

## ENVIRONMENT & HEALTH TOOLS FOR SUSTAINABLE DEVELOPMENT

Even in today's world of instant communications, delivering vital knowledge and evidence about environmental health problems, and potential solutions, into the hands of policy-makers remains a formidable political, organizational and logistical challenge.

**The second thrust of the HELI initiative, complementing the pilot projects, focuses on better use of assessment tools and improved overall access to knowledge for effective environment and health decision-making.**

A dynamic web-based portal and paper-based tool kit for communications and training are being developed, and will be constantly updated and enhanced. They include:

- policy briefs on priority environment and health issues describing cost-effective, environmentally-sound approaches to addressing vector-borne disease; indoor and urban air pollution; chemical hazards; water quality and sanitation; and climate change impacts;
- description of, and links to, data sources and instruments such as Geographic Information Systems (GIS), useful for environment and health assessment and monitoring;
- useful references for more information on priority issues and to existing UNEP/WHO resources;
- tools and guidance on carrying out impact assessment and economic valuation of linked health and environment issues.

Such resources also make reference to the broader range of evidence and assessment tools that WHO/UNEP have developed and are refining constantly. These include: environment and health monitoring frameworks, providing the data upon which evidence of problems and potential solutions may be based; environment and health standards and multilateral environmental agreements, which set baselines and goals to be achieved; tools for comparative risk assessment/burden of disease assessment for quantifying environmental hazards in terms of their impact on human life and health; case-study experiences describing good-practice interventions; environment and health indicators that track progress to the goal; and tools for impact assessment.



Measuring air pollution (above); testing water quality (background).

## Impact Assessment: A Bridge between Science and Policy-making

Whenever a policy decision is made, it can be presumed that decision-makers have made an **assessment** of potential impacts. But was this process formal or entirely informal? Was the relevant scientific evidence about environment and health reviewed publicly and systematically? Impact assessment is the process link in the chain between evidence and decision-making. Yet formal impact assessments are not conducted for many strategic policy decisions. At the project level too, impact assessment processes may fail to consider health and environment in a linked and inclusive perspective. More effective and systematic impact assessment was thus identified as an important priority for HELI, and for improving environment and health decision-making overall.

Over the past three and a half decades, a plethora of impact assessment methodologies have been developed. UNEP and WHO have supported the refinement and application of tools for environmental impact assessment (EIA), integrated assessment (IA), health impact assessment (HIA), and strategic environment assessment (SEA). Overall, there is increased recognition of the value of impact assessment methods that link sectors and disciplines more inclusively. By adapting existing methodologies so as to generate guidance that systematically takes account of health and environment impacts, HELI contributes to a more coherent assessment approach.

### The review and guidance:

- is based on a global study by international experts in the field of impact assessment, synthesizing lessons and experiences from EIA and HIA as well as other assessment approaches. The review included interviews with decision-makers and practitioners, questionnaires to interested stakeholders and systematic literature review;
- addresses the general range of available impact assessment approaches and best practice for matching the approach with decision-making needs, priorities or frameworks;
- relates to both quantitative methods of analysis and qualitative methods (i.e. stakeholder dialogue) as an integral part of the assessment exercise;
- aims at being a practical tool to strengthen a decision-making process at country level that is transparent, inclusive, scientifically sound and benefiting from best practice experience.

As a bridge between science and policy-making, the assessment of linked health and environmental impacts can play a significant role in expanding the narrow focus and frequent shortcomings of sectoral assessment. It also ensures that the direct contributions of ecosystems to better health are duly captured in the decision-making process.



Mid-level managers from health, environment, development, and planning sectors interview a fishing village resident in Lao PDR about the impacts of a nearby dam constructed three decades ago. Their findings will contribute to an impact assessment of new dams, now in the early planning stages. This health impact assessment exercise was part of a course conducted in 2003 by the WHO/FAO/UNEP Panel of Experts on Environmental Management for Vector Control (PEEM), in collaboration with the Danish Bilharziasis Laboratory and the Liverpool School of Tropical Medicine.

## Economic Valuation: Using Numbers for Sensible Policy

Optimizing use of limited resources is one of the biggest challenges facing any decision-maker. Economic assessment is therefore a vital tool. It can enumerate the potential costs and value the anticipated benefits of a proposed programme, policy or regulatory initiative, and reflect trade-offs inherent in alternatives.

There is increasing recognition that environment and health impacts often require valuation in economic terms in order to receive adequate consideration in policy. An integrated economic analysis of such impacts can capture the hidden costs and benefits of policy options, as well as the synergies and institutional economies of scale that may be achieved through complementary policies that support sustainable development. For instance, the economic benefits to be derived from sustainable forestry practices may be considerable when impacts are analysed as part of a comprehensive policy package; this would relate not only to issues of employment and poverty reduction, but also to the long-term environmental and economic impacts of forest maintenance or depletion, as well as to the health costs of diseases associated with deforestation.

A key element of the tool kit, therefore, is a review of issues related to the economic assessment of linked environment and health impacts, as well as guidance for conducting such assessments.

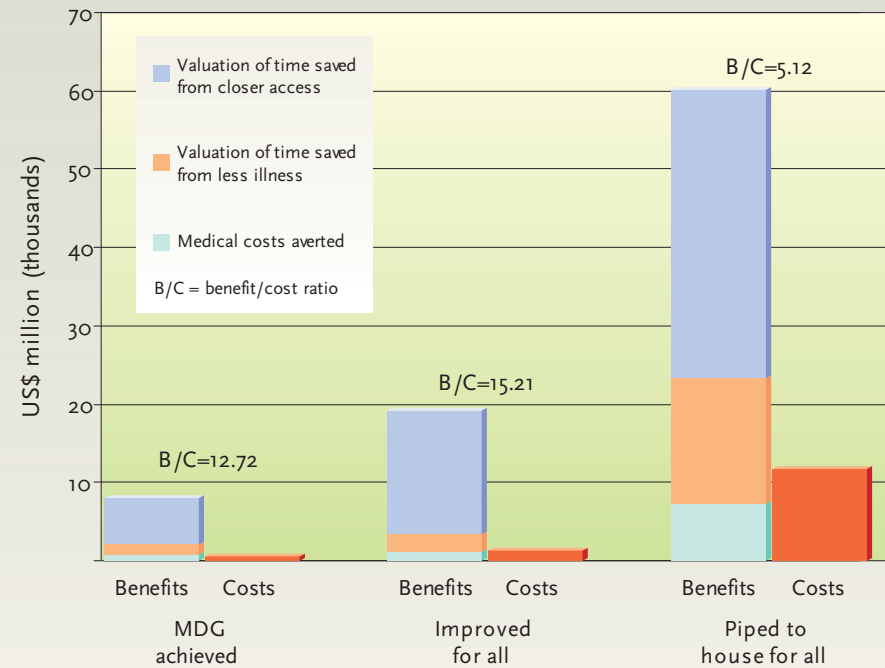
The HELI exercise builds upon UNEP and WHO's ongoing work on methods for quantifying the environmental impacts of a particular policy, on the one hand, and population health impacts on the other (3,22). While the work in this initiative focuses specifically on economic evaluation and valuation, guidance for estimating the burden of disease from environmental risks such as air pollution, poor water and sanitation, etc. is highly relevant to any economic exercise, and will be disseminated in the framework of the broader range of resources available through HELI (23,24).

The review and guidance on economic assessment is the product of a joint effort between a number of leading international experts in health economics and environmental economics.

"The political agenda in our country is called the 'economic catching up process.' This causes a significant bias towards short-term economic interests rather than long-term development. The more intense the political competition, the greater the need for politicians to define their specific political agenda as a 'faster catching up process' than that of other political parties. In this situation, the only successful way to promote healthy public policy is to show how the economy can gain from protecting health and environment."

*Economist and research coordinator,  
Health Systems Research Institute, Thailand (2).*

Valuing water and sanitation interventions



Based upon data in: Hutton, G. & Haller, L. (2004). Evaluation of the costs and benefits of water and sanitation improvements at the global level. WHO Report WHO/DSE/WSH/04.04. WHO, Geneva, 2004.

Annualized costs and benefits for achieving either (1) the Millennium Development Goal (MDG) for water and sanitation, (2) improved water supply and sanitation for all, or (3) piped water supply and sanitation for all, throughout the AMR-B region of Latin America, by 2015. Benefits outweigh costs for all interventions; the highest benefit-cost ratio is achieved through improving water supply and sanitation for all, but the greatest net benefit is achieved by supplying piped water and sanitation to all houses.

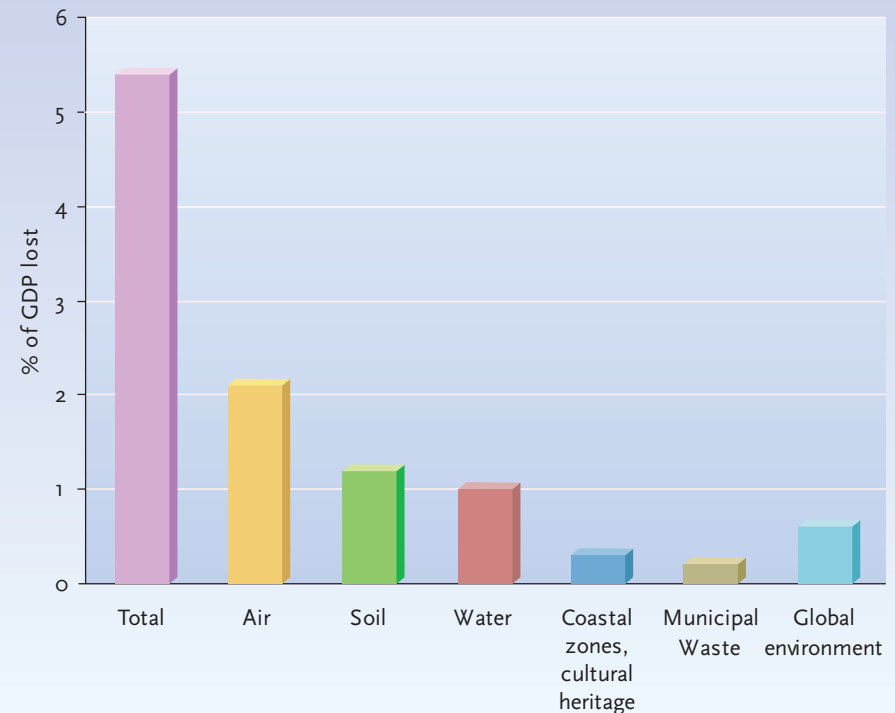
It describes how the evaluation and valuation of ecosystem integrity or degradation can be linked to the quantification and valuation of specific health outcomes, and describes the steps normally required to carry out systematic economic analysis. The guidance describes issues to be considered in the choice of tools such as cost-benefit and cost-effectiveness analysis. In addition, the review underlines the importance of analysing the distribution of costs and benefits of any intervention strategy across different socioeconomic groups. The guidance is not prescriptive; rather it outlines the range of options and methods that may be used in the conduct of a linked economic analysis of environment and health impacts in various policy contexts.

The ways in which economic analysis of environment and health may be integrated into broader plans or programmes, such as poverty reduction strategies, is another topic covered. Economic instruments also are important in financing and supporting successful environment and health policy implementation; the use of instruments such as taxes, subsidies, user fees and market-based instruments (e.g. emission taxes), is thus examined. Case-study examples illustrate some of the successes and failures of their application in real country situations.

#### Rapid & Participatory Economic Assessment

Economic tools may be highly sophisticated, using numerous variables and equations to model an entire economy's performance. However, there are experiments in *rapid and participatory* economic assessment, at the community and household level, which potentially could support better grass roots environment and health decisions. In Thailand, farmers have used rapid methods of economic valuation to assess the benefits and costs of adopting more sustainable agricultural practices such as integrated pest management. In Uganda, a rapid participatory approach to valuation of the health benefits expected from sanitation improvements has been piloted. A WHO health team visiting a village worked with local leaders at a lunch-time meeting to perform such a rapid assessment, estimating the value of the work-hours that an average household might lose due to sanitation-related intestinal disease, and the cost of treatment and medications. This analysis took only a couple of hours and prompted the leaders to give greater priority to sanitation improvements. Such methods have the potential to be more useful to local decision-makers in certain situations than highly formalized valuations costing more in money and time.

#### Valuing costs of environmental degradation



Based upon data in: Larsen, B., M. Sarraf and G. Pillet. (2002) Cost Assessment of Environmental Degradation in Egypt, The World Bank / METAP, Report Number 25175-EGT.

Estimated percentage of GDP lost to environmental degradation in Egypt in 1999. Approximately 2/3 of these costs are from the health effects of degraded environments.