearance/, accessed on 9 March 2002.
- ____ (2002b)
Demining Activities: Bosnia, available at www.roncoconsulting.com/demining_activities, accessed on 9 March 2002.
- SFOR (various)
SFOR Informer Online, available at: www.nato.int/sfor/engineers/mines/mines.htm
- UN Mine Action Centre (1998)
Mine Action Plan for Sarajevo Canton, mimeo.
- UNDP, UNDP-Office in Bosnia and Herzegovina, and the Bosnia and Herzegovina Mine Action Centre (1999)
Assistance to the Mine Action Programme of Bosnia & Herzegovina: Report of the Tri-Partite Review (1 July 1998 – 31 March 1999), Project Number BiH/98/Q-/-/22R/01, mimeo.

- UNDP Office in Bosnia and Herzegovina (2000)
Terminal Report: Assistance to the Mine Action Programme of BiH, draft of 6 March 2000, mimeo.
- U.S. Department of Defense (1997)
Report to the Secretary of Defense on the Status of the DoD's Implementation of the US Policy on Anti-Personnel Landmines, Office of the Under Secretary of Defense for Policy, May 1997.
- _____ (1999?)
The Demining Support System: Worldwide Analysis and Assessment.
- U.S. Department of Defense and Department of State (2000)
Foreign Military Training and DoD Engagement Activities of Interest in Fiscal years 1999 and 2000, Volume I, Joint Report to Congress, 1 March 2000. Available at www.state.gov/www/global/arms/fmtrain/cta_eur_alb2est.html
- Van Ree, B., E. Langer, A. Sierra, and Col. J. Lesperance (1999)
Review of the Organisational Structure for Mine Action in Bosnia and Herzegovina: Report of the Review Working Group, mimeo.
- World Bank (1996)
Technical Annex: Bosnia and Herzegovina Emergency Landmines Clearance Project, Report No. T-6933-NIH, World Bank, Washington DC .
- _____ (1998)
The World Bank's Experience with Post-conflict Reconstruction Volume II: Bosnia and Herzegovina Case Study, Report No. 17769, Operations Evaluation Department, World Bank, Washington DC.
- _____ (2000a)
Country Assistance Strategy of the World Bank Group for Bosnia and Herzegovina, Southeast Europe Country Unit, Europe and Central Asia Region, World Bank, Washington DC.
- _____ (2000b)
Project Appraisal Document: Pilot Emergency Labor Redeployment Project, Bosnia and Herzegovina Country Unit, World Bank, Washington D.C.
- _____ (2001)
Emergency Landmines Clearance Project, Update on the Reconstruction of Bosnia and Herzegovina, mimeo.
- World Bank for the CRPC (2000).
World Bank Survey: Draft Report, February 2000, accessed at www.crpc.org.ba/new/en/html/surveys/Surveys.htm

Constitutional documents (from the OHR website: www.ohr.int)

- Constitution of Bosnia and Herzegovina*, 14 December 1995, Annex 4 to the General Framework Agreement.
- Constitution of the Federation of Bosnia and Herzegovina*, 1/94, 13/97.
- Constitution of Republika Srpska*.

Key agreements relating to the Mine Action Programme (all mimeo)

- Memorandum of Understanding of the Council of Ministers Regarding the Demining Commission of Bosnia and Herzegovina*, 30 October 1997.
- Demining in Bosnia Herzegovina after 1 January 98 – Agreed Principles (Annex 1 to the above MOU)*.

Agreement between the Federation of Bosnia and Herzegovina and the Republika Srpska on Cooperation in the Field of Mine Action (not dated but coming into effect on 1 January 1998).

Decision on the Establishment of the Bosnia and Herzegovina Commission for Demining, The Council of Ministers of Bosnia and Herzegovina (date?).

Decision on the Establishment of the Bosnia and Herzegovina Mine Action Centre (BHMIC), The Council of Ministers of Bosnia and Herzegovina (date?).

Decree on the Establishment of the Fed MAC (version 2.4.98).

Decision on Establishment of the Republika Srpska Mine Action Centre, Government of the Republika Srpska, 23 April 1998.

Memorandum of Agreement between the Government of the Republika Srpska, Ministry of Defence; The Government of the Federation of Bosnia and Herzegovina, Ministry of Defence; The Commanders of the Army of the Republika Srpska and the Army of the Federation of Bosnia and Herzegovina; The Bosnia and Herzegovina Commission for Demining; the Federation of Bosnia and Herzegovina Mine Action Centre; the Republika Srpska Mine Action Centre; and the Multi National Stabilisation Force Concerning the Entity Army Demining Schools and the Integration and Operation of the Entity Armies within the National Demining Plan (not dated but signed 6 July 1998, with Annex A added and signed at some later date by the Ministries of Defence and the Commanders of the VRS and ABiH).

Cambodia case study

CMAC (Cambodian Mine Action Centre) (2000)

Progress and Productivity Report, Phnom Penh.

_____ (2001)

Annual Report 2001, Phnom Penh.

_____ (2002a)

Six-month Progress Report, Phnom Penh, January-June 2001.

_____ (2002b)

Monthly Operational Productivity Report, Phnom Penh, June 2002.

_____ (2002c)

Integrated Work Plan (Revised Version), 1 July 2002, Phnom Penh.

_____ (2002d)

Five-Year Strategic Plan (2003-2007), Phnom Penh.

_____ (2002e)

National Mine/UXO Contamination, Demining and Mine Incident Statistics, Phnom Penh, September.

Geospatial Inc. (2002)

Cambodia National Level 1 Survey Project, Phnom Penh.

Handicap International – Belgium (2001)

Spontaneous Demining Initiatives, January.

Handicap International Belgium & the Cambodian Red Cross (2000)

Mine/UXO Victim Information System.

UNDHA (1997)

Cambodia: The Development of Indigenous Mine Action Capacity, UN Department for Humanitarian Affairs, New York.

UNDP (1995)

In-depth Evaluation Mission, December 1995, Phnom Penh.

_____ (1999)

Capacity Development Review, Phnom Penh.

Documents/Agreements:

Decree on the Establishment of the Cambodian Mine Action and Victim Assistance Authority, September 2000

Sub-Decree: Organization and Functioning of The Cambodian Mine Action and Victim Assistance Authority, August 2001.

Decree on the Legal Status of Cambodian Mine Action Centre, August 2001.

Law on the Prohibition of the Use of all Anti-Personnel Mines, April 1999.

Report to the U.N. Secretary-General on the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines, June 2000, June 2001.

Report on the Protocol on the Prohibitions or Restrictions on the Use of Mines, Booby-traps and other Devices, December 2000.

Ethiopia case study

UNMEE (United Nations Mission to Ethiopia and Eritrea) (2002)

Fact Sheet, available at www.un.org/Depts/dpko/unmee/unmeeF.htm.

United Nations (2000)

Report of the UN Secretary-General to the Security Council, UN Doc. S/2000/643, 30 June 2000.

United Nations Security Council

Resolution 1430 (2000), 14 August 2002.

Lebanon case study

GICHD (2002)

Mine Awareness in Lebanon – Review, Analysis and Assessment, Occasional Paper, GICHD, Geneva.

NDO (National Demining Office) (2001)

Strategic Mine Action Plan, 2001-2006, NDO, Beirut.

UNIFIL (2001)

Mine Action Plan in South Lebanon, February.

UNMACC (2001)

Southern Lebanon Work Plan, 1 July-31 December.

UNMAS (1999)

Lebanon Assessment Mission Report, UNMAS, New York, 7 June.

_____ (2000)

The Landmine/UXO Problem in South Lebanon, Preliminary UNMAS Assessment Report, 6 June.

UNMAS/UNDP (2001)

Outline Strategy for UN Assistance to Mine Action in Lebanon, Joint UNMAS/UNDP Mission Report, New York.

U.S. Department of State (2000)
Lebanon Management Assistance Visit Report, 3-10 June.

Nicaragua case study

- Buse, M. (2001)
"Field Trip with MARMINCA", *Journal of Mine Action*, Vol. 5, No. 2, Mine Action Information Center, James Madison University, Harrisonburg, Va.
- D'Angelo A., and S. Cansino (2001)
Humanitarian Demining, Nicaragua Case Study, Managua, March.
- Danish Cooperation (2002)
Progress Report of the Psychosocial, Economic and Environmental Impact Study of the Nicaraguan National Demining Programme, Managua, August.
- National Demining Commission (2001)
Task Memoirs 2001, Managua.
- Nicaraguan Ministry of Defense (2001)
Task Memoirs 2001, Managua.
- Inter-American Defense Board (nd)
News Bulletin, accessed at www.jid.org/programs/demining.

Websites consulted

www.oas.org/CSH/spanish/desminfo3306.htm
www.upd.oas.org/demining/demsoan.htm
www.jid.org/programs/demining/logistic.asp

Glossary of terms and acronyms

A	BiH	Federation Army (principally Bosniak)
ACH		Agreement on Cessation of Hostilities (Ethiopia)
ASEAN		Association of South-East Asian Nations
BiH		Bosnia and Herzegovina
BHCD		Bosnia and Herzegovina Commission for Demining
BHMAC		Bosnia and Herzegovina Mine Action Centre
Blue Line		The line of withdrawal of Israeli forces from Lebanon, May 2000
CEEN		Center of Strategic Studies of the Army (Nicaragua)
CENAPRORTO		National Prosthetics and Orthotics Centre (Nicaragua)
CIA		Central Intelligence Agency
CIEN		Nicaraguan Army Engineer Corps
CIMIC		Civil Military Cooperation
CMAA		Cambodian Mine Action and Victim Assistance Authority
CMAC		Cambodian Mine Action Centre
CPAF		Cambodian People's Armed Forces (Phnom Penh Government forces up to the Paris peace accords)
CPP		Cambodian People's Party
CTA		Chief Technical Adviser
DAC		Development Assistance Committee (OECD)
DoD		United States Department of Defense
DoS		United States Department of State
DPKO		UN Department of Peacekeeping Operations
EAF		entity armed forces
EBRD		European Bank of Reconstruction and Development
EC		European Commission
EDD		explosives detection dog
EDP		Ethiopian Demining Project
EMAC		Entity Mine Action Centre
EMAO		Ethiopian Mine Action Office
EOD		explosive ordnance disposal
ERP		Emergency Recovery Programme
ESAG		College of Engineering Applications (France)
EU		European Union

FMV	Swedish Defence Material Administration
FSLN	Sandinista Front for National Liberation
FUNCINPEC	Front Uni National pour un Cambodge Indépendant, Neutre et Pacifique et Coopératif (Sihanoukist party)
GDP	gross domestic product
GFAP	General Framework Agreement for Peace (the “Dayton Peace Agreement”)
GICHD	Geneva International Centre for Humanitarian Demining
HALO	HALO Trust
HELP	Hilfe zur Selbsthilfe (German NGO)
HVO	Croat Defence League (Bosnian Croat army)
IADB	Inter-American Defense Board
ICRC	International Committee of the Red Cross
IDF	Israeli Defence Forces
IED	improvised explosive device
IFOR	Implementation Force
IMAS	International Mine Action Standards
IMF	International Monetary Fund
IMSMA	Information Management System for Mine Action
INATEC	National Technological Institute (Nicaragua)
INIFOM	Nicaraguan Institute for Municipal Promotion
IPTF	International Police Task Force
ISG	International Support Group (Lebanon)
ITF	International Trust Fund for Demining and Mine Victims Assistance (the “Slovenia Trust Fund”)
IWG	Interagency Working Group (U.S.)
JCC	Joint Civilian Commission
KPNLF	Khmer People’s National Liberation Front
KR	Khmer Rouge
LAF	Lebanese Armed Forces
LIS	Landmine Impact Survey
LM	Landmine Monitor
LMRC	Landmine Resource Centre, University of Balamand
LSN	Landmine Survivor’s Network
MAC	Mine Action Centre
MACC	Mine Action Coordination Centre
MACG	Mine Awareness Coordination Group
MAG	Mines Advisory Group
MARMINCA	OAS/IADB Support Mission for the Removal of Mines in Central America
MAT	Mines Awareness Trust
MATF	Mine Action Task Force
MCC	Military Coordination Commission (Ethiopia)
MCPG	Mine Clearance Policy Group
MCTU	Mine Clearance & Training Unit (Cambodia)
MDD	mine detection dog
MEDaC	Ministry for External Development Assistance and Cooperation (Ethiopia)
MICC	Mine Action Coordination Cell (Bosnia and Herzegovina)
MoFED	Ministry of Finance and Economic Development (Ethiopia)
MOU	Memorandum of Understanding

MINSAs	Nicaraguan Ministry of Health
MITC	U.K. Mine Information and Training Centre
MND	Multinational Division
MPRA	Mine Protection and Removal Agency
MPWT	(Cambodian) Ministry of Public Works and Transport
MRE	mine risk education
NATO	North Atlantic Treaty Organization
NDC	National Demining Commission (Nicaragua)
NDO	National Demining Office (Lebanon)
NGO	non-governmental organisation
NPA	Norwegian People's Aid
NTC	National Training Centre
OAS	Organization of American States
OES	Operation Emirates Solidarity
OHDACA	Overseas Humanitarian, Disaster, and Civic Aid (U.S.)
OGL	Observer Group Lebanon
OHR	Office of the High Representative
OSCE	Organization for Security and Cooperation in Europe
PADCA	OAS Programme of Assistance for Demining in Central America
PIC	Peace Implementation Council
PIU	Project Implementation Unit
PM	Programme Manager
PRRP	Priority Reconstruction and Recovery Programme
QA	quality assurance
RaDO	Rehabilitation and Development Organisation
RCAF	Royal Cambodian Armed Forces (after the Paris Peace accords)
RRTF	Refugee Return Task Force
RS	Republika Srpska
RS-MAC	Republika Srpska Mine Action Centre
SAG	Study Advisory Group
SFOR	Stabilisation Force
SHAPE	Supreme Headquarters, Allied Powers Europe
SIDA	Swedish International Development Agency
SLA	South Lebanese Army
SNC	Supreme National Council
SOF	Special Operations Forces
SO/LIC	Special Operations/Low Intensity Conflict
SOP	Standard Operating Procedure
STA	Senior Technical Adviser
SWEDDEC	Swedish EOD and Deming Center
TA	Technical Adviser
TAMC	Tripler Army Medical Center (U.S.)
TSG	Technical Standards and Guidelines
TSZ	Temporary Security Zone
UAE	United Arab Emirates
U.K.	United Kingdom
UN	United Nations
UNAMIC	United Nations Advanced Mission in Cambodia
UNDP	United Nations Development Programme
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIFIL	United Nations Interim Force in Lebanon

UNMAC	United Nations Mine Action Centre
UNMACC	UN Mine Action Coordination Centre for South Lebanon
UNMAS	United Nations Mine Action Service
UNMEE	United Nations Mission to Ethiopia and Eritrea
UNMIBH	United Nations Mission in Bosnia and Herzegovina
UNOPS	United Nations Office for Project Services
UNPROFOR	United Nations Protection Force
UNTAC	United Nations Transitional Authority in Cambodia
UNTSO	United Nations Treaty Supervision Organization
U.S.	United States
USAID	United States Agency for International Development
USDCC	United States Demining Coordination Center
UXO	unexploded ordnance
VRS	Army of Republika Srpska
WFP	World Food Programme
WHO	World Health Organisation

Appendix

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