

# **A Public Health Approach to Landmine Injury and Death**

## ***A Case Study of Cambodia***



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Master Thesis for the TropEd Masters Program in International Health (MIH)  
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Basel, December 2004

## 1 Summary

Landmine research in general has focused so far mainly on identification of affected areas, determination of square meters of land cleared and collection of casualty data. Within the health sector the issue of landmines has mainly been described from a medical (surgical) point of view. But there has been comparatively little research done on landmine injuries and deaths from a public health view. The magnitude of the problem in most affected countries however requires such an approach which may help to improve preventive measures and strengthen health care strategies to prevent disability in the most effective way possible.

This case study has been proposed by the Director of the Centre for Research on the Epidemiology of Disasters (CRED) at the University of Louvain, Brussels, Belgium. The research work falls under the scope of the European Union-South East Asia Research Network on Public Health in Conflicts and Disasters, which is coordinated by CRED.

Cambodia is one of the most severely landmine-affected countries in the world. Estimates vary between hundreds of thousands and millions of landmines and unexploded ordnance which are polluting land for habitat, agriculture and pasture - a legacy from decades of wars and conflicts. From 1979 to 2002 around 60,000 individuals became victims of landmines; more than 18,000 have been killed and at least 7,700 persons were amputated. Up to 90% of the victims are males. With the gradual establishment of peace and political stability in the country after 1998, landmine incidents have continuously diminished. And yet, there were still almost 6,000 landmine victims reported from 1998 to 2002.

This case study attempts to describe the landmine problem in Cambodia in form of a situation analysis based on available data, literature and reports. Focussing on the characteristics of landmine victims and the factors that lead to injury and death during 1998 and 2002, it also tries to estimate the human

impact of landmine mortality in terms of life years lost, the costs for physical rehabilitation of landmine amputees, and to assess the health sector's capacities to address the landmine problem.

The analysis of data shows that men between 15 to 49 years of age are the most vulnerable population group for landmine injury and death; from 1998 to 2002 they made up 76 percent of the reported victims, followed by children under 15 years (18 percent) and women (6 percent). Most of the landmine accidents in women and men happened during daily livelihood activities, such as collecting water and firewood, farming, or herding cattle. Children were mainly injured while tampering with unexploded ordnance. Although many Cambodians are aware of the danger coming from landmines, they often are forced to enter mine-contaminated areas in search for a living while risking their lives. Around half a million life years were lost through landmines. By far most of these years were lost in men, who not only bear the responsibility for the living of their families, they constitute Cambodia's basis for sustainable development, as regards labour force and economic productivity.

The amount necessary for the physical rehabilitation of the reported 7,781 landmine-amputees is estimated at 35 million US\$. This means on average more than 4,500 US\$ per amputee, a multiple of the MoH's yearly allocated amount to health of around 2.5 US\$ per capita. These costs continuously use up funds of a health system, which already has to struggle to meet the basic health needs of the population. The inadequate access to and the low quality of health care aggravates the situation for thousands of communities living in landmine polluted areas. Many of the rural poor cannot afford to pay for medical care, not to mention for the costly and lengthy treatment of landmine injuries. The respond to the health needs of the population represents a major challenge for Cambodia's health sector. Emergency care and rehabilitation for landmine victims is scarce and only provided by a few non-governmental and international organizations.

This case study describes only partially the devastating effects of landmines in Cambodia. In order to understand the magnitude of the landmine problem

for the country's population and the impact of these weapons on public health, economy and development further studies would be needed.