

## Environmental Burden of Disease Assessment

<b>Description</b>	The global burden of disease attributable to climate change was recently estimated as part of a comprehensive World Health Organization (WHO) project. The project sought to use standardized methods to quantify disease burdens attributable to 26 environmental, occupational, behavioral, and life-style risk factors in 2000 and at selected future times up to 2030. The Environmental Burden of Disease (EBD) tools include guidelines on how to estimate the approximate magnitude of the health impacts of various environmental factors, including climate change, at national or regional level, to help determination of priorities for action.
<b>Appropriate Use</b>	An EBD assessment for climate change will indicate which impacts could be greatest and in which regions, and how much of the climate-attributable disease burden could be avoided by emissions reduction. It also will guide health-protective strategies.
<b>Scope</b>	An EBD assessment is usually conducted on a national or regional scale.
<b>Key Output</b>	Comparative risk assessment attempts to answer the following questions: 1) How much disease is caused by climate change (attributable burden of disease)? 2) How much could be avoided by making plausible reductions in the exposure (avoidable burden of disease)? The outputs can be defined by the user, but are usually in DALYs (disability adjusted life years) or avoided deaths that can be compared between populations and between specific health impacts of climate change.
<b>Key Input</b>	The following are needed to determine the amount of climate-sensitive disease that is attributable to climate change: 1) the baseline burden of climate-sensitive diseases, 2) the estimated increase in the risk of disease/disability per unit increase in exposure to climate change, and 3) the current or estimated future population distribution of exposure. The avoidable burden of climate-sensitive diseases is estimated by comparing projected burdens under alternative exposure scenarios. The global assessment used WHO estimates of the baseline burden of cardiovascular deaths associated with thermal extremes, diarrhea episodes, cases of malaria, malnutrition, and deaths due to natural disasters.
<b>Ease of Use</b>	Requires familiarity with comparative risk assessment methods, disease modeling, and estimation of DALYs.
<b>Training Required</b>	Depends on individual familiarity with comparative risk assessment methods, disease modeling, and estimation of DALYs.
<b>Training Available</b>	Occasional training workshops on EBD methods, by WHO.
<b>Computer Requirements</b>	Standard PC, GIS, and spreadsheet software; access to outputs of climate prediction models.
<b>Documentation</b>	Examples of global and regional assessments previously published by the WHO and Australian National University. Guidelines for comparative risk assessment methods have been published by WHO, with guidelines for national and regional assessments forthcoming in early 2004.
<b>Applications</b>	Can be used to estimate the burden of climate sensitive diseases that are most important nationally; identify populations that may suffer disproportionately due to low capacity to adapt to changing conditions, perhaps due to low socioeconomic status and poor public health systems. Because the assessment is still being drafted, no examples of its application yet exist.

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<i>Cost</i>	Not identified.
<b>References</b>	WHO. 2003. The World Health Report 2002. World Health Organization, Geneva. McMichael, A.J. et al. 2003. Climate change. In <i>Global Burden of Disease</i> . C.J. Murray and A.D. Lopez (eds.). World Health Organization, Geneva.

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