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Humanitarian Demining as a Precursor to Economic Development

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Cost per square metre (about 1.2 square yards) are $3.41 (U.S.) compared to $11.29 using fully manual methods (the base case). Use of this method over the whole area to result in a cost savings of $7.2 million compared to the signing of the Ottawa Convention. However, the Convention’s requirement that all mines be cleared will not always be the best way of improving the plight of those affected by mines. Likewise, the U.N. standard of 99.6 percent clearance will often be too stringent and will tend to drive up costs per square metre. A similar complication comes from the type of mine that is expected in a given field. Mechanical procedures feasible when working with anti-personnel mines may not be feasible when working on anti-tank mines, and the use of suitably armoured machinery is likely to affect the cost comparison. Hence, the information provided by CEMOD cannot replace the detailed knowledge of the project manager, instead, it is designed to provide additional information to help make informed decisions about mine clearance. There are at least two other factors which would be considered when interpreting the cost-effectiveness data. First, there is no explicit premium for mines (particularly UXO) in the calculations carried out by CEMOD. However, CEMOD reports do indicate clearance rates and cost per day, so information on the timeliness of particular methods can be extracted. It is unlikely a standardised model could provide more detail because local factors will dictate what value is placed on timeliness. Second, although cost per square metre can be an accepted metric for recording output, other arguments are likely to be relevant to the decisions agencies make about the most effective way to clear a given area.

Table 2: Example of Results Report. Courtesy of Dan Marsh/MAIC.

<table>
<thead>
<tr>
<th>Method</th>
<th>Total Cost</th>
<th>Cost per sq. m</th>
<th>Cost Ratio vs Base Case</th>
<th>Annual Cost Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Only</td>
<td>1,128,742</td>
<td>11.29</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Flail &amp; Manual</td>
<td>1,156,574</td>
<td>5.78</td>
<td>51%</td>
<td>5,009,138</td>
</tr>
<tr>
<td>Flail, Manual, Dogs</td>
<td>1,365,574</td>
<td>3.41</td>
<td>38%</td>
<td>7,166,541</td>
</tr>
<tr>
<td>Veg. Cutter, Manual</td>
<td>635,602</td>
<td>7.31</td>
<td>65%</td>
<td>6,317,597</td>
</tr>
<tr>
<td>Area Reduction then manual</td>
<td>304,352</td>
<td>6.07</td>
<td>54%</td>
<td>4,732,347</td>
</tr>
<tr>
<td>Veg. Cutter, Manual, Dogs</td>
<td>247,085</td>
<td>4.94</td>
<td>44%</td>
<td>5,774,010</td>
</tr>
<tr>
<td>Area Reduction, MP, Manual</td>
<td>587,267</td>
<td>11.75</td>
<td>104%</td>
<td>-446,703</td>
</tr>
</tbody>
</table>

Conclusions

Many of the key issues of mine action are amenable to cost-effectiveness analysis. In this respect, mine action is no different from any other activity that uses scarce resources. Policy in this field has often been strongly influenced by both military and humanitarian concerns and approaches. Mine action agencies have often seen mine clearance as being a technical problem requiring technical solutions. Cost-effectiveness analysis has been paid to cost-effectiveness in determining the best course of action. Humanitarian concerns have brought the impact of mines into a context of the world’s wealth and the signing of the Ottawa Convention. However, the Convention’s requirement that all mines be cleared will not always be the best way of improving the plight of those affected by mines. Likewise, the U.N. standard of 99.6 percent clearance will often be too stringent and will tend to drive up costs. This report provides total cost, cost per square metre, and cost ratio/annual cost saving (compared to base case) for each mine clearance method. Many factors are likely to influence the cost-effectiveness of particular methods of mine clearance in particular settings. Foremost amongst these will be labour and machine costs, and the competitive productivity levels of manual-clearance teams, dogs and mechanical-clearance machines. However, other idiosyncratic factors are also likely to be important and these include the type of mine clearance method used. Factors affecting cost-effectiveness. The cost-effectiveness model is designed to provide standardised calculations of the cost of mine clearance using actual or projected data. Many factors are likely to influence the cost-effectiveness of particular methods of mine clearance in particular settings. Foremost amongst these will be labour and machine costs, and the competitive productivity levels of manual-clearance teams, dogs and mechanical-clearance machines. However, other idiosyncratic factors are also likely to be important and these include the type of mine clearance method used. Factors affecting cost-effectiveness. The cost-effectiveness model is designed to provide standardised calculations of the cost of mine clearance using actual or projected data.
Ronco began the difficult task of demining the Line in Mozambique near the village of Tserona. During the war, the land served as a no-man’s-land between Ethiopian and Eritrean forces and was suspected of being heavily mined. Local farmers wanted assurance that the land was safe, as it was highly fertile and had the potential to support a large number of the surrounding villages. Ronco deminers worked for six weeks and verified almost a half-million square meters (about 124 acres) of ground to confirm the area as mine safe. As in Tisha, local farmers began utilizing the fertile land, making it a mine-free area and giving them the chance to leave the village. Once the land was accepted by the host country government’s mine action center, farmers were sufficiently confident to plow not only the confirmed land, but the entire valley, encompassing approximately 6 square kilometers (2 square miles). The valley now serves the needs of thousands of families living in the surrounding villages, boosting agricultural production in the region significantly.

Since the initiation of the Eritrea program, Ronco’s clearance operations have benefited over 200 Iraqi deminers and organized them into national clearing and mine action units. The Department of State’s support for the development of a large-scale, in-country, in-country mine clearing and Mine Action Support contract has resulted in assistance to national mine action centers in at least 12 countries during the past six years. The planning, organizing and executing of mine-clearance operations, the removal of landmines, the destruction of ordnance and debris, and the establishment of a comprehensive program for the clearance and destruction of mines, ordnance, and debris help to ensure the safety of the local population, and ultimately provide for a safer, more peaceful environment.

Conclusion

Ronco’s operations in Mozambique, Eritrea, and Iraq attest to the crucial role humanitarian de-mining can play in securing natural resources, revitalizing a nation’s economy, and, in the case of Iraq, legitimizing a fledgling government. And in all three countries, Ronco is establishing the capacity for the country to further develop de-mining operations on its own. In both Mozambique and Eritrea, Ronco continues to train deminers to operate independently. In Iraq, Ronco has trained over 200 Iraqi deminers and organized them into national clearing and mine action units.
Humanitarian Demining as a Precursor to Economic Development, Lundberg | from page 53 |


The Road to Mine Action and Development: The Life-Cycle Perspective of Mine Action, Patterson and Filipino | from page 55 |

Endnotes

1. This phrase is from The World Bank, which has been in the forefront of planning, managing and financing post-conflict reconstruction since the wars arising from the break-up of Yugoslavia. The central role played by the Bank may be an important source of financing for demining.

2. The term “mechanical applications” is not a specific mine terminology, but rather a very fluid and evolving one.


Environmental Applications in Demining, McLean | from page 60 |

Endnotes


4. Editor’s Note: Some countries and mine action organizations are using the word of the term “mine-free”, while others are opening the term “mine safe” or “impact free”. “Mine free” conforms to a condition where all landmines have been cleared, whereas the terms “mine safe” and “impact free” refer to the condition in which landmines no longer pose a credible threat to a community or country.


10. Another deminer should be qualified to render safe UXO for safe removal from the demining worksite and to undertake their final destruction.

11. This book can only be purchased by contacting Chris North at Chrisnorth69@hotmail.com or through his publisher, The Old Pier House, England.


14. The PRB M409 is a plastic-bodied, low metal content, circular anti-personnel mine. For more information, visit http://www.eng.warwick.ac.uk/DTU/pubs/wp/wp48/m409andordinance.html.

15. Hungarian-manufactured AP blast mine closely resembling the PMN. For more information, visit http://www.eng.warwick.ac.uk/DTU/pubs/wp/wp48/m409andordinance.html.


17. USSR-manufactured fragmentation bounding mine whose results shatter into more than 1000 metal splinters. For more information, visit http://www.eng.warwick.ac.uk/DTU/pubs/wp/wp48/m409andordinance.html.

18. USSR-manufactured rudimentary pressure-activated blast devise in a wooden box. For more information, visit http://www.eng.warwick.ac.uk/DTU/pubs/wp/wp48/m409andordinance.html.
