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Are We Setting the Wrong Target?

by Robert Keeley | Imperial College London |



The Ottawa Convention¹ was signed by 122 countries in Ottawa in December 1997. In September of the following year, Burkina Faso became the 40th country to ratify the agreement, triggering entry into force six months later. Thus, in March 1999, the Ottawa Convention became binding under international law.¹ Article 5 of the Convention states, "Each State Party undertakes to destroy or ensure the destruction of all anti-personnel mines in mined areas under its jurisdiction or control, as soon as possible but not later than 10 years after the entry into force of this Convention for that State Party."²

The year 2009 is when the earliest countries should, therefore, become "mine free." However, as the 2004 Nairobi Review Summit³ got under way, there was widespread doubt that this target would be reached⁴—which, in essence, leaves the international community with three options:

1. Increase resources in order to meet the target, in accordance with Article 6 of the Convention, which states, "Each State Party in a position to do so shall provide assistance for mine clearance and related activities."
2. Delay the target date to something longer than 10 years.
3. Abandon—or modify—the target.

The aim of this paper is to investigate a possible economic argument for seeking an alternative paradigm for Article 5 of the Ottawa Convention and to seek responses.

Assumptions

The economic argument for a modification of Article 5 is based on a hypothetical mine action programme (MAP) and relies on several assumptions:

- The MAP is both vertically and horizontally integrated (i.e., is the single actor providing the service in the country).
- The MAP is a bureaucracy.⁵ See the box at the right for a description of the attributes of a bureaucracy from a political-economic perspective. Most, if not all, of these attributes could be applied to any MAP with little controversy.
- Benefits and costs of clearance can be quantified.

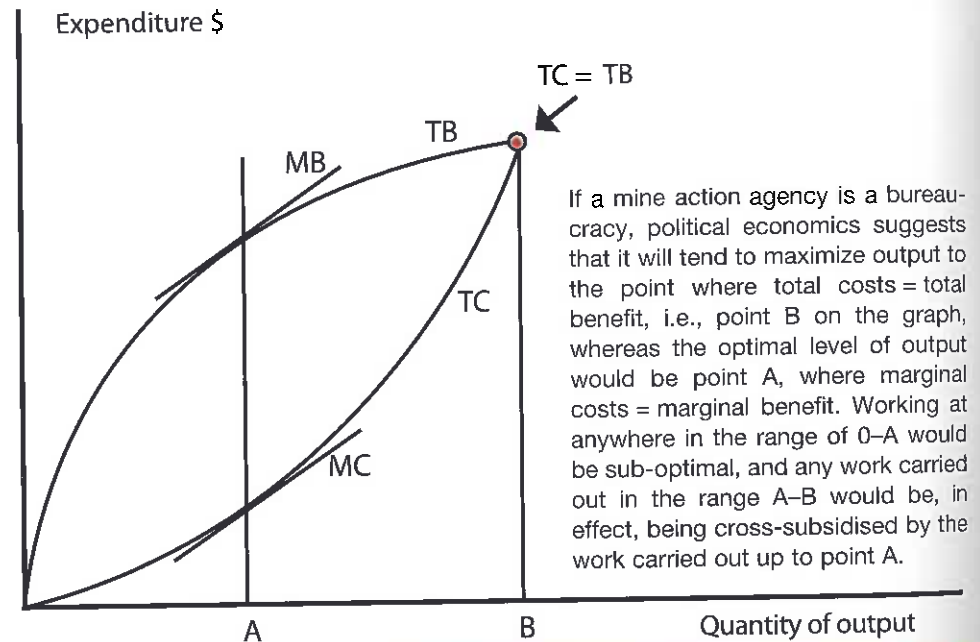
- MAP work plans are rational, with the most important tasks addressed first. The most important are those for which the benefit-cost ratio is greatest.

The Application of the Bureaucratic Model to a MAP

Accepting that a MAP is a bureaucracy, one can draw a graph⁶ showing how benefits and costs vary with the output of the MAP (see FIGURE 1).

Note that the gap between benefit and cost increases in Section 1, i.e., before point A. This increase is largely due to economies of scale; in a demining context, large fixed costs can be amortised over more and more cleared areas. This gap increases until Point A, the optimal production point, or the point at which the most "bangs per buck" are being achieved. Graphically, it is found where marginal benefit (MB) (the benefit from clearing the latest piece of land) = marginal cost

FIGURE 1: Mine action from a political perspective.



If a mine action agency is a bureaucracy, political economics suggests that it will tend to maximize output to the point where total costs = total benefit, i.e., point B on the graph, whereas the optimal level of output would be point A, where marginal costs = marginal benefit. Working at anywhere in the range of 0–A would be sub-optimal, and any work carried out in the range A–B would be, in effect, being cross-subsidised by the work carried out up to point A.

A political-economic description of a bureaucracy

- Bureaus are non-profit organisations that are financed, at least in part, from a periodic appropriation or grant.
- Bureaus specialise in providing goods and services that some people prefer in larger amounts than would be supplied by their sale at a per-unit rate.
- Many goods and services supplied by bureaus are characterised by either high fixed costs of production or difficulties in collecting fees.
- A bureau offers a promised set of activities for a budget.
- The relevant demand is that of the sponsoring organisations and not of the constituents.
- There is usually a wide disparity in the relative information available to the sponsor and to the bureau.

(MC) (the cost of clearing that same latest piece of land). After Point A, the gap between benefits and costs begins to narrow again, until it reaches Point B, the break-even point, where total benefit (TB) = total cost (TC). Political economics tells us this is “what bureaus want” as it maximises the budget of the organisation and more output is always seen as being better than less.^{7, 8}

The gap between benefit and cost is decreasing between points A and B because (in a demining context) land cleared later by the MAP is of less value.⁹ At the same time, marginal costs may increase, perhaps because the distance from population centres or demining camps increases, and marginal land (e.g., rocky land or peat bogs) may also be harder to process. At first glance, as long as the MAP is operating at a point to the left of point B,¹⁰ this situation may appear satisfactory. Perhaps, however, between Points A and B, marginal cost exceeds marginal benefit. In other

words, the more beneficial tasks are, in effect, cross-subsidising these less beneficial tasks. For sites that lie to the right of Point A, alternative mine action strategies, such as mine risk education, fencing marking and even compensation (perhaps in the form of resettlement or alternative income generation schemes) may be more appropriate than actual clearance.

Implications for General Application

The exact shape of the graph will vary from country to country. The benefit curve will be fixed by the overall economy (i.e., by factors such as land values). Mine action intervention will not, therefore, directly affect the benefit curve, although survey processes could help collect the data necessary to determine the potential benefit. The cost curve is likely to be sensitive to changes in mine clearance processes, either through

improvements in management or through the introduction of more productive equipment that makes a positive contribution to overall cost-effectiveness.

Implications for Consideration of the Ottawa Convention

As stated above, economic theory suggests that a MAP should be designed to include only tasks that lie at or to the left of Point A in the clearance plan. This is clearly not compatible with the requirements of Article 5 of the Ottawa Convention. Indeed, the situation may even be more extreme. It is entirely possible to imagine a situation (see FIGURE 2) in which clearance tasks provide zero marginal benefit, but where marginal costs continue to increase—in the mine clearance community, this is sometimes referred to as the “mine on the mountaintop.” Furthermore, in a situation of scarce resources, this situation may represent a point at which mine action funds could be better applied in a district, province or even a different country in order to achieve a greater net gain in welfare.

Possible Recommendations

If this model (and its assumptions) is true, perhaps the international community should do the following:

- Recognise that “mines on mountaintops” should not necessarily be cleared.
- Encourage use of other mine action interventions that may be appropriate to remove or reduce impact where mine clearance is not cost-effective, in order to achieve an “impact-free” state, though work needs to be done on agreeing what “impact free” actually means (see box at left for a possible definition).
- The potential for improvements in efficiency over time should be recognised. Plans may not necessarily be set in stone forever, as new technology or changes in organisational management or procedures could change the costs and thus the optimum level of output.
- Modify Article 5 of the Ottawa Convention accordingly.

Finally, it must be reiterated that this paper is part of a research project that is intended to establish objective mechanisms for the planning of mine action activities. Objective comments, especially on the validity of assumptions, are welcome. ♦

See “References and Endnotes” on page 105

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A possible definition of “impact free”

“Impact free” could be defined as being the point where there is no economic demand for the land left uncleared, and where all reasonable and practicable steps have also been taken to prevent casualties in the areas that remain contaminated.

FIGURE 2: The possible implications of Article 5 of the Ottawa Convention.

