

**Sustainable Development
and Healthy Environments**
Highlights 2004

**Protecting Human Health through
Scientific Evidence, Reasonable Caution and
Strategic Partnerships**



World Health Organization
Sustainable Development and Healthy Environments
Geneva
2005

© World Health Organization 2005

All rights reserved. Publications of the World Health Organization can be obtained from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel: +41 22 791 2476; fax: +41 22 791 4857; email: bookorders@who.int). Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to WHO Press, at the above address (fax: +41 22 791 4806; email: permissions@who.int).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Printed by the WHO Document Production Services, Geneva, Switzerland

Introduction

Three unifying themes underlie the work of WHO's Sustainable Development and Healthy Environments (SDE) cluster¹: the promotion and protection of health as a human right; the importance of health in the eradication of poverty and in overcoming inequality as goals of development; and the recognition that human health needs to be protected from environmental hazards such as pollution, resource depletion and changes in eco-systems.

Through scientific evidence, reasonable caution and strategic partnerships, SDE translates scientific knowledge into policy and practice and reinforces the links between the gathering of evidence and the formulation of policy - with feedback mechanisms to monitor impact.

Scientific evidence

Sustainable development implies sustainability not only of the environment but of the economy. Economy and ecology are inseparable. SDE's department of Health and Development Policy (HDP), brings these two disciplines together in both policy and practice, and particularly so in its 2004 work at the High Level Forum on the Health MDGs (Millennium Development Goals), highlighted in this report.

'Long term and upstream' as opposed to 'short term and downstream' are principles guiding all SDE's activities and in particular, those undertaken by SDE's department of the Protection of the Human Environment (PHE). The SDE Cluster conducts major technical work with critical responsibilities in the development and application of norms and standards with regard to water, sanitation and hygiene, radiation, chemical safety, food safety, air and noise pollution and safety in the workplace. Drawing on the most recent scientific evidence, these standards and guidelines are established and regularly updated through WHO's extensive network of experts.

Reasonable Caution

Not all measures can wait until full scientific evidence is available. SDE therefore operates under a *Framework for Developing Precautionary Measures in Areas of Scientific Uncertainty*. Time periods for recognizing and acting on public health hazards have to be shortened and the real limits to the resilience of natural systems and to the earth's self healing

capacities, appreciated in order to protect human health and well-being. SDE's normative work is built on scientific assessments of risk and makes science-based exposure

limits available to policy makers in member states. Norms and standards aim to reinforce existing safeguards to public health in relation to potential environmental health hazards.

Networking and Strategic Partnerships

SDE is probably the most intersectoral of WHO's clusters; its operational and normative work is less disease specific and more focused on a range of environmental and social determinants of health and its audiences are frequently outside the health sector. Maintaining and expanding a broad range of partners for collaborative work is therefore particularly important in SDE's work. Essential advocacy work to raise awareness of environmental determinants, the ethical and human rights dimensions as well as the implications of globalization for health within WHO and among WHO's partners has been addressed in 2004 and the cluster has continued to reinforce, refine and extend its networking and collaboration capacity with appropriate partners.

In the subsequent chapters we highlight some of the products and services which we provide to our member states and our partners in the UN system and beyond.

SDE addresses environmental determinants of communicable and non-communicable diseases, injuries and disabilities and ensures ethical and human rights dimensions to health policies, laws and international agreements, with the overall aim of integrating health fully into the development process.

¹ See Annex 1, organigram of the Sustainable Development and Healthy Environments cluster

A high level action agenda to accelerate work to meet the health Millennium Development Goals

In response to concern that, at current rates of progress, the health Millennium Development Goals will not be met, WHO and the World Bank have organized a high level forum, bringing together the world's leaders in health and development to take stock, review progress and identify opportunities for accelerating progress towards the health Millennium Development Goals.

Achievement of these goals, as Dr Lee has said, would transform the lives of millions of people. Six of the eight Millennium Development Goals relate to

The meeting examined the extent to which PRSPs are becoming "MDG-friendly", in terms of the priorities they express and their associated budgets. Importantly, it was noted that the proportion of aid delivered in flexible form (budget support) is less now than under structural adjustment; and finally that long term predictability of aid a key issue.

Improving the effectiveness of development assistance (aid) in so-called fragile states was another important subject of discussion. These include countries emerging from conflict and those with particularly weak capacity and governance.

The forum also discussed the **massive shortage of health workers**, particularly in sub-Saharan Africa. It was argued that action being taken to tackle the human resources crisis in health should extend beyond the health sector, to include issues such as public sector reform, migration and expenditure ceilings.



health either directly - maternal mortality, infant mortality; HIV/AIDS, malaria and other big killers - or very closely - food security, water and sanitation, and access to essential drugs.

WHO's urgent and central message at the HLF is that the MDGs are achievable: the resources are available, the interventions exist and international partners such as WHO, stand ready to provide all necessary technical input and guidance to countries.

A WHO model public health act to advance the MDGs

This year the health law team in ETH launched a major project to elaborate a Model Public Health Act that will integrate the Millennium Development Goals (MDGs) and serve as a reference tool for WHO Member States. The principal collaborator on this project is the Centre for Law and the Public's Health of Johns Hopkins and Georgetown Universities. The project will involve an

international team, including other WHO collaborating centres as well as WHO regional and country offices.

Taking into account country specificities in legal approaches, cultural traditions, religious beliefs, and socio-economic conditions, the model act will propose a basic structure of essential elements to guide the development of public health policy and to bring laws up-to-date with current issues in public health, such as the growing importance of noncommunicable and chronic diseases.

Putting health at the top of the development agenda

High level advocacy to increase and improve resources for health, and especially health of the poor, has continued in 2004. National commissions, set up by many countries, encourage heightened interaction between political leaders and policy makers and foster



dialogue between ministries of health, planning and finance.

Macroeconomics and Health national commissions have supported the building up of country-specific evidence for needs-based national health planning and budgeting, a major focus in 2004. The Commissions have acted as catalysts for funding research that reflects country-identified issues for strengthening health systems,

Macroeconomics and Health work has provided input into existing poverty reduction programmes and other national development strategies. In China for example, work continues to develop evidence to put health at the centre of social reforms and to demonstrate that health investments will contribute to overall development, focusing on health care financing, achieving universal access to basic health care, and government health spending.

making knowledge more accessible, and ensuring that the evidence directly inputs into national health and development policy making. This important work in Mexico, India and China was presented in a session chaired by Dr Julio Frenk, the Secretary of Health of Mexico, at the Ministerial Summit on Health Research and at the Global Forum for Health Research's Forum 8 in Mexico in November 2004.

Significant progress has been made in 2004 in promoting involvement of civil society in Macroeconomics and Health processes - critical to poverty reduction and the promotion of equity - in particular through the Asian Civil Society Conference on Macroeconomics and Health held in April 2004 in Colombo, Sri Lanka.

Water for health

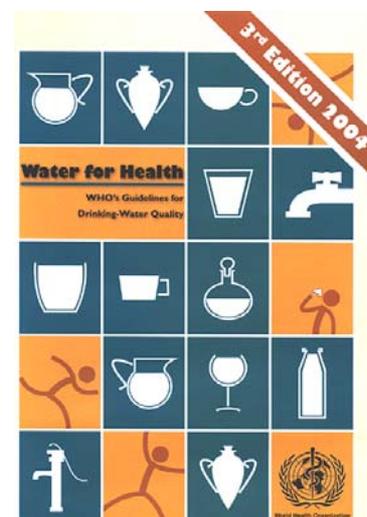
The Third Edition of WHO's Guidelines providing a state-of-the-art perspective on issues of water quality and health and on effective approaches to water quality management, was published in 2004.

The guidelines are used extensively by national water and health regulators, policy makers and their advisers to assist them in the development of norms and standards. The Guidelines used to be updated roughly every ten years, but the pace of development in this area is now such that revision has become a continuous process.

This edition of the Guidelines places more emphasis on preventive management of water quality. Comprehensive

management of water quality from catchment to consumer is currently the most effective preventive approach in the provision of safe drinking water. The fully revised third edition includes expanded coverage on systematic drinking water safety assessment and management. It describes a Water Safety Framework encompassing complementary functions of national regulators, water suppliers and independent surveillance agencies. "Water Safety Plans" provide an all-encompassing approach to assist suppliers in water safety management.

The Third Edition deals with infectious diseases (microbes), hazardous chemicals, radiological hazards and acceptability aspects. The approach to microbial hazards advocates protection of water sources and treatment according to source quality and disinfection, with monitoring of control measures plus verification testing for faecal indicators to ensure that targets are met. For hazardous chemicals, exhaustive chemical- by-



chemical reviews have been prepared and “guideline” values updated representing concentrations that should be safe even with lifelong consumption. Significant improvements have been made in response to new information and developments in risk assessment and management for chemicals and microbes.

New evidence on cost/benefit of meeting water and sanitation goals

Two new WHO reports, published in 2004, have contributed significantly to the advocacy effort required to mobilize the international community towards meeting MDG#7 and the sanitation goal of the World Summit on Sustainable Development.

Evaluation of the Costs and Benefits of Water and Sanitation

Improvement at the Global Level, a

report prepared by the Swiss Tropical Institute for WHO, has shown significant, region-specific economic benefits, ranging from US\$ 3 to US\$ 34 per US\$ 1 invested in improved access to safe water and basic sanitation. It estimates that an additional investment in water and sanitation of around US\$ 11.3 billion per year, over and above current investments, could result in a total economic benefit of US\$ 84 billion annually.

The report provides analyses of the benefits of five intervention options, from sustainable access to improved water supply to regulated in-house

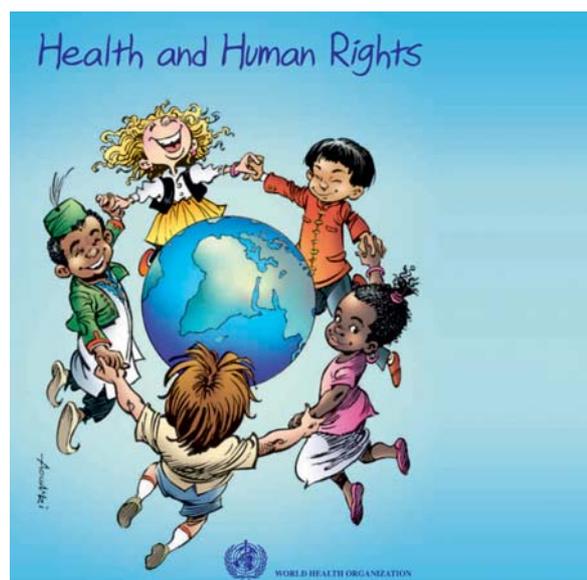
piped water supply and in-house sewerage connection. The latter option would require a total investment of US\$ 136.5 billion per year and would achieve an average global reduction of 69% in episodes of diarrhoea.

Estimates of basic, intermediate and highest possible standards is of enormous value to policy makers who are committed to long term improvements which will *significantly and sustainably reduce disease and death*. For responsible decision-making in this critical area, *full comparisons* which take into account long term costs and impacts and all relevant factors are required. In relation to the opportunity costs of lack of access, the report presents estimates of the *non-health benefits* of safe water supply and sanitation facilities, namely costs avoided due to less illness, less interruptions to productive activities and school attendance, and time savings associated with closer location of facilities.

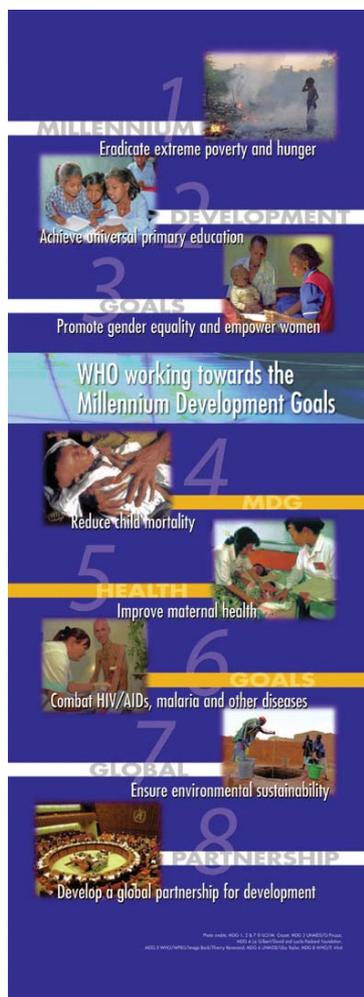
A second report published in 2004, *The Sanitation Challenge: Turning Commitment into Reality*, highlights local initiatives and provides concrete examples of what can be done at community level. This report provides practical evidence to inspire and encourage people everywhere towards achieving the 2025 goal of global sanitation coverage.

Health and human rights

Increasingly, work in the area of development and humanitarian action is integrating a human rights-based approach, across the UN system and beyond. WHO’s public health guidance needs to be consistent with these human rights obligations and WHO must be prepared to provide assistance to Member States in this as in other technical areas. The right to health (short-



hand for the “the right to the enjoyment of the highest attainable standard of health”) is gaining momentum through jurisprudence at the national level and health as a human right has also evolved in the framework



of international law, resulting in greater clarity in terms of its scope, content and application.

Attention to human rights also supports WHO's commitment to tackle the complex relationship between poverty and ill-health. Special attention is focused on ensuring respect for the human right to health among vulnerable population groups which are entitled to the enjoyment of the highest attainable standard of health as a human right *and not as charity*. They are also entitled to participate in decision-making processes which may affect their health development.

Other key human rights principles, applicable to health, include the rights to information and education, which is of particular importance in the area of sexual and reproductive health, enabling vulnerable population groups to access relevant information in order to protect themselves.

Ethical guidance

With the launch of the 3 by 5 initiative in 2003, WHO took up the challenge of universal access to treatment and care as a moral imperative and a human right. Treatments exist - as do the resources to supply, distribute and prescribe them safely - even for regimes as complicated as antiretrovirals for HIV/AIDS. They cannot, however, for lack of a robust infrastructure, be fully mobilized today.

Priority setting in such situations - questions about who comes first when only 8% of those in immediate urgent need have access - pose very complex ethical questions. Throughout 2004, SDE's Ethics team, has been heavily involved in planning the scaling up of treatment programmes in ways that are ethically sound, fair, beneficial and sustainable.

With the Health Technology and Pharmaceuticals cluster, the HIV department and UNAIDS, ETH convened an International Consultation on Equitable Access to Treatment and Care for HIV/AIDS in January to: elucidate issues of ethics and equity that might arise in the implementation and scaling up of ART programmes; lay the groundwork for the formulation of guidance to help governments and others to implement ART programs in an ethical and equitable manner; and consider indicators by which to monitor equity in implementation and distribution.

Based on the outcome of the meeting and further consultations, ETH then led an interdepartmental writing



team in producing *Guidance on ethics and equitable access to HIV treatment and care*, which was published on 1 December 2004 (UN AIDS Day).

Trade and health: towards policy coherence for human development

The programme of work on trade and health is part of WHO's response to a changing international context to promote an effective health dimension to economic policies. Much of the work is focused on increasing the capacity of those at the forefront of policy making, negotiation, and advocating change, whether as health specialists needing to know about trade, or as

“A key objective is to work towards trade and health policy coherence...”

trade specialists needing to know about health. WHO's work in trade and health focuses on building the knowledge base and strengthening capacity in member States and in WHO itself to recognize and act on the public health implications of trade agreements. A key objective is to work towards trade and health policy coherence for human development - a common goal for all development efforts.

Of particular note in 2004 are a series of products contributing to research, the knowledge base and policy development. These included: a legal review of the General Agreement on Trade in Services (GATS) from a public health perspective; *Trade and Health Notes for Policy Makers: a Handbook on Trade in Health Services and GATS*; a database for trade in health goods; Working Papers Series (including *10 steps before making commitments under GATS and Implementation of the WTO General Council decision on paragraph 6 of the Doha Declaration on the TRIPS Agreement and public health*).

This project involves working closely with international agencies such as WTO, the World Bank, OECD and UNCTAD and major international NGOs, foundations and centres of academic excellence worldwide. Various scientific resource groups of outside experts have assisted WHO in developing the research agenda and identifying emerging issues. An internal Technical Working Group involving key programmes in WHO HQ and Regional offices meets regularly to discuss areas of policy concern.

of food production and trade has contributed to this increased risk but countries are not equally well equipped to deal with or communicate about these problems. Most developing countries are either food



exporters or importers and their inclusion in an operational and interactive network such as INFOSAN is essential.

The need to increase country capacity to respond to health emergencies posed by natural, accidental and intentional contamination was recognised in several resolutions passed by the World Health Assembly since 2000. INFOSAN, which is designed to promote the exchange of food safety information and improve collaboration among Food Safety Authorities at both national and international level, now meets that need. It provides a mechanism to exchange information on both routine and emerging food safety issues, in particular, rapid access to information in case of food safety emergencies.

The food safety emergency component is intended to complement and support the existing WHO Global Outbreak Alert and Response Network (GOARN) at both national and international levels.

Food safety emergencies such as the BSE outbreak in UK or the dioxin contamination of animal derived food in Belgium, will now benefit from an efficient and extensive network of communication which is essential for prevention and response measures and for maintaining consumer confidence in the food supply.

Clean, safe and energy efficient stoves to fight the “killer in the kitchen”

Indoor air pollution is one of the world’s neglected health problems which WHO is confronting head on through its department of Protection of the Human Environment. Nearly half the world continues to cook with solid fuels producing smoke containing extremely high concentrations of health damaging pollutants. Rural women and children are most at risk for the health problems associated with indoor air pollution, mainly pneumonia. Their exposure to

levels of smoke in their homes far exceeds international safety standards and in many cases, is the equivalent of consuming two packs of cigarettes a day.

WHO and UNDP marked World Rural Women’s



Day, 15 October 2004, by drawing attention to indoor air pollution - one of the major causes of death and disease in the world’s poorest countries - and a “killer in the kitchen”. WHO provides technical input to the Global Partnership for Clean Indoor Air. It participated in 2004 in the work of an international

panel of experts, selecting among more than 100 proposals, eleven organizations (three in Latin America, four in Asia and five in Africa) for grants to develop, promote, field test and advocate appropriate household energy technologies.

WHO is championing the development of a catalogue of methods to evaluate the impact of these interventions and will provide training and capacity building in countries.

Health care waste management



The management of health care waste requires increased attention in order to reduce the substantial disease burden associated with poor practice, including exposure to infectious agents and toxic substances. Volumes of health care waste produced can be substantial and unless adequate, well operated infrastructure exists, safe disposal is difficult. A 2002 WHO study conducted in 22 developing countries showed that the proportion of health care facilities that do not use proper waste disposal methods ranges from 18% to 64%.

The introduction and widespread use of disposable needles has added to the burden itself and to the controversy surrounding incineration of plastics containing PVC which, at low temperatures, produces dioxins, furans and other toxic air pollutants.

WHO develops guidance material for assessing the quantities and types of waste produced in different facilities, creating national action plans, developing national health care waste management guidelines and building capacity at the national level. In 2004 these have included a comprehensive fact sheet and a policy paper setting out short-, mid- and long-term strategies.

Based on the experience of technical assistance projects, gathered over several years, WHO finalized in 2004 a Guidance Manual for the Preparation of National Health Care Waste Management Plans in Sub-Saharan Countries. The Guidance Manual provides assessment and planning tools - applicable in most countries of the region - for identifying appropriate practices for health care waste management.

Needlestick prevention in health care workers

WHO estimates that 2.5 % of HIV infections and 40% of Hepatitis B and C among healthcare workers are due



to occupational exposure. WHO's Needlestick Prevention Project was established in 2003 to reduce the risk of needlestick injury by raising awareness among healthcare workers of the risk of occupational exposure to HIV and hepatitis; by implementing a programme and policy to improve surveillance, undertaking hepatitis B immunization and post-exposure prophylaxis; and by ensuring compliance with universal precautions and other engineering and work practice controls. Tools developed by the WHO Safe

"...2.5% of HIV infections and 40% of Hepatitis B and C among healthcare workers are due to occupational exposure"

Injection Global Network (SIGN) are being used to implement pilot projects in three countries.

Following an international consultation on the Prevention of Needlestick Injuries in Health Care Workers in Geneva, in 2003, three national planning meetings were held in South Africa, Tanzania and Vietnam, sites of the pilot projects and the WHO Safe Injection Tool Kit was adapted for use in those countries. Initial assessments were conducted in Vietnam and South Africa. South Africa submitted human subjects' applications for review and developed an educational brochure adapted from the National Institute for

Occupational Safety and Health "Preventing Needlestick Injuries" brochure for workers. Training in prevention has been carried out.

Two new WHO publications were distributed to the country teams providing background and policy guidance to support the project including the November 2004 Aide Memoire on Healthcare Worker Safety developed by SIGN in collaboration with project staff, and the January 2004 report: "Global burden of disease from sharps injuries to health-care workers" (see <http://www.who.int/peh/burden/921562463/sharptoc.htm>) which shows an estimated hepatitis B vaccine coverage among healthcare worker to be between 18 – 77 % and an estimated 0.18 – 4.68 needlestick injuries per healthcare worker per year.

Assessing the health consequences of ionizing radiation

The Chernobyl disaster was the worst nuclear accident in history. The explosion on 26 April 1986 at the Chernobyl Nuclear Power Plant led to the substantial radioactive con-

tamination of more than 200,000 square kilometres of European territory, most within the borders of what is now Belarus, Russia and Ukraine. Millions of people were directly or indirectly affected by the accident and had to deal with its environmental, health, social and economic consequences.



With a view to contributing to the implementation of the new strategy of the United Nations launched in 2002 on the "Human Consequences of the Chernobyl Nuclear Accident – A Strategy for Recovery", Chernobyl Forum was launched in 2003 with the participation of relevant international organizations and representatives of the three countries primarily affected by the Chernobyl accident – Belarus, Russia and Ukraine.

In 2003-2004, within the Forum's framework, WHO played a key role in assessing the impact of the accident. It conducted a series of international expert

meetings reviewing and assessing available evidence on health effects of the Chernobyl accident. Resulting from the meetings, a WHO report on assessment of health effects is currently being finalized. To date, childhood thyroid cancer remains the major health outcome of the accident. Some 4000 children in Belarus, Ukraine and Russia, have developed thyroid cancer after exposure to radioactive iodine.

WHO has been coordinating and supporting international efforts for screening, diagnosis, and treatment of Chernobyl childhood thyroid cancer, as part of a long-term follow-up programme. WHO Chernobyl activities also include coordination of epidemiological research programmes, establishment of the Chernobyl Tissue Bank funded by the Sasakawa Memorial Health Foundation, EC, and the National Cancer Institute (USA), and development of infrastructure for the telemedicine project between hospitals in Belarus and Japan.

The Chernobyl Forum will finish its work in 2005 with a UN Conference open for public and mass media with the purpose of delivering the best available information to all.

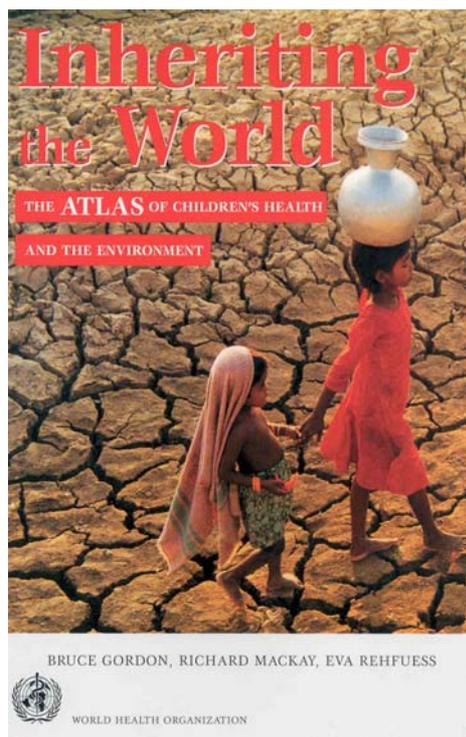
WHO Atlas of children's health and the environment

In June 2004, at the Fourth European Conference of Health and Environment Ministers, in Budapest, WHO launched *Inheriting the World* - the first atlas of its kind, mapping the impact of unhealthy environments on children - showing where the risks are and where children are safe.

Every year, around the world, polluted air and water and other environment related hazards kill more than three million children under the age of five. Only 10% of the world's population is under five years of age, yet 40% of the environment related burden of disease falls on children in this age group.

SDE's atlas provides a striking illustration of the tragic pattern, repeated in health and development data everywhere, in which the most vulnerable members of society pay the price of the failure to protect and preserve the world we live in.

The atlas tackles issues as diverse as the devastating and largely unknown impact of indoor air pollution, the unfashionable yet huge tragedy of poor or non-existent sanitation, and complex emerging issues like climate change. Other issues addressed include fluoride and arsenic in drinking water and climate change. Success stories have been included to emphasize the benefits of policies and interventions that have resulted in a healthier and safer environment.



Full-colour maps and graphics clearly demonstrate the threats that children face everywhere, and underscore the impact of poverty on children's health. The atlas is organized in three parts, *Child Health and Poverty*, *Environmental Issues*, and *A Look to the Future*. Each topic is simply and attractively laid out on one page with essential facts and figures, commentary, a map of the world showing distribution and severity of the problem and extra graphs or pie charts to illustrate particular aspects of the issue.

At the Budapest conference WHO also launched the first WHO e-library on children's health and environment made up of more than 100 documents covering all environmental risk factors affecting children's health and drawn from WHO Headquarters and six Regional Offices.

A WHO framework for effective application of the "precautionary principle"

Recognizing the uncertain and global nature of environmental health threats, WHO has developed an approach for applying precautionary measures that is rational and practical and consistent with public health values and its mission to promote and protect public health.

WHO has always been cautious in its conclusions on health and safety issues and continues to base its recommendations on sound and established scientific evidence.



With rapid technological advances and equally rapid development of potential health hazards, it has become urgent to rigorously apply the precautionary principle (which is the basis for European environmental legislation) or similar measures in assessing risks and to adopt a more preventive and pro-active approach to hazards.

For several years, WHO has been promoting discussion and debate in this field through scientific fora, and it will continue to provide scientific advice on established health risks.

The framework has been developed to assist Member States in incorporating precautionary measures into management of uncertain public health risks. These measures should be the driving force for the development of protective measures that restrict exposure to a given risk factor and should in addition, indicate areas where practical measures can be identified that reduce any consequence to health.

The *WHO Framework for Developing Precautionary Measures in Areas of Scientific Uncertainty* aims to develop a set of policy options for protecting public health according to the degree of scientific uncertainty and the anticipated severity of the harm that might result, taking into account the size of the affected population and the cost. A principal requirement is that these types of policies be adopted in such a way as to avoid undermining scientific assessment of risk and science-based exposure limits. Effective communication and consultation between stakeholders is seen as an integral part of this process.

Sharpening country focus

As part of the new networking across regions and technical clusters at HQ aimed at strengthening approaches for country support, the Country Cooperation Strategy (CCS) was revisited and key elements identified at the first thematic meeting of the country support units (CSU) network in March 2004 in Copenhagen.

At the second CSU network meeting in August 2004, a common set of principles and approaches for strengthening WHO support to national health systems development, particularly through the implementation of country cooperation strategies, was agreed at a Country Focus and Health Systems Development meeting held in Cairo. Recommendations included action to speed up health systems-oriented country work; greater linkages of the CCS to national health development; mainstreaming of CCS into the WHO managerial process; and development and updating of health systems tools, common frameworks to be used by health systems advisers and the Evidence for Information cluster in HQ.



By the end of 2004, all African countries but one had done the CCS exercise (119 are completed or in process worldwide). In response to collective needs expressed in the CCS, the Division of Programme Management in the WHO African Regional Office supported by the Department of Country Focus have worked with technical and managerial programmes to agree on a strategy for phasing in changes to WHO's work so as to strengthen WHO's ability to support national health development and better health outcomes. This started with three countries, Kenya, Tanzania and Malawi, and several months have been spent working on a strategic framework for the whole region, endorsed by senior management in AFRO, and currently being implemented across the region, linked to a resource mobilization strategy.

**Office of the Assistant Director-General
(ADG/SDE)
Dr Kerstin Leitner**

Director, ADGO
Dr Maged Younes

**Co-Ordination of Macroeconomics
and Health Support Unit (CMH)**
Dr Sergio Spinaci, Executive Secretary

Assistant, ADG
Ms Christine Perry

Communications Adviser
Mr Gregory A. Hartl

**Resource Mobilization
External Relations Officer,**
Mr Randy Grodman

IT Support
IT Officer
Mr Tony Armstrong

Assistant, ADGO
Ms Clare Forbes-Hedberg

Technical Officer, Writer
Ms Alison Katz

Country Focus (CCO)
Dr Marie-Andrée Romisch-Diouf, Director

**Articulation with Regional offices,
monitoring and reporting**
Dr Shambhu Acharya
Public Health advisor, Facilitator

**Streamlining with technical
programmes and Partnership**
Dr Robert Fryatt
Public Health Advisor, Facilitator

**Country Cooperation Strategy
follow up**
Dr Cristina Nogueira
Public Health advisor, Facilitator

Country Intelligence and Connectivity
Dr Yonas Tegegn
Technical Officer, Facilitator

**Protection of the Human Environment
(PHE)**
Dr Margaret Chan, Director

Chemical Safety (PCS)
Dr Tim J. Meredith, Coordinator

**Occupational and Environmental
Health (OEH)**
Dr Carlos Corvalan,
Coordinator

**Radiation and Environmental Health
(RAD)**
Dr Michael Repacholi, Coordinator

Water, Sanitation and Health (WSH)
Dr Jamie Bartram, Coordinator

**Intergovernmental Forum on
Chemical Safety (IFCS) ***
Dr J. Stober, Executive Secretary

**Secretariat of the Water Supply and
Collaborative Council (CCW) ***
Mr G. Ghosh, Executive Director

**Food Safety
(FOS)**
Dr Jorgen Schlundt, Director

Chemical Issues
Dr Gerald Moy, GEMS Food
Manager

Microbiology Risk Issues
Dr Peter K. Ben Embarek, Scientist

**Ethics, Trade, Human Rights
and Health Law
(ETH)**
Mr Alex M. Capron, Director

Trade
Dr Nick Drager, Senior Adviser

Human Rights
Ms Helena Nygren-Krug
Health and Human Rights Adviser

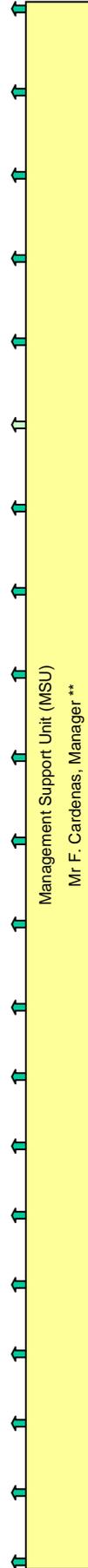
Health Legislation
Ms Geneviève Pinet
Chief, Health Legislation

**MDGs, Health and Development
Policy (HDP)**
Dr Andrew K. Cassels, Director

Ms Brenda Killen, Senior Adviser

Dr Paolo Piva, Adviser

Pro-Poor Health Policies
Dr Eugenio Villar Montesinos,
Coordinator



* Reports to ADG/SDE

** Reports to ADG/GMG

Approved by Dr K. Leitner, ADG/SDE

17 February 2005