



Estimated proportion of total disease burden caused by environmental risk factors, by region of the world.

A HEALTHY ENVIRONMENT: LUXURY OR NECESSITY?

Every minute, 5 children in developing countries die from malaria or diarrhoea. Every hour, 100 more children die as a result of exposure to indoor smoke from solid fuels. Every day, almost 3000 people in low- and middle-income countries die from road traffic injuries: in the poorest countries most of these deaths are among pedestrians. Every month, nearly 19 000 people in developing countries die from unintentional poisonings, often as a result of exposure to toxic chemicals and pesticides in their work or home environments. Environmental hazards and related illnesses kill millions globally every year (1,3). But while the victims share a common fate, their problems are not necessarily linked in either today's policy agendas or in the minds and actions of decision-makers.

Much of the environmental disease burden is attributable to a few key risks. Those include unsafe water and sanitation, vector-borne disease, indoor smoke from solid fuels, toxic hazards and global environmental change as well as unsustainable patterns of development that contribute to air pollution, traffic injury and other forms of urban environmental degradation. Along with the human toll, developing countries bear the economic cost of lost productivity, the burden on the health sector, degraded resources and long-term social consequences (4). Against these stark realities, policy-makers in the developing world grapple with a rapid rate of modernization and change. They face critical development decisions that require a thorough consideration of impacts on environment and health.

Why are environment and health issues not higher on policy agendas, particularly in countries where the disease burden is so great?

A HELI review of environment and health decision-making in a developing country context described and analysed the driving forces that shape environment and health policy, synthesizing the results of over 50 in-depth interviews with experts and decision-makers globally as well as findings from an extensive literature review (2). The review concluded that the primary barriers to more effective policy are neither a lack of evidence nor a lack of knowledge. They are economic, institutional, political and social.

Macroeconomic factors such as trade globalization, market liberalization, debt burdens and structural adjustment policies are among the most powerful drivers of national political agendas and, indirectly, environment and health policies.

The hidden hazards posed by hasty and improperly conceived projects may be overlooked; better environmental management may be regarded as a luxury that developing countries cannot afford. The goods and services provided by bio-diverse ecosystems, upon which particularly the poor may rely for healthy livelihoods, are not meaningfully taken into account within market-driven development processes. This leads to continued degradation of those natural resources with resulting health impacts (5).

A dearth of institutional resources, human capacity and "enabling" legal frameworks impedes adequate assessment of the complex links between health, environment, poverty and development options. For instance, irrigation schemes may yield benefits in terms of food security and health. But when irrigation and dam design is not sensitive to the surrounding ecosystem, the scheme may enhance the conditions necessary for disease vectors to thrive and thereby create new health impacts. Agricultural chemicals can be used constructively to increase yields, but they also can kill or maim farm workers and children, and infiltrate water sources, when chemical regulation and education is inadequate.

A complex series of tasks is required to translate scientific evidence about such issues into policy. Common institutional barriers to the effective use of scientific information may include weak technical capacity, limited or ineffective legal and regulatory frameworks and debate driven by interest group pressures rather than by evidence. Data collected systematically according to scientifically acceptable criteria rarely determine policy on their own. Large infrastructure projects that are popular symbols of development (e.g. urban

highways, water purification plants) may be regarded as evidence or indicators of good policy even when alternative strategies (e.g. improved public transport and bike lanes, better ecosystem protection of drinking water resources) might contribute to a more cost-effective package of solutions. The cost and benefit of alternative strategies, in terms of impacts on health and environment, may not be fully considered.

Environmental hazards, which may be unseen and/or emerge slowly over time, also compete as policy priorities with social, political, economic and humanitarian crises - some of which may be related to long-neglected environmental problems (e.g. floods and epidemics or drought and famine). In the division of more routine governmental tasks, however, health ministries are focused on health care services and policies, which may not systematically address broader environment and development agendas.



UNEP/Stephen Dolmer

"Environment is still perceived by some countries as a luxury. Policy-makers in developing countries want more employment, higher income. They tend to say: 'Don't come talk to us now. Developed countries have already gone through this process. When we reach a similar stage, we will look at the environment.' "

*Director, Economics and Trade Branch,
Division of Technology, Industry and Economics, UNEP(2).*

"It is common practice to define poverty exclusively in financial terms. Yet someone surviving on one or two dollars a day in a run-down environment may well be far worse off than someone else, without any income at all, but living on fertile land. We are not trying to idealise poverty or the non monetary means of subsistence available to the poor, but we should try to convince people that alternative solutions do exist. " Director, Division of Policy Development and Law, UNEP (2).



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Increased road traffic has exacerbated air pollution in urban areas of Asia, Latin America and Africa, as well as the risk of traffic injury.

Environment ministries, for their part, often are newer entities lacking sufficient influence and resources to promote, proactively, government investment in sustainable development policies. As a result, they tend to remain focused more upon "sectoral" concerns related to nature conservation and pollution. This institutional context generates barriers to coordinated action and mutually reinforcing strategies. Thus governments may make crucial policy and economic development decisions without substantive input on either health or environment.

International institutions also have operated with separate and unlinked agendas.

Agreements at recent international conferences and summits all emphasize the need to improve coherence and enhance the coordination of work at country level that promotes economic development, the environment, health and poverty-reduction. In a concrete, action-oriented international agenda the translation of evidence into terms and tools relevant to policy-makers is of critical importance. Renewed emphasis therefore should be placed on demand-driven approaches rather than supply-side solutions that generate knowledge for its own sake. HELI aims at making best use of existing knowledge to demonstrate that good environment and health policy is not a luxury but an essential feature of sound development processes.

The Human Toll

- **Unsafe water**, poor sanitation and hygiene kill an estimated 1.7 million people annually, particularly as a result of diarrhoeal disease (3).
- **Malaria** kills over 1.2 million people annually, mostly African children under the age of five (6). Poorly designed irrigation and water systems, inadequate housing, poor waste disposal and water storage, deforestation and loss of biodiversity, all may be contributing factors to the most common vector-borne diseases including malaria, dengue and leishmaniasis.
- **Indoor smoke** from solid fuels kills an estimated 1.6 million people annually due to respiratory diseases (3).
- **Urban air pollution** generated by vehicles, industries and energy production kills approximately 800 000 people annually (3).

- **Road traffic injuries** are responsible for 1.2 million deaths annually; low- and middle-income countries bear 90% of the death and injury toll. Degradation of the built urban and rural environment, particularly for pedestrians and cyclists, has been cited as a key risk factor (7,8).
- **Lead exposure kills more than 230 000 people per year** and causes cognitive effects in one third of all children globally; more than 97% of those affected live in the developing world (9).
- **Climate change impacts** including more extreme weather events, changed patterns of disease and effects on agricultural production are estimated to cause over 150 000 deaths annually (3,10).
- **Unintentional poisonings kill 355 000 people globally each year** (6). In developing countries, where two-thirds of these deaths occur, such poisonings are associated strongly with excessive exposure to, and inappropriate use of, toxic chemicals and pesticides present in occupational and/or domestic environments (11,12).

Over the next 30 years, most of the world's population growth will occur in the urban areas of poor countries (13). Rapid, unplanned and unsustainable styles of urban development are making developing cities the key focal points for emerging environmental and health hazards (14). These include the synergistic problems of urban poverty, traffic fatalities and air pollution. In addition, increased urbanization and motorization and diminishing space for walking/recreation in cities is associated with more sedentary lifestyles and a surge in related non-communicable diseases (15-17). Globally, physical inactivity is estimated to be responsible for some 1.9 million deaths each year as a result of diseases such as heart ailments, cancer and diabetes (3).

Increased industrial and agricultural production has intensified poorer countries' production and use of both newer and older chemicals, including some formulations that are banned in other countries. OECD has estimated that the global output of chemicals in 2020 will be 85% higher than in 1995, and nearly one-third of the world's chemical production will take place in non-OECD countries, compared to about one-fifth in 1995. The shift of chemical production from more affluent to poorer settings could increase the overall health and environmental risks arising from the production and use of such chemicals (18). Already in many developing countries a range of toxic effluents are emitted directly into soil, air and water from industrial processes; pulp and paper plants; tanning operations; mining; and unsustainable forms of agriculture; at rates well in excess of those tolerable to human health. Along with the problem of acute poisonings, the cumulative health impacts of human exposures to various chemical combinations and toxins can be a factor in a range of chronic health conditions and diseases (19,20).



UNEP/ Carmel Fatima

Some cities are rediscovering the health and environment advantages of non-motorized transport alongside more high-tech approaches (e.g. high capacity bus and rail). Improved protection from risk of injury for pedestrians and cyclists remains a critical challenge.