



**World Health
Organization**

REGIONAL OFFICE FOR

Europe

Capacity Building in Environment and Health (CBEH) project

Using impact
assessment in
environment and
health: a framework



Using impact assessment in environment and health: a framework



Abstract

More and more, countries are faced with the challenge of addressing the burden of disease arising from environmental exposures. Capacity building in environment and health has been recognized as a critical need among Member States of the WHO European Region, and the European Union. To address this need WHO European Centre for Environment and Health is assisting WHO Member States to use health impact assessment (HIA) and health in environmental assessments (EA) like environmental impact assessments (EIA) and strategic environmental assessments (SEA).

In order to further reduce citizens' environmental health burden of disease and tackle environmental health inequities, a framework for the analysis of environment and health interactions through environmental and health impact assessments is presented in this report. Key stakeholders such as practitioners in public health and environmental agencies at various levels participate in a joint workshop to analyse impact assessments of selected projects, plans, programmes or policies outside the health sector and to place them in the context of other major families of health determinants, such as lifestyle, socioeconomic factors, health care etc. Gaps in capacity and knowledge are discussed as well as how existing environment and health data resources in the country can be used for impact assessment. Based on the analysis and discussions a country specific action plan is developed for enhanced integration of health in environmental assessments and the implementation of standalone HIA if desired.

Keywords

Capacity building — Environment and Public Health — Environmental health — Guidelines — Outcome assessment (Health care) — Public health

Address requests about publications of the WHO Regional Office for Europe to:

Publications

WHO Regional Office for Europe

UN City, Marmorvej 51

DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office web site (<http://www.euro.who.int/pubrequest>).

Citation advice

Capacity Building in Environment and Health (CBEH) Project. Using impact assessment in environment and health: a framework. Copenhagen, WHO Regional Office for Europe, 2013.

© World Health Organization 2013

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

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

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

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. The views expressed by authors, editors, or expert groups do not necessarily represent the decisions or the stated policy of the World Health Organization.

This document has been produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

Acknowledgements

This report was prepared by Julia Nowacki, Technical Officer and lead author, and Dr Marco Martuzzi, EHI Programme Manager, European Centre for Environment and Health (Bonn, Germany), WHO Regional Office for Europe.

Table of Contents

1	Background	1
2	Supporting the assessment of EH interactions	2
2.1	Defining health	3
2.2	Health impact assessment (HIA)	4
2.3	Health in environmental assessments (EA)	5
2.3.1	Health within environmental impact assessment (EIA)	5
2.3.2	Health within strategic impact assessment (SEA)	6
3	Gaps identified for a better consideration of health in IAs	8
3.1	Legal requirements and responsibility	8
3.2	Communication	8
3.3	Guidelines and training	9
4	A framework for using IA in EH	10
5	References	14
	Annex 1 – Additional resources	17
	Annex 2 – Examples of HIA guidelines	18
	Annex 3 – SEA stages and key health entry points	19

List of figures

Fig. 1.	The main determinants of health and well-being	3
Fig. 2:	Flowchart – Framework for EH interaction analysis through HIA and health in EA for countries not having HIA implemented at country level	11

List of abbreviations

CBEH	capacity building in environment and health
DALYs	disability-adjusted life years
DG Sanco	European Commission Directorate General for Health and Consumers
EA	environmental assessment
EH	environment and health
EIA	environmental impact assessment
EU	European Union
IA	impact assessment
HIA	health impact assessment
SEA	strategic environmental assessment

1 Background

Many European countries face great challenges in environment and health. WHO estimates that in the WHO European Region well-tested environment and health interventions could reduce total death in these countries by almost 20% (Prüss-Üstün & Corvalán, 2006). The range of disability-adjusted years of life (DALYs) lost varies up to fourfold across the WHO European Region. The lowest levels of risk are found in northern and western European countries, while high risk levels are reported for some countries of eastern Europe. While rapid social and economic evolution, coupled with a legacy of environmental degradation (and its interplay with other significant health determinants) results in potentially large health impacts currently underway and/or projected, there is also great potential for health gains, if environmental determinants are addressed.

The European Centre for Environment and Health of the WHO Regional Office for Europe has been running the project “Capacity building in environment and health (CBEH)”, co-funded by the European Commission, Directorate General for Health and Consumers (EC DG Sanco). It is in line with recent orientations in environmental health, as reflected, for example, in the 2010 Fifth Ministerial Conference on Environment and Health (WHO Regional Office for Europe, 2010a).

The overall objective of the CBEH project was to strengthen in-country capacity in several European Member States to deal with environment and health issues. Eight European Member States participated in the project: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

One of the main outcomes of the project was an international training workshop on environment and health (EH), held in Riga, Latvia, 19–23 March 2012 with 70 representatives of the environment and the health sector from the eight European Union (EU) Member States. Aims of the event were:

- to provide new insights on EH (key topics were selected through discussions at preparatory meetings);
- to offer in-depth training on specific areas in EH; and
- to provide opportunities for networking among participants of different sectors and countries.

The one-week training was structured through four components:

1. key lectures on priority topics in EH delivered by international experts;
2. case studies presented by country representatives;
3. parallel in-depth modules related to health in impact assessments (IA) and quantitative methods; and
4. training of trainers.

In follow-up of the main training event, two country specific workshops were organized—one in Tallinn, Estonia and one in Ljubljana, Slovenia—to further strengthen in-country capacity in tackling EH issues through existing frameworks like health impact assessment (HIA) and environmental assessments (EA). Aim of the two-day workshops was to review together with EH experts their experience in environment and health impact assessments and how health issues are looked at. For this case studies were analysed in regard to what went well and what could be changed in future IA. A special focus was on analysing capacity gaps within the health and the environment sector to enhance integration of health into environmental impact assessments (EIA) and strategic environmental assessments (SEA).

Based on the experience from the main training event, the follow-up workshops and WHO work with countries on HIA, the following framework for the analysis of EH interactions has been developed.

2 Supporting the assessment of EH interactions

It has been long recognized that the health sector alone cannot tackle the complex, far reaching health determinants of modern society. Policies in sectors such as environment, industry, agriculture, economy and so forth can and do influence powerful health determinants, of various nature. Intersectoral work is being approached in many ways, among such approaches, HIA has established itself as one of the main means to achieving intersectoral action and identify interactions between environmental issues and good or bad health implications. HIA has by now a strong tradition, as it has been adopted and applied in many countries, at various levels and has proven to be an effective approach to understanding and dealing with the health implications of policy choices in all sectors.

The WHO Regional Office for Europe is assisting WHO European Member States to have a deeper understanding of HIA and health in EA like EIA and SEA, as these are recognized as powerful and effective approaches and tools for dealing with environmental health determinants. In order to further reduce citizens' environmental health burden of disease and tackle environmental health inequities, countries are supported in building capacity in conducting IA through the analysis of in-country experiences with IAs. In IA, the health implications of selected projects, plans, programmes or policies outside the health sector are analysed and placed in the context of other major health determinants, such as lifestyle, socioeconomic factors, health care etc.

Existing EH data can be used for IA along with other analytical modern methodologies for the analysis of the interactions between environment and health such as risk assessment, descriptive small area disease mapping, or environmental burden of disease.

IA is designed for addressing broad, distal determinants at policy level, or to address the multiple risk factors operating at project level, for example in connection to local industrial or infrastructure developments, and for ultimately support health-friendly decision making. In fact IA is especially valuable for such complex interrelationships between environment and health, and is a possible response to the limitations of more rigorous methodology such as risk assessment, which tend to provide specific information pertaining to partial components of complex systems.

Following the full process of an EA and HIA not only involves the inclusion of basic knowledge and evidence on EH issues, but also allows incorporating "horizontal" issues like:

- policy-analysis and scenario-analysis, relevant for the screening phases of IA;
- analysis and negotiation of policy options and alternative courses of action;
- stakeholders' preferences, interests, risk perceptions; and
- strategies for risk communication and participatory models of work in all phases leading to final decision-making.

The theory and practice of IA in EH has been elucidated to a considerable extent; facilitating factors and hurdles have been identified, often as a function of local circumstances; the mutual role that different forms of IA can play is also being discussed; numerous legislative instruments exist that promote its implementation—all this reflects a growing recognition of the value of IA in many domains, including EH. However, concrete, effective and sustainable implementation is challenging, and seems to require several ingredients, including a better understanding and acceptance of its principles and its practice among different constituencies. In the work in the Capacity Building Project, therefore, an effort was made to develop a framework for the application of IA (notably HIA and EIA) in EH.

2.1 Defining health

WHO definition of health (WHO, 1946) recognizes the broad scope of health, emphasizing that health goes beyond states of ill health:

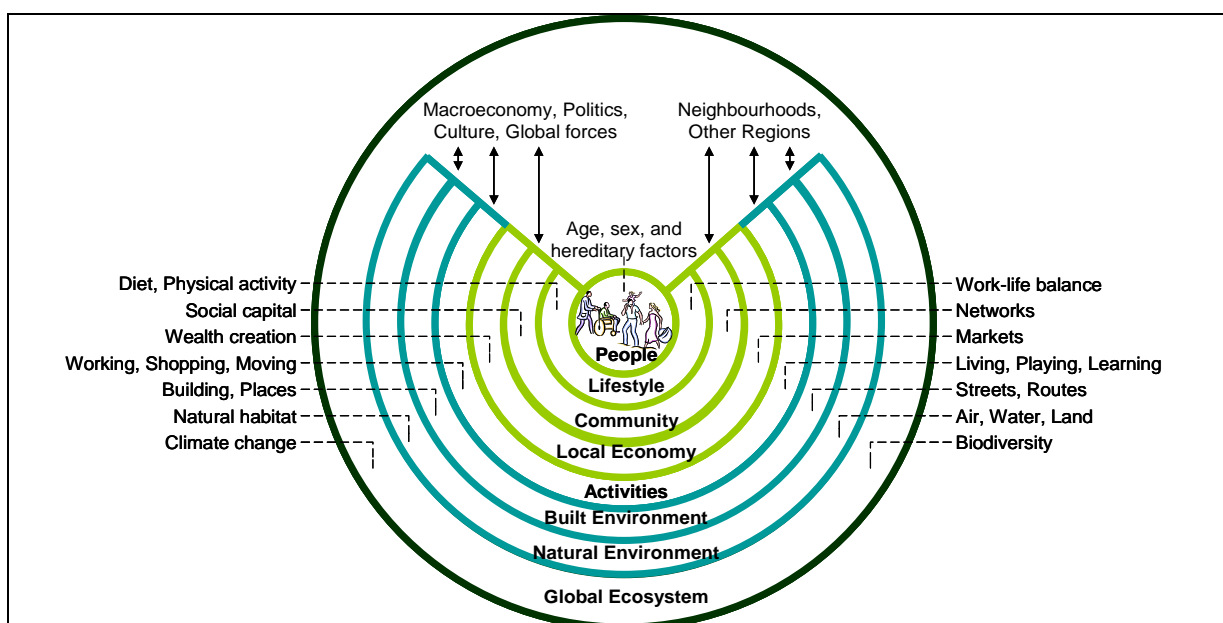
Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

Actions to protect and improve health, then, must go beyond providing services that reduce the effects of ill health and look into prevention of illness and promote good health.

As the health of a population is inextricably linked with the state of the environment, both fields, environmental health and public health, are important for health in IA. Environmental health traditionally focuses on issues such as water supply and sanitation, air and water pollution control, solid waste management, chemical and food safety, radiation protection, housing settlements and occupational health (WHO Regional Office for Europe, 1990); however, there is increasing awareness that a broader approach to environmental health determinants is beneficial for public health, defined as “the art and science of preventing disease, prolonging life and promoting health through the organized efforts of society” (Acheson, 1988; WHO Regional Office for Europe, 2013). Hence, public health professionals work with other health professionals to prevent illness and promote good health as well as with other sectors to address the determinants of health (see Fig. 1).

There are therefore overlaps between the two disciplines but few links. The specialists in environmental health, including air quality specialists, hydrologists and acoustic engineers, have much to contribute to, and to gain from, public health specialists whose concerns include surveillance of population health and well-being, monitoring and responding to health hazards and emergencies, health protection, health promotion and disease prevention. Hence there is high need to draw the two sides together (Gibson et al., 2013a&b).

Fig. 1. The main determinants of health and well-being



Source: Nowacki et al. (2010) adapted from Barton & Grant (2006).

Many factors outside the health sector affect individual and population health, as conceptualized by Dahlgren and Whitehead (1991), further developed by Barton and Grant (2006) and shown in figure 1. These factors include individual characteristics such as age and gender as well as lifestyle factors. Moving further from the centre one moves towards factors influenced by policies, plans or

programmes outside of the health sector, for example environment, transport, housing, employment, social support, crime and community safety and education.

2.2 Health impact assessment (HIA)

Public attention of the impacts on human health of severe environmental events led to the development of regulatory EA. Hence, within IA health is not a new concern (WHO, 1979; Kasperson, 1983). Impacts on human health have expanded not only in EAs as one issue to take into consideration when doing an IA; but also triggered the development of HIA as an independent form of IA. In the past two decades HIA has become relatively widespread (Vohra, 2007), with its origins not only lying in environmental health but also in the wider social determinants of health as well as in health equity (Harris-Roxas & Harris, 2010).

HIA aims to support intersectoral decision-making for healthy public policies (Bekker et al., 2004). It offers a practical means to enhance cooperation between health and other sectors (Cole et al., 2005) and to strengthen understanding among policy-makers of the interactions between health and other policy areas (Lock & McKee, 2005) with the aim to protect and improve population health (Gulis et al., 2012).

Based on the Gothenburg Consensus Paper (WHO Regional Office for Europe & European Centre for Health Policy, 1999) HIA can be defined as

a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects (Quigley et al., 2006, adapted from WHO Regional Office for Europe & European Centre for Health Policy, 1999).

HIA is a process through which policies, plans, programmes and projects can be examined for their effects on health. It aims to influence the decision-making process in an open and structured way (Lock, 2000). It can be conducted as a standalone assessment, were four different form of current HIA practice can be observed: mandated, decision-support, advocacy, and community-led HIAs (Harris-Roxas & Harris, 2010) or in conjunction with, or as part of, EAs (Gibson et al., 2013a&b).

Commonly there are six stages used to describe the HIA process:

1. **Screening** helps to determine whether an HIA is needed and likely to be useful.
2. **Scoping** develops a plan for the HIA, including the identification of potential health risks and benefits, communities and subgroups likely to be affected, stakeholder concerns, and available data sources.
3. **Assessing** draws on multiple data sources, describes the baseline health status of affected communities; identifies vulnerable populations; and describes existing conditions that influence health.
4. **Recommending** develops recommendations that are feasible in the political, economic, regulatory, and technical context of the policy, program or plan being assessed.
5. **Reporting** disseminates the findings to decision-makers, affected communities, and other stakeholders.
6. **Monitoring and evaluation** involves process, impact or outcome evaluation and monitoring collects information to inform each type of evaluation (Wernham, 2011).

Currently HIAs are mainly conducted on a voluntary basis outside legislative or regulatory requirements (Wismar et al., 2007), often undertaken by the public health sector but increasingly by the private sector stimulated by industry best practice standards (IPIECA, 2005; Quigley et al., 2006; Bhatia et al., 2009; Fredsgaard et al., 2009; ICCM, 2010). Up to now only few countries have adopted

policy framework or legislative regulation for conducting HIA, e.g. Lithuania, Slovenia, Spain, Thailand. Implementation approaches differ between formulating specific laws, regulatory mandates or supportive policies for the use of HIA or through considering health impacts within a whole-of-government decision-making process (Harris-Roxas et al., 2012).

Implementation of HIA in the health and non-health sectors can be supported through:

- a. promoting it as decision-making tool that is simple and well-defined;
- b. analysing whether it is compatible with existing decision-making processes;
- c. giving information that is tailored to particular audiences;
- d. ensuring information is provided about the advantages of HIA compared to other IA of decision-making tools; and
- e. ensuring there is strong HIA leadership (Gulis et al., 2012).

While in the screening and scoping phase the context for the assessment is defined and a first risk analysis is undertaken, the assessment or appraisal phase plays a central role in the process. The full spectrum of exposures, what is known and what is still not known or uncertain, should be recognized: from more proximal to more distal. This can occur in a number of different settings, as well as the different ways of exposure and cumulative effects. While individual health effects can

often be traced back to a wide variety of different exposures and causes [...] individual exposures can lead to a wide array of health effects, varying both in their intensity and immediacy [...] both exposures and health outcomes may be affected by more remote, contextual factors, such as social conditions, demographics and economic development, that influence the susceptibility of the population to environmental health effects (Briggs, 2003:4).

Once the impacts have been identified it would be necessary to compare them, e.g. by developing a causal model of impacts, shortly describing each impact in a table (N° | Cause | Effect | Likelihood | Intensity) or/and developing an impact matrix (European Commission, 2006:28–36), and to judge the tolerability and acceptability of the impacts (Renn, 2005).

2.3 Health in environmental assessments (EA)

EA is the most widespread approach to analysing the ways in which new plans, programmes and projects might affect the environment, which can include social and health effects. EA is the umbrella term for processes carried out at all levels of policy-making: while EIA are usually carried out at a project level, SEA are carried out at policy, plan and programme level (Gibson et al., 2013a&b). EA is the only approach for which national legislation and guidelines exist in almost all countries worldwide (Morgan, 2012).

Even though effects on human population are in theory included into the EA issues to be considered during the assessment, the practice is lacking, and guidelines for the integration of health and well-being issues into EA are not established. In fact there seems to be a consistent lack of either a systematic or a full coverage of human health and well-being; a gap identified in high- as well as in low- to middle-income countries e.g. across the EU, in Australia, Brazil, Ghana, Nigeria and the United States (Harris-Roxas et al., 2012; Hilding-Rydevik et al., 2005; Gibson et al., 2013a&b).

2.3.1 Health within environmental impact assessment (EIA)

EIA can be defined as “a systematic process to identify, predict and evaluate the environmental effects of proposed actions and projects” (UNEP, 2002).

Ideally the EIA process is integrated into the project design process otherwise it should be applied prior to major decisions and commitments being made (Pettit, 2012).

The first legislation requiring the consideration of environmental impacts of proposed actions was the United States National Environmental Policy Act of 1969. In the European context, the EU EIA Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (European Union, 1985) is concerned with improving the quality of the environment and protecting human health: the effects of a project on the environment must be assessed in order to take account of concerns to protect human health, to contribute by means of a better environment to the quality of life, to ensure maintenance of the diversity of species and to maintain the reproductive capacity of the ecosystem as a basic resource for life.

Human health *per se* is not explicitly mentioned but Art. 3 of the Directive regulates that an EIA shall identify, describe and assess the direct and indirect effects firstly on human beings, followed by fauna and flora among others. Furthermore Art. 5 refers to the information that has to be provided according to Annex IV, which also includes effects on the population (European Union, 1997):

A description of the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors..

Nonetheless, human health is rarely covered explicitly or with input from health professionals; instead it is considered to be covered by the analysis for biophysical factors such as air, noise and water. Hence, EIA could take a more systematic view and use a more inclusive model of health (Hilding-Rydevik, 2005). In addition EIA often misses cumulative and synergistic outputs, rarely addresses social issues, and it almost never considers both together (Harris & Spickett, 2010).

2.3.2 Health within strategic impact assessment (SEA)

Even though EIAs aim at entering early in the decision-making process, they often entered into the decision-making process when the major decisions at the planning or policy level had normally already been taken. Hence, the influence of project EIA was often found to be limited. In this regard SEA aims to ensure that environmental considerations are taken into account early in the decision-making process to be able to influence the process before strategic decisions are taken and to inform higher levels of decision-making (João, 2005; Sadler, 2011; Fundingsland Tetlow & Hanusch, 2012).

Within the WHO European Region, the legal provisions of the EU and the UNECE have a major impact on the practice of SEA throughout the region: the EU SEA Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment entered into force in 2004 in all EU Member States (European Union, 2001). It is based on the EU EIA Directive 85/337/EEC which provides a framework for the assessment of the environmental effects of certain public and private projects which are likely to have significant effects on the environment. It aims:

to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.

The plans and programmes which should be subject to SEA are those:

- which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use; and
- which set the framework for future development consent of projects listed in Appendixes I and II of the EIA Directive (85/337/EEC); or

- which have been determined to require an assessment pursuant to Article 6 or 7 of the Habitat Directive 92/43/EEC (European Union, 1992).

The EU SEA Directive requires that the information provided in the environmental report are the likely significant effects of plans and programmes on the environment, including on issues such as: biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape, and the interrelationship between the above factors (Art. 5 and Annex I(f) SEA Directive, European Union, 2001).

Whereas the EU SEA Directive does not apply to policies, in other jurisdictions SEA can be applied at policy level. In this regard the Protocol on Strategic Environmental Assessment to the UNECE Convention on EIA in a Transboundary Context, the so-called UNECE Protocol on SEA includes the application of SEA at the preparation of policies and legislation proposals “that are likely to have significant effects on the environment including health” (UNECE, 2003).

While human health is explicitly named as one of the topics to be assessed under the regulation of the SEA Directive, the UNECE Protocol on SEA goes further than the SEA Directive, as it constantly underlines the consideration of environmental effects including health effects and requires consultation with environmental and health authorities (Art. 9). Otherwise the UNECE Protocol on SEA follows closely the provisions of the EU SEA Directive and its Parties shall ensure that

environmental, including health, concerns are considered and integrated to the extent appropriate in the preparation of its proposals for policies and legislation that are likely to have significant effects on the environment, including health (Art. 13, UNECE, 2003).

In addition SEA was recognized in the declarations of the European Ministerial Conferences on Environment and Health held in Budapest in 2004, and in Parma in 2010, calling for the WHO European Member States to “take significant health effects into account in the assessment of strategic proposals” (WHO Regional Office for Europe, 2004), and

to use health, environment and strategic IAs to integrate the needs of children into the planning and design of settlements, housing, health care institutions, mobility plans and transport infrastructure (WHO Regional Office for Europe, 2010b).

SEA has a long term perspective and provides a relatively early opportunity to consider and address potential effects on human health. If it is overlooked during these early stages it is likely to be harder to raise health issues at later stages. Hence, health in SEA is of great importance and is also supported by legislation (Gibson et al., 2013a&b).

3 Gaps identified for a better consideration of health in IAs

The use of and knowledge on HIA between as well as in countries varies significantly (Kemmerling, 2013). HIA has the capacity not only to identify negative outcomes but also positive outcomes, such as improved benefit derived from new sources of employment, protection of drinking-water sources, greater access to outdoor play areas, etc. If used at the correct point in the process it can assist decision-makers at strategic level or at project level (Gibson et al., 2013a&b). Based on the different project activities¹, common issues in relation to an enhanced analysis of EH interactions through the implementation of HIA and further integration of health into EAs in WHO eastern European Member States can be described as follows.

3.1 Legal requirements and responsibility

One of the main drivers for HIA or an enhanced integration of health into EAs to happen on regular basis is its introduction and/or specification in current laws and regulations. As described above, in most countries of the WHO European Region there is a legal obligation to conduct EIA and SEA, e.g. based on the EU EIA/SEA Directives or the UNECE Protocol on SEA, whereas only in a few countries an explicit statutory requirement exists to conduct standalone HIA. If there is political support for the implementation of HIA and/or the further integration of health into EAs a review of existing laws and regulations to determine which legal drivers can be used is needed.

Based on this the development of a protocol for the delivery of health input to EAs and/or standalone HIA is needed. In this regard the organization which should oversee the mechanisms to require health input to EA and/or standalone HIA or to commission it needs to be identified (Gibson et al., 2013a&b).

3.2 Communication

There is no doubt that a lot of knowledge, practical experiences and skills on environment issues and on environmental health issues exist within environment and health authorities, nonetheless there seems to be a lack in communication between the different authorities. Human health is a core requirement of the EU SEA Directive and also the EU EIA Directive is concerned with protecting human health. Nonetheless environmental authorities are usually not aware of the data collected by health authorities, how this data can relate to their (forecast of) environmental data and how the data can be used within EAs; while vice versa health authorities are often not aware of EA processes, the data collected by environmental authorities and how this data can be used for HIA and enhanced protection of health. For example, environmental data like air emissions modelling, water quality data, impact on climate change, flood data can be used to inform HIA (Gibson et al., 2013a&b).

Health input to EA and/or standalone HIA should be a cross-sectoral activity, as it not only requires a range of technical expertise but also communication and advocacy skills. In addition to political support needed for a better integration of health in EA or HIA implementation, communication channels need to be identified and applied at different levels: within departments, across ministries, to the public, inwards from the public, and in both directions with the media (Gibson et al., 2013a&b).

Special attention should be paid to the communication with the population concerned and here especially to disadvantaged population groups and/or minorities: disadvantaged people are often

¹ Two preparatory workshops for the main capacity building in EH event in Tallinn, Estonia and Budapest, Hungary; the main international capacity building in EH event in Riga, Latvia; and the two follow-up workshops in Tallinn, Estonia and Ljubljana, Slovenia.

the ones who are unlikely to be heard in the process, as they usually lack mechanism to engage with consultation processes, especially if this is done by use of the written word (Gibson et al., 2013a&b). Hence, a communication strategy needs to include consultation mechanism with disadvantaged population groups concerned by the policy, program, plan or project.

Besides defining communication channels between the different sectors, an expert network within ministries and links with international networks of practitioners can provide useful information and discussion fora (Gibson et al., 2013a).

3.3 Guidelines and training

There is normally a training system in place for environmental auditors or EIA/SEA assessors, often combined with licensing obligations, but only few countries offer systematic training on HIA. However, if there is training provided, EIA/SEA trainings usually do not include a health component nor do HIA trainings include specific environmental components. The same is true for guidelines on SEA/EIA as well as on HIA (Nowacki & Fehr, 2011).

To ensure a base-level of HIA knowledge, efforts should be placed on delivering the HIA training across environment, health and other sectors, not only at national level but if possible also at regional and municipality level. Various HIA training programmes and HIA guidelines have been developed, which would need to be adapted to the country specific needs and its legal system. Besides the development of a generic HIA training program and guidelines, also training programs specific to a particular sector such as housing, transportation, or land-use could be developed (Gulis et al., 2012).

In addition, a module on human health should be included in the EIA/SEA training; especially if a licensing scheme for EIA/SEA 'experts' is in place, a health module should become obligatory prior to licensing. As HIA is a cross-sectoral approach, training should involve different sectors e.g. public health, planning and environmental scientists. Besides trainings for governmental agencies, the inclusion of HIA and health in EA should be covered in university curricula (Gibson et al., 2013a&b).

In countries with a licensing system in place it could be useful to develop standards for HIA 'experts' licensing scheme, backed up by continuing professional development, e.g. through a mentoring programme (Gibson et al., 2013a).

In general within health authorities there is a need to have greater understanding regarding EIA and SEA, and within environmental authorities there is a need to have greater understanding regarding how sound decision-making can be underpinned either by enhanced consideration of health and the involvement of health experts into EAs or through standalone HIAs (Gibson et al., 2013a&b).

4 A framework for using IA in EH

Not many countries have implemented HIA on a regular basis (Kemmer, 2013); however interest in it is rising and most countries in Europe have implemented some form of EA in their legislation. This provides a good basis for developing a framework that can support countries through the process of implementing HIA as standalone practice, and/or through further integration of health into EA. The key steps, the review exercises to undertake and the main questions to address are part of this framework and presented below, but inevitably all steps will need to be adjusted and adapted to the national own legal, policy or administrative arrangements and requirements. Aim of the framework is a better integration of the environment and health domains, and an enhanced capacity deal with EH priority challenges, with the ultimate objective of a better population health.

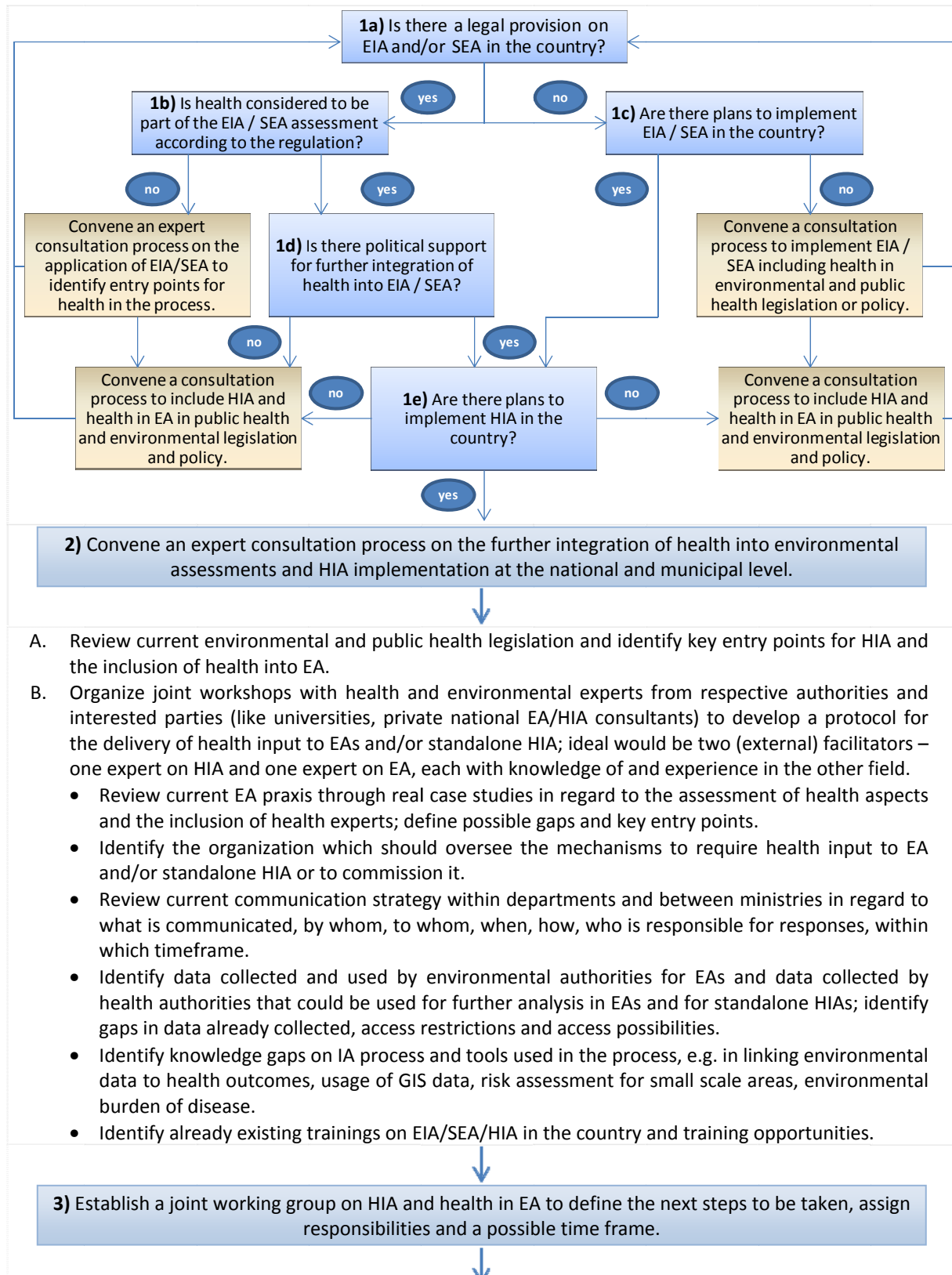
When considering HIA implementation it should be noted that standalone HIA not only has a long and strong historical tradition in environmental health, at least in some countries, but also has emerged from two further well-established fields: social determinants of health and health equity (Harris-Roxas & Harris, 2010).

In the light of this, the major steps towards an effective and sustainable use of IA in EH, at national or sub-national level, include:

- 1) Identification and review of legal and policy frameworks on EA and HIA
 - a) Is there a legal provision for EAs?
 - b) If yes, is health considered to be part of the EIA/SEA assessment according to the regulation?
 - If no, convene an expert consultation process on the application of EIA/SEA to identify entry points for health in the process.
 - c) If no, are there plans to implement EIA/SEA in the country?
 - ◆ If no, convene a consultation process to implement EIA/SEA including health in environmental and public health legislation or policy.
 - d) Is there political support for further integration of health into EIA/SEA?
 - If no, convene a consultation process to include HIA and health in EA in public health and environmental legislation and policy.
 - e) Is there political support and a decision to implement HIA?
 - If no, describe the key factors about the decision not to implement HIA and review in two to three years time or if applicable convene a consultation process to include HIA and health in EA in public health and environmental legislation and policy.
 - If yes, document the decision to implement HIA including which agency will lead it, where the resources will come from, and who has responsibility for leading the development of a national HIA plan – move on to 2).
- 2) Convene an expert consultation process on the further integration of health into EAs and HIA implementation at the national and municipal level to analyse current praxis and identify gaps in communication, knowledge, data collection etc.
- 3) Establish a joint working group on HIA and health in EA to define the next steps to be taken, assign responsibilities and a possible time frame.
- 4) Develop a communication strategy in order to strengthen political and administrative support within the ministries as well as with the public.
- 5) Develop a plan for enhanced integration of health into EAs and standalone HIA implementation at the national and municipal level.
 - a) Health input and oversight is important in all stages of the assessment. This applies to strategic assessments and to project level assessments.
 - b) The early stages in the process are important as screening establishes whether health input is required and scoping establishes the parameters of the assessment and who should be involved. This will also be beneficial for the latter stages: appraisal, feedback and monitoring evaluation (Gibson et al., 2013a&b).

- 6) Develop a training program for health in EAs and standalone HIA.
- 7) Monitor and evaluate the national health in EA and HIA plan two to three years after its implementation, including recommendations for future implementation.

Fig. 2: Flowchart – Framework for EH interaction analysis through HIA and health in EA for countries not having HIA implemented at country level



4) Develop a communication strategy.



Define what needs to be communicated, by who, to whom, when, how, who will receive the responses, and how will they be acted upon.

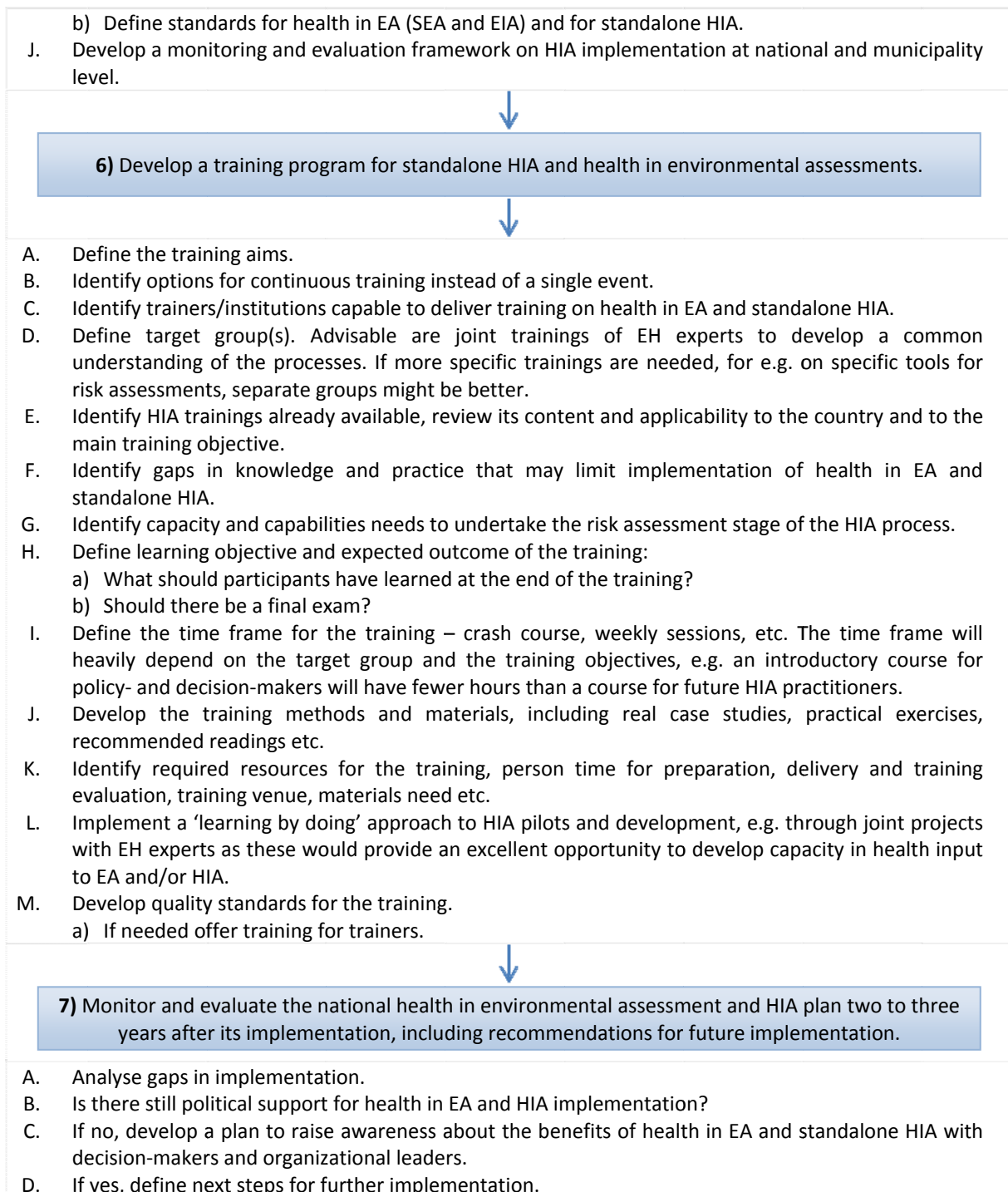
- A. Internal communication
 - a) Improve understanding of EA and HIA in the ministries
 - Describe the benefits that apply to health, environmental and other sectors.
 - Develop key messages and tailored information about HIA and its benefits to environment, health and other sector audiences.
 - b) Is there strong leadership and an innovative culture in the agencies implementing HIA?
 - If no, identify ways to develop EA and HIA leaders or champions at different levels with an organization.
 - If yes, develop a plan to raise awareness about the benefits of health in EA and standalone HIA with organizational leaders.
 - c) Improve understanding of the role of the other ministries, e.g. through the establishment of a joint working group and regular consultation meetings.
 - Develop protocols for communicating between ministries and ensure that these function during an emergency.
 - Audit relevant processes, and establish common terminology.
 - Develop an online glossary of acronyms and technical terms.
 - Develop protocols for requesting and for sharing information between ministries.
 - Establish a national experts network within and between the ministries.
- B. Communication with the public
 - a) Develop protocols for communicating with the public, e.g.
 - on the objectives of the HIA/EIA/SEA process in general,
 - the public consultation process,
 - the integration of disadvantaged population groups in the process, and
 - the communication of the HIA/EIA/SEA results and on the final decision taken.
 - b) Develop protocols for communicating with the public in the event of an emergency.
- C. Establish links with international networks of IA practitioners.



5) Develop a plan for enhanced integration of health into environmental assessments and for standalone HIA implementation at the national and municipal level.



- A. Establish a national or transboundary HIA support unit.
- B. Define overall responsibilities for HIA implementation at the national and municipal levels.
- C. Define task of ministries and clarify how departments will be reimbursed for activities such as commissioning of analyses, etc.
- D. Allocate financial resources to HIA implementation.
- E. Develop national guidance on the stages of HIA including the development of a screening tool. There is a wide range of guidance documents and resources for HIA (see Annex 1 and Annex 2) that would serve as useful starting points.
- F. Define key entry points for health in EA (see Annex 3).
- G. Develop national guidance on the inclusion of health into EAs including a guide on data available for the assessment and contact persons.
- H. Define how HIA experts can demonstrate competence, e.g. through a licensing system:
 - a) Standards could consider: level of education; record of HIA training; and ability to carry out HIA, HIAs conducted.
 - b) If considering a licensing scheme it should be backed up by continuing professional development, e.g. through a mentoring programme.
- I. Develop a monitoring and evaluation framework for the execution of HIA.
 - a) Establish ways to quality assure health input to EA and/or standalone HIA.



Source: Based on Gulis et al. (2012) and Gibson et al. (2013a&b).

5 References

- Acheson ED (1988). *Public Health in England. Report of the Committee of Enquiry into the Future Development of the Public Health Function*. London, HMSO.
- Barton H, Grant M (2006). A health map for the local human habitat. *The Journal of the Royal Society for the Promotion of Health*, 126(6):252–253.
- Bekker M, Putters K, van der Grinten T (2004). Exploring the relation between evidence and decision-making – a political administrative approach to health impact assessment. *Environmental Impact Assessment Review*, 24:139–149.
- Bhatia R et al. (2009). *Practice standards for Health Impact Assessment (HIA) (Version 1)*. Oakland, CA, North American HIA Practice Standards Working Group.
- Briggs D (2003). *Making a difference. Indicators to improve children's environmental health*. Geneva, World Health Organization (<http://www.who.int/phe/children/en/cehindic.pdf>, accessed 1 March 2013)
- Cole B et al. (2005). Methodologies for realizing the potential of health impact assessment. *American Journal of Preventive Medicine*, 28(4):382–389.
- European Commission (2006). Impact assessment guidelines 15 June 2005 with March 2006 update. Brussels, European Commission (SEC(2005) 791; http://www.mfcr.cz/cps/rde/xbcr/mfcr/SEC_2005_791_Impact_Assessment_Guidelines_2006update.pdf; accessed 1 March 2013).
- European Union (1985). Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment. *Official Journal of the European Communities*, L175, 5.7.85:40–48 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1985:175:0040:0048:EN:PDF>, accessed 1 March 2013).
- European Union (1992). Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. *Official Journal of the European Communities*, L206, 22.7.92:7–50 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1992:206:0007:0050:EN:PDF>, accessed 1 March 2013).
- European Union (1997). Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. *Official Journal of the European Communities*, L73, 14.3.97:5–15 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1997:073:0005:0015:EN:PDF>, accessed 1 March 2013).
- European Union (2001). Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment. *Official Journal of the European Communities*, L 197, 21.7.01:30–37 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:197:0030:0037:EN:PDF>, accessed 1 March 2013).
- Dahlgren G, Whitehead M (1991). *Policies and strategies to promote social equity in health*. Stockholm, Stockholm Institute for Further Studies.
- Fredsgaard MW, Cave B, Bond A (2009). *A review package for health impact assessment reports of development projects*. Leeds, Ben Cave Associates.
- Fundigslund Tetlow M, Hanusch M (2012). Strategic environmental assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1):15–24.
- Gibson G, Nowacki J, Cave B (2013a). *Strengthening HIA and health in impact assessments in Estonia. Gap analysis and way forward*. Copenhagen, WHO Regional Office for Europe.
- Gibson G, Nowacki J, Cave B (2013b). *Strengthening HIA and health in impact assessments in Slovenia. Gap analysis and way forward*. Copenhagen, WHO Regional Office for Europe.
- Gulis G et al. (2012). *Strengthening the implementation of health impact assessment in Latvia*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0016/160810/e96481.pdf, accessed 1 March 2013).

- Harris-Roxas B, Harris E (2010). Differing forms, differing purposes: a typology of health impact assessment. *Environmental Impact Assessment Review*, 31(4):396–403.
- Harris-Roxas B et al. (2012). Health impact assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1):43–52.
- Harris P & Spickett J (2010). Health impact assessment in Australia: A review and directions for progress. In: *Environmental Impact Assessment Review*, 31(4):425–432.
- Hilding-Rydevik T et al. (2005). *Health aspects in EIA. D 2.2 Report WP 2. IMProving the IMPlmentation of Environmental IMPact Assessment*. Vienna, Österreichisches Institut für Raumplanung (http://www.umweltbundesamt.at/fileadmin/site/umweltthemen/UVP_SUP_EMAS/IMP/IMP3-Health_Aspects_in_EIA.pdf, accessed 1 March 2013).
- ICMM (2010). *Good practice guidance on health impact assessment*. London, International Council on Mining and Metals.
- IPIECA (2005). *A guide to health impact assessments in the oil and gas industry*. London, International Petroleum Industry Environmental Conservation Association.
- João E (2005). Key Principles of SEA. In: Schmidt M, João E, Albrecht E, eds. *Implementing Strategic Environmental Assessment*. Berlin, Springer:3–14.
- Kasperson R (1983). Acceptability of human risk. *Environmental Health Perspectives*, 52:15–20.
- Kemm J, ed. (2013). *Health Impact Assessment: Past Achievement, Current Understanding, and Future Progress*. Oxford, Oxford University Press.
- Lock K, McKee M (2005). Health impact assessment: assessing opportunities and barriers to intersectoral health improvement in an expanded European Union. *Journal of Epidemiology and Community Health*, 59:356–360.
- Lock K (2000). Health impact assessment. *British Medical Journal*, 30:1395–1398.
- Morgan RK (2012). Environmental impact assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1):5–14.
- Nowacki J, Fehr R (2011). Health in SEA guidelines and tools. In: *XI HIA International Conference "In times of crisis, healthier ways", Granada, 13–14 April 2011. Abstracts*. Granada, Escuela Andaluza de Salud Pública:116 (http://si.easp.es/eis2011/wp-content/uploads/2011/04/HIA11_Book_of_abstracts.pdf, accessed 1 March 2013).
- Nowacki J, Martuzzi M, Fischer TB, eds. (2010). *Health and strategic environmental assessment. WHO consultation meeting, Rome, Italy, 8–9 June 2009. Background information and report*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0006/112749/E93878.pdf, accessed 1 March 2013).
- Pettit C (2012). *Environmental Impact Assessment (EIA). E Brief*. Lincoln, Institute of Environmental Management and Assessment.
- Prüss-Üstün A, Corvalán C (2006). *Preventing disease through healthy environments. Towards an estimate of the environmental burden of disease*. Geneva, World Health Organization (http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf, accessed 1 March 2013).
- Quigley R et al. (2006). *Health Impact Assessment. International best practice principles*. Fargo, International Association for Impact Assessment (Special Publication Series No.5; <http://www.iaia.org/publicdocuments/special-publications/SP5.pdf>, accessed 1 March 2013).
- Renn O (2005). *Risk Governance. Towards an integrative approach*. Geneva, International Risk Governance Council (white paper no. 1).
- Sadler B (2011). Taking stock of SEA. In: Sadler B et al., eds. *Handbook of Strategic Environmental Assessment*. London, Earthscan:1–18.
- UNECE (2003). *Protocol on Strategic Environmental Assessment to the convention on Environmental Impact Assessment in a transboundary context*. Geneva, United Nations Economic Commission for Europe

- (<http://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/protocolenglish.pdf>, accessed 1 March 2013).
- UNECE (2011). *Resource manual to support application of the UNECE Protocol on Strategic Environmental Assessment*. Geneva, United Nations Economic Commission for Europe (http://www.unece.org/fileadmin/DAM/env/eia/sea_manual/documents/SEA_Manual_final_Feb2011_en.pdf, accessed 1 March 2013).
- UNEP (2002). *Environmental Impact Assessment Training Resource Manual, Second Edition*. Geneva, United Nations Environment Programme (http://www.unep.ch/etu/publications/EIAman_2edition_toc.htm, accessed 1 March 2013).
- United Nations (2012). *CHAPTER XXVII ENVIRONMENT. 4.b Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context*. New York, United Nations (<http://treaties.un.org/doc/Publication/MTDSG/Volume%20II/Chapter%20XXVII/XXVII-4-b.en.pdf>, accessed 1 March 2013).
- Vohra S (2007). International perspective on health impact assessment in urban settings. *New South Wales Public Health Bulletin*, 18(9–10):152–154.
- Wernham A (2011). Health impact assessments are needed in decision-making about environmental and land-use policy. *Health Affairs*, 30(5):947–956.
- WHO (1946). *Constitution*. Geneva, World Health Organization (<http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf>, accessed 1 March 2013).
- WHO (1979). *Environmental Health Impact Assessment - Report on a WHO Seminar, Argostoli, Kefalonia, Greece, 2–6 October, 1978*. Geneva, World Health Organization.
- WHO Regional Office for Europe, European Centre for Health Policy (1999). *Health Impact Assessment: main concepts and suggested approach. Gothenburg consensus paper*. Copenhagen, WHO Regional Office for Europe on behalf of the European Centre for Health Policy.
- WHO Regional Office for Europe (1990). *Environment and Health. The European Charter and Commentary. First European Conference on Environment and Health, Frankfurt, 7–8 December 1989*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0011/116012/WA3095.pdf, accessed 1 March 2013).
- WHO Regional Office for Europe (2004). *Fourth Ministerial Conference on Environment and Health, Budapest, Hungary, 23–25 June 2004. Declaration*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0008/88577/E83335.pdf, accessed 1 March 2013).
- WHO Regional Office for Europe (2010a). Fifth Ministerial Conference on Environment and Health, Parma, Italy, 10–12 March 2010 [web site]. Copenhagen, WHO Regional Office for Europe (<http://www.euro.who.int/en/what-we-do/event/fifth-ministerial-conference-on-environment-and-health>, accessed 1 March 2013).
- WHO Regional Office for Europe (2010b). *Parma Declaration on Environment and Health*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0011/78608/E93618.pdf, accessed 1 March 2013).
- WHO Regional Office for Europe (2012). *Environmental health inequalities in Europe. Assessment report*. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0010/157969/e96194.pdf, accessed 1 March 2013).
- WHO Regional Office for Europe (2013). Public health services [web site]. Copenhagen, WHO Regional Office for Europe (<http://www.euro.who.int/en/what-we-do/health-topics/Health-systems/public-health-services>, accessed 1 March 2013).
- Wismar M et al., eds. (2007). *The Effectiveness of Health Impact Assessment. Scope and limitations of supporting decision-making in Europe*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies (http://www.euro.who.int/__data/assets/pdf_file/0003/98283/E90794.pdf, accessed 1 March 2013).

Annex 1 – Additional resources

International Association for Impact Assessment (IAIA)	www.iaia.org
International Association for Impact Assessment wiki resource	http://bit.ly/SNGAdM
HIA at WHO	www.who.int/hia/about/en
HIA Gateway	http://bit.ly/124SSDz
HIA Blog	http://bit.ly/VAbK6y
HIA group on Linked-In	http://linkd.in/12iCKO2
Resources for quality standards in HIAs:	
A review package for Health Impact Assessment reports of development projects. Ben Cave Associates Ltd. 2009.	http://bit.ly/k63NtC
North American HIA Practice Standards Working Group. Minimum Elements and Practice Standards for Health Impact Assessment 2010.	http://bit.ly/IO8Ngm

Source: Gibson et al. (2013a&b).

Annex 2 – Examples of HIA guidelines

This list does not claim to be exhaustive nor does it include a quality assessment of the guidelines.

Country	Author/ Editor	Editor	Year	Title	Institution/ City/ Edition	Link
England	Scott-Samuel, A./Birley, M./Ardern, K.		2001	The Merseyside Guidelines for health impact assessment.	IMPACT: Liverpool, 2nd Edition.	http://www.liv.ac.uk/ihia/IMPACT%20Reports/2001_merseyside_guidelines_31.pdf
Canada	Health Canada	Ed.	2004	The Basics. Canadian handbook on health impact assessment. Vol. 1.		http://dsp-psd.pwgsc.gc.ca/Collection/H46-2-04-343E.pdf
Canada	Health Canada	Ed.	2004	Approaches and Decision-Making. Canadian handbook on health impact assessment. Vol. 2.		http://dsp-psd.pwgsc.gc.ca/Collection/H46-2-04-361E.pdf
Canada	Health Canada	Ed.	2004	The Multidisciplinary Team. Canadian handbook on health impact assessment. Vol. 3.		http://dsp-psd.pwgsc.gc.ca/Collection/H46-2-04-362E.pdf
Canada	Health Canada	Ed.	2004	Health Impacts by Industry Sector. Canadian handbook on health impact assessment. Vol. 4.		http://dsp-psd.pwgsc.gc.ca/Collection/H46-2-04-363E.pdf
Wales	Health Promotion Division	Ed.	o.J.	Developing Health impact assessment in Wales.	National Assembly of Wales	http://www.wales.nhs.uk/sites3/Documents/522/developing_hia_in_wales.pdf
European Union	Abrahams, D./den Broeder, L./Doyle, C./Fehr, R./Haigh, F./Mekel, O./Metcalfe, O./Pennington, A./Scott-Samuel, A.		2004 a	European Policy Health Impact Assessment (EPHIA) – Gesundheitsverträglichkeit Europäischer Politikentscheidungen: Empfehlungen zum Vorgehen (Annex 6).		http://ec.europa.eu/health/ph_projects/2001/monitoring/fp_monitoring_2001_a6_frep_11_de.pdf
United States	North American HIA Practice Standards Working Group	Ed.	2009	Practice Standards for Health Impact Assessment (HIA)		http://www.sfphe.org/HIA_Tools/HIA_Practice_Standards.pdf
African Development Bank	African Development Bank	Ed.	2003	INTEGRATED ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT GUIDELINES		http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/Integrated%20Environmental%20and%20Social%20Impact%20Assesment%20Guidelines.pdf
United Kingdom	ICMM – International Council on Mining and Metals	Ed.	2010	Good Practice Guidance on Health Impact Assessment		http://www.apho.org.uk/resource/aphosearch.aspx
Australia	Harris, P., Harris-Roxas, B., Harris, E., & Kemp, L.		2007	HEALTH IMPACT ASSESSMENT: A PRACTICAL GUIDE	Centre for Health Equity Training, Research and Evaluation	http://www.hiaconnect.edu.au/files/Health_Impact_Assessment_A_Practical_Guide.pdf
European Union	European Commission	Ed.	2009	Impact Assessment Guidelines		http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf

Annex 3 – SEA stages and key health entry points

SEA stage	Key health entry points
Screening: to decide if SEA is needed, e.g. based on a legal requirement; to determine whether the proposal will have any significant environmental effects; and/or to help define aims and objectives of the proposal.	Health considerations should be included as part of the screening process, e.g. through active involvement of health impact assessment experts, inclusion of health criteria in screening tools, etc.
Scoping: to determine the terms of reference, including the geographic, temporal and thematic extent, the level of detail of the assessment and necessary information to be included, a first identification of environmental problems, identification of alternatives, methods and techniques for the assessment, define potential stakeholders and ‘affected parties’, establish the consultation and participation procedure, management arrangements.	Health must be adequately covered in the terms of reference, including in relation to the role and competencies of experts that will conduct the health related assessment activities.
Assessment and reporting: conduct the analysis to establish the significant environmental impacts, ensuring that the results are state-of-the-art and as reliable as possible, using different methods and techniques. All to be documented in an environmental report including alternatives and recommendations.	Need to ensure quality and comprehensiveness of health related assessment, including stakeholder engagement activities, disclosure of information, assessment methodologies used, credibility of baseline, appropriateness of recommendations, etc.
Consultation and participation: testing the completeness, validity and reliability of the relevant information; identifying and mitigating conflicts; taking into account the needs to the concerned public; facilitating a better understanding between different players; enhancing the acceptance of the policy, plan and programme and enhancing transparency	Need to ensure that health sector actors and advocates are actively engaged in the policy, plan and programme process.
Decision-making: weighing the findings against each other, justification how a decision was reached and what information was used.	Are health sector actors playing a meaningful role in these deliberations? In other words, actively engaged in decision-making activities.
Monitoring and evaluation: follow-up of the SEA regarding the observation and measurement of predefined environmental indicators and effects but also of the SEA process itself.	Health indicators are used for monitoring. They can also be used to help measure the overall impact and performance of the SEA. For example, many environmental issues will result in health problems, many of which have clear attributable risks, e.g. poor air quality/respiratory disorder. Health indicators could provide an opportunity to link SEAs performance to wider development objectives, e.g. Millennium Development Goals (MDG) related environmental and health indicators (those clearly attributed to environmental risk factors, e.g. water and sanitation).

Source: Nowacki et al. (2010).

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. 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 conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
The former Yugoslav Republic of Macedonia
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

More and more, countries are faced with the challenge of addressing the burden of disease arising from environmental exposures. Capacity building in environment and health has been recognized as a critical need among Member States of the WHO European Region, and the European Union. To address this need the WHO European Centre for Environment and Health is assisting WHO Member States to use health impact assessment (HIA) and health in environmental assessments (EA) like environmental impact assessments (EIA) and strategic environmental assessments (SEA).

In order to further reduce citizens' environmental health burden of disease and tackle environmental health inequities, a framework for the analysis of environment and health interactions through environmental and health impact assessments is presented in this report. Key stakeholders such as practitioners in public health and environmental agencies at various levels participate in a joint workshop to analyse impact assessments of selected projects, plans, programmes or policies outside the health sector and to place them in the context of other major families of health determinants, such as lifestyle, socioeconomic factors, health care etc. Gaps in capacity and knowledge are discussed as well as how existing environment and health data resources in the country can be used for impact assessment. Based on the analysis and discussions a country specific action plan is developed for enhanced integration of health in environmental assessments and the implementation of standalone HIA if desired.

World Health Organization Regional Office for Europe

UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00 Fax: +45 33 70 01 Email: contact@euro.who.int
Website: www.euro.who.int