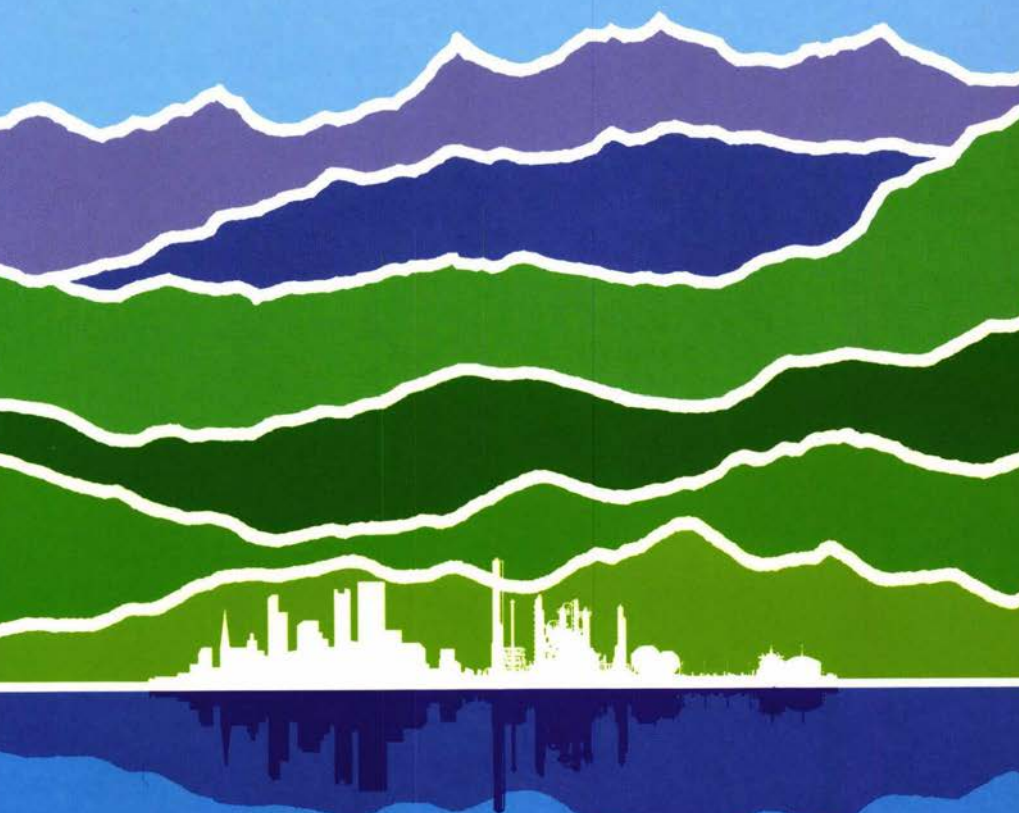


Environment and Health

The European Charter and Commentary



World Health Organization
Regional Office for Europe
Copenhagen

The World Health Organization is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Through this Organization, which was created in 1948, the health professions of some 165 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life.

The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region has 32 active Member States,^a and is unique in that a large proportion of them are industrialized countries with highly advanced medical services. The European programme therefore differs from those of other regions in concentrating on the problems associated with industrial society. In its strategy for attaining the goal of "health for all by the year 2000" the Regional Office is arranging its activities in three main areas: promotion of lifestyles conducive to health; reduction of preventable conditions; and provision of care that is adequate, accessible and acceptable to all.

The Region is also characterized by the large number of languages spoken by its peoples and the resulting difficulties in disseminating information to all who may need it. The Regional Office publishes in four languages — English, French, German and Russian — and applications for rights of translation into other languages are most welcome.

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ENVIRONMENT AND HEALTH

THE EUROPEAN CHARTER AND COMMENTARY



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Foreword

The First European Conference on Environment and Health, held at Frankfurt-am-Main, Federal Republic of Germany on 7 and 8 December 1989, brought together ministers and other senior representatives from the environment and health administrations of 29 European countries and from the Commission of the European Communities.

The Charter, which was adopted by the final session of the Conference, is a further extension of the European health for all policy and targets adopted by the 32 Member States of the European Region of WHO in 1984. The Charter also incorporates the basic philosophy of the World Commission on Environment and Development, and represents a major step forward in the development of both public health and environmental policies at a time when political change is greatly enhancing cooperation among Member States throughout Europe.

The present volume combines the Charter and the Commentary, an explanatory text originally provided as background for delegations to the Conference. It is now being more widely disseminated at their request.

Since this text was prepared, a major development in the implementation of the Charter has taken place, in that an agreement on the establishment of a European Centre for

Environment and Health has been signed with the governments of Italy and the Netherlands. It is already clear that governments are making use of the Charter as a basis for practical action in the interests of all our citizens now and in the future.

J.E. Asvall
WHO Regional Director for Europe

THE CHARTER

Preamble

In the light of WHO's strategy for health for all in Europe, the report of the World Commission on Environment and Development and the related Environmental Perspective to the Year 2000 and Beyond (resolutions 42/187 and 42/186 of the United Nations General Assembly) and World Health Assembly resolution WHA42.26,

- *Recognizing* the dependence of human health on a wide range of crucial environmental factors,
- *Stressing* the vital importance of preventing health hazards by protecting the environment,
- *Acknowledging* the benefits to health and wellbeing that accrue from a clean and harmonious environment,
- *Encouraged* by the many examples of positive achievement in the abatement of pollution and the restoration of a healthy environment,
- *Mindful* that the maintenance and improvement of health and wellbeing require a sustainable system of development,
- *Concerned* at the ill-considered use of natural resources and man-made products in ways liable to damage the environment and endanger health,

- *Considering* the international character of many environmental and health issues and the interdependence of nations and individuals in these matters,
- *Conscious* of the fact that, since developing countries are faced with major environmental problems, there is a need for global cooperation,
- *Responding* to the specific characteristics of the European Region, and notably its large population, intensive industrialization and dense traffic,
- *Taking into account* existing international instruments (such as agreements on protection of the ozone layer) and other initiatives relating to the environment and health,

The Ministers of the Environment and of Health of the Member States of the European Region of WHO, meeting together for the first time at Frankfurt-am-Main on 7 and 8 December 1989, have adopted the attached European Charter on Environment and Health and have accordingly agreed upon the principles and strategies laid down therein as a firm commitment to action. In view of its environmental mandate, the Commission of the European Communities was specially invited to participate and, acting on behalf of the Community, also adopted the Charter as a guideline for future action by the Community in areas which lie within Community competence.

Entitlements and responsibilities

1. *Every individual* is entitled to:
 - an environment conducive to the highest attainable level of health and wellbeing;
 - information and consultation on the state of the environment, and on plans, decisions and activities likely to affect both the environment and health;
 - participation in the decision-making process.
2. *Every individual* has a responsibility to contribute to the protection of the environment, in the interests of his or her own health and the health of others.
3. *All sections of society* are responsible for protecting the environment and health as an intersectoral matter involving many disciplines; their respective duties should be clarified.
4. *Every public authority and agency* at different levels, in its daily work, should cooperate with other sectors in order to resolve problems of the environment and health.
5. *Every government and public authority* has the responsibility to protect the environment and to promote human health within the area under its jurisdiction, and to ensure

that activities under its jurisdiction or control do not cause damage to human health in other states. Furthermore, each shares the common responsibility for safeguarding the global environment.

6. *Every public and private body* should assess its activities and carry them out in such a way as to protect people's health from harmful effects related to the physical, chemical, biological, microbiological and social environments. Each of these bodies should be accountable for its actions.
7. *The media* play a key role in promoting awareness and a positive attitude towards protection of health and the environment. They are entitled to adequate and accurate information and should be encouraged to communicate this information effectively to the public.
8. *Nongovernmental organizations* also play an important role in disseminating information to the public and promoting public awareness and response.

Principles for public policy

1. Good health and wellbeing require a clean and harmonious environment in which physical, psychological, social and aesthetic factors are all given their due importance. The environment should be regarded as a resource for improving living conditions and increasing wellbeing.
2. The preferred approach should be to promote the principle of “prevention is better than cure”.
3. The health of every individual, especially those in vulnerable and high-risk groups, must be protected. Special attention should be paid to disadvantaged groups.
4. Action on problems of the environment and health should be based on the best available scientific information.
5. New policies, technologies and developments should be introduced with prudence and not before appropriate prior assessment of the potential environmental and health impact. There should be a responsibility to show that they are not harmful to health or the environment.

6. The health of individuals and communities should take clear precedence over considerations of economy and trade.
7. All aspects of socioeconomic development that relate to the impact of the environment on health and wellbeing must be considered.
8. The entire flow of chemicals, materials, products and waste should be managed in such a way as to achieve optimal use of natural resources and to cause minimal contamination.
9. Governments, public authorities and private bodies should aim at both preventing and reducing adverse effects caused by potentially hazardous agents and degraded urban and rural environments.
10. Environmental standards need to be continually reviewed to take account of new knowledge about the environment and health and of the effects of future economic development. Where applicable such standards should be harmonized.
11. The principle should be applied whereby every public and private body that causes or may cause damage to the environment is made financially responsible (the polluter pays principle).
12. Criteria and procedures to quantify, monitor and evaluate environmental and health damage should be further developed and implemented.

13. Trade and economic policies and development assistance programmes affecting the environment and health in foreign countries should comply with all the above principles. Export of environmental and health hazards should be avoided.
14. Development assistance should promote sustainable development and the safeguarding and improvement of human health as one of its integral components.

Strategic elements

1. The environment should be managed as a positive resource for human health and wellbeing.
2. In order to protect health comprehensive strategies are required, including, *inter alia*, the following elements:
 - The responsibilities of public and private bodies for implementing appropriate measures should be clearly defined at all levels.
 - Control measures and other tools should be applied, as appropriate, to reduce risks to health and wellbeing from environmental factors. Fiscal, administrative and economic instruments and land-use planning have a vital role to play in promoting environmental conditions conducive to health and wellbeing and should be used for that purpose.
 - Better methods of prevention should be introduced as knowledge expands, including the use of the most appropriate and cost-effective technologies and, if necessary, the imposition of bans.
 - Low-impact technology and products and the re-cycling and reuse of wastes should be encouraged. Changes should be made, as necessary, in raw

materials, production processes and waste management techniques.

- High standards of management and operation should be followed to ensure that appropriate technologies and best practices are applied, that regulations and guidance are adhered to, and that accidents and human failures are avoided.
- Appropriate regulations should be promulgated; they should be both enforceable and enforced.
- Standards should be set on the basis of the best available scientific information. The cost and benefit of action or lack of action and feasibility may also have to be assessed but in all cases risks should be minimized.
- Comprehensive strategies should be developed that take account of the risks to human health and the environment arising from chemicals. These strategies should include, *inter alia*, registration procedures for new chemicals and systematic examination of existing chemicals.
- Contingency planning should be undertaken to deal with all types of serious accident, including those with transfrontier consequences.
- Information systems should be strengthened to support monitoring of the effectiveness of measures taken, trend analysis, priority-setting and decision-making.

- **Environmental impact assessment should give greater emphasis to health aspects. Individuals and communities directly affected by the quality of a specific environment should be consulted and involved in managing that environment.**
- 3. Medical and other relevant disciplines should be encouraged to pay greater attention to all aspects of environmental health. Environmental toxicology and environmental epidemiology are key tools of environmental health research and should be strengthened and further developed as special disciplines within the Region.**
 - 4. Interdisciplinary research programmes in environmental epidemiology with the aim of clarifying links between the environment and health should be encouraged and strengthened at regional, national and international levels.**
 - 5. The health sector should have responsibility for epidemiological surveillance through data collection, compilation, analysis and risk assessment of the health impact of environmental factors and for informing other sectors of society and the general public of trends and priorities.**
 - 6. National and international programmes of multidisciplinary training, as well as the provision of health education and information for public and private bodies, should be encouraged and strengthened.**

Priorities

1. Governments and other public authorities, without prejudice to the importance of problem areas specific to their respective countries, the European Community and other intergovernmental organizations, as appropriate, should pay particular attention to the following urgent issues of the environment and health at local, regional, national and international levels and to take action on them:

global disturbances to the environment such as the destruction of the ozone layer and climatic change;

urban development, planning and renewal to protect health and promote wellbeing;

safe and adequate drinking-water supplies on the basis of the WHO *Guidelines for drinking-water quality* together with hygienic waste disposal for all urban and rural communities.

water quality in relation to surface, ground, coastal and recreational waters;

microbiological and chemical safety of food;

the environment and health impact of:

— various energy options

— transport, especially road transport

— agricultural practices, including the use of fertilizers and pesticides, and waste disposal;

air quality on the basis of the WHO *Air quality guidelines for Europe*, especially in relation to oxides of sulfur and nitrogen, the photochemical oxidants (“summer smog”) and volatile organic compounds;

indoor air quality (residential, recreational and occupational), including the effects of radon, passive smoking and chemicals;

persistent chemicals and those causing chronic effects;

hazardous wastes including management, transport and disposal;

biotechnology and in particular genetically modified organisms;

contingency planning for and in response to accidents and disasters;

cleaner technologies as preventive measures.

2. In addressing all of these priorities, the importance of **intersectoral environmental planning and community management** to generate optimal health and wellbeing should be borne in mind.
3. **Health promotion** should be added to health protection so as to induce the adoption of healthy lifestyles in a clean and harmonious environment.
4. It should be recognized that some urgent problems require direct and immediate **international cooperation and joint efforts**.

The way forward

1. Member States of the European Region should:

- take all necessary steps to reverse negative trends as soon as possible and to maintain and increase the health-related improvements already taking place. In particular, they should make every effort to implement WHO's regional strategy for health for all as it concerns the environment and health;
- strengthen collaboration among themselves and, where appropriate, with the European Community and other intergovernmental bodies on mutual and transfrontier environmental problems that pose a threat to health;
- ensure that the Charter adopted at this meeting is made widely available in the languages of the European Region.

2. The WHO Regional Office for Europe is invited to:

- explore ways of strengthening international mechanisms for assessing potential hazards to health associated with the environment and for developing guidance on their control;
- make a critical study of existing indicators of the effects of the environment on health and, where

necessary, develop others that are both specific and effective;

- establish a European Advisory Committee on the Environment and Health in consultation with the governments of the countries of the Region;
- in collaboration with the governments of the European countries, examine the desirability and feasibility of establishing a European Centre for the Environment and Health or other suitable institutional arrangements, with a view to strengthening collaboration on the health aspects of environmental protection with special emphasis on information systems, mechanisms for exchanging experience and coordinated studies. In such arrangements, cooperation with the United Nations Environment Programme, the United Nations Economic Commission for Europe and other organizations is desirable. Account should be taken of the environmental agency to be established within the European Community.

3. Member States of the European Region and WHO should:

promote the widest possible endorsement of the principles and attainment of the objectives of the Charter.

4. European Ministers of the Environment and of Health should:

meet again within five years to evaluate national and international progress and to endorse specific action plans drawn up by WHO and other international organizations for eliminating the most significant environmental threats to health as rapidly as possible.

THE COMMENTARY

Introduction

The Nature of Environmental Health

The Conference focused on all aspects of the relationship between the environment and human health, a subject referred to by WHO as environmental health.

Environmental health comprises those aspects of human health and disease that are determined by factors in the environment. It also refers to the theory and practice of assessing and controlling factors in the environment that can potentially affect health.

Environmental health, as used by the WHO Regional Office for Europe, includes both the direct pathological effects of chemicals, radiation and some biological agents, and the effects (often indirect) on health and wellbeing of the broad physical, psychological, social and aesthetic environment, which includes housing, urban development, land use and transport.

These two aspects of environmental health make different scientific and organizational demands but are parts of a coherent whole. The programmes of the Regional Office on environmental health include water supply and sanitation, air and water pollution control, solid waste management, chemical and food safety, radiation protection,

housing and settlements, and occupational health. The Charter takes all these into account.

The Purposes of the Charter and the Commentary

A Charter by which the governments of Europe have adopted a united position on the basic principles, mechanisms and priorities for further developing environmental health programmes should, in itself, help to ensure that the subsequent actions of those governments are undertaken confidently and decisively.

Several factors impede international collaboration in this field, including:

- misunderstandings about the scope of the subject, since in some countries the term environmental health is not used or understood, and in others it includes activities that vary widely in type and scope;
- conflicting views on the nature and extent of the harm caused by environmental factors and on the benefits of more stringent controls;
- severe limitations on the methods available for estimating harm;
- a difficulty shared by organizations responsible for various aspects of environmental health in Member States in securing the collaboration of other government sectors and society at large.

The Charter, and this Commentary, aim to suggest a reasoned consensus where immediately practicable and to indicate ways of overcoming these impediments in future.

Historically, charters have tended to be grants of just and due rights, privileges and powers. In modern times, they have come to be used and regarded as statements of basic principles and entitlements in public affairs. The WHO Regional Office for Europe uses the term charter in this latter sense. The entitlements referred to in the Charter comprise the generally accepted public precepts of morality for health and the environment to which an individual is entitled, rather than strictly construed legal provisions or acts.

The European Charter has been introduced at a time when the peoples of the European Region are demanding decisive policies and programmes to control the interaction of environment and health. The Charter includes key principles for meeting this challenge, and represents a mutual understanding and determination to succeed.

The preamble

The Dependence of Health on Environmental Factors

The starting point for policy on health and the environment is the recognition that, in principle, almost every aspect of the environment potentially affects health for good or ill. This applies not only to specific agents (microorganisms, other biological entities, physical forces and agents, and chemicals) but also to elements of the urban and rural environment: homes, workplaces, leisure facilities and the main components of the natural world (the atmosphere, soil, water, and many parts of the biosphere). A properly managed environment is therefore essential, not only to improve health but indeed to ensure human survival.

Although many environmental factors have the potential to harm health, it does not follow that they are doing so. Humans and the biosphere can coexist in reasonable harmony, and in many ways they do. There are important exceptions, however, including indirect or long-term effects that have only recently been revealed, as well as some long recognized recalcitrant problems. It is not yet completely clear how current trends in environmental management and the use of resources will affect health. There are substantial geographical differences in the incidence of disease (and of

positive health) that are not yet understood, although life-style or genetic factors do not explain them entirely. Important unsuspected environmental causes of disease probably remain to be found.

Some of the important influences of the environment on health are very difficult to determine by scientific study and seem to be psychological in character. A beautiful countryside, together with cities, towns and villages that represent the flowering of humanity's cultural achievements, are vital to many people's sense of health and wellbeing. Likewise it is accepted that unpleasant environmental conditions have many important negative consequences for physical and mental health.

It is increasingly necessary to ensure that the environment created by humans is planned and managed strongly and imaginatively enough to maximize its potential benefits to health and wellbeing. This is why the Charter addresses not only hazard control but the management of all aspects of the environment.

Preventing Health Hazards by Protecting the Environment

The Charter acknowledges the relationship between many aspects of care of the environment and of health, and focuses on the principles, mechanisms and priorities for action appropriate to Europe.

A Clean and Harmonious Environment for Health and Wellbeing

Policies are needed that promote positive enhancement of the physical environment, so that it will not only be free from

obnoxious or offensive influences but also provide an effective and harmonious basis for healthy living. In this respect, the Charter embodies some of the principles developed for the WHO Healthy Cities project.

Achievements in Pollution Abatement and Environmental Restoration

Many cases of contamination or neglect of the environment have been prevented or reversed by wide-ranging local, regional, national or international programmes. Based on present evidence, if the best practices already adopted in some places were universally followed, the total impact on health of unsatisfactory environmental conditions in Europe would be much reduced. With few — though important — exceptions, techniques are available to deal with the environmental health problems that have been clearly identified. The European Region faces a major challenge in promoting the best practice and techniques more uniformly throughout individual countries. The Charter is intended to help in this process.

The Need for a Sustainable System of Development

Sustainability is a strategy for socioeconomic development. It implies meeting the needs of the present generation, without compromising the ability of future generations to meet theirs. It demands that development be pursued within the constraints of the earth's resource base and the biosphere's capacity, which some existing strategies cannot fulfil. Sustainability requires new approaches and practical

measures, and reorientation at the highest political level, in many sectors of society.

The European Region of WHO is now obliged to consider sustainability in many of its environmental issues: for example, the depletion of the stratospheric ozone layer, the deterioration of large areas of the Mediterranean Sea, energy production from low-quality brown coal, acid deposition, groundwater pollution, some aspects of intensive agricultural production, and urban transport policies.

All these issues significantly affect health. The Chairman of the World Commission on Environment and Development, Gro Harlem Brundtland, then Prime Minister of Norway, stressed the interdependence of health and sustainable development in her 1988 speech to the World Health Assembly. The questions addressed by the Charter are therefore very important for the follow-up to the Commission's report, which includes both the high-level conference of industrialized countries in Bergen in 1990 and the global conference proposed for 1992. Relevant resolutions of the United Nations General Assembly and of the World Health Assembly are presented in Annexes 2-5.

Ill-considered Use of Resources and Products

Although most European countries have reasonably effective systems that prevent or reduce harm from recognized categories of hazard, new and sometimes alarming problems still occur. Some are essentially unpredictable, but experience in recent years shows that, outside closely regulated

fields, ill-considered land use, carelessness with resources, poor hygiene, and thoughtless use and development of new technologies, chemicals and products are commonplace. In some fields and in some localities, grossly polluting technology continues to be used even though substantially superior technology is readily available. The damage that occurs to the environment and to health might easily be foreseen and avoided. One main purpose of the Charter is to define and seek agreement on the required policy changes and countermeasures.

The International Character of Environment and Health

The programmes that protect and enhance health in relation to the environment face many of the same issues in different European countries, even if priorities vary. Much of the necessary research, assessment and preparation of guidelines and codes of practice can therefore be accomplished most effectively internationally. Nevertheless, flexibility is essential to respond effectively to problems faced by particular countries or areas, taking into account differences in their social and economic circumstances.

Some problems are basically international, such as the pollution of air or water across national borders and international movement of food, consumer products, waste and potentially hazardous chemicals. These problems require specific international agreements and collaboration, and the Charter supports such initiatives in the context of protecting health.

Problems Facing the Developing Countries

In many developing countries, environmental problems have grown to dimensions that may exceed those of countries that have been industrialized for many years. Pollution, land-use practices, agriculture (including overgrazing and deforestation), rapid and uncontrolled urbanization, and inappropriate use of water resources frequently cause particular problems that can often be correlated with serious health detriments.

The influence of economic policies and of technological innovations from the developed countries, including those of the European Region, have contributed to these problems in some cases. The resulting effects can transcend national boundaries and, in some cases, can have global consequences. International cooperation is therefore needed, and the European Region is in a strong position to lead such initiatives.

The Reasons for a Charter Specific to Europe

Many of the principles and proposals set out in the Charter for Europe also apply to other parts of the world; in some ways, parts of the European Region have more in common with countries outside Europe than with other European countries. Nevertheless, Europe has a particular character stemming from its generally high population density, intensive industrialization, transport problems, urbanization, cultural identity, the interdependence of its 32 countries in

resources and trade, the generally high level of socio-economic development, and the increasing mobility of its population. For these reasons, the Charter has been developed primarily to conform to the specific circumstances and needs of the European Region; if it leads to more widespread action, so much the better. In the light of changing circumstances, it was thought constructive to build on common perceptions across the entire Region of what is required in terms of environment and health policy, since collaboration between the different political and economic groups in Europe is at least as necessary in this field as collaboration within each separate group.

Existing International Instruments

There are many examples of international collaboration; some of these were referred to earlier. Any new initiative emerging from the Conference must clearly build, if possible, on existing arrangements and not seek to duplicate them.

Entitlements and responsibilities

The Entitlements of the Individual

The concept of a human entitlement in relation to health must be defined carefully to be of value. An entitlement is something a person expects in a defined area, based on law, morality or traditional social practice. Certain entitlements can be construed as specific rights and are enforceable in their nature and may be provided for by law. Nevertheless, such broadly conceived entitlements as the right to health, which was included in the United Nations Declaration of Human Rights, or the right to an environment conducive to health, are not precise in their practical implication, nor are they anyone's gift to provide in any absolute sense. They reflect a shared moral view of society, a touchstone against which the appropriateness of specific policies and actions can be tested and, if necessary, provided for by law.

The public acknowledgement of generally recognized and morally based entitlements of individual people in relation to environmental health programmes may help to re-establish trust in public policy which, reasonably or not, has been damaged in some ways in recent years. People's legal entitlement to redress if they can prove that damage results from the action of others is well established in national legal systems. The public, however, now has a

strong sense that it is entitled to the protection of health (where possible by preventive action) that limits the likelihood or extent of risk from environmental hazards; and to be informed and consulted on the state of the environment and on plans, decisions and activities likely to affect the environment and health, including participating in the decision-making process.

These entitlements also extend to any person whose health is damaged by the action of any other person, not only the state or others in authority. The Charter acknowledges that every individual is entitled to an environment conducive to health. Every individual also shares the responsibility for securing good health within the environment, and cannot merely depend on others for protection.

Such an entitlement cannot be absolute: total absence of risk is not possible. Health-enhancing improvements to the environment would be unlimited if resources were unlimited: this entitlement, however, can only extend to what is practicable.

Experts and the public can perceive risk in radically different ways. Public perception of a risk may prevent the implementation of policies that experts (after careful study) believe to be safe: for example, methods for disposing of low-level radioactive waste. On the other hand, particularly if they will suffer financially, people sometimes discount risks that, for good reasons, experts take seriously. On other occasions, the experts fail to foresee (or to acknowledge) the likely hazards of a new technology or development that the public reasonably objects to once they learn of it: for example, some modern practices in the animal feedstuff industry.

People dislike being kept ignorant or discovering that an official body is so sure that it knows best that it is unwilling to listen to other opinions. Implementing an entitlement to know in the terms used in the Charter inevitably has disadvantages, as it will arm people who are stubbornly determined to oppose some new technology or development. It is reasonable to expect, however, that ready access to information will reinforce trust and most people's willingness to accept well argued policy, at least in the longer term.

The public should be entitled to information that is gathered for management purposes or as a legal obligation. Nevertheless, categories of information such as commercial secrets may have to be excluded, although it is questionable whether all information currently kept secret merits such protection.

Collecting, analysing and disseminating information is costly. Data must be selectively gathered. The public particularly needs information on developments and products that may affect health and on the effectiveness of control measures. On the other hand, to take a sensible view of the public interest, an entitlement can only comprise what it is practicable to obtain.

The WHO Healthy Cities project has shown the value of public participation in complex projects in which the community has as much to give as to gain in improving its own environment. The authorities may find it very difficult to consult the public, for example on a proposed waste disposal facility, when the local community feels that it is being asked to accept some risk to benefit people living in a much wider area. In an open society, however, failure to consult is likely to cause even bigger problems. People feel strongly that

they have the right to be consulted when their interests are affected, and this should not lightly be ignored.

The way forward, based on the difficulties participation and consultation can produce, is for experts to acknowledge the roots of public concern, and to balance this by disseminating more information to the public. More public knowledge of potential environmental hazards and of the means used to assess and mitigate the risks associated with them should lead, in time, to more reasonable attitudes.

The Responsibilities of the Individual

Most people will agree that they have an entitlement to an environment conducive to health. They may be less ready to accept voluntarily that there are balancing obligations, but the human race cannot afford to have social groups that continue to be irresponsible. Care for a health-giving environment cannot be regarded merely as a virtue; it is an obligation. The more this care is accepted as a freely undertaken moral obligation the better, although it needs to be supported by a framework of law and effective enforcement. It is, of course, easier to propose that every person is responsible for a health-giving environment than to bring about the changes in attitude required to implement this principle. This is the challenge.

The entitlements of individuals do not exist without corresponding responsibilities, not only to protect the safety of others but to help promote a safe, health-enhancing environment for the community. Moreover, the individual is responsible to more people than those encountered from day to day in the immediate environment; public policies

designed to promote the health and wellbeing of future generations and the inhabitants of other countries need the assent and sometimes the active participation of individual people. Individuals are also responsible for the quality of the urban, rural and natural environments because they significantly influence health and wellbeing.

An Intersectoral Responsibility for All Sections of Society

The Charter contends that it falls to all sections of society, including every individual, group and organization, to exercise a duty for care to a healthy environment when going about their affairs. Unless special care is taken each person, group and organization, often without realizing it, tends to degrade the environment, to deplete the earth's resources and to infringe the entitlements of others. Activities outside the purview of health professionals, public health authorities and the regulatory agencies have caused many serious environmental health problems in recent years. The nature of environmental health is that hazards may appear in connection with virtually any human activity. To reduce environmental hazards and to enhance environmental quality, the people responsible for each activity must exercise care and foresight in the first place; they are usually the only people who fully understand it technically. Environmental health, therefore, is the responsibility of all sections of society.

Potential hazards to health are caused by agents from many sources, which reach humans by complex routes. Hazards with which one sector of society must cope, such as the water supply and food industries, may originate in the practices of another, such as agriculture. The most effective

solution requires the cooperation of all sectors involved, and optimal progress depends on collaboration, not on the defence of sectoral interests. Environmental health is thus not just multisectoral but also an intersectoral responsibility.

Cooperation with Other Sectors

Isolated decisions cannot usually solve problems of environment and health; a lack of cooperation between authorities has created or aggravated many problems. Mechanisms for intersectoral cooperation must be established for policies (such as those relating to energy, transport and agriculture), for strategic and physical planning and for individual developments. Environment and health considerations need to be addressed at the earliest possible stage, in accordance with the principle of prevention.

In some cases intersectoral collaboration may have to be mandatory; in others it may be effectively achieved by establishing less formal consultative mechanisms. The Healthy Cities project has demonstrated how this process can operate at the municipal level: it needs to be applied locally, regionally, nationally and internationally.

Such collaboration involves interests whose objectives may be diametrically opposed. It is therefore difficult, but collaboration is fundamentally important to achieving satisfactory environment and health conditions and a process of sustainable development.

Individual European countries vary considerably in the way they delegate the responsibility for environmental issues as a whole, and for health aspects of the environment, among government departments and agencies. Regardless of the system adopted, the many possibilities for interaction

between the policies of the health and environment sectors and others require both effective collaboration and very clear mutual global objectives.

An important question is whether the political responsibility for major socioeconomic development sectors should lie in the same hands as the responsibility for protecting human health and the environment. On the one hand an organization with dual responsibility, either national or local, risks subordinating protection to socioeconomic development. On the other hand environmental protection and health agencies at all levels are liable to be held publicly responsible for any evidence that the authorities as a whole have failed to protect health or the environment, although they may not have either the means or the power to be aware of potential problems or to take appropriate action. Moreover, separation of functions may tempt people responsible for socioeconomic development to neglect their obligations towards health, environmental protection, conservation and sustainability.

The choice of structure is probably less important than having clear overall objectives. The short-term tensions between environmental health and economic objectives should be openly acknowledged, and there should be intersectoral links with clearly delegated responsibility and public accountability to make sure that these links are effective.

International Responsibilities of Governments

All countries share a vital responsibility for preventing catastrophic damage to the global environment and thus to

humanity. Each country has the responsibility to ensure that activities under its jurisdiction or control do not damage the health of humans in other countries through pollution, trade in hazardous materials or other causes.

Protecting Health

In order that socioeconomic development and innovation proceed in a way that protects and, where possible, enhances human health, the effects of whatever is planned need to be predicted, so that rational decisions can be made. The process of environmental impact assessment is now becoming a generally accepted tool for specific developments, and effects on human health must clearly be taken fully into account. Technology and products should be routinely assessed, to improve the health and safety of workers, consumers and the general public. Whereas much progress has been achieved in assessing potentially hazardous chemicals, the effects of changes in such diverse fields as housing construction, transport policies and food production and manufacture have not been consistently taken into account.

A process of accountability to competent and specifically designated authorities must be built into such systems of impact assessment.

The Role of the Media

The average person cannot be expected to evaluate every facet of environmental quality as it relates to health, or the adequacy of work carried out by private and official agencies. The media and special interest groups can perform

a vital function by obtaining and interpreting information for the public. As the truth about a pollution incident is often dull, however, journalists may be tempted to create colourful, unjustifiably alarming stories or to emphasize unduly the extreme views of individual experts. Official agencies get angry when this happens, particularly if they are not consulted. Nevertheless, it is useless for them to complain if they do not provide the media with honest and effective information. A compact is needed between the two sides. Journalists should be briefed as fully and accurately as possible, and they should be encouraged to communicate this information effectively to the public. Neither concealment nor false scares are in the public interest.

The Role of Nongovernmental Organizations

A wide range of nongovernmental organizations has demonstrated an awareness of and concern for environmental and health issues in the European Region. Some organizations were specifically established based on those issues at local, national or international level; others include such issues as part of their wider terms of reference. Together, in their different ways, they represent a sizeable proportion of the total population and this potential should be fully used for consultation, and for providing and disseminating information.

The cooperation of such organizations, whether concerned with professional, commercial, or community or other interests, is essential to promote and to achieve an improved environment for human health and wellbeing.

Principles for public policy

The Environment and Health

A basic concept of the Charter is that environmental health in Europe includes not only pollution control and environmental hygiene but all aspects of the physical environment and of socioeconomic development.

The difficulties facing planners in relation to the latter aspects are exactly the opposite of the difficulties involved in chemical and radiation hazards, where much is known on how adverse effects might occur but, in many cases, it is not known whether they do occur. For the physical environment, substantial geographical differences in the incidence of disease clearly coincide with different housing standards and urban and rural conditions in health statistics, although the precise causes and mechanisms are not known. However, the public health reforms of the nineteenth century suggest that remedying conditions that are perceived as poor or stressful is very effective in reducing high disease rates, and can indeed lead to an understanding of the etiology even in the absence of prior scientific evidence. It is true that there are lifestyle and probably genetic factors in the geographical differences in disease incidence, but it is also increasingly clear that a range of environmental factors, and the interaction between those and lifestyle, are of great importance.

It is not, of course, intended that expensive changes in the built environment are justifiable solely because of general speculation about their supposed effects on health. Recent experience, however, such as that of the Healthy Cities project, shows that carefully analysing the problems of individual communities can lead to many economically realistic initiatives that can be implemented when public enthusiasm, including that of businesses and official agencies, is harnessed to promote changes that clearly benefit health and wellbeing. The mechanisms behind the record of poor health in certain communities need to be revealed by precise, painstaking scientific study, but major health problems should not be neglected just because their causes are difficult to trace. As in the case of individuals with poorly understood illnesses, faith, enthusiasm, a willingness to experiment and care in listening to the individual or to the community are all necessary.

The features of the physical environment that are unquestionably responsible for illness, injury and death must be given high priority. Accident prevention, for example, needs to be strongly emphasized in designing housing, transport systems and the workplace. It is imperative to remedy the insanitary conditions still widespread in the home and community and in food production and handling. Urban facilities and infrastructures that are clearly linked with health, such as attractive, affordable facilities for healthy recreation, are another good starting-point for collaboration among sectors.

It is not only the physical aspects of the environment that influence health, but also the psychological, social and aesthetic dimensions. People usually feel fitter and happier

when their surroundings are attractive and when their neighbours are friendly and well behaved. Conversely, psychological and social factors affect physical symptoms and contribute to psychiatric disorders, although their role in causing physical disease is more controversial. Whatever the case, WHO's definition of health is broad: "health is a state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity."

Many diverse professions and local, provincial and central organizations are involved in physical planning and in providing services for urban and rural environments. It does not matter who provides the leadership as long as the health dimension is explicitly regarded as a major objective and taken fully into account at all stages.

Giving Priority to Prevention

In most cases, preventing ill health should take priority over cure, and the most effective way to manage the environment is to identify problems as early as possible and introduce appropriate safeguards. In view of the principle of sustainability, proposed socioeconomic development must explicitly address the need to minimize detriment to health and to maximize health benefits by, for example, using low-impact technologies in industry, agriculture and energy production, and introducing appropriate land-use and transport policies.

Cleaning up the environment after long-standing pollution and correcting mistakes, for example in physical planning and in the design and construction of housing, are often difficult and highly wasteful of resources.

Vulnerable and High-risk Groups

Individuals and groups who are at high risk need special consideration. People working with certain processes or living near certain industrial plants may be particularly exposed to specific agents. Somewhat higher levels of risk may be acceptable in the workplace than in the general environment, but risk should be reduced to negligible levels, except for people who choose to work in hazardous environments knowingly and without duress, when all possible steps have been taken to minimize the risk entailed.

Infants and children tend to be at greater than average risk for many reasons. They take in more of a contaminant relative to their size than do adults, they have immature and therefore vulnerable physiologies and, simply because of their youth, have a greater probability of manifesting long-term effects. Elderly people are also liable to certain physiological vulnerabilities. Pregnant women and mothers require special consideration, not only to maintain and improve their own health but because they pass contaminants to the fetus and to breastfed infants.

The needs of these vulnerable groups should normally determine the limits to be applied to the whole population, but if this is not possible, special steps should be taken to protect these groups.

The vulnerability of individuals also varies: safety factors used for setting control limits provide for a range of susceptibility to hazardous agents. Individuals who, because of sensitization or pre-existing illness, are vulnerable to agents that are harmless to most people present a more difficult problem. Care must be taken in permitting the use

of substances liable to sensitize, and general restrictions are needed when many people are vulnerable. There is, however, a limit to what is practicable, and some people must be protected individually.

The Best Available Scientific Information

The need to strengthen information systems is addressed on page 64. In some cases, sufficient information is not available to make rational decisions, either because the information does not exist or because it is not accessible. In other cases, information (such as environmental monitoring data) may be available, but is irrelevant for the intended purpose. Appropriate information of many kinds from a wide variety of sources needs to be generated and used optimally. This requires carefully defining the requirements of the environment and health and a high degree of cooperation among the different authorities involved.

The Need for Prudence

There is considerable uncertainty about the extent of direct and indirect risks to human health caused by specific agents present in the environment. For many substances, it is not known whether there are thresholds to an adverse effect or, if so, what those levels are. The potential for harm of the full range of chemicals to which people are exposed has not been fully explored; there is clearly room among the burden of unexplained disease for the operation of hitherto unsuspected toxic effects. Substances widely present in food and the environment that were once regarded as entirely safe have turned out to have a propensity for harm, and probably

in future there will be other, similar unforeseen instances. Further, there is at present limited knowledge of the pattern in the general population of exposure to even well studied toxic substances, or of the patterns of contamination of water, food and indoor and outdoor air. Comprehensive assessment of the separate or combined impact of all individual chemicals is impracticable and will continue to be so.

The existing evidence on industrial discharges and on the concentrations of chemical contaminants and radioactivity in food, water and air and in the home and urban environments suggests that their total contribution to the burden of disease in the general population is probably minor in most communities, unless control measures have been grossly neglected. Nevertheless, because this assessment is based on substantially uncertain evidence that is inherently difficult to resolve, and because even small benefits to health are desirable, a prudent policy on the levels of exposure permitted for chemicals and radiation originating from human activities continues to be important. Care is also sensible in relation to natural substances, since they quite commonly generate toxins. The public attitude towards risks associated with pollution, as discussed earlier, reinforces the necessity for a prudent policy in chemical safety and radiation protection.

Health takes Precedence

Measures to increase protection from chemical, radiation and microbiological hazards, and the creation and maintenance of an environment conducive to health, cost money. Due weight should be given to such factors as the disincentives to innovation implicit in a highly regulated system, and

in the direct costs (reflected by increased prices) or taxation rates. Sound environmental health policies have economic and health benefits, of course, and a long-term view on the part of businesses and government sometimes implies a greater investment in safety. The principles of sustainable development demonstrate the increasing convergence of economic, environmental and health goals. Nevertheless, unjustifiably stringent standards can sometimes be paid for only at the cost of health protection or health care or other aims of society. No country can afford perfection. Prudent objectives in environmental health and financial prudence must be balanced.

There is controversy at present as to how those responsible for environmental health should take account of costs to industry. Some people believe that the regulatory agencies should press for the cleanest technologies and minimal discharges in all cases. They consider that if decisions on the use of a particular agent or the control of a discharge depend in part on the cost and technical feasibility of the change, then adequate information is needed on the alternatives and their cost. Such information is not readily available to the regulatory agencies: technical knowledge usually lies with the industries whose commercial interests are at stake and much depends on whether industry will provide balanced, complete information even when it is economically disadvantageous to do so. Cost predictions often turn out to be inaccurate. Many changes, such as the introduction of lead-free petrol, have been strenuously resisted for technical and cost reasons (often by government departments of industry and finance and by industry itself) but then introduced with relative ease. For these reasons, environmental health professionals tend to be sceptical about the validity of

arguments that a given cleaner technology is not feasible at acceptable cost. They are in a very weak position to sustain an argument against scientists employed by industry; they therefore often prefer to demand clean technologies and minimal discharges as the norm and to resist the routine application of a condition of practicability, judging that if reductions are truly unfeasible at sustainable cost this will rapidly become evident.

Nevertheless, controls should be applied on a rational, informed basis, taking account of honest and accurate assessments of what is technically achievable and what costs are reasonable based on the advantage gained. In efforts to enhance health while avoiding fruitless or unsustainable pressures on the economy, everyone has a long-term interest in dispassionate analysis and assessment based on the criterion that the health of individuals and communities should take clear precedence over considerations of economy and trade.

Assessment of the Impact of the Environment on Health

The mere existence of a system for routine assessment of chemicals often leads producers to decide not to proceed with the development of particular products. Other items do not gain approval even before their existence is widely known to the public. Thus the successes of the system can go unnoticed.

The failures of environmental health protection have been based partly on the failure to foresee the potential for hazard in physical developments and new technologies. It

could be asked whether enough foresight has been used to identify new classes of potential hazard. Could the effects of chlorofluorocarbons on the stratospheric ozone layer have been predicted? Could food poisoning caused by *Listeria* have been foreseen as a consequence of the widespread use of refrigeration?

Impact assessment is used increasingly to predict the effects on the environment of new physical developments such as industrial plants, dams and highways. Assessments of health impact need to be explicitly incorporated in such studies when appropriate. They must be carried out prior to decision-making and as early in planning as possible. If the development proceeds, it should be followed by carefully designed monitoring and evaluation programmes, with appropriate legislation to ensure that controls are enforced.

The principles of environmental and health impact assessment can also be applied to policy formulation: for example, in developing strategies for alternative energy, transport or food production. They may also be applied to physical and economic planning at the earliest possible stages of development.

Finally, impact assessment should be used more often for new technologies that may significantly affect human health and wellbeing.

Optimal Use of Natural Resources

The report of the World Commission on Environment and Development emphasizes the need to ensure less wasteful use of natural resources in the interests of sustainable development. Contamination of the environment by industry can

be minimized not only by pollution control but by, for example, prudently selecting raw materials and processes, by recycling and re-use, and by developing by-products. Steps must be taken not only in relation to individual industrial or other installations, but also at policy level. For example, decisions on subsidies for nitrogenous fertilizers could significantly influence a range of environmental issues, yet only recently have such factors been taken into account.

The ability to demonstrate the potential consequences of particular policies, strategies and activities now seriously challenges environment and health authorities. Modelling the flow of chemicals, materials, products and waste in alternative development scenarios becomes a high priority, particularly within the densely populated and highly developed European Region, in order to allow rational decision-making.

The principles embodied in this clause are a vitally important component of preventive action.

Preventing and Reducing Adverse Effects

Much of modern regulatory toxicology and radiation protection is already carried out very prudently. Food and environmental standards are usually based on very substantial safety factors that are designed to allow for uncertainties or statistical weakness in the evidence and for the possibility that humans may be more susceptible than are the laboratory animals used to derive a particular standard. Regulation of carcinogens, for most of which no completely safe dose is

assumed, is based on the concept that some extremely low level of predicted risk is acceptable. The exposure associated with this acceptable risk is estimated from animal experiments by statistical procedures that tend greatly to overestimate risk, because they are based on extremely conservative assumptions.

These precautions mean that a moderate breach of any particular standard is likely to have no effect. Safety margins are more narrow, however, for the limits set for some contaminants already widespread in the environment, such as lead or nitrate. It would be prudent to ensure that proposals for regulation openly distinguish between cases in which a narrow safety margin is considered to be fully justified by toxicological evidence and criteria and cases in which a narrow safety margin has to be adopted because it is impracticable to employ more ample safety margins.

In regulating industrial discharges, in addition to specific limits for selected substances, it is commonly required that installations (to use two of the various terms in use) employ the Best Available Technology Not Entailing Excessive Cost (BATNEEC) so as to achieve discharges that are As Low As Reasonably Achievable (ALARA).

It is here suggested that the general principle of seeking, within reason, to minimize potential harmful exposure be applied more widely. It should be a principle of environmental health to avoid the use of or exposure to hazardous agents for no good reason in unnecessary amounts or in inappropriate ways.

Where applicable, standards should be harmonized internationally, as is already the case for many foods, food

additives and contaminants, including limits for pesticide residues covered by the provisions of the Codex Alimentarius.

Environmental Standards

Rational environmental standards to safeguard human health must include appropriate safety margins, depending on the nature of the potential hazard and its propensity for harm. At present, risk is estimated in different ways in, for example, chemical safety and radiation protection; more consistent approaches would be advantageous.

There is a growing tendency for standards to be imposed at national or even multinational level, and care must be taken to ensure that this does not unduly distort local priorities for environmental health protection.

For some potential health hazards, such as exposure to lead, new scientific knowledge of health effects has led to the necessity for progressively more stringent standards. In other instances, research may show that particular standards are unnecessarily restrictive.

Increased economic activity both within and beyond the European Region will inevitably require stricter controls. If the number of motor vehicles markedly increases, the emission standards will need to be appropriately reduced to maintain the same ambient air quality. Unless they are banned or stringently controlled, nondegradable contaminants will progressively accumulate over the years and, in some cases, represent an increasing potential threat to human health.

Although some environmental standards will therefore inevitably need to be progressively adjusted, regulations should be stabilized over reasonable time periods, commensurate with protecting the environment and health.

The “Polluter Pays” Principle

It is being progressively accepted in most countries in Europe that environmental policies and actions should reflect a number of underlying principles to which all public and private bodies should adhere. One of the most important principles is that the polluter should pay the cost of preventing, eliminating and disposing of pollution. This has proved to be successful not only in controlling existing pollution but in promoting the development of processes that pollute less. Human health considerations should be fully taken into account in applying this principle.

Such approaches may be widened to influence the course of overall development towards sustainability for natural resources, the environment and health. Endeavours are now growing to assign monetary values to many aspects of environmental quality, and it is increasingly acknowledged that environmental quality is not free. The same economic principles underlie the appropriate pricing of goods and services and of natural resources: prices should reflect the true social cost of production and use. Using prices in this way is fully consistent with the principle that the polluter pays.

In some circumstances, policy-makers might consider supplementing the traditional approach to environmental policy of setting standards with market-based approaches,

requiring payment and granting tradable permits. Considerations of human health and its sustainability need to remain paramount in all decisions on the environment and socioeconomic development.

Monitoring and Evaluating Damage

The criteria and procedures for monitoring and evaluating damage to the environment and to health are inadequate at present.

Many environmental data are collected to assess compliance with standards or guidelines, with the aim of detecting peak levels, often at places that are not important in terms of human exposure. Monitoring networks usually provide, at best, only dense coverage for a few areas and for a few substances. Often only a few of the potentially toxic components of an emission are monitored for pollution, to ensure that the controls are operating correctly. When exposure is calculated, it is often carried out using statistical modelling based on these emission data, and the results inevitably include substantial uncertainty. The exposure of the population to contaminated food or air is usually assessed by ad hoc surveys rather than by routine monitoring. Analytical procedures are sometimes inadequate and often extremely costly.

The availability of useful data on health outcome is also severely limited. Detailed mortality data should be available in most European countries, although in some cases they are not available for analysis for reasons of privacy. The attributed causes of death are often inaccurate; but mortality data often inaccurately indicate the incidence of disease

anyway, since much disease is not fatal or can be treated successfully, or death is long delayed. Reasonably accurate incidence data are available only for cancer, and then only for some European countries.

At present, data on health outcome tend to be available only for large geographical areas that are not usually the focus of exceptional exposure to environmental contamination. To investigate exceptional contamination, statistics must be available for very small areas, which is the case in only a few European countries. This type of study is complex and time consuming, although there have recently been some notable successes.

Data on health outcome related to microbiological contamination of food and water have their own limitations. Infections that are severe and even threatening the lives of vulnerable people may be trivial for others. In many cases, even individuals who suffer severe short-term discomfort either do not receive medical attention or are not given a specific diagnosis. Further systems for reporting diagnosed cases are often informal. Incidence is thus often grossly underestimated.

There are yet other obstacles to analysing data on health outcome together with data on pollutants or other health hazards in order to detect previously unrecognized effects, that is, causes of disease. If a chemical is the only cause of a particular disease, the relationship is relatively easy to detect. Environmental toxicology much more often faces the situation, however, that a chemical may somewhat increase the risk of a common disease that has many causes. As a result, although differences in the incidence of a disease in different communities may be associated with differences

in the level of exposure to a specific chemical, they may in fact be caused by other factors. Similarly, it may be very difficult to link unsatisfactory factors in the physical environment with specific health effects.

This subject is further addressed on page 64.

Avoiding the Export of Environmental and Health Hazards

This clause affirms that countries should observe the principles of this section of the Charter in their foreign trade and economic policies and development assistance. Many measures have already been taken to control the transfer of potentially hazardous goods and wastes between countries, and these will need to be progressively reinforced. It is sometimes difficult to identify both the nature and extent of the hazard, because the materials involved have been inadequately categorized.

Development Assistance

The report of the World Commission on Environment and Development states that human health is an essential component of and prerequisite for sustainable development. The preamble of the Charter asserts that maintaining and improving human health and wellbeing require a sustainable system of development. These considerations have clearly been reflected in World Health Assembly resolution WHA42.26 (Annex 5).

It is therefore appropriate for the Charter to affirm as a principle of public policy that development assistance, as one of its integral components, should promote sustainable development and safeguard and improve human health.

Strategic elements

Environment as a Positive Health Resource

Although the industrial revolution generated a dream of a future in which humanity would “conquer” nature and banish want and disease, development has had negative effects, including new health hazards and stresses to the environment often resulting from scientific and technical advances. The relationship between people and the environment is now a major public concern throughout Europe: a new principle of greater harmony between human activities and the ecosystem is taking over from the previous attitude of confrontation. Extreme approaches to both environmental protection and socioeconomic development threaten human health and wellbeing because they risk either underproviding the means of life or overexploiting resources.

The Charter is based on the assumption that, by carefully assessing their experience and the options before them, the people of Europe can find the right way forward. The science of environmental health should not only identify and control hazards in the environment but also positively promote and enhance health by creating environmental conditions that help individuals to improve their health and their physical and mental wellbeing.

Although specific hazards to health in degraded environments must be identified and corrected, most of the individual features of such an environment, by themselves, cannot be shown to adversely affect health: the total impact is important. This is why the widespread deterioration that characterizes many European towns and cities must be reversed. Individuals and the community must help with the work, to break down barriers and overcome inertia.

Management

Responsibilities for implementation

How much responsibility should be vested at central, provincial or local government level for the detailed implementation of pollution control and other environmental health policies?

There are many options, each with its own drawbacks. Decentralized structures may lack the resources necessary to manage all the complex components of environmental health, and may not be committed to self-regulation. They may introduce conflicts and inconsistencies into problems such as food safety and pollution control as they transcend local boundaries. On the other hand, highly centralized structures are liable to generate complex regulation and monitoring systems, whose operations can too easily become divorced from the reality of the problems faced by those working in the field, lose touch with community opinion, and start wasting resources.

Whatever structure is chosen, the roles and responsibilities of the different levels of government and the different

organizations involved at each level must be clearly specified, and appropriate intersectoral links must be created. Beyond that, it is hoped that the Conference and its follow-up will facilitate exchange on how the problems inherent in each type of structure can be overcome, so that countries can adopt economical and effective mechanisms that can respond to the complex and rapidly evolving environmental health issues of the day.

Reducing risks to health

As the issues involved in managing environmental health are diverse, control measures must cover a wide spectrum. Sound legislation and adequate means to implement it are indispensable prerequisites for control mechanisms. Scientific control limits are often necessary, either as legally enforceable standards or as guidelines. They may be devised as appropriate to fit the requirements of individual licences, such as for discharging an industrial effluent into a river, or have a more general application such as in relation to a food additive.

In many instances, land-use planning is important in optimally siting and controlling new developments that may adversely affect health and wellbeing. Policy decisions, for example on methods of agriculture or strategies for energy production, should fully consider environmental health.

The principle of sustainable development demands new control strategies that provide strong incentives towards conservation and health protection. Interest is growing in extending the principle that the polluter must pay to encompass pricing mechanisms, and such tools as tradable permits may be increasingly used.

All such means should be applied not only to controlling potential hazards but to striving towards the optimal environmental conditions conducive to health and wellbeing.

Methods of prevention

Potential hazards to health and wellbeing caused by environmental conditions should be anticipated and prevented, where possible. The adoption of procedures to assess environmental health impact and to screen chemicals and consumer products is important for this process. In some instances, potential risks to health and wellbeing may justify banning particular activities or products.

Accidents in the home or workplace, on roads and elsewhere can be prevented by using appropriate design and technology and by promoting awareness.

Pollution can be prevented by selecting optimal raw materials and production processes and by adopting procedures to recycle and reuse wastes and to use by-products. Containing pollutants rather than dispersing them into the environment is appropriate in some cases.

When community development is being planned, attention to such environmental health considerations as noise, pollution from traffic and the suitability of design and construction of dwellings and other buildings can prevent serious subsequent problems.

A comprehensive strategy for prevention requires appropriate incentives, technologies and legislative and administrative mechanisms, and that awareness of the importance of prevention be promulgated throughout all sections of the community.

Low-impact strategies

The use of low-impact technologies as part of an overall preventive strategy for protecting health has been referred to previously. They are important for efforts to conserve natural resources and are compatible with sustainable development and protecting the environment and human health.

Low-impact technologies are of particular importance in the fields of energy, transport, industry and agriculture. The efficiency and effectiveness of the low-impact alternatives to existing technologies and practices inevitably influence whether and how they are adopted.

Operational management

Adequately staffed systems of regulation, inspection and enforcement are as important as appropriate regulations. Nevertheless, enforcement is only the last line of defence: sound management is the main rampart. Good, careful, honest practice is needed at every stage in producing and disposing of substances and in the use of potentially hazardous technologies. Deliberate evasion of regulations, careless management and inadequate maintenance often create hazards to human health.

A key requirement is that every organization and everybody working in it must accept responsibility for public safety. It is psychologically difficult to maintain a high level of preparedness for rare events. New approaches to all levels of training are required to create the attitudes necessary to achieve safety in a modern technological society.

Regulations

Effectively limiting human exposure to hazardous agents requires detailed knowledge of their sources and environmental pathways.

It is usually more difficult and costly to remove substances that have already dispersed into the environment than to control their production and release. The problems with nitrate could have been reduced by different fiscal policies on nitrogenous fertilizers. The cost and complexity of removing nitrates from drinking-water supplies and from wastewater will severely burden European countries, and the lessons learned from this should now be applied urgently to other issues. Regulations should therefore be applied at the most appropriate point in the pathway of a hazardous substance or agent.

Recent WHO surveys of environmental health services in Europe have shown that legislation is sometimes fragmented, with gaps and overlaps in the responsibilities of particular government agencies. Laws and regulations should be comprehensive and consolidated, facilitating the best possible solution to problems at the most appropriate point in the chain leading from production through environmental release to human exposure. Laws and regulations should be enforceable and adequate resources should be available to enforce them.

Standards

Several types of scientific standard are used to protect health from environmental hazards, including emission standards (for air and water), product standards (for drinking-water,

food and consumer goods) and standards of construction and design (for housing, motor vehicles, etc.). Great care must be taken to ensure that they are appropriate and based on the best available information. If standards are perceived as irrelevant or unattainable, or if there are no adequate means to enforce them, introducing them is likely to be counterproductive.

The nature of a hazard determines whether strict compliance with a standard is necessary. It is inappropriate, for example, to use the same approach to enforce compliance with standards for lead and for nitrate in drinking-water. Based on sound scientific evidence, the acceptable limits for lead have been progressively lowered over the years; for nitrate, on the other hand, there are no firm grounds for thinking that very strict controls are needed to protect human health. In some cases, guidelines for action might more appropriately replace standards.

Standards are developed by identifying hazards, estimating and evaluating risk, and imposing control limits. The latter part of the process is not purely scientific, but involves value judgements about cost-effectiveness, practicability and other factors. The objective of the standard must be to protect health, but it must be accepted that, in all European countries, the minimization of risk has at present a very different order of magnitude when applied, for example, to reducing road traffic accidents as compared to controlling chemicals.

Strategies for chemical safety

Considerable progress has been achieved in controlling potentially toxic chemicals at the national level and through

international collaboration among, for example, the International Programme on Chemical Safety, the Commission of the European Communities, the Council for Mutual Economic Assistance and the Organisation for Economic Co-operation and Development.

Comprehensive strategies must include testing chemicals to determine their potential harmfulness to the environment and health, and implementing appropriate control procedures. Knowledge is therefore required of estimated production, distribution and use, and of the processes of transfer through the environment, transformation and bioaccumulation. Appropriate monitoring procedures must be established, sometimes including human exposure and relevant epidemiological studies. Rational control strategies to protect health and the environment can be applied only when the relative importance of the various routes of exposure, including air, water, food and skin contact, have been established.

Laws, regulations and administrative provisions may embody scientific limits and controls on, for example, classification, packaging, labelling, and the use and disposal of potentially harmful substances. The regulating process may lead to action ranging from total prohibition, or prohibiting certain uses or procedures, to use without restriction.

As substantial quantities of chemicals are traded internationally, testing and control need to be harmonized. The various economic groups of countries within the European Region have each progressed considerably in developing guidelines for toxicology testing for new chemicals and implementing them as a pre-marketing requirement. European countries have some registration procedures for new

chemicals. Many but not all of them are consistent with one another, and further steps should be taken towards pan-European harmonization.

Systematically examining existing chemicals involves an enormous backlog of tens of thousands of substances. Several attempts have already been made to set priorities rationally at the national and international levels. Limited resources should be used optimally, so that reliable data can be generated and disseminated as quickly as possible.

Contingency planning for accidents

Sudden, unforeseen occurrences in the home, at the workplace, on a highway or elsewhere cause many deaths and injuries. Accidents constitute the third most common cause of death in the WHO European Region, after cancer and cardiovascular diseases. Although the number of accidental deaths and injuries has decreased in recent years, the relative importance of accidents as a cause of death and injury is growing, especially among children, young people and the elderly.

Motor vehicle accidents still account for approximately 40% of accidental deaths, although traffic fatalities have decreased in most European countries over the last decade. For every death in a road accident, about 15 people are severely injured and 30 slightly injured. Injuries require complex and costly treatment technology, and medical and social services to care for the disabled.

Accidents in the home account for approximately 40% of accidental deaths, but affect children and old people disproportionately.

Mortality from work-related accidents can vary by more than five times from one country to another. Some countries have substantially reduced deaths over the past few years, but reductions in the frequency of accidents have been much less general. Self-employed people and workers on farms and construction sites and in small manufacturing plants and workshops are most at risk.

The number of large-scale technological accidents causing death or injury to the public in recent years in Europe has been small, except for road, rail, air and sea transport. Nevertheless, several chemical and radiological catastrophes have had widespread consequences, sometimes across national borders, and have heightened public fears about the safety of various types of industry, especially nuclear installations and processing plants for chemical waste. Perhaps influenced by press coverage, people are disproportionately concerned about the danger of such accidents and their effects on health, compared to the much larger risk of accidents at home, at the workplace or on the roads.

It is sometimes forgotten that several countries of the WHO European Region, in common with other parts of the world, periodically experience serious natural disasters including earthquakes and floods. These can kill and injure very large numbers of people, destroy houses, and greatly disrupt water and sanitation services.

To reduce the frequency and effects of accidents intersectoral efforts are needed, including better standards for the design and construction of buildings, roads, vehicles, equipment and machinery, high standards of operation and maintenance and, most importantly, proper training and information for all sections of the community.

Natural disasters such as earthquakes or volcanic eruptions cannot be prevented, but their effects on life and health can be reduced substantially by carefully locating communities and industrial installations and by appropriate design and construction of buildings and other structures. The severity and effects of floods can be mitigated by effective river-basin and land-use management.

Large-scale natural or technological disasters may adversely affect health in more than one country, which necessitates careful pre-planning, exchange of information and mutual support. Some countries need international assistance: the WHO Regional Office for Europe has provided technical support and information facilities after chemical and nuclear accidents, food poisoning emergencies and major earthquakes.

Information systems

Information that allows new problems to be identified and the success of policies and control measures to be monitored, is essential to effective management of environmental health programmes. Collating information throughout Europe would allow the status of and trends in environmental factors and health outcome to be compared for different communities and would allow policy decisions, including priority setting, to be taken on an increasingly rational basis. A European system should also facilitate research on the role of environmental factors in causing disease.

Despite the many difficulties associated with information on the environment and health, an increasing number of satisfactory databases have been established. Successful

studies are also being carried out, especially where exposure can be determined such as in occupational settings.

Information is grossly inadequate on the extent to which environmental conditions in Europe are causing ill health. Important public health problems may not be detected. On the other hand, some conditions may be less harmful than is popularly supposed, and costly control measures based on uncertainty may be unnecessarily stringent.

Conflicts of judgement caused by inadequate information on the nature and extent of environmental health problems are politically damaging. For all these reasons it is vital to seek more, and more relevant, information and to make better use of what exists.

The huge cost of setting up comprehensive databases suggests that countries should rely on selective, periodic data collection undertaken for clearly defined purposes. Many current environmental monitoring programmes lack clear objectives and do not provide data suitable for decision-making. Furthermore, many such programmes are ineffectively coordinated, for example in relation to the various routes of exposure.

Despite these limitations and difficulties, more useful systems of data collection should be developed that permit selective geographical comparisons of actual exposure to specific pollutants, and the monitoring of trends. A coherent European basis for collecting, analysing and interpreting environmental health data could be of considerable value.

Impact assessment

Environmental impact assessment is now becoming generally accepted as an important tool in planning new

developments. The potential effects on human health must be fully taken into account in such work and, for this purpose, appropriate training must be given to health professionals and to other disciplines involved in the process. To have optimal practical value, the reports of such assessments should contain appropriate recommendations for follow-up studies during construction, operation and, where applicable, shut-down. These might include monitoring and epidemiological studies, and the results should be used in decision-making on a continuing basis.

Experience in several countries has clearly shown the value of involving local individuals and communities in planning new development. Such consultations should be an integral component of the process of environmental assessment, including its health-related components.

The Role of Various Disciplines in Research and Management

Environmental health research and management both require multidisciplinary approaches. In most European countries, health professionals have been inadequately involved in environmental management, and decisions involving human health may sometimes be taken without their involvement.

The development of environmental epidemiology has been understandably slow; studies often involve very small increases in the incidence of health effects compared to the variability that may be expected for other reasons. Nevertheless, there have been several successful studies, both in

small areas and on a multicentre or multicountry basis. The necessary measures must be provided to motivate appropriately skilled personnel to work in this field, so that existing efforts can be augmented. Such work is likely to have increasing value in achieving a better understanding of the relationships between environmental conditions and health effects, and in improving the basis for rational decision-making.

Progress in these matters is constrained by several important factors. In general, medical research organizations and health services give rather low priority to environmental health research. The intersectoral and multidisciplinary nature of the subject sometimes makes it difficult to persuade any organization or group to take responsibility for funding and managing it. Moreover, environmental health issues often acquire political priority at very short notice, and efforts by national and international bodies to assign logical priorities and predict the issues that are likely to become practically and politically important have so far not been very successful.

Environmental Epidemiology

Further research is needed to determine or to estimate more precisely the harmful potential of many environmental factors and to discover the reasons for the substantial geographical variation in the incidence of disease. At present, readily obtainable data meet only a small part of the need, as mentioned above. Health statistics on small areas are particularly important in investigating clusters of disease and possible links with environmental conditions.

In some cases, to cover a sufficiently large population, it is advantageous to carry out multicentre, multicountry epidemiological studies. The International Agency for Research on Cancer in Lyon, in cooperation with the Regional Office, carried out such a large-scale study on the health effects on workers involved in the manufacture and use of man-made mineral fibres. The Regional Office is coordinating several multicentre epidemiological studies at present, including one on how cadmium affects renal function. A similar study on how low levels of lead exposure influence the intelligence of children was recently completed. In such cases the effectiveness of the research can be improved by achieving agreement on common protocols, and by sharing experience among the various centres involved as the study proceeds.

Epidemiological Surveillance

Health authorities can significantly contribute to the intersectoral management of environmental health through epidemiological surveillance, as discussed in the previous two sections. Such work requires close collaboration at the local, regional, national and international levels.

The duty to provide relevant information to other sectors of society and to the general public should be integral to such work, so as to improve the understanding of health status and of trends in environmental conditions and to establish more rational priorities for further action.

Training

Every element of environmental health — water supply and sanitation, pollution control, water disposal, radiation

protection, food and chemical safety, occupational health, and the public health aspects of urban development and housing — involves a range of specialized professionals and auxiliary staff. The most relevant subjects for basic training are biochemistry, biology, chemistry, engineering and medicine, together with economics and law.

Several European countries have specially trained environmental health officers who do much of the inspection, sampling and enforcement and give technical advice, particularly in local areas. Although competent, well trained experts in particular fields are needed, overspecialization is a constant threat. The broad tradition of public health, which allows problems to be placed in perspective and incorporates a due sense of proportion, tends to be forgotten. The entire spectrum of subjects covered by the Charter needs to be taken into account, particularly in terms of assessment and in the allocation of resources.

Expertise should not be disproportionately concentrated in health and environmental administrations. Industry and other sectors liable to cause health hazards should also have trained, authoritative staff whose role is to ensure that environmental health is taken fully into account in research, development and management.

The Charter emphasizes that many issues can be most effectively dealt with by policy-makers and at the earliest stages of planning. For example, in developing alternative strategies for energy, transportation or agriculture, properly trained and experienced staff must be employed at a high level to achieve the necessary impact on decision-making.

Many professions and occupations increasingly need people who have had some training in environmental health,

even though their work does not specifically focus on environmental health. As a minimum, they should understand the types of hazard that may arise in their work and the importance of foresight and continuing vigilance. The training should cover not only their own health and safety but also the possible effects of their work on others, including the general public.

In such a wide and rapidly changing field skills clearly need to be kept up to date, implying that refresher training is essential throughout the working life.

Education for both young people and adults must promote greater understanding of the nature and relative magnitude of the various environmental health hazards people may encounter, focusing on local conditions that people experience every day.

Priorities

Although it is important to move towards the principles of the Charter, many pressing issues need to be dealt with immediately.

The environmental health problems facing different countries and different local areas, the degree of potential harm, the costs of remedial action and the resources available all vary enormously. Priorities cannot be uniform across Europe but should be established locally, nationally and internationally, according to the topic.

These priorities should take into account both the extent of risk to the people most affected and the number of people affected: that is to say, the risk to the individual and to the community as a whole. The likelihood of harm should be balanced against its severity should it occur. A very low probability that an event will occur may be acceptable if few people can be harmed, whereas it is not acceptable if many people are at risk.

The scientific basis for environmental health policies and programmes is evolving rapidly but has important limitations. Conclusive evidence on environmental health issues is sometimes very difficult to obtain, particularly for chronic, long-term effects, although these may be the most important. Determining the correct priorities therefore requires careful

and expert assessment of the full body of evidence available on each topic. Numerous hypotheses are being considered at any one time. Many of them fail to survive adequate testing, and very preliminary ideas may be given too much weight. Further, interpreting the evidence is often extremely difficult, such as in the case of short-term carcinogenicity tests, and ill-founded interpretations do get published. For many decades to come decisions will have to be taken on uncertain and incomplete evidence, but policy-makers should at least benefit from the best available advice.

Priorities of Special Concern

The Charter states that the governments and other public authorities of the European Region, without prejudice to the importance of problems specific to their respective countries, should focus particularly on the following urgent issues at the local, regional, national and international levels.

Global disturbances to the environment

Several consequences for health of air pollution are of global concern. Chlorofluorocarbons, widely used in refrigerators, aerosols and elsewhere, have depleted the stratospheric ozone layer to such an extent that worldwide efforts are being made to phase them out. The consequences for skin cancer and cataracts are difficult to predict, but one estimate suggests that a 1% decrease in the stratospheric ozone concentration will lead to an 8% increase in skin cancers in fair-skinned people. A depletion of 3% in the temperate zones of the northern hemisphere has been postulated: this

would lead to 80 000 new cases of skin cancer annually in the United States, corresponding to approximately 250 000 in the European Region of WHO. An important gap in knowledge is the effect of increased ultraviolet radiation on other animals and on plants such as phytoplankton, and the subsequent indirect effects of this on human health.

Chlorofluorocarbons also contribute to global warming — the so-called “greenhouse effect”, which is mainly caused by the increasing concentration of carbon dioxide, methane and nitrogen oxides in the atmosphere. Recent estimates suggest that the mean global temperature will increase by 1.5–4.0 °C over the next 50 years.

Past emissions will continue to affect atmospheric levels of carbon dioxide for several decades. It is too soon to know whether such targets as a 20% reduction of the present carbon dioxide emission levels by the year 2005 are realistic and likely to be achieved, but reliable estimates of temperature change are needed covering best- and worst-case assumptions for atmospheric carbon dioxide levels. Only when this information is available can meaningful attempts be made to assess the extent of associated changes in sea level and rainfall, or in fresh water and coastal ecosystems (including the effects of climatic change on the life cycles of pests and plant diseases and on natural vegetation). The greenhouse effect may also more directly affect human health by, for example, changing the prevalence of tropical diseases, affecting the toxicity of pollutants, causing flooding in heavily populated coastal areas, and reducing supplies of fresh water as a result of seawater incursion.

The likely scale of these effects on the environment and human health must be better understood before priorities can

be set and countermeasures planned. Interdisciplinary research will become increasingly important as we resolve present uncertainties as to how best to prevent the greenhouse effect from progressing further and, if possible, reverse it.

Despite energy-saving policies, the European countries are likely to need more than 25% more electrical generating capacity in the next 25 years. The health implications of alternative energy strategies therefore need careful consideration.

Urban development, planning and renewal

The quality of the built environment substantially influences people's lives. Besides the adverse health effects of pollution, there is also increasing evidence of the stressful effects of noise, dirt and congestion on mental health and behaviour. The communities participating in the WHO Healthy Cities project have demonstrated the benefits of intersectoral action backed by strong political commitment and active public participation.

Recent studies have identified the environmental problems that take priority in European cities as air pollution, noise, solid wastes and litter, pollution of urban watercourses, lack of green spaces, the low aesthetic quality of many new buildings, and the rapid decay of much housing constructed during the last 30 years. These issues are usually better approached as part of a broad urban policy than in isolation. For example, enlightened urban transport planners take into account air pollution, noise and the need to protect urban green areas from road development. Another example is that preventing illegal parking makes it easier to clean the streets.

Rehabilitating unsatisfactory conditions often depends less on legal power and enforcement — necessary though these are — than on encouraging civic interest and pride, including asking more of people and less of equipment and technology. This approach can improve the public's attitude towards reducing noise and towards using facilities to collect and recycle litter and garbage. Public interest and response are more likely to be awakened by making a concerted and well understood effort to improve the urban environment than by concentrating on a single issue.

Many of the detailed issues in urban areas are covered under subsequent items, but they should still be considered, as far as possible, in the context of healthy cities and communities.

Safe and adequate drinking-water supplies and hygienic waste disposal

Safe water and sanitation are essential to human health. Water-related diseases are still an important problem in some parts of Europe.

In the European Region as a whole, with a population of some 840 million, an estimated 70 million people have no piped water in the home. There is no accurate estimate of how many people have microbiologically unsafe drinking-water; 50 million is probably an understatement, and the data on sanitation are even less complete. In urban areas alone, about 30 million people are not connected to public sewerage systems. More than half of the wastes collected through sewers are discharged untreated.

For public health, the highest priority must be to provide the entire population with adequate and reliable supplies of

microbiologically safe water. The presence of harmful chemicals, however, is an increasingly important problem. As a single water source can supply several million consumers, generous safety factors must be applied. Water supplies are contaminated by both point and non-point pollution sources. The latter, including agricultural activities, especially affects groundwater aquifers.

Under some circumstances, the only way to protect health is to ban or control the production or specific uses of potentially harmful chemicals. One governmental agency normally cannot justify or accomplish such measures; they require an intersectoral approach involving government bodies, industry and commerce. If trade considerations and perhaps shared water resources are at stake, several countries may need to act together. Interventions should be made at the optimal point in the environmental pathway, not necessarily at the water-treatment plant.

The 1984 WHO *Guidelines for drinking-water quality*, now being revised, give a detailed rationale and guideline levels for biological, chemical and physical contaminants. General compliance with these guidelines would provide significant health protection to the population of the WHO European Region.

The Regional Office's recent survey on water services in Europe shows that, in some cases, a wide variety of ministries are involved and to a varying degree central, provincial and local government bodies, perhaps poorly co-ordinated. The available data and information are sometimes unsuitable for assessing health or for making decisions on policy, programmes or projects. The number and complexity of issues of water supply and pollution control now

confronting European countries generally require greater national, provincial and local emphasis on the public health dimension.

Water quality

In many countries of the WHO European Region, gross pollution of rivers and lakes has diminished during the last 20 years. In a smaller number of countries, the situation still appears to be deteriorating because the rapid progress of industrialization and increasing demand for water have not been accompanied by enough investment in measures to safeguard water quality.

In all countries, the proliferation of chemicals in the environment has increased problems of potentially toxic micropollutants in the aquatic environment, some arising from non-point sources. Land-use decisions may significantly affect the quality of surface water and groundwater: many problems result from changes in agricultural and forestry practices. Such contaminants as heavy metals and man-made organic substances in rain and snow can markedly pollute surface water and groundwater. Acid deposition, responsible for serious damage to lakes and forests, may indirectly affect human health.

Some trace contaminants may not directly harm human health but may pass through a complex system of environmental pathways and bioaccumulation and thereafter increase human exposure significantly. Using contaminated water for irrigation and thus progressively increasing contaminant concentrations through recycling can pose health problems.

Some of the most important rivers in Europe such as the Danube and the Rhine flow through several countries, and many smaller rivers and streams flow across national frontiers or form their boundaries. Besides the continuous discharge of polluted wastewater, accidents result in sporadic pollution, some of which worsens the quality at public supply intakes several hundred kilometres downstream.

Public pressure and a greater awareness of the finite capacity of coastal waters, especially enclosed seas, have led to many successful pollution control programmes during the last few decades. Nevertheless, many stretches of European coastal water are polluted and, all too often, the increasing numbers of tourists encounter many bathing beaches and marinas that are heavily contaminated with sewage from nearby outfalls. Shellfish are susceptible to both microbiological and chemical contamination, and edible fish may be poisoned or have their flesh tainted by pollution.

Appropriate action to prevent and control water pollution may include stopping individual sources, but also implementing land-use policies that consider fully water quality. In some instances, broad policy decisions may be appropriate at a national or international level: for example, fiscal measures to control nitrate pollution of arable land.

Many of the environmental health dimensions of water pollution control require close international collaboration, including transfrontier issues and preparing codes of practice on such matters as controlling groundwater quality and protecting recreational waters.

Microbiological and chemical safety of food

All recent indications show that foodborne diseases are increasing markedly. In one country the number of recorded

cases has tripled in six years, yet even in countries with good reporting systems it is estimated that only 1–10% of food poisoning cases are reported. Poor food safety and sanitary measures cause most foodborne infections, poisonings and outbreaks of diarrhoeal diseases.

One example has been the rapid increase in the prevalence of *Salmonella enteritidis*, which can infect the oviducts of poultry and thus pass into the eggs, affecting both consumers and the next generation of birds.

The nature of the relationship between the presence of *Listeria monocytogenes* in food and clinical cases of human listeriosis is still uncertain. Nevertheless, the vulnerability of pregnant women to listeriosis and the associated risk of miscarriage or stillbirth make the presence of *L. monocytogenes* in certain foods a cause for concern. As incidents have clearly occurred in a number of European countries, improved international exchange of information on incidence, epidemiology and means of prevention and control is needed.

These and other examples of microbiological food infection have seriously hurt public confidence in the safety of many foodstuffs. In this situation, many of the Charter's principles are important, including predicting the effects of new methods of food production, processing and storage, achieving high standards of management, and strongly emphasizing basic hygiene and adherence to codes of good practice.

The WHO Regional Office for Europe recently published a second edition of its book *Food safety services*.^a In

^a *Food safety services*, 2nd ed. Copenhagen, WHO Regional Office for Europe, 1988 (Public Health in Europe No. 28).

many European countries, food control services are divided among different authorities. Sometimes responsibilities are not clearly defined, and coordination between central and local authorities appears to be lacking. Although legislation is usually adequate, some countries lack systematic implementation in the form of routine surveillance and control by well trained and strongly motivated personnel. The basic information and data on foodborne diseases and other relevant factors are inadequate and incomplete for Europe as a whole, and often for countries and local communities as well.

Food and people increasingly move across national borders, which means that the problems cannot be solved entirely within each country. Tourists appear to be particularly at risk: a recent estimate suggests that more than 40% of international holidaymakers suffer from diarrhoea. The proposed changes in trade regulations for the 12 countries of the European Communities for 1992 will pose significant challenges for food safety throughout Europe. It is not clear that these challenges are being taken up with sufficient urgency, given the short time frame involved.

Although great efforts have been made to control potentially harmful food additives, at both national and international levels, the situation becomes more complex. In some countries, for example, mayonnaise may have more than 40 legally permitted additives. Several serious cases of fraudulent chemical contamination of food have involved large numbers of consumers in Europe during recent years. The toxic oil syndrome in Spain, for example, resulted in the death of over 500 people and serious impairment of health in a further 20 000.

Environmental and health impact of various energy options

Consciousness is growing of hazards to health and the environment at different stages of the fuel cycle, and greater efforts are therefore being made to develop low-impact technologies such as solar and wind power, and to use sustainable biomass. Hydroelectric power has almost reached its limit in many European countries, although tidal power still offers some possibilities for growth. Some of these technologies are likely to be increasingly useful in Europe under the right conditions, but for the foreseeable future Europe's high demand for energy will need to be met largely by burning fossil fuels and by nuclear power.

The risks to exploiting coal and oil are apparently greater than to those producing nuclear power. The consequences of fossil fuels for the environment and health are associated mainly with production and combustion, either in stationary sources or motor vehicles, whereas for nuclear power they are related to accidents, decommissioning of plants and disposing of radioactive waste. The potential risks of nuclear power therefore have a higher profile and are more dramatic, a fact which significantly affects public opinion.

At present, energy policies and projections of energy supply, demand and economics do not take sufficient account of environmental health. Yet public pressure is increasingly delaying, substantially modifying or causing the abandonment of planned developments. A more systematic study of the effects on health of alternative energy strategies is urgently needed.

Energy conservation has a large and immediate potential, with significant consequences for health. Policy decisions

are required in a number of other sectors including transport, industry and housing; the full health impact of these decisions needs to be reviewed.

Environmental and health impact of road transport

Private automobile ownership is growing rapidly in almost all European countries, and the proportion of goods moved by road over both long and short distances is increasing. The modern road vehicle is safer and quieter, consumes less fuel and pollutes less than its predecessor of even a few years ago, but the growing density of traffic and the infrastructure necessary to support it are profoundly affecting both urban and rural areas. The great benefits of road transport in convenience and flexibility must be weighed against the environmental and health problems it causes.

Despite better design and more stringent controls, vehicle emissions are responsible for a substantial proportion of air pollution. Near busy city streets, often in dense residential areas, toxic materials in the air such as carbon monoxide, nitrous oxides, lead, formaldehyde, benzene, pyrene and soot frequently exceed acceptable levels. In some countries, heavy diesel-powered vehicles are poorly maintained, leading to unnecessarily high emissions of noxious exhaust fumes.

In many European cities, traffic emissions are the main cause of photochemical smog. The many deaths and widespread distress that occurred during two successive summers in one town in southern Europe have been attributed to a combination of dense traffic pollution and high temperatures.

Traffic noise, especially from heavy diesel-powered vehicles and motorcycles with low engine capacity, is increasing in both cities and rural areas. It causes significant stress and is a major reason why people are dissatisfied with their surroundings. Noise is also still a problem near many airports, even though much quieter aircraft engines have been introduced.

In some cases urban traffic congestion has increased journey times to more than what they were 100 years ago. The vast number of private cars used and parked in city centres causes congestion and stress. Parked vehicles often prevent pedestrians from using the pavement and prevent the streets from being cleaned properly.

Intersectoral action is urgently needed throughout Europe to develop and implement healthier transport policies.

Environmental and health impact of agricultural practices

Agricultural production in Europe has increased greatly in the last 50 years. The ploughing of grassland and heavy use of chemicals on arable land have led to difficult problems with water quality, including increases in nitrate concentrations and the presence of potentially harmful pesticides in drinking-water. Levels of nutrients in many inland and coastal waters are much higher than they were a few decades ago, largely because of a 10- to 20-fold increase in the use of nitrogenous fertilizers.

Much animal production is now concentrated in intensive units. Cross-contamination by *Salmonella* and other organisms is an increasing problem. In addition, waste

disposal has created serious air and water pollution problems, including the production of large concentrations of ammonia and methane and the presence of additives, which prevent solid wastes from being used as fertilizer. Additives to animal feed, including antibiotics and anabolic steroids, are an increasing concern for public health.

Seepage from silage has extensively polluted surface waters and groundwaters used for public drinking-water. Sewage sludge from waste treatment plants — sometimes still untreated — is used in some areas for fertilizing leaf vegetables, which may then be eaten raw.

Agricultural production is now substantially industrialized, yet farms are often exempt from many of the planning controls and other safeguards that apply to industry and commerce.

In accordance with the principles of the Charter, the implications for environmental health of agricultural practices should now be examined more closely and comprehensively.

Air quality

Lung function is affected by many pollutants, and toxic agents in air have both acute and chronic effects, including carcinogenicity and mutagenicity. Even minute concentrations of some contaminants can cause distress because they affect sensory organs.

More effective controls have considerably reduced both domestic and industrial emissions throughout most of Europe. In some heavily industrialized areas, however, air pollution, especially from metal smelting plants, poses a

serious direct threat to health. Surface deposition and uptake by crops have also contributed to these risks in some areas.

The increasingly dense European road traffic emits growing amounts of exhaust, despite the progressive introduction of more stringent controls. Even well maintained diesel engines emit particulates that may harm the respiratory tract and potentially carcinogenic hydrocarbons.

The deposition of air pollutants on soil or bodies of water can also indirectly affect public health, as chemicals enter the food chain or reach drinking-water.

Sulfur dioxide, one of the main air pollutants, is hazardous to both the environment and health. Its main source is the combustion of fossil fuels. Besides its indirect effects through environmental contamination, it directly affects the respiratory tract and lungs at moderate levels of exposure. Emissions from small domestic, commercial and industrial premises have tended to decline in recent years, but emissions have increased dramatically from large power stations, which disperse pollutants at high altitudes. Successful international efforts are reducing overall emissions, and particularly transfrontier acid deposition.

In many parts of Europe, urban levels of sulfur dioxide and particulates are much lower than they were a few decades ago, but in some areas the combustion of low-grade brown coal still causes heavy pollution. Heavy smogs can occur, especially during windless conditions and climatic inversions, resulting in considerable excess mortality and morbidity and widespread discomfort.

Further reductions of sulfur dioxide emissions require better technology or changes in the policies for energy production and use.

Nitrogen dioxide is a product of fossil fuel combustion in both stationary sources and motor vehicles; levels are still increasing in many areas of Europe, especially in towns. It directly affects lung function and its presence in the atmosphere can produce ozone and other photochemical oxidants. Ozone, at its present concentrations in many heavily populated areas in Europe, can cause ear, nose and throat irritation, headaches and damage to lung function. It can also lead to unpleasant photochemical smog.

Reducing nitrogen dioxide emissions requires more stringent controls and modified energy and transport policies.

In 1987, the Regional Office published its *Air quality guidelines for Europe*,^a which established guideline concentrations in air, based on scientific criteria, for 28 pollutants or groups of pollutants that threaten health. General compliance with these guidelines would greatly protect the European population from both the direct and indirect effects of air pollution.

Indoor air quality

Most Europeans spend less than 20% of their time in the open air. This demonstrates the importance of air quality in buildings and other enclosed spaces, such as motor vehicles, trains and aircraft. The concentrations of nitrogen dioxide, carbon monoxide and other pollutants in buildings may exceed outdoor levels. New construction methods and new

^a *Air quality guidelines for Europe*. Copenhagen, WHO Regional Office for Europe, 1987 (WHO Regional Publications, European Series, No. 23).

materials for furniture and fittings, together with more effective thermal insulation, have increased the risks to health of potentially harmful contaminants in the indoor environment.

The term "sick building syndrome" has been applied to blocks of flats, hospitals, offices and schools constructed mainly during the last 25 years, where occupants have experienced sickness and discomfort. The phenomenon can seldom be attributed to a single factor, but the distress caused has forced the closure of many such buildings so that improvements could be carried out. In extreme cases, buildings only a few years old have been demolished.

In larger buildings, central heating and air conditioning systems can rapidly spread biological and chemical contaminants. Legionellosis has been associated with such systems and has spread quickly in Europe over the last few years.

Tobacco is a significant indoor air pollutant, and firm evidence indicates that exposure to other people's tobacco smoke increases the risk of cancer.

In some areas of Europe, significant concentrations of radon seep into buildings from the ground, and some building materials also release radon. Systematic monitoring has only recently been carried out, and only in limited areas. Radon is recognized to be second only to tobacco smoking as a causal factor for lung cancer: 5–15% of lung cancers are attributable to exposure to indoor radon.

There now has to be a better understanding of the factors influencing health in relation to indoor climate and air quality, embodied in codes for building design, construction and product safety. In many countries, responsibility for these issues is fragmented both centrally and locally.

Persistent chemicals and those causing chronic effects

People may be exposed to potentially hazardous chemicals when they are produced, distributed, used or finally disposed of. Approximately 60 000 chemicals have been marketed in Europe, and not all have been stringently tested for their effects on health and the environment. Some persist in the environment and some can cause chronic effects on health, including carcinogenicity and neurotoxicity. Most risk assessments require extrapolation from short-term, high-dose animal experiments to predict long-term, low-dose effects in humans; epidemiological studies are difficult, costly and time consuming. In some cases, complex pathways are involved that include air, water, soil and the biota.

The public is very cautious in accepting the safety of chemicals in air, water and food, although in many cases considerable proof of safety is available. A number of highly publicized accidents have especially shaken public confidence. The idea is growing in some countries that chemicals have been marketed without a proper balance being struck between their advantages and usefulness to society and their possible risks to health.

There have been substantial recent international and national efforts to control both new and existing chemicals by assessing their potential harmfulness to health and the environment. The International Programme on Chemical Safety, the Joint FAO/WHO Expert Committees on Food Additives and Pesticide Residues, the International Agency for Research on Cancer, the Commission of the European Communities and the Organisation for Economic Co-operation and Development have been active internationally.

A sizeable backlog remains, however, in the toxicological assessment of single chemicals, and the effects of most combined exposures to two or more chemicals, or to a chemical and other harmful agents, are still not well understood. The effects of chemicals on vulnerable groups at the workplace or in the general population, such as pregnant women and people who are allergic or genetically sensitive, demand special attention. Effects of low-level exposures on the central nervous system and hence, for example, on behaviour and intelligence are also as yet not fully understood.

Hazardous wastes

For many years, the dumping of hazardous wastes was virtually uncontrolled in many European countries. Large areas of agricultural land had to be abandoned and toxic materials leached into both surface water and groundwater. Although restrictions are now becoming more stringent, for both local disposal and transfer between countries, many problems remain. The quantity and complexity of newly generated wastes is still increasing despite conservation measures. Industry and local authorities have great practical difficulties in disposing of such wastes in a manner that protects public health and the environment; neighbourhoods are often reluctant to accept processing plants for hazardous waste, including incinerators, because of public doubts about their safety.

On a smaller scale, facilities are not always available to collect and dispose of such hazardous consumer products as waste oil and household and farm chemicals.

In many European countries, no precise information is available on the location or content of old industrial waste

dumps, and public health problems have arisen because housing and other developments are unknowingly allowed on such sites. Some residential areas have had to be evacuated because of emissions from industrial wastes that were buried long before the houses were built. In some areas, consumption of vegetables has had to be prohibited due to soil contamination by such wastes.

Although the generation of hazardous wastes in industrial plants must be minimized and materials must be recycled and recovered, hazardous wastes will inevitably be a major problem in Europe for many years. The environmental and health problems must be addressed: primary prevention, improved understanding of health risks, the introduction of safeguards for old dumping sites, and better disposal practices for wastes produced in future.

Biotechnology

Recombinant DNA technology allows specific genetic information to be transferred from one cell to another. This has led to the rapid development of processes that have important practical applications, including the potential exploitation of a wide range of renewable raw materials for the food and manufacturing industries, the production of pharmaceutical products and diagnostic equipment for health care, the production of alternative fuels, and more efficient use and disposal of waste materials.

Careful assessment of potential effects on occupational, environmental and public health must be integral to developing any practical application of biotechnology. The industrial use and appropriate containment of organisms pathogenic to higher animals, plants and humans must receive

special attention. Moreover, care must be exercised in deliberately introducing into the outside environment genetically altered microorganisms or higher organisms that can survive or multiply there.

Most organisms used in industrial processes are unlikely to successfully compete with those in the outside environment or are so disabled that they cannot survive outside the controlled and favourable environment of the industrial plant. Nevertheless, organisms that have been deliberately engineered to grow on natural substrates may have an enhanced ability to survive, and must therefore be appropriately contained. Experiments and pilot trials with microorganisms intended to be used in the outside environment should be carried out under confined conditions, to assess safety and long-term effects. Similarly, experiments on plants to improve properties for growth by inserting recombinant DNA should be carried out under confined conditions until the plant characteristics have been fully evaluated.

Biotechnical processes use large quantities of water, and waste treatment needs to be carefully considered. Aerosols, dust and aqueous effluents and sludges may cause health problems.

All European countries need to develop evaluation and control strategies, supported by legislation, to allow these important new techniques to be developed without prejudicing the environment and health. Existing international cooperation should appropriately be extended to include research, training, the design and evaluation of epidemiological studies, and the development of appropriate guidelines based on the work that WHO and other international organizations have already carried out.

Contingency planning for accidents and disasters

Despite all reasonable efforts to prevent sudden events that may have serious direct and indirect effects on human health, accidents will inevitably happen. A European society that depends increasingly on complex and diverse technology needs careful and comprehensive contingency planning and emergency response to mitigate the adverse effects of technology on both the population and the environment.

Preparedness requires close intersectoral collaboration locally, nationally and internationally. Many recent emergencies, including pollution of water supplies, food transportation accidents, the transfrontier consequences of nuclear and chemical accidents and natural disasters, have revealed shortcomings in such cooperation.

Reliable information must be collected, collated, analysed and disseminated. The public must have ready access to information it can trust. In several recent cases advice has been fragmented, incomplete and inconsistent, leading to a serious loss of public confidence and prejudicing the success of control and rehabilitation measures.

Since the nuclear accident at Chernobyl many local, national and international steps have been taken to improve contingency planning for any such accident in future, particularly where the consequences may transcend national boundaries. Recent expert groups convened by the WHO Regional Office for Europe have emphasized the diversity of possible nuclear emergencies, which could involve not only power stations but reprocessing plants, fixed and mobile sources of radiation for medical or industrial use, nuclear-powered ships or space vehicles, and nuclear material being transported by road, rail, sea or air.

Proper effective intersectoral plans must now be developed and tested for other types of emergency that could affect health either directly or indirectly by contaminating air, water, food or soil or by disrupting vital services. Internationally, rapid and efficient systems are needed that can transfer information on how to protect the population and the environment after an accident, including early warnings and mechanisms to obtain technical advice and support.

Cleaner technologies

The importance of introducing low-impact technologies has already been discussed on page 58. The extent to which low-impact technologies are introduced depends significantly on the development of appropriate, effective and reliable alternatives to existing technologies and practices and of incentives that encourage people to adopt them.

Low-impact technologies are important in such fields as energy, transportation, industry and agriculture. In addition, such developments as the introduction of returnable or degradable packaging and containers would markedly benefit the human environment in Europe, since the growing quantities of plastic wrappers and metal drinks cans affects both urban and rural environments.

Intersectoral Environmental Planning and Community Management

Earlier sections of the Charter stressed the importance of securing intersectoral action for many issues related to environment and health. Whereas many of the objectives

pursued by different authorities may appear to be incompatible, an open dialogue must continue and the European Charter should provide a basis for concerted action on environment and health by all sectors. Such an integrated approach is essential for all the priorities enumerated in this section of the Charter.

The community is an appropriate focus for intersectoral action on many issues; the WHO Healthy Cities project has already provided some striking examples of this. Participating communities have demonstrated how enlightened intersectoral planning and community involvement can safeguard health and wellbeing by influencing layout and design, pollution control, noise abatement, transport facilities and recreation areas. Health and social problems have arisen in many European urban development schemes during the last few decades, largely because health and social workers, architects and other professionals did not predict the consequences of what was being planned and work together to develop more appropriate solutions.

Such efforts should not only aim at controlling unsatisfactory conditions but also, more positively, to create an environment that generates optimal health and wellbeing for all sections of the population.

Health Promotion

The 1986 Ottawa Charter for Health Promotion states: 'Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social wellbeing, an individual or group must be able to identify and to realize

aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living''.

Environmental conditions and personal lifestyles, which mutually interact in many ways, are both important for human health and wellbeing. People's nutrition and smoking habits, for example, can amplify the effects of particular harmful agents, and the physical and social environments in which people live and work can substantially influence their lifestyles. Promoting healthier lifestyles, which European countries increasingly accept as an important component of health for all strategies, is therefore an essential corollary to improving and sustaining environmental conditions.

International Cooperation

Many important international initiatives have been taken in the field of environmental protection. Many United Nations agencies have environmental programmes, and mechanisms are in place for regularly exchanging information and for joint action. Examples of long-term collaboration are the FAO/WHO Codex Alimentarius Commission and the Joint FAO/WHO Expert Committees on Food Additives and Pesticide Residues. Another excellent example is the Mediterranean Action Plan, which has a joint secretariat in Athens comprising staff members from the United Nations Environment Programme (UNEP), FAO and WHO. The International Programme on Chemical Safety, which is responsible *inter alia* for the documents on health criteria for chemical safety, was jointly established by WHO, the International Labour Organisation (ILO) and UNEP.

The WHO Regional Office for Europe has carried out many environmental health activities with the United Nations Development Programme (UNDP), UNEP, the Commission of the European Communities (CEC), FAO, the International Atomic Energy Agency (IAEA), the United Nations Educational, Scientific and Cultural Organization (Unesco) and ILO. The Regional Office maintains close contact with several directorates of CEC, and several joint activities and projects have been carried out. The Regional Office has worked closely with OECD on nuclear safety, and with the Council for Mutual Economic Assistance on international water resources. The Regional Office also works closely with the environmental programme of the Council of Europe.

In respect of all these organizations, there is mutual participation in expert meetings and a frequent exchange of information. Nevertheless, the public health aspects of environmental protection and management do not always receive adequate attention at the international level, compared with protection of the ecosystem.

Unfortunately, the various aspects of the subject assembled in the Charter have, in the past, not generally been regarded as a cohesive whole requiring intersectoral attention and action. Many aspects of this cooperation are in place, such as elements of chemical safety and pollution control, but others need considerable strengthening, including the establishment of environmental health databases, health impact assessment and the health dimensions of the urban environment.

The ramifications for health of global disturbances to the environment will definitely require further international

attention during the next few years. Many of the other priorities listed in this section of the Charter transcend national borders and most require international, especially pan-European, cooperation to be satisfactorily resolved. Well coordinated joint efforts in research and development should also facilitate the most effective utilization of available resources.

The way forward

Despite the many improvements achieved throughout the European Region, some environmental conditions that affect human health are still deteriorating in particular localities, including pollution from the combustion of low-grade coal, from metallurgical plants and from increasing road traffic. International problems, including atmospheric changes, may have increasing effects in future. Negative trends must therefore be arrested and reversed; in some cases, existing programmes may need to be strengthened. Environmental health improvements already completed or in progress should be maintained and if necessary augmented, in accordance with the principles and strategies of the European Charter and WHO regional strategy for health for all (Annex 1).

International Collaboration

Many environmental health issues facing Europe have an international dimension, including air and water pollution across national boundaries and issues related to food trade, hazardous substances, wastes and consumer products. Even where problems are perceived as local, collaboration between governments and with international organizations can assist in developing effective solutions by using available

resources most effectively, by sharing experience, and by coordinating joint efforts in research and development.

Much bilateral and multilateral collaboration is already in progress, especially among particular economic groupings of countries. The time is now ripe to extend such initiatives to cooperation throughout Europe. The inter-country environmental health programme of the WHO Regional Office for Europe has established a firm foundation and could be used as a basis for enhanced efforts.

It is proposed that the Charter be translated into all the languages used in the Region and widely disseminated. It is further proposed that WHO, in collaboration with other international organizations, strengthen the international mechanisms for assessing potential hazards to health from the environment, bearing in mind the multifaceted and complex nature of the problems that involve many routes of exposure and aspects of the environment including the home, the community and the workplace.

WHO has already drawn up guidelines on air and drinking-water quality and on many other subjects: water supply and sanitation, pollution control, radiation protection, chemical and food safety, occupational health, and public health aspects of housing and settlements. It is proposed that this work be developed in cooperation with other organizations to take into account the need for a unifying and interdependent approach to the multisectoral issues addressed by the Charter.

In many respects we lack the necessary data and information to make decisions on both longer-term and short-term strategies, including strategies for emergencies. This problem must be addressed cautiously: any measures taken must be well coordinated internationally, nationally and

locally, and clearly defined objectives must be established so that the information gathered is both relevant and practical.

The work already being done by WHO and other international organizations must be fully taken into account. But it is not as important which organization carries out a particular task as to ensure that all aspects of the Charter are implemented in a manner that reflects their interrelationship and interdependence. The whole is clearly greater than the sum of its parts.

Indicators

In 1984 the WHO Regional Committee for Europe endorsed 38 targets for health for all. Evaluation of progress towards achieving these targets requires proper indicators. Indicators are difficult to design and use for several of the targets, particularly those for which structures and mechanisms are to be established. On specific issues such as providing water supplies, indicators are more straightforward. The validity of existing indicators of environmental effects on health should be evaluated critically. Furthermore, where such indicators are missing, new indicators that are both specific and valid should be developed and a database established so that trends and progress can be measured. This will also help to monitor progress in implementing the Charter.

European Advisory Committee on the Environment and Health

To ensure that all the Charter's elements are taken into account in WHO's future work in Europe, and that advice is

available for Member States, it is proposed that a European Advisory Committee on the Environment and Health be established that comprises representatives of Member States, selected multisectorally, and that meets at least once a year. This Committee would advise the WHO Regional Director for Europe on all policy and programme matters, and review status and trends. From time to time, the Committee might also wish to review particularly pressing subjects in depth.

European Centre for Environment and Health

The Charter emphasizes that the wide-ranging environmental health problems now facing Europe require a multi-disciplinary and intersectoral approach; many need to be dealt with internationally. At the invitation of individual countries, several WHO regional offices have now set up environmental health centres, each providing an international setting for a small interdisciplinary core group with seconded and visiting experts. These centres have promoted, catalysed and coordinated studies and research. They directly participate in technical cooperation with Member States and act as clearing-houses for information.

Although the WHO Regional Office for Europe has long had a substantial programme on environment and health, the staff must spend substantial time on their day-to-day work; longer-term objectives need a different setting. For many years WHO has used networks of collaborating centres, chosen to cover specific fields and asked to complete specific tasks in a given time. Environmental health problems

are multisectoral, diverse and complex, which has made it difficult for the Regional Office, within its resources, to develop and manage such networks of collaborating centres; this would be one of the main tasks of the proposed European Centre for Environment and Health.

The Centre is expected to serve as a clearing-house for environmental data and information. Another important task would be to develop and coordinate multicentre activities. The Regional Office has already demonstrated the value of these activities in epidemiological studies of low-level exposure to environmental hazards. Steps would be taken to secure close cooperation with other international organizations, and the role and functions of the environmental agency to be established within the European Communities would be fully taken into account.

Promoting the Charter

The Charter can only succeed if its principles are adopted and all necessary action is taken to attain its objectives in all countries of the European Region. The Charter should therefore be promoted both by Member States and by WHO on a continuing basis, so that in all sectors of society the Charter becomes regarded as an important basis for future action on environment and health.

Follow-up Conference

The Charter proposes that Ministers of Environment and of Health in Europe meet again within five years to evaluate

national and international progress and to endorse plans drawn up by WHO and other international organizations for specific action to eliminate the most significant environmental threats to health as rapidly as possible. In 1991, the proposed European Advisory Committee on the Environment and Health might decide when to hold the Second European Conference on Environment and Health.

ANNEXES

Annex 1

Relevant European Health for All Targets

The environment of the European Region is changing rapidly in terms of demographic structure, human lifestyles, consumer goods, energy sources, modes of industrial and agricultural production, transportation, tourism and migration. All these factors can cause, and can interact to produce, major impacts on health.

An important aspect of preventive health care is to ensure that socioeconomic development is carried out in such a way as to protect, and where possible enhance, human health and wellbeing. In addition to safeguards in relation to new socioeconomic development, there is a need for improvements in the existing human environment, including the upgrading of housing, the reduction of longstanding pollution and the provision of better working conditions.

Such measures involve many aspects of government, at central, regional and local levels, and require well integrated, multisectoral planning and management. Because many of the problems, such as air and water pollution and the transportation of potentially harmful materials, may affect more than one country, there is a need for international collaboration on surveillance and control measures.

The development of new technologies, e.g. in the areas of energy production or chemical manufacture, must be such that it minimizes the potential adverse effects on

human health, and this requires the establishment of systematic mechanisms for risk assessment and the study of alternatives.

While rapid socioeconomic development has brought about substantial changes in the European environment, some countries still have major problems of water supply and sanitation, whose solution could lead to a major reduction in the incidence of enteric diseases, particularly those affecting children.

Environmental management should aim not only at safeguarding human health from the potential adverse effects of biological, chemical and physical factors, but also at enhancing the quality of life by, among other things, providing people with clean water and air, pleasant living and working conditions and ample facilities for leisure pursuits. All are factors that can have substantial positive effects on health and wellbeing.

In all countries of the European Region, there is now widespread interest in the quality of the environment and in its influence on human health. Attainment of the targets in this chapter will be facilitated by the provision of information on the issues involved, and by promoting community and individual participation.

Target 11: Accidents

By the year 2000, deaths from accidents in the Region should be reduced by at least 25% through an intensified effort to reduce traffic, home and occupational accidents.

This target could be achieved if, by the year 2000, no country had a mortality rate from road traffic accidents of

more than 20 per 100 000; if countries below that level reduced it to less than 15; if all countries reduced the differences between the sexes, and age and socioeconomic groups; furthermore, if the occupational accident mortality in the Region were lowered by at least 50%; and if the mortality from home accidents were significantly reduced.

Problem statement

Accidents constitute the third leading cause of death in the Region, with a mortality rate of about 50 per 100 000. About 50% of accidental deaths occur in the age group 15–64, and they account for 50% of all deaths in men aged 15–24.

The number of accidental deaths varies considerably among countries of the Region. Among those for which data are available, the death rates range from 30 to 65 per 100 000 people. There is also a considerable variation within countries. In fact, accidents are one of the causes of death for which the difference between socioeconomic groups is most significant.

In developed countries, the number of accidental deaths and injuries has declined over recent years. However, the relative importance of accidents as a cause of death and injury is growing, especially among children, young people and the elderly. In developing countries, the numbers of accidents, accidental deaths and injuries are rising as a consequence of increasing industrialization and greater use of motor vehicles.

Motor vehicle accidents account for about 40% of accidental deaths. Death rates from such accidents in Member States range from 9 to 30 per 100 000 population, although

20 countries have registered an overall reduction of 15% in traffic fatalities since 1974. For every death in a road accident, there are about 15 cases of severe injury and 30 of slight injury. Motor vehicle accidents are thus an important cause of hospitalization and a major factor in permanent disability. They entail the use of complex and costly technology for treatment as well as medical/social services for the care of the disabled.

Accidental poisoning, falls and fires produce a combined death rate of close to 25 per 100 000 and account for about 45% of all accidental deaths. Although the available information does not allow precise identification of the places where accidents occur, those in the home appear to be an important cause of death in the Region.

Accidents at work are still an important cause of disability and death. The available data indicate that in highly industrialized countries the annual rate of reported occupational accidents is about 6 per 100 working people. Accidents on the way to and from work are about one tenth as frequent as those that occur at work. The reported death rate varies from 2 to over 10 per 100 000. As many as 10% of these accidents result in permanent disability, and they are six times more frequent in men than in women.

During the past 10 years, some countries have achieved a sizeable reduction of fatal accidents at work. However, the general trend in Europe has been towards only a limited or no reduction of accident frequency.

Suggested solutions

In the prevention of accidents, multidisciplinary and intersectoral policies and programmes should be developed

with a view to determining and then eliminating or reducing hazards, especially in the home, on the roads and at work, and to designing safer goods. In view of the large and increasing trade in motor vehicles, encouragement should be given to the adoption of internationally agreed vehicle design changes that will improve health and safety and give better protection to occupants. More effective traffic control and safety education for road users, better roads, improvements in the design of machinery, child-proof containers for medicines, building codes, fire codes, protective devices and other forms of occupational hazards control are some of the safety measures that would help to reduce accidents. Legislation and economic incentives should be established to encourage the design and marketing of safer products. Consumer products should be systematically tested from the point of view of health and safety, and the results made widely available to consumers.

The health sector should play an important role in increasing an awareness of risks among politicians, planners, professionals and consumers. Systems for epidemiological surveillance, contingency planning and response to accidents, including man-made and natural disasters, should be developed in all countries, with suitable machinery to deal with major emergencies that might affect more than one Member State.

Consideration should be given to improving the system of information on accidents so as to state the place of occurrence in each case. This would allow better identification of the causes of domestic accidents as well as of those people who are most at risk, and thus give important feedback for the development of intervention programmes.

Target 18: Multisectoral Policies

By 1990, Member States should have multisectoral policies that effectively protect the environment from health hazards, ensure community awareness and involvement, and support international efforts to curb such hazards affecting more than one country.

The achievement of this target will require the acceptance by all governments that well coordinated multisectoral efforts are needed at central, regional and local levels, to ensure that human health considerations are regarded as essential prerequisites for industrial and other forms of socioeconomic development, including the introduction of new technologies; the introduction of mechanisms to increase community awareness and involvement in environmental issues with potential implications for human health; and the development of international arrangements for effective control of transfrontier environmental health hazards.

Problem statement

Preventive health care involves many matters of concern to governments, within the fields of physical planning, housing, industry, agriculture, transport, energy production and environmental protection. At present there is sometimes a lack of a multisectoral approach towards environmental health management, and an absence of effective coordination to ensure that socioeconomic development is not accompanied by detrimental effects on the health and well-being of the population. In addition, in some countries there is an overlap of functions, with two or more ministries or

government agencies engaged in closely related work that could be performed more effectively by a single body.

Particularly since the Conference on Man and the Environment in Stockholm in 1972, there has been increasing concern in all countries of the Region about the impact of environmental hazards on human health, but the public are often confused and worried about the nature of such hazards, both in the workplace and in the general environment. In some countries, insufficient efforts have been made to promote community awareness of or involvement in such issues.

Increasingly, potentially hazardous goods and wastes are being transported across national boundaries, and hence air and water pollution may affect states other than the country of origin. Industrial development close to frontiers can pose particular problems. Moreover, continuing trends in the migration of workers and international travel can lead to an increased probability of infections reaching other countries.

Suggested solutions

This target will be achieved only if governments regard environmental health concerns as mandatory elements of socioeconomic development. This means that there should be adequate legislation in all areas affecting the environment, an increased awareness throughout society of possible environmental hazards and how to protect against them, more concern for health factors when planning for new developments, a free flow of information and public involvement in these issues, and more international collaboration on transfrontier problems.

Effective legislation and permanent machinery will need to be established to ensure that all sectors of national, subnational and local government, including those concerned with physical planning, housing, industry, agriculture, energy production and environmental protection, take health considerations fully into account at the planning stage of new developments. Intensive efforts are required to ensure that development takes place in forms that minimize environmental hazards and enhance human health and wellbeing.

The achievement of a significant reduction in health risk due to environmental factors will require increased awareness among all exposed groups, "risk producers", all categories of professionals involved, and the general public as to the nature and extent of risks and effective means of protection against them.

Greater awareness of environmental hazards will increase the desire for safety and promote more active and enlightened public involvement in the issues. This in turn should lead decision-makers to exercise greater care in ensuring that environmental health considerations are taken fully into account when planning and assessing new developments.

Much attention should therefore be given to producing material that provides information on health concerns and existing risk factors for the general public, particularly at the community level. The community should also be given a decisive voice in decisions affecting its environment. This could be done, for example, through representatives on local health councils with strong mandates.

All countries will need to give support to agreements to control the transfrontier pollution of air and water and the international movement of hazardous goods and wastes. Examples of existing cooperation are the Convention on Long-Range Transboundary Air Pollution and the Convention for the Protection of the Mediterranean Sea against Pollution, in whose implementation the WHO Regional Office for Europe is collaborating closely with Member States and with the other international organizations concerned.

Target 19: Monitoring and Control Mechanisms

By 1990, all Member States should have adequate machinery for the monitoring, assessment and control of environmental hazards which pose a threat to human health, including potentially toxic chemicals, radiation, harmful consumer goods and biological agents.

The achievement of this target will require the establishment of well coordinated monitoring programmes with clearly defined objectives; the development of methodologies and health criteria for the assessment of data in relation to control procedures; the investment of adequate levels of funding for control measures, and their introduction and maintenance; and the training and utilization of sufficient numbers of competent personnel for all aspects of environmental health protection.

Problem statement

CHEMICALS. The possibility of health hazards arising from chemical, physical and biological factors is a major concern

in all countries of the European Region. A total of about 60 000 chemicals are produced commercially, and between 200 and 1000 new compounds are introduced each year. A high proportion have not caused any discernible adverse effects. However, although some toxicity information is available for many of the products, there is very little relating to human health risk assessment. For example, the International Agency for Research on Cancer has evaluated nearly 600 chemicals and industrial processes, and found some 30 to be causally associated with cancer in humans. Furthermore, cancer is only one of a variety of the potential toxic insults from chemicals that can cause acute toxic effects, congenital abnormalities, skin lesions, neurological disorders, behavioural abnormalities, immunological damage and mutagenic effects.

IONIZING RADIATION. The adverse effects of ionizing radiation on human health, particularly in relation to cancer, have been clearly demonstrated. Mishaps have occurred only when technical knowledge has been inadequately applied to the design and operation of plant and equipment. It is not always appreciated that the greatest public exposure to ionizing radiation is from medical X-rays, and attention is being paid to the limitations of diagnostic procedures in many countries.

NOISE. Noise is increasing in urban and industrial areas with an estimated 10–20% of the European population exposed to sound well above acceptable levels. It is forecast that community noise levels in the Region will increase by 30% by the year 2000 unless more stringent controls are imposed.

BIOLOGICAL AGENTS. These take a great public health toll, particularly in the Mediterranean area of the Region. Inadequate sanitation has led not only to diarrhoeal diseases,

which are the major cause of morbidity and mortality in infants in that area, but also to endemic typhoid and cholera. As regards tropical diseases, there were 116 000 cases of malaria in one country in 1977, schistosomiasis is still a problem and leishmaniasis is returning. In some European countries with good reporting systems, the incidence of food poisoning has shown a sharp increase in the last 10 years, and it is often associated with new methods of production, storage and preparation. Finally, the considerable damage caused by insects and rodents not only as disease carriers but as destroyers of food must be recognized.

CONSUMER GOODS. An ever-increasing range of consumer goods is available to the public. A small proportion are unsafe, either because they are badly designed or constructed or contain potentially dangerous materials, or because they can readily be misused.

RISK ASSESSMENT. There are widespread uncertainties and misconceptions about the magnitude and probability of different types of risk, and conjecture about impairments to health resulting from exposure to chemicals and radiation and to unsafe consumer products has become a regular feature of the mass media. Public concern often differs markedly in respect of risks that are sustained individually, such as smoking, and those that affect the community, such as occupational conditions or pollution of air and water. Fears in the latter category frequently result in suspicion of or opposition to certain kinds of technological development, and in the past the lack of effective health safeguards has sometimes justified such negative responses. Decisions have frequently been made in a way that does not allow community involvement.

The risk to health arising from the contamination of water, air, soil and food is often difficult to assess precisely. Specific episodes of high-level pollution, resulting in widespread contamination, have attracted considerable attention, but much less is currently known about the cumulative risk of low-level, long-term contamination, including the combined effects of exposure to a number of different hazards.

Although there have been major efforts in all countries of the Region to monitor and control the adverse health effects of unsatisfactory environmental conditions, such measures have often been incomplete and fragmented, with a lack of anticipatory action which could have prevented the conditions from arising in the first place.

Suggested solutions

To understand the potential impact of environmental hazards on human health, there is a need for carefully designed monitoring strategies, involving as appropriate the measurement of levels of contaminants, the tracing of pathways of contamination in the environment, the estimation of personal exposures and accumulations in tissue, and the performance of epidemiological studies. Assessment of potential health effects will involve the use of the results of investigations together with toxicological information, which is often based on experiments in other species. Use should also be made of internationally developed health criteria in developing limits of exposure.

Control strategies may provide for legislative, economic and technical measures, together with education and training, and they would frequently involve more than one sector of government. Efforts should be directed especially to the development of procedures whereby potential adverse

effects on health can be anticipated and prevented at the planning and design stages of new development. Such measures should be counted as part of the cost of such development, since prevention is almost invariably cheaper than later cure. When control equipment is introduced, e.g. to reduce the levels of harmful emissions, it must be efficiently operated and maintained by appropriately trained personnel.

When possible, technologies with a low impact on human health and the environment should be adopted. So far as possible, waste materials should be recycled and reused.

An important requirement for the satisfactory control of environmental health hazards is the establishment of a well trained corps of inspectors who, with the backing of sound and practical legislation, can not only monitor and seek to remedy harmful conditions, but also give expert advice on both preventive and curative measures.

Because of the international nature of many environmental health problems, there is a clear need for collaboration among countries in relation to both monitoring and control. In addition, because the available human and financial resources are limited, risk assessment for particular hazards, such as new chemicals, can often be best done through international endeavours.

Target 20: Control of Water Pollution

By 1990, all people of the Region should have adequate supplies of safe drinking-water, and by the year 1995 pollution of rivers, lakes and seas should no longer pose a threat to human health.

The achievement of this target will require, in the less developed countries of the Region, the investment of higher levels of funding for the construction and maintenance of drinking-water supply facilities, with the appropriate mobilization of international and bilateral assistance to reinforce national endeavours, and with the training and utilization of adequate numbers of competent personnel; and in all countries of the Region, the introduction of effective legislative, administrative and technical measures for the surveillance and control of pollution of surface water and groundwater, in order to comply with criteria to safeguard public health.

Problem statement

The recognition that safe water and sanitation are essential for the protection of human health led to the adoption by the United Nations General Assembly of resolution 35/18 on the International Drinking Water Supply and Sanitation Decade. Water-related diseases are an important public health problem and a major cause of death of young children in developing countries. It is estimated that over 100 million people in the Region are without an acceptable water supply and 250 million without adequate sanitation. Even in the most advanced Mediterranean countries, some 10% of all children's admissions to hospital are due to diarrhoeal disease. Water-related vectorborne diseases (malaria, schistosomiasis) are on the increase in some areas of the Region. Population growth and the sudden influx of tourism in the warmer countries have added to the demand for safe water supplies.

Even in the more developed parts of the Region, there are still serious deficiencies in water supply and sanitation, particularly in rural areas, and it is estimated that

about 35 million people lack safe water and 100 million adequate sewerage. Any defective supply system, whether the shortcoming is in the form of leakage or discontinuity of service or poor operation and maintenance, is a potential danger to health. Every effort should therefore be made to ensure that all systems remain in continuous and effective operation, and disinfection will play a key role in this respect.

Owing to increased demands on limited water resources, an ever greater proportion of public supplies is being drawn from lowland rivers and groundwaters that are subject to pollution by a growing range of potentially toxic substances from domestic, industrial and agricultural sources. Groundwater is particularly difficult to rehabilitate once contamination has occurred. Natural occurrences of substances such as arsenic and excessive concentrations of fluorides may pose a public health problem, and the degree of softness of the water is even considered to be a factor in cardiovascular disease. In older communities with plumbing systems in lead, appreciable concentrations of this element can occur in the water. Some forms of treatment of public water supplies can result in the production of potentially harmful substances.

Control of pollution of major water resources is not always the responsibility of a single nation. When rivers cross or constitute international borders, or where large aquifers are shared by countries, international collaboration becomes essential.

The contamination of rivers, lakes and coastal waters may represent a hazard when they are used for water supply, bathing or aquaculture. Enteric diseases and hepatitis have

been associated with swimming in polluted Mediterranean waters, and the consumption of seafood harvested from contaminated areas has resulted in many cases of infection. On the other hand, unpolluted waters can represent an important, health-enhancing recreational resource.

Suggested solutions

This target could be achieved if all countries ensured that the whole population was served by supplies conforming to the WHO guidelines for drinking-water quality and that effective steps were taken to protect both fresh and marine waters from pollution.

Specific measures to reach this target would include the investment of sufficient funds to provide adequate supplies of safe drinking-water for the population, and the effective management or maintenance of collection, treatment and distribution systems. It will be necessary to draw up countrywide strategies on the protection of water resources as part of overall water management, and to entrust their implementation to effective pollution control authorities. Particular stress should be laid on preventing groundwater pollution and the leakage of potentially toxic materials from non-point sources and from hazardous waste dumping sites. Physical planning and land-use management may also have an important influence on water quality. Finally, agricultural practices that can be detrimental to water quality need to be controlled.

Achievement of the targets would be facilitated by the adoption of internationally binding agreements on the development and implementation by all coastal countries of measures to protect the quality of seawater, particularly in

areas where there are bathing beaches or where seafood is harvested. Protocols and agreements on pollution control, between countries sharing water resources, are also an important requirement.

Target 21: Control of Air Pollution

By 1995, all people of the Region should be effectively protected against recognized health risks from air pollution.

The achievement of this target will require the introduction of effective legislative, administrative and technical measures for the surveillance and control of both outdoor and indoor air pollution, in order to comply with criteria to safeguard human health.

Problem statement

In extreme instances, acute episodes of air pollution have been shown to cause serious illness and loss of life. Less is known about the consequences of long-term exposure to low concentrations of contaminants, although the adverse health effects of sulfur oxides and particulates, nitrogen oxides and oxidants and hydrocarbons, for example, are recognized. Greater use of fossil fuels, particularly coal and oil for energy production and transportation, has led to considerable increases in the discharge of sulfur and nitrogen oxides. Vehicular traffic in European countries has increased by at least 30% in the last 10 years, producing harmful emissions with both a direct and an indirect impact on human health. The transboundary migration of sulfur and nitrogen oxides,

together with other pollutants and acid rain, are causing increasing concern in northern and central Europe.

Long-term climatic changes resulting from air pollution may ultimately have an influence on human health and well-being, particularly in terms of the direct effects of increased carbon dioxide emissions on atmospheric temperature and the possible effect of the reduction of the ozone layer due to aerosol propellants on the incidence of skin cancers.

Indoor air pollution by substances originating outdoors, emitted by building materials or generated by man and his indoor activities, is a problem that is becoming more acute as new materials are introduced and ventilation is reduced to save energy.

Suggested solutions

The attainment of this target would require the strengthening of measures in Member States for control of emissions from industry, domestic premises and motor vehicles, and a substantial reduction in indoor air pollutants. Legislative, economic and technical measures based on internationally accepted criteria will be needed for this purpose. In some cases, air pollution would be substantially reduced by the use of alternative raw materials or technologies or the modification of production processes. More effective international agreements would progressively enable adequate control of long-range air pollutants, such as sulfur and nitrogen oxides. More systematic investigations, *inter alia* in the form of epidemiological surveillance, should be carried out in accordance with internationally agreed protocols in order to determine the long-term health effects of air pollutants.

Target 22: Food Safety

By 1990, all Member States should have significantly reduced health risks from food contamination and implemented measures to protect consumers from harmful additives.

The achievement of this target will require the introduction of effective legislative, administrative and technical measures for the surveillance and control of food contamination at all stages of production, distribution, storage, sale and use; and the implementation of measures to control the use of harmful food additives.

Problem statement

The reporting of foodborne infections is inadequate, and it is estimated that no more than 5% of acute incidents are notified in most countries. The relationship between such diseases and the availability of safe drinking-water and sanitation is well established.

Chemicals, whether from natural, industrial or agricultural sources, can adversely affect food safety. The possible effects range from acute poisoning to carcinogenicity or reproductive damage in the longer term. Although knowledge of the effects of the ingestion of low concentrations of potentially harmful chemicals is limited, it is clear that technological development is resulting in a steady increase in the number and range of chemicals to which the population is exposed. For example, recent programmes for monitoring cadmium in food have shown European levels to be close to the weekly permissible dose. In addition, several hundred chemicals are used as food additives to improve the quality

and appearance of prepared foods and, hence, toxicological evaluation and systematic surveillance are of paramount importance.

Changing social habits, tourism and the entry of a large proportion of the female population into the workforce have led to dramatic changes in the pattern of food consumption. In some countries, the majority of meals are now produced outside the home, and thus mass catering has replaced home cooking, leading to new problems related to changing methods of food production, storage and preparation.

Suggested solutions

The attainment of this target would involve the design and strict enforcement of properly coordinated control systems covering the production, distribution, storage, sale and use of food, and the employment of well trained and effective food inspectors and food surveillance teams. Furthermore, it will be necessary to change public attitudes by means of information and education and to include food hygiene in all primary school curricula. In view of the rapidly growing international trade in food products, food safety regulations in countries should be based on those agreed internationally.

Target 23: Control of Hazardous Wastes

By 1995, all Member States should have eliminated major known health risks associated with the disposal of hazardous wastes.

The achievement of this target will require the introduction of effective legislative, administrative and technical measures for the surveillance and control of

hazardous wastes; and the introduction of effective measures to eliminate health risks due to previously dumped wastes.

Problem statement

Very large quantities of waste are generated within the European Region. In the member countries of the European Community, for example, 2000 million tons are produced annually, including about 30 million tons that are considered to be hazardous. The chemical industry has expanded continuously for more than a century and the manufacture of some of the most important substances has increased by 30% within the last 10 years; inevitably this has been accompanied by a greatly increased production of waste, some of which could pose a threat to health unless effective disposal measures are adopted.

A number of major incidents have occurred during recent years, resulting in gross contamination of soil and groundwater. At the same time, there have been many less dramatic cases where unsatisfactory methods of disposal have led to long-standing pollution as well as health hazards on some occasions. Clandestine disposal to rivers and public sewers sometimes occurs, and in the 90% of cases where hazardous wastes are dumped, the contents and even the location of disposal are unknown to the authorities.

In some countries, pesticides are frequently handled without proper care, and partly filled containers may be left to rot. Facilities are not always available for the collection and safe disposal of hazardous consumer products such as waste oil and household chemicals. Potentially toxic materials are often transported and stored without clear

labelling and without adequate precautions to prevent spills or seepage. In some countries, there are no arrangements for educating the users as to potential dangers.

Suggested solutions

This target could be achieved if all countries adopted comprehensive legislative, administrative, technical and educational measures for the safe handling, transportation and disposal of hazardous wastes, including effective international agreements relating to transfrontier shipment. In some cases, technical measures will include the recycling of wastes, the manufacture of useful by-products, alternative methods of production or the selection of alternative raw materials. In some places, measures will be needed to eliminate risks due to wastes dumped (sometimes many years) previously.

Target 24: Human Settlements and Housing

By the year 2000, all people of the Region should have a better opportunity of living in houses and settlements which provide a healthy and safe environment.

The achievement of this target will require the acceleration of programmes of housing construction and improvement; the development of international health criteria for housing, space, heating, lighting, disposal of wastes, noise control and safety, while taking into account the special needs of groups such as young families, the elderly and the disabled; legislative, administrative and technical measures to comply with such criteria; the improvement of community planning in order to enhance

health and wellbeing by improving traffic safety, providing open spaces and recreational areas, and facilitating human interaction, etc.; and the equipment of all dwellings with proper sanitation facilities and the provision of sewers and an adequate public cleansing and wastes collection and disposal system in all human settlements of sufficient size.

Problem statement

The environment of human settlements is a basic factor governing the physical and mental health, the social wellbeing and, generally, the quality of life of the people who live in them. Despite much improvement during the last few decades, environmental health conditions in many cities, towns and villages in the European Region, and in particular housing conditions, are often totally inadequate. Some large settlements are still not fully sewered or do not have an efficient service for public cleansing or for liquid and/or solid wastes collection and disposal.

The level of hygiene in human dwellings is a very important environmental health factor especially for those who spend most of their time indoors, such as infants, young children, the elderly and the handicapped. For better or for worse, housing conditions affect everybody's physical and mental health and wellbeing; yet today, many millions of people in Europe still live in dwellings that are grossly substandard. It has been estimated that 34% of the population have less than 8 m² of floor space, 42% of dwellings are inadequately heated, and 27% are without basic sanitation. In some countries, a majority of the population do not have a flush toilet, and in some parts of the Region millions live in shanty towns.

The population growth rate of the Region as a whole is projected at 0.5–0.7% up to the year 2000. However, in some areas, especially around the Mediterranean, the rate is much higher. At the same time, there is a steady movement of people from rural to urban areas, thus increasing the pressure on housing in towns and cities. The incidence of respiratory diseases is considered to be related to such housing features as air quality and density of occupation. In Mediterranean countries, there is a significant link between poor housing and both tuberculosis and enteric diseases.

In some cases, social trends have led to the decay of inner city areas, with its consequences of overcrowding, inadequate hygiene, noise pollution, traffic hazards and a total lack of facilities for health promotion. Migration patterns have placed an increased burden on housing in some places. Areas in the vicinity of poor housing are often derelict and open to infestation by stray animals, rodents and insects.

The mentally depressing effects of living in dirty, drab and monotonous environments are difficult to quantify but are clearly important in relation to human health and wellbeing.

In developed countries, the advent of air conditioning and energy conservation measures have been accompanied by growing problems of indoor air quality. Potentially harmful levels of nitrogen oxides, tobacco smoke, formaldehyde and radon can be found in homes. Some pollutants arise from insulation products, some from kerosene heaters, and others from modern housing materials. As many Europeans spend up to 90% of their lives in buildings, the health effects of the indoor climate are significant.

In all parts of the Region, there is an unacceptably high incidence of accidents in the home leading to considerable mortality and disability.

Suggested solutions

The situation could be substantially improved if all countries took effective measures to reduce overcrowding in houses, to ensure the provision of adequate means of heating, lighting, cooking and hygienic disposal of wastes, and to reduce community noise to acceptable levels.

Effective and enlightened community planning could have a major impact on the creation of a healthy environment, by such measures as traffic safety, adequate collection and disposal of solid and liquid wastes, the provision of recreational areas and the facilitation of human contact and interaction. In many countries, the health sector should be more directly involved in housing and settlement planning. Minimum standards should be set in relation to the health aspects of housing, including provisions on hygiene, safety, space, lighting and both noise and thermal insulation. Criteria for indoor air quality should also be established. In accordance with the goals of the International Drinking Water Supply and Sanitation Decade, all dwellings should not only have a supply of safe water but also adequate means for the hygienic disposal of wastes.

A special effort should be made to ensure that building designs meet the needs of the disabled and the elderly and the requirements of harmonious family life. Comprehensive measures, including specifications for the safe design and construction of buildings, furniture, fittings and domestic equipment, together with continuing education programmes,

should be introduced with a view to substantially reducing the incidence of home accidents.

Target 25: Working Environment

By 1995, people of the Region should be effectively protected against work-related health risks.

The achievement of this target will require the introduction of appropriate occupational health services to cover the needs of all workers; the development of health criteria for the protection of workers against biological, chemical and physical hazards; the implementation of technical and educational measures to reduce work-related risk factors; and the safeguarding of specially vulnerable groups of workers.

Problem statement

Satisfying work in a safe and pleasant environment is a source of health and wellbeing. Yet, the physical and psychological working environment is all too often responsible for diseases and injuries.

Many workers are exposed to toxic chemicals, harmful dusts and fibres, noise, and the hazards of fatal or disabling accidents. In some European countries over the last 10 years, there has been little reduction in the incidence of accidents at the workplace. In certain industries, such as mining, quarrying or construction, there are remarkable variations among the countries of the Region with regard to the frequency of accidents per number of hours worked, apparently due mainly to differences in the effectiveness of

regulations and safety education of workers. The self-employed and workers such as those on farms, on construction sites and in small manufacturing plants are often at most risk.

The total incidence of occupational disease in the Region is unrecorded, although information is available on the effects of particular substances, such as lead, arsenic, asbestos and vinyl chloride, and of processes such as coal mining, stone quarrying and furniture making. Deaths from occupational diseases such as asbestosis, silicosis, pneumoconiosis and byssinosis are recorded in some countries. Individual behaviour such as smoking can greatly increase the risk of health damage due to occupational exposure.

As a result of the increasing employment of women, who currently represent 30–40% of the civilian workforce in Europe, there is now an interest in identifying and controlling the potential effects of chemicals on reproductive processes, both male and female. Mental disorders, hypertensive diseases and myocardial infarction have sometimes been linked to psychological and social stress associated with certain working conditions, changes in those conditions and unemployment. Noise levels can have a disturbing effect on workers and result in severe physical impairment.

In most countries of the Region, occupational health records are inadequate, and it is not possible to establish clear links between them and the overall morbidity and mortality statistics. Coordination between occupational health services and the rest of the health care system is often unsatisfactory.

Suggested solutions

This target could be achieved by ensuring that occupational health services cover the needs of all workers, with reporting systems that facilitate identification of hazards, assessment of risk and evaluation of the effectiveness of control measures.

Occupational health services should cover all places of work, including the home. In some countries, it will be necessary to introduce or intensify training programmes for the various categories of personnel required. It is important that workers, employers and the general public should be involved in developing and should receive guidance on ways to improve working conditions and prevent occupational risks, including reference to the association between such risks and personal behaviour such as smoking.

Legislation, economic incentives and improved employer/employee cooperation should facilitate health promotion and risk prevention. In particular, the registration of workers and the recording of workplace exposure to potentially harmful processes and materials should make it easier to take preventive action. Special attention will have to be paid to high-risk vulnerable groups. Measures to reduce risks should include the introduction of safer procedures and in some cases the replacement or strict control of chemicals known to be dangerous, especially those having carcinogenic, teratogenic or mutagenic effects.

Methods and procedures for monitoring chemicals, dusts, fibres and radiation in the workplace will need to be strengthened. Internationally developed health criteria concerning all potential hazards should provide the basis for

the assessment of risks and the establishment of control strategies. Epidemiological studies and surveillance of workers' health will need to be expanded in many countries of the Region.

Efforts are needed to improve the linkage between occupational health services and the overall health care system at all levels, from the highest government authorities to primary health care units.

Annex 2

Resolution 42/187 of the United Nations General Assembly: Report of the World Commission on Environment and Development

The General Assembly,

Concerned about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development,

Believing that sustainable development, which implies meeting the needs of the present without compromising the ability of future generations to meet their own needs, should become a central guiding principle of the United Nations, Governments and private institutions, organizations and enterprises,

Recognizing, in view of the global character of major environmental problems, the common interest of all countries to pursue policies aimed at sustainable and environmentally sound development,

Convinced of the importance of a reorientation of national and international policies towards sustainable development patterns,

Recalling that, in its resolution 38/161 of 19 December 1983 on the process of preparation of the Environmental Perspective to the Year 2000 and Beyond to be

prepared by the Governing Council of the United Nations Environment Programme, it welcomed the establishment of a special commission, which later assumed the name World Commission on Environment and Development, to make available a report on environment and the global *problématique* to the year 2000 and beyond, including proposed strategies for sustainable development,

Recognizing the valuable role played in the preparation of the report of the World Commission by the Intergovernmental Inter-sessional Preparatory Committee of the Governing Council of the United Nations Environment Programme, as envisaged by the General Assembly in its resolution 38/161,

Recalling that in resolution 38/161 it decided that, on matters within the purview of the United Nations Environment Programme, the report of the Commission should in the first instance be considered by the Governing Council of the Programme, for transmission to the General Assembly together with the comment of the Council and for use as basic material in the preparation, for adoption by the Assembly, of the Environmental Perspective and that on those matters which were under consideration or review by the Assembly itself, it would consider the relevant aspects of the report of the Commission,

Taking note of Governing Council decision 14/14 of 19 June 1987 transmitting the report of the Commission to the General Assembly,

Noting that the Environmental Perspective to the Year 2000 and Beyond has taken account of the main recommendations contained in the report of the Commission,

Recognizing the instrumental role of the Commission in revitalizing and reorienting discussions and deliberations on environment and development and in enhancing the understanding of the causes of present environmental and developmental problems, as well as in demonstrating the ways in which they transcend institutional frontiers and in opening new perspectives on the interrelationship between environment and development as a guide to the future,

Emphasizing the need for a new approach to economic growth, as an essential prerequisite for eradication of poverty and for enhancing the resource base on which present and future generations depend,

1. *Welcomes* the report of the World Commission on Environment and Development entitled "Our Common Future";
2. *Notes* with appreciation the important contribution made by the Commission to raising the consciousness of decision-makers in Governments, intergovernmental and nongovernmental international organizations, industry and other fields of economic activity, as well as of the general public, in regard to the imperative need for making the transition towards sustainable development, and calls upon all concerned to make full use in this regard of the report of the Commission;
3. *Agrees* with the Commission that while seeking to remedy existing environmental problems, it is imperative to influence the sources of those problems in human activity, and economic activity in particular, and thus to provide for sustainable development;
4. *Agrees further* that an equitable sharing of the environmental costs and benefits of economic development between

and within countries and between present and future generations is a key to achieving sustainable development;

5. *Concurs* with the Commission that the critical objectives for environment and development policies which follow from the need for sustainable development must include preserving peace, reviving growth and changing its quality, remedying the problems of poverty and satisfying human needs, addressing the problems of population growth and of conserving and enhancing the resource base, reorienting technology and managing risk, and merging environment and economics in decision-making;

6. *Decides* to transmit the report of the Commission to all Governments and to the governing bodies of the organs, organizations and programmes of the United Nations system, and invites them to take account of the analysis and recommendations contained in the report of the Commission in determining their policies and programmes;

7. *Calls upon* all Governments to ask their central and sectoral economic agencies to ensure that their policies, programmes and budgets encourage sustainable development and to strengthen the role of their environmental and natural resource agencies in advising and assisting central and sectoral agencies in that task;

8. *Calls upon* the governing bodies of the organs, organizations and programmes of the United Nations system to review their policies, programmes, budgets and activities aimed at contributing to sustainable development;

9. *Calls upon* the governing bodies of other relevant multilateral development assistance and financial institutions to commit their institutions more fully to pursuing sustainable

development in establishing their policies and programmes in accordance with the national development plans, priorities and objectives established by the recipient Governments themselves;

10. *Requests* the Secretary-General, through the appropriate existing mechanisms, including the Administrative Committee on Co-ordination, to review and coordinate on a regular basis the efforts of all the organs, organizations and bodies of the United Nations system to pursue sustainable development, and to report thereon to the General Assembly through the Governing Council of the United Nations Environment Programme and the Economic and Social Council;

11. *Stresses* the essential role of the United Nations Environment Programme, within its mandate, in catalysing the sustainable development efforts of the United Nations system, while fully taking into account the coordinating responsibilities of the Economic and Social Council, and agrees with the Commission that that role should be strengthened and that the resources of the Environment Fund should be substantially enlarged, with greater participation;

12. *Considers* that the Governing Council of the United Nations Environment Programme, within its mandate and with participation, when appropriate, at the ministerial level, should examine on a periodic basis the long-term strategies for realizing sustainable development, and should include the results of its examinations in its reports to be submitted to the General Assembly through the Economic and Social Council;

13. *Agrees* that the catalytic and co-ordinating role of the United Nations Environment Programme in the United

Nations system should be reinforced in its future work on environmental and natural resource issues;

14. *Reaffirms* the need for additional financial resources from donor countries and organizations to assist developing countries in identifying, analysing, monitoring, preventing and managing environmental problems in accordance with their national development plans, priorities and objectives;

15. *Reaffirms* the need for developed countries and appropriate organs and organizations of the United Nations system to strengthen technical co-operation with the developing countries to enable them to develop and enhance their capacity for identifying, analysing, monitoring, preventing and managing environmental problems in accordance with their national development plans, priorities and objectives;

16. *Invites* Governments, in co-operation with the regional commissions and the United Nations Environment Programme and, as appropriate, intergovernmental organizations, to support and engage in follow-up activities, such as conferences, at the national, regional, and global levels;

17. *Calls upon* Governments to involve nongovernmental organizations, industry and the scientific community more fully in national and international activities to support efforts towards sustainable development;

18. *Invites* the governing bodies of the organs, organizations and programmes of the United Nations system to report, as appropriate, through the Economic and Social Council, to the General Assembly, not later than at its forty-fourth session, on progress made in their organizations towards sustainable development, and to make such reports

available to the Governing Council of the United Nations Environment Programme at its next regular session;

19. *Also invites* the Governing Council of the United Nations Environment Programme to provide comments on matters concerning progress on sustainable development that fall within its mandate, on the above-mentioned reports and on other developments, for submission to the Economic and Social Council at its second regular session of 1989 and to the General Assembly at its forty-fourth session;

20. *Requests* the Secretary-General to submit to the General Assembly at its forty-third session, through the Economic and Social Council, a progress report on the implementation of the present resolution and to the Assembly at its forty-fourth session a consolidated report on the same subject;

21. *Decides* to include in the provisional agenda of its forty-third session a sub-item entitled "A long-term strategy for sustainable and environmentally sound development" under the agenda item entitled "Development and international economic cooperation".

Annex 3

Resolution 42/186 of the United Nations General Assembly: Environmental Perspective to the Year 2000 and Beyond

The General Assembly,

Recalling its resolution 38/161 of 19 December 1983 on the process of preparation of the Environmental Perspective to the Year 2000 and Beyond, in which it, *inter alia*, welcomed the desire of the Governing Council of the United Nations Environment Programme to develop the Environmental Perspective and transmit it to the General Assembly for adoption, benefiting in carrying out that function from its consideration of the relevant proposals made by a special commission, which adopted the name World Commission on Environment and Development,

Welcoming the Environmental Perspective to the Year 2000 and Beyond, prepared by the Intergovernmental Intersessional Preparatory Committee on the Environmental Perspective to the Year 2000 and Beyond of the United Nations Environment Programme, referred to in General Assembly resolution 38/161, considered further by the Governing Council of the United Nations Environment Programme at its fourteenth session and adopted in its decision 14/13 of 19 June 1987, as a basis for the further elaboration of its programme and operations, while acknowledging that different views exist on some aspects,

Appreciating that concepts, ideas and recommendations contained in the report of the World Commission on Environment and Development have been incorporated into the Environmental Perspective,

1. *Expresses* its appreciation for the efforts of the Governing Council of the United Nations Environment Programme and its Intergovernmental Inter-sessional Preparatory Committee on the Environmental Perspective to the Year 2000 and Beyond in the preparation of the Environmental Perspective to the Year 2000 and Beyond;

2. *Adopts* the Environmental Perspective to the Year 2000 and Beyond, contained in the annex to the present resolution, as a broad framework to guide national action and international co-operation on policies and programmes aimed at achieving environmentally sound development, and specifically as a guide to the preparation of further system-wide medium-term environment programmes and the medium-term programmes of the organizations and bodies of the United Nations system, in the light of Governing Council decision 14/13;

3. *Notes* that the perceptions generally shared by Governments of the nature of environmental problems, and their interrelations with other international problems, and of the efforts to deal with them include the following:

(a) An international atmosphere of peace, security and co-operation, free from the presence and the threat of wars of all types, especially nuclear war, in which intellectual and natural resources are not wasted on armaments by any nation, would greatly enhance environmentally sound development;

(b) The imbalance of present world economic conditions makes it extremely difficult to bring about sustained improvement in the world's environmental situation; accelerated and balanced world development and lasting improvements in the global environment require improved world economic conditions, especially for the developing countries;

(c) Since mass poverty is often at the root of environmental degradation, its elimination and ensuring equitable access of people to environmental resources are essential for sustained environmental improvements;

(d) The environment puts constraints on as well as provides opportunities for economic growth and social well-being; environmental degradation, in its various forms, has assumed such proportions as can cause irreversible changes in ecosystems, which threaten to undermine human well-being; environmental constraints, however, are generally relative to the state of technology and socioeconomic conditions, which can and should be improved and managed to achieve sustained world economic growth;

(e) Environmental issues are closely intertwined with development policies and practices; consequently, environmental goals and actions need to be defined in relation to development objectives and policies;

(f) Although it is important to tackle immediate environmental problems, anticipatory and preventive policies are the most effective and economical in achieving environmentally sound development;

(g) The environmental impacts of actions in one sector are often felt in other sectors; thus internalization of

environmental considerations in sectoral policies and programmes and their co-ordination are essential for the achievement of sustainable development;

(h) Since conflicts of interest among population groups, or among countries, are often inherent in the nature of environmental problems, the participation of the concerned parties is essential in determining effective environmental management practices;

(i) Environmental degradation can be controlled and reversed only by ensuring that the parties causing damage will be accountable for their actions, and that they will participate, on the basis of full access to available knowledge, in improving environmental conditions;

(j) Renewable resources, as part of complex and inter-linked ecosystems, can have sustainable yields only if used while taking into account system-wide effects of exploitation;

(k) The safeguarding of species is a moral obligation of humankind and should improve and sustain human well-being;

(l) Building awareness at various levels of environmental conditions and management, through the provision of information, education and training, is essential for environmental protection and improvement;

(m) Strategies to deal with environmental challenges have to be flexible and should allow for adjustments to emerging problems and evolving environmental management technology;

(n) International environmental disputes, which are growing in number and variety, need to be resolved by peaceful means;

4. *Welcomes* as the overall aspirational goal for the world community the achievement of sustainable development on the basis of prudent management of available global resources and environmental capacities and the rehabilitation of the environment previously subjected to degradation and misuse, and the aspirational goals to the year 2000 and beyond as set out in the Environmental Perspective, namely:

(a) The achievement over time of such a balance between population and environmental capacities as would make possible sustainable development, keeping in view the links between population levels, consumption patterns, poverty and the natural resource base;

(b) The achievement of food security without resource depletion or environmental degradation and restoration of the resource base where environmental damage has been occurring;

(c) The provision of sufficient energy at reasonable cost, notably by increasing access to energy substantially in the developing countries, to meet current and expanding needs in ways which minimize environmental degradation and risks, conserve nonrenewable sources of energy and realize the full potential of renewable sources of energy;

(d) The sustained improvements in levels of living in all countries, especially the developing countries, through industrial development that prevents or minimizes environmental damage and risks;

(e) The provision of improved shelter with access to essential amenities in a clean and secure setting conducive to health and to the prevention of environment-related diseases, which would, at the same time, alleviate serious environmental degradation;

(f) The establishment of an equitable system of international economic relations aimed at achieving continuing economic advancement for all States based on principles recognized by the international community, in order to stimulate and sustain environmentally sound development, especially in developing countries;

5. *Agrees* that the recommendations for action contained in the Environmental Perspective should be implemented, as appropriate, through national and international action by Governments, intergovernmental and nongovernmental organizations and scientific bodies;

6. *Requests* the Governing Council to keep under review the extent to which the long-term environmental actions recommended in the Environmental Perspective have been implemented and to identify any new environmental concerns that may arise;

7. *Calls* special attention to section IV of the Environmental Perspective, which spells out instruments of environmental action, to be used as support in addressing, as appropriate, problems dealt with in previous sections of the Environmental Perspective;

8. *Stresses* the essential role of the United Nations Environment Programme within the United Nations system in catalysing environmentally sound and sustainable development and agrees with the Governing Council that this role should

be strengthened and that the resources of the Environment Fund should be substantially increased with greater participation;

9. *Endorses* the priorities and functions for the United Nations Environment Programme set out in paragraph 117 of the Environmental Perspective;

10. *Decides* to transmit the text of the Environmental Perspective to all Governments and to the governing bodies of the organs and organizations of the United Nations system as a broad framework to guide national action and international cooperation on policies and programmes aimed at achieving environmentally sound and sustainable development;

11. *Calls upon* the governing bodies of the organs and organizations of the United Nations system to consider the Environmental Perspective and take it into account in the development of their own medium-term plans and programmes as relevant to their own mandates;

12. *Requests* the governing bodies of relevant United Nations organizations to report regularly to the General Assembly on the progress made in achieving the objectives of environmentally sound and sustainable development in line with paragraph 114 of the Environmental Perspective;

13. *Invites* the Governing Council of the United Nations Environment Programme to report to the General Assembly at its forty-fourth session on the implementation of the present resolution and the relevant provisions of the Environmental Perspective to the Year 2000 and Beyond.

Annex 4

Resolution WHA41.15 of the World Health Assembly: Report of the World Commission on Environment and Development

The Forty-first World Health Assembly,

Welcoming the report of the World Commission on Environment and Development, entitled *Our common future*, and calling particular attention to its conclusions and recommendations as they relate to the mandate of WHO;

Noting United Nations General Assembly resolution 42/187 of 11 December 1987, transmitting to all governments and to the governing bodies of the organs, organizations and programmes of the United Nations system the report of the World Commission on Environment and Development, and inviting them to take account of the analysis and recommendations contained in the report in determining their policies and programmes;

Noting further that, in the same resolution, the General Assembly called upon the governing bodies of the organs, organizations and programmes of the United Nations system to review their policies, programmes, budgets and activities aimed at contributing to sustainable development;

1. REQUESTS the Director-General, the Executive Board and its Programme Committee, in preparing the programme budget for the biennium 1990-1991, to take into account the

recommendations in the report of the World Commission on Environment and Development in all relevant programme areas, in order to contribute to sustainable development;

2. FURTHER REQUESTS the Director-General to submit to the eighty-third session of the Executive Board a progress report on WHO's contribution to the international efforts towards sustainable development as a contribution to the report to be submitted to the forty-fourth session of the United Nations General Assembly in accordance with operative paragraph 18 of General Assembly resolution 42/187.

Annex 5

Resolution WHA42.26 of the World Health Assembly: WHO's Contribution to the International Efforts towards Sustainable Development

The Forty-second World Health Assembly,

Having considered the report of the Director-General on WHO's contribution to the international efforts towards sustainable development;

Recalling resolutions WHA34.36, WHA35.17, WHA39.22 and WHA41.15;

Noting United Nations General Assembly resolutions 42/187, on the report of the World Commission on Environment and Development, and 42/186, on the Environmental Perspective to the Year 2000 and beyond;

Noting also that the United Nations General Assembly will consider at its forty-fourth session the scope, title, venue and date of a United Nations conference on environment and development in 1992;

Considering that equitable health development is an essential prerequisite for socioeconomic development and that the sustainable and equitable use of the world's resources will be of paramount importance for achieving health for all and for the solution of ecological problems;

Concerned that uncontrolled development and the indiscriminate use of technology have degraded the environment, and that this increasingly poses threats to the health of the present and future generations and the sustainability of the development process itself;

Stressing the need for both national and international policies and strategies dealing with the interdependence between development, the environment and health;

1. THANKS the Director-General for his report;
2. ENDORSES the report and the analysis contained therein of the implications of sustainable development for health and for the future development of the Organization's programme;
3. URGES Member States:
 - (1) to establish and evaluate policies and strategies for preventing adverse effects of development on the environment and on health;
 - (2) to strengthen their national health programmes in this respect, particularly for:
 - (a) meeting basic human health needs in the context of development;
 - (b) providing health care for specific population groups requiring attention in the development process — for example, the urban poor;
 - (c) preventing diseases resulting from uncontrolled development;
 - (d) assessing and preventing the environmental health risks arising from uncontrolled development and the indiscriminate use of technology;

(3) to strengthen their national health services to enable them to play an active role in the context of sustainable development;

(4) to adopt appropriate legislation, regulating anthropogenic influences on ecological systems;

4. CALLS ON the international community, including development aid agencies and nongovernmental organizations, to increase their support for activities to promote a healthy environment and to control adverse effects of development on environment and health;

5. REQUESTS the Director-General:

(1) to give prominence to the interdependence between development, the environment and health in WHO's programme, emphasizing:

(a) the capability of the Organization to provide leadership in the identification, assessment and control of new problems including the health effects of hazardous and toxic substances, industrial processes and products, agricultural and food processing practices and climate change;

(b) research and the development of technology for assessing and controlling the complex interactions between environmental factors and health;

(c) education and information programmes with a view to promoting behaviour and lifestyles compatible with the needs arising from the interdependence between development, the environment and health;

- (2) to support national health agencies in the formulation of national policies and strategies for, and the implementation of, sustainable and environmentally sound development;**
- (3) to ensure the continuation of WHO's advocacy role, in its collaboration with other international organizations, regarding the paramount importance of health considerations for sustainable development;**
- (4) to give particular attention to strengthening cooperation between the health and other development sectors, including, as appropriate, research on the institutional, economic and other factors involved;**
- (5) to collaborate with the Secretary-General of the United Nations with a view to preparing WHO's contribution to the forthcoming conference on environment and development;**
- (6) to report on the progress in this respect to the Forty-fifth World Health Assembly.**

The First European Conference on Environment and Health, held at Frankfurt-am-Main, Federal Republic of Germany on 7 and 8 December 1989, brought together ministers and other senior representatives from the environment and health administrations of 29 European countries and from the Commission of the European Communities.

The Charter, which was adopted by the final session of the Conference, is a further extension of the European health for all policy and targets adopted by the 32 Member States of the European Region of WHO in 1984. The Charter also incorporates the basic philosophy of the World Commission on Environment and Development, and represents a major step forward in the development of both public health and environmental policies at a time when political change is greatly enhancing cooperation among Member States throughout Europe. By adopting the Charter, the governments of Europe have taken a united position on the basic principles, mechanisms and priorities for further developing environmental health programmes.

This book combines the Charter and the Commentary, an explanatory text originally provided as background for delegations to the Conference and now given wider dissemination at their request.

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