



World Health Organization, Regional Office for Europe
Weltgesundheitsorganisation, Regionalbüro für Europa
Organisation Mondiale de la Santé, Bureau Régional de l'Europe
Всемирная организация здравоохранения, Европейское региональное бюро

Health impact assessment as part of strategic environmental assessment

A review of Health Impact Assessment concepts, methods and practice to support the development of a protocol on Strategic Environmental Assessment to the Espoo Convention, which adequately covers health impacts.

November 2001

ADVANCED COPY

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ABSTRACT

This document has been prepared for policy makers in different sectors of the economy and representatives of Governments participating in the negotiations of the Protocol on Strategic Environmental Assessment (SEA) to the Espoo Convention.

It draws on a wide body of knowledge and experience in developing and implementing Health Impact Assessment (HIA) in Europe and elsewhere. These were brought together for the purpose of the review, by meetings of international experts convened by the Rome Office of the WHO European Centre for Environment and Health.

It discusses how decisions taken outside of the health sector can affect the health of individuals and populations by modifying their physical and social environment, and how this in turn affects social and economic development.

The document describes methods, procedures and practices to carry out health impact assessments of policies, plans and projects, highlighting the similarities with and opportunities for integrating health impact assessment within strategic environmental assessments, and other forms of impact assessment under use. It draws attention to the opportunities for achieving health benefits and avoiding health costs by considering health impacts early in the planning process. It is aimed at inspiring policy makers to include health considerations early in their planning process by showing how different perspectives can feasibly be incorporated into everyday decisions.

The document also highlights how governments are increasingly becoming aware of the health implications of decisions in different sectors of the economy, and how this is reflected in the WHO Health for All targets and in the Amsterdam Treaty of the European Union, which requires that a high level of health protection be ensured by all community policies and activities.

As yet there are no institutional mechanisms for integrating health concerns into other sectors decisions. This has consequences for people's health and results in health systems bearing the costs of health being overlooked during the planning of other sectors activities. Over the last few years, a number of countries have started developing mechanisms for HIA of policy decisions. International gatherings (such as the 3rd Ministerial Conference on Environment and Health and meetings of the Parties to the Espoo and Aarhus Conventions) have also asked for the development of instruments to facilitate the implementation of strategic environmental assessments where impacts on people's health are fully addressed. This special emphasis on health aspects intends to improve the present practice according to which, although health considerations are formally part of environment impact assessments, they are not or poorly covered in the real assessments.

The developments on health impact assessment and on strategic environmental assessments could come together in the new SEA protocol. If health issues can be adequately addressed by this instrument, there would be no need for further requirements and instruments for including HIA in other sectors policies. This could save resources, and integrate different concerns into day to day policy making.

FOREWORD

Over the last few years, Member States of the European Region have repeatedly called for mechanisms to be established to facilitate and promote the implementation of strategic environmental assessments (SEA) where impacts on people's health are fully addressed. At the 3rd Ministerial Conference on Environment and Health (London, 1999), and meetings of the Parties to the Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters ("Aarhus Convention"), and of the Convention on Environment Impact Assessment in a Transboundary Context ("Espoo Convention"), governments specifically called for the development of a protocol on Strategic Environmental Assessment, and agreed to begin negotiations for this protocol under the Espoo Convention. The World Health Organization Regional Office for Europe and representatives of the Aarhus Convention were invited to join the preparation of that protocol, providing their perspectives to the draft text under negotiation.

This review has been prepared to inform policy makers and parties negotiating the SEA protocol about the health implications of projects, plans and strategies not primarily meant to affect health, and how these can be assessed. It describes the methods and practice of health impact assessment (HIA), highlighting its similarities with other forms of impact assessments in terms of process and procedure. It provides an overview of the different types and levels of complexity of HIA and of the skills needed for their implementation. The emphasis is on the need for selecting HIA methods and tools that are fit for purpose, provide just enough detail to support decision making, and focus in identifying the key health impacts.

This is a concise document, meant to raise the awareness of policy makers about the range of health benefits that can be achieved and health costs that can be avoided by considering health impacts early in the planning process. It is meant to inspire them to take action on implementation of HIA, by highlighting how procedures and processes for HIA are straightforward, and their similarities and synergies with other impact assessments that are regularly being implemented. It is meant to encourage the integration of different sustainable development goals into common practice, by showing how different perspectives can feasibly be incorporated into everyday policy making.

Over the last few years there has been increasing awareness of the need to make more explicit the human/social dimension of development, and the links between health and sustainable development, including the contribution of health to poverty alleviation. This document informs of practical tools to make those links more clear, advocates the added value of mechanisms to include health concerns into policies and strategies, and calls for their implementation at the different levels of decision-making processes.

The document is grounded on the understanding that a wide range of factors can affect health. These include policies and project implemented in all sectors of the economy, not just those directly aimed at affecting health or health care. There is therefore considerable scope for action outside the health sector to prevent ill health and promote good health. Governments increasingly recognize these social, economic and environmental determinants and the need for greater integration of policies and programmes, as reflected in the WHO Health for All policy and the Amsterdam treaty of the European Community (article 152), which calls for "a high level of human health protection ... in the definition and implementation of all community policies and activities" and urges that "public health...be a consideration of policies of non-health sectors".

Against this background and policy objectives, there is however still a lack of institutional mechanisms to integrate health in other sectors' decisions. This has consequences for people's health and for Europe's health systems, which end up bearing the consequences of health being overlooked during planning and development in other sectors of the economy.

Health Impact Assessment (HIA) is a combination of procedures, methods and tools by which a policy, programme, projects or legislative procedure may be judged for its potential effects on the health of a population, and the distribution of these effects within it.

There are many similarities between processes and procedural steps of HIA and those used in Environment Impact Assessment (EIA), which are already successfully being used to integrate environmental concerns into sector policies.

Although the principle of health protection is established as a primary concern in EIA processes, in practice health is scarcely mentioned or the discussion is limited to a description of effects through the biophysical environment. The whole range of possible effects on health, including those mediated by socio-economic factors is often ignored, and no effective mechanisms are in place to successfully incorporating health criteria and expertise into environmental assessments.

The development of the new protocol on Strategic Environmental Assessment to the Espoo Convention, creates an opportunity for adequately covering health aspects as part of that instrument. This can potentially be an important mechanism for the institutionalisation of HIA in Europe. It can also obviate the need for developing other international instruments focusing on health impacts, saving resources, and allowing for processes that facilitate the integration of different concerns into policy making.

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ACKNOWLEDGEMENTS

This review draws a wide body of knowledge and experience in developing and implementing HIA in Europe and elsewhere. These were brought together for the purpose of the review, by a meeting of experts convened by the WHO in Budapest on 25 November 2000. This HIA meeting took place back to back with another meeting, co-organised by the Governments of the Czech Republic, Norway, and Italy, and by the WHO, the UNECE, and the Regional Environmental Centre in Szentendre on 23/24 November 2000, where the different perspectives regarding the new SEA protocol were openly discussed by health and environment experts, as well as by other actors on public participation and access to information.

The review is part of the WHO Regional Office for Europe activities on HIA, led by the European Centre for Environment and Health, Rome Office.

The WHO is grateful to all the experts who contributed their time, knowledge and experience towards the development of this review, and participated in the relevant meetings. We are especially thankful to the editors of this report who have managed to communicate complex matters in direct, every day language, without compromising on the scientific rigour of the information provided.

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1. Introduction

At the 3rd Ministerial Conference on Environment and Health (London, 16-18 June 1999) and at meetings of parties to the Aarhus and Espoo Conventions^{1 2}, Member States of the World Health Organization asked for negotiations to start on the development of a protocol for strategic environmental assessment³.

The request was for a protocol within which the impacts on people's health are fully addressed. The World Health Organization (WHO) Europe was asked to support Member States by considering, in close collaboration with the Sofia Initiative and the UN/ECE programme on the Espoo Convention, how health impact assessment could be integrated into strategic environmental assessment.

At the second meeting of the Parties to the Espoo Convention (UN/ECE Convention on Environmental Impact Assessment, Sofia, Bulgaria 27 February 2001), it was agreed that a legally binding protocol on Strategic Environmental Impact Assessment would be prepared. This will supplement the existing provision of Environmental Impact Assessment in a transboundary context. The aim is for its possible adoption at the 5th Ministerial Conference 'Environment for Europe' at an extraordinary meeting of the Parties to the Convention scheduled for May 2003 in Kiev, Ukraine⁴.

This document, which responds to the request of Member States of the WHO, has been prepared for policy makers and government representatives negotiating the Protocol on Strategic Environmental Assessment (SEA). It provides an overview of the health impact assessment approach and its relevance to SEA. It highlights the benefits of a multi-sectoral approach to protecting and improving people's health and identifies, as the basis for further discussion, key issues relevant to integrating health impact assessment as part of SEA.

What is health?

According to the definition provided by the Constitution of the World Health Organization (1948), "health" is defined as:

"A state of complete physical, social and mental wellbeing, and not merely the absence of disease or infirmity".

In this sense, health is seen as a resource for everyday life, as a positive concept that emphasises social and personal resources as well as physical capabilities. This definition is broader than the way in which 'health' or 'human health' is interpreted by organisations and decision-makers in most sectors but it fits well within the full meaning of the sustainable development concept. It recognises that a wide range of economic, political, social, psychological, and environmental factors affect people's health. These factors are interrelated and can affect groups of people within a population in different ways.

People's health and wellbeing is recognised as the ultimate aim of social and economic development⁵ but the converse is also true, human health and wellbeing is fundamental to sustainable economic growth⁶.

Health cuts across all sectors

Impacts on human health are not limited to specific health policies. Policies and programmes in all sectors affect – directly or indirectly – on people’s health and wellbeing. Health is a theme that cuts across all sectors although awareness and, perhaps to some extent, acceptance of this by policy and decision-makers is not as high as it might be. While health care services play a vital role in improving people’s health by treating disease and ill health, the need to prevent ill health in the first place is an essential requirement for successful sustainable development policy in any country.

Considerable scope exists outside the health sector to help to prevent ill health and to encourage and help people to achieve better health and wellbeing. Increasingly, Governments and supra-national institutions are acknowledging the wider determinants of people’s health and thus, the relevance of health impacts. In some cases, awareness of health impacts has increased as a result of major issues of public concern. Examples, such as Agricultural policy, BSE and food safety for example, have highlighted the impact on human health of decisions made in other policy areas and the knock-on effects that such developments can have, including effects on people’s perceptions of risks and on public confidence in policy makers and scientists.

The impact(s) of policies, programmes or other developments on people’s health and wellbeing may be positive and/or negative, and may vary in their magnitude. The impact(s) may also vary across different groups of people within the population or between people living in different local communities. Groups in society that can be affected to a much greater extent by the adverse health effects of some policies, plans or programmes include children, elderly people, people with disabilities and people from ethnic minorities. Furthermore, some impacts are of transboundary nature, such as those resulting from energy and transportation policies, and those that have an effect on transboundary water courses. These effects may manifest themselves in locations that are geographically remote from the primary source of impact, or on a global scale (e.g. effects of global climate change).

Health impact assessment

Action to consider the impact of plans on people’s health is not new. It has featured in the development of modern environmental policies⁷. However, there is clearly scope for much greater notice to be taken of the potential effects on health of policies, programmes and other developments, and of their potential to contribute to efforts to improve health. Harnessing the full potential of different sectors to contribute to protecting and to improving people’s health means that health needs to be taken into account during the development and review of policies and programmes.

A key issue has emerged recently through reviews of practices and of available literature. Despite the fact that several international policy instruments - the Espoo Convention, the Amsterdam Treaty and the European Directives on Environmental Impact Assessment, for example – cite emphasis on human health protection as a major reason to carry out EIAs⁸⁹, in practice the consideration of health impacts has largely been neglected or has been inadequate.

Health impact assessment is an approach that provides a systematic but flexible means of doing this. Based on the broader model of health, it enables the wide range of factors that can affect human health – directly or indirectly – to be identified and taken into account at an early stage in planning and decision-making. The approach puts great emphasis on the

involvement of stakeholders including the public so that the expertise and/or opinions of those who may be affected by a proposed policy or development are taken into account during planning and decision-making processes.

The most important aspect of health impact assessment is not its title but what it can do to improve policymaking by contributing to informed and transparent decision-making. It can also help to:

- make the links between health and other policy areas more explicit, thus helping to generate a better understanding of the interactions between policy areas;
- ensure that the potential health consequences of decisions – positive or negative – are not overlooked by raising awareness of the relevance of health across policy areas;
- facilitate greater integration and co-ordination between policies and action across all sectors by identifying new opportunities to protect and improve health and by informing discussions and decisions on appropriate action.

Health impact assessment should not necessarily be viewed as something that is different from or separate to many forms of impact assessment. The main difference is often the interpretation of 'health' with health impact assessment taking the broader definition of health as set out by the WHO. The different forms of impact assessment share many common features and therefore provide opportunities for utilising one as an integrated part of another.

2. Health impacts and determinants

The health impact assessment approach is grounded in the broad determinants of human health. These are defined as the personal, social, cultural, economic, and environmental factors that influence the health status of individuals and populations. Some factors that affect health, such as age, sex and the genes people inherit, cannot be changed. However, policies, programmes, and the way they are implemented represent important influences on people's health and wellbeing.

To understand the health impacts, there is a need to consider all the health determinants that may be affected by the proposed policy, programme or other development. Two broad groups of determinants are particularly important, namely the bio-physical environment and the socio-economic environment.

What affects people's health and wellbeing?

Many health determinants are interrelated and there are several cross cutting issues that affect health e.g. poverty and education. The systematic nature of health impact assessment recommends that health impacts are considered by way of a number of categories. The categories encompass a series of intermediate factors that are determinants of health, through which changes due to a policy or project can impact on people's health. The precise categories used and their component parts may vary according the nature of the proposed policy, programme or other development thus

providing sufficient flexibility in the application of the health impact assessment concept in different circumstances. Table 1 illustrates one example of such a classification.

Table 1: Categories of health determinants

Principal categories	Sub-categories	Examples of health determinants
Individual/ family	Physiological	Age, nutritional status, disability, gender, immunity, ethnicity
	Behaviour	Risk taking behaviour, occupation, education, risk perception
	Socio-economic circumstances	Poverty, unemployment
Environmental	Physical	Air, water and soil media, infrastructure, vectors, housing, energy, land use, pollution, crops and foods
	Social	Family structure, community structure, culture, crime
	Financial	Employment, investment
Institutional	Organisation of health care	Primary health care, specialist services
	Other institutions	Police, transport, public works, municipal authorities, local government, project sector ministry, local community organisations, non-Government organisations, emergency services
	Policies	Regulations, jurisdictions, laws, goals, thresholds, priorities

Taking this approach to health determinants a stage further, it is possible to relate them to specific policy sectors. The following table illustrates this aspect.

Table 2: Examples of the association between policy sectors and the determinants of health

Sectors	Determinants of health			
	Individual/ family	Physical environment	Social environment	Public services
Transport	Fear of assault, physical activity choice	Air pollution, collisions	Social severance, exclusion	Speed regulation, casualty units
Agriculture	Food safety and availability, Food choice	Irrigation water quality, Pesticide residues	Rural livelihoods e.g. farmers	Regulation of food safety and food price
Housing	Shelter, comfort, dignity	Damp, cold, indoor air pollution	Crime rates in some deprived areas; safety	Land use designation and planning, Building codes
Energy	Energy poverty	Gas and particulate emissions		Power station siting, energy pricing policy
Industry	Occupational health and safety	Chemical safety	Employment opportunities	Environmental monitoring institutions
Mining	Migration	Dust and explosion Water pollution	Crowded housing	Regulation of working environments
Water resources	Hygiene behaviour	Chemical and microbiological contaminants	Conflict over water scarcity	Water treatment, protection of sources

Protecting and improving health through a multi-sectoral approach

There is increasing recognition of the need not only to take positive action to protect people's health but also to take advantage of all opportunities to improve people's health and wellbeing. The provisions of Article 152 of The Amsterdam Treaty of the European Community, which stipulates that "*A high level of human health protection shall be ensured in the definition and implementation of all Community policies and activities*" is but one example of this¹⁰. That said, all countries have some way to go before it can be said that a truly integrated approach has been achieved. Protecting and improving people's health is important for the public and governments alike. This means a multi-sectoral approach which takes health into account across all policy areas and, where possible, integrating action to promote better health and wellbeing as part wider policies and programmes.

Policy areas such as economic development, agriculture, transport, education, housing and social support can make an important contribution to improving the health of a country's population. The converse is also true. While policy areas other than health can contribute to improving population health, there is also growing economic evidence that investing in action to improve human capital, including health, can contribute to sustainable economic development and to equity within societies. Ill health can constitute a barrier to economic development in that it can result in economic inactivity. It can also transfer hidden costs to the health care sector in respect of treatment which consumes public resources to correct the underlying problem.

Benefits of a multi-sectoral strategy

A multi-sectoral strategy which targets people's health and wellbeing as an explicit component of sustainable development brings with it a number of potential benefits¹¹ including:

- strengthened health and productivity (of individuals) throughout life
- reduced burden of ill-health and injury
- profit from greater equity in health
- unlocking of new resources by an integrated approach.

Case study (Netherlands) ^{12 13}

In a debate on Regulating Environmental Tax on Energy (Ecotax) in the Netherlands Government in 1995, parliamentary parties expressed their concern for the income impact on chronically ill and handicapped people amongst others. An investigation of possible increase in energy consumption by chronically ill and handicapped was carried out in relation to the introduction of regulating environmental tax on energy.

The development of health impact assessment by the Ministry of Health led to a health impact assessment being one of the three research reports presented as a result of the investigation. This led to better insight for Government into the income status of chronically ill and handicapped. To improve this status, the fixed deduction in the area of extra taxation was increased in the Report on the Amendments to the Tax Plan by 511 DFL up to the maximum of 1532 DFL among other things. Following this line, the tax relief for elderly and for disabled was increased by 50%. 75 million DFL are assigned from the budget for this matter. Next to this, a sum of 225 million DFL has been allocated to accommodate a stronger appeal to the Health Care Services Act. After the health impact assessment, the Government decided to earmark an extra sum of maximum 10 million DFL for the income status improvement of chronically ill through tax facilities.

3. Health impact assessment

The purpose of health impact assessment is to consider the health consequences – positive and/or negative – of a policy, project, or programme that does not necessarily have health as its primary objective. Health impact assessment is a combination of procedures, methods, and tools by which a policy, programme, or plan may be judged as to its potential effects on the health of population and the distribution of those effects within the population¹⁴.

Health impact assessment provides a framework with which to identify the impact – or potential impact – on people's health of a proposal. It is a multi-disciplinary and participatory process that takes into account the opinions of those who may be affected by a proposed policy or development. As such it fits well with, and complements the approach and principles proposed for strategic environmental assessment. The consideration of health and any subsequent analysis of impacts and potential impacts will inform various stages of the decision-making process.

Health is of course, not the only consideration in policymaking and final decisions will be the result of a number of other considerations or factors. The aim is to ensure that possible health consequences of actions are not overlooked. In this way, any negative impacts on people's health and wellbeing can be anticipated, removed or mitigated. However, health impact assessment extends beyond simply identifying the negative or adverse effects. It can help to identify how policies outside the health sector can benefit health and create new opportunities to help people to improve their health and that of their families

Health impact assessment has emerged in response to the need to focus on health as a strategic priority and as something that can be addressed through intersectoral action¹⁵. It shares many common features with other forms of impact assessment – including environmental impact assessment and strategic environmental assessment – and thus opportunities exist for an integrated approach.

Furthermore, health impact assessment does not mean that health considerations will take primacy over all others in policy making¹⁶. Decision-making often needs to take into account a number of priorities and, in some cases, may involve trade-offs between different objectives. The use of health impact assessment alongside, or as part of, other impact assessments means that decisions can be made in the knowledge that health, as a common priority across Europe, has not been overlooked, and with an understanding of what effects the proposal might have on people's health and wellbeing or factors that affect it.

Types of health impact assessment

There are three main types of health impact assessment:

- *Prospective assessment*: undertaken during the development of a new or revised policy or development. It aims to consider, and if possible predict, the effects on health and wellbeing that might be expected as a result of implementing the policy, and to identify corrective measures that could prevent or mitigate these effects.
- *Retrospective assessment*: looks at the consequences for health of a policy, programme or other development that has already been implemented, or at the

consequences of an unplanned development or event.

- *Concurrent assessment*: assesses the impacts in health in parallel with the implementation of the policy or programme. Its main use is where impacts on health are anticipated but where their nature and/or magnitude are uncertain. It allows to monitor the policy or programme implementation and to feedback the results into the system for prompt corrective actions.

Case study (Wales)¹⁷

Between 2000-2006, Wales will receive substantial support from the Structural Funds of the European Community. The support includes the Objective 1 Programme for West Wales and the Valleys, an area covering 64% of the population of Wales and 15 of its 22 local authorities. The goal of the Objective 1 Programme is economic development. The development of the Programme commenced well before the National Assembly for Wales put in place its plan to develop the use of health impact assessment but the absence of a prospective health impact assessment during the Programme's development did not prevent health from becoming part of it. There were two main reasons for this. First and foremost, the Assembly's overall commitment to developing an integrated approach in its policies and programmes and the political will to reinforce this. Second, and largely resulting from the first, work across policy area by Assembly officials and recognition of the Programme's relevance to health by some external organisations.

A health impact assessment was undertaken in the early stages of Programme implementation, as there was a clear need to raise awareness of its relevance to people's health and wellbeing. The report has stimulated considerable discussion on the relevance of action to improve health as part of local economic regeneration development and has facilitated the inclusion of action to improve health within local plans. Additional guidance - including a simple assessment tool - was published to assist those developing project proposals to take health into account. Feedback also suggests that organisations outside the Objective 1 area have found the health impact assessment report useful for the way it highlights the connections between health and other policy areas, including environment, economic development and social regeneration.

Who can use health impact assessment?

Organisations and groups operating at local, regional, national and international levels can utilise health impact assessment to enhance their policymaking and planning processes. Although there are standard features one would expect to find in a health impact assessment, there is no single 'right' approach. Different methods may be appropriate in different circumstances thus reflecting the flexibility of the approach. The goal is to ensure that the method used is appropriate and 'fit for purpose'. In this way, health impacts and/or potential impacts will not be overlooked while at the same time, planning and decision-making processes are not delayed unnecessarily. In some cases, a health impact assessment may be undertaken as a specific task while in others, it may be done as part of an impact assessment that considers other policy priorities.

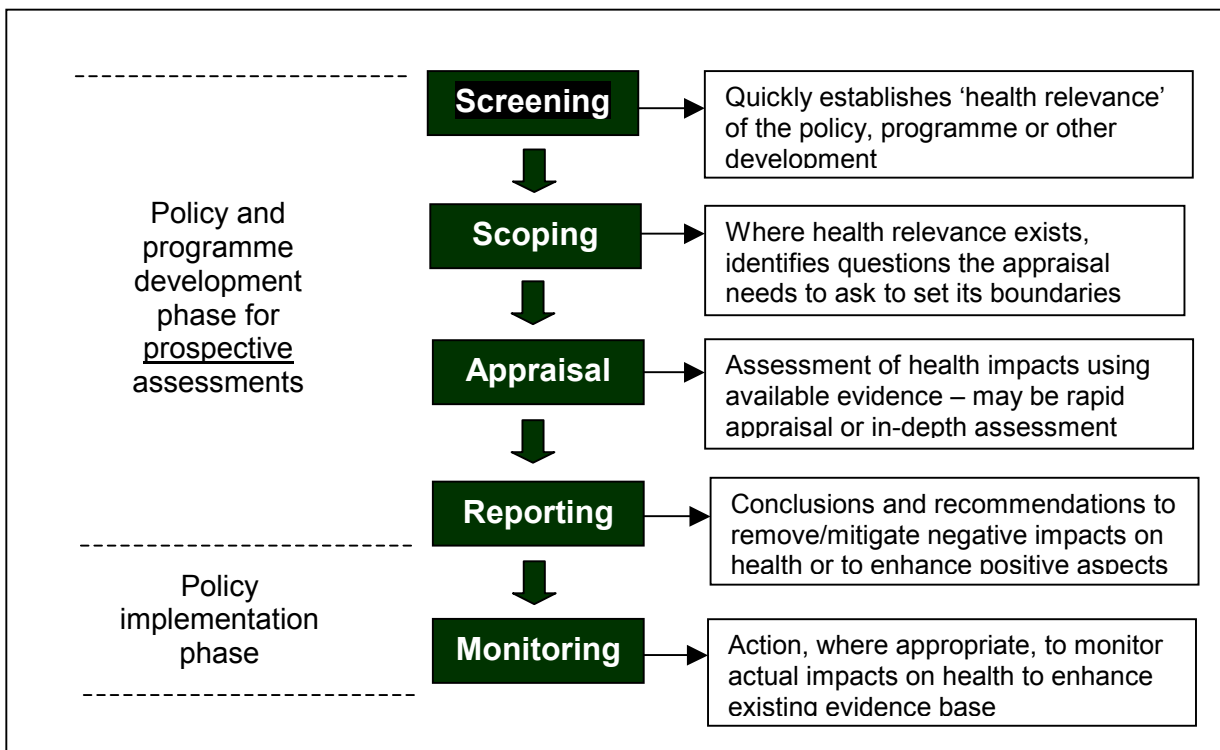
The process of health impact assessment

The processes used in health impact assessment are similar to those used in environmental assessments, as this is where the health impact assessment concept has its roots. Health impact assessment can be thought of as a group of activities to identify the health impacts of new or existing policies and programmes. It is a structured way of bringing together policy appraisal, risk assessment and indications for risk management, evaluation, partnership working, public participation, and evidence-based approaches to inform decision-making.

Health impact assessment is not necessarily a lengthy and time-consuming process. In some cases where initial consideration suggests that there could be considerable effects on health and wellbeing or where little is known of the effects, there may be the need for detailed analysis. However, in other cases, the use of rapid appraisal techniques where appropriate means that the output from the assessment process may be able to inform the decision-making process within any constraints of the timescale available. The search for accurate, quantified impacts on human health is by no means the only goal of health impact assessment. In some cases, quantification of impacts will not be possible due to the limitations of available scientific evidence. However, there are benefits from considering how people's health could be affected so that health is not overlooked and so that connections can be made between different policies and programmes. Such work can also help to inform future research so that research programmes can be geared to policy priorities and to strengthening the evidence base.

The following diagram illustrates the main stages in the process.

Diagram 1: Overview of main stages in health impact assessment process (prospective assessments), their functions and relationship to policy development and implementation process



In practice, the process following the screening stage may not be sequential but iterative with some steps being repeated as questions and potential health impacts emerge from the various stages. The above stages are also relevant to concurrent and retrospective assessments although undertaken during implementation or following implementation respectively.

Systematic **screening** of policies and programme proposals provides quick preliminary assessment of the relevance to health of the policy or programme. It is the essential first stage of the health impact assessment and can be done with or without the assistance of screening tools and checklists. It enables any significant issues relating to health to be identified and a decision to be made on whether or not there is a need for more detailed assessment to take place.

If there is a felt need for further consideration of the health impacts or potential impacts, the **scoping** stage identifies the questions that need to be addressed in the assessment process.

The **appraisal** stage itself also has in-built flexibility. It can take the form of a **rapid appraisal**, which might be done over the course of a few days, or an **in-depth appraisal**, which may require a period of weeks or months. The appraisal may include quantitative and/or qualitative assessments that cover both risks and hazards to health, and opportunities to help people to improve their health by adjusting elements of the proposals or by integrating new elements within it.

The conclusions of the appraisal and assessment are **reported** to those responsible for the development process. The report, which should not be allowed to delay unnecessarily the decision-making process, should make any recommendations necessary to remove or to mitigate any negative impacts on the health of a population or on specific groups within a population. Similarly, the report should identify ways on which the policy or programme features could be enhanced in order to positively encourage and support people to improve their health and wellbeing.

The health impact assessment process is grounded in the use of available evidence on what affects people's health and wellbeing and how. Where appropriate, arrangements should be made to **monitor** the actual impact(s) a policy, programme or other development has on people's health and wellbeing over a pre-determined timescale. This will help to expand the existing evidence base.

Methods

There is a need for a balance between rigorous methods that require specialist skills and high levels of resources and those that can be used more easily and cost-effectively. The balance will be determined by the nature of the policy, programme or other development under consideration. The investment of resources should be appropriate in terms of the health relevance of the policy, programme or other development under consideration. The two approaches are not mutually exclusive and can be combined in a continuum of options for assessment hence the varying time commitments which might be incurred by the relevant stages of the process e.g. screening (minutes), rapid appraisal (days), and in-depth assessment (weeks or months). Ultimately, there will have to be a trade-off between costs and quality to make the health impact assessment a realisable goal.

Role of health experts and authorities

'Health expert' is a generic term used to describe many different professionals. Some health experts may specialise in clinical issues involving the treatment of individual patients. Others may specialise in public health issues that consider the wider implications of policies, plans and programmes on the health of communities and entire populations. Public health experts may be medically trained although the public health speciality is based on a multi-disciplinary approach. Public health and other health professionals can make a valuable contribution to health impact assessment process.

Public health experts, working as part of a multi-disciplinary team, can be found in a variety of organisations. These include local health authorities, local and national institutes of public health, municipal authorities with a responsibility for health and academic institutions. Local health authorities may have a public health role in addition to responsibility for the management of healthcare services and systems. In countries where local health authorities have a strong public health role they are well placed to contribute to the development and use of health impact assessment.

Local circumstances will ultimately determine the most appropriate arrangements for undertaking health impact assessment but, given that the concept puts great weight on the involvement of stakeholders, effective partnership with other organisations and appropriate involvement of the public is essential. Local health authorities often have a statutory function to protect, monitor and improve the public's health, although many of the factors that determine people's health lie outside their direct control. Health impact assessment provides a useful tool to help discharge this function and public health experts may contribute in a number of ways to its use and further development by, for example:

- Advising on and/or guiding others through the process of health impact assessment
- In some cases, leading or undertaking a health impact assessment at the request of local partner organisations as a specific task or as a task that contributes to larger impact assessment
- Providing information for use as part of health impact assessments
- Providing a means of monitoring and assuring the quality of health impact assessments
- Assisting the development of local capacity to enhance the use of health impact assessment and to develop further the concept and tools.

Authorities that have public health expertise as part of a statutory role are major stakeholders in any development that has, or could have, an impact on people's health. Authorities that collect or have access to a range of health data on their local populations and are skilled in interpreting these data can make an additional contribution to the health impact assessment process. Many non-government organisations also have staff with the skills necessary to participate in, and assist with, health impact assessment.

Public participation

Many international agreements make commitments on public participation in environmental and health decision-making process. These have included the Stockholm

Declaration, (1972), the Espoo Convention (1991), the Rio Declaration (1992) and the Aarhus Convention (1998). The Aarhus Convention is not simply limited to purely environmental issues but has a significant relevance for matters of environmental health as well. It can be seen that the provisions of the Aarhus Convention dealing with the issue of public involvement in the decision-making process (Articles 6, 7 and 8) are relevant also to decision-making on both environment and health issues.

It is widely recognised that concern about local environmental issues is often related to their effects on the health of local population. Usually, environmental impacts are translated into health impacts. As public opinion is relevant to policy development and implementation, the public's participation and involvement in environmental and health decision-making can be important. With this in mind, risk perception and the communication of risks and scientific evidence to the public is an important area for exploration and development.

The health impact assessment approach emphasises the participation of those who may be affected by a proposed policy or project. The public's participation and involvement may take different forms depending on the nature of the policy, programme or other development, and whether the development is national, regional or local. It may range from identifying people's health concerns to prioritising health impacts and recommendations. The aim should be to include, where appropriate, the participation of stakeholders from vulnerable groups such as children, the elderly, disabled and minority ethnic groups who are often not actively involved in democratic or decision-making processes. The health concerns of the public and key informants allow a picture of likely positive and negative health impacts to be built up, including areas of speculation and disagreement.

Information from the public needs to be combined with quantitative and qualitative evidence of health impacts from other sources. Sources of information include literature reviews, routine health, environmental and municipal data, community health profiles, and local community opinion surveys. The evidence is used to prioritise the positive and negative health impacts of the proposal. In many completed assessments, the lack of quantitative data for many impacts makes this stage the most difficult. Deciding the importance of each health impact is a balance between objective evidence and subjective opinion and is obviously open to conflicts of interest between different stakeholders' views. However, this is a difficulty that is common to all methods of public participation and decision-making. Health impact assessment aims to clarify this by making these differences explicit at the reporting stage.

4. Environmental impact and health impact

Many factors influencing the natural environment are also determinants of human health. Measures to minimise health impacts may also minimise environmental impacts. Similarly, minimising environmental impacts may also have benefits to health and such opportunities can be exploited more fully with the help of a health impact assessment.

Health has been highlighted within environmental impact assessment in a number of countries worldwide¹⁸. Article 174 of the Treaty of the European Community includes the protection of human health as one of its aims¹⁹. This is taken further by Article 152 of The Amsterdam Treaty of the European Community²⁰, which states that public health should be a consideration in non-health sector policies. The WHO Health for All policy stresses the need to generate more widespread action and accountability for health and awareness of mutual objectives in protecting health across all sectors, setting multisectoral responsibility for health as a specific target to be achieved by member States¹⁵. Health impact assessment is a tool that can help to do this. For countries in transition, health impact assessment can contribute to the sustainability of development policies so that costs are not transferred to the health care sector and human capital is not undermined..

Health impacts and environmental assessment

Health impact assessment, environmental impact assessment (EIA) and strategic environmental assessment (SEA) have much in common. Whereas EIA tends to focus on specific projects or developments and SEA tends to focus on plans, policies and programmes, the health impact assessment concept covers both. Health impact assessment has developed as a systematic means of ensuring that people's health and wellbeing and the factors that affect it are taken into account at all levels.

Strategic environmental assessment provides an important opportunity to protect and to improve people's health within a clearly defined context, and to build in the principles of health impact assessment as an integrated part of it. Health is a key part of sustainable development. There has been increased public awareness of environmental effects on health debated at international, national, and local levels since the 1992 Rio earth summit. Many factors influencing the natural environment are also determinants of human health. For example, many factors contributing to climate change such as air pollution and deforestation, directly and indirectly influence health. Scientific consensus suggests that climate change itself directly harms human health. Similarly, measures to minimise climate change for environmental reasons will often improve health. Section 3 explores the links between environment and health impacts.

To date health has not always been made explicit in most EIAs and SEAs. Although health protection is always underlined to be of prime concern in any EIA, in practice, little has been achieved in integrating health criteria and relevant health expertise in EIA practice. The ownership of the EIA process by agencies that are not related to the health sector has been shown to be an obstacle to the effective integration of health concerns²¹. It might also be fair to say that increased knowledge of planning processes by some health professionals is also needed. Although the scope of EIA practice continues to broaden, most environmental assessments have still overlooked or neglected the wide range of possible effects on human health and also, new opportunities to reinforce action to improve people's health and wellbeing as part of a multi-sectoral approach. In some countries, highlighting the human health effects of proposals can influence the public and

decision-makers more than the environmental effects, although both are important for sustainability.

Traditionally, environmental assessments have made little reference to human health perhaps because the scope of health concerns was unclear or because awareness of the relationships between policy areas and health has been relatively low. Health in environmental assessment includes, but should not be limited to, the biophysical environment. For example, the 'health' aspects of an EIA often focus solely on toxicological levels of specific air and water pollutants. In contrast, a health impact assessment focuses on the exposure of communities affected to a wide range of factors that affect people's health. It can include a comparative process, comparing positive and negative health impacts of developments on whole populations and/or the differential effect(s) on specific groups of people within the population. Groups may be based on geographical factors e.g. where they live, or their sharing of certain characteristics e.g. language, circumstances or unemployment. This is important as factors such as poverty, education, occupation etc. determine vulnerability to the potential impact(s) of policies, plans and programmes and is at the root of inequalities in health that exist across Europe.

Case Studies:

1. Development of an International Airport (England)²²

One of the first published health impact assessments in Europe was undertaken as a submission to a public inquiry on the proposed development of a second runway at Manchester airport, United Kingdom. It was carried out by local public health doctors and involved a range of professionals. It used a prospective method based on environmental impact assessment and rapid appraisal techniques. The study was limited by a lack of quantitative data but still proved to be a powerful lobbying tool. It resulted in the implementation of changes to the planning proposals, including the increased provision of public transport and noise reduction schemes

2. Assessment of a transport strategy (Scotland)²⁵

Health impact assessment can also highlight instances where environmental policies bring about health improvements, or help focus on the environmental policy option which will facilitate maximum health gain. Proposals for the City of Edinburgh's transport strategy underwent a health impact assessment by the local public health organisation and the municipal council. It suggested that one option being considered would bring about health gain by reducing road traffic accidents, increasing physical activity (and thus reducing diseases such as coronary heart disease and stroke), decreasing social inequalities in health, promoting community networks, and reducing air pollution. This option aimed to facilitate walking and cycling, develop public transport, and integrate transport policy with land use policy. The assessment influenced decision-making on the city's transport strategy. The result was a strategy that had positive benefits for the environment and population health.

The scope of the health component of EIA or SEA is best informed by any health concerns of the public and by advice from key stakeholders including health and public health experts.

Similarities in HIA and strategic environmental assessment

As highlighted earlier, there are many similarities between the health impact assessment and environmental assessment approaches. This means that there is ample scope for the principles of health impact assessment to be integrated into SEA as part of the basic elements of good SEA practice; for example, by:

- informing the screening to trigger a SEA;
- helping to scope in order to identify key issues and alternatives, clarify objectives and to develop terms of reference for SEA;
- providing information to elaborate and compare alternatives including no action options to clarify implications and trade-offs;
- reinforcing the need to involve the public early – for instance at the scoping stage – and with sufficient access to information so that they can make constructive contribution;
- covering the health dimension of an impact analysis or policy appraisal to examine effects or issues, evaluate alternatives, and identify mitigation and follow-up measures;
- contributing to documenting the findings of the SEA, if necessary with supporting advice and recommendations to decision makers on terms and conditions for implementation;
- being a means of checking the quality of the SEA report to ensure it is clear and concise and the information is sufficient and relevant to the decision being taken;
- helping to establish necessary follow-up measures e.g. for monitoring effects, checking implementation and tracking any arrangements for any subsidiary level assessment, such as connected project level assessment.

The above, taken alongside the overview of the health impact assessment process (Diagram 1 on page 9), clearly demonstrate the similarities in process and, as a result, the ease with which action to consider impacts in health and wellbeing can become an integrated part of SEA.

The draft Directive on Strategic Environmental Assessment, which was recently approved by the Conciliation Committee of the European Parliament and of the Council, is explicit in its requirement for environmental reports to be prepared under the scope of this Directive. Reports must include 'risks to human health' as part of the description of the characteristics and effects, and of the area likely to be affected by the plans or programmes being assessed²³.

5. Key issues in integrating health impact assessment within SEA

Previous sections have provided an overview of health impact assessment and its links with environmental impact assessment (EIA) and strategic environmental impact assessment (SEA). This section provides the basis for further discussion on how the health impact assessment approach can be used to integrate health considerations within SEA. Such action will help to realise the benefits that arise from integrated approaches to policy development and implementation processes, and to wider objectives that span policy areas e.g. sustainable development.

The following have been identified as issues that will be encountered, and/or will need to be addressed, both during the negotiation of the protocol for SEA and subsequently during the implementation of SEA procedures.

Generating common understanding

For a number of reasons, individuals and organisations in different sectors often have a different understanding or interpretation of commonly used words e.g. 'health'. Achieving a common understanding is a prerequisite for integrating the health impact concept within SEA. This will require a 'meeting of minds' but it can be achieved. Different sectors often share the same, or similar, goals even if they utilise different policy instruments to work towards them e.g. sustainable development. In some cases, the policy direction and goals are the same; it is only the language and/or terminology used that differs. In others, there is scope for further development towards a more integrated approach in which policies and programmes add value to one another. The health dimension of sustainable development is not as explicit as it perhaps could be or, where it is recognised, tends to focus on the biophysical environmental determinants of health as opposed to the wider socio-economic factors that affect health.

The breadth of knowledge of policy and decision-makers – of policy areas other than their own - is an essential part of a multi-sector approach. Action to raise policy makers' awareness and understanding of the interrelationships between different policy areas is needed. This needs to happen at national and international levels. Action to generate further understanding between the environment and health sectors is particularly important but the principle applies to all sectors. This will provide a solid base for increased commitment to integrated policies and programmes and for the screening stage of health impact assessment to be done quickly and adequately.

Increasing awareness of health impact assessment and what it can do

In the same way that different interpretations are placed on the word 'health', a similar situation exists for the term 'health impact assessment'. The key to health impact assessment is not its title but what it can do. For example, 'health' is often interpreted in different ways, sometimes rather narrowly and limited to disease and healthcare services. The term 'assessment' can also mean different things to different people.

The most important aspect of the health impact assessment approach is what it can contribute to improving policies and plans by way of better informed and transparent decision-making, and greater integration of policies and action across all sectors. Action to raise awareness of health impact assessment and how it can be utilised as an effective policy tool is important, and needs to be taken forward both within countries and between countries.

Managing expectations

The health impact assessment approach is still evolving. Expectations of health impact assessment can sometimes, because of the different interpretations placed on the term, exceed what it is capable of delivering. Health impact assessments do not necessarily produce highly quantified, highly accurate forecasts of the effects on a policy or development on people's health. Some quantification of impacts is possible, particularly in the transport and environment fields, but health impact assessment is based on the existing evidence base and the application of current knowledge. Raising awareness of health impact assessment, its limitations but also its potential, will help to ensure that expectations are managed and are realistic. This does not take anything away from the benefits of using health impact assessment that are emerging from countries across Europe.

Learning from experience

Health impact assessment needs to be developed further. This is best done through its application as part of the policy and programme development process. Countries are at various stages of development in respect of use of health impact assessment. There are a growing number of reports of health impact assessments that have been undertaken and these demonstrate how the concept can be operationalised in different circumstances. Some reports include reflections on what has been learnt during the process and this practice is to be encouraged as the basis for sharing learning from experience at national and international levels^{24 25 26}

National and regional governments and health organisations or institutes have an important role to play in developing further the concept and its use, including support for its use at the local level. While health impact assessment is often the responsibility of a Ministry of Health, the range of social, economic and environmental factors that affect people's health means that health impact assessment is relevant across policy areas and to other Government departments at local, regional and national levels.

Capacity building and involvement

Health experts with the necessary skills for health impact assessment are currently available in many organisations across Europe although many will not have used their skills as yet for the purposes of health impact assessment. Nevertheless, certain organisations and institutions and their staff are experienced, especially in those academic departments where health impact assessment methods have been a specific focus of development. These sources of advice and guidance provide an important foundation on which to develop local and national capacity within countries.

There is a need to develop further the local and national capacity for health impact assessment so that it can facilitate the efficient implementation of the SEA Protocol. Action

needs to capitalise on existing skills but will require training opportunities, facilitation and sharing experiences as the basis for multi-disciplinary, multi-sector collaboration. Existing centres of expertise and networks within countries can support this process and Governments may need to consider how best to ensure that health experts and others can contribute to the further development of health impact assessment as a policy tool. The process needs to be ongoing as methods and the concept continues to develop. Capacity building activities at local, national and international levels can also help to build health alliances and partnerships between practitioners and organisations in different sectors. Increased capacity together with efforts to engage with, and to involve, public health professionals through multi-disciplinary working will be essential if health impact assessment and SEA are to be integrated successfully.

Increasing the evidence base

The results of health impact assessments and monitoring actual impacts of developments on people's health and wellbeing - and the sharing of these results - are important for two reasons. First, to expand our understanding of the interrelationships between determinants of health and the actual impacts on health of different policy areas. Second, to make the health impact assessment process progressively easier by expanding the evidence base available to those who need to undertake rapid appraisals or in-depth assessments.

Principles for assessing health impacts as part of SEA

This report was prepared following a WHO Meeting (Budapest, Hungary, 25 November 2000), which was convened for the development of a position paper on health impact assessment. Over and above the key issues set out in this concluding section, a number of principles need to be considered in relation to integrating health impact assessment within SEA. The following are offered as suggestions.

A strategic environmental assessment (SEA) should:

- include, routinely, an initial screening to determine the broad relevance to people's health of the policies, plans or programme under consideration;
- take into account any health concerns expressed by relevant health authorities and of the public;
- consider the range of health determinants, and how they are likely to be modified, in positive and/or negative ways, as a result of the policies, plans or programmes that were subject to the SEA;
- consider the positive as well as the negative effects of proposed policies and programmes;
- consider how the expected health effects might be distributed across different groups within the population who are affected;
- contain recommendations with respect to actions that could be undertaken to enhance the potential positive health effects identified and to mitigate or remove the negative ones;
- seek to involve the public through consultation and participation;
- give due account to issues raised by the public and/or organisations representing members of the public who may be affected;
- consider the need for cost-effective monitoring of any anticipated impact(s) on people's health.

In line with the principles of SEA, the results of health impact assessments should be disseminated and made accessible to the public.

The authority responsible of initiating the SEA could usefully seek to assure the quality of the health assessment component of the SEA and ensure that the relevant health authorities and expertise are actively involved in undertaking any health impact assessment considered necessary.

In order to strengthen the development and utilisation of health impact assessment, special consideration should be given to:

- ensuring greater awareness and acceptance of the WHO's definition of health, the wider social, economic and environmental determinants of health, and the interrelationships between them;
- increasing capacity in carrying out health impact assessment as part of SEA, by training, and by disseminating and exchanging information and experience;
- encountering issues – barriers and opportunities – in the development of health impact assessment within government policymaking ;
- addressing research needs, as per article 9 of Espoo Convention.

Appendix: 1

Workshop

“Health Impact Assessment as part of Strategic Environment Assessments” 25 November 2000, Budapest – Hungary

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