УДК 623.454.362+811.111

Cherkashin N., Nesterovich R., Piskun O. **Humanitarian Demining**

Belarusian National Technical University Minsk, Belarus

Demining or mine clearance is the process of removing either land mines, or naval mines, from an area, while minesweeping describes the act of detecting of mines. There are two distinct types of mine detection and removal: military and humanitarian.

Humanitarian demining, a core component of mine action, covers the range of activities which lead to the removal of mines and unexploded ordnance hazards. These include technical survey, mapping, clearance, marking, post-clearance documentation, community mine action liaison and the handover of cleared land. In general, humanitarian demining is regarded as a short-run emergency mine clearance of land with 100 percent efficiency. Humanitarian demining differs from military mine clearance mainly in its purpose. The purpose of humanitarian demining is to clear the land from mines and other explosive remnants to return to the end users, whereas military mine clearance is intended to open a passage for troops. Therefore, the military may breach a path through a minefield without destroying every single mine in the path. Demining for humanitarian purposes is slow due to its 100 percent clearance requirement, and it is dangerous because a simple mistake can cost the lives of the operators.

In some situations, clearing landmines is a necessary condition before other humanitarian programs can be implemented. A large scale international effort has been made to test and evaluate existing and new technologies for humanitarian demining, notably by the EU, US, Canadian and Japanese governments and by the Mine Action Centers of affected countries.

Humanitarian demining programs are often aimed at quickly safeguarding people living with the threat of landmines. Peacekeeping forces need safe movement to carry out their activities. Additionally, food, medicine, temporary shelter, or some emergency materials may need to be delivered to those who need it. When such activities are obstructed by the presence of landmines, a humanitarian demining is imperative.

Demining activity can be limited to opening access roads, clearing residential areas, creating temporary relocation places, and the like. Demining to allow such emergency assistance can be acceptable; however, it should only be for a short period of time. If it goes beyond a short period of time or demining is no longer for emergency purposes, then there must be a justification for its value. When demining for such purposes exceeds the emergency need, it is difficult to defend its cost especially in countries where they have other humanitarian needs. Therefore, demining for humanitarian purposes should not last a very long time. Otherwise, demining for humanitarian purposes will not justify the cost.

In an emergency situation the cost of demining can be defended. For example, when people need to return home and if access is not provided, people will either die or be restrained from returning. When many people die demining can be justified because the benefit from demining can be proven against the cost of many people's lives. Moreover, when people are restrained from returning they need to be supplied with all their needs. To supply human needs forever is very costly, and thus demining for the return of displaced people is beneficial.

In the absence of access to roads due to mines to a community who needs emergency aid, demining again justifies

its cost because aid will have to be delivered by other means such as helicopters or planes, which is more expensive than road transportation. However, when road access is provided through demining and people are returned back to their homes, they will still need to build their daily lives. This can be through using their farmlands, breeding cattle, using water wells, developing a power supply, going to school, and rebuilding their residential areas or any other daily activities. In such situations, the cost of demining needs to be calculated in comparison to its benefits. The decision makers should show that demining activities to provide such access to the community have a benefit greater than the associated cost. Every plan of the demining activity should be linked to promotion of the development of the community. If demining is not linked to development it will be difficult to justify it for only humanitarian purposes.

The prioritization of demining in terms of the outcome of the land to be cleared should be calculated against the cost and set in place before any demining activity. If one cannot do this, resources will be wasted because the short-run humanitarian need will change to a development requirement and it will be hard to justify the cost in relation to the benefits. Therefore, after emergency needs are resolved, the next steps for demining should be conducted based on a cost-benefit analysis.