National Assembly for Wales / Cynulliad Cenedlaethol Cymru
Health and Social Care Committee / Y Pwyllgor Iechyd a Gofal Cymdeithasol

Public Health (Wales) Bill / Bil Iechyd y Cyhoedd (Cymru)

Evidence from the BMA – PHB AI 07 / Tystiolaeth gan y BMA – PHB AI 07

At the Committee meeting on 17 September 2015 representatives from the British Medical Association agreed to provide the Committee with information on how countries such as Norway, Sweden and South Australia have implemented health impact assessments through legislation. The information submitted can be found below.

Recent Public Health Laws in Other European Countries

Estonia

Estonia defines the purposes of its public health act as to protect human health, prevent disease and promote health, which are to be achieved through the performance of duties by the state, local governments, legal persons in public law, legal persons in private law and individuals, and through national and local measures.

"The Public Health Act of Estonia, passed 14 June 1995 (RT I 1995, 57, 978), entered into force 21 July 1995:
(1) The purpose of this Act is to protect human health, prevent disease and promote health, which is to be achieved through the performance of duties by the state, local governments, legal persons in public law, legal persons in private law and natural persons and through national and local measures.
In this Act, the following definitions are used:
1) "public health" means the science and art of disease prevention, extending life expectancy, promoting and improving mental and physical health through the organised efforts of society;
2) "health" means a state of physical, mental and social well-being of a person, not only the absence of disability or disease;
3) "health protection" means activities aimed at ensuring a physical and social environment which is safe for human health and at preventing health disorders and disease associated with the physical and social environment;
4) "health promotion" means the creation of behaviour and lifestyles which value and enhance health and the purposeful development of a physical and social environment which is conducive to health;
5) "disease prevention" means activities aimed at early detection of disease in persons and measures to prevent illness;
6) "health education" means the purposeful dissemination of information and formation of people's habits for the preservation and improvement of health;
7) "physical and social environment" means the aggregate of natural, artificial and social environmental factors with which people come into contact and which affects or may affect human health."
Source: Riigi Teataja [State Gazette].

Law to reduce salt consumption in Portugal
Doctors from the Portuguese Society of Hypertension have spearheaded a unique mass-media campaign about the harmful consequences of consuming too much salt, which in turn has led to the Portuguese Parliament approving a law restricting the sodium content of processed foods. On August 12, 2009, the Portuguese Parliament approved a law that was intended to: a) Establish standards to reduce the salt content in bread and set a maximum limit of salt content in bread, b) Encourage information on salt content on the labelling of pre-packaged foods for human consumption. With this legislation the maximum allowed salt in bread is 1.4 g sodium chloride per 100 grams of bread or 0.55 grams of sodium per 100 g of bread (salt = sodium x 2.5).

The Netherlands

In the Netherlands, the act of 9 October 2008 regulating public health care matters (the public

health act) brought together in a single act, to create a coherent statutory instrument, the Public Health (Preventive Measures) Act, the Infectious Diseases Act and the Quarantine Act, as well as provisions for the obligatory storage of digital data in the context of health care for young people. It includes definitions, public health care activities, national and municipal health policy documents, municipal health services, infectious disease control, and finance and enforcement.

Decentralized public health responsibilities in the Netherlands:

"1. The municipal executive shall promote the establishment and continuity of and cohesion within a system of public health and the harmonization of that system with the curative health care system and the system for the provision of medical assistance in the event of accident or disaster.
2. Pursuant to subsection 1, the municipal executive shall at the least make provision for:
a. the acquisition of insight into the health status of the population based on epidemiological analysis;
b. the collection and analysis, every four years and in accordance with a uniform national standard, of data on the health status of the population, prior to the formulation of the Municipal
Health Policy Document, referred to in Section 13, subsection 2;
c. monitoring of the health implications of governmental decisions;
d. support for the establishment, implementation and coordination of preventive programmes, including health promotion programmes;
e. the promotion of environmental medical care;
f. the promotion of technical hygienic care;
g. the promotion of psychosocial assistance in the event of disaster."
Source: Ministry of Health, Welfare and Sport.

Czech Republic: Act on care of people's health

"Article III: The main precondition for care of people's health is the permanent development of science and technology and effective practical application of results of scientific research. Science must permanently assure the sufficient quantity of needed knowledge and apply it to those sectors of national economy that influence people's health."
Source: Act 20/1966 Coll.

The Hungarian National Public Health and Medical Officer Service (ÁNTSZ)

"The Hungarian National Public Health and Medical Officer Service (ÁNTSZ) is a national institution financed by state budget and it is responsible for controlling, coordinating and supervising activities concerning public health (especially environmental, settlement, food hygiene and nutrition, child and youth health, radiobiology and radio hygiene and chemical safety), epidemiology, health promotion (health protection, health education and health maintenance), health service administration, and it also controls the health service. The head of the service is the Chief Medical Officer of Hungary who completes his task under the direct control of the Minister of Health.

The central organization of the three-tiered Service is the Office of the Chief Medical Officer (OCMO). The national institutions (see last page) fulfilling professional and methodological tasks are also controlled by the OCMO. Sub regional institutions are on the first level of the

organizational structure, regional institutions are on the second level."
Source: Allami Népegészségyügyi és Tisztiorvosi Szogálat [Hungarian National Public Health and Medical Officer Service].

Bulgarian Health Act

The Bulgarian Health Act is all-inclusive and regulates the social relations concerning the protection of the citizens' health (Article 1). Article 2 of this comprehensive law states:

The protection of the citizens' health as a condition of full physical, mental and social well-being is a national priority and it shall be guaranteed by the Government through the application of the following principles:
1. equality in the use of health services;
2. ensuring accessible and high-quality health care, giving priority to children, pregnant women and mothers of children aged up to one year;
3. priority of health promotion and integrated disease prevention;
4. prevention and reduction of the health risk to citizens as a result of adverse effects of environmental factors;
5. special health protection of children, pregnant women, mothers of children aged up to one year and people with physical and mental disabilities;
6. participation of the government in the financing of activities aimed at protecting the health of citizens.

Macedonia's new Public Health Law

In 2010, The former Yugoslav Republic of Macedonia endorsed a public health law regulating the essential functions and tasks of public health, the public health system, public health emergencies and the funding of public health activities.

The establishment of adequate legal frameworks for public health is an important part of the health reform process for many countries. The WHO Regional Office for Europe provides guidance on the design and content of public health laws based on practical work with countries and its own public health and legal expertise. Public health laws have been developed with the support of WHO and endorsed by national parliaments in Albania, Kyrgyzstan and the Republic of Moldova.

World Health Organization
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Health in Impact Assessments

Opportunities not to be missed

EUPHA
EUROPEAN PUBLIC HEALTH ASSOCIATION

World Health Organization
REGIONAL OFFICE FOR Europe

IAIA

Health in Impact Assessments

Opportunities not to be missed

Edited by Rainer Fehr, Francesca Viliani, Julia Nowacki and Marco Martuzzi

EUPHA
EUROPEAN PUBLIC HEALTH ASSOCIATION

World Health Organization
REGIONAL OFFICE FOR Europe

IAIA

Abstract

Prospective impact assessment is a consolidated approach for pursuing foresight in policy and decision-making, systematically deployed worldwide. There is consensus that, even in well developed impact assessments, human health is not always covered adequately. Partly as a response, health impact assessment (HIA) has emerged and has been applied in several countries in Europe and beyond. Opinions about the merits of HIA separate from other forms of impact assessment differ. This publication aims to provide a detailed and balanced view on "health in impact assessments". Five key types of impact assessment, namely environmental impact assessment, strategic environmental assessment, social impact assessment, sustainability assessment, and HIA are presented, and four key questions are discussed: How can the various assessments contribute to promoting and protecting human health? How can further integration of health support the various forms of impact assessments? What forms of integration seem advisable? What priorities for further development? This analysis suggests that the potential of impact assessments to protect and promote health is underutilized, and represents a missed opportunity. Ways need to be found to exploit the potential to a fuller extent.

Keywords

ENVIRONMENT AND PUBLIC HEALTH
HEALTH, ENVIRONMENTAL
HEALTH IMPACT ASSESSMENT
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List of abbreviations

CBA	cost–benefit analysis
CEHAPE	Children's Environment and Health Action Plan for Europe
CSDH	WHO Commission on Social Determinants of Health
EC	European Commission
EIA	environmental impact assessment
EIS	environmental impact statement
EPA	Environmental Protection Agency
EU	European Union
EUPHA	European Public Health Association
FPIC	free, prior and informed consent
HIA	health impact assessment
IAIA	International Association for Impact Assessment
IBA	Impacts and Benefits Agreement
ICMM	International Council on Minerals and Metals
IFC	International Finance Corporation
IPAS	Integrated Project Approvals System
IPIECA	International Petroleum Industry Environmental Conservation Association
LNG	Liquefied Natural Gas
MCA	multicriteria analysis
NEHAPs	National Environmental Health Action Plans
NEPA	United States National Environmental Policy Act
NIBR	Norwegian Institute for Urban and Regional Research
OECD	Organisation for Economic Co-operation and Development
OECD-DAC	OECD Development Co-operation Directorate
PBA	Planning and Building Act
PEA	programmatic environmental assessments
PPP	policies, plans and programmes
SEA	strategic environmental assessment
SIA	social impact assessment
SIMP	Social Impact Management Plan
UNECE	United Nations Economic Commission for Europe
WCED	World Commission on Environment and Development

Authors and contributions

This publication was produced as a result of ongoing collaboration on health impact assessment between the European Centre for Environment and Health of the WHO Regional Office for Europe, the International Association for Impact Assessment (IAIA) and the European Public Health Association (EUPHA). It was edited and co-authored by Rainer Fehr (Faculty of Public Health, University of Bielefeld, Germany and former vice president of EUPHA's health impact assessment section), Francesca Viliani (International SOS, Copenhagen, Denmark and former co-chair of IAIA health section), Julia Nowacki and Marco Martuzzi (both WHO European Centre for Environment and Health, Bonn, Germany and members of IAIA).

The following authors provided their technical expertise on different forms of impact assessment and contributed through five dedicated chapters:

- Heikke Kalle (Hendrikson & Ko Ltd, Estonia), Charlotta Faith-Ell (Estonian Environmental Institute, Estonia) and Martin Lund-Iversen (Norwegian University of Life Sciences, Norway) for their chapter on health in environmental impact assessment in northern Europe;
- Thomas B. Fischer (University of Liverpool, United Kingdom) for his chapter on health in strategic environmental assessment;
- Alan Bond (University of East Anglia, United Kingdom) and Jenny Pope (Integral Sustainability, Australia) for their chapter on sustainability assessment and health;
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Foreword

In a rapidly changing world, good “foresight” is needed. Both at local and global level, societal decisions can have far-reaching consequences, for good and bad, including on people’s health and well-being. Prospective impact assessment is a key approach to predict, anticipate and steer the implications of projects, plans and policies. While the basic idea dates back to ancient times, more formalized procedures emerged about 45 years ago, and by now have spread around the world.

Impact assessments, however, are interpreted and implemented in various ways.In the view of many, human health and well-being are among the most important “goods” to be protected and promoted. How well, then, is health covered in impact assessments? Many would say not well enough – there is room for improvement.

This publication contributes to this debate by taking a close look into the details.

What we try to provide here, together with a group of knowledgeable authors, is a detailed and balanced view on health in impact assessment. This publication builds on an initiative of a “family of health-related impact assessments” and was prepared in cooperation with IAIA, EUPHA, and the WHO Regional Office for Europe.

This book looks into the question of whether and how health is taken care of in impact assessments. We need to warn readers that, in this field, univocal and conclusive answers are elusive. However, we trust that the suggestions for the way forward may be useful, and will stimulate further discussion on impacts and foresight, for the benefit of human health and well-being.

Rainer Fehr

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Marco Martuzzi

Executive Summary

Prospective impact assessment is a consolidated approach to estimate and anticipate the consequences of policies, plans, programmes and projects. It is a key resource for achieving foresight in societal decision-making, systematically deployed worldwide. Impacts on humans, including on human health, have been an issue from the beginning of impact assessments.

A large fraction of ill health is caused by recognized and avoidable factors; and much of this is determined by factors outside the control of the health sector. Hence, health can be seen as being "produced" as well as "damaged" or even "destroyed" by multiple societal sectors. It is an obvious conclusion that health should be considered adequately by all sectoral policies, plans, programs, and projects.

However, human health is often not covered adequately in impact assessments; when the focus is on environmental factors, for example, human health is often only marginally considered. Perhaps as a response to this, health impact assessment (HIA) has emerged as a type of impact assessment revolving specifically around human health. However, opinions about the balancing of various dimensions in impact assessment differ. To further the discussion and to enhance the impact assessment of policies, plans, programmes and projects on human health, the WHO Regional Office for Europe, the International Association for Impact Assessment (IAIA), and the European Public Health Association (EUPHA) jointly reviewed principles and practice in impact assessments to address the following questions:

- How can the various assessments contribute to promoting and protecting human health?
- How can further integration of health support other forms of impact assessments?
- What experiences can be shared across the various impact assessment types?
- What forms and levels of integration seem advisable?
- What should be seen as priorities for further development?

This book considers five types of impact assessment of key relevance for health: environmental impact assessment (EIA), strategic environmental assessment (SEA), social impact assessment (SIA), sustainability assessment, and HIA. Impact assessment experts outline the specific origins and dynamics of these assessments; analyse how health issues are covered; and give some perspectives on future developments.

The principles, theory and practice of different forms of impact assessment, and their full or partial inclusion or exclusion of human health differ widely but the basic attitude of impact assessors towards health is consistent: human health is widely accepted as a crucial component of the *overall impact*, and the integration of health is expected to be in line with stakeholders' and the public's expectations.

Current practice indicates that, in EIA, the focus is on issues of environmental health, but there is a recent tendency to broaden the perspective. A similar situation occurs in SEA, but with a more comprehensive coverage of health. In sustainability assessment, a wide range of health determinants are considered as falling into its remit. HIA, obviously, is fully devoted to human health.

All these forms of impact assessments seem to be evolving in the direction of a more comprehensive inclusion of human health. The contributions of the various impact assessments to protecting and promoting human health would benefit greatly from:

- consistent use of a clear conceptualization of health, including the physical, mental, and social dimension;
- access to reliable health data and information, including on proximate as well as distant health determinants;
- involvement of health experts from early stages, contributing substantive as well as methodological knowledge and experience; and
- awareness by all impact assessors as well as decision-makers on the interconnections of policies and projects with health.

The coverage of health in an impact assessment does not guarantee the improved consideration of health in decision-making, let alone improvements in the *real* world. However, comprehensive and meaningful inclusion of health in different forms of impact assessments can strengthen their relevance for interested communities and thus their acceptability and legitimacy. And indeed, explicit coverage of human health is increasingly demanded by the regulatory frameworks governing several impact assessments.

Taking into account the great variety of established and newly evolving forms of impact assessments, this diversity might lead to impact assessment "fatigue", i.e., a perceived multiplicity of goals and duties for relevant authorities to carry out impact assessment, compounded by a potentially confusing vocabulary. The health sector, by crafting and promoting HIA, can be regarded as contributing to fragmentation. Given the considerable value of impact assessments from a societal perspective, this is a risk not to be taken lightly. If the objectives pursued via a separate HIA can successfully be integrated into other impact assessments, then typically such integration would be the way to go.

The success of impact assessment depends on comprehensive cooperation as well as broad societal understanding and acceptance of the rationale of impact assessment. In this respect, the role, goals, process and benefits of impact assessment should be better known also outside the impact assessment profession, for example, within public health, other professions, and civil society.

In summary, there is a need to ensure that the health consequences of proposed actions are predicted and understood in a reliable, transparent way, based on the available evidence. The health sector, the planning arena, and impact assessment institutions should jointly be involved in the development of research agendas, methodologies, and impact assessment capacity-building programs.

Integration of different forms of impact assessment requires careful weighing of pro's and con's. A prudent attitude suggests optimizing the coverage of health along three avenues: better consideration of health in existing impact assessments other than HIA, dedicated HIA, and integrated forms of impact assessment. In the future, integrated impact assessments may take on a larger role, and it may even become the norm.

Introduction

The basic idea of prospective impact assessment is the systematic application of foresight to human activities at a societal level. This is widely agreed upon as a necessary and useful approach. The history of explicit impact assessments started with the United States of America National Environmental Policy Act (NEPA) in 1969 which established environmental impact assessment (EIA) (US EPA, 1970). Over the span of nearly 45 years, such impact assessments have been applied successfully, and a whole EIA "culture" has been taking shape, including concepts, legal basis, practice, literature, actors, and ongoing debate (Morgan, 2012).

Impact assessment is the systematic application of foresight to human activities on societal level

Also, a range of further impact assessment types has evolved, focusing on, for example, social issues, sustainability, economy and a host of other issues. Several forms of impact assessment such as social impact assessment (SIA) and health impact assessment (HIA) developed "cultures" of their own and are experiencing extensive global practice. This is also the case for more recent impact assessment forms like strategic environmental assessment (SEA) and sustainability assessment (Bond & Pope, 2012).

Impact assessments operate at the intersection of science and decision-making. They reflect a combination of intersectoral action and pro-active attitude, and contribute effectively to foresight efforts. Societal needs of "foresight", and therefore impact assessments, are large, and growing.

Impact assessments operate at the intersection of science and decision-making

The various forms of impact assessment share several areas of concern and face common challenges including the following:

- unwarranted predominance of economic priorities over environmental, social or health impacts;
- persistent difficulties with public participation and community engagements;
- poor coverage of equity, partially due to difficulty in assessing distributional issues;
- complexity of considering cumulative effects and alternatives;
- lack of career structures and opportunities in certain impact assessment fields, inducing scarcity of experts, for example, concerning health issues;
- transparency of the process and openness of reports;
- conflicts of interest and "clashes" of values, be it powerful vested interests or even genuinely different worldviews; and
- effectiveness of impact assessments.

Areas of common concern of the various foms of impact assessments

Impact on humans, including on human health, has been an issue from the beginning of impact assessments. Health is universally seen as one of the highest-ranking societal values. Health is defined by WHO as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). Furthermore health is not only important in its own right, but has increasingly been recognized as a

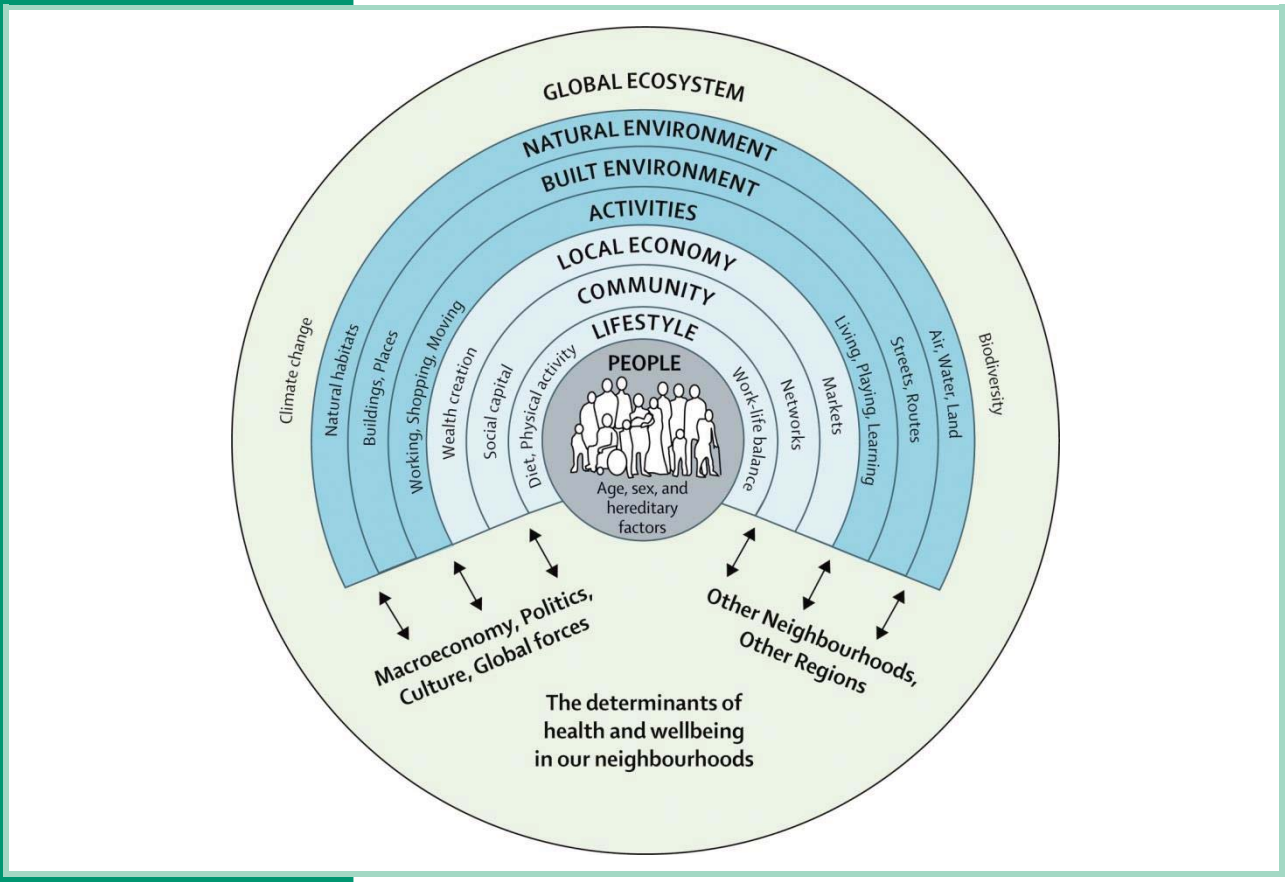
Impacts on humans have been an issue from the beginning of impact assessments

prerequisite for economic development and political stability (WHO, 2001; Task Team, 2013).

Health determinants are factors affecting individual and population health

Evidence and knowledge about what influences health and disease in populations have been accumulating for decades. Fig. 1 shows that many factors affect individual and population health. These *health determinants* include individual characteristics such as age and gender as well as lifestyle factors. Moving from the centre outwards, health determinants are increasingly influenced by policies, plans or programmes in numerous sectors, for example, the physical and social environment, transport, housing, employment, social support, crime and community safety and education as well as the health care system. The science and practice of public health aim at understanding how all these determinants influence human health and, on this basis, how to promote health and preventing disease.

Fig. 1. The main determinants of health



Source: Barton & Grant (©2006:252). Reprinted by permission of SAGE.

Social determinants of health refer to conditions in which people are born, grow, live, work and age health

In recent years, the *social determinants of health* have moved to centre stage. The term refers to the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health also shape health inequities — the unfair and

avoidable differences in health status seen within and between countries (WHO, 2014).

Health inequalities are unfair and avoidable differences in health status

For humane, ethical and practical reasons, health protection and disease prevention are preferable to cure. In other words, whichever fraction of the burden of disease is avoidable should be avoided ("*primacy of prevention*").

Principle of primacy of prevention

Although important aspects of health and disease are not completely understood, a large fraction of ill health (in terms of both morbidity and premature mortality) is caused by recognized and avoidable factors; and much of this fraction is determined by factors outside the control of the health sector (IHME et al., 2012). Health can be seen as being "produced" as well as "damaged" or even "destroyed" by multiple societal sectors. This is the basis for the Health in All Policies approach, nowadays a widely accepted notion (Ståhl et al., 2006).

Health is being produced as well as damaged or destroyed by multiple societal sectors

Acknowledging that health determinants are largely influenced by societal drivers other than the health sector, it is an obvious consequence to advocate that health should be considered adequately by all sectoral policies, programs, and projects in order to secure health, minimize health risks, and maximize health opportunities. Impact assessment, conceived with the goal of exercising foresight, anticipating consequences of policies and plans, and managing the decision process, is therefore ideally suited to address the public health challenges. In other words: health is an essential element in any impact assessment approach.

Health is an essential element of any impact assessments approach

The call for adequate coverage of health within impact assessments is strongly supported by WHO, calling in the Ottawa Charter for Health Promotion for "systematic assessment of the health impact of a rapidly changing environment – particularly in areas of technology, work, energy production and urbanization" (WHO, 1986) and issuing in Gothenburg in 1999 a consensus statement on HIA (WHO European Centre for Health Policy, 1999). Furthermore the WHO Regional Office for Europe's Health 2020 policy framework aims to support governments in fostering intersectoral action to protect health through supporting action across government and society (WHO Regional office for Europe, 2013).

Coverage of health within impact assessments is strongly supported by WHO, as well as the European Commission

At the Fourth European Ministerial Conference on Environment and Health (Budapest, Hungary, 2004), the ministers of environment and the ministers of health committed themselves to implementing the Children's Environment and Health Action Plan for Europe (CEHAPE) in their respective countries. They also adopted the Conference Declaration recalling the United Nations Economic Commission for Europe (UNECE) Protocol on SEA to the Convention on EIA in a Transboundary Context, that

> acknowledges the benefits to the health and well-being of present and future generations that will follow if the need to protect and improve people's health is taken into account as an integral part of SEA. (WHO Regional Office for Europe, 2004)

The Ministers committed themselves to "taking significant health effects into account in the assessment of strategic proposal under the Protocol" (WHO Regional Office for Europe, 2004).

The UNECE SEA Protocol itself, adopted in 2004 and entered into force in 2010, confirms the commitment of UNECE Member States to use SEA to evaluate plans and policies in all sectors. References to human health are explicit throughout the Protocol, and requests consultation with environmental and health authorities.

The First Inter-Ministerial Conference on Health and Environment in Africa (Libreville, Gabon, 2008) included HIA strengthening as one of the 10 priorities for the continent and specifically called on national governments and international organizations to institute "the practice of systematic assessment of health and environment risks, in particular through the development of procedures to assess impacts on health" (WHO Regional Office for Africa, 2009). Also the European Union (EU) funded a range of research and development projects on HIA.[1]

What must be done to close the health gap resulting from social and health inequities

The WHO Commission on Social Determinants of Health (CSDH) investigated the health gap resulting from social and health inequities in much detail and identified a number of actions ("What must be done"), which included the following (CSDH, 2008):

- Place responsibility for action on health and health equity at the highest level of government, and ensure its coherent consideration across all policies. … Assess the impact of all policies and programmes on health and health equity, building towards coherence in all government action.
- Institutionalize consideration of health and health equity impact in national and international economic agreements and policy-making.
- Invest in generating and sharing new evidence on the ways in which social determinants influence population health and health equity and on the effectiveness of measures to reduce health inequities through action on social determinants.
- Provide training on the social determinants of health to policy actors, stakeholders, and practitioners and invest in raising public awareness.

Ongoing efforts towards better coverage of health in different forms of impact assessments

Backed by such comprehensive support, efforts are ongoing to include health in impact assessments adequately and efficiently. Several approaches can be observed, especially efforts towards better coverage of

[1] Generic HIA projects: HIA in New Member States and Pre-Accession Countries (HIA-NMAC), Promoting and Supporting Integrated Approaches for Health and Sustainable Development at the Local Level across Europe (PHASE). HIA projects focusing on quantitative methodology: Air Pollution and Health: A European Information System (APHEIS), Improving Knowledge and Communication for Decision Making on Air Pollution and Health in Europe (APHEKOM), Dynamic Modelling for HIA (DYNAMO-HIA), Environment and Health Information System (ENHIS/HIA component), European Policy HIA (EPHIA), Health and Environment Integrated Methodology and Toolbox for Scenario Assessment (HEIMTSA), Integrated Assessment of Health Risks of Environmental Stressors in Europe (INTARESE), Risk Assessment from Policy to Impact Dimension (RAPID) (projects listed in alphabetic order).

health within the range of existing impact assessments such as EIA and SEA on the one hand, and emergence of explicit HIA on the other.

Concerning health within existing impact assessments, current practice — as illustrated in this publication — shows that even well developed impact assessment exercises do not always properly consider health. This underutilized potential of various forms of impact assessments to protect and promote health is a missed opportunity for public health. Ways should be found to exploit this potential to a fuller extent. It would also be useful to define how the further integration of health into the various forms of impact assessment can support those procedures. Health may offer opportunities to maintain and increase whatever interest decision-makers and the public at large have in impact assessment practice.

Underutilized potential of various forms of impact assessment to protect and promote health

The last two decades saw the emergence of explicit HIA as a dedicated type of impact assessment. HIA practice varies largely among different countries. In several countries, and also internationally, an HIA "culture" of its own has come into being (Harris-Roxas et al., 2012).

How to handle human health in impact assessments

How to handle human health in impact assessments has also been an issue of debate for many years in the HIA community. For illustration, we summarize a selection of sources.

Building on related experiences

The report on the landmark HIA workshop held in Gothenburg in 1999 speaks of "building on related experience" (Diwan et al., 2000:4) and mentions three large categories of impact assessment to be found in the academic literature:

HIA can draw on related experiences

- fiscal impact assessments,
- demographic impact assessments, and
- ecological impact assessments.

"There is... a considerable body of work and experience in related fields, on which HIA could draw." EIA is mentioned as being one of the most important of these, having a long history and having been implemented through legislation in many parts of the world. Reference is also given to SEA and SIA. Obviously, "there is a wealth of knowledge, and useful tools to be borrowed or adapted, and experiences to be avoided" (Diwan et al., 2000:5). Some early conclusions are drawn:

- the implementation of endless different types of impact assessment, particularly if these were mandatory as some already are, would be infeasible and inappropriate;
- some of the different types of impact assessment already being carried out could possibly be merged, harmonized or otherwise linked; and
- some of the information, indicators and even processes already tested, or to be introduced, might serve more than one purpose (Diwan et al., 2000:5).

Separate impact assessments might overwhelm and delay the assessment process, which could be avoided by combining assessments

To combine or not to combine?

The report also raises the question on combining or not combining HIA with other forms of impact assessment such as EIA. It is acknowledged that carrying out HIA separately gives health prominence. To establish additional, separate impact assessments, however, might overwhelm and delay proposed policies and projects. This could be avoided by combining various kinds of assessment (Diwan et al., 2000:13). The strategic discussion paper (Lehto & Ritsatakis, 2000) presented at the Gothenburg conference includes discussion of EIA and SIA. It is mentioned that merging SIA and HIA as *human impact assessment* had been suggested (Lehto & Ritsatakis, 2000:75).

Impacts on human health are often totally or partially neglected... Merging SIA and HIA seems difficult but possible

> Experience from EIA indicates that impacts on human health are often totally or partially neglected. Particularly, the impact on mental and social aspects of health as well as the socioeconomic determinants of health tends to be neglected. It seems to be difficult, but not impossible, to broaden the orientation of institutions, professionals and decision-makers of... [environmental assessment], when the original orientation has been towards more traditional environmental concerns (Lehto & Ritsatakis, 2000:75–76).

HIA and other impact assessments – critical questions

The Gothenburg consensus paper itself closes with a section on critical questions to be faced:

Synergies can be attained and overburden can be avoided by coordination and cooperation

> Synergy between different impact assessments may be attained, and overlap or overburden with various impact assessments can be prevented by coordination and cooperation. Whether to carry out separate HIA or to combine this with other impact assessments is just one of the critical questions facing policy-makers (Lehto & Ritsatakis, 2000:99).

Lessons from EIA

Poor coverage of health issues in EIA

In one of the first comprehensive HIA textbooks in English (Kemm, Parry & Palmer et al., 2004), a full chapter presented lessons from EIA (Bond, 2004). Coverage of health in EIA was reported often to be poor, with the level of inclusion across the world being highly variable (Bond, 2004:137). A number of specific lessons for HIA, based on the EIA experience, were categorized as follows (Bond, 2004:138–9):

Specific lessons to be learned for HIA from EIA

- capacity building,
- decision-making,
- quality control,
- communication, and
- procedural.

Concerning integration of HIA and EIA, the potential was recognized, and some encouraging examples were referred to. However, caution “does need to be exercised over this potential for integration”, including a risk that health professionals may be marginalized in the decision-making process. The author concluded that integration

> will not work without considerable effort to get various organizations/ departments working together, and will only facilitate the consideration of health... in those cases where EIA is currently required – and this doesn't necessarily coincide with all those cases where significant health impacts may arise (Bond, 2004:140).

Integration bears the risk that health may be marginalized in the decision-making process

HIA in SEA

Another chapter in this same book deals with HIA in SEA (Dora, 2004). HIA as part of SEA is described here as tool for healthy public policy. It is maintained that EIA and SEA development offer valuable experiences for HIA. Largely due to WHO strong efforts, the SEA protocol adopted by the Fifth Ministerial Conference "Environment for Europe" (Kiev, Ukraine, 2003) used the expression "*environment including health*" throughout its text. It requests that health be considered at all stages of the SEA process, and that health authorities are consulted (Dora, 2004:408).

SEA Kiev Protocol uses the phrase "environment including health" throughout its text

Future directions for HIA

The book final chapter on future directions for HIA (Parry & Kemm, 2004), also looks at the relation of HIA to other impact assessments:

> Increasingly there is recognition of the overlap.... The practice of approaching health in the context of EIA... is not without its dangers and problems but it may be the route through which HIA becomes 'institutionalized'... For integrating HIA with other assessments, the danger is that this could degenerate into a tokenistic check box exercise (Parry & Kemm, 2004:415).

Health in EIA bears the danger of degenerating into a tokenistic checkbox exercise

On the other hand, it could make "all policy-makers aware of health", triggering increased partnership and working between departments.

> The challenge for the HIA community is to give away ownership of health impacts, become more aware of other cross-cutting issues and allow integrated impact assessment to develop in a way that benefits the health of the population (Parry & Kemm, 2004:415).

Health in EIA could make all policy-makers aware of health

Integration and fragmentation

In the book "Health Impact Assessment – Principles and practice" (Birley, 2011), consideration is given repeatedly to other impact assessments. The section "Integration and fragmentation" (Birley, 2011:24–5) states that there is considerable overlap between health, social and environmental impact assessments:

> There are many components of the impact assessment that cannot be assigned logically to one of the three areas. ... The decision must be made pragmatically, based on the skills, resources and timings available. However, this should not be construed as an opportunity for assessors with no health background to take responsibility for the HIA. There are many examples of impact assessment statements that contain paragraphs about health of dubious quality (Birley, 2011:24–5).

There is considerable overlap between HIA, SIA and EIA

Also, the timing of the three assessments is important. Since the outputs of the EIA and SIA are often inputs to the HIA, the HIA may have to be completed last.

HIA management

Many outputs of EIA and SIA can be useful inputs to HIA

In the chapter "HIA management", a section deals with integration (Birley, 2011:115–7): "The management of an integrated assessment provides a number of additional challenges, including report content and budget." Since many outputs of environmental and social assessments (for example air quality, income distribution) can be regarded as statements about changes in the determinants of health, they are useful as inputs to HIA. "A well-integrated report would contain cross-references between the EIA, SIA and HIA sections" (Birley, 2011:115).

Health in other impact assessments

There is a strong case for looking into integrating different impact assessments

In "Health Impact Assessment: Past Achievement, Current Understanding, and Future Progress" (Kemm, 2012), a chapter deals with health in other impact assessments (Kemm, 2012:90–6). Starting out from the observation that "HIA is only one of a wide family of impact assessments", it is pointed out that projects and policies may be assessed for a wide range of impacts, including environmental, social, economic, human rights, gender, law and order, and many more: "To undertake all the impact assessments separately would be a considerable burden and most of them have areas in common. There is therefore a strong case for looking to see if assessments can be integrated." The chapter outlines EIA, SEA and SIA, then discusses integrated impact assessment (Kemm, 2012:94). The main objections to integrated impact assessment are summarized as follows.

> The chief objection is that those who are not focused on health cannot be trusted to cover health issues adequately... much experience with EIA and SEA suggests that these fears are not without foundation. ... Those who argue against integrated impact assessment usually imply that a separate HIA is an alternative... However, in many busy organizations the reality is the choice between inclusion of health in an integrated impact assessment or no consideration of health at all (Kemm, 2012:95).

In conclusion, consequently form the above, key questions concerning health in impact assessments are:

Box 1. Key questions concerning health in impact assessments

- How can the various assessments contribute to promoting and protecting human health?
- How can further integration of health support other forms of impact assessments? What experiences can be shared across the various impact assessment types?
- What forms of, and what levels of, integration seem advisable?
- What should be seen as priorities for further development?

Based on the following chapters of this publication, a "conclusions" section in this publication tries to answer these questions, and proposes steps to move forward.

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Health in EIA in Estonia, Norway and Sweden

By Charlotta Faith-Ell, Heikki Kalle and Martin Lund-Iversen

Summary

EIA was the first impact assessment to be introduced decades ago and is now the most developed, recognized and institutionalized form of impact assessment. It is now practiced in most countries of the world, often based on explicit legal regulations, aiming at transparent, inclusive and informed decision-making on project proposals. The institutionalization of such assessments across the globe, often through regulation, is an outstanding achievement.

EIA methodology and procedures have advanced considerably over the years. Current EIA practice varies, even between countries with distinct similarities. This chapter reports on variations within the group of Nordic and Baltic countries, as an example.

Concerning health, EIAs tend to look at disease and illness risk factors, as opposed to opportunities for promoting health and well-being. For EIA professionals in many countries, health is however a familiar topic from the perspective of environmental health. The focus is often on factors from the physical environment, especially on pollution of air, water, and soil as well as on noise and radiation. Gradually, also more complex themes have been incorporated into these assessments (usually on the descriptive rather than methodological level), including the effects of the broad physical, psychological, social and cultural environment, for example, urban development, land use and transport. Even with this broader arena "health", however, remains underdeveloped in terms of pathways to outcomes or distribution of health in affected populations.

The priorities for strengthening "health" in EIA tend to differ from country to country. For example, in Estonia, where the majority of the local communities are small and with limited institutional capacity, the introduction of separate HIA is not judged to be practical. Instead, the focus is on better coverage of public health aspects and stronger involvement of public health specialists in the EIA process. In Sweden, health aspects are gradually being introduced in EIA, at the same time that methodologies for independent HIA are being developed in parallel to EIA. Health in impact assessment has been quite strong on the agenda during the last 12-15 years in Norway, and there are no signs of this wearing off. However, as a "wicked problem" in land-use planning, that poses a broad range of challenges

Introduction

Health is considered to be an integral part in many legislative systems of EIA and SEA. This is also the case in the Nordic and Baltic countries. Also, a common belief among practitioners in the Nordic and Baltic countries is that the application of impact assessment is the same in the respective countries. However, when comparing the practice of integrating and assessing health impacts in Estonia, Norway and Sweden similarities but also differences can be seen. This following chapter aims at i) giving an introduction to EIA and SEA, and ii) comparing the similarities and differences in treating health-related issues in Estonia, Norway and Sweden. In the legal systems of all three countries EIA and SEA are to some extent intertwined which means that although the focus of this chapter is EIA, SEA will also be discussed to some extent.

Health is an integral part in many EIA and SEA legislative systems

Background to EIA and SEA

Definition of EIA

EIA is a process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made (IAIA, 1999). The purpose of EIA is to (IAIA, 1999):

Purpose of EIA

- ensure that environmental considerations are explicitly addressed and incorporated into the development decision-making process;
- anticipate and avoid, minimize or offset the adverse significant biophysical, social and other relevant effects of development proposals;
- protect the productivity and capacity of natural systems and the ecological processes which maintain their functions; and
- promote development that is sustainable and optimizes resource use and management opportunities.

EIA goes back to National Environmental Policy Act of 1969

EIA originates from the NEPA, which was passed by the United States Congress in December 1969 (US EPA, 1970). Since then, a number of countries have adopted systems for a systematic assessment and evaluation of impacts from various project and actions. The EU approved a Directive on EIA in 1985 (Council of the EU, 1985). Currently, EIA is a requirement in most countries of the world. In some countries, there are often both national/federal and state/regional EIA systems and regulations. EIA was fully recognized at the international level at the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992. Principle 17 of the Final Declaration is dedicated to EIA (UN, 1992):

> Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Thus, the goal of EIA is to incorporate environmental considerations into decision-making of projects.

Principles of EIA application

The EIA process should be applied (IAIA, 1999):

- as early as possible in decision-making and throughout the life cycle of the proposed activity;
- to all development proposals that may cause potentially significant effects;
- to biophysical impacts and relevant socioeconomic factors, including health, culture, gender, lifestyle, age, and cumulative effects consistent with the concept and principles of sustainable development;
- to provide for the involvement and input of communities and industries affected by a proposal, as well as the interested public; and
- in accordance with internationally agreed measures and activities.

Wider understanding of environment in EIA context

The term “environment” in an EIA context is applied based on a wider understanding. EIA legislation in many countries states that “the direct and indirect impacts to the people’s well-being and health, environment,

cultural heritage and property" (Riigikogu, 2005) must be taken into account within the EIA. Therefore EIA has been developed as a tool of integrated assessment involving various impacts but also experts into a single assessment scheme.

Public involvement is the underlying principle of EIA. Therefore raising public awareness on environmental issues is as important to the EIA as direct environmental goals. Some of the key elements of the EIA process are shown in Box 2:

Public involvement as underlying principle of EIA

Box 2. Key elements of the EIA process

- *Screening* – to determine whether or not a proposal should be subject to EIA and, if so, at what level of detail.
- *Scoping* – to identify issues and impacts likely to be important and to establish terms of reference for EIA.
- *Examination of alternatives* – to establish the preferred or most environmentally sound and benign option for achieving proposal objectives.
- *Impact analysis* – to identify and predict the likely environmental, social and other related effects of the proposal.
- *Mitigation and impact management* – to establish the measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate, to incorporate these into an environmental management plan or system.
- *Evaluation of significance* – to determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated).
- *Preparation of the environmental impact statement (EIS) or report* – to document clearly and impartially impacts of the proposal, the proposed measures for mitigation, the significance of effects, and the concerns of the interested public and the communities affected by the proposal,
- *Review of the EIS* – to determine whether the report meets its terms of reference, provides a satisfactory assessment of the proposal(s) and contains the information required for decision-making,
- *Decision-making* – to approve or reject the proposal and to establish the terms and conditions for its implementation,
- *Follow up* – to ensure that the terms and condition of approval are met; to monitor the impacts of development and the effectiveness of mitigation measures; to strengthen future EIA applications and mitigation measures; and, where required, to undertake environmental audit and process evaluation to optimize environmental management.

Source: IAIA (1999)

A further development of the EIA is SEA, which originated from a notion that many projects are influenced by strategic-level decisions. These decisions are much more influenced by political factors than by technical criteria. Moreover, the environmental impacts associated with policy decisions are often indirect, occur gradually over the long term and are difficult to assess accurately. While still very valuable and relevant at the project level, established EIA procedures, methods and techniques have only limited application at the level of policies, plans and programmes (PPP) (OECD, 2006). Therefore, a similar process, SEA, was adopted for more strategic decisions. SEA refers to a range of "analytical and participatory approaches that aim to integrate environmental considerations into PPP and evaluate the inter linkages with economic and social considerations" (OECD, 2006).

SEA originated form discussions on shortcomings of EIA at policy level

SEA definition

SEA has been defined as

> a systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure they are fully included and addressed at the earliest appropriate stage of decision-making on par with economic and social considerations(Sadler and Verheem, 1996:27).

The EU approved a Directive on SEA in 2001, popularly referred to as the SEA directive, although the official name does not refer to SEA as such: Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (European Parliament and Council of the EU, 2001).

The inclusion of health in impact assessment in Estonia, Norway and Sweden

Estonia

Biophysical health determinants have been part of EIA

Environmental health issues – water or air quality, noise, vibration – have been a part of EIA since the introduction of EIA in Estonia. The first elements of an EIA system were introduced in the mid-nineties followed by the first EIA law, which was enforced in 2001. Gradually more complex themes related to mental health and disturbing effects of development activities have been called for in the practice of EIA. Presently, the EIA Law states, that EIA should aim at assessing impacts to human health from development projects (Riigikogu, 2005). However, in what manner health issues should be treated in practice in the EIA process, has largely been left to the practitioners of EIA. Aside from the absence of specific guidelines for how to treat health issues within impact assessment, there are no good overviews of best practice on the subject in Estonia. The overview below is based on a sample of EIA projects performed during the last ten years.

In practice how to deal with health issues has been left to the EIA practitioners

Definition of environmental health

The concept of environmental health, as used by the WHO Regional Office for Europe, includes both the direct pathological effects of chemicals, radiation and some biological agents, and the effects (often indirect) on health and well-being of the broad physical, psychological, social and cultural environment, which includes housing, urban development, land use and transport. It could be said that most of these aspects are regularly covered in Estonian EIAs, but usually in a descriptive manner. Causal connections between public health problems or statistics and environmental conditions are rarely the subject of EIA.

Causal connections between public health and environmental conditions are rarely subject of EIA

In the Estonian system, the responsibility for integrating health in planning is shared between the Ministry of Environment, responsible for development of EIA system, and the Ministry of Social Affairs, of which the Health Board is responsible for public health, particularly of monitoring and control. However, from a more practical point of EIA, there is limited share of responsibilities between environmental and health officials and experts. In the case a more thorough analysis of health is made in EIA, it is often due to a coincidence or based on personal preferences of the EIA expert.

Since the introduction of EIA in Estonia, there have been several developments related to national strategies influencing the development of a health-related impact assessment. Environmental health issues were included into the Estonian Environmental Strategy 2030. In the elaboration of the strategy in the year 2005, one of the working groups was "Environment, health and quality of life", which mainly dealt with aspects relating to environmental health.

Environmental health issues were included into the Estonian Environmental Strategy 2030

The extent to which health-related issues can be observed in EIAs is associated with the environmental conditions of the site, the nature of the development, and the presence of health-related problems that might be linked to the development within the area of influence. The limiting factor for adequate assessments is often related to the absence of substantive health studies, providing a sound basis for good assessments. However, there are a few good examples of studies, the most interesting and useful of which are related to the comparisons between cumulative dispersion characteristics of certain pollutants and distribution patterns of health conditions that could be related to the environmental conditions (Orru et al., 2011). For instance, the relation of traffic-related particulate matter emissions and cardiovascular diseases have been studied in Tartu city (Orru et al., 2009).

Limiting factor for adequate assessment of health issues is the absence of substantive health studies

From an EIA perspective the main challenges affecting more efficient involvement of health-related issues in Estonian EIAs are:

Main challenges affecting more efficient involvement of health related issues.

- lack of health statistics and surveys that are meaningful for the purpose of EIA – there are not many studies available linking health issues to the various environmental conditions also providing spatial and temporal dynamics of the relationship; and
- lack of environmental health specialists, or limited cooperation between experts in environmental health and environmental management, at both institutional and expert levels. This is partly explained by the fact that there are few trained environmental health experts, who are usually overstretched or are not aware of the role, goals, process and benefits of EIA.

Norway

This chapter discusses the inclusion of health in the legal context of impact assessment pursuant to the Planning and Building Act (PBA), and the practices and guidelines under that in Norway. There are also two other significant legal contexts for HIA, which will not be elaborated on here. Firstly, because they are not extended impact assessment-regulations (like, for example, what the European EIA- and SEA-directives provide), and, secondly, there are no research-based knowledge about them. These contexts are:

- Instructions for Official Studies and Reports (Norwegian Government, 2005), which states health as one of the impact assessment topics (section 2.3.2); and

Planning and Building Act regulates environmental impact assessments (EIA and SEA)

HIA has been part of impact assessment regulations since the start in 1990

- section (11) in The Act on Public Health (folkehelseloven), which allows for the municipality to require HIA at any time of any activity, independent of decision-making contexts or lack of such.

The context of the impact assessment/PBA fully represents the transposition of the European SEA and EIA Directives, on land and in coastal waters (the way Norwegian authorities sees it). The PBA regulates regional and municipal planning, with the first of them granted a minor role.

HIA has been a part of the regulations on impact assessment from the start in 1990 (including SEA since 2005). Initially, under a terminology which covers all relevant impacts for the decision, and since 2005 explicitly in Annex III – where the distribution of health in the population is the focal point. The current regulations also, mention a number of topics which are (wider) determinants for health, such as pollution, risks for accidents, crime prevention, growing up conditions for children, transport, the cultural environment, etcetera.

In 2005 "health" was also introduced in the impact assessment regulations as one of the criteria for deciding on impact assessment obligations for Annex II projects in the EU EIA-Directive. The amended text from 2009 reads that, if the project can have impacts on public health or its distribution, Impact Assessment is required (Norwegian impact assessment regulations, Section 4i; Kommunal- og moderniseringsdepartementet, 2009). Efforts to reach an agreement between the Ministry of the Environment (the planning ministry) and the Directorate of Health to develop workable criteria for this, has been going on for many years without success.

HIA/PBA is mostly carried out in relation to municipal planning. So, it is relevant in the Norwegian context to also widen the perspective onto how health-issues are integrated into municipal planning (not only in what is explicitly labelled impact assessment of such plans). One important finding with regard to this is Hofstad's 2011 study, in which she argues that

> There is little knowledge transfer and interaction between planners and public health coordinators, and it has proven difficult to incorporate public health themes that are out of rhythm with planning's traditional focus.

A study by Strand et al. (2005), looked into the treatment of health in seven impact assessments where it would be expected to play a significant role. The study found that parties working with health-issues and expecting to get involved in such issues were relatively active in the process. The involvement resulted in health becoming a clearly defined issue in the study program for impact assessment. Also, the study points out that health has to be clearly defined to be handled adequately. Just showing good will, or applying too general approaches, does not produce sufficient results in terms of good enough quality in HIA (Hofstad, 2011).

Two impact assessment guidelines have been issued by the Norwegian Directorate of Heath. One deals especially with social inequality in health as

a topic in HIA (Helsedirektoratet, 2001). The other (Helsedirektoratet, 2006) brings up a series of issues:

- health is linked to well-being, which especially shows its relevance for the municipal planning context of the PBA;
- methods and data sources (mostly statistically) are introduced;
- broader issues are mentioned and broken into smaller topics: housing and living environment (air quality, water and ground pollution, noise and vibrations, renovation, radiation, accidents, aspects of the built environment, infrastructure, transport), social network and leisure (culture on offer, play, outdoor recreation, safety), employment, benefits and services;
- participation, presentation of impact assessment-findings, monitoring and follow-up, is dealt with.

Health in impact assessment has been quite strong on the agenda during the last 12–15 years in Norway, and there are no signs of this wearing off. However, it being a so called "wicked problem" in land-use planning, meaning "it is difficult to demarcate, define and frame, and has no simple, commonly accepted, agreed solution" (Hofstad, 2011), one can suppose the emphasis from the authorities has to be kept strong, and even increased, for the outlook to be really good.

Health in impact assessment is a "wicked problem"

Sweden

Sweden has a long tradition of working with public health. Eleven public health objectives were adopted by the parliament in the year 2002. The public health objectives cover what has been identified as the most important determinants of public health in Sweden, and all public authorities at all levels should be guided by them in their work (Regeringskansliet, 2002). This means that i.e. the public health objectives establish a basis for the inclusion of health in planning activities. Health is included in the preamble of the Environmental Code (Sveriges riksdag, 1998:808), which states that "human health and the environment shall be protected from damage and adverse effects". Health is also included in chapter six of the Environmental Code which regulates EIA and SEA, which lists human health as one aspect that shall be assessed.

Public health objectives establish a basis for the inclusion of health in planning activities.

Health is included in the Environmental Code, regulating EIA and SEA

The work with HIA in Sweden stems originally from a proposal on a public health programme that the board of the Federation of Swedish County Councils adopted in 1995. The aim of the programme was to increase the weight of health aspects and to support the County Councils in their work with public health issues and to reach the municipalities (Gustafsson, 2009, 2010).

HIA already since 1995 established in Sweden

The Swedish system knows several types of impact assessments that include health aspects with three main types of HIA that can be identified:

a. HIA of national policies and decisions such as integration, alcohol tax or agricultural and food policies (Swedish National Institute of Public Health, 2005);

Three different types of HIA can be identified

b. HIA of infrastructure and land-use planning; and
c. assessment of health as an aspect in EIA (mainly of infrastructure projects).

SIA is at its infant stage

Furthermore, the practice of SIA is at its infant stage in Sweden and in some cases health has been included as an aspect in the few examples of SIA that have been carried out.

'Health matrix' is a tool for county councils and municipalities to work with HIA

The methods and processes used in these three types vary between the different types of impact assessment. The Swedish National Institute of Public Health has published guidance on HIA (Swedish National Institute of Public Health, 2005). The Swedish Association of Local Authorities and Regions has developed a tool, called the "health matrix" which is used by county councils and municipalities in their work with HIA (Landstingsförbundet, Svenska Kommunförbundet, 1998; Swedish National Institute of Public Health, 2005). The health matrix is a checklist which illustrates how a decision can impact on different groups in the society (Gustafsson, 2009).

Main health issues covered are noise and air pollution

However, health is mainly included in impact assessment as an aspect in EIA, especially in infrastructure planning, through the assessment of noise and air pollution (Kågström, 2009). But, the consequences of the impacts, for example, for a specific population groups are rarely included in the EIA (Gustafsson, 2010). However, the Stockholm Bypass project (21 km highway with 18 km in tunnels) has raised the awareness of the importance of assessing health aspects in infrastructure planning. The majority of the health assessments are not made by public health experts. However, in some of the assessments of municipal master plans and the largest infrastructure projects health experts have been involved in the assessments. Gustafsson (2010) argues that one of the main reasons behind the lack of integration of health impacts in EIA is lack of common understanding of health as a concept.

Majority of health assessments are not made by public health experts

Health in impact assessment is at its infant stage

To conclude the Swedish experience, the integration of health in impact assessments in Sweden is that it is at its infant stage and needs further development and integration in planning processes.

Discussion and conclusion

Health issues are present in EIA practice in the three countries

A comparison of the practice in the three countries shows that health issues are present in EIA practice in all studied countries, and that the methods and basic tools commonly used in the assessments of health-related issues are similar. Furthermore, the comparison shows that there are clear differences in the institutional setup of impact assessment among the countries. This is important in order to understand the status of health-related issues within EIA. This means that there are differences among the countries, which are related to the conceptualization of EIA systems. For example, Norway and Estonia have adopted a much more integrated approach to impact assessment, in which social and health assessments are included. While in Sweden, there is a tradition of just including health as

one of many other aspects in EIA. Furthermore, in all countries SEA is generally performed within the planning process and EIA is carried out for specific projects (for example infrastructure or environmental permitting).

Although showing similarities in general health objectives, the practical priorities in strengthening health in EIA differ from country to country. In Estonia, where the majority of the local communities are small and with limited institutional capacity, the introduction of separate HIA is not considered to be very practical and the focus is therefore in better involvement of public health aspects and specialists in the EIA process. In Sweden, the development of impact assessment is happening along two different lines: on one hand health aspects are gradually introduced in EIA, on the other hand methodologies for HIA are developed in parallel with EIA. In Norway, research has described the field of health issue in planning as suffering from vagueness and diversity, making it difficult to identify solutions (it being a wicked problem). However, this has not deterred authorities from pressing this issue onwards in impact assessment.

At the same time, the comparison shows that the need for substantive health studies is the same among the three countries. This means that every EIA process needs to conduct their own studies in the case health-related issues are identified as significant aspects during the scoping process. Furthermore, health-related issues are not a novelty for EIA professionals in the Nordic and Baltic countries, and environmental health is a familiar topic in impact assessment. However, an improvement of databases, surveys, methodologies and professional as well as institutional capacities would improve the situation. All in all, public health specialists should have more influence in impact assessments and, where possible, in the decision-making process. These are in general the main similarities across the three countries:

- Impacts to the environment, commonly involves a side for the physical environment within the EIA context, also cultural, social and economical aspects. Health-related issues are interlinked to the extent, that a common process would provide more meaningful and comprehensive outcome in the form of sustainable project delivery.
- Application of multiple assessment schemes would create too much confusion in society and alienation of stakeholder groups from the strategic development initiatives land-use planning and impact assessment. Therefore the integrated approach in impact assessment is supported and developed.
- More meaningful statistics and studies with both temporal and areal distribution patterns of health-related issues through various social groups are needed. That would mean involvement of public health experts as well as EIA professionals in development of research agendas and methodologies, as well as jointly developed EIA capacity-building programs.

There is a need of substantive health studies

Need to improve databases, surveys, methodologies professional and institutional capacities

Public health experts should have more influence in impact assessment

Integrated impact assessment approaches are supported

Joint capacity building programs are needed

Health aspects are increasingly addressed in impact assessments in the Nordic and Baltic countries

Looking into the future, the review of the practice of integrating health in impact assessment in the three studied countries shows that health aspects are increasingly addressed in impact assessments in the Nordic and Baltic countries.

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Health in SEA

By Thomas B Fischer

Summary

The term SEA was first used in the late 1980s. Since then, SEA has become the most widely employed notion globally for the assessment of environmental impacts of public and private decision-making activities above the level of individual development projects. There are now over 40 countries with formal SEA requirements and associated legislation. In addition, there is substantial voluntary practice, and practice in developing countries driven by development banks.

Initially, SEA was understood as involving the application of a project EIA process to strategic initiatives. However, it turns out that the higher the level of the strategic action, the less applicable EIA based methods and techniques tend to be. For example, a conceptual policy which aims at developing a broad development vision for a certain area will need specific methods and techniques, possibly ones that are more discursive and qualitative, rather than quantitative approaches more frequently used under EIA procedures.

SEA is often portrayed in terms of a "framework" rather than just a process. The validity of the approach used in SEA is often seen as depending on the characteristics of the specific situation. Where SEA is more routinely applied, for example, in statutory land-use planning, highly structured processes as used in EIA can lead to positive results. In situations where vested interests are not too strong and power gradients not to steep, round table approaches involving multiple stakeholders can work well.

Most SEA systems globally formulate requirements in terms of the process applied and the substantive issues addressed. Next to biophysical issues, human health is an issue which is routinely included, though, similarly to EIA, to a variable extent in terms of scope and breadth. This is true of the European SEA Directive, the UNECE SEA Protocol, as well as SEA legislation from various countries. WHO has committed itself to support the improved consideration of health in SEA. Development banks frequently ask for health to be addressed in their SEAs through the application of their Performance Standards.

So, health already plays an important role in SEA. In current practice, however, whilst physical determinants of health (for example, emissions, pollution) are routinely considered, other health determinants, including social and behavioural aspects are only occasionally covered.

A number of shortcomings have been observed. In many SEA systems, health stakeholders do not get engaged in SEA processes. One reason is that frequently they are not statutory consultees. Another is that health professionals are often uncomfortable about getting involved, as SEA is not a framework they are familiar with. In addition, the decision-makers for spatial and other policies, plans and programs often appear to lack a comprehensive understanding of health and may, as a consequence, only consider biophysical determinants of health.

Introduction

Since the term SEA was first used in the second half of the 1980s, it has become the most widely employed notion globally for the assessment of environmental impacts of public and increasingly private decision-making activities above the level of individual development projects, at which the

The term SEA was first used in the second half of the 1980s

term EIA is commonly used. Decision-making tiers at which SEA is applied are frequently referred to as PPPs (Wood & Djeddour, 1992).

US National Environmental Policy Act (NEPA) in 1969 established first formal requirements for environmental assessment

The statutory practice of conducting environmental assessments at the level of PPPs predates the establishment of the term and goes back more than another 15 years. Formal requirements for the environmental assessment of United States Federal activities were first formulated in the 1969 NEPA (Sigal & Webb, 1989; US EPA, 1970). This Act did not distinguish between different decision-making levels, but made general reference to actions for which environmental impacts were to be formally assessed. These included both, project as well as more strategic decision-making situations (Nitz & Brown, 2001). Subsequently, in the United States, assessments above the project level started being referred to as programmatic environmental assessments (PEA). To this date, PEA has remained a United States version of SEA. Whilst the NEPA did not define different approaches for assessments at different application levels, it is now widely accepted that the way in which assessments are effectively conducted differs, depending on the specific situation of application (Fischer, 2001). Whilst on the one hand there are distinct differences between different types of SEA, on the other hand there are also commonalities between SEAs applied in similar situations, including, for example, the specific decision-making tier (projects, programmes, plans and policies) and the sector in which it is applied. SEA takes different forms, with regards to, for example, the assessment process, the substantive issues covered, the methods and techniques used, the acting strategies of those conducting it and the way in which different actors contribute to it. This means there is no one-fits-all approach of the instrument (Fischer, 2014; Verheem & Tonk, 2000).

There is no one-fits-all approach of SEA

SEA especially influenced through European SEA Directive EC/42/2001 and UNECE Protocol on SEA

Over the past decade, the development of SEA practice internationally has been particularly influenced by the EU Directive 2001/42/EC on the assessment of environmental impacts of certain plans and programmes (commonly referred to as the “SEA Directive”; European Parliament and Council of the EU, 2001) and the UNECE (Kiev) protocol on SEA (UNECE, 2003) to the Convention on EIA in a trans-boundary context (the Espoo Convention). The SEA Directive was published in July 2001 and had to be transposed by EU Member States by July 2004. The Directive has not only made SEA a routine application for numerous spatial and sectoral plans and programmes in the 28 EU Member States, it has also heavily influenced the development of SEA in other countries and international institutions, as well as development banks. It is likely that several thousands of SEAs have been conducted in EU Member States alone since 2004 (Fischer, 2010; EC, 2009).

The SEA protocol to the Espoo Convention entered into force in 2010. It made SEA binding for a further four non-EU European countries in addition to the 28 EU Member States which have to comply with the SEA Directive, namely Albania, Armenia, Montenegro and Serbia. Finally, formal SEA systems have also been developed elsewhere in the world, including, for

example, China and the Hong Kong Special Administrative Region, Guinea-Bissau Norway, the Republic of Korea and Ukraine (OECD, 2012). Australia, Canada, New Zealand and the United States have had environmental assessment requirements in place that have covered both, project and strategic decision-making levels for several decades (Dalal-Clayton & Sadler, 2000). Whilst Bhutan also introduced SEA legislation in 2002, subsequently, this was not implemented yet (OECD, 2012). This means that there are now over 40 countries with legal SEA requirements and associated legislation (see Box 3). Recently next to some provinces of Pakistan, some central and south American countries have also been said to have introduced some formal requirements, including Bolivia, Chile, Costa Rica, El Salvador, Guatemala, Honduras, Peru and Uruguay. However, the extent of associated SEA practice has remained unclear. Finally, there is also some substantial voluntary application and practice in developing countries, which is driven by development banks and organizations (including, for example, the World Bank, the Inter-American Development Bank and the Asian Development Bank). In this context, over 150 separate SEA initiatives in 2012 were tracked by the Organisation for Economic Co-operation and Development (OECD) Development Co-operation Directorate (OECD-DAC) Environet SEA Task Team, which regularly surveys SEA activities in developing countries (Dalal- Clayton, 2013). In addition to the rapidly growing use of SEA, related research activities and outputs have also grown significantly over the past 20 years. Fischer and Onyango (2012), for example, estimated that there are now over 500 English speaking peer-reviewed journal articles on SEA. However, an analysis of 263 SEA articles revealed that only about 1% of these were explicitly dealing with health (Fischer & Onyango, 2012).

SEA by now legally established in over 40 countries all over the world

Box 3. SEA for systematically improving the consideration of health in PPP making

What is of particular importance with regards to SEA potential for improving the consideration of health in policy-, plan- and programme-making procedures is its statutory status in over 40 countries, based on, for example, the European SEA Directive and the SEA (Kiev) Protocol to the Espoo Convention and development bank/organization requirements in many developing countries. This means that for many initiatives there are formal requirements to use it, thus making it different from many other impact assessment instruments, which are often applied voluntarily. Negative health impacts could thus be systematically avoided in many policies, plans and programs and positive health outcomes be enhanced though SEA.

Most SEA systems globally formulate requirements for how to apply the instrument, in particular in terms of the process and the substantive issues to be addressed. Next to biophysical issues, “human health” is an issue which is routinely included. In this context, NEPA, for example, mentions health several times, i.e. to

Next to biophysical issues, human health is an issue which is routinely included in SEA

> promote efforts which will … stimulate the health and welfare of man; assure for all Americans … healthful … surroundings; … attain the widest range of beneficial uses of the environment without degradation, risk to health or safety (US EPA, 1970).

Furthermore, the European SEA Directive in Annex 1 specifies that "information … be provided on … the likely significant effects on … human health" and that "criteria for determining the likely significance of effects" include "characteristics of the effects and of the area likely to be affected, having regard, in particular, to.... the risks to human health". Whilst SEA legislation from some other countries also mentions health (for example the Canadian Directive refers to health in its Annex), others do not (including those of, for example, Australia, China and the Republic of Korea).

Subsequently, firstly, the evolving understanding of SEA is further elaborated on. This is done with a view as to where, when and how health may be considered. This is followed by a discussion on what aspects of health may potentially be considered in SEA. The empirical evidence produced to date of the performance of SEA with regards to improving the consideration of heath is then summarized. Finally, conclusions are drawn and recommendations are given for how the consideration of health in SEA may be advanced further.

SEA – an evolving concept

Understanding of SEA has continuously evolved ever since the term was first used. This has been accompanied by a rapid growth of SEA practice and professional publications worldwide. The conceptual development of SEA has taken place in terms of various components, in particular:

Components of conceptual development of SEA

- the assessment process,
- the scope of substantive issues covered, and in this context the extent of integration with other assessment tools,
- contextual aspects that enable effective SEA, as well as
- the methods and techniques used, and
- strategies for assessors on how to act in a specific PPP situation.

Considering the range of issues that are important for making SEA an effective decision support instrument, SEA is increasingly portrayed in terms of a "framework" rather than just a process (Fischer, 1998, 2006; Partidário, 2000). Subsequently, different SEA components are elaborated on in further detail.

SEA Process

Initially, SEA was understood as involving the application of a project EIA process to strategic initiatives (Fischer and Seaton, 2002), consisting of a number of distinct stages. It is important that these stages match those that are often said to make up an effective HIA process (see, for example, Breeze & Lock, 2001). An EIA based SEA process is presented in Box 4. Consultation and participation of statutory and non-statutory bodies (including those representing health), as well as the general public need to take place in any assessment, at least during the scoping and impact assessment stages.

Box 4. EIA based SEA process

- *Screening:* establishing whether an assessment is necessary for an initiative, i.e. determining whether any significant environmental (including health) impacts are likely to arise as a consequence of the initiative; screening is explained further by, for example, Morris and Therivel (2001).
- *Scoping:* once an assessment has been found to be necessary, its scope needs to be determined; decisions need to be made on, for example, what baseline data are required, what alternatives should be considered, what impacts (including those on health) should be assessed, what public or private entities should contribute to SEA and what techniques and methods should be used; scoping is explained further by, for example, Fischer and Phylip-Jones (2008).
- *Impact assessment and report preparation:* the assessment of environmental (including health) impacts needs to be conducted and a report needs to be prepared, which should include recommendations on the choice of alternatives, as well as mitigation and potentially compensation measures; a more comprehensive report is usually accompanied by a non-technical summary; for more information, see, for example, Fischer (2007).
- *Decision-making on the initiative*: it is crucial that at this stage, the results of the SEA are considered; ideally, the decision-maker would justify any decisions made in the light of the findings of the assessment (including what is said on health).
- *Monitoring and follow up*: once a decision has been made to go ahead with an initiative, actual developments need to be monitored; if, for example, actual impacts are found to be not in line with predicted impacts, ideally corrective action should be possible; furthermore, whether mitigation and compensation measures are actually implemented needs to be monitored; for a more in-depth discussion, see Partidário and Fischer (2004).

It is important that this process is not understood to work in a strictly top-down manner, but that feedback loops are possible, if found necessary. This means that whilst the process is organized in terms of a clear line of stages, it can work bottom-up, as well.

The process is not to work in a strictly top-down manner, but that feedback loops are possible.

The views on what effective SEA processes look like have changed over the past two decades. In particular, during the late 1990s and early 2000s, post-modern communicative ideal driven debates in the planning discipline (spearheaded by, for example, Judith Innes and Patsy Healey and influenced in particular by the sociologist Jürgen Habermas) had a significant impact on the SEA community. This meant that the above described "rational" EIA process was dismissed by some as being an inadequate basis for impact assessment at strategic decision-making levels. Non-prescribed deliberative "post-modern" processes were portrayed as the way forward (see, for example, Richardson, 2005; Caratti, Dalkmann & Jiliberto, 2005). Typical assessment approaches propagated at the time included, for example, round-tables and citizen juries (Wiklund & Viklund, 2006), in which the main focus was on deliberations rather than on aiming to achieve environmentally sustainable outcomes.

SEA as a post-modern process

However, subsequently, this — what may be called — post-modern communicative ideal, which some considered to be a panacea to overcoming environmental assessment problems, was questioned, in particular with regards to its ability to actually steer decisions towards more environmentally sustainable solutions and outcomes (Fischer, 2003). One of the main arguments brought forward was that some of the more routinely conducted plan or programme making processes were already following

...but questioned regarding the ability to steer decision toward environmentally sustainable solutions

structured processes and that the role of environmental assessment within this context was not only to function as a platform for debate and deliberations, but also to act as a change agent for more environmentally sustainable outcomes. In this context, it was suggested that SEA needed to focus as much on outcomes as on processes.

Today validity of different approaches depending on the specific situation of application of SEA

Today, some consensus has arisen with regards to the validity of different (mainly procedural) approaches, depending on the specific situation of application. In situations where SEA is more routinely applied, for example, in statutory land-use and transport planning, structured EIA based processes have shown to be able to lead to some positive results in terms of making decisions more environmentally sustainable (Fischer et al., 2009). Here, it is important to remember that SEA applied according to NEPA and the European SEA Directive already follows a systematic and structured process. Furthermore, in planning situations, where all those involved in an assessment are open to different outcomes, rather than having a pre-set mind of what the results should be, i.e. in the absence of strong vested interests and some potentially steep power gradients, round table approaches have shown to work well (see, for example, Arbter, 2004). These are also decision-making situations in which independent expert opinions and reports are more likely to have some considerable impact. Finally, it has become clear that the specific cultural context may have a bearing on the way in which the instrument may be used (Fischer & Gazzola, 2006).

Scope of issues covered, level of integration and other important contextual aspects

Ongoing discussion on integrating economic, social and environmental aspects in SEA

SEA and EIA were introduced in order to address the problem of the systematic subordination of environmental aspects to economic growth paradigm-related interests in policy, plan, programme and project decision-making. The original substantive focus of the instrument was therefore on bio-physical impacts, which also includes (physical) impacts on human health. Subsequently, and triggered by the emerging sustainable development agenda of the 1980s, many became convinced that SEA should include other aspects, as well. In this context, whilst some have suggested that SEA should be used as an assessment instrument which fully integrates economic, social and environmental aspects (Partidário & Moura, 2000; see also George, 2001), others have warned of the potential dangers of doing so. In this context, and based on empirical observations in both Australia and the United Kingdom, Morrison-Saunders and Fischer (2006), for example, urged for some caution when advocating full integration of different assessment aspects in the absence of any strong empirical evidence that more balanced decision-making will indeed occur as a result of this integration. Empirical evidence for the need to be cautious when attempting to integrate different aspects through SEA has recently also been generated by Therivel and Fischer (2012) as well as Tajima and Fischer (2013) for English spatial planning practice, where the instrument is applied within the overall framework of sustainability appraisal. They found

that here, environmental aspects kept being subordinated to economic aspects.

It is probably fair to say that a differential approach is now prevailing, where it is widely accepted that the specific context within which SEA is applied needs to be considered before deciding on the specific format of SEA. A range of aspects are thought to be important for determining the most effective way of SEA application, including in particular those shown in Box 5 (following Fischer, 2014).

The specific context in which SEA is applied needs to be considered for the specific format of the SEA

Box 5. Aspects for effective SEA application

- *The specific decision tier*: there is some evidence to suggest that the likelihood of achieving effective integration of different aspects is connected with the specific decision-making tier, mainly because of existing experiences and traditions. Whereas, for example, at programme levels, in many systems traditionally different aspects have been integrated through cost–benefit analysis (CBA) and multicriteria analysis (MCA) in the sense of forcing heterogeneous entities into a common metric, in statutory spatial planning, the purpose of impact assessment instruments has often been to highlight implications of development options in terms of specific issues, for example, the environment (usually including some health aspects), the economy and others. Finally, policy level assessments have tended to integrate different aspects more fully, the main reason being a more open approach to different futures of those involved at this level, which is often perceived to be more abstract and distant (and thus less subject to powerful interventions by those with vested interests).
- *Distribution of power*: in the presence of an unequal distribution of power in decision-making processes, it has been suggested that the best thing SEA can do is to create transparency with regards to who (or what) wins and who (or what) loses. In this case, full integration of different assessment aspects in SEA may just lead to hiding trade-offs and could therefore be problematic. There may either be a case for keeping different impact assessments separate (including, for example, HIA) or for creating a set of strict trade-off rules.
- *The specific administrative level*: Different administrative levels (for example, national, regional and local) are frequently given different tasks and responsibilities, which may mean specific options need to be dealt with at specific administrative levels.
- *Existence of a policy framework with compatible policy objectives*: Frequently, economic, social and environmental (including health) objectives of specific policy frameworks (including sustainable development strategies) have shown to be not fully compatible (see, for example, Connelly, 2007); if this is the case, integration of different aspects through SEA is problematic.
- *The institutional capacity to integrate*: even in the presence of a wish to integrate different substantive aspects, it may be difficult to do so, because:
  - in many systems, traditionally, different administrations are used (and possibly asked) to act autonomously and may find closer cooperation difficult;
  - the technical or financial capacity to deal with very different aspects all at once may also be limited; on the one hand, more aspects may mean that more data need to be processed; on the other hand, the treatment of a range of aspects in assessment may also mean having to manage the involvement of (potentially too) many people.

Overall, it is important to note that whilst a cautious approach is needed with regards to the integration of different aspects, in particular those that tend to dominate and those that tend to be subordinated to others, existing evidence suggests that integration of environmental and health (along with social) issues can result in overall positive health outcomes (see, for

A cautious approach is needed with regard to the integration of different aspects in SEA

example, Tajima and Fischer, 2013; World Bank, 2014; IFC, 2014; OECD, 2012).

Methods and techniques used and acting strategies of assessors

As explained above, in the early years of its development, SEA was seen as an extension of project EIA principles to the levels of PPP (Emmelin, 2006). As a consequence, EIA methods and techniques were also thought to be suitable for use in SEA. Many of these are, however, based on the identification of spatially concrete, and comparatively speaking, easily measurable impacts of proposed actions on existing land usage. Typical project EIA methods and techniques include, for example, field surveys, the use of indicators, (decision focused) checklists, matrices, networks, overlays, the calculation of quantitative mass balances of impacts, photographs and photomontages (see, for example, Belčáková, 2008).

The higher the level of strategic action, the less applicable project EIA based methods and techniques

In connection with the various debates on SEA over the past two decades, understanding of what methods and techniques may be suitable for use in SEA has also advanced. This has been closely connected with an improved comprehension on how SEA differs from EIA and also how different SEAs differ from each other. In this context, it has been established that the higher the level of the strategic action, the less applicable project EIA based methods and techniques might be. This means that, for example, a conceptual policy which aims at developing a broad development vision for a certain area will need a different set of methods and techniques (i.e. possibly one that is more discursive and qualitative) than, for example, a programme, which aims at ranking potential projects on the basis of, for example, MCA or CBA.

It is therefore suggested that the choice of suitable assessment methods and techniques for health inclusive SEA is particularly connected with the specific tier of decision-making, i.e. whether it is applied to a policy, a plan or a programme. In this context, aspects to be considered for choosing suitable methods and techniques include the issues described in Box 6 (following Partidário & Fischer, 2004).

The role of the assessor also depends on the context

In line with the different situations described above, the roles of the assessors (and their acting strategies) are also likely to differ (see Fischer, 2003). In project-related and structured situations, the assessor is more likely to act as a problem solver. Furthermore, if there is consensus on goals, the assessor may also act as an advocate of those. In more strategic situations with high degrees of uncertainty, an assessor is likely to act as a problem recognisor. Finally, if an assessment is striving to integrate different aspects, the assessor may also act as a mediator of different interests (see, for example, Runhaar & Driessen, 2007; Fischer, Martuzzi & Nowacki, 2010).

Box 6. Aspects to be considered for choosing suitable methods and techniques

- *Time scales*: the more strategic the initiative is, the more likely is it to be removed from project action; therefore, a longer time perspective on likely impacts needs to be applied with increased uncertainties and increasingly less predictable futures.
- *Types of data*: At higher levels of decision-making, assessment issues are frequently not readily quantifiable, but are of a more descriptive nature; methods and techniques used will therefore often be of a more qualitative nature; where quantitative methods are used, they need to allow for the consideration of possible ranges of impacts (i.e. in terms of high and low potential impacts), rather than trying to calculate precise figures.
- *The level of certainty*: Based on longer timescales and the lack of readily quantifiable, precise data at higher decision-making tiers there is less certainty in assessment. As a consequence, even the prediction of direct effects can be difficult, notwithstanding the problems involved in attempting to anticipate indirect effects.
- *Types of impacts*: Whilst project-related decisions usually have concrete spatial, localized impacts, policy-related decisions may give rise to more spatially undefined impacts and therefore may be of a more regional, national or even global scale (for example impacts of tax policies on future CO_2 emissions); furthermore, the cumulative nature of impacts is likely to be greater the further away an assessment situation is from individual project decisions.
- *The problem of consultation and participation*: Higher decision tiers are often perceived by the public as vague and distant when compared with more reactive project situations (in which "not in my backyard" attitudes may trigger high levels of interest and involvement); in this context, methods and techniques need to help facilitate effective consultation and participation.
- *Alternatives*: the more policy oriented a situation is, the more abstract and area wide the alternatives to be considered are likely to be; reliability of predictive methods and techniques is therefore likely to be lower and they should not pretend to be more precise than they actually are.

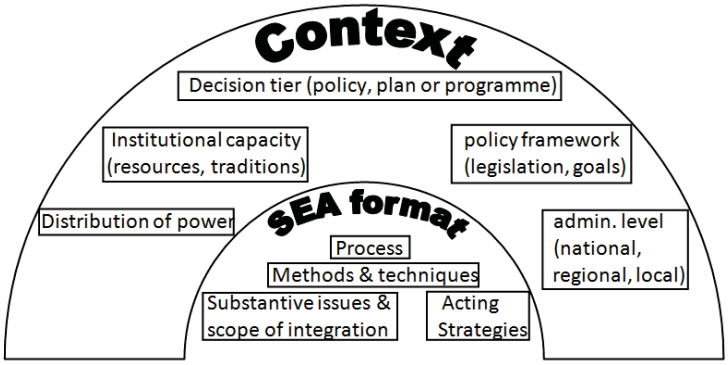
Ultimately, acting strategies can be connected with the contingency model of organizational decision-making, as first developed by Thompson and Tuden in 1959. They described decision-making models in terms of means and ends uncertainty (uncertainty about how and why to take a course of action). As a consequence of the observed levels of uncertainty, they made suggestions for how organizations may want to act, ranging from computation over judgement and bargaining to inspiration. Fig. 2 summarizes current thinking with regards to various contextual issues influencing the specific format of SEA, as discussed in this section.

Acting strategies can be connected with the contingency model of organisational decision making

Health in SEA: current requirements and conceptual thinking

This section is divided into two subsections. Firstly, the role of health in environmental protection/legal requirements and rules is explored. Secondly, the conceptual thinking behind the inclusion of health in SEA is elaborated on.

Fig. 2. The format of SEA as determined by contextual factors



Source: Fischer (2013).

Environmental protection and legal requirements and rules – the role of human health

Legal rules on environmental issues are up to several thousands of years old and are very closely connected with human health, for example, with regards to the availability of pure water. In modern times, the first pieces of environmental legislation in many countries had a health based rationale. Examples include the United Kingdom Public Health Act from 1848, which is widely regarded to be the first piece of environmental protection legislation in modern Europe. This aimed at combating filthy urban living conditions, one of the effects of the industrial revolution.

Public health and the state of the biophysical environment are considered to be inextricably linked

Public health and the state of the biophysical environment are now considered to be inextricably linked. Health features in most environmental legislations worldwide, mostly with regards to the need for a clean (i.e. healthy) environment which should not negatively impact on (physical) human health. It is within this context that SEA frequently addresses human health as an important issue to be considered at those levels where action can be pro-actively influenced, i.e. at the levels of PPP.

However, aspects that are connected with the biophysical environment only cover parts of what is important. Mental health and social well-being are other important issues that also need to be considered. This was already acknowledged in the now over 65 year old definition of health by WHO “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1946).

Health determinants and outcomes other than those directly connected to the physical environment should be considered

So whilst environmental legislation related to, for example, sanitation, air and water quality is vital for the protection and improvement of human health, it only partly addresses the broad spectrum of health determinants. This is essential for SEA, as evaluations of impacts in SEA are often done on the basis of environmental protection legislation. However, it is important that neither NEPA nor the SEA Directive nor the UNECE SEA protocol suggest that it is only biophysical aspects of health that should be considered. As a consequence, awareness that health determinants and

outcomes other than those directly connected to the physical environment should be considered is growing in the SEA community.

SEA and health – conceptual thinking

As explained above, human health is an integral part of the different substantive aspects to be considered in SEA, disregarding of its substantive focus, which may be a narrow, environmental focus or a wider sustainability focus. This is frequently acknowledged in SEA legislation and guidelines worldwide. In this context, WHO has committed itself to support the improved consideration of health in SEA, for example, through its London and Budapest ministerial conferences on environment and health. In the Budapest Declaration, for example, health was explicitly mentioned as being an integral part of SEA (WHO Regional Office for Europe, 2004).

WHO is committed to support the improved consideration of health in SEA

It is also important to note that in national legislations and guidelines as well as in international declarations, the connection between the environment and health, if covered, is not normally reduced to its physical components, i.e. other social and behavioural aspects are not explicitly excluded. However, it appears that in practice, in many countries, the main focus of SEA is often on physical aspects. Therefore, an important question for SEA is whether and how it should widen its scope to consider other important determinants of health. As a starting point, this requires the development of a better conceptual understanding of what health relevant issues may need to be covered in SEA.

Connection between environment and health is normally reduces to biophysical components

There is a need to develop a better conceptual understanding of what health relevant issues need to be covered

Based on the evidence generated to date it is important to note that the range of substantive issues covered will, at least to some extent, depend on the policy, plan and programme to which the instrument is applied, as the scope of assessment is inextricably linked with the remit and issues to be covered of the action it is assessing. For example, a research study conducted in 2011 on SEAs of English municipal waste management strategies found that the risks of different waste management options to human health (i.e. potential negative health impacts) were addressed rather well (Fischer et al., 2011). Another study conducted a year earlier, using the same research approach and looking at English spatial plan SEAs, on the other hand, established that human health impacts were addressed comparatively poorly (Fischer, 2010). Whilst this certainly does not mean that spatial plans do not pose potential threats to human health, their identification for different waste management options is likely to be more obvious and straightforward, as associated impacts (in terms of, for example, pollutants to air and water) are bound to be more direct. Whilst indirect effects should always be considered in SEA, in reality this is often difficult. This means that in reality there may be a discrepancy between the wish to consider all kinds of impacts and the ability to do so. What is important here is to stay realistic on what is doable and what is not, considering both, data and technical resources.

It is important to stay realistic on considering what is doable and what is not

In order to be able to determine the extent to which health is considered in SEA, a suitable evaluation framework is needed. In this context,

determinants of health which can potentially be addressed through SEA have to be identified. Determinants of health were first summarized in a model by Whitehead and Dahlgren (1991), which was subsequently developed further by Barton and Grant (2006). This model is linked to spatial scales, ranging from the global ecosystem and the natural environment over the built environment and the local community/economy to individual determinants (age, sex, hereditary factors) and lifestyles.

Important health determinants

Important health determinants are therefore connected with:

a. biophysical,
b. social,
c. economic,
d. behavioural, and
e. other "fixed" personal physical attributes.

Whilst it is possible to influence (a) to (d), personal physical attributes are not normally changeable. However, it is still possible to exert an influence on associated health implications. For example, a person with hereditary high blood pressure and heart problems may alleviate potential impacts by exercising regularly. As the built and natural environments can either encourage or discourage certain exercises (such as cycling or walking to work), health determinants can be influenced through policies, plans, programmes and their associated SEAs and behavioural aspects are thus important.

Almost every planning decision potentially affects human health

Following on from this, it is clear that new development can influence health through multiple pathways (Curtis, Cave & Coutts, 2002; Thomson et al., 2006). The realization therefore that spatial planning can have an impact on human health, or as Kørnøv (2009:60) puts it: "almost every planning decision potentially affects human health", has given rise to a rich body of work in this area. In this context, guidance has been prepared, for example, in the United Kingdom (SPAHG, 2011; TCPA, 2010). Elements that are of particular importance include, for example, the spatial set-up, which can influence physical activity (Burns & Bond, 2008). This influence may occur in different ways, for example, through the provision of green space, the mix of different uses and accessibility by foot and bicycle. Importantly, housing and its design affect all determinants of health. In this context, Marmot (2010:30) argued that "planning, transport, housing, environmental and health systems [should be fully integrated] to address the social determinants of health in each locality".

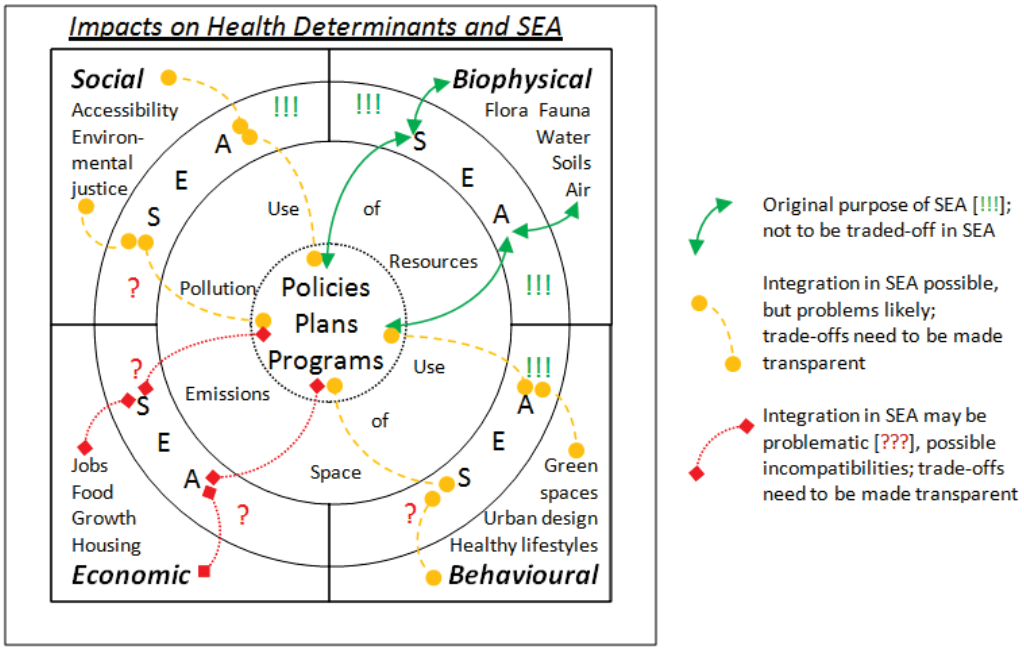
In addition to design issues, there are other health related aspects spatial planning can influence. For example, it is now commonly accepted that crime rates — which are connected with health in communities — can be influenced by urban design (Cozens, Saville & Hillier, 2005). Furthermore, transport and spatial planning are inextricably linked (Fischer, 2002). In this context, besides some obvious physical aspects, such as noise and other emissions, health-related aspects that are important include, for example,

access to health care, jobs and sports as well as physical fitness facilities (Hilbers, 2008).

Because of the connections described above, SEA can play an important role for improving the consideration of health in spatial and other sectoral plan making (see, for example, Carmichael et al., 2012). Whilst in theory at least, nothing should keep SEA from supporting the consideration of various health aspects in policy, plan and programme making, whether this is happening in existing practice has been researched in a few studies only. Fig. 3 provides for a conceptual idea of how health determinants should be approached, if addressed in SEA.

SEA can play an important role for improving the consideration of health in planning

Fig. 3. Approaching the consideration of health determinants in SEA: a conceptual model



Source: Fischer (2013)

What is important is that whilst in principle, all important health dimensions can be considered, the adoption of broad health models may entail the consideration and discussion of controversial, difficult-to-measure issues such as well-being, quality of life or perceived health. This in turn may generate problems in terms of management of opinions, interests and values, which may conflict, in particular with aspects that are connected with economic growth. In this context, the extent to which SEA engages in making trade-off decisions should be carefully evaluated, against the existence of clear trade-off rules and considering the presence of powerful interests. Whilst the main role of SEA has been seen by some as being an instrument of power mediation, there is currently no empirical evidence that this can be successfully achieved. Therefore, a cautious approach to integration should be taken (see, for example, Devlin & Yap, 2008).

The extent to which SEA engages in making trade-off decisions should be carefully evaluated

Role of SEA would be to weight impacts of different options and give recommendations for the most environmentally sustainable solutions

It is acknowledged at this point that incompatibilities might not only be in existence between different health determinants, but also amongst them. Regarding biophysical environmental aspects, for example, climate change mitigation and adaption measures may turn out to be incompatible (see, for example, Moser, 2012). However, here, an important role of SEA would be to weigh impacts of different options and to give recommendations for the most environmentally sustainable solutions.

Empirical evidence for the consideration of health in SEA

In this section, firstly the existing body of literature is briefly introduced before the emerging empirical evidence is outlined. Furthermore, facilitating factors and barriers for an effective consideration of health in SEA are identified.

Existing body of literature

Health impacts are better considered in SEA than EIA but there is scope for improvement

To date, there have only been few studies explicitly looking at the empirical evidence for the consideration of health in SEA. These have mostly not limited their scope to biophysical health aspects, but also considered social and behavioural aspects. Carmichael et al. (2012) summarized the literature on the integration of health into urban spatial planning through impact assessment and Bond, Cave and Ballantyne (2013) reflected on "the separation of spatial planning and health planning" and the associated roles of SEA and HIA. Furthermore, Douglas, Carver and Katikireddi (2011) reflected on how well health was being considered in Scottish SEA practice, suggesting that health impacts were better considered in SEA than EIA, but that there was scope for improvement. Also, in 2011, Schmidt looked at the consideration of health and climate change in United Kingdom and German spatial plans and associated SEAs. A year earlier, Nowacki, Martuzzi and Fischer (2010) reflected on health in SEA guidelines and Fischer, Martuzzi and Nowacki (2010) explored the consideration of health in eight SEAs from Austria, the Czech Republic, England, Germany, the Netherlands and Wales. Five of these were spatial plan-related with the other three being from transport, waste management and economic development planning. Furthermore, in 2008, Fischer looked at the existing evidence and the potential of SEA to address health impacts. Finally, in 2006, Tomlinson established the extent to which health was considered in SEA of local transport plans in the United Kingdom.

Some more conceptual papers on the integration of health in impact assessment were provided by Morgan (2011:40), who argued from a New Zealand perspective in favour of bringing "health concerns into formal impact assessment processes", and by Wright et al. (2005) who discussed whether coupling of HIA and SEA would be the best way forward. Furthermore, Mindell and Joffe (2003) looked at the linkages between HIA and other impact assessments, amongst which SEA. Finally, in 2001, WHO released a report on the potential linkages of HIA and SEA (Breeze & Lock, 2001).

In addition to the above, there is also an emerging body of work on the connections of spatial planning and health which is of direct relevance for SEA. Barton (2009), for example, looked at the connections of land-use planning and health and well-being. Furthermore, Kørnøv (2009) evaluated Danish guidance and practice on healthy spatial planning and, in this context, considered the role of SEA. Earlier, Burns and Bond (2007) provided an overview of the extent to which health features in United Kingdom spatial plans, also looking at the potential role SEA may play.

Emerging evidence on the consideration of health in SEA

What is clear from those works that have looked into the consideration of health in SEA is that in current practice, the only aspects that consistently feature are those that are of a biophysical nature. This includes in particular issues surrounding soils, climate, air, water, flora, fauna and biodiversity. SEAs also normally routinely consider issues such as noise and light pollution, vibration and smell. Furthermore, most SEAs consider some other non-physical health aspects, including those related to human behaviour, connected with, for example, food provisions and services or leisure facilities.

In current practice only biophysical aspects consistently feature in SEAs

What aspects are considered in a specific SEA depends very much on the specific context, which may differ for different sectors of application. Furthermore, the institutional setup is important. English spatial plan SEAs, for example, consistently consider a range of social and economic aspects. This is not surprising, as SEA is applied here within the overall context of sustainability appraisal. Reasons for why certain aspects are/are not considered differ. Fischer, Martuzzi and Nowacki (2010), for example, found that whilst English SEAs usually considered economic and social aspects, these were not normally covered in German and Dutch local spatial plan SEAs. However, in the German case, many municipalities were found to prepare separate development plans on various health issues which are the responsibility of other authorities. This means that spatial planning and health planning are done separately, rather than being integrated. In Dutch practice, a range of socioeconomic aspects are covered in local spatial plans. However, subsequently these are not assessed in SEA. This appears to be connected with a more narrow interpretation of what types of health impacts should be considered in SEA here. Also, and interestingly, in English transport planning, opposite to spatial planning, SEA rather than sustainability appraisal is applied and here, socioeconomic aspects are considered to a much smaller extent. Issues that are considered include accessibility with regards to social exclusion and physical health impacts of transport, in particular with regards to noise and other emissions (see Tomlinson, 2006). These findings are hardly surprising, though, in the light of the findings by Nowacki, Martuzzi and Fischer (2010) who established that only a few current SEA guidelines internationally fully considered non-physical health aspects.

What aspects are considered depends very much on the specific context

Only few SEA guidelines internationally fully considered non-physical health aspects

Regarding the extent to which specific determinants of health were considered in SEA, Schmidt (2011) in his study on United Kingdom and German spatial plan related practice found that the three most frequently considered were:

- in the United Kingdom "access to and availability of health facilities", "green infrastructure/open space" and "leisure and recreation facilities"; and
- in Germany "noise", "air quality and pollution" and also "leisure and recreation facilities".

Whilst more social health determinants were considered in English sustainability appraisal based SEA practice, despite of the above mentioned separation of health and spatial planning, German plans and their SEAs still considered some non physical health determinants, such as quality of life, accessibility to public transport and a "humane environment". Regarding trends on the consideration of health in SEA over time, the same author also showed that there was a steady increase in the number of times health was mentioned in both, English and German spatial plans and their SEAs. Whilst quantification of impacts was not often attempted in English practice, this was routinely done in German SEAs. This is connected with the more specific land allocation orientation of spatial plan making here.

Finally, with regards to Danish practice, Kørnøv found that overall, health aspects were only poorly considered in 100 environmental reports (i.e. SEA reports) of municipal plans. Noise, traffic security, drinking-water, air pollution and recreation/outdoor life were the most extensively considered determinants. However, only noise was actually represented in over 70% of environmental reports with the other aspects featuring in less than 50% of them. Many other determinants were not considered at all, and most of those that were considered were usually transport related.

Facilitating factors and barriers for the effective consideration of health in SEA

Facilitating factors and barriers for health consideration are not different to other assessment aspects in SEA

Regarding facilitating factors and barriers for the consideration of health in SEA, based on the evidence established so far, it is clear that there do not appear to be any differences between health and other assessment aspects, including, for example, biodiversity or climate change. Facilitators and enablers can be divided into those connected with the process of a specific SEA and those connected with the overall context within which the instrument is applied. The former include the application of a suitable assessment procedure (EIA based/non-EIA based) and the use of suitable methods and techniques. The latter include provisions for the consideration of health, a clear understanding of the issues to be addressed and the roles of those involved in assessment, clear ideas about the expectations and values of stakeholders and their effective involvement in SEA, as well as issues of appropriate funding, time and support (see Bina, 2008; Fischer and Gazzola, 2006; Fischer, 2005; Marsden, 1998).

Similarly to the above, Nowacki, Martuzzi and Fischer (2010:13) suggested that facilitating factors for effectively considering health in SEA were linked with institutional, methodological and procedural aspects.

Facilitating institutional, methodological and procedural aspects

Institutional aspects were said to include effective links between proponents and health authorities, a meaningful involvement of health professionals and other stakeholders as well as effective support by a dedicated body (i.e. with regards to health a health authority or an equivalent body). *Methodological aspects* were said to include an effective distinction between (health) aspects that should always be considered and those that should only be considered at times or in certain sectors, the availability of data from authorities and other bodies and their effective integration in SEA, as well as the definition of meaningful indicators and integrated monitoring systems. Finally, *procedural aspects* were said to include the application of SEA as an instrument that aims at achieving consistency of aims, objectives and actions of different sectors and tiers, an effective coordination with other assessment tools, a pro-active approach (i.e. anticipating developments and impacts), the consideration of social, behavioural, physical and ecological factors of health early on in the process, the consideration of data from different sources, and the effective use of dedicated resources (for example guidance), which considers health.

Health professionals rarely engage in spatial planning processes

Regarding the effective involvement of health professionals, Bond, Cave and Ballantyne (2013) suggested that spatial planners are frequently ill-equipped to deal with health and that the health profession rarely engages in spatial planning processes (frequently these are actually not statutory consultees). In this context, they suggested that the separation of functions between different professions was a particular serious problem, something which was also observed by Fischer et al. (2009) for German local spatial plan related SEA practice. Finally, Carmichael et al. (2012) summarized a number of barriers to the effective consideration of health in SEA. They suggested that these include aspects of knowledge, partnerships, management and resources. Knowledge aspects are connected with different conceptual understandings of health by different stakeholders. These may, for example, think of health more in terms of a narrow rather than a broader definition. Partnerships' aspects determine the extent to which stakeholders are able to effectively engage with the SEA process. They suggest that this may be connected in particular with the specific cultures of different disciplines. Finally, management and resources related aspects are said to be connected with an ability to coordinate different appraisal processes. This includes both, the technical (management) ability and the necessary (time, technical and monetary) resources.

Knowledge aspects are connected with different conceptual understanding of health by different stakeholders

Conclusions

Health already plays an important role in SEA

There can be no doubt that health already plays an important role in SEA. The United States NEPA includes requirements on the consideration of health in environmental assessment. Furthermore, the European SEA Directive requires all EU Member States, and the SEA (Kiev) protocol to the

Biophysical aspects are routinely considered in SEA practice globally

Espoo Convention asks all its signatories, to explicitly address health in SEA and to consult with health authorities. Finally, development banks and organizations frequently ask for health to be addressed in their SEAs. As a consequence, biophysical determinants of health are already routinely considered in SEA practice globally. However, this is currently happening in a fairly general way only, without distinguishing between, for example, specific population groups. Depending on the specific context and policy, plan or programme making system within which SEA is applied and the sector of application, other determinants of health (social and behavioural) are also considered, albeit less frequently. Whilst the consideration of health does not mean resulting PPPs are automatically "healthy", based on the empirical evidence emerging, it is safe to assume that SEA can lead to its improved consideration, mostly to a moderate extent (Carmichael et al., 2012; Schmidt, 2011; Fischer, Martuzzi and Nowacki, 2010).

Shortcomings with regards to the consideration of health

A number of shortcomings have been observed with regard to the consideration of health in current SEA practice. Importantly, in many SEA systems, health stakeholders do not get engaged in SEA processes. One reason is that frequently they are not statutory consultees. Another is that health professionals are often uncomfortable to getting involved, as SEA is not a platform they are familiar with. Furthermore, spatial and other policy, plan and programme makers often appear to lack understanding of health issues and may, as a consequence only consider biophysical determinants of health. Getting health stakeholders involved in SEA and increasing capacity amongst policy, plan and programme makers and assessors is therefore key to improving practices. Finally, it is important that despite of the rapidly growing practice of SEA globally, empirical evidence produced so far for health and SEA is still thin and that only a tiny fraction of the now substantial body of professional literature on SEA explicitly deals with health.

Getting health stakeholders engaged in SEA process is key

Integration of different environmental, social and behavioural health determinants need to be approached with care

Whilst integration of different environmental, social and behavioural health determinants in SEA is possible, empirical evidence suggests that this may need to be approached with care, in particular when there are tensions between, for example, economic growth objectives on the one hand and environmental and social issues, on the other. In certain situations, different assessment aspects are probably better kept separate (for example in dedicated assessment instruments) rather than being fully integrated in SEA. An important reason for applying a cautious approach is power differences between the various contributors to an "integrated" SEA. For example, integrating transport assessment into SEA in the presence of a powerful road building lobby is unlikely to result in reduced environmental impacts from less road construction. In the absence of strong vested interests, however, integration of different impact assessments may be more unproblematic. Furthermore, problems may be reduced in the presence of formally established trade-off rules. Another important barrier which may be in the way of effective integration includes technical, human and financial resource limitations. Finally, responsibilities for health issues

may not be with the authority preparing a specific policy, plan or programme, but may lie with a different body which possibly prepares their own PPP. In this case, achieving effective coordination is important. However, if institutional barriers are high, even this may already be a challenge. Despite of these potential barriers, it is important that integration can succeed, though, if those contributing to SEA are open to different outcomes.

Whilst there are various problems of current practices with regards to the effective consideration of health, most of these are actually not specific to health, but are generic, applying to all substantive aspects considered in SEA. They include in particular an only moderate impact on policy, plan and programme making, an inability to pro-actively identify reasonable alternatives, and a lack of capacity to successfully address cumulative and indirect impacts. Furthermore, in particular at higher tiers of decision-making (i.e. policies), it is often difficult to get stakeholders and the public to engage in assessment, as the issues at stake are often thought of as being abstract and remote.

There is only a moderate impact on policy, plan and programme making of SEA

Overall, however, SEA is an instrument which can work effectively towards a better consideration of health in policy, plan and programme making, not least because "environmental reports require collecting and presenting data from various sources, which would otherwise not exist" (Schmidt, 2011:105). Also, requirements to consider health through SEA have shown to make policy, plan and programme makers and assessors reflect on issues that they otherwise would not have. Whilst in current practice globally, it is mainly the biophysical determinants of health that are advanced through SEA, social and behavioural determinants may also be included. However, this is only likely to become more widespread in the presence of associated government policy, legal mandates or official guidance (Bond, Cave & Ballantyne, 2013).

SEA is an instrument which can work effectively towards a better consideration of health in policy, plan and programme making

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Sustainability assessment and health

By Alan Bond and Jenny Pope

Summary

The move towards sustainability assessment can be traced back to the 1992 global conference on the environment and development (UN, 1992) that led to the worldwide recognition of "sustainable development". Soon after, sustainable development became a central goal in the rhetoric of most political parties, and could be argued to have led to a realignment of traditional environmental advocacy tools like EIA and SEA.

Sustainability issues are often structured into three pillars: social, economic and environmental. An assessment attempting to cover all three pillars including tradeoffs between them can be called "integrated assessment" or Triple Bottom Line assessment. However, sustainability assessment goes further, attempting not just to assess but to direct decision-making towards the delivery of more sustainable outcomes.

Sustainability assessment practice has become more widespread in recent years, with very diverse examples reported in numerous countries. Unlike other forms of assessment, however, sustainability assessment is, as often as not, an interpretation of a process as being sustainability assessment rather than a bespoke assessment; there is no consensus on what sustainability assessment should look like, and no typical examples. As a result, this chapter draws on very different practice to illustrate the current approach to incorporating health in sustainability assessment; as such it offers an insight into the way practitioners currently grapple with health issues.

The examples considered are England and Western Australia. England is unusual in having a legal requirement for sustainability appraisal which requires that, for any particular local authority area, a framework of sustainability objectives is drawn up along with associated indicators that can be used to assess draft plan policies against baseline conditions.

In Western Australia, the State Sustainability Strategy (Western Australia Government, 2003) included a commitment to undertake sustainability assessments of complex and strategic projects and to integrate HIA into this process. This led to the development of practice in both sustainability assessment and HIA which has continued in various forms to some extent despite a change in government removing these commitments at the policy level.

Planning in England is primarily driven by spatial ("local") plans. Each such plan is subjected to sustainability assessment as it is developed, and the sustainability assessment has to conform with the SEA Directive. Concerning health coverage under the sustainability appraisal procedure conducted in England, current practice suggests that England's local development plans are likely to be assessed against specific health and well-being objectives. The objectives-based approach covers all significant issues associated with a local authority's existing context. As such, physical, social and economic determinants of health are included as objectives in the sustainability assessment and help to promote good health, albeit not explicitly.

Health professionals are statutory consultees in the Local Plan preparation process, but they are not statutory consultees in the sustainability assessment process. A study (Burns & Bond, 2008; Bond, Cave & Ballantyne, 2013) found that those involved in conducting sustainability assessment felt they had insufficient expertise to fully appreciate the health implications of plans and policies while the engagement with health professionals was sporadic. Even where dialogue did take place, there was a feeling that the health professionals did not fully understand how planning worked and, rather than advise on determinants of health, they tended to focus on the expected demands that would be placed on health infrastructure and the potential need for additional primary care, or hospital capacity.

In two examples of government-led sustainability assessment from Western Australia, biophysically-oriented statutory EIA was supplemented with non-statutory social and economic assessments, and attempts were made to bring the different perspectives together to provide an overarching sustainability perspective to the project proposals. Health considerations were a minor and largely implicit part of the process in both examples. More recently, analysis of the environmental assessment of a proposed industrial precinct found that many aspects of both sustainability assessment and HIA were incorporated into the process despite the lack of any legal requirement to consider anything other than biophysical impacts, demonstrating that the importance of both sustainability and health considerations is recognized in the context of project-level assessment. The analysis found that most determinants of health were acknowledged in the assessment (the exception being consideration of the health of the workers and their families) but the potential impacts associated with these determinants were not always evaluated. Nevertheless, there is evidence that practice of both sustainability assessment and HIA has continued in Western Australia, and that the two are closely related.

Conceptual basis for sustainability assessment and its incorporation of health

Definition of sustainability assessment

Bond and Morrison-Saunders (2011:4), drawing on Hacking and Guthrie (2008), defined sustainability assessment as "a process that directs decision-making towards sustainability". This definition is deliberately vague and, assuming "sustainability" equates to "sustainable development", incorporates a term which has strongly normative meaning (Bond & Morrison-Saunders, 2009). The best known definition of sustainable development comes from the World Commission on Environment and Development (WCED), better known as the Brundtland Commission: "development that meets the needs of current generations without compromising the ability of future generations to meet their needs" (WCED, 1987:9). Inherent in this concept of "needs" is the expectation of good "health", which is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). As such, any process which has as its goal, the achievement (or at least working towards the achievement) of sustainable development, must necessarily encompass consideration of health and well-being.

Definition of sustainable development

Definition of health

Sustainable development concept base on a triple bottom line of integrating environmental, social and economic concerns

That said, the inclusion of health in framings of sustainable development tends to be implicit rather than explicit. The triple bottom line conceptualization of sustainable development as an integration of environmental, social and economic concerns, for example, (Elkington, 1997), leaves no space for explicit mention of health, but is explicit about the three pillars of sustainability which determine health outcomes, that is they are "determinants" of health. The concept of health determinants is critical to an understanding of how sustainability assessment incorporates consideration of health impacts. WHO defines health determinants as "[t]he range of personal, social, economic and environmental factors which determine the *health status* of individuals or populations" (WHO, 1998:6). While there are numerous categorizations of health determinants, for the purposes of this chapter we will adopt those presented in Fig. 1 of Chapter 1 (p. 2) of this book:

Definition of health determinants

- people, including age, sex and hereditary factors;
- lifestyle, including diet, physical activity and work-life balance;
- community, including networks and social capital;
- local economy, including wealth creation and markets;
- activities, including working, shopping, moving, living, playing and learning;
- built environment, including buildings, places, streets and routes;
- natural environment, including natural habitat, air, water and land; and
- global ecosystem, including climate change and biodiversity.

Individual health and well-being is a complex function of each of these inter-related determinants. In practice, sustainability assessments do tend to investigate the implications of proposed actions on a range of health determinants such as those listed above, although the word "health" may not be used at all. For example, air quality is an environmental determinant of health, but assessments are often undertaken in relation to environmental standards. For the construction of a new fossil-fuel burning power station, the existing baseline air quality would be compared with the predicted air quality should the power station be operational. If air quality standards were likely to be exceeded, mitigation measures would be needed to reduce them. Whilst health is not necessarily mentioned explicitly, it is implicit in two ways: firstly because air quality is a determinant of health (see the bullet list above); secondly, because air quality standards are set based on current understanding of health effects of air pollution. As an example, the EU has an ambient air quality Directive which sets limit values for pollutants which are not to be exceeded:

Health might not be mentioned but usually health determinants are investigated

> 'limit value' shall mean a level fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health and/or the environment as a whole, to be attained within a given period and not to be exceeded once attained (European Parliament and Council of the EU, 2008:5).

Definition of 'limit value'

Likewise, WHO state that "Clean air is considered to be a basic requirement for human health and well-being" (WHO Regional Office for Europe, 2000:vii).

Sustainability assessment practice has become more widespread in recent years. Bond and Morrison-Saunders (2011) cite examples of practice in Canada, China (Hong Kong Special Administrative Region), Namibia, South Africa, Western Australia and England. Bond, Morrison-Saunders & Howitt (2013) review sustainability assessment case studies from a subset of these (Canada, South Africa, Western Australia and England). Further examples of some level of practice have been reported in:

Sustainability assessment has become more widespread

- Austria (Döberl, Ortmann & Frühwirth, 2013)
- China (Tsung et al., 2013)
- Japan (Sharifi & Murayama, 2013)
- Malaysia (Saadatian, Sopian & Salleh, 2013)
- Mexico (Santana-Medina et al., 2013)
- Switzerland (Speiser et al., 2013)

- United States (Sharifi & Murayama, 2013).

Whilst this burgeoning list of sustainability assessments gives the impression of rapid growth in practice, many of these claims for the conduct of sustainability assessments are actually based on post-practice interpretation of an assessment methodology as being sustainability assessment (for example, Sharifi & Murayama, 2013), or interpretation of the sustainability goals of environmental legislation as entailing a form of sustainability assessment (as in South Africa, see Retief, 2013).

The legal basis for sustainability assessment is extremely limited

So whilst practice is increasing, and there is evidence of an exponential increase in academic interest into sustainability assessment (Bond, Morrison-Saunders & Pope, 2012), the legal basis for a separate process called "sustainability assessment" is extremely limited, as will be discussed further in the following sections. On this point, it is relevant that SEA is very closely related to sustainability assessment in that sustainable development is often regarded, or stated, as its main purpose (for example, Feldmann, Vanderhaegen & Pirotte, 2001), and SEA systems are claimed to be in place in at least 60 countries (Fundingsland Tetlow & Hanusch, 2012). However, SEA is covered elsewhere in this book, and the focus of this chapter will be constrained by processes which are called sustainability assessment or some similar variation, including sustainability appraisal.

SEA is very closely related to sustainability assessment

Sustainability assessment can be applied to projects, plans or policies

An important distinction between SEA and sustainability assessment is that sustainability assessment might be applied to projects (with examples from Western Australia (Morrison-Saunders & Pope, 2013) and Canada (Gibson, 2011)), as well as plans (for example, practice in England, Thérivel et al., 2009), or policies (for example, through the application of impact assessment in the EU (Adelle & Weiland, 2012)). It would be fair to conclude, therefore, that sustainability assessment is extremely diverse, both in scope and application. This wide diversity of practice and application contexts complicates a review of where health fits into practice, so the following text will focus on examples in England, where sustainability appraisal at the plan level has been mandatory since 2004 (Thérivel et al., 2009) and Australia, focusing on Western Australia, where considerable efforts were made in the mid-2000s to establish both sustainability assessment (Morrison-Saunders & Pope, 2013) and HIA, particularly at the project level (Harris & Spickett, 2011).

Sustainability assessment is extremely diverse in scope and application

In the following two sections, we consider how health is addressed within sustainability assessment practice in these two very different applications, giving particular consideration to the policy and legislative basis for consideration of health issues, including HIA; whether guidance on methodologies and tools for considering health have been utilized; which health determinants have been included; and the extent to which public health experts have been involved in the assessment process.

Health and Sustainability Appraisal in England

Policy and legislative basis

Planning in England is primarily driven by spatial plans which themselves conform to a National Planning Policy Framework (Department for Communities and Local Government, 2012). Spatial Plans, called Local Plans, are prepared for each local authority to set out local planning policy covering the next 10–15 years. Each Local Plan is subjected to sustainability appraisal as it is developed, and the sustainability appraisal has to conform with the SEA Directive (European Parliament and Council of the EU, 2001).

Planning is driven by spatial plans, called Local Plans

Although there is no statutory requirement for HIA, there is broad recognition of the links between planning and health outcomes. Bond, Cave and Ballantyne (2013:72) report that

> PCT [primary care trust] responsibilities for local health improvement will transfer to local authorities, who will employ the Director of Public Health jointly appointed with the National Public Health Service, allied with an emphasis on localism in planning, could provide opportunities to break down some of the barriers that currently exist.

Links between planning and health are recognized

In the meantime, at least one local authority has decided that sustainability appraisal at the plan-level only in England is too limited, as there is no sustainability assessment at project level, and no statutory obligation for HIA. South Cambridgeshire District Council has therefore adopted a Supplementary Planning Document that requires HIA for any "major development" proposal (South Cambridgeshire District Council, 2011). Thus, EIA at project level is not seen as having a sufficient focus on health and has led in this example to a separate assessment, potentially leading to tradeoffs with the EIA.

Guidance, methodologies and tools for incorporating health

In terms of current practice of sustainability appraisal, assessments to date have been undertaken using Government-prepared guidance which promotes an objectives-driven approach (Planning Advisory Service, 2010). This means that for any particular local authority area, given the specific context and issues (for example, is it a high crime area with significant obesity and unemployment, or a rural area with low crime rates, low obesity but significant access to amenity issues?), a framework of sustainability objectives is drawn up along with associated indicators that can be used to assess draft plan policies against the baseline. Specific examples of objectives and indicators are provided in the Practical Guide to the Strategic Environmental Assessment Directive (Office of the Deputy Prime Ministeret al.,2005) (see Table 1).

Government-prepared guideline presents a framework of sustainability objectives and associated indicators

The implications of this approach are that sustainability appraisals of English plans are likely to be assessed against specific health and well-being objectives. However, the objectives-based approach covers all significant issues associated with a local authority's existing context. As such, physical, social and economic determinants of health are included as objectives in

Physical, social and economic determinants of health are included as objectives in English sustainability appraisal

the sustainability appraisal and help to promote good health, albeit not explicitly.

Table 1: Specific reference to health and well-being in English sustainability appraisal guidance.

Sustainability assessment Topic	Possible objectives	Possible indicators and ways of quantifying baseline
Population and human health	▪ create conditions to improve health and reduce health inequalities ▪ promote healthy living ▪ protect and enhance human health ▪ reduce and prevent crime, reduce fear of crime ▪ decrease noise and vibration ▪ increase opportunities for indoor recreation and exercise	▪ size of population ▪ changes in demography ▪ years of healthy life expectancy/infant mortality rate ▪ mortality by cause ▪ recorded crimes per 1,000 population ▪ fear of crime surveys ▪ number of transport/pedestrian/cyclist road accidents ▪ number of people affected by ambient noise levels ▪ proportion of tranquil areas ▪ percentage of population living in most deprived areas/reliant on key benefits/ income deprived ▪ general resident perception surveys

Source: adapted from the Office of the Deputy Prime Ministeret al. (2005:65). Crown copyright.

Coverage of health determinants

Systematic studies have not been conducted to examine the coverage of health in sustainability appraisal in the same way that authors have examined the coverage of socioeconomic effects in EIA (for example, Chadwick, 2002), or the coverage of health in SEA (Fischer, Martuzzi and Nowacki, 2010), although one analysis of the consideration of health in SEA does include a single case study on an English sustainability appraisal (Nowacki, Martuzzi & Fischer, 2010). However, Burns and Bond (2008) did examine the extent to which land-use planners felt that they considered a variety of determinants of health in the plan-making process. They conducted a questionnaire survey of planners working in 32 different district councils in the Eastern region of England. The survey coincided with a time shortly after sustainability appraisal became mandatory. An analysis was made of the specific areas on which planners are legally bound to focus by virtue of national planning policy:

Legally binding areas on which planners have to focus

- economy
- housing
- retail
- countryside
- telecommunications
- minerals
- waste

- transport
- open space
- sport and recreation
- energy.

Table 2 indicates the responses to two specific questions by topic areas: which of the following planning policy topics do you consider will impact on human health; which three topics do you consider the planning system has greatest potential to influence?

Table 2: Scope of health in planning policies and ability of land-use planning to influence health determinants as perceived by planners in the East of England.

Topic Areas	Proportion of planners (% of respondents) recognizing health implications of policy area	Proportion of planners (% of respondents) identifying policy as one of the three most likely to be influenced through planning system
Open Space, sport & recreation	100	59
Housing	94	84
Economy	91	31
Transport	84	53
Waste	81	19
Telecommunications	69	6
Countryside	66	3
Energy	56	16
Minerals	37	0
Retail	28	0

Source: Adapted from Burns and Bond (©2008:188). Reproduced with permission from Elsevier.

The results make it clear that planners largely appreciate that the areas on which the plan focuses are determinants of health (even if they might not be familiar with the term "determinants", they understand there are health implications). Some notable exceptions related to retail, where the location of retail has a significant effect on the transport mode of consumers and, therefore, the health implications. Also energy is a significant determinant of health, especially in relation to families suffering from fuel poverty, although only just over half of planners recognized this fact. Of more concern is the column on the right which indicates that even where planners are aware of an issue within their remit being a determinant of health, they are rarely of the opinion that they can have much, or even any, influence over the determinant (housing, transport and recreation being notable exceptions). This raises a particular concern about the expertise of those responsible for spatial planning and associated decision-making in relation to health.

Planners largely recognize that areas on which plans focus are determinants of health

Planners are rarely of the opinion that they can have much or even any influence over the determinant

The single case study of the coverage of health in sustainability appraisal referred to above (in Nowacki, Martuzzi & Fischer, 2010), specifically the Peterborough Development Plan, involved the researchers seeking answers to a predetermined set of questions regarding the inclusion of health in the

Based on the guidance a range of health determinants were covered in a exemplary case study

process. The results indicated coverage of a range of determinants in keeping with the Government guidance to derive objectives based on the current sustainability context (Office of the Deputy Prime Minister et al., 2005). However, no detailed assessment was provided for any determinant. Assessment was mentioned (but not detailed) for

- access to health services
- affordable housing
- air
- crime rates
- education
- effects on soils
- flora and fauna
- health inequalities
- health of minorities (with detailed baseline provided in most cases)
- healthy lifestyles
- leisure activities
- noise and light pollution
- open and green space
- poverty
- social exclusion
- social inequality
- unemployment
- waste
- water
- weather/climate/flooding,

but assessment was not mentioned for

- food
- health and safety
- houses and buildings
- satisfying employment (Nowacki, Martuzzi & Fischer, 2010).

Evidence for use of the baseline data in subsequent analysis was weak

The case study review suggested the scoping exercise identifying the issues to examine in the sustainability appraisal was very thorough, as was collection of baseline data, but the evidence for use of the baseline data in subsequent analysis was weak.

Involvement of public health experts

Planners feel that they have insufficient expertise to fully appreciate the health implications of the decision they were making.

Engagement with health professionals was found to be sporadic

Bond, Cave and Ballantyne (2013) analysed the consideration of health within planning in England over a six-year period (2005–2010) and explored the role of health professionals. The legal context is that health professionals are statutory consultees in the Local Plan preparation process, but they are not statutory consultees in the sustainability appraisal process. Bond, Cave and Ballantyne (2013) found that those involved in the sustainability appraisal, including the planners and statutory consultees, felt they had insufficient expertise to fully appreciate the health implications of the decision they were making. Engagement with health professionals was

found to be sporadic and varied widely on a spectrum varying between no contact at all, and regular dialogue. Even where dialogue did take place, there was a feeling that the health professionals did not fully understand how planning worked and, rather than advise on determinants of health, they tended to focus on the expected demands that would be placed on health infrastructure and the potential need for additional primary care, or hospital capacity. There was a strong feeling that, without legal requirement to have dialogue between planners and health professionals, the existing workloads of both parties would often preclude meaningful contact. This despite the Kiev Protocol (UNECE, 2003) requiring the appointment of health professionals as statutory consultees in the SEA process and being ratified by the EU. To date, there has been no move to alter the wording of the SEA Directive to demand consultation in the SEA process with health professionals, which would then place obligations on the United Kingdom to require the same dialogue as part of sustainability appraisal.

Health professions did not fully understand how planning worked

Health and sustainability assessment in Australia

Policy and legislative basis

In the Australian context both HIA and sustainability assessment remain emerging and somewhat marginalized forms of impact assessment, although HIA is better established with stronger legislative backing than sustainability assessment: Harris and Spickett (2011) note that HIA is mandated in three Australian jurisdictions (Victoria, New South Wales and the Australian Capital Territory) though not at the Commonwealth level nor in the remaining five States or Territories. They also note that practice to date has focused mainly on the integration of health considerations into project EIA and suggest that this is well established, while there is more patchy uptake of "policy HIA" which they define as HIA conducted outside a regulatory EIA framework. There is however, evidence of HIA practice across a diverse range of applications in Australia (Harris-Roxas et al., 2012).

HIA and sustainability assessment are emerging with HIA being better established with stronger legislative backing

In contrast, sustainability assessment is not specifically mandated in any Australian jurisdiction. In practice, many forms of planning and even EIA can be considered forms of sustainability assessment if they seek to deliver positive contributions to environmental, social and economic objectives, noting that the scope of EIA depends largely upon the definition of "environment" within environmental legislation and the extent to which this embraces social dimensions, including health, as well as biophysical ones. In Western Australia, a previous government led several experimental sustainability assessments of project proposals that were specifically designed to overcome limitations (from a sustainability perspective) of the biophysical definition of environment in the Environmental Protection Act 1986 (Western Australia Minister for Environment, 1986), under which EIA is conducted (Morrison-Saunders & Pope, 2013). While the Western Australia EIA system has been held up to be particularly strong in an international context (Wood, 2003), consideration of the social and health

Many forms of planning and EIA can be considered to be forms of sustainability assessment

Considerations of social and health dimensions in Western Australian EIA is less systematic and robust than considerations of the environment

dimensions is far less systematic and robust. In the following discussion we will focus specifically on the Western Australian context and the incorporation of health into project sustainability assessment.

Sustainability assessment stopped after change in government

When the Western Australian Government released the Western Australian State Sustainability Strategy in 2003 (Western Australia Government, 2003), included amongst the broad range of actions outlined in the Strategy was a commitment to undertake sustainability assessment of complex and strategic projects. Two such sustainability assessments were conducted before a change of Premier and then Government brought about the end of the experiment (Morrison-Saunders & Pope, 2013). In both cases, biophysically-oriented statutory EIA was supplemented with non-statutory social and economic assessments, and attempts were made to bring the different perspectives together to provide an overarching sustainability perspective to the project proposals. Health considerations were a minor and largely implicit part of the process in both cases.

State Sustainability Strategy committed to develop and implement HIA

The State Sustainability Strategy also included a commitment to develop and implement processes for HIA, and specifically to incorporate HIA into the evolving practice of sustainability assessment, in recognition of the strong links between human health and sustainability (Western Australia Government, 2003). The barriers to broad HIA uptake were also recognized in this work, particularly the lack of statutory backing and the limitations of the Public Health Act 1911 (Western Australia Government, 2008) in providing an appropriate framework for HIA (Harris & Spickett, 2011). In addition the Department of Health is not designated as a Decision-Making Authority under the Environmental Protection Act 1986 and therefore there is no legal requirement for the Environmental Protection Agency (EPA) to consult with Department of Health on the health implications of proposals under the EIA process. Despite these challenges, considerable progress on HIA was made, even after sustainability assessment effectively disappeared from the policy agenda in 2006. A proposal was put forward for a new Public Health Act; it was agreed that all strategic projects subject to the new Integrated Project Approvals System (IPAS) would be referred to the Department of Health; and a Memorandum of Understanding between the EPA and Department of Health was mooted to promote consideration of health impacts within EIA as well as the application of Health Risk Assessment. Despite the fact that the new Act and the Memorandum of Understanding have not eventuated, and IPAS has been replaced by other processes in which health requirements are more ambiguous, there is real evidence of HIA practice in Western Australia today.

There is no legal requirement for the Environmental Protection Agency to consult with the Department of Health

Both sustainability assessment and HIA have continued in practice despite lack of statutory backing

In summary, what is perhaps most interesting about the current state of practice of both sustainability assessment and HIA in Western Australia is that despite lack of statutory backing or even clear policy support, both HIA and sustainability assessment have continued in practice, particularly in a project context. This is largely due to the efforts of private proponents who realize that a broad sustainability approach is essential if they are to obtain and maintain a social licence to operate.

Guidance, methodologies and tools for incorporating health

As a result of the State Sustainability Strategy commitments, a considerable amount of work was undertaken by the Department of Health to establish HIA processes and practice in the state. In addition to integration into sustainability assessment, the HIA in the Western Australia Discussion Paper identifies opportunities for the integration of HIA into EIA (including EIAs of smaller projects that would not be subject to sustainability assessment), regional land-use planning (facilitated by the State), and local government land-use planning (Western Australia Department of Health, 2007). Guidelines promoting the use of tools such as the health risk assessment were also issued during this period (Western Australia Department of Health, 2006). Health risk assessment guidelines specifically for projects were subsequently also prepared (Spickett, Katscherian & Miang Goh, 2012), although it is not clear whether these are utilized within EIA practice.

Coverage of health determinants

Project proposals can cause significant impacts on determinants of health many years in advance of any work commencing, particularly if the project is large enough to significantly impact on a particular community. Fear and apprehension in individuals clearly have potential health impacts, and in many cases social capital and community cohesion are affected when some sectors of the community support the project development while others oppose it. Then, when the project actually commences, further, more tangible issues also come into play, including impacts on the local environment and pressures on local infrastructure and services. The potentially disruptive force of major projects is particularly evidenced by major resource development projects proposed in areas that have previously not been industrialized. Importantly, however, such developments in remote areas are also increasingly viewed as opportunities to significantly improve the health and well-being of marginalized groups, particularly indigenous communities located near these projects. In addition to financial compensation in return for access to traditional land, such projects offer training, employment and business opportunities to people who may have been previously excluded from the mainstream economy. Indeed, the potential for a project to contribute positively to the lives of disadvantaged people is often a key factor in evaluating the overall sustainability of such a proposal (see, for example, Gibson, 2011). Thus projects have the potential to bring about rapid and fundamental change within a community and dramatically affect determinants of health, arguably far more so than planning initiatives that tend to be based on comparatively minor amendments to the status quo.

Projects in remote areas are also increasingly viewed as opportunities to significantly improve health and well-being of marginalized groups

Projects have the potential to dramatically affect determinants of health

In the discussion that follows, we will use a particular case study to evaluate the extent to which health issues are (or potentially can be) covered within sustainability assessment in Western Australia: the strategic assessment of the proposed Browse Liquefied Natural Gas (LNG) Precinct. In the following

evaluation, we draw on the determinants of health presented in Fig. 1 (Barton & Grant, 2006:2). We assess the extent to which these determinants were considered in the assessment processes; consider whether or not the health implications of changes to these determinants were considered; and reflect on what the case study suggests about both HIA and sustainability assessment practice in Western Australia.

Legislation is largely limited to biophysical focus, but social and socio-economic impact assessment were included in the report

Firstly it is important to state that the Browse assessment process was neither technically a sustainability assessment nor a project. The proposal by the Western Australian Government (through the Department of State Development) to establish a multiuser LNG processing precinct at James Price Point north of Broome was the subject of strategic assessment under both the Environmental Protection Act 1986 (Western Australia Minister for Environment) and the Environment Protection and Biodiversity Conservation Act 1999 (Australian Government, 1999). Despite this, it can be argued that the proposal is much closer to a project (albeit a large one) than to a land-use plan such as those that are subject to sustainability appraisal in England. And although the Browse strategic assessment was not termed a sustainability assessment, and in fact both the Western Australian and Commonwealth legislation are largely limited to a biophysical focus, social and socioeconomic impact assessments were undertaken by the Western Australian Government and these reports were included within the Strategic Assessment Report (Western Australia Department of State Development, 2010). A specific Aboriginal SIA was also conducted by the Kimberley Land Council, the group representing traditional owners. Thus it can be argued for the purposes of this discussion that the Browse proposal was subject to a project-level sustainability assessment. The following analysis is based upon the publically available Strategic Assessment Report (Western Australia Department of State Development, 2010).

Starting at the centre of Fig. 1 (p. 2) to look at the first two spheres of "people" and their "lifestyle", it is important to note that there are several potentially affected groups of people who needed to be considered at this level:

Affected population groups that needed to be considered in the assessment

- the workers, the vast majority of whom would be "fly in/fly out" either from the Western Australian capital city of Perth or increasingly from regional centres and even South East Asia;
- the families they left behind in the city;
- the local community of Broome; and
- the nearby Aboriginal communities.

The Strategic Assessment Report did not discuss health and well-being of fly-in/fly-out workforce

Many of the lifestyle impacts would be borne by the workers and their families; while high levels of remuneration could bring many positive changes, the negative impacts of the fly in/fly out regime and associated long shifts are becoming increasingly well known. Despite recognition of the issues, the Strategic Assessment Report did not discuss the health and well-being of the workforce or identify poor work/life balance as a determinant

of health. Some consideration was given to the potential for drug and alcohol issues to develop in the workers' camps and for an illegal sex industry to develop, which could have also potentially impacted the health of the workers. While it is known that individuals within the local communities could also be affected at a personal level, for example, through fear or uncertainty about the potential impacts of the proposed development on their lives, or a sense of powerlessness to influence the course of future events, these issues were not considered in any detail in the Strategic Assessment Report.

Impacts on local communities at personal level were not assessed

Beyond individuals, the next sphere considers the community as a whole, and in this case the appropriate focus was the town of Broome and the Aboriginal communities. In addition to social capital identified in Fig. 1 (p. 2), other determinants here could include community identity, sense of place and social mix, all of which are considered in the Strategic Assessment Report. It was repeatedly acknowledged in the document that the sense of place of the local community was likely to be negatively affected as Broome shifted from being a tourism centre to also becoming a support base for a major industrial development, and that this could also impact on the tourism industry by affecting the Broome "brand". There was also extensive discussion of the impacts of a large workforce (mainly in the construction phase), comprising mainly young men earning high salaries on the town, as well as the potential for an influx of opportunistic workers arriving in Broome seeking a job on the project. The Strategic Assessment Report acknowledged both impacts on social cohesion and potential increases in anti-social behaviour and crime. Culture is another important determinant of health and well-being at the community level, and this is particularly so for indigenous people whose traditional cultures are often under threat from many angles. This issue was well recognized in the Aboriginal SIA and also reflected in the Strategic Assessment Report, which acknowledged that almost everything about the proposal, including its physical presence, had the potential to impact negatively on indigenous culture.

Community identity, sense of place and social mix were discussed in the assessment

Cultural issues were covered in the Aboriginal SIA and reflected in the strategic assessment report

At the next level of the local economy, the Strategic Assessment Report had much to say. It considered the potential positive impacts of employment and business opportunities for the local communities, and also acknowledged potential negative impacts on other industries such as fishing and tourism, which were the subject of specialist impact assessments.

Positive as well as negative impacts on the local economy were especially assessed

Similarly, determinants of health and well-being at the level of "activities" were generally well considered. It was acknowledged that the proposed development would have far-reaching impacts on the ways in which the people of Broome work, play, shop and move around. For example, it was predicted that prices would be likely to rise, roads would become more congested, access to some local recreation areas would be prohibited, and local workers could be enticed to leave their roles in the service industry to earn higher salaries on the project, thus impacting the social fabric of the town and the services offered. Less consideration was given to the next

Impacts on Broome citizens at the level of activities were well assessed

The built environment was less considered, as the new camp would be 50 km away

sphere of the built environment, which is probably appropriate in this case seeing as the development and associated workers' camp would be located approximately 50 km from the town of Broome itself.

The natural environment was comprehensively considered, including potential impact for the indigenous culture

The natural environment was comprehensively considered in the environmental volumes of the Strategic Assessment Report, in keeping with standards for EIA in Western Australia. As has been noted previously, in many cases environmental determinants have a direct impact on human health (for example air pollution). The potential for cultural impacts, particularly indigenous culture was also recognized, for example, vegetation clearing and altered fire regimes could cause a loss of culturally significant species. Nuisance impacts such as noise, vibration and light were also considered. In the sphere of global systems, the potential of the project to contribute to climate change was acknowledged.

Most determinants of health were at least acknowledged but significant gaps related to the individual level of community members

In summary, it can be concluded that most of the determinants of health were at least acknowledged in the Browse LNG Precinct Strategic Assessment Report. Significant gaps were found, however, at the level of individuals and include the lack of focus on the health and well-being of workers and their families and lack of recognition of the impact of fear, uncertainty and powerlessness amongst local community members. A particular strength was the acknowledgement of the impact of changes in the natural environment on indigenous cultural values. A number of potential health impacts were summarized in Part 5: Social Assessment of the Strategic Assessment Report (Western Australia Department of State Development, 2010) and can be found in Table 3 below. These did not include the potential impacts arising from all the determinants acknowledged in the report with only air emissions, physical presence, vehicle movements, workforce and "general population factors" identified as stressors.

Three main flaws with respect to health considerations in project EIAs

Harris et al. found in their study of project EIAs in the State of New South Wales in Australia that there were three main flaws with respect to health considerations (Harris et al., 2009):

- Little or no health data were used to inform the analysis;
- No consideration of causal pathways between determinants and health outcomes; and
- Little consideration of equity and distribution issues.

It is not clear if health data were directly used to inform the assessment

The Browse assessment reflected some of these concerns to some degree. It is not clear that health data were directly used to inform the analysis, and there is no quantitative assessment of health risks using the Department of Health's Health Risk Assessment methodology. However, it can be argued that since the LNG Precinct is located 50 km from the major population centre of Broome and at least 20 km from indigenous communities, and that the workforce is to be housed in a closed camp near the site, that health risks are actually very low due to the lack of proximity of the hazards to the receptor communities. Furthermore, while causal pathways are not always explicitly articulated in the Strategic Assessment Report, the

Low health risks to the receptor communities due to lack of proximity

determinants of health have clearly been understood and fairly comprehensively considered in the assessment process itself. Equity and distribution issues have been considered, particularly with respect to vulnerable Aboriginal communities.

Table 3: Impact assessment summary for human health

Socioeconomic Aspect (stressor)	Potential Impact	Mitigation Measures			Significance of Residual Impact
		State Government Measures	Proposed Environmental Condition (where relevant to socioeconomic factors)	Future proponent management plans	
Air emissions	Potential health impacts associated with air emissions, primarily potential increase in particulate matter.	Prepare and implement a closure and decommissioning strategy for the Browse LNG Precinct and related activities for the purpose of providing a timely and consistent approach to removal or retention of plant and infrastructure, rehabilitation of disturbed areas. Prepare an overarching Emergency Response Plan that addresses: ○ risk assessment of potential emergencies (including bushfires, introduction of foreign pests, flooding and spills); ○ emergency response equipment and training; ○ emergency response procedures; ○ responsibilities during emergency response; and ○ reporting, review and improvement as required.	No specific environmental condition proposed.	Development of Precinct Health, Emergency Services, Policing (State will be responsible for policing) and Security to ensure that health and emergency services required to service the BLNG Precinct do not impact on Broome services. Prepare and implement a CEMP to the satisfaction of the Western Australian Minister for Environment, which addresses the following: schedule of construction activities; details of the construction methods to be used; objectives and targets; environmental management environmental training and inductions; and environmental monitoring, contingencies and reporting, and stakeholder consultation. Prepare and implement an Air Quality Management plan. To incorporate buffer zone requirements. Prepare and implement a Traffic Management Plan. Prepare and implement Waste Management Plan	Very Low
Physical Presence	Potential impacts resulting from potential pollution incidents, creation of areas of standing water (increasing the likelihood of insect borne disease), waste management.				Very Low
Vehicle movements	Potential impacts from increase vehicle numbers, particularly in relation to increases in heavy vehicle during the construction period.				Very Low
Workforce	There is the potential impacts of the workforce potentially require use of existing facilities which may result in increased pressure on existing services [sic]. There is also the potential impact on the current population in terms of increased risks of STIs and drug and alcohol abuse, associated with the workforce.				Low
General population factors	Wider indirect impacts associated with general population increase that may be accelerated due to the presence of the BLNG Precinct, and the impacts associated with increased pressure on existing resources.				Low

Source: Western Australia, Department of State Development (2010:4–172). Reproduced with permission.

Sustainability assessment provides a valuable framework for meaningful consideration of health

This generally good result is largely due to the processes of the social, socioeconomic and Aboriginal impact assessments, which were undertaken for this proposal but are not generally common practice in Western Australian EIA due to the lack of statutory requirement. However, since these studies are essential to any sustainability assessment, it can be argued that sustainability assessment can provide a valuable framework within which the health impacts of project proposals can be meaningfully considered. In the Browse case, as for most project proposals in which rigorous analysis and prediction of social and health impacts is extremely difficult, the actual outcomes of the project are largely dependent upon monitoring and management programmes.

Involvement of public health experts

The involvement of health professionals in broader assessments is ad hoc

In their study of EIA in New South Wales, Harris et al. also identify the potential for health professionals to engage more directly in EIA processes (Harris et al., 2009). In the case of the Browse LNG precinct assessments process both local health service and Department of Health representatives were extensively involved, representing another strength of the process. However, due to the lack of clearly defined and agreed processes, the involvement of health professionals in HIA undertaken as part of a broader assessment process in Western Australia is ad hoc, and largely dependent upon the awareness and networks of the individuals involved. The proposed new Public Health Act and Memorandum of Understanding between the EPA and Department of Health would go a long way to providing the required level of formality in this respect.

Existing ties with other impact assessment processes

A recent special issue of "Impact Assessment and Project Appraisal" specifically examined the state-of-the-art of impact assessment processes, focusing on:

- EIA (Morgan, 2012),
- HIA (Harris-Roxas et al., 2012),
- policy assessment (Adelle & Weiland, 2012),
- SEA (Fundingsland Tetlow & Hanusch, 2012),
- SIA (Esteves, Franks& Vanclay, 2012), and
- sustainability assessment (Bond, Morrison-Saunders & Pope, 2012).

There are significant overlaps between levels of assessment

This issue, together with a reflection on the state-of-the-art of impact assessment in general provided in Bond, Morrison-Saunders and Pope (2012), make it clear that there are significant overlaps between levels of assessment, and that the existing range of different tools creates a somewhat confusing picture for both observers and some stakeholders alike.

Sustainable development became a central goal in the rhetoric of political parties

The move towards sustainability assessment can be traced back to the 1992 global conference on the environment and development that led to the globalization of "sustainable development" and the subsequent creation by governments around the world of sustainable development strategies. In

effect, this made sustainable development a central goal in the rhetoric of political parties, and could be argued to have led both to a realignment of traditional environmental advocacy tools like EIA and SEA (see, for example, Morrison-Saunders & Fischer, 2006). Some specific examples are indicated below.

EIA is the decision-tool most widely legislated for globally. Even within this one specific tool-type, the scope of the "environment" varies dramatically, although is usually focused on the bio-physical environment. This reflects the arguments for the need for EIA in the 1960s that led to the NEPA (1969) in the United States. The biophysical environment is sufficiently broad that it can still lead to expensive and time consuming studies, and accusations that particular environmental components are investigated in insufficient depth, or using tools which cannot accommodate inherent uncertainty. Observers anxious to see an increased scope for EIA encompassing sustainability goals rather than biophysical conservation have been quick to point out the lack of adequate coverage of, for example, socioeconomic or health impacts. For the latter, significant progress has been made in Europe under the auspices of UNECE.[3] This Commission recognized the need for EIA processes to consider transboundary effects many years ago, and produced the Convention on Environmental Impact Assessment in a Transboundary Context (UNECE, 1991) (known as the Espoo Convention) which entered into force in 1997. The parties to the Convention (those that have ratified) meet regularly and develop other agreements, such as the Protocol on Strategic Environmental Assessment (UNECE, 2003) (known as the Kiev Protocol) which entered into force in 2010. The discussions over new agreements include relevant NGOs and this allowed WHO to ensure that the Kiev Protocol uses the term *environment and health* throughout, thereby increasing the profile of the health component within SEA conducted in compliance with the Protocol.

Scope of the environment varies dramatically in EIA

UNECE Kiev Protocol on SEA increased the profile of health component within SEA

At the same time, WHO was active in the development of European Ministerial Conferences on Environment and Health the third one of which, taking place in London in 1999, led to the "London Declaration" which promised to "carry out environmental impact assessments fully covering impacts on human health and safety" (WHO Regional Office for Europe, 1999:4). In 2014 the European Commission (EC) adopted a proposal for an amendment to the EIA Directive (EC, 2012) which aims to add to the scope of the environment, adding the need for consideration of "human health" to the existing requirement to consider effects on the "population" (EC, 2014)[4].

WHO European Ministerial Conferences on Environment and Health supported the inclusion of health in EIA and SEA.

Consideration of human health and effects on population are to be included in the EIA Directive

[3] UNECE is covering 56 countries including the United States and Canada.

[4] The initial EIA Directive (85/337/EEC) of 1985 and its three amendments have been codified by Directive 2011/92/EU of 13 December 2011. Directive 2011/92/EU has been amended in 2014 by Directive 2014/52/EU; see http://ec.europa.eu/environment/eia/eia-legalcontext.htm.

EIA is increasing its scope also in regard to biodiversity, vulnerability and resilience

As such, there is evidence of EIA beginning to encompass human health within the overarching definition of the "environment". There is other evidence of a shift in EIA to encompass a greater scope, with the same proposal for an amended EIA Directive also including a need to examine effects on biodiversity and exposure, vulnerability and resilience to man-made and natural risks. Such increases in the scope of EIA may have implications for the future practice of sustainability assessment if it becomes to be seen as redundant. These changes reflect a shift in the stated purposes of assessment processes towards a definition of sustainability in which human health is a key consideration. In any case, the legal requirement to consider human health within the SEA Directive, and possibly within an amended EIA Directive, provides a much greater guarantee of inclusion of health in assessment processes than does a determinants-driven approach guided by the objectives and goals of a specific decision context, where the very nature of sustainable development leads to a reductionist approach (Bond & Morrison-Saunders, 2011) in which health determinants may be marginalized purely because of the need to ensure a sustainability framework is practicable.

Legal basis of EIA and SEA Directives provide a greater guarantee of inclusion of health

Outlook

There is a need to ensure that sufficient health expertise exists within EIA and SEA processes

Whether health is considered through a determinants-based approach within a form of sustainability assessment, or specifically as an "environmental" variable within SEA or EIA, there is a need to ensure that sufficient expertise exists to fully predict and understand the health consequences of proposed actions. Evidence has indicated that health and planning functions are often separated in modern societies, and this has the potential to bring with it unintended ignorance when considering proposals. In moving forward, health professionals need to work alongside environmental and planning professionals to ensure a thorough understanding of health implications is conveyed.

Sustainability assessment requires the consideration of the policy context

Sustainability assessment, as currently practiced, invariably requires the consideration of the existing policy context to set the boundaries of the study. This boundary needs to include the goals set out in National Environmental Health Action Plans (NEHAPs) to ensure that sustainability objectives and indicators encompass the recognized health issues.

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Health in SIA

By Lea den Broeder and Frank Vanclay

Summary

Social impact assessment (SIA) developed alongside EIA in the early 1970s as a mechanism to consider the social impacts of planned interventions. The early understanding tended to limit the practical application of SIA to the project level, usually within the context of regulatory frameworks, and primarily considered only the direct negative impacts. However, like other types of impact assessment, SIA has evolved over time and has diverged considerably from EIA. Nowadays, SIA has widened its scope to become a "philosophy about development and democracy". Ideally SIA considers the pathologies, goals, and processes of development. In this broad understanding, it now focuses on the management of all social issues, intending to bring about a more sustainable and equitable biophysical and human environment.

The SIA field defines "social" very broadly, as "anything that affects people and their communities". Thus, for example, all environmental impacts are also social impacts because people depend on the environment for their livelihoods as well as their physical and spiritual well-being. Social impact concepts include people's way of life, their culture, community, political systems, environment, health and well-being, personal and property rights, and their fears and aspirations.

Formerly seen as a regulatory tool required by regulatory agencies but resented by proponents, SIA, for a variety of reasons, is now increasingly being embraced by corporations and used as an internal process for managing social issues. Such a shift towards corporate acceptance, of course, does not guarantee that SIA will always be done properly, or that it is able to adequately influence company operations.

Several other shifts have been observed:

- *greater consideration of benefits;*
- *moving towards developing and implementing Social Impact Management Plans;*
- *communities themselves actively commissioning, or doing, their own SIA studies;*
- *SIA playing an important part in ensuring "free, prior and informed consent" and gaining a "social license to operate".*

Health issues have a central place in SIA. Many of the social impacts of projects could also be described as health impacts, and all health impacts would be regarded as social impacts in SIA. In SIA, health impacts are considered amongst a wide range of impacts on people and communities. SIA practitioners are supposed to look from an integrated perspective. Arguably, this means that the determinants of health should be addressed when SIA is carried out properly. Nevertheless, SIA guidelines do not typically require a detailed analysis of the origins of, or pathways to, specific health conditions. There is, however, a strong awareness of indirect effects and cumulative effects.

In actual practice, the SIA approach used highly depends on the type of policy, plan or project being considered, as well as on the legal and cultural context, on client requirements, and on the commitment of the individual practitioner or consultancy. The SIA case studies considered in this chapter usually discussed the broader determinants of health but did not necessarily recognize them as such. The pathways from social impacts to health, and the linkages between health and social impacts, were not explicitly part of the analysis. Overall, the input of health expertise into SIAs seemed to be lacking. However, given the close connections between the HIA and SIA approaches, more cooperation and cross-fertilization between these two types of impact assessment can be expected in the future.

Introduction to SIA

SIA developed in the early 1970s alongside EIA

SIA developed alongside EIA in the early 1970s as a mechanism to consider the social impacts of planned interventions (Burdge & Vanclay, 1995). However, the early understanding of SIA was narrowly conceived, tending to apply SIA only at the project level (rather than at the policy level), only considering a narrow selection of immediate direct impacts (rather than indirect and cumulative effects), with the role of SIA being limited to the predictive assessment of negative consequences within the context of a regulatory framework (Vanclay, 2006). This limited understanding of SIA pervaded and continues to dominate the legislation, policy, procedures and organizational cultures of the environmental management agencies of many countries as well as of many environmental consultancies.

In contrast, nowadays most SIA professionals consider that SIA is more than a technique or step; it is philosophy about development and democracy. As such, ideally it considers the pathologies of development (i.e. impacts), the goals of development (for example, poverty alleviation), and the processes of development (for example, participation, capacity building) (Vanclay, 2003, 2004). Thus, SIA should also be involved in assisting communities to determine their development priorities, as well as being a process for incorporating the social dimensions into development projects (Esteves & Vanclay, 2009; Esteves, Franks & Vanclay, 2012).

Definitions of SIA

The contemporary understanding is that SIA is about "the processes of managing the social issues associated with planned interventions" (Esteves, Franks & Vanclay, 2012:35), and is largely equivalent to what is often called "social performance" in the corporate world. An elaboration of that definition is:

> Social impact assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment (Vanclay, 2003:6).

Developments in SIA

Although SIA arguably applies to policies, plans and programs, the practice and thinking of SIA still tends to be at the project level because this is where the demand for SIA exists. A major change over time has been from SIA being seen only as a regulatory tool required by regulatory agencies and resented by proponents, to also being an internal corporate process of managing social issues actively embraced by leading corporations. This change has occurred for multiple reasons, including: the neoliberalist turn in notions about the role of governments; the growing acceptance by companies of the corporate social responsibility and sustainability agendas and their desire to be a "developer of choice"; the increasing expectations, activism and empowerment of communities; an increasing acceptance of the concept of "social licence to operate"; high profile litigation cases; as well as the fact that the SIA community has actively promoted the business case for doing SIA (Vanclay & Esteves, 2011; Vanclay, 2014).

Unfortunately, such a shift does not guarantee that SIA will always be done properly, have sufficient time and resources, or that the SIA process is able to adequately influence company operations (Kemp, 2011). In most settings, there remains many structural limitations affecting SIA, including the lack of training or accreditation of SIA practitioners, the lack of adequate peer review processes, and greenwashing by companies (Vanclay, 2004; Kemp, 2011; van der Ploeg & Vanclay, 2013). The level of funding and timing allocated to social issues continue to be inadequate.

Challenges for SIA

Alongside the increasing corporate acceptance of SIA is a shift towards greater consideration of benefit enhancement in SIA processes. Thus, SIA not only predicts harm and plays a role in developing mitigation strategies, it also advises on how project benefits might be enhanced through local procurement and other actions. Related to this is an increasing expectation that projects actively contribute to community development, not through unfocused philanthropic gestures but through strategic local social investments (Esteves & Vanclay, 2009; João, Vanclay & den Broeder, 2011).

Increasing corporate acceptance of SIA

In government, too, there is a shift away from the evaluation of SIAs in terms of the extent to which they have adequately predicted the likely social impacts (akin to an EIS) to evaluation of the extent to which there is a reasonable plan for the management of social impacts, in other words, a Social Impact Management Plan (SIMP) (Franks & Vanclay, 2013).

Shift in the understanding of SIA in governments

A further change is that communities themselves are actively commissioning their own SIA studies or seeking to do them themselves. This is especially the case in situations where communities are negotiating Impacts and Benefits Agreements (IBAs) with proponents (O'Faircheallaigh, 2011). SIA becomes a particularly important part of ensuring "free, prior and informed consent" (FPIC). While FPIC is an expectation – and in certain jurisdictions a requirement – of companies dealing with indigenous communities (Hanna & Vanclay, 2013), it is also being conceived as a philosophy applicable to all communities (Vanclay & Esteves, 2011).

SIA helps to ensure "free, prior and informed consent"

Whether proponent-directed or community-led, and whether for regulatory approval or company management, there is a set of activities that would typically be expected in a good practice SIA process (see Box 7).

Box 7: Activities to be undertaken in the course of doing an SIA

Overarching activities

- facilitating participatory processes and deliberative spaces to enable community discussions about desired futures, the acceptability of likely impacts and proposed benefits, and community input into the SIA process, consistent with the principle of FPIC;
- facilitating an agreement-making process between the affected communities and the developer leading to the drafting of an IBA that is mutually acceptable and compatible with FPIC;
- ensuring that the proponent has fully considered all impacts on human rights by either ensuring that human rights impacts are considered in the SIA, or that a separate human rights impact assessment will be conducted.
- ensuring that the proponent has fully considered all health impacts by either ensuring that impacts on health are considered in the SIA, or that a separate HIA will be conducted.
- ensuring that a grievance mechanism – consistent with Principle 30 in the United Nations Guiding Principles on Business and Human Rights (UN, 2011) – is established to ensure that affected people with complaints against the proponent have a mechanism by which their concerns can be heard and resolved.

Scoping activities

- gaining a thorough understanding of the communities likely to be affected by the planned intervention (i.e. profiling), including undertaking a thorough stakeholder analysis to understand the differing needs and interests of the various sections of those communities;
- identifying community needs and aspirations;
- scoping the key social issues associated with the planned intervention (the significant negative impacts as well as the opportunities for creating benefits);
- collecting baseline data to provide a benchmark to measure change over time

Assessment activities

- predicting the social changes that may result from the policy, program, plan or project;
- establishing the significance of the predicted changes, and determining how the various affected groups and communities will likely respond;
- examining other options, especially in terms of social issues;

Mitigation & enhancement, monitoring and adaptive management activities

- identifying ways of mitigating potential impacts and maximizing positive opportunities;
- developing a monitoring plan to monitor change over time;
- implementing an adaptive management process to address unanticipated changes;
- assisting the proponent in the drafting of a SIMP that operationalizes all benefits, mitigation measures, monitoring arrangements and governance arrangements that were agreed to in the IBA, as well as plans for dealing with any ongoing unanticipated issues as they arise;
- putting processes in place to enable proponents, government authorities and civil society stakeholders to implement arrangements implied in the SIMP and IBA and to develop their own respective management action plans and embed them in their own organizations, establish respective roles and responsibilities throughout the implementation of those action plans, and maintain an ongoing role in monitoring.

Source: developed further from Vanclay & Esteves (2011); Esteves, Franks & Vanclay (2012), Vanclay (2012).

SIA is now an ongoing process of adaptive management

The shift in SIA – from being a regulatory tool to being a corporate process or management system – has changed the language of SIA and the way it is done. SIA is no longer a relatively short-term technique to produce a statement of predicted social impacts, which may (or more likely may not) influence decision-making and project management, it is now an ongoing process of adaptive management.

While reporting to stakeholders is still needed at various intervals, the emphasis is not on producing a report of the once-off prediction of impacts to inform a go/no go decision (as is the case with EISs), instead the focus is on the ongoing processes of managing the social issues, engaging the relevant communities, identifying and mitigating negative impacts, enhancing positive benefits, and monitoring outcomes. An EIS-like report (statement of social impacts) might still be important for regulatory approval requirements, but in SIA the concern is more with ensuring that the social management (social performance) processes are in place.

In some ways, and for some companies at least, a "social licence to operate" has become just as important as the formal legal procedures. Thus, the key document is not the EIS-like statement of impacts, but the IBA the community develops with a proponent. Other key issues are the extent to which these agreements and the commitments they contain become embedded into corporate procedures and practices. Consequently, SIA has evolved considerably over time and has diverged considerably from EIA.

SIA helps in gaining a "social licence to operate"

The place of health in SIA

Health issues have a central place in SIA. Vanclay (2002), for example, considers death the most severe social impact that can befall an individual, and notes that the death of an individual also has major social impacts on many people in a family, household, and even in the society more generally. Furthermore, as some indication of the centrality of health issues in SIA, in Vanclay's (2002) comprehensive analysis of social impacts, the category of health and well-being impacts were listed first. It is clear that many of the social impacts of projects could also be described as health impacts, and most (if not all) health impacts would be regarded as social impacts in SIA.

Health is one of the central issues in SIA

The SIA field defines "social" very broadly as anything that affects people and their communities. Thus, for example, all environmental impacts are also social impacts because people depend on the environment (nature and landscape) for their livelihoods, physical and spiritual well-being, and because the preservation of biodiversity is socially valued (Slootweg, Vanclay & van Schooten, 2001). In general, social impacts are

> all social and cultural consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society... [including] changes to the norms, values, and beliefs of individuals that guide and rationalise their cognition of themselves and their society (Burdge and Vanclay, 1995:32).

More specifically, Vanclay (2002) identified the dimensions below, and outlined more than 88 social impact concepts (see Box 8).

Box 8: Dimensions of social impacts

- People's way of life — how they live, work, play, and interact with one another on a day-to-day basis;
- their culture — their shared beliefs, customs, values, and language or dialect;
- their community — its cohesion, stability, character, services, and facilities;
- their political systems — the extent to which people are able to participate in decisions that affect their lives, the level of democratization that is taking place, and the resources provided for this purpose;
- their environment — the quality of the air and water that people use; the availability and quality of the food they eat; the level of hazard or risk, dust, and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control of resources;
- their health and well-being — where "health" is understood in a manner similar to the WHO definition: "a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity";
- their personal and property rights [and human rights] — particularly whether people are economically affected or experience personal disadvantage which may include a violation of their civil liberties; and
- their fears and aspirations — their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and that of their children.

Source: Vanclay (2002:185–6)

Because health is for a large part socially defined (and influencing the social determinants of health is a major strategy to improve population health), it is reasonable to presume that in jurisdictions that require HIA but not SIA, the social issues would generally be included in the HIA. In jurisdictions where SIA is required but HIA is not, the health issues would typically be included in SIA. In contexts where both are required, a combined or integrated impact assessment would be undertaken. In contexts where neither are required by a regulator, whether they are done depends on the commitment of the proponent (and to some extent the extent of civil society pressure).

SIAs require a team with a broad suite of skills and expertise

HIA and SIA therefore are not mutually-exclusive concepts, but refer to the different orientations taken and to the different discourses or paradigms that are applied to consider an overlapping territory of concern. Because the interests of SIA are so broad, covering environmental and health influences that affect people, SIAs cannot be undertaken by only one person but require a team with a broad suite of skills and expertise. Expertise in HIA is necessarily part of that mix.

Human impact assessment

Human impact assessment aims to combine HIA and SIA

The conceptual overlap between HIA and SIA led to the development of "human impact assessment" in Finland in the 1990s (Kauppinen et al., 2002; Kauppinen & Nelimarkka, 2004; Kauppinen, 2011). Even though the idea of human impact assessment was considered attractive, the integration process posed a number of important challenges both in terms of combining different disciplines and concepts and combining different institutional and organizational arrangements, as well as in terms of resources and capacity (Rattle & Kwaitkowski, 2003). In practice today, these barriers have not yet been overcome (Kauppinen, 2011). Nelimarkka, Kaupinnen and Perttilä (2007) point out that within this integrated human impact assessment, health is most prominently addressed in relation to

environmental health risks and that the relations between the expected social consequences of a plan or project and their health impacts are typically not made explicit.

Other approaches to combine SIA and HIA have indicated a positive experience of integration. For example, in an assessment of the South East Queensland Regional Plan (Australia), SIA and HIA practitioners decided to cooperate before the start of the impact assessment process and merged their methods and tools, leading to a rich and informative assessment (Copeland & Young, 2006). In a similar study, a SIA of the Lower Hunter Regional Strategy (in New South Wales, Australia) primarily addressed health benefits (Wells et al., 2006).

Positive examples of combining SIA and HIA exist

The inclusion of health in SIA guidelines and standards

Guidelines and standards can play an important role in the implementation and operationalization of impact assessment processes including SIA. They provide a reference point against which the performance of impact assessment can be evaluated. There are different types of guidelines including generic guidelines, national or regional specific guidelines, international organization guidelines, sector guidelines, and corporate guidelines. Some impact assessment guidelines are focused specifically on social impacts, while others are generic but include social aspects. To gain an impression of the way health is included in these various guidelines and standards, we have selected an indicative example or two for each of these categories (see Table 4).

Table 4: Assessment of the status of health in some indicative social impact guidelines

SIA Guidelines or Standard (an indicative selection only)	Health mentioned	Occupational health mentioned separately	Broad definition of health applied	Interdisciplinarity or integration mentioned	Involvement of health experts required
Generic guidelines/standards					
IAIA International Principles for Social impact Assessment (2003)	+	-	+	+	0
National and regional guidelines/standards					
Guidelines for Social Impact Assessments for mining projects in Greenland (2009)	+	-	+	-	-
Issues and Recommendations for Social and Economic Impact Assessment in the Mackenzie Valley (2007)	+	-	+	+	-

SIA Guidelines or Standard (an indicative selection only)	Health mentioned	Occupational health mentioned separately	Broad definition of health applied	Interdisciplinarity or integration mentioned	Involvement of health experts required
International organization guidelines/standards					
World Bank Social Analysis Sourcebook (2003)	+	-	0	+	-
World Bank Social Analysis Guidelines in Natural Resource Management (2005)	0	-	-	+	-
World Bank Social Analysis in Transport Projects (2006)	+	-	+	-	-
IFC Performance Standards on Environmental and Social Sustainability (2012)	+	+	-	-	-
Sector guidelines/standards					
IPIECA Guide to SIA in the oil and gas industry (2004)	+	-	-	+	-
Corporate guidelines/standards					
A corporate toolbox published by one of the world's largest mining companies (2012)	+	+	+	+	+

Legend: + mentioned; 0 not mentioned but can be implied; – not mentioned and no implication that it is expected

International Principles for SIA = generic guideline

The International Principles for Social Impact Assessment (Vanclay, 2003) is a typical example of a *generic guideline*. The document describes a number of basic values and principles underpinning good practice in SIA. As such, it is a compass for practitioners and those who commission or review SIAs, rather than a toolbox or checklist. The International Principles include health as an important aspect of all social and environmental impacts to be assessed, and explicitly embraces the broad WHO definition of health. It does not, however, specifically mention the need to include health experts, although that can be implied. The need for interdisciplinarity is expressed, but in a generic way: since a broad range of different impacts are involved, SIA can only be carried out with teamwork.

National or regional guidelines translate generic guidelines in their specific context

National or regional guidelines are usually in place to translate generic principles into specific national or regional contexts, taking account of, for example, the specific characteristics of the local culture, economy and legal system. Examples of such guidelines are the Guidelines for Social Impact Assessments for Mining Projects in Greenland (Bureau of Minerals and Petroleum, 2009), and the Issues and 7 Recommendations for Social and Economic Impact Assessment in the Mackenzie Valley (Canada) (Mackenzie Valley Environmental Impact Review Board, 2007). Such guidelines focus on properly addressing the capacities, needs and problems of the respective

populations of those regions. The Greenland guideline provides a number of regional specificities that must be taken into account in any SIA carried out: the language of the population, the spread of the population in widely scattered, small communities, the most important economic sectors, both existing (fishing, hunting) and upcoming (tourism), and the current lack of experience with mining in the country. The Mackenzie Valley guideline pinpoints some issues that are imminent to economic developments in this specific region, for example, the influx of workers from elsewhere, changes in the landscape and economy. Several potential negative impacts are mentioned including changes in employment (for example shift work), changes of lifestyle (such as alcohol abuse) and social disruption (for example increase in domestic violence). But the guideline also highlights possible positive impacts: jobs, income, and better infrastructure. Attention is paid to the special needs of indigenous peoples. The history of the region, including the history of land use and land rights, is clearly integrated in the text of the guideline. The guideline sets the scene for the SIA process in a detailed way, tailored to the regional context. Many of the issues mentioned are health-relevant, and health is clearly present in both guidelines. However, health expertise is not explicitly part of the requirements for impact assessments in either guideline, although the Mackenzie Valley guidelines mentioned the need for an interdisciplinary assessment team – which arguably includes professionals from the health field.

Health expertise is not usually a stated requirement within the guidelines

In standards from *international organizations*, health is usually part of the social issues addressed, at least in the ones we examined. The World Bank Social Analysis Sourcebook (2003) is a description of good practice, but is explicitly not a standard that must be followed. This implies it is mainly published as an inspirational document. Health is mentioned several times, but mostly either in the framework of health services, or as one of the assets of a given population. Health impacts in a broader sense are not addressed in the sourcebook. Nor does the sourcebook recommend that health expertise be secured in the interdisciplinary assessment team.

The broader concept of health is not reflected in guidelines of international organizations

A similar image appears regarding the World Bank Social Analysis Guidelines in Natural Resource Management (World Bank, Social Development Department, 2005). The word “health” appears four times in this document — of which one is related to the well-being of crops, land, and waters, not of humans. Although different types of health-relevant impacts are mentioned, the link to health is not made explicit. Much attention is paid to the distributional aspects of the social impacts of projects. Vulnerable groups are to be identified and attention is paid to gender issues. Human rights are present in the Guidelines, albeit in a relatively generic way. In several places, the Guidelines mention that human rights approaches are increasingly part of the impact assessment process, and that they should be considered. However, this is not elaborated in a practical way. Like the sourcebook discussed above, these

guidelines are presented as a source of knowledge, but not as a legal document.

A third World Bank guide, World Bank Social Analysis in Transport Projects (World Bank, Social Development Department, 2006) defines health in a broader way. A range of health aspects and health determinants that may be impacted are addressed. For example, health impacts of air pollution (respiratory disorders), increased physical inactivity and related chronic diseases as a result of the increased use of motorized transport, and mental health problems caused by the stress of urban sprawl and congestion are mentioned, as well as infectious diseases, occupational health risks and injuries caused by traffic accidents. Moreover, the guide highlights how transport projects can enhance health, for example, by improving access to health services and facilitating the distribution of vaccines needed for immunization schemes. The guide also argues that transport infrastructure is an essential prerequisite for health monitoring by providing access for health monitoring staff to sparsely populated areas. Interestingly, occupational health is ignored. The guide gives no clue as to the composition of assessment teams, and therefore it is not clear whether health expertise is expected to be included. Like the other two World Bank guides, this guide refers to the social scientist as the core professional, while other disciplines are not specifically identified.

IFC standards include standards on Community Health, Safety and Security (PS4)

Many other international bodies also have an interest in SIA, notably the International Finance Corporation (IFC), especially with respect to their Performance Standards on Environmental and Social Sustainability (IFC, 2012). These authoritative performance standards include, amongst others, a performance standard on Community Health, Safety, and Security (PS4) focusing on a few health aspects but ignoring others. Accidents and injuries, emergency preparedness, exposure to hazardous substances, and exposure to infectious diseases are addressed. However, mental health and noncommunicable diseases are not discussed, nor are significant health determinants such as housing, food, healthy lifestyles, health care and other facilities, and social cohesion. Such wider health determinants are partly addressed in other IFC standards, which means that health determinants are to some extent mainstreamed throughout the IFC performance standards. Various health issues are also mentioned in other standards. In PS3, Resource Efficiency and Pollution Prevention, environmental health risks are considered. In PS2, Labour and Working Conditions, some occupational health and safety issues are discussed. However, in none of these IFC standards is there an explicit statement requiring the interdisciplinarity of the team or the specific involvement of health experts.

Health impacts are mentioned within the closer context of the specific sector

Several industry bodies have developed sector-specific guidelines for SIA at an international level. One example is the Guide to Social Impact Assessment in the Oil and Gas Industry prepared by the International Petroleum Industry Environmental Conservation Association (IPIECA) in 2004. This guide is meant to instruct managers in the oil and gas industry

about the basics of SIA. The health issues mentioned in this guide are infectious diseases, occupational health, and health care. Health is also present in the list of baseline data that, according to this guide, need to be collected within the SIA framework. What exact health data should be gathered is not specified. The participation of health experts in the assessment team is not mentioned; although the guide recommends an interdisciplinary team and gives examples of the kinds of expertise that need to be included: social scientists, communications specialists, and development specialists. This guide notes that several types of impact assessment exist (including HIA), and that they are partly overlapping and complementary to each other. It gives an overview of these forms of impact assessment and recommends integration. IPIECA has also published a separate guidance document on HIA, in which the same recommendation regarding integrative approaches is repeated (Krieger & Baldge, 2005). That guide is more substantial and contains considerable detail on processes and methods, for example, several epidemiological tools for calculating health outcomes are presented. Also, the range of potential impacts included in the HIA guide is larger – including issues such as cultural health practices, psychosocial health and accidents and injuries, but leaving out noncommunicable diseases.

Some companies have developed their own SIA guidance/toolbox. A prominent example of such corporate guidelines was a toolbox published by one of the world's largest mining companies which was given the Corporate Initiative Award by the International Association for Impact Assessment (IAIA) in 2012 for the way the toolbox helps incorporate impact assessment into the ongoing management of all its operations. This guideline or toolbox is by far the most extensive of all guidance documents discussed in this chapter and discusses a wide range of issues. The guide consists of seven "steps", each of which contains a number of "tools". One of the tools concerns community health and provides a framework for HIA. A comprehensive overview of health issues is presented in that tool, and a broad model of health is applied. Health issues are explicitly mainstreamed throughout the whole toolbox. For example, health data are part of the baseline data to be gathered during the profiling stage, the health impacts of corporate social investment activities are to be considered, and changes in health status are a specific category in the list of potential issues and impacts that need to be assessed. The relations between social and health impacts are repeatedly highlighted. Interdisciplinarity is part of the working routines described in the guidance. Several times, the guide mentions the requirement for the consultation of health experts in the assessment procedure.

By far the most extensive of all guidance documents discussed

The inclusion of health in actual SIA studies

While health issues are addressed in the guidance documents discussed above, the approach used in actual SIA practice depends greatly on the type of policy, plan or project being considered, as well as on the situational

Interdisciplinarity is an essential part of the assessment

context (legal, cultural etc.) of the region where it takes place, and on the commitment of the individual practitioner, SIA consulting company and proponent. The inclusion of health and health determinants varies in SIA practice. Three indicative examples are discussed (see Table 5), drawn from publicly-available SIA reports of projects in the Russian Federation, South Africa and Australia.

Table 5: Assessment of the status of health in some indicative SIA reports

Examples of SIA reports	Broad model of health applied	Causal pathways and linkages between social and health impacts identified	Distribution of health impacts discussed	Occupational health issues considered	Health expertise included
Sakhalin II phase 2 project (Russian Federation)	0	0	-	-	0
Camden-Mbewu power line (South Africa)	0	-	0	-	-
Outer harbour development, Port Hedland (Australia)	-	-	0	-	+

Legend: + mentioned; 0 not mentioned but can be implied; – not mentioned and no implication that it is expected

Generic plan containing commitments regarding environmental, health and social issues

Case Study 1: Sakhalin II Phase 2 Project, Russian Federation

The Sakhalin II Phase 2 Project (2005) concerns the development of an integrated oil and gas project on Sakhalin Island on the eastern coast of the Russian Federation, close to Japan. Sakhalin Island has a population of around 550 000 people and is characterized by a harsh climate. The project developer is a consortium comprising of three international acting companies. The project entails installation of two offshore platforms, pipeline linkages, an onshore processing facility, a new liquid natural gas plant, and an oil and gas export terminal. A health and social impact assessment was undertaken in 2003 and updated with an environmental and social impact assessment in 2005. The outcomes led to the publication of a Health, Safety, Environmental and Social Action Plan, which has been modified several times, with the most recent version being 2010. This plan is very generic and contains a list of commitments made regarding the management of environmental, health and social issues. There is a distinct separation between the environmental, social and health impact assessments.

Focusing on how the HIA and SIA components relate to each other, in the SIA section the main issues are:

- community disruption
- impacts on livelihoods and employment

- loss of land
- relocation of homes, small companies, and farms
- impacts on recreation.

Vulnerable population groups are identified, such as elderly people, people with low income, and reindeer herders and other indigenous groups. The health impacts reported in the HIA section includes issues such as:

- infectious diseases
- lifestyle concerns (alcohol, drugs)
- accidents and injuries
- health care facilities.

The crossover between the two fields is not discussed, except for the linkage between changes in socioeconomic circumstances and lifestyle factors. The health of vulnerable groups is not examined. The report does not provide information on the composition of the assessment teams.

Case Study 2: Camden-Mbewu transmission line, South Africa

A SIA was carried out on the proposed Camden-Mbewu transmission line in the provinces of Mpumalanga and KwaZulu Natal, South Africa (Aucamp, 2011). The project involved the construction of a 765 kV transmission line over a distance of approximately 360 km. The affected area comprised forest land, sugar cane and other farms, livestock farms, open fields and residential areas. The aim of the report was to compare several alternatives, and the effects on different stakeholder groups. Social impacts were defined in a generic way and thus included health (consistent with the understanding presented towards the beginning of this chapter). The assessment team looked into the probability of the impacts, the number of people that would be affected and the duration of the impact, as well as cumulative impacts. The distribution of impacts across different population groups was not explicitly addressed. However, the report clearly reveals that some municipalities have a greater chance to experience impacts. Certain vulnerable groups were highlighted, such as women with little or no income. However, no relation was made between vulnerability and health.

Social impacts included health impacts

Health impacts were mentioned, but only in relation to HIV/STD transmission, and asthma and allergies. Nevertheless, the report describes many issues that are highly health relevant, such as:

- increased alcohol consumption
- psychosocial stress
- family and community disruption
- increased transport pressure
- changes in employment opportunities
- hygiene issues regarding waste
- criminal behaviour.

Many health issues were indirectly covered through the description of health relevant issues but without description of their health impacts

The health impacts of these are not discussed in the report, but could potentially include:

- high blood pressure
- liver cirrhosis
- increased STDs
- unwanted pregnancies
- abortions
- increased alcohol-related violence
- accidents and injuries.

The concept of health as such was not discussed in the report and no definition of "health" was given. The report does not say whether health expertise was used in the assessment process. Based on the absence of health baseline data in the report and the fact that the references cited did not include references from the health field, it is not likely that this was the case.

Case Study 3: Port Hedland outer harbour development, Australia

A third case example is the SIA carried out on a proposed outer harbour development at Port Hedland in Western Australia (2011). The project assessed the social impacts associated with

- constructing and developing infrastructure on land and off-shore to accommodate the handling;
- transport and export of iron ore, including rail connections, a wharf and jetty, road infrastructure; and
- the construction of various buildings.

Assessment of social impacts defined 'key factors and 'relevant factors'

The issues considered were grouped into a number of "key factors" and a number of "relevant factors". Key factors were community services, indigenous heritage, public amenity, and visual amenity. Public health was discussed as one of the "relevant factors", alongside with European heritage, recreation, commercial fisheries, and climate change.

Potential positive impacts mentioned in the report included:

- taxes paid to the national, state and local governments;
- increased employment opportunities in the company and in associated services;
- training for indigenous peoples (and targets for indigenous employment);
- a stated commitment to support local businesses (small and medium sized enterprises); and
- a community investment program.

Positive and negative impacts were described but relations between these factors were not discussed

However, the extent of investment in these activities was not stated. Potential negative impacts that were discussed primarily relate to:

- the influx of a large workforce and associated increased cost of living for the local population
- barriers in accessing services including health services
- antisocial behaviour
- drug and alcohol abuse.

While the connection between the expected social impacts and pressure on health care facilities is expressed, relations between the factors mentioned and other aspects of health are not adequately discussed. However, the effect of increased transport on safety is briefly mentioned.

Attention is given to the impacts of the project on local Aboriginal populations. Health is addressed in two ways: in relation to environmental factors (noise and dust, mosquito-borne diseases, and waste) and in relation to health care infrastructure. Mental and spiritual health, noncommunicable diseases and related lifestyle factors are not addressed. The report does not provide information on what health expertise was present in the assessment team. However, the nature of the results presented regarding environmental factors suggests that environmental health specialists were involved.

Discussion: the place of health in SIA

In SIA, health impacts are considered amongst a range of impacts on people and communities. SIA practitioners are supposed to look at the impacts on people and communities from an integrated and/or holistic perspective. In principle, this means that the wider determinants of health should be addressed when SIA is properly carried out. All nine SIA guidelines in our selection made mention of health as an aspect to be addressed, and most expressed in some way that health is a broad concept. Some do this extensively and refer to broad health determinants (for example Mackenzie Valley Environmental Impact Review Board, 2007; and the aforementioned corporate toolbox, 2012) or to the official WHO definition of health, while in other guidelines this is done implicitly. Although health is broadly defined, the approach within SIA typically does not encourage a detailed analysis of the origins of, or pathways to, specific health conditions through other impacts in the way that is pertinent to stand-alone HIA processes, although there is a strong awareness of indirect effects and cumulative effects. The above-mentioned corporate guideline is an exception here, as it includes a HIA process that requires consideration to be given to the specific relations of broader health determinants of the expected impacts.

SIA should look at the impacts on people and communities from an integrated and/or holistic perspective and therefore should include health

SIA guidelines do not encourage an analysis of the origins or pathways to specific health conditions, but there is a strong awareness of indirect and cumulative effects

The approach to health varied in the actual cases of SIA practice we considered. The broader determinants of health were visible in all reports, but were not necessarily recognized as such. The pathways from social impacts to health, and the links between health and social impacts were not explicitly part of the analysis. In none of the cases was the impact of health on social factors part of the analysis.

Pathways from social to health impacts and linkages between them were not part of the SIA reports reviewed

With SIA usually taking place in the context of economic and spatial development projects, perhaps it might be expected that occupational health should be a concern as it is a key component of the health of those employed by the project. However, occupational health tends not to be a component of SIAs, and only two of the guidelines we considered explicitly included an occupational health focus. However, the health of employees is addressed in most guidelines within the broader framework of the health

Occupational health tends not to be a component of SIA

impacts of a project. For example, the World Bank guidance on Social Analysis in Transport Projects discusses HIV infection of workers in the project both as a risk for the workers and as a risk of transmission to the local community. In none of the practice cases we considered was occupational health an extensive part of the considerations. It may well be that the inclusion of this topic was deemed unnecessary in guidance documents since it is normally part of other regulations governing worker protection that are applicable to the companies operating in this field.

Guidelines reflect the interdisciplinarity of SIA but only one recommends involving health experts

The interdisciplinarity of SIA is reflected in the nine guidelines we studied. In different ways, most guidelines we reviewed made mention of the need for involvement of different types of expertise. However, out of the nine guidelines studied, only the corporate guideline explicitly recommended involving health experts in the process. Some guidelines recommended integration of impact assessment processes, and one guideline (again the corporate one) puts this into practice by taking an integrated approach itself. The reports we studied typically do not reveal what health expertise was used. However, our impression is that the input of health expertise was lacking. In addition to being carried out as a separate exercise, SIA is often part of a wider assessment covering environmental, social and health issues. In such integrated assessments, health is not necessarily combined with "social"; it is sometimes addressed as a separate issue. Although most SIA guidelines make mention of health as a broad concept, the conception of health in integrated assessment guidelines and practice is sometimes quite narrow.

Reports do not reveal what health expertise was used

Sometimes only a narrow conception of health can be found

Conclusion and future prospects

SIA and HIA complement each other very well. Both are necessary, but greater integration would lead to more complete assessments and a clearer understanding of the links and causal relations between the different impacts. However, there is a noticeable gap between theory and practice, with contemporary assessments not always being adequate.

Greater integration of SIA and HIA would lead to more complete assessments

There are a number of recent developments that are likely to affect the SIA field in the near future. These developments create opportunities for developing the linkages between SIA and HIA. The most important of these developments is the rise of human rights as an issue of concern, especially with the adoption of the United Nations Guiding Principles on Business and Human Rights (UN, 2011; also see Kemp & Vanclay, 2013). Although "health" is not mentioned in the United Nations Guiding Principles, it can be implied because the minimum standards for human rights observance include the Universal Declaration of Human Rights which mentions health in Article 25 (UN, 1948). A right to health and access to health care can thus be inferred. The emerging human rights agenda is establishing a range of human rights in areas not previously widely considered as rights. The rights agenda is also gaining a strong legal foothold and thus will significantly influence impact assessment into the future.

The United Nations Guiding Principles on Business and Human Rights creates an opportunity for better integration of SIA and HIA

Somewhat related to human rights is the concept of FPIC. This concept gained prominence through its mention in the United Nations Declaration on the Rights of Indigenous Peoples (UN, 2007) and in the International Labour Organization Convention 169 (ILO, 1989). Although these agreements strictly only apply to indigenous peoples, there is a view that FPIC is an appropriate philosophy which should be extended to all communities (Vanclay & Esteves, 2011; Hanna & Vanclay, 2013; Vanclay, 2014). At its extreme interpretation (albeit challenged), FPIC implies that a project should not proceed unless:

'Free, prior and informed consent' is a fundamental principle in SIA and HIA

- all local communities affected by the project have given their consent;
- any such consent be given freely (without duress);
- the time provided to enable them to consider the project was sufficiently in advance of any works starting;
- all aspects of the project were fully disclosed; and
- the local people were able to comprehend what the implications of the project would be on them.

Impact assessment (addressing all the environmental, health and social consequences on people) becomes of fundamental importance in ensuring a common understanding of the likely impacts of a project for the community. The concept of "informed consent" is well recognized as the ethical principle underpinning the provision of medical treatment and social research (Vanclay, Baines & Taylor, 2013). It seems only appropriate that it should also be extended (as FPIC) to be a fundamental principle in HIA and SIA.

Impact assessment is of fundamental importance in ensuring a common understanding of project impacts

Proponents of projects that do proceed are increasingly developing IBAs with local peoples. These quasi-legal agreements specify the scope of the project, what the likely impacts will be, what mitigation measures will be enacted and what benefits the company promises to provide to the affected communities. The agreements enable a platform for discussions about benefits, mitigation measures, compensation measures, jobs for local people, local procurement arrangements, local enterprise development opportunities, and company contributions to local economic and social development. A strength of SIA is in considering, not only the risks, but also the enhancement opportunities. In HIA, both positive and negative impacts have always been assessed – and this developing SIA approach is highly relevant for HIA practitioners and researchers to connect with.

Impacts and Benefits Agreements serve as platform for discussion between communities and proponents

A strength of SIA and HIA is to consider not only risks but also to enhance opportunities

SIA has changed considerably over time, and has departed considerably from the EIA model it once tried to emulate. Nevertheless, in its revised format as a process-based model used by companies to achieve a social licence to operate, to meet human rights expectations, to demonstrate that they have undertaken negotiations on the basis of the principle of FPIC, it is clear that SIA has a strong and secure future. The business case for SIA is clearly established.

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Health impact assessment

By Monica O'Mullane and Gabriel Guliš

Summary

HIA is a multidisciplinary approach and instrument that draws from divergent disciplines such as public health, the social and political sciences, environmental health, urban planning, epidemiology and statistics. Its remit is broad in scope — to protect and promote population health by analysing and estimating potential health impacts of projects, programmes and policies and informing decision-makers about those potential impacts.

The Gothenburg consensus paper of 1999 (Diwan et al., 2000; WHO European Centre for Health Policy, 1999) proposed the most commonly cited definition of HIA: "HIA is a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population". This definition was expanded by Quigley et al. in 2006 with an additional sentence at the conclusion of the abovementioned definition: "HIA identifies appropriate actions to manage those effects."

HIA seeks to assess the impact of actions (mostly from non-health sectors) on population health using a comprehensive model of health which includes social and environmental determinants. Also, a core goal of HIA is to address not only the extent of the impacts, but their distribution across subpopulations, i.e., inequalities in health. The proofing of projects, programs and policies for their health impacts is not a new phenomenon. However, the systematic assessment proposed by HIA is unique.

The application of HIA has expanded over the past two decades in many countries worldwide. At the heart of HIA, there are both qualitative and quantitative methods of impact assessment (for example, to evaluate risks and benefits related to defined exposures) and demography (for example, to define age and gender specific characteristics of populations of interest).

To date, the practice of HIA — as some other impact assessments — often focuses on actions which influence environmental determinants, due to two key reasons. The first is that to some extent HIA grew out of EIA. The second is the availability of data and knowledge. There is copious information on physical environmental factors (air, waste, water, chemicals, noise, vibration and so on) and their causal relations with health. Concerning social environmental factors (education, employment, and so on), there is also a growing body of information and knowledge. So far, it remains challenging to integrate all this knowledge successfully into HIA.

Origins of HIA

HIA is a multidisciplinary approach that draws from diverse disciplines such as public health, the social and political sciences, environmental health, urban planning, epidemiology and statistics. Its remit is broad in scope — to protect and promote population health by analysing and estimating potential health impacts of projects, programmes and policies and by informing decision-makers about those potential impacts.

HIA is a multi-disciplinary approach

HIA seeks to assess the impact of policies, programmes and projects on population health. From a public health perspective, this is based on the recognition that population health is not merely a product of health sector

HIA seeks to assess the impact of policies, programmes and projects on population health

activities, but to a large extent determined by living conditions and other societal and economic factors, and is therefore often best influenced by policies and actions beyond the health sector. This approach of "health in all policies" is solidly rooted in the public health sciences and the knowledge of health, governance and public policies (Sihto, Ollila & Koivusalo, 2006:4–6). Correspondingly, the focus of HIA is to address these impacts on population health that occur through activities from the health- and non-health sectors alike.

Definition of HIA

The Gothenburg consensus paper, developed by HIA practitioners, proposed the most commonly cited definition of HIA (WHO European Centre for Health Policy, 1999:4):

> HIA is a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.

Expanded definition includes the action orientated focus of HIA

This definition was expanded by Quigley et al. (2006:1) to include the action-orientation focus of HIA (Birley, 2011), thereby promoting the core purpose of why we have HIA in the first place, with an additional sentence at the conclusion of the abovementioned definition: "...HIA identifies appropriate actions to manage those effects."

HIA is conducted on different levels and through different approaches

The Gothenburg consensus paper also defines the values governing HIA: democracy, equity, sustainable development, and ethical use of evidence. First discussions on the need of assessing health impacts within the context of major development projects (Morris & Novak, 1976), HIA has by now spread around the world (Harris-Roxas and Harris, 2011) and is promoted by institutions such as WHO and, to some extent, by IFC and industry associations.

HIA is strongly promoted to be placed on policy agendas

Many countries have been influenced by WHO work and strategy on HIA, which promotes the use of HIA to inform the development of the policy agendas of its Member States. Additionally, following the Gothenburg Consensus paper there has been much development worldwide on HIA practice (Harris-Roxas et al., 2012) with many of the influences and policy drivers originating from within country and regional boundaries. While proofing projects, programmes and policies for their health impacts is not a new idea, introduced solely by the creation of HIA (Krieger et al., 2003), the systematic nature of assessment proposed by HIA is novel.

Libreville Declaration names HIA as one out of 10 priorities to reduce environmental threats to health

For many countries, the institutionalization of EIA has paved the path, both for incorporating public health considerations into EIA, and for the development of HIA. For example, shortly after the 1999 Gothenburg meeting, another meeting was convened in Arusha, Tanzania (WHO, 2001) to discuss HIA capacity-building in African countries. It was decided that HIA practice would be progressed within the existing structures of environmental regulations. In 2008 in Libreville (Gabon), the First Inter-ministerial Conference on Health and Environment in Africa took place. The aim of this conference was to gain commitment from African governments for reducing environmental threats to health; HIA is named as one of the 10

priorities of the Libreville Declaration (Viliani & Clarke, 2013; WHO Regional Office for Africa, 2009).

HIA rationale

Although the institutionalization of environmental assessments across the globe is a noteworthy success, these assessments are often lacking consideration of human health impacts (Bhatia & Wernham, 2008), which HIA can consider adequately.

Mandated versus voluntary HIA

HIAs are conducted at different levels and through different approaches: from local, regional, national and subnational level to international level; from a voluntary approach to a mandatory/regulatory approach. Among the voluntary HIAs, one can further distinguish between who undertakes the initiative (this might be the project or plan proponent, the community or other groups). However, all HIAs (mandatory or voluntary) can be seen as aiming to support decision-making.

Even though most HIAs are conducted on a voluntary basis (Harris-Roxas et al. 2012; Winkler et al., 2013) (for example, in most European countries as well as in the United States), some countries have developed different types of legislation and requirements at national levels, either through specific regulations on HIA or through integrating HIA into existing environmental and social assessment frameworks (for example, Brazil, Lao People's Democratic Republic, Lithuania, Republic of Korea, Slovakia, Thailand and Viet Nam). Alternatively, legislation and requirements are in some places only in existence at subnational levels of states or regions (for example, Australia, Canada, New Zealand and Spain). On the international level, organizations like WHO as well as regional development banks such as the Asian Development Bank, the EU or international associations like the International Council on Minerals and Metals (ICMM) and IPIECA promote the use of HIA. Furthermore, the IFC Performance Standards with a special standard on community health, safety and security and related guidance document (IFC, 2009) are widely recognized and used in impact assessments of projects financed by the IFC, thus having considerable influence on large development projects (Vohra, 2007; Winkler et al., 2013).

HIA mostly deals with environmental determinants

HIAs, as some other impact assessments, often deal with environmental determinants, in particular with agents of the physical environment. This is mainly caused by two reasons: the first is that HIA grew up, and in fact, out of EIA to some extent; and the second is that there is copious information on physical environmental factors (air, waste, water, chemicals, vibration, noise, etc.) and their causal relations with health. There is also a wealth of data and plausible mechanisms on how aspects of the social environment (for example, education, employment) influence health but quantitative models on how changing attributes of the social environment results in changes to different health outcomes are rarely available, and less reliable. Thus, it remains challenging to integrate all this knowledge successfully into HIA.

Health promotion as another perspective of HIA practitioners

With a focus on social determinants and equity, HIA shares considerable grounds with health promotion, which is mostly based on an empowerment oriented approach (Harris-Roxas & Harris, 2011). This perspective positions HIA as resource for an "empowered citizen" to request for the conduct of HIA if there is some suspicion that an investment could harm health. Even in this case, such a suspicion is often related to the physical environment. This approach is often considered as a form of advocacy, but the judgement about the value of such an exercise will vary: while some may consider it devoid of scientific value, others will recognize it as form of "citizen science" (Irwin, 1995). In any case, voluntary HIAs are often launched to advocate certain values (for example, in favour of development; in favour of community common goods); and all HIAs ultimately advocate good coverage of health in the decision-making process.

All HIAs advocate "good coverage of health" in the decision making process

A core goal of HIA is to address inequalities in health

As an approach and instrument to better inform public policy of the foreseen and unforeseen consequences of projects, programmes and policies, and the fact that a comprehensive and social model of health underpins HIA, a core goal of HIA is to address inequalities in health. Inequalities are a result of the negative or positive effects of the determinants of health upon various population groups, within countries or across countries and regions. The research of Wilkinson and Marmot (2003) in particular, has highlighted the impact of the physical and social environment on public health, thus leading to a better understanding of the importance of social determinants of health. HIA adopts such a broad, comprehensive model of health as its basis, differing from EIA for instance, which views health primarily from a biophysical perspective. In this respect, the Declaration on Social Determinants of Health as a global political commitment needs to be mentioned. The declaration calls for action to address the social determinants of health, in order to reduce health inequalities and to improve health equity. The declaration calls for "social and health equity through action on social determinants of health and well-being by a comprehensive intersectoral approach" (WHO, 2011:1). HIA was thus identified as an important instrument to allow intersectoral work and to improve public health by addressing the socioeconomic determinants of health, so as to promote policies and practices that improve health equity and reduce health inequalities (WHO, 2011:5). HIA is increasingly cited and promoted as an appropriate and relevant approach that can inform public policy-making processes by placing health considerations onto the policy agendas (O'Mullane, 2013).

HIA identified as an important instrument to allow inter-sectoral work

Methods and practice

The defining focus of HIA, of course, is human health. WHO defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). Beyond this well known definition, there are different notions of health, represented in a range of health measurement scales and indices. For HIA, the scope of health concepts includes medical conditions such as noncommunicable and communicable diseases, injuries, and mental illness, but also well-being. An overview from a HIA perspective is given by Birley (2011:36–45), for example, to include the role of vector-, water- and foodborne diseases, sexually transmitted diseases, respiratory infections, nutritional disorders (under-, overnutrition), and unintentional as well as intentional injuries.

The scope of health includes well-being, and medical conditions, such as non-communicable and communicable diseases, injuries and mental illness.

Policies, plans, and programmes, in many cases, do not impact on human health directly. Instead, they change health determinants, that is to say, they affect various factors which — in a multitude of pathways — influence our health (see also Fig. 1, p. 4). All health determinants are relevant for HIA, and their broad range can be roughly categorized into physical and socioeconomic environment; personal behaviour; health and medical care. In many cases, health determinants interact or overlap. What used to be regarded as "personal" behavioural decisions (for example, related to nutrition, physical activity, or social interaction) is increasingly recognized as being co-determined by environmental conditions, including housing, employment status or level, transport system, social infrastructure, and access to public open spaces.

Personal behavioural decisions are recognized as being co-determined by environmental conditions

Given the multitude of reported associations between potential determinants and human health, it is a challenge to adequately differentiate between causality and mere association. Kemm (2012) discusses both quantitative and qualitative methods of assessment to this effect. Quantitative approaches are typically based on epidemiologic data and methods, including causality criteria, dose-response curves, health metrics, and modelling (Kemm, 2012:25–37). Qualitative assessment includes efforts to adequately include lay and civic knowledge, thus enriching the HIA process, and possibly contributing to consensual policy decisions. In order to promote the necessary extended participation a range of tools including questionnaires, interviews, focus groups, public meetings, and working groups are used. In spite of the emphasis on the crucial role of participation, its practice seems to be less than systematic (Kemm, 2012:38–50).

It is a challenge to adequately differentiate between causality and "mere" association

HIA uses a range of methods in different phases of the conduct. In the table below we identify the most important methods according to the wellaccepted stages of the HIA process.

Values governing HIA

Table 6. Stages of HIA within the process of decision-making and implementation

Stage	HIA methods used
Screening stage	Similar to screening in medical or epidemiological terminology, one is looking at proposals to identify signs of potential hazards which can, in certain times, lead to harm to the health status of a population. The result of the screening is a decision whether to conduct an HIA or not. Usually literature searching, documentation analysis, database searching and interview processes are involved as methods to complete screening.
Scoping stage	Scoping aims to define how the HIA should be conducted, basically the terms of reference of HIA, and establish a steering group. Project management methodology is therefore the key method to be employed in this stage; in addition, various communication skills and methods, networking techniques and negotiating methods are used.
Appraisal stage	The appraisal of potential risks and benefits is "at the heart of HIA" and employs a variety of public health methods. Both qualitative and quantitative methods are used to identify exposures and health outcomes related to the proposal, measure strengths of their relation, assess their role in overall impact on health. Risk assessment techniques are often used to estimate risks related to defined exposures. Demographic methods are important to define age and gender specific characteristics of populations of interest.
Reporting/ Decision-making stage	In order to support decision-making, a report needs to be written and submitted to decision-makers with recommendations how to deal with the project or policy subjected to assessment. Consequently the most relevant method in this stage is writing skills and communication methods. Presentation skills are also very important as the recommendation can be transferred to decision-maker in format of a workshop or seminar. The timing of the report submission and presentation of the findings is important at this stage, and it can vary, depending on whether the HIA is retrospective, concurrent or prospective.
Monitoring and evaluation stage	In this stage, HIA aims to monitor the real impact of the proposal implementation. Demographic, vital statistic, epidemiological follow or survey methods are most often used to conduct monitoring. Evaluation can focus on different aspects of the HIA, and mainly it can evaluate the process of conducting the HIA, the impact the HIA has on the decision-making process, and finally outcome evaluation assesses changes in health status and health determinants after implementation of the decision.
Stakeholder engagement	Finally, most guidelines consider stakeholder engagement a component so important to be considered a stage in itself that last as long as the HIA process; while others do not single out this as an independent stage but mention that stakeholder participation should be encouraged at each stage.

HIA is sometimes seen as an "abstract" idea, lacking structured practice. A closer look, however, reveals a different picture. A project concerning the effectiveness of HIA, mapped its use in Europe until 2005. The project analysed the situation in 21 national entities in Europe. Owing to the large number of HIAs found in England and in the Netherlands, only a sample of HIAs was included from these countries. At subnational level, only one single reference region and reference locality per nation were selected. The number of documented HIAs for the countries included in the research was 470. Given the limitations, the actual number of HIAs conducted in Europe by that time was deemed to be probably much higher (Blau et al., 2007) – and has continued growing since then.

The number of HIAs conducted is not known; in 2007, one single publication documented 470 HIAs

Beyond this quantitative perspective, it is also instructive to consider the breadth of topics covered and the range of countries involved. Irrespective of their legal or administrative basis, existing HIAs refer to a broad

spectrum of different topics. A report by Fehr[5] to the HIA section of the European Public Health Association (EUPHA) selected four HIA reference sources which are easily accessible book publications in English, published after 2000 in Europe, and containing contributions of multiple authors. Aiming to illustrate HIA development in countries & regions, the documentation focuses on case studies and country reports from the following sources: Kemm, Parry and Palmer (2004); Wismar et al. (2007); O'Mullane (2013), and Kemm (2012).

Irrespective of their legal or administrative basis, HIAs refer to a broad spectrum of different topics

In the report 16 EU countries are represented: Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, , Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom (with England, Northern Ireland, Scotland and Wales analysed separately) (Table 7). In addition, some case studies involved several countries, for example, on agricultural and food policies, and on transportation. Continents and countries outside Europe represented in the report are: Africa, Australia, Canada, Ghana, India, Japan, New Zealand, Republic of Korea, Thailand and the United States.

A recent report enlists HIAs from 18 European countries

Table 7. HIA in EU countries

Country	***Chapter title*, and selected topics of interest (Authors)**
Denmark	*Contributing to a public health culture: health and economic impacts of a health promotion campaign in Denmark* (Gulis, 2007)
	HIA in Denmark, incl. (i) HIA in the Healthy Cities project and (ii) HIA of noise action plan in Copenhagen (Bistrup, Bronnum-Hansen, 2012)
	Health impact assessment implementation and public health policy systems in Denmark [and Slovakia], incl. (i) the municipality of Nordborg as a pioneer of HIA in the country, (ii) Horsens municipality initiating an informal group of municipalities who use HIA or work on its development (Gulis & Kollárová, 2013)
Finland	*A participative social impact assessment at the local level: supporting the land-use planning process in Finland*, incl. a case study on Korteniitty in the city of Jyväskylä (Nelimarkka, Kauppinen, Perttilä, 2007)
France	*HIA in France* (Simos & Prisse, 2012)
Germany	*HIA: the German perspective* (Fehr, Mekel & Welteke, 2004)
	The controversial Berlin Brandenburg International Airport: time- and resource-consuming efforts concerning health within planning approval in Germany (Welteke et al., 2007)
	HIA in Germany, incl. (i) HIA projects in Germany, (ii) Examples of HIA in Germany, European Employment Strategy, Demographic change in the Ruhr area, Joint regional land utilization plan Ruhr, Housing subsidy program NRW, Waste site extension, Highway project: circular road, Drinking-water privatization, Non-smoker protection, Living on a contaminated site, Traffic noise and children (Fehr & Mekel, 2012)
	The Ruhr metropolitan area in Germany: rapid health impact assessment of novel spatial planning: The planning officials regarded this rapid HIA as one out of 115 statements received, representing 14 out of a total of 590 suggestions, and provided explicit answers to all suggestions (Fehr, 2013)
Hungary	*Removing hurdles towards HIA: pilot project of an obstacle-free environment in Hungary* (Eke, 2007)

[5] Fehr R (in progress). HIA development in countries & regions - Report for EUPHA section HIA.

Country (continued)	*Chapter title*, and selected topics of interest (Authors) (continued)
Ireland	*Traffic and transport at the local level: capacity building for HIA in Ireland* (Lavin & Metcalfe, 2007a)
	HIA in the island of Ireland, incl. a case study: HIA on a community allotment / garden proposal (Metcalfe, Higgins, Lavin,2012)
	The impact of health impact assessment on the policy-making process in Ireland: Northern Ireland and the Republic of Ireland, incl. (i) HIA of the Service Framework for Cardiovascular Health and Well-being (CVSFW): facing the common misconception that health policies donot require HIA because of their nature of improving health, this HIA was undertaken to strengthen the implementation of the CVSFW in relation to tackling health inequalities, (ii) HIAs on 3 elements of the Limerick city regeneration process: physical regeneration; early school leaving, absenteeism, and truancy; integrated youth space(s) (Higgins, Metcalfe & Cotter, 2013)
Italy	*Ecosystem revitalization: community empowerment through HIA in Tuscany, Italy*: case study of creating a wet zone (Siliquini, Nante & Ricciardi, 2007)
	HIA in Italy, incl. HIA and waste management in the Province of Florence (Bianchi & Cori, 2012)
Lithuania	*A local-level HIA in the transport sector: following legal requirements in Lithuania*: Reconstruction of the southern railroads in Klaipeda National Seaport (Stricka, Zurlyte & Grabauskas, 2007)
Netherlands	*HIA and national policy in the Netherlands*, incl. a table of HIAs and Health Impact Screening results, produced or coordinated by the Netherlands School of Public Health (25 reports on 23 subjects) (Roscam Abbing, 2004)
	HIA in Schiphol Airport (Staatsen et al., 2004)
	HIA and intersectoral policy in urban planning: a checklist for health impact screening in Leiden, the Netherlands (van Reeuwijk-Werkhorst & van Herten, 2007)
	Development of HIA in the Netherlands, incl. a case study: Expansion of Amsterdam Schiphol airport. RIVM carried out a monitoring programme during the period 2002-2008 to keep a close watch on the ongoing impacts of the expansion on health; the results confirmed most health impacts as predicted in the HIA studies of the 1990s (den Broeder & Staatsen, 2012)
	From instrument towards a health in all policies programme for intersectoral decision support: health impact assessment in The Netherlands,, incl. Study 1: Health in all Polices in Dutch municipalities, and Study 2: Coaching municipalities in setting-up intersectoral policies (Bekker et al., 2013)
Poland	*"Buzz" around electromagnetic fields: a lengthy environmental HIA in Poland* (Bubak & Nowak, 2007)
Slovakia	*Health impact assessment implementation and public health policy systems in [Denmark and] Slovakia* incl. (i) HIA PHASE and HIA-NMAC projects, (ii) Multisectoral expert group, and (iii) HIA licensing system (Gulis & Kollárová, 2013)
Slovenia	*Using intersectoral networks towards the adoption of the Common Agricultural Policy: an HIA on the Food and Nutrition Action Plan in Slovenia* (Blenkus & Scagnetti, 2007)
Spain	*A private sector HIA initiative: a smoke-free workplace policy in Spain* (Barroso, 2007)
	HIA in Spain (Aldosoro, Artundo & Rivadeneyra, 2012)
	Implementing and institutionalizing health impact assessment in Spain: challenges and opportunities, incl. (i) HIA initiatives in Spain, with synopsis of 15 case studies in 6 regions, and (ii) synopsis of policy regulations that provide a framework for HIA institutionalization in Spain (Martín-Olmedo, 2013)
Sweden	*HIA at the local level in Sweden* (Berensson, 2004)
	HIA speeding up the decision-making process: the reconstruction of route 73 in Sweden (Knutsson & Linell, 2007)
Switzerland	*Moving towards the development of an HIA methodology: the effects of air pollution in Ticino, Switzerland* (von Bremen, 2007)

Country (continued)	***Chapter title*, and selected topics of interest (Authors) (continued)**
Switzerland (continued)	*HIA in Switzerland*, incl. (i) Situation in Swiss cantons: Legislation for HIA in Geneva; Attempts to embed HIA in Ticino; Agenda 21 and HIA in Jura, and (ii) Swiss HIA platform aiming to pool and enhance knowledge by sharing experience (Simos & Cantoreggi, 2012)
United Kingdom (England)	*Health impact assessment and its role in shaping government policy-making: the use of HIA at national policy level in England*: (i) Project-level HIA is now widely undertaken in England on housing, regeneration, waste, energy, and transport projects, (ii) Impact Assessment process in England: Examples of health and well-being impacts considered but often seen as social welfare and quality of life issues in IAs: Crime reduction, alcohol, terrorism, apprenticeships, formal and informal learning, climate change, housing/regeneration, fire service, environmental protection, aviation, public transport, dangerous goods, road networks, driver licensing (Vohra, Amo-Danso & Ball, 2013)
	The HIA of crime prevention, incl. (i) Target Hardening programme in Liverpool, (ii) Reducing Burglary Initiative, a national crime prevention policy (Hirschfield, 2004)
	Expanding the number of places for medical student training in England: an assessment of the impacts (Mathers & Parry, 2004)
	HIA and the National Alcohol Strategy for England (Kemm, 2004)
	The Finningley Airport: a case study, referring to Doncaster, South Yorkshire (Aziz, Radford & McCabe, 2004)
	HIA and urban regeneration: the Ferrier estate, England, located in Greenwich, London (Barnes, 2004)
	HIA and policy development in London: using HIA as a tool to integrate health considerations into strategy (Bowen, 2004)
	Using HIA in local government, referring to North East England (Milner, 2004)
	A large-scale urban development HIA: focusing on vulnerable groups in London, England: King's Cross construction projects (6 projects, > 20 years) (Collins & Taylor, 2007)
(Northern Ireland)	*A city council's air quality action plan: building capacity for HIA in Northern Ireland* (Lavin & Metcalfe, 2007b:2)
	HIA in the island of Ireland, incl. a case study: HIA on a community allotment / garden proposal (Metcalfe, Higgins, Lavin,2012)
	The impact of health impact assessment on the policy-making process in Ireland: Northern Ireland and the Republic of Ireland, incl. (i) HIA of the Service Framework for Cardiovascular Health and Well-being (CVSFW): facing the common misconception that health policies donot require HIA because of their nature of improving health, this HIA was undertaken to strengthen the implementation of the CVSFW in relation to tackling health inequalities, (ii) HIAs on 3 elements of the Limerick city regeneration process: physical regeneration; early school leaving, absenteeism, and truancy; integrated youth space(s) (Higgins, Metcalfe & Cotter, 2013)
(Scotland)	*HIA in Scotland*, incl. Scottish Needs Assessment Programme HIA pilots (Douglas & Muirie, 2004)
	HIA in Scotland, incl. the Scottish HIA Network (SHIAN) (Douglas & Higgins, 2012)
	Integrating health into impact assessments in Scotland, incl. Strategic environmental assessment (SEA) and Equality impact assessment (Douglas, Palmer & Higgins, 2013)
(Wales)	*The experience of HIA in Wales*, incl. case studies on (i) "Objective 1 Programme", i.e. economic regeneration, and (ii) the National Skills and Employment Action Plan (Breeze, 2004)
	Citizen involvement in a local HIA: informing decisions on the future of a landfill site in Wales (Elliott, Golby & Williams, 2007)
	Devolution, evolution, and expectation: HIA in Wales, incl. the Wales HIA Support Unit (WHIASU) (Elliott et al., 2012)

Source: compiled from Kemm, Parry and Palmer (2004); Wismar et al. (2007); O'Mullane (2013), Kemm (2012).

The collection of HIAs could easily be extended, especially by including earlier publications (for example, the report on the Göteborg workshop of 1999), publications from outside Europe; in other languages; single-author book publications; journal publications; etc. Convenient access to HIA reports as well as to HIA-related information at large is provided by HIA gateways and websites in the following box.

Box 9. Key information sources on HIA

- the HIA gateway – www.apho.org.uk/default.aspx?QN=P_HIA – reports, tools, related references, causal diagrams are enclosed. Links to other HIA websites included;
- general WHO website on HIA – www.who.int/topics/health_impact_assessment/en/ and www.who.int/hia/en/ – this site contains general description of HIA, reports and experience with use of HIA as well as useful links;
- IAIA health section blog: http://healthimpactassessment.blogspot.com;
- a toolkit for cities – www.euro.who.int/en/health-topics/environment-and-health/urban-health/activities/health-impact-assessment – this toolkit contains a detailed description what is HIA, a short brochure for politicians on why is HIA needed, a training manual for HIA including a screening tool developing table and reports of two case studies from testing the toolkit in a municipality in Slovakia and in Italy;
- Environmental health and HIA – www.enhis.org/object_class/enhis_healthimpactassessment.html – this website contains a tool to conduct risk assessment on environmental health issues including selection of indicators;
- the Welsh HIA Support Unit has been set up very soon and became a leader of HIA work in Wales (www.wales.nhs.uk/sites3/home.cfm?orgid=522);
- Australia, New South Wales HIA project www.hiaconnect.edu.au/nsw_hia_project.htm and www.hiaconnect.edu.au/;
- (Asian-Pacific) HIA information system of the Republic of Korea at http://hia.kihasa.re.kr/eng/index.jsp.; and
- Spanish HIA information system (in Spanish): http://www.creis.es/.

And there are many other smaller but important HIA resources available on the web. Most of them can be accessed via the HIA gateway (see above link).

Existing ties with other forms of impact assessments

When amalgamating HIA with other impact assessments representing similar value systems, integration may be smooth and feasible

Integrating health with impact assessments representing different foci may dilute the health dimension

There is potential for HIA to harmonize with other impact assessments, or for public health experts to be part of an integrated impact assessment. This issue, to integrate or not to integrate, has been a subject of some discussion and debate within the impact assessment community (Fehr & Gulis, 2012). On the one hand, if amalgamating HIA with other impact assessments, especially those with similar value systems such as Equality Impact Assessment, integration would be smoother and more feasible than those with different value systems, such as Regulatory Impact Assessment of the United Kingdom (Douglas, Palmer & Higgins, 2013). On the other hand, integrating health with other impact assessments foci such as economic, environmental, regulatory, social, and poverty may dilute the health dimension within the issues assessed in the impact assessment framework.

In the following we focus on HIA ties with EIA and SEA as these are regulated internationally.

HIA ties with EIA and what HIA can add to EIA

HIA is analogous with EIA in the sense that they share similar methodological steps. Although the institutionalization of environmental assessments across the globe is a noteworthy success, these assessments are often lacking adequate consideration of human health impacts (Bhatia and Wernham, 2008) which HIA brings to the fore.

While usually EIAs do consider health impacts of project or plans, this is rarely done explicitly or with input from public health experts. Furthermore, there is often a purely toxicological and illness-focused conceptualization of health and an emphasis on mitigating harmful risks, as opposed to also considering opportunities whereby health could be promoted and benefits of plans could be increased (WHO Regional Office for Europe, 1979). Hence there seems to be a need in EIA to take a more systematic view and use a more inclusive model of health (Hilding-Rydevik et al., 2005). As stated by Harris and Spickett (2010) EIA not only often misses cumulative and synergistic mechanisms, but it also rarely addresses social issues. In addition even though public participation is a given in the EIA process, practice shows often problems with it (Morgan, 2012).

HIA can support meaningful public participation and build common ground between multiple interests

As described above one of the HIA roots lies in community development and empowerment, hence HIA could help with meaningful public participation in integrated impact assessment, as HIA has the potential to engage polarized stakeholders and build common ground between community groups, local and central government, industry and other interests (Wernham, 2012). In addition to the health influences often analysed by an EIA and described in the EIS, HIA can add further information, as for example the baseline prevalence of relevant air pollution or water pollution related diseases, and identify vulnerable population locations (for example schools) relevant to sources (for example truck traffic, operations equipment). More examples can be found in Table 8 below.

HIA can add further information, for example baseline prevalences and vulnerable population locations

Table 8. Information HIA can add to an EIA

Health influence (often part of EIS)	Information added by HIA
Air – criteria pollutants	• Baseline prevalence of relevant diseases, • Local concerns • Impact pathways, susceptibility analysis, cumulative factors
Water – metals, organics, and microbial pollution	• Baseline prevalence of relevant diseases • Local concerns/ traditional environmental knowledge • Often discussion of potential impacts: what discharges are expected, what health effects do they cause, what are the pathways through which they might contact people? • Impact pathways, diet/subsistence practices, cumulative factors. • Sometimes: incorporating health risk assessment (HRA) approach

Health influence (often part of EIS) (continued)	Information added by HIA (continued)
Noise	• Baseline prevalence of relevant diseases • Local concerns/traditional environmental knowledge • Identify vulnerable populations (e. g. schools), locations relevant to sources (truck traffic, operations equipment) • Mitigations: sound walls and housing modifications, truck routes, hours of operation.
Demographic change – for example, influx of non-resident workers	• Potential impact pathways: ▪ Strain on services ▪ Social change: violence, crime • Infectious disease
Economy – revenues	• Service needs – education, water/sanitation, public safety, clinics/ hospitals, emergency medical services
Economy – costs	• Change in demands/length of hospital stays hospitals, emergency services, police, fire

Source: adapted from Wernham (2012)

HIA ties with SEA and what HIA can add to SEA

While EIA applies to single projects at local level, the SEA applies to PPP. Generally SEA is not as detailed as an EIA of a local project, instead taking account of broader regional and global issues (Mindell & Joffe, 2003; Byrne, 2006).

Given HIA's emphasis on upstream strategic planning and assessment of policies as well as projects and programmes, HIA is considered to have more commonalities with SEA than EIA (Mahoney, 2009).

The importance of health integration into SEA was recognized by the Ministries of Environment and Ministries of Health of WHO European Region in Budapest 2004 and Parma 2010

In addition consultation with health experts in SEA is also legally required for example by the UNECE Protocol on SEA to the Convention on EIA on a transboundary context (UNECE, 2003, Art. 9) and the importance of health integration into SEA was also recognized by the ministries of environment and ministries of health of the WHO European Region by adopting the declarations of the European Ministerial Conferences on Environment and Health of Budapest 2004 and Parma 2010 (WHO Regional Office for Europe, 2004, 2010).

Concerning integration of health into SEA, similar problems as with health in EIA persist

Based on these considerations, one could assume that health is more meaningfully integrated in SEA practice than in EIA. However, research shows that similar problems as with health in EIA persist and within SEA mainly biophysical determinants of health are considered and only rarely the wider spectrum of health determinants (Nowacki, Martuzzi & Fischer, 2010).

A further integration of health into SEA or complementing SEA with HIA could provide important additional information similar as described above for EIA in Table 8. For example within urban planning HIA could identify

vulnerable population locations (such as schools) and assess health benefits from green space and physical activities.

The way forward

HIA, just like the other forms of impact assessment, went through important developments. By now, it has achieved high recognition at least in the research field, and is established in all continents. However, information on HIA current practice and on the effectiveness of different ways of implementation of HIA is somewhat limited. To enhance practice, mutual information and standardized tool exchange with other impact assessment professionals within a country and across countries would definitely increase the use of HIA and strengthen the value and power of impact assessment in general.

HIA is established in all continents, yet there is a lack on information on how HIA is doing in practice

Exchange with other impact assessment professionals would increase the use of HIA

The ways in which HIA is implemented vary a lot across the globe, and there is a lack of knowledge regarding which methods work best. More comparative research is needed to address this question and identify the best method of implementation in different specified political and cultural contexts. Clear assets of HIA, however, are its richness and diversities; thus there seems to be room for improving HIA practice by more careful consideration of its different purposes.

HIA implementation varies across the globe. There is a lack of knowledge on which methods work best

Also, the rapidly expanding practice of HIA requires a collegial reflection on the underlying values and ethical issues. Several of them are firmly established, captured by the commitment of HIA to the "ethical use of evidence", for example, health equity, environmental justice, intergenerational justice and others. However, other questions invite more careful attention. One example is the question of how the legitimacy of HIA practice may be affected by conflict of interest, whereby the proponents of certain developments are also undertaking or commissioning the assessments. In line with a strong tradition of open and constructive debate within the HIA discipline, it is important that these questions continue to be addressed and that consensus is built amongst practitioners and all interested parties. This will ensure HIA maintains and further expands its role in policy-making.

Reflection on underlying values and ethical issues of HIA is further required

In any case, it is not too early to identify a set of recommendations for integrating HIA with public policy processes on various administrative levels (O'Mullane, 2013:207–8). For example, transnational and cross-sectoral partnerships should continue to flourish; and HIA must continue to be promoted and used in the international arena. On the national level, government ministries should establish and resource either internal HIA support units or external HIA support agencies, and secure training and education in HIA and associated approaches. Local government and health authority structures should have the necessary infrastructure for HIA implementation. A key element is high-level political and policy support. All partners with an interest in the development of HIA must be involved in the development of research, educational, and training endeavours to promote intersectoral collaboration and enhance co-ownership for HIA.

Recommendation for integrating HIA with public policy processes are needed

Ministries should establish/support HIA support agencies and training in HIA

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Enhancing health in impact assessments

It is the aim of this publication to promote discussion on health and impact assessments. For this purpose, a range of impact assessments was selected. In the preceding chapters, the specific origins and dynamics of these assessments have been outlined; how health issues are covered has been analysed; and some perspectives on future developments have been given.

General observations

Impact assessment has become a reference conceptual framework for decision-making

All different types of impact assessments share a common rationale: societies, especially in situations of change and crisis, need prudence and foresight. Securing and improving societal welfare and well-being requires pro-active approaches, involving cross-sectoral action at all administrative levels. Impact assessment is one of the key instruments to this end and has been shown to contribute effectively to foresight efforts. However, the potential may not have been exploited in full and there seems to be room for improvement.

Significant overlaps between types of impact assessment

Recently, a special issue of the journal Impact Assessment and Project Appraisal examined the state-of-the-art of impact assessments (IAPA, 2012), focusing on policy assessment, sustainability assessment, SIA, SEA, HIA, and EIA. The analysis showed significant overlaps between the different types of (impact) assessment, creating a picture which — due to the overlaps and potential inconsistencies — may not easily be understood by observers or stakeholders.

It is beyond the remit of this publication to analyse in detail where the impact assessment field is moving. Nevertheless, a focused view on health and impact assessments requires awareness of essential trends and perspectives in the field. For an adequate consideration of health in impact assessments, the following essential elements need to be included in the assessment (extended after Harris et al., 2009):

- explicit analysis of health-related issues;
- comprehensive consideration of health determinants including physical and social environment, personal behaviour, and health care system;
- causal pathways from health determinants to health outcomes, including interactions;
- distribution of health impacts across various subgroups within an affected population (health equity); and
- utilization of health data to inform the analysis and possibly quantify health impacts.

Impact assessments are evolving concepts

The principles, theory and practice of different forms of impact assessment, and their full or partial inclusion or exclusion of human health differ widely. The interpretation of impact assessments, even where these are based on legal regulations, changes over time. Generally, impact assessments are evolving concepts. From a health perspective, this fact introduces

Human health seems to be widely accepted as a crucial component of 'overall impact'

significant opportunities towards improved integration of health in various forms of impact assessments. The basic attitude of impact assessors towards health tends to be positive: human health seems to be widely accepted as a crucial component of the *overall impact*, and the integration of health is expected to be in line with stakeholders' and the public's expectations.

Conclusions

The previous chapters offer important insights into whether and how health is considered in different types of impact assessment, what are the strengths and weaknesses, and what opportunities exist for stronger, more health-friendly impact assessment. We discuss these points, addressing the four questions posed in the introduction.

Question 1: How can the various assessments contribute to promoting and protecting human health?

Health as a topic is not foreign to any of the impact assessments considered

Health as a topic is *not foreign* to any of the impact assessments considered here. At least in terms of concepts, health and even more so the determinants of health fall within the range of interest for all of these impact assessments. In EIA, the focus is on issues of environmental health, but there is a recent tendency to develop a broader perspective (Faith-Ell, Kalle & Lund-Iversen, 2014). In SEA, there is a similar situation, but apparently further advanced towards a broader coverage (Fischer, 2014). In SIA, health has been identified as one central topic (den Broeder & Vanclay, 2014). In sustainability assessment, a broad range of health determinants are seen as falling into its remit (Bond & Pope, 2014). HIA, obviously, is fully devoted to human health (O'Mullane & Guliš, 2014).

In current practice there is limited coverage of health – practice has to be brought closer to aspirations

Thus, the aspirations of all these impact assessments seem to evolve in the direction of a more comprehensive inclusion of human health. In practice, however, there is still limited coverage. Therefore, from a health perspective, a good step for all impact assessments is to bring practice closer to aspirations.

The contributions of the various impact assessments to protecting and promoting human health would benefit greatly from:

- consistent use of a clear conceptualization of health, including the physical, mental, and social dimension;
- access to reliable health data and information, including on proximate as well as distant health determinants;
- involvement of health experts from early stages, contributing substantive conceptual knowledge (health, determinants, interactions, vulnerabilities, etc.) as well as on methodological issues (epidemiology, risk assessment, burden of disease, etc.) and experience; and
- awareness by other impact assessors as well as decision-makers on the interconnections of policies and projects with health.

It should be noted that in many cases policies and projects do not impact on health directly but through chain of events beginning upstream in the causal web of health determinants. The health impacts may then become manifest at some distance (in space and/or time) from the initial action and effectively become externalities – a foresight failure. Adequate consideration of human health, therefore, calls for integration of *upstream* analyses (as provided largely by experts from various fields outside health) with more *downstream* analyses involving specific health expertise.

Adequate consideration of human health calls for integration of upstream with downstream analyses

Based on emerging evidence in SEA, the improvement in the consideration of health may be measurable, albeit moderate (Fischer, 2014). Furthermore, as mentioned in the sustainability assessment chapter (Bond & Pope, 2014), although planners largely appreciate that the areas in which a plan focuses are determinants of health, they are rarely of the opinion that they can have much influence on these determinants and finally on health. Impact assessors should therefore be encouraged to continue their efforts to better integrate health.

With most impact assessments constantly evolving over time, it is useful to evaluate emerging trends with respect to health. One important development is the rise of *human rights* as an issue of concern. The human rights agenda is gaining a strong legal foothold and thus may come to dominate impact assessment. The minimum standards for human rights observance include the Universal Declaration of Human Rights which mentions health; a right to health can thus be inferred (den Broeder & Vanclay, 2014).

Another relevant concept is the *FPIC*. Originating in the context of impacts on indigenous peoples, there is a view that such consent is an appropriate philosophy which should be extended to all communities. Impact assessment becomes of fundamental importance in ensuring a common understanding of the likely impacts of a project on a community (den Broeder & Vanclay, 2014).

Obviously, the coverage of health in an impact assessment does not guarantee the improved consideration of health in decision-making, let alone improvements in the *real* world. Securing adequate consideration of the findings of impact assessments in actual decision-making, to the extent possible, serves the promotion and protection of human health as well as the broader (environmental, social, sustainability-related) aims of impact assessment.

Securing adequate consideration of impact assessment on actual decision-making serves the promotion and protection of health

Question 2: How can further integration of health support other forms of impact assessments and what experiences can be shared across the various impact assessment types?

As indicated earlier, health is an issue which is widely accepted as a cornerstone of societal well-being as well as prerequisite for participation in education, work, and multiple other aspects of social life. For this reason, comprehensive and meaningful inclusion of health in different forms of

impact assessments can strengthen their relevance for interested communities and thus their acceptability and legitimacy.

Impact assessments that include explicitly human health can be expected to meet with greater levels of acceptance

Although the basic idea of impact assessments is in line with a modern understanding of good governance, there are reservations, including evocations of *red tape* and risks of *impact assessment fatigue*. Where human health is explicitly included into the scope of impact assessments in a transparent and evidence-based way, such impact assessments can be expected to meet with greater levels of acceptance in all quarters, from policy-makers and stakeholders to the public at large.

Better coverage of health reflects proper adjustments to shifting frameworks and expectations

A case study from West Australia (Bond & Pope, 2014) highlights how both HIA and sustainability assessment have continued (independently) in practice despite lack of statutory backing or even clear policy support, largely due to the efforts of private proponents who realize that a broad sustainability approach is essential if they are to obtain and maintain a social licence to operate. Explicit coverage of human health is indeed increasingly demanded by the regulatory frameworks governing several impact assessments, especially in relation to EIA and SEA. Also for sustainability assessment, the interpretation is shifting towards a definition of sustainability in which human health is a key consideration. Better coverage of health thus reflects adjustments to shifting frameworks and expectations within different types of impact assessments.

Along this line, it should be noted that performance standards and guidance notes as issued by the World Bank Group's IFC now require the private sector to prepare impact assessments that include community health, safety and security. For example, IFC Performance Standard No. 4 applies to infrastructure and equipment design and safety; hazardous materials management and safety; ecosystem services; community exposure to disease; and emergency preparedness and response (IFC, 2012). However, such regulatory basis still needs to be implemented in actual practice.

In some countries, proponents of projects are increasingly developing quasi-legal IBAs with local people, specifying the scope of the project, what the likely impacts will be, what mitigation measures will be enacted, and what benefits the company promises to provide to the affected communities. Here, the adequate coverage of health issues is likely to increase the acceptability of such agreements (den Broeder & Vanclay, 2014).

Question 3: What forms of, and what levels of, integration seem advisable?

As indicated earlier, the existing range of impact assessments is not likely to be perceived by observers as completely rational or convincing. Reasons to consider integration of existing impact assessments include the following:

- there is obvious topical overlap between impact assessments;
- with current trends towards enlarging the scope of topics covered by specific impact assessments, this overlap can be expected to increase;

- such topical overlap, at the very least, implies a certain waste of efforts and an example of societal inefficiency;
- for a given action being assessed, contradictory statements may be made by different forms of impact assessment, which is bound to undermine their credibility with policy-makers, stakeholders, and the public at large; and
- even short of such contradictions, the existence of multiple impact assessments conducted in parallel may wear out the goodwill and patience of all parties involved, contributing to impact assessment *fatigue*.

The existence of multiple impact assessments conducted in parallel may contribute to impact assessment fatigue

The health sector, by crafting and promoting HIA, can be regarded as contributing to fragmentation among impact assessments. Given the considerable value of impact assessments from a societal perspective, this is a risk not to be taken lightly. Without doubt, health is widely agreed upon as a fundamental value in society. But impact assessments are *means to an end*, not an end in themselves. So, the need of, and justification for separate HIA cannot automatically be derived from the universally accepted significance of health; rather, it should be demonstrated whether and how HIA offers a comparative advantage in terms of societal benefits.

Justification for separate HIA cannot automatically be derived from the universally accepted significance of health

From this perspective, considering HIA as an element of the public health strategies toolkit or embarking on the concrete assessment of a specific policy or project requires careful consideration. If the objectives pursued via a separate HIA can successfully be integrated into other impact assessments, then typically such integration would be the way to go. Even where full integration of health seems out of reach, the benefits of a separate HIA need to be weighed carefully against the potential damage, for example, concerning fragmentation and overall credibility. It may be challenging to weigh the short-term benefits such as an undiluted statement on health impacts of some current proposal against the long-term benefits of building strong coalitions for health across sectors and stakeholders.

Benefits of separate HIA need to be weighed carefully against potential damage

Incidentally, reflections on how to optimize health coverage in impact assessments might contribute to identify new and useful ways of impact assessment integration.

The impact assessment practiced by the EC is to some extent *integrated* across economic, social, and environmental issues. The EC practice demonstrates that it can be challenging to successfully integrate human health.

It can be challenging to successfully integrate human health

As a positive experience of integration, in an assessment of the South East Queensland Regional Plan (Copeland & Young, 2006), SIA and HIA practitioners decided to cooperate before starting the impact assessment process and merged their methods and tools. In Scotland, an integrated assessment for health, equality and human rights was created recently. It was concluded that integrating assessments with similar value systems

would be smoother and more feasible than those with different value systems, such as Regulatory Impact Assessment.

With the reasons in favour of integration being obvious, actors and observers are swift to also point out drawbacks:

- Integrating several or even many different foci such as economic, environmental, regulatory, social, and health may dilute the emphasis of each specific dimension
- Power differences between various contributors may undermine the idea of *integrated impact assessment*; some aspects, for example, economic development or highway construction, tend to dominate and others tend to be subordinated
- Due to institutional barriers, there are difficulties in achieving cooperation across sectors and responsible bodies.

Power differences between various contributors may undermine the idea of integrated impact assessment

Even where integration is envisaged, actual integration can still be challenging. As discussed in the sustainability assessment chapter (Bond & Pope, 2014), planners and statutory bodies consulted felt they had insufficient expertise to fully appreciate the health implications of the decision they were making but still engagement with health professionals varied widely.

Actual integration can be challenging

Concerning integration, an important aspect refers to technical, human and financial resources. It is not always clear, however, how to make best use of limited resources. In theory, the integrated approach should benefit from synergies and the avoidance of duplication. Given current realities, it can be more economical to conduct several separate impact assessments.

In summary, at this point in time, strong tendencies towards integration can be observed, and indeed there are numerous reasons in favour of integration. At the same time, there are good reasons to introduce changes prudently, lest existing and functioning mechanisms of foresight be damaged or even lost. Nevertheless, in the future, integrated impact assessments may take on a larger role, and it may even become the norm. More empirical evidence on concrete experiences with specific forms of integration ("partial" or "full") would be helpful.

In the future integrate impact assessments may become the norm

For the time being, a cautious approach is needed. The decision to integrate or not requires careful weighing of pro's and con's.

From a health-focused perspective, integration per se is neither a "must" nor a "don't". Health issues can, and need to, be included irrespective of levels of integration. At the same time, from a civic society perspective, it would be unacceptable for HIA to weaken other impact assessments. A prudent attitude suggests optimizing the coverage of health along all three avenues:

From a health focused perspective, integration per se is neither a must nor a don't

- better consideration of health in existing impact assessments other than HIA,
- dedicated HIA, and
- integrated forms of impact assessment.

Question 4: What should be seen as priorities for further development?

The first priority is to maintain and strengthen existing regulations and practices of impact assessments. Already today, health is featured in many impact assessments (not limited to HIAs), thus contributing on many occasions to the protection and promotion of human health. It is important that this culture remains in *good shape*, constructively moves forward, and stays open for evaluations and discussions.

A first priority is to maintain and strengthen existing regulation and practises of impact assessments

The success of impact assessments depends on comprehensive cooperation as well as broad societal understanding and acceptance of the rationale of impact assessment. In this respect, the role, goals, process and benefits of impact assessment should be better known also outside the impact assessment profession, for example, within public health, other professions, and civil society.

Impact assessment should be better known outside the impact assessment profession

As indicated above, the field of impact assessment is evolving. Care should be taken not to overlook relevant recent developments, for example, the increasing interest of other impact assessors in human health. Also, the concept of environment has expanded over the years and is increasingly being constructed as an overarching concept that encompasses human health.

Specific health priorities include the following:

Priorities for future development on fostering health in impact assessments

- There is a need to ensure that the health consequences of proposed actions are predicted and understood in a reliable, transparent way, based on the available evidence.
- An understanding of health that is plausible and robust beyond the public health profession is needed.
- Health coverage in other impact assessments benefits from access to evidence on the determinants of health, providing information on the temporal, spatial, and social dynamics (“time, place, person” in epidemiology) of the relationship between populations, impacts and the determinants of health.
- Both programmatic endorsement of, and legal requirements for, health coverage in impact assessments are useful, although they do not guarantee effective practice.
- Public health specialists and health institutions should have a stronger role in impact assessments.
- There needs to be training for public health practitioners, especially in the Public Health Service, on impact assessment theory and practice, with the goal to enable health professionals (officials and consultants) to work alongside environmental and planning professionals as well as other impact assessors to ensure a thorough understanding of potential health implications.
- Professional capacity is needed, for example, in the form of dedicated impact assessment units in ministries or governmental agencies and/or HIA consultants in the private sector.

Both programmatic endorsement and legal requirements of health coverage are useful

There is a need to integrate health modules into trainings of impact assessment professionals and impact assessment modules into training of public health experts

- As a practical step, health modules need to be integrated into trainings of impact assessment professionals and impact assessment modules need to be integrated into training of public health professionals.
- Databases, surveys, and methodologies as well as guidelines and reports of "good practice" are needed.
- Professionals (and institutions) from the health, from planning, and other impact assessment arenas should jointly be involved in the development of research agendas, methodologies, and impact assessment capacity-building programs.
- HIA professionals need to be included as part of other impact assessment teams.

At this point in time, it seems premature to decide on the exact limits of the inclusion/exclusion of health and health determinants in various types of impact assessments. Clearly, there should be a keen awareness of health as a potential issue in most, if not all, impact assessments. At the same time, other priorities as well as conceptual and resource limitations need to be acknowledged.

Epilogue

In preparing this publication, research results and practical experiences on health and other impact assessments were encountered which should be of interest well beyond "inner circles". Nevertheless, many questions remain unanswered. Most importantly, there is no single answer to the question how best to bring together health and impact assessments.

The three main paths for the way ahead

We keep seeing three main paths for the way ahead:

- better coverage of health within the range of existing impact assessments other than HIA;
- further development and practical implementation of HIA; and
- development of better and more use of integrated assessments.

Importantly, these options do not exclude each other.

Whichever path is chosen, it will require efforts for public health professionals to deal more explicitly with existing impact assessment cultures, and for professionals from other disciplines and sectors to understand the role of health in impact assessments more clearly. We hope that this publication helps to raise awareness of health as a crucial issue for impact assessment, and to reflect on how the *family of health-inclusive impact assessments* can move forward, in mutually beneficial ways.

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Annex

Institutional context and chronology

The following chapter gives an overview of the institutional context of the publishing organization and displays a chronology of "family of impact assessment" related activities undertaken by members of the three institutions.

WHO Regional Office for Europe, European Centre for Environment and Health

In the late 1980s, concerned about the growing evidence of the impact of hazardous environments on human health, the WHO Regional Office for Europe promoted an international process on environment and health process, involving both the health and the environment sectors and developing a broad-based primary prevention public health approach for addressing environmental determinants of health.

The European Environment and Health Process has been marked by ministerial conferences, that bring together the 53 Member States of the WHO Regional Office for Europe, several other organizations and stakeholders to identify environment and health challenges, set priorities, agree on commitments and shape shared European policies and actions on environment and health.

The first Ministerial Conference, held in Frankfurt in 1989, adopted the European Charter on Environment and Health a commitment to basic principles, mechanisms and priorities for future action. The conference also called on WHO to establish the European Centre for Environment and Health, which remains the key institution of the European Environment and Health Process to this day.

Based in Bonn, Germany, the WHO European Centre for Environment and Health is the primary source of knowledge, technical expertise and normative guidance relating to the environment and health in the WHO European Region.

Adequate coverage of health within impact assessments is strongly supported by WHO and by the European Environment and Health Process. At the Fourth European Ministerial Conference on Environment and Health (Budapest, Hungary, 2004) the ministers of environment and ministers of health, in adopting the Conference Declaration, recalled the UNECE Protocol on SEA to the Convention on EIA in a Transboundary Context. The Protocol acknowledges the benefits to the health and well-being of present and future generations that will follow, if the need to protect and improve people's health is taken into account as an integral part of SEA. The ministers committed themselves to "taking significant health effects into account in the assessment of strategic proposal under the Protocol" (WHO Regional Office for Europe, 2004).

European Public Health Association

EUPHA is an umbrella organization for public health associations and institutes in Europe. Founded in 1992, EUPHA now has 71 members from 40 countries, including 41 national associations, 18 institutional members, and 8 European NGOs. EUPHA is an international, multidisciplinary, scientific organization, bringing together around 14,000 experts for professional exchange and collaboration throughout Europe.

EUPHA's vision is of improved health and reduced health inequalities for all Europeans. EUPHA seeks to support members to increase the impact of public health in Europe, adding value to the efforts of regions and states, national and international organizations, and individual public health experts. The mission is to build capacity and knowledge in the field of public health, and to support practice and policy decisions through scientific evidence and producing and sharing knowledge with members and partners in Europe. The strategic objectives pursued by EUPHA refer to capacity building, knowledge building, and policy building.

In order to bring together researchers, policy-makers and practitioners working in the same field for knowledge sharing and capacity building, there are sections within EUPHA for specific public health themes. One of EUPHA sections is devoted to HIA. Among other issues, the section is interested in the integration of results from various HIA projects and in the interrelationships of different health-related impact assessments (for example, EIA/SEA, SIA, sustainability assessment, EC-type impact assessment), potential conflicts between them, and the pro's and con's of integrated assessments; and health impact quantification. The initiative for this section started in 2010. The section was established by the EUPHA Governing Council at their annual meeting in November 2011; it has more than 500 members now.

Beyond holding annual meetings, EUPHA's HIA section organizes workshops and other contributions to the annual European Public Health (EPH) conferences which are joint activities of EUPHA and the Association of Schools of Public Health in the European Region (ASPHER).

International Association for Impact Assessment

Impact assessment, simply defined, is the process of identifying the future consequences of a current or proposed action.

IAIA is the leading global network on best practice in the use of impact assessment for informed decision-making regarding policies, programs, plans and projects.

IAIA was organized in 1980 to bring together researchers, practitioners, and users of various types of impact assessment from all parts of the world. IAIA involves people from many disciplines and professions. Our members include corporate planners and managers, public interest advocates, government planners and administrators, private consultants and policy analysts, university and college teachers and their students.

One of the unique features of IAIA is the mix of professions represented, which provides outstanding opportunities for interchange: to advance the state of the art and science of impact assessment in applications ranging from local to global to develop international and local capability to anticipate, plan and manage the consequences of development to enhance the quality of life for all. To ensure professional specialty interests are fully addressed, IAIA offers a number of special interest-area sections.

IAIA activities seek to:

1. develop approaches and practices for comprehensive and integrated impact assessment;

2. improve assessment procedures and methods for practical application;
3. promote training of impact assessment and public understanding of the field;
4. provide professional quality assurance by peer review and other means; and
5. share information networks, timely publications, and professional meetings.

IAIA members number more than 1,600 and represent more than 120 countries.

IAIA Affiliates are active in Cameroon, Canada (Ontario, Quebec, Western and Northern Canada), Germany, Ghana, Iran (Islamic Republic of), Italy, Republic of Korea, Mozambique, New Zealand, Nigeria, Portugal, South Africa, Spain and Zambia.

IAIA's first branch (a group comprised entirely of IAIA-International members), the Washington (DC) Area Branch, was organized in September 2001 and the Ireland-UK Branch was formalized in June 2008.

IAIA Sections provide opportunities for IAIA members with mutual interests to share experiences and discuss ideas in an informal setting. Sections provide a forum for active topical debate and for development and promotion of good practice. In the future IAIA hopes to strengthen links with other relevant organizations in section interest areas. Many sections have issued up-to-date key citations, guidance and information on best practice.

"Family of health-related impact assessments" chronology 2009 to today

		WHO-European Centre for Environment and Health (1)	European Public Health Association (2)	International Association for Impact Assessment (3)	HIA International conferences	Other events
2009	I					
	II					
	III	WHO consultation meeting; Health and strategic environmental assessment; Rome, Italy, 8–9 June 2009				
	IV		EUPHA annual conference: "Human ecology and health". Lodz, Poland, 25–28 November2009		10th International HIA Conference in Rotterdam, Netherlands, 14–16 October 2009	
2010	I	WHO; Fifth Ministerial Conference on Environment and Health; Parma, Italy, 10–12 March, 2010				
	II			30th IAIA Annual Conference: "The Role of Impact Assessment in Transitioning to the Green Economy". Geneva, Switzerland 6–11 April 2010		
	III					Deutsche Gesellschaft für Sozialmedizin und Prävention, DGSMP (German Society for Social Medicine and Prevention); Individualized Prevention and epidemiology: Modern medicine; Berlin, Germany, 22 September, 2010
	IV		EUPHA annual conference: "Integrated Public Health". Amsterdam, The Netherlands 10–13 November 2010			
2011	I					
	II			31st IAIA Annual Conference: "Impact Assessment and Responsible Development for Infrastructure, Business and Industry". Puebla, Mexico 28 May – 4 June 2011	11th International HIA Conference in Granada, Spain, 14–15 April 2011	
	III					
	IV		EUPHA annual conference: "Public Health and Welfare". Copenhagen, Denmark 10–12 November 2011			

		WHO-European Centre for Environment and Health (1)	European Public Health Association (2)	International Association for Impact Assessment (3)	HIA International conferences	Other events
2012	**I**	WHO, Capacity building in Environment and Health, Training on health in SEA and EIA; Riga, Latvia; 19–23 March, 2012				
	II	WHO, Strengthening health in environmental assessments, joint workshops for E&H experts in Estonia and Slovenia; June, 2012		32nd IAIA Annual Conference: "Energy Future The Role of Impact Assessment". Porto, Portugal 27 May–1 June 2012		
	III		European Urban Health Conference; Amsterdam, Netherlands, 12–14 September, 2012		12th International HIA Conference in Quebec, Canada 29–31 August 2012	
	IV		EUPHA annual conference: "All Inclusive Public Health". Malta, 7–10 November 2012			
2013	I					
	II			33rd IAIA Annual Conference "Impact Assessment: the next generation". Calgary, Alberta, Canada, 13-16 May 2013		
	III					8th European Congress of Tropical Medicine and International Health; Copenhagen, Denmark, 10–13 September, 2013
	IV		EUPHA annual conference: "Health in Europe: are we there yet? Learning from the past, building the future". Brussels, Belgium 13–16 November 2013		13th International Conference on Health Impact Assessment (HIA) Geneva, Switzerland, 2–4 October 2013	
2014	I			"		
	II	Publication of Book on Health in Impact Assessments – opportunities not to be missed		34th IAIA Annual Conference: "Impact Assessment for Social and Economic Development". Viña del Mar, Chile, 8–11 April 2014		
	III					
	IV		EUPHA European Public Health Conference: "Mind the gap: Reducing inequalities in health and health care". Glasgow, Scotland, United Kingdom, 19–22 November 2014 – Planned –-			

Contributors

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Alan Bond is Senior Lecturer in Environmental Management in the School of Environmental Sciences at the University of East Anglia (United Kingdom) and Extraordinary Professor in the School of Geo and Spatial Sciences, North West University (South Africa), with 23 years of experience in Impact Assessment. He runs a full-time MSc programme on Environmental Assessment and Management at the University of East Anglia. He is a member of the Editorial Board of Environmental Impact Assessment Review and is a Quality Mark review panel member for the Institute of Environmental Management and Assessment (IEMA) and sits on the Radioactive Waste Management Directorate's (part of the United Kingdom Nuclear Decommissioning Authority) Sustainability Assessment Group. He has previously conducted research for WHO, the EC, the Health Development Agency, the European Environment Agency, the Welsh Assembly Government, the Environment Agency (England & Wales), and has undertaken a variety of consultancy work.

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Lea den Broeder is a social scientist and public health specialist. She works as a coordinating adviser on Health in All Policies at the National Institute for Public Health and the Environment in the Netherlands. Lea has worked extensively on HIA, in research, training and tool development. She is a long-standing member of the International Association for Impact Assessment and had several positions in this organization, including membership of the Board of Directors. Since September 2013 she is appointed part-time as a scientific adviser for Environment and Health at the School of Sports and Nutrition of the Amsterdam University of Applied Sciences.

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Charlotta Faith-Ell holds a PhD in Land and Water Resources Engineering from the Royal Institute of Technology and a MSc in Earth Sciences from Stockholm University. She has more than fifteen years of experience of working with project management and environmental management. Dr Faith-Ell is a recognized expert in the field of Impact Assessment. As Project Manager she has headed up a large number of Infrastructure planning projects, EIA and SEA in infrastructure and land-use planning. Parallel to working with EIA and SEA she has since 2007 led one of the leading research groups on Gender Impact Assessment in Sweden. Charlotta is a board member of the Estonian Environmental Institute (EKKI).

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Rainer Fehr is a physician (MD, Hamburg University) and epidemiologist (PhD, University of California, Berkeley). He worked in various academic and administrative environments incl. the University of Hamburg; the Hamburg State Ministry of Health; and the NRW Institute of Health and Work (LIGA.NRW), where he was also director of the WHO Collaborating Center for Regional Health Policy and Public Health. At the NRW Center for Health (LZG.NRW) he was a member of the directorate, retiring in December 2012. His profile includes academic teaching; participation in multiple (international) projects; reviewing and consulting, for example, for WHO and the EC. Being an adjunct professor at the University of Bielefeld, he is a member of the Department of Public Health and continues to do research on the human ecology of health, especially urban and regional health; on health monitoring & surveillance; and on HIA and other governance-supporting health analyses.

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Professor Dr Thomas B Fischer, Dipl.-Geogr. (FU Berlin) PhD (University of Manchester), FIEMA, is Head of the Department of Geography and Planning, School of Environmental Sciences, University of Liverpool, United Kingdom. His specialist areas revolve around ex-ante impact assessment tools in spatial, transport, energy, waste and other sectoral policy, plan, programme and project making, in particular SEA and EIA. He has worked in consultancy, public administration and academia internationally for over 23 years and is one of the most widely published authors on SEA and EIA globally. Thomas was a Professional Member of the 'NHS National Institute for Health and Clinical Excellence Public Health Programme Development Group for the NICE guidance on Spatial Planning' in 2009/2010 and is editor of the international 'Journal of Environmental Assessment Policy and Management' and editorial board member of the journals 'EIA review' and 'Impact Assessment and Project Appraisal'.

Gabriel Guliš

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Gabriel Guliš is a lecturer and researcher at the Unit for Health Promotion Research of the University of Southern Denmark, Esbjerg, Denmark. He started his public health career in Slovakia as a practitioner working at regional public health authority, and moved via international fellowships (United States, and WHO courses), national level management post (director of former National Center for Health Promotion in Slovakia) to academia. First he worked at Trnava University, in Slovakia, where he started his research on health impact assessment. After moving to Denmark in 2012 he continued research on same area and added working with Danish municipalities on introduction of HIA in Denmark. Recently his research interest is on Health in All Policies, HIA and global health issues.

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Heikki Kalle (MSc) is a member of board of Hendrikson & Ko Ltd, Estonian based spatial planning and environmental consultancy with international operations. Also he is active in managing of scientific projects in Estonian Environmental Institute. Heikke has been involved in development of Estonian spatial planning and impact assessment legislature and methodology last 15 years. Currently he is active in development of national planning guidance. Also, Heikke has been active lecturer of SEA/EIA in Tartu University, Estonian University of Life Sciences and in several special courses. He is founder and first chairman of Estonian Society of Spatial Planners. His current scientific interests are related to the role of impact assessment in decision-making with special reference to the mobility planning and management.

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Martin Lund-Iversen has almost 20 years of experiences in impact assessment and land-use planning, from the Royal Norwegian Ministry of the Environment, the Norwegian Institute for Urban and Regional Research (NIBR) and the Norwegian University of Life Sciences (NMBU). This has involved work on the development of the Norwegian impact assessment regulations, including the transposition of the two EU directives in the field. He has researched many impact assessment practices in Norway, including screening, monitoring, quality control, and the adaptation of the impact assessment to the project and planning levels. He has also been doing consultancy work in SIA for mining developments, and for plans for the protection of marine areas. Topics like universal design, coastal zone management and planning, and the central government's concern with municipal planning, have been a main focus of his work in land-use planning.

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Marco Martuzzi is the Manager of the Environment and Health Intelligence and Forecasting Programme of the WHO Regional Office for Europe. He is an epidemiologist with experience in environmental and occupational studies. He worked at the Italian Institute of Health, the London School of Hygiene and Tropical Medicine, the Imperial College School of Medicine, the WHO International Agency for Research on Cancer (Lyon, France), and over the last fifteen years at the WHO European Centre for Environment and Health, currently based in Bonn, Germany. He has experience in noncommunicable disease epidemiology, which was the subject of his PhD obtained from the University of London in 1996. His current work is concerned with the health impact of several environmental risk factors and health determinants. He has a special interest in approaches for developing policies in environmental health and other sectors, suitable for supporting WHO Member States in decision-making on health-related matters.

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Julia Nowacki, M.Ed. MPH, studied adult education and political science at the University of Cologne and Public Health at the University of Bielefeld. Before joining WHO in 2008

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Monica O'Mullane is a lecturer in the Department of Public Health, Trnava University, Slovakia. Monica started working in Trnava after completing a study investigating the public health legislation for HIA in 2010, which was funded by the Slovak Ministry of Education. Previous to that, Monica worked at the University College Cork, Ireland, as a postdoc researcher, where she also received her PhD, which examined the use of HIA knowledge in policy-making processes. HIA is her main research interest. Monica's other research interests include surveillance systems for infectious diseases, intersectoral collaboration for health inequalities and gender equality in academia.

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Dr Jenny Pope is Director of the Western Australian consultancy firm Integral Sustainability, which provides consultancy services to Government and industry on the integration of sustainability concepts into decision-making processes, with a focus on delivering positive sustainability outcomes from major projects, particularly in the extractives sector. In 2007 she was awarded her PhD from Murdoch University for her research into the evolution of processes for the sustainability assessment of complex and strategic projects, and she is now recognized internationally as a leader in the field of sustainability assessment. Jenny continues to combine her consultancy practice with academic research and teaching roles. She is a Fellow of the Cambridge Programme for Sustainability Leadership at the University of Cambridge, United Kingdom; Extra-ordinary Senior Lecturer in Environmental Management at North-West University in South Africa; and Adjunct Research Fellow at the Curtin University Sustainability Policy Institute in Western Australia.

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Frank Vanclay is professor of cultural geography in the Faculty of Spatial Sciences at the University of Groningen, Netherlands. Originally an Australian, he is a specialist in SIA, receiving the 2014 Individual Award from the International Association for Impact Assessment for his contribution to the theory and/or practice of the discipline of SIA. He is author of many of the key papers and editor of several key texts in the field of SIA. He has had a long-standing interest in health issues and in the overlap between SIA and HIA.

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Francesca Viliani is a specialist in public health and social development. She has worked in contexts as varied as western Europe, Balkans, central America, Middle East, south east Asia, and Africa. Francesca has advised the WHO on public health and extractive industries and is currently a Conjoint Senior Lecturer at the Centre for Primary Health Care and Equity (CHETRE). She was the co-chair of the IAIA Health Section from 2009–2012 and has had articles published in journals such as The Lancet and Impact Assessment and Project Appraisal. Francesca is currently the Head of Public Health Consulting Services and Community Health Programs for International SOS, the world's largest medical services company. In this role she oversees the scoping, design, delivery and management of health impact assessments and its related components on a global basis. Francesca also assists with the development and ongoing monitoring of public health programs and initiatives targeting workforces and communities around the world.

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Prospective impact assessment is a consolidated approach for pursuing foresight in policy and decision-making, systematically deployed worldwide. There is consensus that, even in well developed impact assessments, human health is not always covered adequately. Partly as a response, health impact assessment (HIA) has emerged and has been applied in several countries in Europe and beyond. Opinions about the merits of HIA separate from other forms of impact assessment differ. This publication aims to provide a detailed and balanced view on "health in impact assessments". Five key types of impact assessment, namely environmental impact assessment, strategic environmental assessment, social impact assessment, sustainability assessment, and HIA are presented, and four key questions are discussed: How can the various assessments contribute to promoting and protecting human health? How can further integration of health support the various forms of impact assessments? What forms of integration seem advisable? What priorities for further development? This analysis suggests that the potential of impact assessments to protect and promote health is underutilized, and represents a missed opportunity. Ways need to be found to exploit the potential to a fuller extent.

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.

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Public Health Law and Non-communicable Diseases

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VISION, VOICE AND PRACTICE

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Contents

Acronyms

EU	European Union
HIA	Health Impact Assessment
HiAP	Health in All Policies
NCDs	Non-communicable diseases
WHO	World Health Organization

Executive summary

Non-communicable diseases (NCDs) are increasingly responsible for serious health and economic burdens to governments around the world. Most NCDs in all countries stem from risk factors including tobacco use, harmful use of alcohol, the over-consumption of saturated fat, sugar and salt, and lack of physical activity. Because treatment of these diseases is expensive, prevention is highly cost-effective. One way for governments to respond to the growing burden of NCDs is through the use of public health law in order to reduce exposure of their populations to these risk factors.

There are many effective ways in which public health law can be utilised to influence these risk factors. These may include litigation against industry, advertising or marketing restrictions, or taxation or pricing restrictions, all of which have proven remarkably effective in reducing risk factors. However, it may be politically difficult or unfeasible for individual local governments to pursue these types of legislation on their own, in the absence of more over-arching powers. This paper instead concentrates on four types of potential legislation highlighted in the recent Welsh consultation on public health law. These include: 1) extending the requirement to use Health Impact Assessments; 2) imposing a statutory duty on a range of bodies to reduce health inequalities; 3) legislation to bring about a renewed focus on prevention of ill health; and 4) legislation to strengthen community action around health protection and health improvement.

The paper examines a number of pieces of legislation in each of these four areas, from different jurisdictions in the UK and other countries in Europe, and in the United States, Canada, Australia and New Zealand, in order to provide precedents and, where available, feedback about success or challenges of each given approach. Throughout these approaches, the themes of multi-sectoral approaches and equity appear repeatedly. Faced with the growing burden of NCDs, governments have been finding effective and in some cases novel ways to use public health law to address relevant risk factors over the last decade. The four focuses of legislation listed above may be particularly appealing as ways of enabling local governments to effect changes in NCD rates, for three reasons: they are relatively less politically controversial than other possibilities; they are multi-sectoral approaches; and they focus on health inequalities.

1 Introduction

Non-communicable diseases (NCDs) create a serious health and financial burden for local and national governments. NCDs can be defined as diseases that are not infectious. These diseases may result from genetic or behavioural factors and include coronary heart disease, stroke, hypertension (high blood pressure), type 2 diabetes, kidney disease, certain forms of cancer, respiratory and liver diseases, and overweight and obesity, as well as certain mental health conditions. Most NCDs can be linked to the modifiable determinants of tobacco use, harmful use of alcohol, poor diet and lack of physical activity.

Legislation is one key tool to address these risk factors and determinants. While traditionally public health law has addressed issues of communicable diseases, the changing global burden of disease means that in recent decades it has also been used to address non-communicable disease.

There is a broad spectrum of ways in which public health law can address the determinants of non-communicable diseases. However, this paper will address four specific options in light of the over-arching themes of multi-sectoral engagement and the reduction of health inequalities. The first such option is legislation requiring Health Impact Assessments – tools that help decision-makers identify the public-health consequences of proposals that potentially affect health. The second involves imposing a statutory duty on a range of bodies to address and reduce health inequalities. The third is the use of legislation to bring about a renewed focus on prevention of ill health, both within and outside the health sectors. Fourthly, the use of the legislation to strengthen community action around health protection and health improvement will be reviewed.

2 Background to non-communicable diseases and public health law

2.1 The burden of disease

Non-communicable diseases (NCDs) include coronary heart disease, stroke, hypertension, type 2 diabetes, kidney disease, certain forms of cancer, respiratory and liver diseases, overweight and obesity, and mental health conditions such as vascular dementia. These diseases, which are often treatable but not always curable, are responsible for sizable economic burdens on governments. Most NCDs can be linked to the modifiable determinants of tobacco use, harmful use of alcohol, poor diet and lack of physical activity.

Over the past few decades, global health has witnessed a shift in the burden of disease from communicable to non-communicable diseases. Worldwide, the contribution of different risk factors to disease burden has changed substantially, with a shift away from risks for communicable diseases in children towards those for non-communicable diseases in adults.[1] In 2008, nearly two-thirds of all deaths – 36 million – resulted from NCDs, comprising mainly cardiovascular diseases, cancers, diabetes and chronic lung diseases.[2] NCDs disproportionately impact young and middle-aged adults, and on a global scale they are quickly becoming dominant causes of death and disability.[3] Within the WHO European Region, NCDs account for 86% of deaths and 77% of the disease burden.[4] In the UK, NCDs are the leading cause of death, and in 2008 there were 518,400 deaths from NCDs, of which 23.75% were among the under-70s.[5]

The economic burden of NCDs is sizable. A 2011 projection of costs carried out by the World Economic Forum and Harvard School of Public Health suggests that the cost of NCDs to the global economy will amount to $47 trillion over the next two decades, approximately 75% of the 2010 global GDP.[6] The cost of diabetes and related complications to the NHS in England and Wales amounts to an estimated £9 billion a year,[7] and over half of these cases could have been prevented. According to the World Health Organization, “Investing in prevention and better control of this broad group of disorders will reduce premature death and preventable morbidity and disability, improve the quality of life and well-being of people and societies, and help reduce the growing health inequalities they cause”.[8]

Though too rich and complex to explore comprehensively in this paper, there has been a sizable international response to the problem of NCDs. One of the most notable was the September 2011 UN High-level Meeting on Non-communicable Diseases which generated substantial global attention for the problem of NCDs. Similarly, in a World Health Assembly Resolution of May 2012, governments pledged to adopt a global target of a 25% reduction in premature mortality from NCDs by 2025.[9] NCDs are related to sustainable development issues including nutrition and energy, and there have also been calls to integrate NCDs carefully into the United Nations’ Sustainable Development Goals as well as the post-2015 Millennium Development Goals.[10]

Clearly, governments have much to gain – and certain targets to meet – through the implementation of effective prevention techniques.

2.2 NCD risk factors and interventions

As stated above, the proximate causes of NCDs across all countries include tobacco use, harmful use of alcohol, the over-consumption of saturated fat, sugar and salt, and lack of physical activity. While many interventions may be cost-effective, WHO has classified some as 'best buys' – meaning "actions that should be undertaken immediately to produce accelerated results in terms of lives saved, diseases prevented and heavy costs avoided." These are listed in Table 1.

Table 1: The World Health Organization's 'best buys' for NCD interventions

- Protecting people from tobacco smoke and banning smoking in public places
- Warning about the dangers of tobacco use
- Enforcing bans on tobacco advertising, promotion and sponsorship
- Raising taxes on tobacco
- Restricting access to retailed alcohol
- Enforcing bans on alcohol advertising
- Raising taxes on alcohol
- Reducing salt intake and salt content of food
- Replacing trans fats in food with polyunsaturated fat
- Promoting public awareness about diet and physical activity, including through mass media.

Source: World Health Organization, 2011[11]

There is substantial evidence of the success of preventive interventions. Frequently cited is the case of Finland's North Karelia province, where a policy focused on healthy diet, exercise and reduction of smoking was implemented in the early 1970s. Between 1972 and 2006, North Karelia witnessed an 85% decrease in annual mortality rate from coronary heart disease.[12] More recently, in New York City, a five-year-old Health Department regulation banning trans fats has reduced the consumption of trans fats among fast-food customers from about 3 grams to 0.5 grams per purchase – showing also that local health regulations can significantly influence public consumption.[13]

It should be noted that corporate interests have markets to protect, and legislation restricting advertising, marketing or use of alcohol, tobacco and unhealthy foods may face numerous legal and political obstacles. Certain interventions require a cross-border approach. These may include advertising restrictions, labelling requirements, taxation and minimum unit pricing measures. A key example is the WHO's Framework Convention on Tobacco Control – developed

in response to the globalisation of the tobacco epidemic and the cross-border effects of many factors – which has made substantial progress in reducing tobacco consumption.[14] One advantage of the four approaches outlined in this paper – and which will be appealing to national and local governments – is that the general and multi-risk-factor NCD prevention strategies may be less likely to incur this kind of industry opposition.

2.3 The importance of public health law in improving population health

A central question in public health law and policy is what degree of intervention is appropriate to improve population health. In response to this, in 2007 the Nuffield Council on Bioethics presented a vision of the stewardship role of the state.[15] Under this model, it is understood governments have a "duty to look after important needs of people individually and collectively". Goals of public health programmes in this perspective should encompass reduction of risk, environmental protections, protections for vulnerable populations, health promotion, enabling the population to make healthy choices, access to medical services and a reduction of health inequalities.[16]

Public health law can be defined as "the study of the legal powers and duties of the state to assure the conditions for people to be healthy (e.g. to identify, prevent and ameliorate risks to health in the population) and the limitations on the power of the state to constrain the autonomy, privacy, liberty or other legally protected interests of individuals for protection or promotion of community health".[17]

Law can be used to advance public health in a number of different ways. A 2011 report from the WHO Regional Office for Europe sets out four major roles: defining the objectives of public health and influencing its policy agenda; authorising and limiting public health action with respect to protection of individual rights, as appropriate; serving as a tool for prevention; and facilitating the planning and coordination of governmental and non-governmental health activities.[18]

While in most European countries public health legislation is contained in separate acts and regulations because of the scope of the issues and stakeholders, another approach is to develop a law specifically addressing public health. In practice, most jurisdictions use a combination of the above approaches, with a specific public health law as well as provisions integrated into other legislation. Table 2 below, adapted from a WHO Regional Office for Europe document on public health law, reflects some of the benefits and disadvantages of each approach.

Table 2: Advantages and disadvantages of public health law structure

	Advantages	Disadvantages
In separate acts and regulations	A wider constituency may be benefited when public health provisions are inserted into legislation outside the health sector.	Difficulty of ensuring coverage of all legislative aspects relevant to public health.
Law specifically addressing public health	Ease of enactment and adoption, without the need for multiple amendments to existing public health legislation. Good opportunity to raise public awareness about public health issues and to educate policy-makers.	Need to amend all impacted legislation.

Source: Chichevalieva, 2011[19]

The legal system and public health situation will determine which of these options are most appropriate for a given government. Examples of each relevant to NCDs can be found within Europe:

- *In separate acts and regulations:* In 2009, a Portuguese law established standards to reduce the salt content in bread, set a maximum limit of salt content in bread and encouraged information on salt content on the labelling of pre-packaged foods.[20] Denmark has brought in a tax on trans-fatty acids, Hungary a 'junk food tax' and France a tax on all sweetened drinks.[21]

- *Law specifically addressing public health*: The Netherlands Public Health Act (2008) created a single instrument bringing together the previously separate Public Health (Preventive Measures) Act, the Infectious Diseases Act and the Quarantine Act, as well as provisions for the obligatory storage of digital data in the context of health care for young people.[22]

The purpose of public health law may vary considerably from country to country. Table 3 compares the stated purposes of a number of recent acts. These vary in specificity as well as in the extent to which they focus on communicable versus non-communicable diseases.

Table 3: Purposes of public health laws

Public health law	Purpose
CANADA British Columbia Public Health Act 2008 [23]	This act replaces the outdated legislation, supports improved health and wellness of British Columbians and helps to address current public health issues including new challenges in infectious disease control like SARS or pandemic influenza, environmental toxin exposures, prevention of chronic disease, injuries, and poisonings and bioterrorism threats.
FRANCE Public Health Act 2004	To improve the health of the population by establishing a more effective administrative system in public health and by reinforcing the implementation of national and regional programmes.
AUSTRALIA New South Wales Public Health Act 2010 [24]	To protect and promote public health. To control the risk to public health. To promote the control of infectious diseases To prevent the spread of infectious diseases. To recognise the role of local governments in protecting public health.
NORWAY Norwegian Public Health Act 2011[25]	To contribute to societal development that promotes public health and reduces social inequalities in health. Public health work will promote the population's health, well-being and good social and environmental conditions, and contribute to the prevention of mental and somatic illnesses, disorders or injuries.
AUSTRALIA Queensland Public Health Act 2005[26]	To protect and promote the health of the Queensland public.
SCOTLAND The Public Health etc. (Scotland) Act 2008[27]	To re-state and amend the law on public health; to make provision about mortuaries and the disposal of bodies; to enable the Scottish Ministers to implement their obligations under the International Health Regulations; to make provision relating to the use, sale or hire of sunbeds; to amend the law on statutory nuisances; and for connected purposes.
AUSTRALIA South Australian Public Health Act 2011	To provide a modernised, flexible legislative framework, so South Australia can better respond to new public health challenges as well as traditional hazards.

The number of public health law instruments within Europe is on the rise. A recent literature review found over 400 legally binding instruments in the area of public health at global and

European levels, reflecting the expanding and complex nature of such a system in recent years.[28] At the national level, there is increasing interest in legislation that can improve public health and avoid the fiscal and economic burdens associated with costly treatment of NCDs and loss of productivity.

2.4 How public health law is used to address NCDs and their risk factors

As explained in section 2.2, the risk factors for NCDs fall primarily into four categories: tobacco use, harmful use of alcohol, poor diet and lack of physical activity. Although public health law can be an effective mechanism for NCD prevention, two potential political obstacles include: firstly, strong public and political resistance to laws intended to influence choices and behaviours, with a perception of NCD risk factors being a matter of personal choice; and secondly, that effective interventions are difficult politically because it means challenging the rights of profitable businesses to manufacture and sell potentially harmful products.[29] One Canadian article points out that – despite the public health crisis around NCDs – jurisdictional disputes, legal challenges, ideological opposition and doubts about effectiveness can all serve to forestall legislation in this area.[30]

There are a number of ways in which law can influence behavioural risk factors for NCDs. These fall into the following categories: health infrastructure and governance; shaping the informational environment; creating economic incentives and subsidies; designing or altering the built environment; addressing health inequalities through economic policies; and command and control regulation, i.e. directly regulating persons, professionals, businesses and other organisations.[31]

For example, improved infrastructure might be accomplished through the establishment of structures or institutions that support whole-of-government approaches to NCD risk factors. An improved informational environment could include restrictions on advertising of harmful products, inclusion of health warnings, or nutritional labelling. Fiscal strategies might include increasing excise taxes on tobacco and alcoholic beverages to reduce demand, and grants to encourage other levels of government to fund worthwhile interventions. An improved built environment could mean smoke-free places, zones with restrictions on sales of tobacco, alcohol or certain foods, improved school food, or environments facilitating physical activity.[32]

In recent years in Europe, public health laws have often been introduced in response to specific disease threats, or to strengthen national public health institutes. However, as NCDs become an increasing burden on economies through treatment costs and loss of productivity, more and more governments are exploring how public health law can best manage NCD risk factors. Current laws relating to NCDs have proved to be an effective and central component of comprehensive prevention and control strategies. Magnusson et al, in an Australian paper, wrote:

> *"Although governments are increasingly using law in innovative ways to support chronic disease prevention, law's role remains controversial. The food, tobacco and alcohol industries have lucrative markets to protect and there is a pervasive assumption that the solution to galloping rates of obesity, diabetes and other lifestyle diseases lies in individuals exercising greater self-control. But preaching self-control will not work if healthy choices are constantly undermined by other, more powerful influences. While law is not a complete answer, it can help to create supportive environments for changing the average behaviour of populations*."[33]

The next four sections of this paper outline how the approaches identified in this discussion have been and can be used as tools in public health law. These four were selected as they are the focus of a current Welsh consultation on public health law.[34] They are:

- extending the requirement to use Health Impact Assessments (section 3)
- imposing a statutory duty on a range of bodies to reduce health inequalities (section 4)
- legislation to bring about a renewed focus on prevention of ill health (section 5), and
- legislation to strengthen community action around health protection and health improvement (section 6).

3 Extending the requirement to use Health Impact Assessments

There has been increasing recognition that addressing public health issues effectively is a multi-sectoral undertaking – i.e. that public health agencies and the health care delivery system need support to adequately address the social, economic and cultural environments which impact health. This approach has been endorsed by many national governments, as well as by the WHO and the EU.

3.1 Background to Health Impact Assessments

In keeping with the emphasis on a multi-sectoral approach, Health Impact Assessments (HIAs) provide a means to assess all policy development in terms of its health impact. For example, transport, housing or education policy may all potentially protect or damage people's health. WHO defines HIA as "a combination of procedures, methods and tools by which a policy, programme, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population."[35] The National Research Council (in the United States) defines HIA as "a systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population."[36] The Health in All Policies (HiAP) approach likewise recognises and addresses the fact that many of the determinants of health lie outside the health sector, and encourages governments to take a more inclusive approach through inter-sectoral and 'whole-of-government' policy and governance.[37]

HIAs are widely used internationally and nationally by public (and private) sectors. WHO notes that the benefits of HIAs include: the promotion of cross-sectoral cooperation; a participatory approach which values community views; provision of the best available evidence to decision-makers; improvement of health and reduction of inequalities; the possibility to strengthen the features of a proposal which will positively impact population health; flexibility; and links with sustainable development and resource management.[38] HIAs may also be effective in promoting accountability for decision-makers whose policies may have negative impacts on health. This aspect may explain why HIAs are also increasingly used by international organisations such as the World Bank and the International Monetary Fund as a condition for loans, and by international industry, for example mining.

In terms of NCDs, there are clear links between policy decisions in sectors such as agriculture, energy, housing and transportation and the risk factors for disease. These include, for example: agricultural policies which promote healthy food production; energy and housing policies which relieve fuel poverty and reduce the risk of respiratory and heart diseases; and transport policies which facilitate physical activity, helping to combat rates of obesity and diabetes. Some of these links are set out in Table 4.

Table 4: Links between policy decisions in various sectors and the risk factors for NCDs

Sector	Relation to NCDs
Health and social protection systems	NCD-related illness and disability can destabilise these systems. However, measures such as promoting access to preventive health services, screening and early detection, and healthy aging can reduce the costs of treatments and disability.
Food and agriculture	Because of the role of unhealthy diets as a key NCD risk factor, food/agriculture industry measures around production, trade, manufacturing, retail, labelling, pricing, and taxation options can all impact dietary choices, especially through the reduction of salt, sugar and saturated fat in prepared foods.
Urban transport and urban design	With growing populations in urban areas, public transit, cycling and pedestrian routes, green spaces and similar transport/design initiatives can impact physical activity, a key risk factor for NCDs.
Education	Healthier choices among children can be promoted through the creation of healthy environments, education of children about healthy living, provision of safe spaces for physical activity, and access to nutritious foods.
Employers	Workplace health promotion programmes may include wellness checks, healthy food and exercise options, and smoke-free workplaces. These can result in reduced healthcare costs, as well as increased employee productivity and improved corporate image.
Telecommunications and media	These sectors can highlight features on healthy living. Also, telehealth and mobile phones can further health promotion, offer treatment reminders, and connect individuals with NCD-related information and resources.

Source: Pan-American Health Organization[39]

3.2 The legal basis for a statutory duty to promote Health Impact Assessments

One means of ensuring that the public-health impacts of decisions taken in other sectors are considered is to impose a statutory duty on organisations and authorities to promote or to require HIAs.

At the European level, Article 152 of the Amsterdam Treaty states that: "A high level of health protection shall be ensured in connection with the formulation and implementation of all Community policies and all Community measures"; and Health 21 lists as one of its key strategies that "multisectoral strategies … tackle the determinants of health, taking into account physical, economic, social, cultural and gender perspectives, and ensuring the use of health impact assessment".[40] The adoption by the EU of a White Paper on HiAP (Health in All Policies) requires the European Commission and the Member States to ensure that health concerns are better integrated into all policies at Community, Member State and regional level, including in environment, research and regional policies, regulation of pharmaceuticals and foodstuffs, and governance of tobacco taxation and foreign policy.[41]

Another precedent can be found within UK legislation, where HIAs form part of the mandatory 'Impact Assessment' required by Government for all relevant policies, with the aim of developing better, evidenced-based policy by careful consideration of the impact on the health of the population.[42] Impact Assessments are obligatory for all UK Government interventions of a regulatory nature that affect the private sector, civil society organisations and public services, and apply to primary and secondary legislation, as well as codes of practice or guidance.[43]

Section 54 of Québec's 2001 Public Health Act (implemented in 2002) requires government ministries and agencies proposing laws or regulations to first undertake an HIA. This obligation aims to ensure that legislation does not negatively impact population health and, concomitantly, to allow the Minister of Health and Social Services the capacity to share health-related concerns with other government ministries or agencies as necessary. A 2012 assessment found that, while initially there had been resistance to the measure from the affected ministries and agencies, there has been a consistent trend towards acceptance of the HIA process, with 519 requests for consultations between 2002 and 2012.[44]

At the federal level in the United States, legislation proposed in January 2013 contains measures on Health in All Policies, which would require the Department of Health and Human Services to carry out HIAs of major non-health legislative proposals and to assign staff to other departments to help them consider the health impacts of their activities.[45]

While HIAs are increasingly popular within the United States, they are rarely legislatively mandated at State or local level. A 2012 US study commissioned by the Health Impact Project looked at 36 selected jurisdictions where existing laws offered opportunities for health to be factored into a range of decision-making in which it would typically not otherwise be considered. Sectors included were environment and energy, transportation, agriculture, and waste disposal and recycling.[46] Only 22 of the 36 jurisdictions surveyed had laws requiring or

facilitating HIAs. The authors highlighted that the laws that most clearly facilitate HIAs feature two criteria: either "They refer to a broad range or description of health impacts, such as effects on public health, safety, general welfare, environmental health, health disparities, social or economic well-being, or effects that are borne disproportionately by vulnerable populations," or "They call for studies or assessments that are used to inform public policy, programs, projects, regulations, or decision making". Other, less 'strong' laws may simply allocate funding for or authorise evaluations of health impacts without making the link to policy decisions. One example cited was an Oregon statute authorising the state's health authority to survey and investigate how the production, processing or distribution of agricultural products may affect the public's health.[47]

Summary

Health Impact Assessments are increasingly being required in a number of jurisdictions. In the case of Québec, an examination over ten years has shown that, while government departments were reluctant to work inter-sectorally at first, eventually the HIAs were accepted and collaboration from the health sector sought out. One issue for discussion is the extent to which HIAs are used: should they apply only to government undertakings (and to which ones?), or should they also apply more broadly to private-sector projects which also contribute to the NCD risk factors to which a given community is exposed?

4 Imposing a statutory duty on a range of bodies to reduce health inequalities

According to Marmot et al:

> *"The lower people are on the socioeconomic gradient, the more likely they are to live in areas where the built environment is of poorer quality, less conducive to positive health behaviours and outcomes, and where exposure to environmental factors that are detrimental to health is more likely to occur … People who live in areas of high deprivation are more likely to be affected by tobacco smoke, biological and chemical contamination, hazardous waste sites, air pollution, flooding, sanitation and water scarcity, noise pollution, and road traffic*. *These people are less likely to live in decent housing and places that are sociable and congenial, of high social capital, that feel safe from crime and disorder, and have access to green spaces, adequate transport options, and opportunities for healthy living."* [48]

There is a clear link between social inequalities and ill health, both because disadvantaged groups have poorer access to services, and also fewer resources in education, employment, housing, and transport, and reduced participation in civic society to make healthy choices. NCDs have a strong link to health inequalities, since opportunities to make healthy choices may be affected by social determinants including socioeconomic status, gender, ethnicity or education. Health inequalities are costly: UK estimates suggest that the consequences of inequalities in illness account for productivity losses of £31-£33 billion per year, and lost taxes and higher welfare payments in the range of £20-£32 billion per year.[49]

Reducing health inequalities is not a straightforward undertaking, and policies should be clear about what is meant by promoting equity in health. One expert classifies policy responses into three groups: those aimed at improving the health of poor groups (e.g. by promoting smoking cessation or healthy eating among disadvantaged groups); those which work to narrow the gap between the health of disadvantaged groups and health in the population as a whole; and those which attempt to improve the health gradient with the greatest improvement for the poorest groups, and the rate of gain progressively decreasing for higher socioeconomic groups (e.g. a smoking cessation intervention which is available to the whole population but which is actively promoted via additional services for less advantaged groups, with the most intensive support for the most disadvantaged groups).[50]

A focus on health inequalities may serve to better inform public health choices about the types of interventions used. For example, tobacco use and poor diet are major risk factors for cardiovascular disease, and a high-risk approach to cardiovascular disease prevention usually involves population screening, with those individuals above a particular risk threshold being given advice on behaviour change and/or medication to reduce blood cholesterol and blood pressure. However, it has been found that this approach exacerbates socioeconomic inequalities which have been reported in screening, healthy diet advice, smoking cessation, and statin and anti-hypertensive prescribing and adherence, and that a population-wide approach

which legislates for smoke-free public spaces or for reducing salt intake could be more effective and reduce health inequalities.[51] A 2012 American study suggested that – after adjustments for demographics, health care access, and physiological distress – the level of education attained and financial wealth remain strong predictors of mortality risk among adults with diabetes.[52]

Table 5 shows the guiding principles relating to equity in public health legislation in various countries.

Table 5: Guiding principles relating to equity in selected public health legislation

BULGARIA Bulgarian Health Act 2004[53]	"The protection of the citizens' health as a condition of full physical, mental and social wellbeing is a national priority and it shall be guaranteed by the government through the application of the following principles: … equality in the use of health services …"
FINLAND Health Care Act 2010[54]	"The objective of this Act is to … (2) reduce health inequalities between different population groups;" (Section 2)
GREECE Law on Public Health 2005	"Action to support vulnerable groups and to reduce socioeconomic inequalities in health is an essential part of public health." (Article 2)
NORWAY Norwegian Public Health Act 2012 [55]	The purpose is to "contribute to societal development that promotes public health and reduces social inequalities in health".
AUSTRALIA South Australian Public Health Act 2011[56]	"Decisions and actions should not, as far as is reasonably practicable, unduly or unfairly disadvantage individuals or communities and, as relevant, consideration should be given to health disparities between population groups and to strategies that can minimise or alleviate such disparities." (Part 2, section 13)
SWEDEN Health and Medical Services Act 1982	Lists as the overall objective of health and medical care: *"*Good health and care for the whole population on equal terms".

In Finland, the 2010 Health Care Act was designed in response to equity challenges in healthcare services, and contains provisions that give a number of new rights to patients. For example, patients can access health services outside their municipality, and each patient has the freedom to choose his or her own health setting and specialised healthcare unit (from 2014).[57] Patients enjoy similar benefits under the Swedish 2011 Patient Care Act, which provides the right to choose care providers, the right to health care within a certain time, and a free choice of health centre.[58]

Under the New Zealand Public Health and Disability Amendment Bill 2010 (which amends the New Zealand Public Health and Disability Act 2000), the objectives of the district health boards include: to reduce health disparities by improving health outcomes for Maori and other population groups; and to reduce, with a view to eliminating, health outcome disparities between various population groups within New Zealand by developing and implementing, in consultation with the groups concerned, services and programmes designed to raise their health outcomes to those of other New Zealanders.

One approach suggested in the Welsh consultation on public health law is the imposition of a statutory duty on selected organisations to reduce health inequalities. For example, health boards could be required to address why take-up rates of health services may be lower in deprived groups. Section 1C of the UK Health and Social Care Act 2012 addresses the "Duty as to reducing inequalities" and provides that: "In exercising functions in relation to the health service, the Secretary of State must have regard to the need to reduce inequalities between the people of England with respect to the benefits that they can obtain from the health service".[59] The Act imposes explicit duties on the Secretary of State, the NHS Commissioning Board and clinical commissioning groups to have regard to the need to reduce inequalities in the benefits which can be obtained from health services. The duty applies to both NHS and public functions, and incorporates access to and benefits from health care services.[60]

Summary
Many public health laws explicitly consider the issue of inequities. This could be either as a general principle to be applied in interpretation of the entire act, as well as specific duties such as in the Finnish act which gives new choices to patients, the New Zealand act which sets out responsibilities to district health boards, or the UK act which requires bodies to consider the reduction of inequalities when commissioning health services.

5 Legislation to bring about a renewed focus on prevention of ill health

Legislation may support prevention through reduction of risk factors, through the creation of bodies charged with disease prevention, or through specific activities relating to the financing of prevention.

5.1 Flexible legislation to reduce risk factors

While the category of 'legislation to reduce risk factors' could be construed quite broadly, this paper will focus specifically on public health laws which provide flexibility to address current and future NCD threats. This type of flexibility is another approach to dealing with particular threats as they arise – which we might see, for example, in Scotland's 2008 Public Health Law which contains a provision prohibiting operators from allowing minors to use sunbeds.[61] Two relatively novel approaches can be found in the British Columbia Public Health Act and the South Australian Public Health Act.

The British Columbia Public Health Act (2008) not only allows the Minister of Health to require development of public health plans for health promotion and protection to address issues such as chronic disease prevention or inclusion of mental health and substance services in communities. It also enables the development of health impediment regulations, which address matters that adversely affect public health from long-term, cumulative exposures that cause significant chronic disease or disability, interfere with the goals of public health initiatives, or are associated with poor health in the population (e.g. foods high in trans fats).

In Part 8 of the South Australian Public Health Act 2011 (Prevention of non-communicable conditions), the Minister of Health is vested with the power to declare a particular non-communicable condition to be of significance to public health, which then allows the Minister to develop a code of practice in relation to preventing or reducing the incidence of the non-communicable condition. Such a code of practice can relate to: an industry or sector; a section or part of the community; or an activity, undertaking or circumstance. It may relate to: goods, substances and services; advertising and marketing; manufacturing, distribution, supply and sale; building and infrastructure design; or access to certain goods, substances or services. While not mandatory, performance reports can be published and breaches of a code of practice may result in enforceable compliance notices being issued. Additionally, there is a specific regulation-making power for taking measures to manage any non-communicable condition.[62]

These two laws grant Ministers of Health the powers to creatively and flexibly regulate those products and activities that impact the public health – a potentially valuable tool for reducing the risk factors for NCDs. This kind of flexibility can make it easier to respond to public health threats as they emerge and as evidence becomes available, without needing to resort to lengthy legislative processes.

5.2 Creating bodies and expanding mandates to tackle NCDs

Finland has merged the National Public Health Institute (KTL) and the National Research and Development Centre for Welfare and Health (STAKES) into one large and comprehensive entity, the National Institute for Health and Welfare (THL), which "provides the government with broad background research and expertise to serve public health and welfare and to support health and social services with expert advice, development, and monitoring and to help protect and promote the welfare of Finnish people by active communication and interaction in Finnish society." This supports a multi-sectoral approach to health and has led to increases in alcohol and tobacco tax, a new soft drink and sweets tax, strengthening of tobacco control legislation and discussions with the Ministries of Agriculture, Education and Communications.[63]

In Article 6 of Greece's Law on Public Health (2005), the Centre for the Control of Special Communicable Diseases was renamed the Hellenic Center for Disease Control and Prevention (KEELPNO) and its mission broadened to include NCDs, accidents, environmental health, a central public health laboratory, and the evaluation of health services.

In Iceland, amendments made in 2011 to the Medical Director of Health and Public Health Act incorporated the Public Health Institute of Iceland into the Directorate of Health, and expanded the mandate of the Directorate of Health to include public health measures and health promotion.[64] Functions include: advising the Minister of Welfare and other government bodies, health professionals and the public on matters concerning health, disease prevention and health promotion; and sponsoring and organising public health initiatives.[65]

Similarly, the South Australian Public Health Act establishes a South Australian Public Health Council (SAPHC). This is the successor body to the Public and Environmental Health Council established under the previous Act. The principal difference between these two bodies is that the SAPHC has an expanded membership that reflects the broader scope of contemporary public health. The Act also provides terms of reference for the SAPHC that define a high-level strategic advisory role.[66]

5.3 Increasing budgets for prevention of ill health

Investments in prevention and in protecting and improving the population's overall physical and mental health will have positive consequences in terms of healthcare spending and productivity. 2006 OECD data suggest that spending on prevention currently amounts to an average of 3% of OECD Member States' total annual budgets for health, as opposed to 97% spent on healthcare and treatment.[67] Since prevention is a cost-effective measure, government intervention to shift resources towards prevention will result in long-term benefits.

The US Affordable Care Act establishes a Prevention and Public Health Fund (Section 4002). The Fund "aims to provide an expanded and sustained national investment in prevention and public health programs to improve health and help restrain the rate of growth in private and public

sector health care costs, with a dedicated fund for prevention and wellness". The Secretary of Health and Human Services has the authority to transfer amounts from the Fund to increase funding for any programme authorised by the Public Health Service Act for "prevention, wellness, and public health activities including prevention research and health screenings, such as the Community Transformation grant program, the Education and Outreach Campaign for Preventive Benefits, and immunization programs." The Fund will invest $12.5 billion in prevention activities over the decade 2013-2022. The Fund also supports the Community Transformation Grants that support local initiatives for chronic disease prevention.[68]

This category may also include channelling specified funds into prevention. In Switzerland, the 2009 law on prevention and health promotion *(La Loi Fédérale sur la Prévention et la Promotion de la Santé)* includes provisions requiring that certain proceeds from the LAMal (health insurance) are used for prevention, health promotion and early detection of diseases. Similarly, tax collected from tobacco producers and importers (destined under a 1969 law for health promotion measures) must be used specifically for tobacco control.[69]

Summary

Use of legislation to bring about a renewed focus on prevention work can encompass a variety of measures. In looking at the flexible approaches to the reduction of risk factors, the creation of bodies charged with disease prevention, or specific activities relating to the financing of prevention, there are a number of recent developments that may be of interest to governments. These include: British Columbia's and the South Australian Public Health Acts, which allow Ministries of Health to respond flexibly to NCD threats as they arise; the trend towards replacing or expanding the scope of communicable disease institutes to manage NCDs as well; and the recognition by the US Government of the importance of having funds earmarked for prevention through the Prevention and Public Health Fund under the 2010 Affordable Care Act.

6 Legislation to strengthen community action around health protection and health improvement

The fourth and final topic involves giving local communities an opportunity to be more involved in local decision-making on improving public health. Support for this approach can be found in documents such as the *Action Plan for Implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases*, which endorses empowerment and the 'whole-of-society' as key principles.[70] 'Empowerment' means that all public health and healthcare activities should support community action, promote health literacy, and respect the patient, while the 'whole-of-society' approach is understood as encouraging cooperation and collaboration between public health and health care and between State and non-State actors, and engaging civil society, businesses and individuals in public health and healthcare decisions.[71] Strategies like this are intended to facilitate patients to manage disease, adopt healthy behaviours and use health services effectively.

This section will focus on three interpretations of this type of legislative action: 1) using Health Impact Assessments as a support for community action; 2) mandates or programmes to share information about NCDs with communities; and 3) increasing the role of local government.

6.1 Using Health Impact Assessments as a support for community action

Clearly, this is closely linked to the discussion on HIAs in section 3, as throughout the HIA process communities will ideally play a critical role in identifying the health consequences of a given proposal. A participatory approach that values the views of the community, treating them as relevant stakeholders, will reinforce this perspective. Furthermore, the HIA process can demonstrate that organisers of a given project are eager to listen to, involve and respond to community members.[72]

6.2 Sharing information about NCDs with communities

The concept of legislation to strengthen community action is also based upon the principle that communities have the right to receive appropriate information on reducing the risk of NCDs, empowering them to make appropriate healthy choices. Legislative precedents – and innovative policy and incentives – can be found in the United States, the UK, Finland and South Australia:

- *United States* – Title IV of the US Affordable Care Act (2010)[73] addresses prevention of chronic disease. This contains a section addressing the creation of healthier communities through grants for community initiatives that will support more 'walkable' communities, healthier schools and increased access to nutritious foods in safe environments. One component of this strategy is the use of Community Transformation Grants, which may be

used for programmes to promote individual and community health and prevent the incidence of chronic disease.

- *UK* – The UK Health and Social Care Act (2012) endorses the principle of "No decision about me, without me". The phrase describes a vision of health care where the patient is an active participant in treatment decisions. To this end, legislative changes include: strengthening the voice of patients; imposing additional duties on Commissioning Groups, Monitor (the health care regulator) and Health and Wellbeing Boards to involve patients, carers and the public; and establishing Healthwatch England, a national body representing the views of service users, the public and local Healthwatch organisations.[74]

- *Finland* – The Health Care Act (2010), section 11, states: "When planning and making decisions, local authorities and joint municipal authorities for hospital districts shall assess and take into consideration any effects that their decisions may have on the health and social welfare of residents."

- *Australia* – Principle 11 of the South Australian Public Health Act (2012) states: "Individuals and communities should be encouraged to take responsibility for their own health and, to that end, to participate in decisions about how to protect and promote their own health and the health of their communities."[75]

6.3 Increasing the role of local government

A broader interpretation of the objective of strengthening community action would be to involve local government more in making public health decisions and policy. For example:

- *Finland* – The Health Care Act aims to give key responsibility for public health promotion to the municipalities in order to improve prevention and to reduce the demand for services which accompanies later stages of NCDs. The Act requires each municipality to monitor the health and welfare of its residents and to compile relevant statistics during terms of office.[76]

- *Sweden* – Twenty county councils have the responsibility for the organisation of health care, and are also responsible for health and social care for the elderly. New changes under the 2011 Patient Care Act aim to better protect and involve patients in decisions.[77]

- *UK* – Similarly, in the UK, the Health and Social Care Act (2012) grants new responsibilities to local authorities for improving the health of local populations. Components of the legislation require the engagement of a director of public health, a ring-fenced budget, and annual progress-charting reports. The rationale for this move is the notion that "wider determinants of health (for example, housing, economic development, transport) can be more easily impacted by local authorities, who have overall responsibility for improving the local area for their populations."[78]

Summary
Legislation is frequently used to strengthen community action promoting health protection and improvement. This can give local communities an opportunity to be more involved in local decision-making to improve public health. Some legislative examples come from programmes which endorse a multi-sectoral and community-oriented approach through inclusive processes, such as through the HIA process, or sharing information with communities (e.g. through the UK Healthwatch or the US Community Transformation Grants programmes); while others strengthen the role of local governments in health promotion and disease prevention (e.g. in Finland and the UK).

7 Conclusions

There are a number of tools available to national and local governments in order to address non-communicable diseases. Public health legislation, where appropriate, can be an extremely powerful mechanism in this regard. This paper has explored four legislative options: extending the requirement to use Health Impact Assessments; imposing a statutory duty on a range of bodies to reduce health inequalities; legislation to bring about a renewed focus on prevention of ill health; and legislation to strengthen community action around health protection and health improvement. Precedents in each of these areas, and particularly novel precedents in terms of granting flexibility to health authorities to address NCDs, will help governments to craft their own policy options.

The first discussion showed the increasing use of Health Impact Assessments, and cited a Québec study suggesting that mandatory HIAs will lead to better inter-sectoral collaboration.

The second considered the issue of inequities and a statutory duty on bodies to address and reduce health inequalities. Many public health laws list reducing inequities as a key principle (particularly in Scandinavian legislation). Furthermore, there are specific duties in, for example: the Finnish act which gives new choices to patients; the New Zealand act which sets out the responsibilities of district health boards; or the UK act which requires bodies to consider the reduction of inequalities when commissioning health services.

Legislation can bring about a renewed focus on prevention work through measures including flexible approaches to the reduction of risk factors, the creation of bodies charged with disease prevention, or through specific activities relating to the financing of prevention. Of particular interest are: British Columbia's and the South Australian legislation granting health ministries the ability to respond flexibly to NCD concerns as they arise; and refocusing national health institutions to consider NCDs or earmarking funds for prevention, as in the US 2010 Affordable Care Act.

Fourthly, public health law can strengthen community action promoting health protection and improvement. This can be through programmes which endorse a multi-sectoral and community-oriented approach such as HIAs, community-based information-sharing programmes such as UK Healthwatch or the US Community Transformation Grants programmes, or increasing the role of local governments in health promotion and disease prevention as in Finland and the UK.

Throughout the discussion of the four highlighted legislative options we have repeatedly seen the key concepts of multi-sectoral approaches and of reducing inequalities. This paper has set out a few of the many precedents for ways in which public health law can be used to reduce risk factors for NCDs.

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Sweden's new public health policy

National public health objectives for Sweden

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Sweden's new public health policy

As a result of the Swedish Parliament, the Riksdag, passing the Government's Public Health Objectives Bill in April 2003, Sweden now has a national public health policy.

The overall aim of Swedish public health policy is to create social conditions which ensure good health for the entire population. It is also established that improving the public health of those groups most vulnerable to ill-health is particularly important.

Health is not easy to define even though most people have an intuitive understanding of the concept. The World Health Organization, WHO, defines health in very broad terms – "a state of complete physical, mental and social well-being and not just freedom from disease and disability".

Good health is hence something more than freedom from disease. A person can experience good health even though he or she has been diagnosed with a medical condition and conversely, he or she may feel ill without suffering from a known disease. There is nevertheless a clear connection between ill-health and disease and people who experience impaired health run a much greater risk of premature death regardless of any medical diagnosis.

Most people perceive good health as a very desirable goal and sustained good health is the basis of so many other things. People being affected by ill-health which can be avoided is therefore difficult to accept and it is also unreasonable for people to be affected by disease or serious ill-health if there are methods available to prevent it. Similarly, it is difficult to accept the fact that there are disparities in the health of different social groups despite it being possible to do something about them.

Since health is such a desirable goal, it is only natural for the health of the whole population, i.e. public health, to be one of the most important political objectives. Even if public health policy has been strengthened on a national level, we still have a long way to go before it is considered to be equally as important as economic policy, labour market policy or social policy. The most important aim of the bill is to make public health an fundamental part of social policy. Since public health concerns and is influenced by many different sectors of society, is it also important to set objectives that can act as guiding principles for the work done within the various sectors.

Background

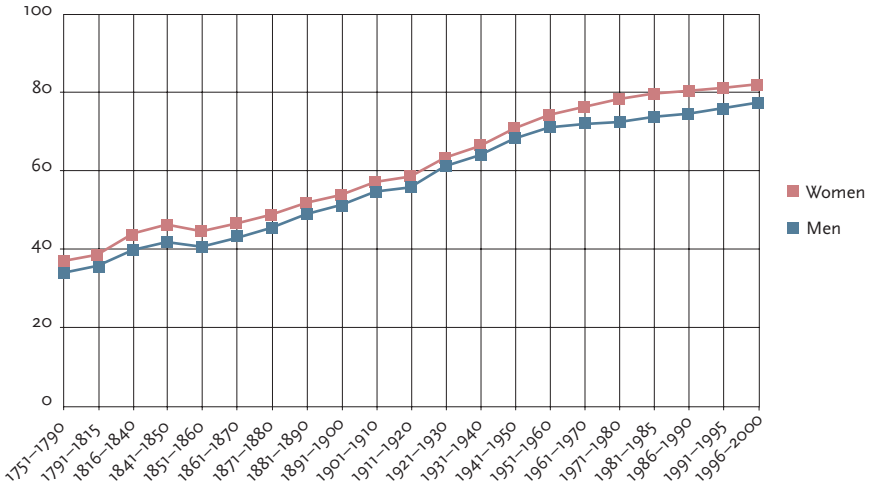
Sweden has a long tradition of public health work on the national level and indeed, we were the first country in the world to carry out compulsory civil registration, when parish priests were instructed to register all births, deaths and causes thereof. This happened as early as 1748 and was implemented for population policy purposes. The governing forces were worried that the country had too few inhabitants and they wanted to obtain knowledge that could be used to increase the birth rate and reduce the death rate primarily among young people.

We have also been able to use population statistics to pinpoint the important causes of ill-health. The fact that mortality among the poor far exceeds that among the rich and that poor urban populations suffer much more from feverish diseases than those living in rural areas is old knowledge.

During the 19th century, public health work concentrated on the struggle against alcohol and drunkenness that had developed into a gigantic public health problem. Towards the end of the century, we learnt how to successfully combat waterborne infections by improving water and wastewater systems and by introducing regulations on food hygiene.

The full emergence of democracy meant that representatives of the large popular movements, temperance societies, labour movements and to some extent the free churches of the era began to dominate most Swedish political assemblies. All these movements had an active interest when it came to both healthy living conditions and lifestyles and it became natural for municipal temperance, healthcare and child care committees to take an interest in issues relating to human health. Society also had a legitimate interest in these types of issues. Citizens did not see the government, municipality and county council as their enemies as they did in many other countries.

The development of the welfare society during the first half of the 20th century



Average life expectancy in Sweden since 1751

included many elements of health policy; expansion of child healthcare, school meals, support to families with children and a social housing policy. The drop in infant mortality and the increase in average life expectancy were seen as the result of social welfare policy.

During the post-Second World War decades, the nature of health issues became increasingly more medical and professional. The discovery of new drugs and other irrefutable medical progress laid the foundations for a strong belief in the ability of doctors and the health service to solve all the major health problems. Health policy became increasingly synonymous with medical care policy, with the debate centring on how we should finance and recruit personnel to an ever-swelling hospital sector. Preventive health care tended increasingly to take a back seat.

A stronger position for public health work

Public health work began to regain a stronger position during the 1980s. The spread of aids dealt a deathblow to the belief in the health service's ability to overcome major health problems and instead, many people began to question whether growing medical care costs really did lead to an improvement in public health. The realization that there were large and growing class differences even in Swedish society also helped bring about a rethink in health policy.

In 1987, the Government appointed a commission made up of state secretaries to formulate guidelines for a more carefully considered public health policy. One concrete proposal put forward by the commission was the establishment of a national institute of public health in 1992, charged with the task of promoting and coordinating public health issues on the national level.

The focus of the institute was, however, more on promoting individual health programmes rather than coordinating national public health work.

A parliamentary commission, the National Public Health Committee, was appointed in 1997 and was made up of members from all the parliamentary parties, a large number of experts from the research community and a number of important interest groups. The Committee put forward a proposal covering 18 national public health objectives to which appurtenant targets and in many cases quantifiable indicators were attached. The National Institute of Public Health was given a new role to monitor these national objectives. The Government submitted a proposal covering 11 general objectives for public health work in December 2002.

Public health determinants

An important strategic crossroads has been reached with the new public health policy. Where objectives had previously been based on diseases or health problems, health determinants were now chosen instead. Health determinants are factors in society or in our living conditions that contribute to good or bad health.

The benefit of using determinants as a basis is that the objectives will then be accessible for political decisions and can be influenced by certain types of societal measures. If we set objectives in terms of disease, e.g. to reduce the number of heart attacks, they do not provide any guidance as to what measures may be effective in achieving them. It is impossible to say, for example, whether a reduction in the number of heart attacks is due to improved public health or to other reasons.

It is important to clarify how a determinant impacts health. There is a relationship between greater economic inequality and poorer public health, but the mechanisms behind this relationship have not been particularly well clarified. This means in turn that the public health argument does not carry quite so much weight in the public debate as for example economic arguments do. Formulating public health objectives in terms of health determinants requires public health work to be very much knowledge-based.

Using health determinants as a basis means the vast majority of public health work must take place outside the medical care service. Most of the factors that impact health are to be found outside the spheres of medical competence and knowledge. When it comes to influencing unemployment figures, social security, housing segregation and alcohol habits, decisions taken in municipal assemblies and other democratic bodies play a much more important role than efforts made in the medical care sector.

Eleven general objectives for public health work

Swedish public health policy is based on eleven objectives containing the most important determinants of Swedish public health. The overarching aim is to create the conditions for good health on equal terms for the entire population.

These eleven objectives are as follows:

1. Participation and influence in society
2. Economic and social security
3. Secure and favourable conditions during childhood and adolescence
4. Healthier working life
5. Healthy and safe environments and products
6. Health and medical care that more actively promotes good health
7. Effective protection against communicable diseases
8. Safe sexuality and good reproductive health
9. Increased physical activity
10. Good eating habits and safe food
11. Reduced use of tobacco and alcohol, a society free from illicit drugs and doping and a reduction in the harmful effects of excessive gambling

These objectives are based to a large extent on those set by the National Public Health Committee. The objectives that have been removed relate first and foremost to how public health work should be organized, the need for research and training and how to provide better, more extensive health information. These issues are discussed as part of other government assignments given primarily to the National Institute of Public Health.

The first six objectives relate to what are normally considered to be structural factors, i.e. conditions in society and our surroundings that can be influenced primarily by moulding public opinion and by taking political decisions on different levels. The last five objectives concern lifestyles which an individual can influence him/herself, but where the social environment normally plays a very important part.

Objectives are pointless if they are not concretized and monitored. It is therefore the National Institute of Public Health's task to formulate interim targets as and when necessary and develop indicators as to how well the objectives are being fulfilled. The idea is for the Government to be kept informed of developments through regular public health policy reports that form the basis of a discussion on how successful the policy has been in improving public health.

1. Participation and influence in society

The power and possibility of people to influence the world around them is probably of crucial significance for their health. Societies with a low election turn-out, where few people feel there is any point in participating in NGO activities or trying to influence development, are also characterized by the occurrence of serious health problems. Increasing people's level of participation in society life is therefore one of the most important national public health objectives.

There is a very clear relationship between the power to influence and health on the individual level. A lack of influence combined with a high workload causes hormone imbalance and increases the risk of heart attack and other diseases. A link has also been established between limited decision-making powers and the incidence of sick leave and it seems in particular as if long-term sick leave is aggravated by a lack of influence. Greater work participation also seems to improve mental health.

It is more difficult to substantiate the positive effects of democracy on health on the societal level. There is a connection between high election turn-out and a high level of trust in authorities and good health, but it is difficult to know how much of this is connected with the degree of influence and how much for example is linked to economic factors. Discrimination, depriving groups of people of their chance to

influence, definitely has a negative impact on health and this may explain the much poorer health of a number of immigrant groups. The deteriorated health of the long-term unemployed may be connected to some extent to reduced powers of influence. Less influence probably also leads to less of a chance to "choose" a reasonably healthy lifestyle, which includes physical activity and diet, as well as alcohol and other illicit drugs.

The Public Health Bill emphasizes that efforts to strengthen democracy and defend human rights also reinforce the feeling of affinity in society as a whole and increases trust between people, both of which promote good health. It also stresses the significance of media policy and information and the importance of it reaching all groups in society.

Labour market policy, gender equality, integration and disability policies are among those fields that are particularly important to allow all citizens the chance to participate in the governing and development of society. Culture, popular movements, youth policy, efforts to strengthen vulnerable metropolitan areas are other examples of activities that strengthen public participation and influence.

2. Economic and social security

Economics and health are connected. Poverty and poor health go hand in hand while conversely, high-income earners enjoy better-than-average health. Economic factors are probably among the significant causes of major regional and geographical discrepancies in health. There are, for example, considerable differences both in average life expectancy and ill-health statistics between rich and less well-off municipalities in Sweden.

This link is even stronger internationally speaking. As one might expect, public health in rich countries is on average better than in poor countries. The relationship between economic situation and health is weaker, however, when a certain income threshold is reached.

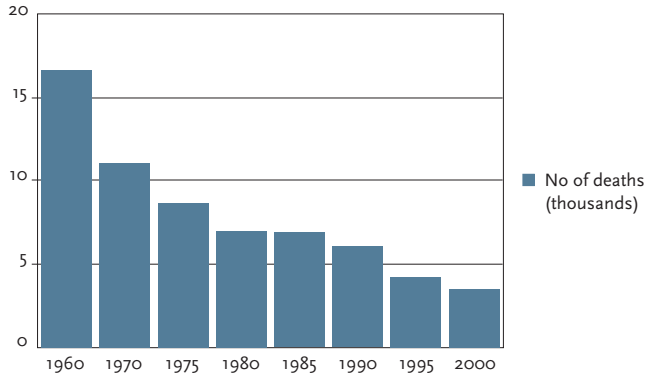
It is important to ask ourselves what has caused these economically related health discrepancies. Poverty and a lack of resources can not only lead to insecurity and a form of economic stress but also to reduced access to basic medical care and other social resources. An important question is to what extent the size of these income divides also affects the average state of health. There are many indications that societies with relatively minor income differences are healthier to live in that those with wide social divides, which can also contribute to more criminality and a greater fear among people of being the victim of crime.

Not only does the Public Health Bill stress that sustainable economic growth is a precondition of successful welfare policy, but also that income divides can in themselves be a risk factor for ill-health. The considerable importance of social security in order to prevent economic stress is emphasized and regarded as particularly important when it comes to combating mental health. Regarding the social security system, special importance is attached to support to families with children and to the elderly as well as to health insurance and housing policy. Labour market and education policies are also important, as are measures to make health and medical care accessible to less prioritized groups. Social services, the judicial system and criminal policy are examples of social areas that are of particular importance for socially deprived groups.

3. Secure and favourable conditions during childhood and adolescence

A summary of socially determined discrepancies regarding the health of children and young people has recently been compiled by associate professor Sven Bremberg at the request of the National Institute of Public Health.

The study shows that there are also very obvious inequalities regarding children's health. Physical health problems, for example, are on average 60 per cent more common among socially less privileged children and mental health problems are 70 per cent more common. There is an even steeper social gradient when it comes to specific types of health problems. Sudden infant death syndrome or cot death is



Infant mortality 1960 – 2000. No of deaths during the first year of life per 1,000 live births.

between 3 and 4 times more common in more deprived social environments and attempted suicide and self-inflicted violence are much more common among socially less privileged young people. Smoking, physical inactivity and alcohol are among the risk factors for disease that are greatly influenced by the social environment. We can also see an area-wise variation when it comes to children's health.

The major inequality concerning children's health is of particular significance, since it has been proven that health during the first few years of life probably has considerable bearing on health development later on. Low birth weight, for example, increases the risk of heart disease in adult life.

Preventive measures concerning children and young people must concentrate on improving the societal conditions for families with children, strengthening child care and developing health-promoting schools. Direct support to families with young children, more parent education and targeted preventive action during pre-school years are important measures to break the trend towards poorer mental health.

The Bill establishes that there is a very strong link between conditions during childhood and adolescence and the economic and social security of adults as well as influence and participation. Family circumstances, school and recreation are seen as the most important aspects of children's health. It is stressed that there are children living in conditions that are far worse than those of others, examples including children of substance abusers and of refugees. The analysis concludes that economic family policies, the social insurance system and the social services play key roles when it comes to strengthening the position of families with children in general. Otherwise, the Bill refers to the same policy areas for this objective as those mentioned under the previous two.

4. Healthier working life

Working life is of crucial importance to public health. People's work is the most significant determinant as regards the very considerable health discrepancies between different population groups. There is much higher mortality and greater ill-health among blue-collar workers than among white-collar workers in managerial positions. The greatest health risks can be found among those who are excluded from the labour market. There are a number of direct relationships between people's work environment and various health outcomes. Negative stress – i.e. tough work requirements combined with a low level of influence over one's work - dramatically

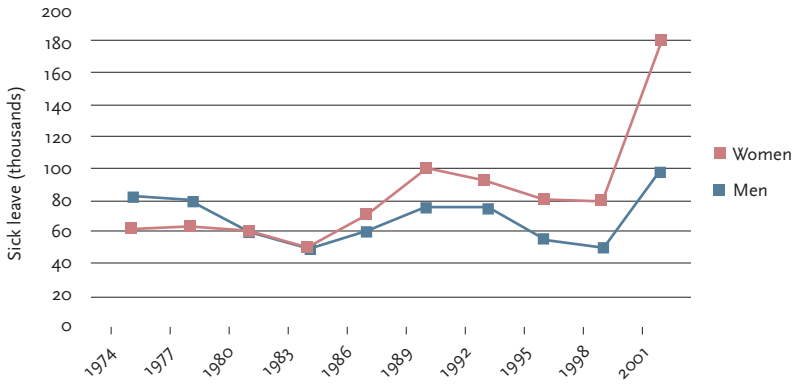
increases the risk both of cardiovascular diseases and mental complaints, such as depression and sleeping disorders. Monotonous work strain is closely associated with muscular pain which is a leading cause of sick leave. The negative development in working life has affected women to a greater extent than men and they are generally over-represented within high-risk professions both regarding negative stress and monotonous muscle strain.

Improving our work environments must therefore be a central and prioritized element of public heath work, a fact indicated not least by the current development in work-related ill-health with about 800,000 people of working age being excluded from working life either because they are on long-term sick leave or disability pension. The costs for sickness absence are in excess of EUR 13 billion per year and threaten both the budget balance and the future expansion of the social welfare system.

This development is also a direct threat to public health since long-term sick leave leads to people being cut off from social contact and causes them to become passive invalids. In order to break this trend, efforts are needed to make workplaces healthier, where good working conditions are combined with real influence and where employees are given the opportunity to take physical exercise during working-hours. It is also very important to review the role of the medical care services in relation to working life. There is a considerable need for occupational medicine skills and the role of occupational healthcare needs to be strengthened. The Swedish Work Environment Authority has a key role to play when it comes to developing requirements both for the physical and the psycho-social work environment.

The Public Health Bill underlines the central role of working life policies and stresses the fact that a healthy and well-functioning working life is the key to breaking the negative trend.

Particular emphasis is placed on the importance of highlighting women's health and the objectives that have been established within the policy areas of gender equality, integration and disability.



Sick leave (thousands) Number of people on sick leave for more than 30 days 1976 - 2001

5. Healthy and safe environments and products

The Government stresses that the requirement for healthy and safe environments is to be regarded in the context of Sweden's environmental quality objectives and the requirement for an ecologically sustainable society, a requirement that affects most policy areas. It is important to increase our knowledge on the environmental impact on health and to apply the precautionary principle when introducing new technology. Of the 15 environmental quality objectives, it is primarily those relating to A good urban environment, Limited climate change, Clean air, A non-toxic environment, A protective ozone layer and A safe radiation environment that are of significance to public health.

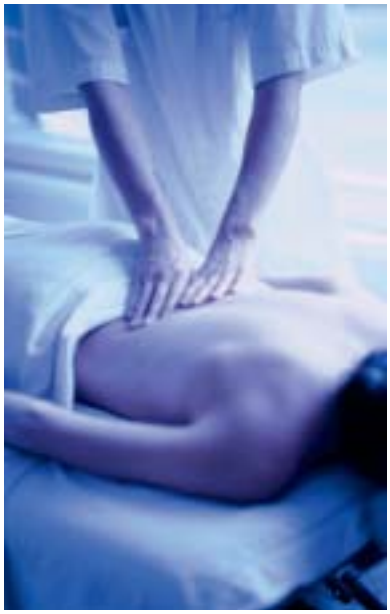
The indoor environment is crucial to human health and radon, damp and mould are among the factors that have a very negative impact.

The Bill also highlights the National Public Health Committee's requirement for access to green areas adjacent to housing, which has a considerable bearing on people's opportunities for physical activities, recreation and recuperation. It is particularly important to ensure that children, the elderly and the disabled have access to green areas.

Injury prevention is also part of this objective. Sweden has been very successful for instance when it comes to preventing accidents involving children through systematic injury-prevention efforts. Such efforts demand involvement on the regional and local levels as well as the incorporation of traffic policies and society's protection and contingency capabilities to deal with accidents. Suicide prevention is also an important element. The requirement for a national injury claims registration system is highlighted as especially important when it comes to developing systematic injury-prevention measures.

Efforts to make products safe must also take consumer policies into account. Very tight control of products that are being introduced onto the market is needed as is good information on the health risks of products already in use. It is important to highlight the risks of developing allergies or of aggravating existing allergy disorders. Guidance and information must be formulated so that children and young people are also protected.

6. Health and medical care that more actively promotes good health

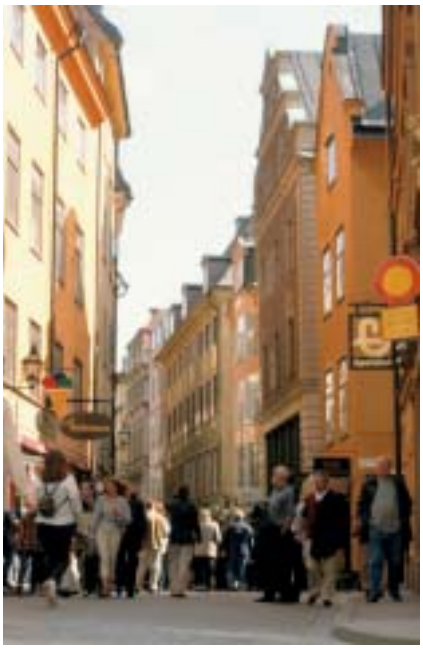


The health and medical care services already have a legal responsibility for the population's health and for conducting preventive measures. The Bill states that the medical care services play a key role in public health work due to their specific competence, broad knowledge, authority and extensive contact with the population. The Bill also points out, however, that the services need to be much more health-oriented, which implies a shift in perspective towards a holistic view of people's problems and a transition to more health-promoting and preventive policy. Such a change to the medical care services would also improve their efficiency and quality. It emphasizes in particular that advice from the medical care services on lifestyle issues is very cost-effective and that primary care has a key role as a result of its extensive contact with people of all ages.

The Bill also points out the current shortcomings in the medical care services' preventive efforts. The potential for being able to intervene at an early stage concerning smoking, physical activity, unhealthy eating habits and alcohol consumption is poorly utilized and there is too much of a tendency to use pharmaceuticals as a preventive course of action instead of proposing non-medicinal measures.

To better promote good health, the health and medical care services must develop in several areas. Preventive measures must be integrated into care chains, at the same time as targeted activities are carried out, including maternity and child healthcare, youth guidance centres, healthcare in schools and companies and in certain cases medical examinations of selected target groups. The health and medical care services have a unique insight into people's living conditions and their consequences and it is important for this knowledge to be harnessed and integrated into the formulation of regional and local strategies for preventive measures. Public health and social medicine departments have a key role to play in this respect and they can also act as important knowledge disseminators between the National Institute of Public Health and other central bodies and local public health promoters. A greater focus on public health in the medical care services calls for strengthened social medicine activities and more training in public health issues.

7. Effective protection against communicable diseases



Internationally speaking, Sweden is in a favourable position when it comes to communicable diseases. This is mainly the result of effective preventive measures in the form of information campaigns, often customized to suit specific target groups, vaccinations and other targeted measures such as testing and contact tracking. A serious international threat does, however, present itself and the situation can rapidly deteriorate as a result of increased travel. The rise in infections that are resistant to antibiotics is also a palpable problem in Sweden. There has also been a marked increase in sexually transmitted infections, which in the long run may also affect the situation with regards to HIV/aids.

Combating HIV/aids has been a central element of the efforts to prevent the spread of communicable diseases. The National Institute of Public Health is responsible for coordinating these efforts on the national level and a special investigator has been appointed to propose how the responsibility may be allocated in the future.

8. Safe sexuality and good reproductive health

The Government points out that Sweden has a very long tradition of conducting information campaigns on the subject of sexuality and partnership, which has been a cornerstone of public health work. It is stressed that efforts should aim to strengthen the individual's own identity and that a positive view of sexuality should be promoted. At the same time, however, it is important to inform people about the risk of sexual transmitted diseases. Efforts to prevent unwanted pregnancies must continue.

The right to safe and secure sexuality must also apply to homosexuals, bisexuals and transsexuals and combating discrimination on the grounds of sexual orientation is a matter of the utmost urgency.

9. Increased physical activity

The value of physical activity to prevent disease has been very convincingly documented in recent years. Physical activity influences a number of diseases and states of health. Of most practical significance is probably its favourable effect on cardio-vascular diseases. The risk, for example, of being stricken with or developing the symptoms of coronary disease is considerably reduced as is the risk of dying from heart failure. It seems as though there is a proportionate relationship between training intensity and risk reduction. Half an hour of moderate physical activity per day, e.g. walking quickly, is sufficient to have a substantial preventive effect for most Swedes.

Physical activity prevents hypertension and significantly lowers the blood pressure. This can be set against the fact that anti-hypertension drugs cost society more than EUR 110 million per year. In many cases, the need for drugs would decrease substantially if doctors recommended physical activity as treatment. This is important not least bearing in mind the fact that many drugs used have serious side-effects.

Type 2 diabetes, i.e. the form of the disease that affects middle-aged and elderly people, is influenced considerably by physical activity. Type 2 diabetes is one of our most widespread diseases and in many cases gives rise to serious complications resulting in blindness and amputations. Physical activity has both a preventive effect and reduces the need for hypoglycaemic drugs.

There is convincing scientific evidence that physical activity has a preventive effect on such widely differing conditions as colorectal cancer, depression and the effects of osteoporosis. There is also a relationship between physical activity and excess weight. Even though physical activity does not itself constitute a weight-reducing measure, it does facilitate weight reduction in the long term and has a positive disease-prevention effect even in those who are overweight.

There are considerable social differences both when it comes to people's opportunity to do physical activity and them actually doing it. Less well educated people, for example, take less exercise than those who are better educated. And girls don't have the same opportunity to participate in organized sports activities as boys do. The opportunity for an active outdoor life and daily exercise is much more limited for immigrants, people excluded from the labour market and the disabled.

The Government's bill refers to the importance of good sports policies that increase people's opportunities to practise sport and take exercise. Physical activity in school and pre-school is seen as essential and the subject of sports and health should aim to develop new working methods that allow all children to participate. Outdoor life should be stimulated both through support to popular movements and better community planning, where access to green areas is important. Physical activity during working hours is of central importance and the number of times people cycle to and from work should increase dramatically.

10. Good eating habits and safe food

Food is of crucial importance to our health. While globally speaking, malnutrition is still an enormous public health problem, excess weight is becoming the predominant problem in an increasing number of countries, including Sweden. Almost 10 per cent of the adult population is seriously overweight and the proportion of overweight children and young people is increasingly rapidly. Excess weight follows a distinct social pattern, in which socially deprived people are worst affected.

Excess weight gives rise to a number of health problems with the considerably greater risk of cardio-vascular diseases, diabetes, musculo-skeletal diseases and some forms of cancer, including colorectal cancer. A key cause of excess weight is a poorly composed diet containing too many calories. The consumption of sugar and fat, especially saturated fat, is too high whilst the intake of fruit and vegetables should increase.

The intensive marketing of sugary and fatty foods, often in the form of semi-finished products or fast food, exacerbates this unfavourable situation. As a result of the European Common Agricultural Policy, many unhealthy products are subsidized, e.g. full-fat milk products, whilst fruit and vegetables are disadvantaged.

In its public health bill, the Government stresses the importance of formulating an objective for societal measures relating to eating habits. The aim of food policy is to bring about ecologically, economically and socially sustainable food production but it is also important to include a public health perspective in this policy. Increasing citizens' knowledge of the relationship between food and health is also important.

11. Reduced use of tobacco and alcohol, a society free from illicit drugs and doping and a reduction in the harmful effects of excessive gambling

Smoking and alcohol use in particular cause enormous public health problems. Around 7,000 people die each year from smoking-related diseases. The number of tobacco-related deaths has decreased somewhat as a result of fewer and fewer Swedish people smoking. The number of alcohol-related deaths amounts to between 4,000 and 5,000 annually, about half of which are violent deaths affecting relatively young people.

Smoking has decreased over subsequent years and about one fifth of the adult population now smoke. The use of moist snuff has, however, increased among men though its health risks have yet to be fully investigated.

Concerning alcohol, there has been a rapid rise in consumption since the end of the 1990s. In 2002, the average consumption was estimated at 10 litres of pure alcohol per adult Swede – the highest consumption level in a century. An increase can be seen in certain types of damage to health from alcohol, such as alcoholic poisoning among young people and a number of alcohol-related acute deaths.

The availability of tobacco and alcohol plays an important part. The Tobacco Act has led to the disappearance of smoking from a number of public places and a smoking ban in restaurants and other catering premises is currently under discussion, something which could further cut down smoking. On the other hand, the tax on cigarettes has been lowered as a result of the increased import and smuggling of tobacco products from other countries.

The availability of alcoholic drinks has increased dramatically as a result of Sweden being forced to adjust to EU import regulations which allow alcohol taxed at a lower rate in one country to be brought into another. Systembolaget AB (the Swedish alcohol retailing monopoly) has increased its number of retail outlets and opening hours whilst the tax on wine has been reduced.

To combat the effects of alcohol drinks becoming more available, the Government has appointed a special alcohol committee whose task is to restrict the harmful consumption of alcohol. The committee has been allocated special resources, the majority of which are to be used to support local preventive measures. The committee has endeavoured to reduce intoxication, limit the alcohol consumption of young people and combat consumption in connection with work, pregnancy and road traffic. The National Institute of Public Health has been charged with the task of monitoring the work of the alcohol committee.

Special funds have been placed at the disposal of the Institute for tobacco prevention

work. Important objectives for this work are to combat first-time smoking among young people and to support anti-smoking measures.

Drug abuse is much less of a public health problem than alcohol and tobacco.

It is, however, a significant cause of death among relatively young people from socially deprived groups and both drug-use and drug-related deaths rose during the 1990s. The Government has appointed a special narcotics coordinator who also has targeted funding at his disposal.

Gambling addiction is also a problem that seems to be on the rise. The number of people with a gambling problem amounts to nearly 100,000, of which 30,000 are addicts. At the request of the Government, the National Institute of Public Health has proposed a special action plan to help gambling addicts.

The public health objectives must be monitored

Objectives are not much use unless they are systematically monitored. This is particularly true if many actors are involved and there is a need for them to work together. The 11 public health objectives involve an estimated 50 or so government agencies. In addition, municipalities and county councils have a major responsibility for conducting public health work on the local and regional levels, as it is on the local level that most of the decisions affecting people's actual living conditions are taken and the county councils have a responsibility to implement preventive measures under the Health and Medical Care Services Act.

Under the Government's Public Health Bill, the National Institute of Public Health is responsible for monitoring the 11 objectives. The intention is to draw up a public health policy report every fourth year which will present developments in public health based on health determinants.

Indicators for the various determinants are needed for this to be possible. Whereas an indicator need not correspond directly to a public health objective, it is nevertheless important for there to be a clear connection between the indicator and the determinant. Naturally, it is also crucial that the indicator is relevant to the health trend and actually measures something that affects human health. It is also important to make use of indicators that can monitor development on the regional and local levels as well.

The public health report can be said to be an attempt to monitor the impact on health of the national policy regarding the 11 public health objectives. Health impact assessments are also becoming increasingly important concerning the monitoring of policies within individual sectors of society. A case in point is the analysis of the European Common Agricultural Policy (CAP) performed by the National Institute of Public Health. About 45 per cent of the EU budget of more than EUR 88 billion is used to finance the CAP. The policy involves not only giving support to some types of agricultural production but also providing a certain amount of consumption aid and has been criticized for being very costly and because it makes it more difficult for poor countries to compete on the European market. The National Institute of Public Health's analysis shows that the policy has a number

of negative effects on health. Many unhealthy foodstuffs are subsidized, such as full-fat milk products, whilst access to fruit and vegetables is obstructed. As a result, the policy exacerbates what is already Europe's biggest health problem, namely the ever-increasing number of overweight people and the excessive fat intake. Production support to tobacco, which costs the Swedish taxpayer nearly EUR 33 million a year, is the most flagrant example of the policy going against fundamental public health interests.

Health impact assessments help to analyse the effects on human health of different proposals and measures, as far as possible in quantitative terms. This may apply to government bills, proposals from various committees and boards, municipal budgets or existing activities. It is important for health impact assessments to be based on fact and be scientifically substantiated in order for them to be used to influence development.

Health information

An important aspect of the future public health policy to be solved is the responsibility for providing society with health information, a responsibility that is currently divided up among several parties. More extensive efforts have been made regarding HIV/aids and sexually transmitted diseases, alcohol, illicit drugs, tobacco and road safety.

Information on HIV/aids began in the middle of the 1980s, firstly through the government aids delegation and later on through the National Institute of Public Health. Activities have targeted different groups such as young people, immigrants and homo- and bisexuals. These efforts have probably helped Sweden to reach a favourable position regarding the level of HIV infection compared to other countries.

Regarding alcohol, an important aim has been to combat the negative effects of the adjustments made to the Swedish alcohol policy to bring it into line with the EU regulatory framework, such as the new import regulations which make it difficult to maintain a high level of tax on alcohol. In 2001, the Swedish Riksdag adopted a new national action plan to combat the harmful consumption of alcohol and a special alcohol committee was set up whose responsibilities included information dissemination. Correspondingly, the government's special narcotics coordinator has funds at his disposal for information campaigns, etc. The National Institute of Public Health has the responsibility for information on tobacco and has also run a specific campaign to increase physical activity among the population called "Sweden on the move".

An important issue is how to secure long-term resources to provide better dietary information since poorly composed diets, excess weight and a number of associated diseases have together become one of the largest and fastest growing public health problems. Both the trade sector and industry market foodstuffs intensively. New food articles are often launched based on loosely founded health claims and products with a high fat and sugar content are marketed very forcibly. It is becoming very difficult for the individual consumer to obtain an overall picture and form an opinion as to what is a well composed diet.

Another area where there is considerable need for information measures is non-medical treatment within the medical care services. Enormous investment is put into

marketing pharmaceutical products both as a preventive measure and for treatment. On the other hand, the resources put into perfectly satisfactory or often superior non-medical alternatives, such as physical activity, modified diet and changed lifestyle, are extremely modest.

The National Institute of Public Health has been instructed by the Government to examine future health information.

Research into public health

The majority of the research carried out in the health sector is basic medical research or research into diseases, disease processes and their treatment. A vast amount of this research is financed by the pharmaceutical industry or by other economic interests associated with the medical care sector.

Research into preventive measures is performed to a substantially less extent and there is hardly any research at all into the social mechanisms of ill-health. The latter constitutes just a small percentage of the total research performed.

Research policy reflects both an over-confidence in the medical care services' ability to solve fundamental health problems and the strong economic interests that exist in the field of medical treatment. An individual and often deep-rooted biological approach dominates within the field of medicine, resulting in socially determined health discrepancies being studied relatively seldom or in many cases being ignored completely.

There is a substantial need for long-term competence building and research into the social causes of health and ill-health. Concerning basically all the social determinants of health, there is a need for research into the modes of action and the efficacy of various health policy strategies. Effective knowledge-based preventive measures need to be systematically developed.

In partnership with the Swedish Council for Working Life and Social Research (FAS), the Institute of Public Health has been instructed to analyse Swedish public health research and propose improvements.

A gender perspective on public health

Gender is a very important health determinant and is in turn connected to other factors, primarily material and cultural resources. To understand the relationship between gender and health, we must look at how power and economic assets are distributed in society. Working life conditions are also of considerable significance.

Gender is a concept we use when we wish to describe socially and culturally determined discrepancies between men and women. This is significant when we wish to influence public health and may to a certain extent be in contrast to the focus of current research, which primarily looks at biological gender differences.

In all probability, there is a biological reason why women live longer then men. Younger and middle-aged women, for example, run a much lower risk of contracting cardio-

vascular diseases than men in the corresponding age group, which is probably associated with biological safety factors. This discrepancy disappears later in life, however.

On the other hand, women are much worse affected by ill-health than men, which has to do with societal conditions. Labour market conditions also play a significant part in this. Women are over-represented in jobs with a high level of strain but a low level of influence and are more often forced to have two jobs. They also go on long-term sick leave twice as often as men. Discrepancies in power and influence mean that women have less access to qualified resources regarding healthcare and rehabilitation. They also earn less than men, even when the type of work and their education are taken into account, and are over-represented among less well-off groups and as a result exposed to greater health risks.

Greater equality and less emphasis on specific female and male gender roles would probably benefit both the sexes. Many health risks, such as injury caused by violence and accident, are closely associated with male behaviour and with higher alcohol consumption among men. It would benefit many children if their fathers were more involved in their upbringing and housework. Older women often have to care for men but frequently find it difficult to obtain the care they themselves need.

A gender perspective, based on the different social situations of men and women and the varying degrees of power and influence, must be an integral part of the entire public health policy.

A lifetime perspective on public health

It is important to consider health problems in a whole-life perspective. We are not just affected by present-day health determinants but also bring with us our previous history. We are particularly impressionable during childhood and adolescence and even events before we are born can have a bearing on our future health. A low birth weight, which in some cases can be evidence of problematic circumstances during pregnancy, is associated with a higher risk of contracting cardio-vascular diseases as an adult. How children relate to their parents also has considerable bearing on their development and mental health.

Better support to parents, efforts to improve the self-confidence of parents of young children and measures to strengthen teaching skills in pre-schools are of considerably greater significance to combat mental ill-health than preventive measures and treatment administered at a later stage.

Physical activity and a good diet during childhood and adolescence are very important when it comes to combating excess weight, type 2 diabetes and osteoporosis much later on in life. Most of the foundation for social inequality in health is laid during childhood and adolescence.

A lifetime perspective does not mean that preventive measures later in life are meaningless. On the contrary, public health measures are particularly important to implement among the elderly and we can see that physical activity and a good social environment have a clearly positive effect even on very old people. Preventive measures among the elderly have unfortunately been neglected. As local authority finances have deteriorated and

responsibilities have been shifted around, social measures to help our elderly have centred very much on healthcare and nursing. More investment in preventive and health-promotion measures among the elderly would provide considerable health gains and help to reduce the future need for care and nursing.

Swedish public health in an international perspective

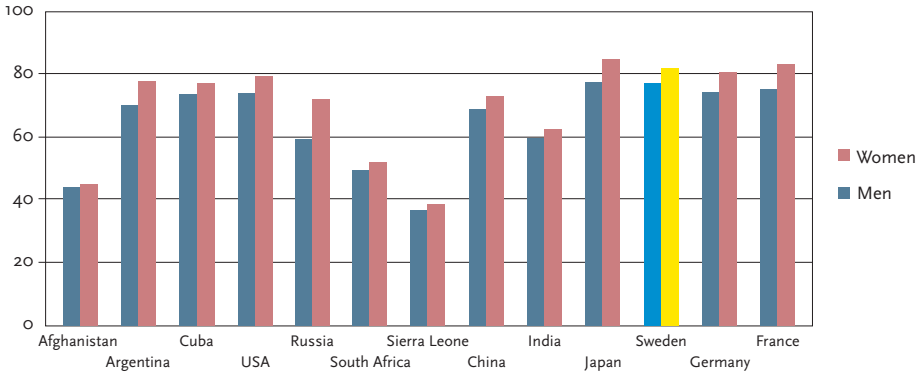
If we look at the issue in a global perspective, the health discrepancies are enormous. When we compare health in different countries, we normally use indicators such as average life expectancy and infant mortality as this information is easily available and reasonably comparable. Comparing people's self-experienced health for example is more difficult, partly because there is a lack of reliable data from many countries and partly because cultural differences make it difficult to know whether the responses are comparable. The WHO and the World Bank have however tried to compare the disease burden, which is an appraisal of morbidity and mortality, between different countries.

Infant mortality is an important indicator as it is probably influenced by both living standard and level of education as well as access to basic health and medical care.

Internationally, there are considerable differences in child survival rates. In Sweden, only 3 infants per thousand do not survive their first year of life, whereas in several African countries, the corresponding figure is over 100, i.e. the mortality rate is 30 times as high. Infant mortality has decreased dramatically in many countries over the last 20 years but has conversely increased in several southern African countries.

We can also see major international discrepancies when it comes to average life expectancy.

Japan has the longest life expectancy in the world followed by Sweden. We have also seen evidence of a catastrophic health development in a number of African states, where



Average life expectancy in several countries in 2000. Sweden has a good standard of public health in many respects.

Source: WHO World Health Report 2001

average life expectancy has fallen by 10-15 years over the last few decades, probably as a result of very negative economic development and the rapid spread of HIV/aids and other infections such as tuberculosis and malaria.

In Russia, it is mainly the negative health development among men that is giving cause for concern. The average life expectancy of Russian men is nearly 20 years less than that of Swedish men. Alcohol-related diseases and cardio-vascular disorders contribute substantially to the ill-health of Russian men.

Such large international discrepancies also reflect a global inequality in economic and political terms. According to the WHO 2002 World Health Report, almost a billion people are under-nourished and 12 million die of diseases that are closely connected with a lack of food and clean water. Whilst about the same number are afflicted with health problems that are associated with excess weight and too high a fat intake.

Global warming primarily affects people in poor countries where agriculture is often extremely sensitive to climate change and where there is a lack of drinking water.

Around ten million people die every year from communicable diseases which in most cases could be prevented or treated. A so-called Global Fund was established several years ago, into which the rich countries of the world were to deposit money to combat aids, malaria and tuberculosis. The idea was for the fund to contain USD 8 billion but so far only part of this amount has been deposited. This can be compared to the costs of war in Iraq, which are estimated to be ten times as much.

Harsh criticism has been directed towards the World Trade Organization, WTO, and its regulations, because they increase the pharmaceutical costs for poor countries by protecting the patents of large pharmaceutical multinationals. Other elements of the regulatory framework have been criticized for facilitating the privatization of medical care services and the establishment of large healthcare companies abroad. The World Bank and the International Monetary Fund, IMF, have received very harsh criticism for requiring debt-ridden poor countries to implement so-called Structural Adjustment Programmes (SAP) and forcing them to make drastic cutbacks in their state school and healthcare systems, causing further deterioration in public health.

It is becoming increasingly clear that Swedish public health work cannot be pursued in isolation from the rest of the world. A case in point concerns communicable diseases which do not respect national borders. The majority of new HIV sufferers in Sweden, for example, have been infected abroad. There is growing realization that good public health is also a necessary prerequisite for economic and social development and hence for peace and democracy.

Public health must be at the centre of the public debate

During the 20th century, average life expectancy in Sweden rose by about 25 years. A small part of this increase is due to better medical treatment methods, new medicines such as antibiotics and anti-hypertension drugs, better surgical methods and new diagnostics. Most of the improvement in health is associated with better hygiene, better diet, better

housing and lower-risk working conditions, i.e. factors that can be influenced by political decisions and community-based preventive measures.

Public health is influenced to a very large extent by social change and by political decisions that are taken by governments and parliaments as well as local and regional assemblies. The work being performed at workplaces and in housing areas is also very important, work in which trade unions and other popular movements play a key role. Public health work has undergone palpable change over the last few decades with the focus increasingly being on the regional and local levels. Municipalities naturally have a key role since it is on the local level that most decisions affecting people's everyday circumstances are taken.

The content of public health work has also changed. There has been a shift in perspective from independent health information and information campaigns to measures to which a structural approach has been applied and an attempt has been made to integrate public health into social policy. There has also been a certain shift from combating individual health problems to applying a holistic approach to health even though this development must continue.

It is important for work to focus on the fundamental public health determinants. If we wish to change people's behaviour, we must do so while at the same time helping to create the social conditions for change. Public health work is mostly about people feeling they have power over their own health.

This view of public health work as social change management also means that it is a pressing issue not just for professional public health workers but also for the entire society.

Public health is ultimately a question of what kind of society we wish to live in. There is a close connection between democracy, participation, equality and social security on the one hand and good public health on the other. The aim of the new public health policy is for human health to be seen as one of the most important overall objectives of social policy as a whole.

Sweden now has a national public health policy. The Swedish Riksdag passed the Government's Public Health Objectives Bill in April 2003.

The overall aim of Swedish public health policy is to create social conditions that will ensure good health for the entire population. It is also established that improving the public health of those groups most vulnerable to ill-health is particularly important.

Since health is such a desirable goal, it is only natural for the health of the whole population, i.e. public health, to be one of the most important political objectives. Even if public health policy has been strengthened on a national level, we still have a long way to go before it is considered to be equally as important as economic policy, labour market policy or social policy. The most important aim of the bill is to make public health an fundamental part of social policy. Since public health concerns and is influenced by many different sectors of society, is it also important to set objectives that can act as guiding principles for the work done within the various sectors.

This publication paints a picture of public health today and provides a more detailed description of the national public health objectives.

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