
1. Health Impact Assessment: 30 years gone. 30 years to come

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INTRODUCTION¹

It is 30 years since the readership of the *British Medical Journal* was introduced to Health Impact Assessment (HIA) as an approach that would add value to government policies in England and as ‘an idea whose time has come’ (Scott-Samuel, 1996). This provides us with a convenient marker for the opening chapter of this *Handbook* to look back and also to look forward to the next 30 years. The 1996 editorial was able to present HIA so confidently because the approach was already being used in other parts of the world. Work to assess the health impacts of activities outside the health system had been spurred on by the safeguards which the World Bank had begun to apply to infrastructure and other development projects funded by its loans in low- and middle-HDI (Human Development Index) countries (UNDP, 2025). These safeguards were being met through environmental assessment, which was seen as providing opportunities to address health considerations in the early stages of project design. The audience for this early HIA work was thus composed of ministries of health and their local counterparts in low- and middle-HDI countries and, importantly, the funders and proponents of infrastructure projects and the environmental protection agencies that granted the licences for such projects. In these early days of HIA we can see themes that apply to this day and, indeed, that recur through this *Handbook*: HIA, and health in environmental assessment, as cross-sectoral; the relationship of HIA to environmental assessment; the tier at which HIA should be conducted; the evolving role of the ministry of health in a process that has been traditionally the purview of other ministries or governmental actors; and variations in practice across regions. The chapters in the *Handbook* show the actors involved in the HIA, the way in which the process of HIA functions, what it might achieve and how a system for HIA can be maintained.

Since its early days, HIA has grown to bring insight from public health to bear on the challenges facing society, whether social, environmental, economic, technological or geopolitical. HIA can be applied at strategic levels or at the project level. This ranges from trade agreements made between nations to national, regional and local policies on matters as diverse as food and energy policy. Projects typically refer to infrastructure projects, large and small, for energy, transport, housing, etc. HIA identifies opportunities to protect and promote human health, reduce inequity in health and contribute to sustainable development. These lofty aims are achieved through the scrutiny and technical analysis of policy and project documentation, with reference to robust evidence from science, secondary data sources and consultation with all stakeholders, crucially including people affected by the intervention at hand.

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Public health is inherently intersectoral; it is also underfunded and under-leveraged, and, at the time of writing, it faces extreme challenges (de Leeuw, 2025), with numerous actions to abolish or reduce government funding for preventative approaches (Cavalcanti et al., 2025). Those who support impact assessment argue that the costs in terms of money and time are repaid in higher quality policies or developments, and against other normative values such as sustainability. Impact assessment is always vulnerable to proposals to ‘streamline’ its processes (Arts and de Vries, 2023) as it costs money, it takes time and, as an integral part of contested decisions, it is often seen as itself being contentious. So, the fields of impact assessment and public health are facing challenging times. Each can inform all tiers of policy. Each is focused on society and its protection and improvement. Each is determinedly an evidence- and rules-based approach that seeks to inform policy and to strengthen decision-making, and must stay true to its ideals while adapting to meet current challenges.

This *Handbook* on HIA presents 29 chapters written by 90 authors, covering HIA in different forms and providing perspectives from many regions of the world. In this opening chapter, we define some of the key terms used across HIA and within this *Handbook*. We then touch on the domains of activity for HIA before we introduce the structure of the *Handbook*. We conclude with some thoughts on the future of the assessment of human health impacts.

DEFINITIONS

Terminology and definitions are especially important for cross-sectoral endeavours such as HIA; so, in this section, we define terms integral to HIA as a process and as a field of expertise. As might be expected, there is no full consensus on each of these terms, and so, where relevant, we provide an indication of the range of interpretations. We first situate HIA within the field of impact assessment before looking at the definition of HIA itself. We then consider some of the concepts that inform the field. This then enables us to look at the steps in the HIA process.

Impact Assessment

HIA belongs to the wider ‘family of impact assessments’ (Vancly, 2015) that seek to inform decision-makers about the implications of an intervention at any policy tier or level. Impact assessments are typically applied to all tiers, for example, policy, programme, plan or project.² The assumption is that the quality of an intervention can be improved by subjecting it to impact assessment, also called *ex ante* evaluation or *ex ante* impact assessment, before it enters into force. A similar set of methods can be applied after an intervention has operated for a certain period of time, and that is known as *ex post* evaluation (after Naundorf and Radaelli, 2017). *Ex ante* assessments have a dual function, being both (i) technical tools for analysing the consequences of a planned intervention and (ii) a legal and institutional procedure that is part of the decision-making process of that intervention (International Association for Impact

² In this chapter we do not always refer to the full range of tiers, for example *policy, plan, programme* or *project*, but we use terms such as *intervention* to refer collectively to the object of an impact assessment. We specify when a point is relevant to a particular tier.

Assessment (IAIA), 2010). So while analysing the intervention, *ex ante* impact assessments are also used to ensure the intervention complies with regulations and other normative frameworks, and so there is an ongoing dialogue in which changes to, for example, the wording of policies or the design of projects are agreed through the impact assessment.

Health Impact Assessment

An early framing of HIA in the Merseyside guidelines (Scott-Samuel et al., 1998) presented it as:

the estimation of the effects of a specified action on the health of a defined population.

Here, HIA is a straightforward causal pathway analysis from action to health effect, albeit one that offers an estimation and which thus embraces uncertainty. One year later, a fuller definition was provided in the Gothenburg consensus paper (WHO Regional Office for Europe and European Centre for Health Policy, 1999), which defined HIA as:

a combination of procedures, methods and tools by which a policy, program 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.

The Gothenburg consensus paper (hereafter ‘Gothenburg’) continues to be extremely influential, and indeed it is used in many of the chapters in this *Handbook*. In Gothenburg, we see that HIA is presented as applicable across all policy tiers, as being *ex ante* and as judging the intervention, and so still embracing uncertainty. By specifying a focus on the health effects on, and within, a population, Gothenburg establishes health inequality and health equity (see Table 1.1) as integral to the process. Gothenburg also established values that run through HIA and inform its practice. These are democracy, equity, sustainable development and being ethical in how evidence is used.

BOX 1.1 DEFINITION OF HEALTH IMPACT ASSESSMENT IN THE 2021 IAIA BEST PRACTICE PAPER

‘Health impact assessment (HIA) is a process which systematically judges the potential, and sometimes unintended, effects of a project, programme, plan, policy or strategy on the health of a population and the distribution of those effects within the population. HIA generates evidence for appropriate actions to avoid or mitigate health risks and promote health opportunities. HIA guides the establishment of a framework for monitoring and evaluating changes in health as part of performance management and sustainable development’.

Source: Winkler et al. (2021).

We now jump to a 2021 definition of HIA from the IAIA (see Box 1.1) in which we, the editors of this *Handbook*, were involved. The 2021 definition was built on Gothenburg, as well as an

Table 1.1 Definitions of key terms

Term	Definition
Health	A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1989).
Public health	The ‘art and science of preventing disease, prolonging life and promoting health through the organized efforts of society’ (Winslow, 1920; Acheson, 1988).
Determinant of health	These are characteristics of the physical environment that influence health such as air quality, water and noise; we have social determinants of health such as housing and employment (Wilkinson and Marmot, 2003) and, more recently, legal determinants of health (Gostin et al., 2019), which draws attention to the importance of law and policy in shaping people’s lives and health; and commercial determinants of health (Gilmore et al., 2023), which highlights the link between, for example, noncommunicable diseases and commercial imperatives to manufacture and sell calorie-dense and highly processed foods.
Health outcomes	The determinants of health influence health outcomes. A health outcome is the change in the health status of an individual, group or population which is attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change health status (WHO, 2021).
Health inequality	Health outcomes are not distributed evenly across a population, and this reality is captured by the term health inequality. ‘Health inequality’ seeks to be a value-neutral observation of differences that are observed: inequalities in health are observable across geographical areas and also within communities that may not be defined by geography (e.g. by ethnicity, disability, socio-economic status, etc.).
Health equity	This term ‘health equity’ makes explicit the moral and ethical dimension of observing a difference. Health inequity refers to differences which are unnecessary and avoidable but, in addition, are also considered unfair and unjust. So, in order to describe a certain situation as inequitable, the cause has to be examined and judged to be unfair in the context of what is going on in the rest of society (Whitehead, 1991).
Health system and health sector	In 1998, the WHO defined the health sector as including organised public and private health services, health departments and ministries and also health-related non-government organisations, community groups and professional associations (adapted from WHO, 1998). In 2010, the WHO refined its definition, stating that the terms are often used interchangeably with ‘health system’ interpreted as being restricted to the actions of the government (WHO, 2010b).

Source: References as cited. Further definitions are found in Cave et al. (2020).

earlier IAIA publication (Quigley et al., 2006), and it sought to update the definition in line with current HIA practice (Winkler et al., 2020). This 2021 definition further specifies that HIA generates evidence for appropriate *actions* to avoid or mitigate health risks and promote health opportunities, and it provides *evidence to manage and monitor the impacts*. Earlier HIA guidance (e.g. Gothenburg) uses the term *recommendation* to describe the changes that need to happen to an intervention so as to protect or promote health. The wording in the IAIA definition allows for the more institutionalised approaches in other impact assessments where the proponent commits to specific actions to mitigate or to enhance an effect. By referring to

both risks and opportunities, this definition is also clear that an intervention can have adverse or beneficial impacts on health. The IAIA paper (Winkler et al., 2021) kept the Gothenburg values but presented them as principles and added that HIAs should be informed by the definition of health as given by the constitution of the World Health Organization (WHO) (1989), which leads us to other important definitions for the field. A final point to note is that the IAIA paper (Winkler et al., 2021) introduces *strategy* as an additional and higher tier for HIA so as to allow for ‘systems approaches’ to address the challenges identified by planetary health and climate sciences.

Health, Public Health, its Determinants and their Distribution

Table 1.1 provides definitions of key terms, and as these are introduced below, each is shown in italics. The IAIA paper (Winkler et al., 2021) states that HIA should use the definition of *health* as given in the WHO constitution (see Table 1.1). This has far-reaching implications for the way in which society protects and promotes health. The WHO constitution establishes the importance of treating disease and infirmity. This is the competence of the *health system*, which is made up of many specialities concerned with diagnosing, treating and managing illness and most of which take place on a 1-to-1 basis between an individual and a clinician. *Public health* does not attend to individuals; instead, it is that branch of the health system that focuses on communities and populations from local to global. It is a field of both practice and research, and it is a branch of government. We say it should also be the ‘home’ of HIA. Public health has a broad vision, it is inherently intersectoral (see Table 1.1), and it emphasises measures that prevent ill health. The WHO constitution also shows health to be a state of physical, mental and social well-being and thus extends responsibility for health beyond the health system to the *health sector* (see Table 1.1 for a definition of these two terms) and to wider society. This has led to the Health in All Policies (HiAP) movement, which makes the case that all areas of government have, and so should pay heed to, effects on health and well-being. Impact assessment (WHO, 2010a) and HIA (WHO, 2019), are named as key tools of HiAP. As a branch of government, public health, while situated within the Ministry of Health, will seek to work with other government departments and with wider society.

The term *determinant of health* is used to explain how actions across all sectors have an influence on health, and changes in one or more determinants of health lead to changes in *health outcomes*. Table 1.1 shows how there are *inequalities in health* across and within communities and that this variation may also be judged as unfair (see *health equity* in Table 1.1). HIA typically explores the relationship between determinants of health and health outcomes, while seeking to reduce inequalities in health and improve health equity.

The WHO constitution also establishes the enjoyment of the highest attainable standard of health as one of the fundamental rights of every human being and thus, ultimately, the responsibility of governments. The right to health was recognised by the 1948 Universal Declaration of Human Rights (United Nations, 1948), and defined further in subsequent documents (e.g. UN General Assembly, 1966; UN Committee on Economic, Social and Cultural Rights (CESCR), 2000). Since then, health as a human right has been reaffirmed most recently in the right to a clean, healthy and sustainable environment (UN General Assembly, 2022).

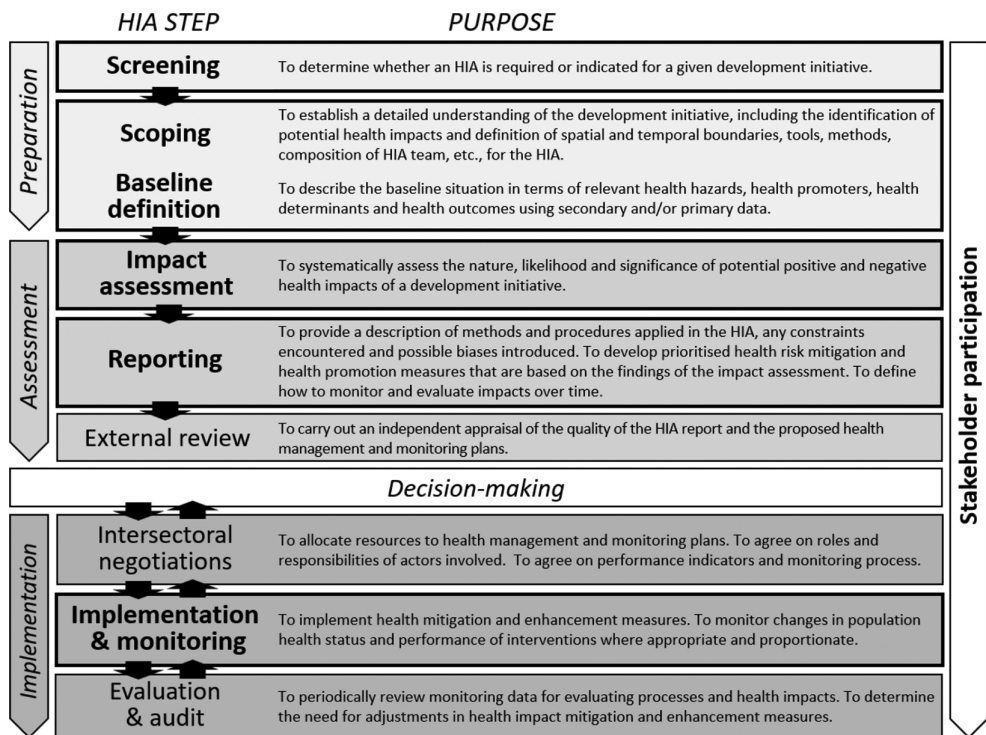
While the definition of health in the WHO constitution has not changed since 1946, other definitions that sit within it have been coined; thus, health has been defined as ‘a resource for everyday life, not the objective of living’ (WHO, 1986); the Permanent Forum on Indigenous

Peoples (n.d.) placed emphasis on emotional, spiritual and cultural dimensions of health; and fields such as Planetary and One Health emphasise the interdependence of ‘natural systems’ and human health (One Health Initiative Task Force, 2008; Whitmee et al., 2015).

The Process of HIA

Health is thus a broad concept, and its effects are far-reaching, which makes it complex to assess. HIA helps to navigate this by providing a structure in which a proportionate approach to assessment can be followed: all stakeholders are able to work out the changes that will result from an intervention, who will be affected and what can be done. A single assessment will present findings on different topics, and HIA has long sought to use both quantitative and qualitative approaches (e.g. Mindell et al., 2001; Cave et al., 2021; Leuenberger et al., 2022).

The actors who play a part in the HIA process vary, but there are four main roles: the proponent that is preparing the intervention; local communities and/or institutions that might be affected, adversely or beneficially, by the proposed intervention; regulators and competent authorities who will have a role in reviewing the HIA and in approving the proposed



Source: Adapted from IAIA Best Practice Principles (Winkler et al., 2021).

Figure 1.1 HIA steps in the context of the assessment process

intervention and should include the national or local public health authority; and the HIA team who will conduct the HIA but may not be involved in all the steps.

Figure 1.1 shows how the IAIA paper (Winkler et al., 2021) presents the steps of HIA. It has been adapted for this chapter to show that stakeholder participation runs throughout the process. It also shows how the technical analysis takes place at the same time as a dialogue about the actions needed to refine the intervention so as to protect and promote health and to meet other governance requirements, be they legal, organisational or financial.

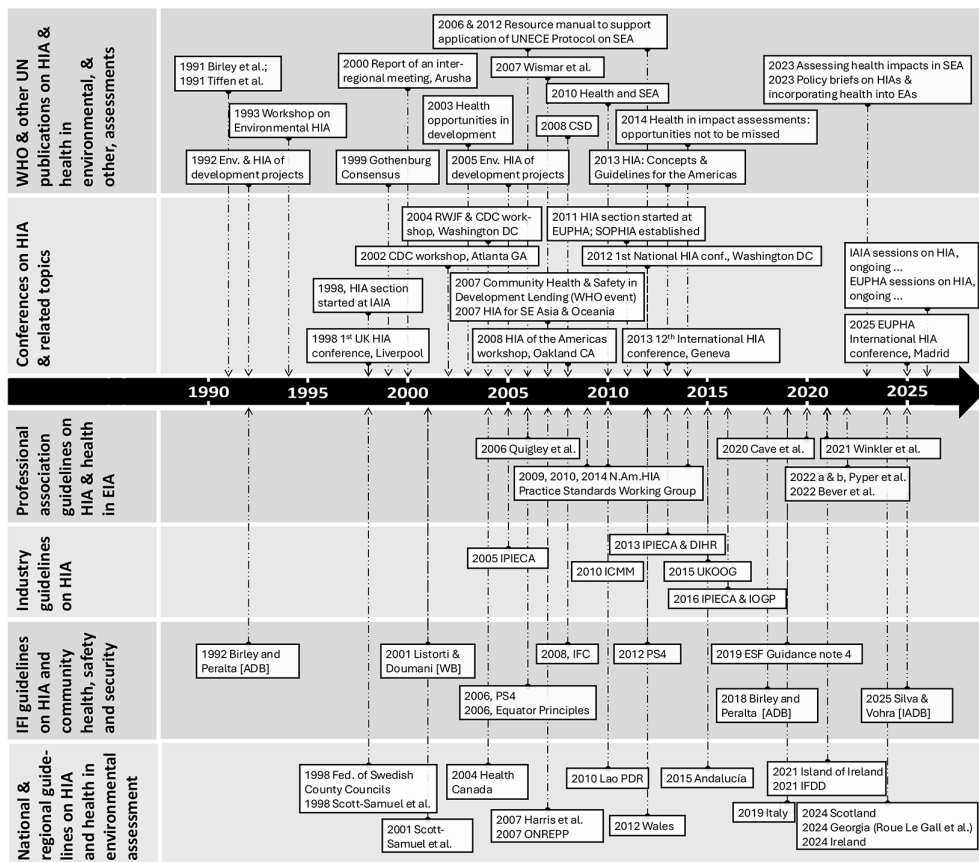
DOMAINS OF ACTIVITY FOR HIA

The history of HIA is well covered elsewhere (Kemmer and Parry, 2004; Birley, 2011; Harris-Roxas and Harris, 2011; Harris-Roxas et al., 2012; Viliani and Clarke, 2013; Dannenberg, 2016), and so we touch but briefly on it here and seek to show activity across different domains. Harris-Roxas and colleagues (Harris-Roxas and Harris, 2011; Harris-Roxas et al., 2012) elegantly show how the field of HIA emerged as impact assessment started, that it has roots in three public health areas of activity, namely environmental health, wider determinants of health and health equity, and that, importantly, each of these roots has a theme of cross- or multisectoral working. HIA has been promoted as a framework to achieve a systematic approach to intersectoral action for health, something that has been on the WHO's agenda since the 1970s (WHO Regional Office for Europe, 1978; WHO, 1986, 1988, 1997). We draw attention to the role environmental assessment has played in providing a regulated and institutionalised process for the assessment of health.

In the section below, we outline the breadth of activities in HIA and health in environmental assessment and link them to the different domains of activity that have been part of defining and promoting the assessment of health. We map this onto a timeline which is, by necessity, selective and illustrative (see Figure 1.2). We reflect on what has changed and what has stayed constant since those early days. We begin with the origins of impact assessment before looking at the work on HIA led by the WHO and then at HIA activities conducted outside, and sometimes alongside, the WHO.

The Influence of the National Environmental Policy Act (1969)

Impact assessment, as an approach, has its origins in the 1960s when a growing awareness of the effects of human-induced actions on the environment spurred the development of the environmental impact assessment (EIA) approach as a key tool for environmental management (Burton et al., 1983; Bond and Wathern, 1999). The United States formalised the assessment of development projects with the introduction of the National Environmental Policy Act (NEPA) (United States of America Senate and House of Representatives, 1969) and this established a comprehensive legal framework for EIA that has been taken up by countries all over the world (Morgan, 2012). NEPA provided a model for the process of EIA that has been widely adopted, and it also established a model for the ambition and the content of legislation requiring EIA. One of NEPA's goals is to stimulate the 'health and welfare of man' (Sec. 2 [42 USC § 4321]), and this has proven important for establishing a requirement for the assessment of human health. The analysis of health effects arising from industrial development had long been recognised and Viliani and Clarke (2013) show two examples in sub-Saharan Africa



Abbreviations: ADB: Asian Development Bank; CDC: Centers for Disease Control and Prevention; CSD: Commission on the Social Determinants of Health; DIHR: Danish Institute for Human Rights; EAs: Environmental Assessments; ESF: Environmental and Social Safeguard; EUPHA: European Public Health Association; IADB: Inter-American Development Bank; IAIA: International Association for Impact Assessment; ICMM: International Council on Mining & Metals; IFC: International Finance Corporation; IFDD: Institut de la Francophonie pour le développement durable; IOGP: International Association of Oil and Gas Producers; IPIECA: International Petroleum Industry Environmental Conservation Association; ONREPP: Office of Natural Resources and Environmental Policy and Planning; PDR: People's Democratic Republic; PS4: Performance Standard 4; RWJF: Robert Wood Johnson Foundation; SEA: Strategic Environmental Assessment; SOPHIA: Society for the Practitioners of HIA; UKOOG: United Kingdom Onshore Operators Group; UNECE: United Nations Economic Commission for Europe; WB: World Bank.

Source: Various, prepared by the authors for this chapter.

Figure 1.2 Selected milestones and domains of activity in HIA and health in environmental assessment: 1991 to 2025

(MacDonald, 1955; Barbiero, 1979), but NEPA established a legal framework for a formal assessment that has spread far and wide.

NEPA was drafted so it could be applied strategically, that is, to tiers (or levels) above projects as well as to projects, but its main use has been at the project level. Fischer and González (2021) explain how, in the late 1980s, the term **Strategic Environmental Assessment (SEA)**

began to be used to refer to environmental assessments conducted above the project level and that its use was boosted by the European Directive 2001/42/EC (known as the ‘SEA Directive’) (European Parliament and Council of the European Union, 2001). This directive is relevant to health as it names human health among the topics to be considered, and we see below how this spurred work looking at health in SEA.

The World Bank also adopted the NEPA model: in the late 1980s and early 1990s, it introduced Environmental Assessment as an ‘umbrella policy’ through which potential social and environmental impacts of the activities funded by its loans should be identified and managed (Dann and Riegner, 2019). The World Bank integrated environmental and social safeguards into the planning, design and management of programmes and projects it funded. This approach was later replicated by multiple International Financial Institutions (IFIs).

WHO and HIA

A distinct form of impact assessment focusing specifically on human health began to emerge from the late 1970s and took shape throughout the 1990s. The work of PEEM (Panel of Experts in Environmental Management for vector control) by the WHO, Food and Agriculture Organization (FAO) and United Nations Environment Programme (UNEP) (Birley, 1991; Tiffen, 1991) was influential in this regard. PEEM’s work responded to the introduction of environmental safeguards by the World Bank and sought to reduce vector-borne diseases by adapting the planning, design and management of dams and irrigation infrastructure.

In 1993, the WHO’s Western Pacific Regional Office held a workshop to examine methods and processes for Environmental Health Impact Assessment (WHO Regional Office for the Western Pacific, 1993). An HIA milestone came from a WHO-convened meeting in Gothenburg in 1999. Health 21 was a WHO European Regional Office policy document which named HIA as one of four strategies to achieve sustainability and ‘health for all’ (WHO Regional Office for Europe, 1998). A meeting to agree on how HIA could achieve sustainability and ‘health for all’ resulted in the Gothenburg Consensus Paper on HIA (WHO Regional Office for Europe and European Centre for Health Policy, 1999). These established values for HIA that have broadly been accepted as overarching for HIA practice and, as noted above, Gothenburg continues to be very influential.

In 2000, the WHO convened a meeting of all its regional offices in Arusha, Tanzania, to begin a process of HIA mainstreaming, harmonisation and strategy development. (WHO, 2001). The participants at this meeting confirmed support for the Gothenburg definition of HIA and stated that health should be considered in accordance with the definition in the WHO constitution. Materials for a training course on HIA were developed after this meeting in Arusha (Bos et al., 2003). The Commission on the Social Determinants of Health (2008) was a global review of health equity and ways in which it should be achieved through cross-sector working. This identified a role for health equity impact assessment at all policy tiers from international to local.

As HIA developed, the environmental health approach was complemented by concerns about wider determinants of health and health equity. HIA became increasingly recognised as a practical activity that could underpin the HiAP agenda (Harris-Roxas and Harris, 2011; Harris-Roxas et al., 2012). Figure 1.2 shows how the WHO adopted a leadership role, working alongside the IFIs, and how HIA was part of intersectoral working, a way of preventing ill health from occurring. Figure 1.2 also shows that there has been consistent recognition

of environmental assessment as an opportunity for health. The WHO Regional Office for Europe has played a leading role in HIA and in health in environmental assessment, including work on health in SEA with the UNECE (United Nations Economic Commission for Europe and Regional Environmental Center for Central and Eastern Europe, 2006, 2012; United Nations Economic Commission for Europe, 2023) and publications on the value of addressing health within environmental assessments that are mandatory across much of its region (WHO Regional Office for Europe, 2022, 2023a, 2023b).

Figure 1.2 also illustrates work across different WHO regions using HIA to address wider determinants of health and health equity. For example, the Pan American Health Organization has promoted HIA as a practical tool that contributes to equity and the promotion of health and well-being in the Region while advancing social and economic development (Pan American Health Organization, 2013). HIA has also been promoted by other departments and programmes within WHO. For example, the WHO Healthy Cities Network operates across the globe and aims to place health on the social and political agendas of cities by promoting health, equity and sustainable development through innovation and multisectoral change (Tsouros, 2015). HIA was a core theme in the European Healthy Cities Network (Simos et al., 2015) and, in 2020, it was included in programmes of action for healthy cities as a supporting measure for health promotion (WHO, 2020). Other WHO publications refer to HIA as a way of addressing commercial determinants of health (WHO, 2025; WHO Regional Office for South-East Asia, 2025) or as a means to integrate health into Nationally Determined Contributions (WHO, 2024).

WHO collaborating centres are institutions, such as research institutes, parts of universities or academies, that enable WHO to deliver its agenda. There are approximately 800 worldwide, and they provide essential technical resources for the WHO, which are essential to delivering its agenda (Singh, 2018). Two centres name ‘impact assessment’ in their title: the collaborating centres for ‘Climate Change and HIA’ at Curtin University in Australia and for ‘Health in Impact Assessments’ at Liverpool University in the United Kingdom (WHO, n.d.a, n.d.b). These provide capacity-building and support in areas such as indicators, standards and tools, as well as the dissemination of information.

HIA With, Alongside or Without WHO

National and regional health authorities and governments

National and regional health authorities, along with governments, play a central role in the adoption and effective use of HIAs. The primary role of governments in HIA, as it was for NEPA, is to serve as strategic enablers, policy drivers and guardians of public health. They could ensure that health considerations are systematically integrated into decision-making across sectors by creating applicable legal frameworks, supporting capacity-building and developing technical guidelines. In Chapter 5, Kim (2026) describes the government’s strategic approach to embedding HIA within Korea’s policy landscape.

National and regional guidelines for HIA and health in environmental assessments have been, and continue to be, written, and some examples are shown in Figure 1.2. This includes a range of guidelines from early to current and guidelines issued by national public health institutes, universities and government bodies for HIA (Federation of Swedish County Councils, 1998; Scott-Samuel et al., 1998, 2001; Health Canada, 2004; Harris et al., 2007; Fengthong, 2010; WHIASU, 2012; Public Health England, 2020; Public Health Scotland, 2025), for

health in environmental and social assessment (ONREPP, 2007; Rodríguez Rasero et al., 2015; Dogliotti et al., 2019; Institut de la Francophonie pour le développement durable, 2021; Roue Le Gall et al., 2024; Transport Infrastructure Ireland, 2024) and guidance for the island of Ireland that covers both (Pyper et al., 2021). This is not an exhaustive list, and other examples are cited throughout the *Handbook*. Suffice it to say that each contributes to good practice and learning globally. Each will respond to the needs of a specific context, and many reinforce the importance of social determinants of health, such as access to education, food, housing and employment, as well as attention to vulnerable populations and the imperative to improve health equity. The findings of a 2012 review of guidelines for HIA found common themes across guidelines including that HIA was seen as a democratic and participatory process; that consideration of health equity was important; that the relationship with other forms of assessment often needed to be defined; and that there was a need for HIA work to be supported in law or policy (Hebert et al., 2012). We suggest these themes continue to be applicable.

International Financial Institutions

Figure 1.2 shows how IFIs began considering human health as they started to implement their safeguards (Birley and Peralta, 1992).

In Chapter 6, Ruiz Alvarado (2026) examines the approaches taken by IFIs in detail. Here we note simply that safeguards are subject to continuous revision with some organisations issuing specific resources on the assessment of health (Listorti and Doumani, 2001; IFC, 2009; Birley and Peralta, 2018; Silva and Vohra, 2025). IFI guidance tends to focus on community health, safety and security, requiring close integration within Environmental and Social Impact Assessments (ESIAs).

Industry

Starting in 2005, various industry bodies provided tailored guidance to their members to meet the health requirements of the safeguards covering community health, safety and security and also guidance on meeting human rights obligations (IPIECA, 2005; ICMM, 2010; IPIECA and DIHR, 2013; UKOOG, 2015; IPIECA and IOGP, 2016).

In 2010, Krieger et al. (2010) reported that activity in HIA in low- and middle-income countries was mainly led by industry on individual projects and that HIAs complied with safeguards and standards set by IFIs. Krieger et al. were concerned that Gothenburg assumed a model whereby HIAs were led by ministries of health and were conducted on national policies. They wrote that HIAs conducted by industry in low- and middle-income countries focused on actions that were within the competence of industry and enforceable by the IFIs, and this meant a pragmatic focus on opportunities arising from industrial projects to protect and promote health. Sommerville and Xiao (2026) (Chapter 7) look at ways in which industry-conducted HIAs align with IFI safeguards and with standard operating procedures within a company to support companies in meeting their sustainability commitments. These HIAs are rarely released publicly, and consequently, little is known about their quality, and they seldom contribute to advancing the field. A deep dive into the topic of HIA in the extractive industries sector is provided in Chapter 18 (Knoblauch et al., 2026), including a best practice example from sub-Saharan Africa.

Professional associations

Professional associations play a crucial role in enabling the exchange of ideas and learning and in setting good practice for impact assessment broadly, as well as for HIA in particular. In 1998, an HIA section was created within the IAIA. This has curated training and sessions on HIA and health in other forms of impact assessment at IAIA conferences and symposia. In 2000, IAIA signed a memorandum of understanding with the WHO. In 2006, IAIA published its first ‘HIA best practice principles’ (Quigley et al., 2006), explicitly building on Gothenburg. In 2018, the IAIA HIA section, now known as the Health Section, surveyed practitioners intending to describe current global HIA practice (Winkler et al., 2020). This survey set the basis for the 2021 IAIA ‘HIA best practice principles’ (Winkler et al., 2021).

In 2011, an HIA section was established within the European Public Health Association (EUPHA). This section has also curated activity and sessions on HIA: in 2014, EUPHA, IAIA and the WHO Regional Office for Europe published a review of health in other forms of impact assessment (WHO Regional Office for Europe, 2014); and in 2020, IAIA and EUPHA published a reference paper on health in EIA (Cave et al., 2020).

The North American HIA Practice Standards Working Group is an *ad hoc* group that has come together periodically since 2009 to provide standards for HIA. As indicated by their name, the group issues standards in HIA, with the most recent being published in 2022 with the Society for HIA practitioners (SOPHIA) (Bever et al., 2022). SOPHIA was set up in 2011 (Whitehead and Hirono, personal communication). It is now the Society for Practitioners of HIAP, and it provides resources and capacity-building (SOPHIA, 2025).

Organisations such as IAIA and EUPHA provide capacity-building and resources, but they tend not to offer accreditation as their remits span national boundaries. This is typically provided by organisations that operate within a particular jurisdiction, such as the Institute of Environmental Sustainability Professionals (ISEP) (formerly Institute of Environmental Management and Assessment (IEMA)). The ISEP health group has developed resources for the United Kingdom and Ireland; for example, a standard of competence for those working in HIA and health in environmental assessment (Pyper et al., 2024) and technical guidance (Pyper et al., 2022a; 2022b) that was adapted from the IAIA–EUPHA reference paper on health in EIA (Cave et al., 2020). In Chapter 14 of this Handbook, Green et al. (2026) examine competence in HIA.

Conferences

Figure 1.2 shows how a series of HIA conferences, organised by universities and national public health institutes, were held from 1998 to 2013. They were in Great Britain and Ireland between 1998 and 2008, and they were then in the Netherlands (2009), Spain (2011), Canada (2012) and Switzerland (2013) (Douglas, personal communication; Cantoreggi, personal communication). Over this period, there were also conferences, meetings and seminars on HIA for Southeast Asia and Oceania (2007).

There were workshops, seminars and conferences in the United States (e.g. in 2004, 2008 and 2012) with the CDC playing a leading role and philanthropic foundations such as the Robert Wood Johnson Foundation and the Pew Charitable Trust funding HIA across the US (Dannenberg, 2016).

As noted above, HIA and health in EIA, SEA and ESIA have been continuously covered at IAIA conferences since 1998. Meetings of HIA experts have latterly been given time annually through EUPHA, the American Public Health Association and the International Union

for Health Promotion and Education (IUHPE). In 2025, EUPHA sponsored a conference in Madrid looking at the institutionalisation of HIA. HIA is also covered in a more *ad hoc* manner at conferences, covering relevant topics such as healthy urban planning.

HIA publications in books and scholarly articles

This *Handbook* seeks to join a small but illustrious collection of books on HIA: Turnbull (1992) provided a practitioner's handbook on the environmental and health impact assessment of development projects. This was followed by Birley's *Health Impact Assessment of Development Projects* (Birley, 1994) and then by *Health and Environmental Impact Assessment: An Integrated Approach* (Birley et al., 1998). Kemm et al.'s work (2004) sought to further establish HIA as a field in its own right, and Wismar et al. (2007) assembled case studies and writings on the effectiveness of HIA. In 2011, the US National Research Council set up a task force which then wrote a book on HIA that has been part of the development of the field across the US (Jackson et al., 2011). This was followed shortly by Ross et al.'s (2014) perspective on HIA in the US. Later publications aimed for a greater coverage of approaches to HIA regionally (WHO Regional Office for Europe, 2014; Birley and Peralta, 2018) and globally (Birley, 2011; Kemm, 2013; O'Mullane, 2013).

HIA is covered in the scholarly literature, and as the chapters in this *Handbook* look critically at this coverage, we restrict ourselves to the trend in articles published and their geographical distribution. Various studies have counted the number of scholarly articles published on HIA (Erlanger et al., 2008; Kim and Haigh, 2021; Lamprecht et al., 2024). These studies reveal an increase in articles using the term HIA, although the number of papers is small when compared to other fields of public health research. Lamprecht et al. (2024) found a steeper increase than Kim and Haigh (2021), although this act of counting is not without controversy, as it involves deciding what to count and thus entails defining HIA (Kim et al., 2024).

The driver behind the Lamprecht et al. (2024) study was to investigate the distribution of HIA research across countries with low- and middle-HDI levels, compared to those in high- and very high-HDI countries (UNDP, 2025). Erlanger et al. (2008) found this proportion to be 6:94, and Lamprecht et al. found it to be 11:89. Thus, a significant disparity remains in the number of peer-reviewed publications focusing on HIAs in low- and medium-HDI countries compared to high- and very high-HDI countries.

Completed HIA, and other impact assessment, reports

A final point to note is that trends in scholarly publishing tell us little about trends in HIA practice (Kim et al., 2024). Tables 1.2a, 1.2b and 1.2c provide examples of where scholarly writing has examined the assessment reports, including HIAs, ESIAs, EIAs and SEAs, respectively. Completed reports require further examination. They are an important output of an assessment and a valuable source of information about the assessment practices and the ways in which results are reported. National and regional portals for planning and infrastructure provide access to environmental assessment reports, and there are some sites that provide access to HIAs and other impact assessment reports (e.g. Institute for People, Place and Possibility, 2023; EHESP, n.d.; Environment & Health Impacts Hub and University of Liverpool, n.d.). The HIA Gateway was a repository of reports and other resources run by the West Midlands Public Health Observatory until 2017, when it was taken over by Public Health England. The HIA Gateway is currently available as an archive, but it is no longer updated (Public Health England, 2017).

Table 1.2a *Scholarly articles and other analyses based on reviews of completed assessment reports: HIAs*

Sector	No. of HIAs	Source
Transportation	158	Waheed et al., 2018
Criminal justice	20	Hom et al., 2017
Education	20	Gase et al., 2017
Food/nutrition/agriculture	25	Cowling et al., 2017
Energy and natural resources	30	Nkyekyer and Dannenberg, 2019
Climate change policies	13	Dannenberg et al., 2020
Substance abuse	21	Packer et al., 2020
Housing	54	Bever et al., 2021
Planning	134	Ricklin et al., 2016

Source: Dannenberg (personal communication).

Table 1.2b *Scholarly articles and other analyses based on reviews of completed assessment reports: ESIAs*

Sector	No. of ESIAs	Source
Energy and natural resources	44	Dietler et al., 2020
Energy and natural resources	35	Cambaco et al., 2024

Source: Authors.

Table 1.2c *Scholarly articles and other analyses based on reviews of completed assessment reports: EIAs and SEAs*

Sector	No. of EIAs and SEAs	Source
Various	333 (and 12 case studies)	WHO Regional Office for Europe, 2022
Various	168 (SEAs only)	Cave et al., 2024

Source: Authors.

THE STRUCTURE OF THE HANDBOOK

This *Handbook* is in five parts. It starts from the observation that the HIA has its roots in different public health areas and has grown into its own field of impact assessment (Harris-Roxas and Harris, 2011; Harris-Roxas et al., 2012). It then covers aspects that we consider crucial to its growth: placing health and health policy within a wider context; views of different HIA actors about its use and limitations; description of aspects that remain constant within the diversity of uses; case studies and experience from diverse applications; and finally, cross-cutting topics that go beyond HIA itself. The *Handbook* presents views that may compete

with, and even contradict, one another. We, as editors, do not necessarily agree with all findings in every chapter, but we consider it important to present these competing views, and we are delighted to offer such a wealth of experience, knowledge and insight as examples of a small but vibrant field.

Part I: Background and Context

Part I provides foundations for the book, and it includes this chapter. We also see and hear two sidelong views of health, public health and health policy that pose questions about HIA, its effectiveness, its governance and the rubrics that should be used to mark its success.

Part II: Promoters and Barriers for Adoption of HIA

Part II describes the perspectives of the different actors who shape and use HIA. It explores how HIA is, or is not, embedded within legal, organisational and financial structures, and it poses the question of what it means to institutionalise HIA when it involves so many diverse actors. The chapters highlight the influence of different actors (governments, industries, IFIs, academia, local communities) in using HIA and shaping the way health is considered in decision-making. The chapters also interrogate the barriers to, and the enablers of, making HIA a routine and impactful practice. The diversity of HIA is one of its strengths, but to ensure that health is routinely part of decision-making rather than an optional add-on, we need a toolbox of processes that allows complexity to be addressed. Chapters in this cluster reveal factors that shape HIA practice, the diversity of roles played by different institutions and the tensions between voluntary and legislated approaches.

Part III: Constants of HIA – the Technical Process

Part III focuses on technical aspects such as the steps of the HIA process and the competences required to commission, conduct and review an HIA. It also looks at the values and principles that inform practice.

Part IV: HIA Key Applications

In *Part IV*, we see how HIA is applied to specific sectors and in diverse geographical areas. Several chapters in this section have a focus on how infrastructure shapes physical and mental health, as well as how it affects the social, physical and economic environment. By describing the different applications, the chapters also explore how legal, organisational and financial frameworks influence the HIA process and the role that the Gothenburg values play within the process. Whether assessing the impact of mega-events, urban development or mining operations, these chapters reveal a flexibility to HIA and great potential to support decision-makers and communities so that infrastructure is healthier and more equitable.

Part V: Cross-cutting Issues in HIA and Methodological Approaches

Part V presents key topics and cross-cutting issues of HIA and explores ways these can be addressed in practice. This section presents methodological advances and novel applications

that go beyond assessing health impacts. Authors present conceptual frameworks that seek to analyse changes across different disciplines and scales and to enable an understanding of the driving forces leading to risks and impacts, as well as actions that can be taken to reduce, mitigate or adapt to these changes. We see how HIA bridges environmental science and public health to address the tangible health impacts of climate change, extreme weather events, shifting disease patterns and ecological disruption.

DIRECTIONS FOR THE FUTURE

We started with the various domains in which activity has taken place over the past 30 years and the interlinked strands that have informed HIA theory and practice. Current activity in HIA can be seen in the wealth of experience presented in the chapters of this *Handbook*. And so, what of the future?

In this *Handbook*, we focus on HIA as an *ex ante* assessment that can be both a technical process of analysing an intervention and part of a legal and institutional procedure for ratifying that intervention. We paraphrase Vanclay (2015) and say that the field of impact assessment can be seen as a *village* of which HIA is one *family*. HIA is multisectoral, but we suggest that its beating heart and source of authority is found in the field, and the branch of government, that is public health, although HIA has not been fully accepted as a core skill, competence or field of endeavour within public health, and so this relationship is not without challenges. It is also the case that both impact assessment and public health are presently facing turbulent times, which are further exacerbated by planetary crisis and epochal technological revolution.

Rather than making specific predictions of what will happen over the next 30 years to the HIA family, we use the diverse chapters presented in this *Handbook* to identify high-level directions essential to furthering its development. The chapters across the five parts of the *Handbook* introduce foundational theories and institutional dynamics that influence HIA; look at the role and views of different actors involved in HIA; describe how the process functions and its essential components; present sectoral applications and regional variations; and reflect on methodological innovation and process adaptability. Across all five parts, a consistent theme emerges: the health sector has a critical role to play in providing institutional leadership, ensuring that HIA meaningfully contributes to the protection and promotion of health.

Reclaiming Health as a Collective Value and Policy Imperative

As de Leeuw (2026) writes, ‘health’ is often used in a fragmented and narrowly medicalised way, so it is reduced to access to and delivery of the ‘medical-industrial complex’. This fragmentation has skewed resource allocation, research and policy priorities towards the clinical side of the health sector, leaving the preventive and promotional functions of public health, which are inherently intersectoral, chronically underfunded and under-leveraged. So while ‘health’ is a universal concept, its interpretation in society is inconsistent, nuanced and often fragmented (de Leeuw, 2026), and this affects HIA. Health in impact assessments is profoundly shaped by:

- the diversity of actors involved (such as planners, public health professionals, environmental experts and community representatives, as shown in the chapters in Part II) who bring a range of interpretations and priorities; and
- the sector or application (transport, urban planning, mining, etc., as shown in the chapters in Part IV), which adds additional considerations, such as regulations and standards, that determine how health is framed and assessed.

These considerations are important because, as recognised by the Alma Ata Declaration (WHO Regional Office for Europe, 1978), the health sector alone cannot shoulder the responsibility for population health and well-being. Cross-sector collaboration, therefore, becomes essential. Cross-sector collaboration recurs as a theme across many of the chapters in the *Handbook*, and it takes various forms and modalities. HIA bridges across sectors and actors; it is recognised as a tool to assist such integration, and it creates an enabling environment to address the complexity of the wider system (Calvin, 2026; Forbat et al., 2026).

Therefore, this *Handbook* is a clarion call for the essential function public health plays, with intersectoral collaboration at its core, in achieving goals such as SDG3, ‘the promotion of healthy lives and well-being for all across all ages’. This means moving beyond the rhetoric of HiAP, and it means the wider health sector must pursue policy integration as a way of meeting its own goals. This applies to the bodies within the health system but also to the wider health sector, for example, the health departments of organisations such as IFIs and private companies. The health sector must show strong leadership and translate public health evidence into actionable policy language, foster shared accountability for health outcomes, and guide and coordinate intersectoral partnerships.

To do so, it is also essential that those involved in HIA improve their understanding of the frameworks that mandate and influence impact assessments, whether those frameworks be legal, organisational or financial, as Boswell et al.’s (2026) analysis suggests. These legal, organisational and financial frameworks are not just background conditions: they actively influence how health is interpreted, prioritised and integrated into decision-making (Abdool Karim et al., 2026). Therefore, understanding the frameworks enabling decision-making will make it clearer what can be achieved from using HIA and health in other forms of impact assessment.

Black et al. argue that to ensure meaningful integration of health considerations in decision-making, it is essential to manage a process that demonstrates effectiveness, acknowledges both the regulatory framework and the tier of application, and considers power dynamics at play from the outset (Black et al., 2026). This means, among other things, identifying whether the assessment is legally mandated or voluntary, understanding the operational constraints and opportunities, and acknowledging who holds influence and decision-making authority (Dardier et al., 2026).

The *Handbook*’s various chapters demonstrate how the assessment process adapts, or fails to adapt, to all these different variables. This diversity presents both opportunities and difficulties. On one hand, it allows HIA to be tailored to specific geographical areas, applications and legal frameworks (Miraglia and Abe, 2026); on the other, it complicates efforts to demonstrate effectiveness and scale adoption across different structures of governance (Lebel et al., 2026). The reality is that there is no one-size-fits-all solution.

Institutionalisation of HIA as a Prerequisite for Sustainable, Consistent and Enduring Practice

Institutionalising HIA is a pivotal strategy for ensuring that health considerations are integrated into policy and decision-making processes. *Handbook* chapters provide examples of the various approaches taken in the pursuit of institutionalisation: environmental legislation to protect from pollution (Kim, 2026); embedding HIA in national legislation (Tremblay et al., 2026); or in policy frameworks (Black et al., 2026). Black et al. (2026) also show how policy frameworks are revised and how this can also dilute or undermine assessment processes, including HIA. Institutionalisation occurs in the private sector as HIA is triggered by the internal organisational policies of companies (Sommerville and Xiao, 2026) and by the requirements of financial safeguards (Ruiz Alvarado, 2026). Although they might operate inconsistently and without long-term guarantees, the latter are triggers for conducting HIA, and they should be adequately considered. So, while the forms of institutionalisation vary across jurisdictions and actors, certain components appear indispensable: legal frameworks, principles, standardised procedures and dedicated resources (Kim, 2026).

HIA that is done voluntarily in response to good practice, rather than being formally required, may not have the elements described above, but it should be supported. HIA done voluntarily is more likely to be *ad hoc*, discretionary and dependent on the goodwill of individual champions. HIA, whether institutionalised or not, adds value to the policy process and enhances our wider understanding. If we take an evolutionary approach to institutionalisation, then HIA done solely as good practice may be a precursor to, or even a remnant of, a more formalised approach.

Institutionalisation is ultimately about endurance and consistency: Boswell et al. (2026) remind us of the premium that the nineteenth- and early twentieth-century sociologist Max Weber placed on stoicism and commitment with his metaphor for success as being the slow, interminable boring into hard boards. As Banken (2001) outlined in an earlier review of institutionalisation, models range from standalone HIA structures to broader HiAP approaches where health is integrated into all aspects of government decision-making. Banken presented health in environmental assessment as one of the options by which HIA is institutionalised, and we have seen how this has been a consistent theme from the early days of HIA. We note that in all options that he presented, Banken assumed an ever-present and active health system, and, in this *Handbook*, Kim (2026) shows the central role of the health system when HIA is institutionalised. In other settings it is clear that when the health system cannot, or will not, engage, the assessment of health is deprived of a source of institutional support and so has a reduced ability to influence policy meaningfully: a survey in Nigeria found low levels of participation in HIA even amongst the health sector (Chilaka and Ndioho, 2019); and in high-income settings there are difficulties with engaging health authorities in environmental assessment processes (e.g. Cave et al., 2021; Logue et al., 2022; van Bavel et al., 2024).

Methodological Renaissance in an Evolving Practice

HIA, and the wider village of impact assessment, stands at a pivotal juncture. We are in a time when geopolitics is shifting to a multipolar system, when the effects of a changing climate are becoming increasingly apparent and when rapid technological advances are making data increasingly accessible, valuable and contested. These changes will continue to prompt

a substantial revision of the methods that underpin the field. We have seen how HIA scholars and practitioners continuously redefine the field, and to this we add a call to embrace ‘smart’ processes that support dynamic real-time decision-making, as well as cross-sector and interdisciplinary collaborations that have implications for each step of the assessment process (Pirvu et al., 2026).

A key aspect of this transformation is the use of quantitative metrics in combination with qualitative insights and the contributions from different disciplines (Edelstein et al., 2026; Hanigan and Vyas, 2026). HIAs have long benefited from descriptive assessments based on existing data, further triangulated with people’s understanding. These aspects remain vital (Hanna et al., 2026), and they ensure that the core values of HIA are observed (and several chapters have pointed to the essential importance of participation and democracy). There is a growing recognition of the role robust quantitative tools, particularly those capable of modelling distributional impacts, can play in facilitating informed decision-making, fostering policies that promote health equity and well-being within communities (Rasella et al., 2026). Tackling health outcomes and impacts over time, across populations and in relation to structural determinants is not a new aim of HIA, but expanding the use of quantitative metrics alongside qualitative insights will enhance the accuracy of assessments and their monitoring.

Best practices must strike a balance between this renaissance and methodological rigour and robustness, while still acknowledging that both quantitative and qualitative methods have limitations and further research is needed (Mueller et al., 2026). This balance also requires all users to be comfortable with the adoption of new methods and to trust their conclusions while simultaneously ensuring that any actions to change the intervention under assessment are socially relevant and responsive to the lived experiences of those affected.

Participation as an Anchor for Values and Principles

All values and principles of HIA are important and have been differently articulated in the chapters of the *Handbook*; however, participation was at the core of several chapters, not merely as a procedural element of the HIA process, but as a strategic dimension. Participation in HIA allows communities to shape the health narratives that affect their lives, ensuring that decisions on policies and interventions are shaped by experiential knowledge rather than being taken exclusively on technical assessments or financial considerations, and simultaneously empowering these groups to better own both the HIA process and any subsequent policy or management plans it informs (Edelstein et al., 2026; Hanna et al., 2026; Hirono et al., 2026; Meuter et al., 2026; Staatsen et al., 2026). By involving relevant stakeholders and also involving other disciplines, such as those needed for One Health (Machalaba et al., 2026), participation ensures that the process is empowering, inclusive, satisfies different purposes, and promotes accountability and transparency. All these dimensions are important as stakeholders differ in the priority given to different health determinants and in the recommendations formulated (Douglas et al., 2026; Edelstein et al., 2026). And finally, when it is done well, and the perspective of participants is understood, it can assist in achieving equity and addressing health inequalities. Hirono et al. look in detail at equity, one of the Gothenburg values. They find that to properly address equity, the HIA team needs to ensure it is considered in both the technical assessment and the way in which the assessment is conducted (Hirono et al., 2026).

Participatory approaches should respect cultural perspectives and community knowledge and, where applicable, the sovereignty of Indigenous Peoples, including their sociocultural

forms, principles and customary ways (Hanna et al., 2026; Meuter et al., 2026). HIAs involving Indigenous populations are centred on culturally relevant values and beliefs and incorporate the concept of health from a holistic perspective, but these approaches are broadly applicable and valuable across sectors and geographies (Meuter et al., 2026). They remind us that community involvement should occur throughout the entire assessment process, from preparation to implementation, rather than being reserved for tokenistic consultation phases.

Nevertheless, participation remains an unfulfilled promise in many HIA applications. The aim of inclusive dialogue is challenged by time constraints, resource limitations, lack of cultural adequacy, and also ‘consultation fatigue’ (Hanna et al., 2026; Staatsen et al., 2026). Power dynamics further complicate engagement, as conflicting interests or technical dominance can overshadow meaningful contributions from community members and local professionals (Dardier et al., 2026). Even so, ongoing efforts to strengthen participation speak to its resilience as a cornerstone of HIA practice.

Participation in HIA is not just procedural; by bringing all stakeholders together in each stage to negotiate potential trade-offs or win–wins across sectoral interests (Pyper and Cave, 2026), it supports a democratic space where people can recognise their agency and affected populations take ownership of decisions that influence their health and well-being, reinforcing all HIA principles (Douglas et al., 2026; Hirono et al., 2026).

Capacity Development, Education and Research

Capacity development of competent and culturally aware practitioners has been mentioned as a crucial aspect to ensure HIA relevance by all chapters of the *Handbook*. This demand for capacity development should be seen within the wider effort to develop a Global Competency Framework that supports the education of public health and emergency workforce in different geographical contexts (WHO, 2022). However, education tends to focus on individual skills and capabilities, but in order to achieve the above-mentioned points, an additional effort is needed. It demands a systematic and sustained investment in institutional capacity, cross-disciplinary collaboration, the pooling of resources, and the development of a community of practice across all sectors involved (Tremblay et al., 2026). While the skills and competencies of practitioners remain important, long-term effectiveness hinges on strengthening the environments and the abilities of individuals, proponents and organisations that require, commission, conduct, or evaluate HIA (Green et al., 2026).

To begin, building competencies at multiple levels (local, national and global) and for multiple actors means developing structured education pathways that equip stakeholders with relevant skills, based on competency frameworks that consider the legal, organisational and financial frameworks where these skills are applied (Green et al., 2026). Teaching and research, especially at higher education institutions, fulfil an important role in the development of effective HIA, and there is a need for dedicated degree programmes, specialised certifications and interdisciplinary training to further develop the methodological renaissance as well as the effectiveness of the process (Fischer and Gulis, 2026). Crucially, such programmes must not only serve public health professionals, but also engage the other actors involved in HIA.

Academic research plays a parallel and complementary role. Methodological innovation, empirical evaluations and applied case studies not only help to build the evidence base and refine HIA practices, but also generate tangible examples of HIA’s capacity to improve health

outcomes and address systemic risks and demonstrate their value and effectiveness to decision-makers (Hanigan and Vyas, 2026; Machalaba et al., 2026).

As mentioned, education alone does not transform systems as it is focused on the individual. Institutions themselves must evolve to support continuous learning and collaboration. Creating organisational cultures where HIA is valued through leadership support, embedded roles, established partnerships and dedicated resources is central to advancing the field and enhancing the collective expertise (Knoblauch et al., 2026; Lebel et al., 2026).

Equally important is the establishment of supportive and inclusive communities of practice (Tremblay et al., 2026) to facilitate exchange between sectors, actors and experts. Conferences, including specialist HIA conferences, and other fora that bring together practitioners, policymakers and academics from diverse disciplines, such as urban planning, environmental health, One Health and economics, foster innovation. Professional associations have so far established international knowledge-sharing platforms and facilitated joint research initiatives, thereby playing a pivotal role in advancing the field. More platforms are needed, with broader coverage to disseminate best practices, foster mentorship across regions and align efforts towards global standards with local flexibility.

THE BEGINNING AT THE END

Thirty years have passed since Scott-Samuel's call (1996) to establish a dedicated process to assess the health consequences of policies. The challenges and opportunities facing the field over the last 30 years are recognisable today and remain valid as we look to the future.

How can we address these challenges and realise these opportunities? Reposition public health as an essential function of the health system, and the wider health sector should use HIA in leading on policy integration and cross-sectoral collaboration. Uphold HIA values and principles in order to contribute to goals such as SDG3 (healthy lives and well-being for all across all ages) and societal challenges. Practitioners should embrace and understand the legal, organisational and financial frameworks that influence how health is interpreted, prioritised and integrated into decision-making.

There is huge diversity across HIA and we consider this to be a strength of the process as long as its values and principles remain integral to its development. We suggest that institutionalisation of HIA is worth pursuing for sustainable, consistent and enduring practice, and there are various approaches to achieve these ends. While the process will change and methodological developments, research and innovation will continue to improve effectiveness, it is also clear that actors, individual and institutional, need to be empowered to continue developing capacity and applying skills and competencies.

HIA has evolved over time, across geographies and applications. The field has moved forward, and HIA has grown into one of many *families* in the impact assessment *village*. It has been presented and debated in many lecture rooms and training venues; it has been embraced by communities facing change; it has been adopted by public and private actors; and it has informed the design and the scrutiny of interventions across the world. The collected works in this *Handbook*, and the ongoing endeavours of the HIA family, indicate it will continue to do so.

REFERENCES

- Abdool Karim, S., Kruger, P. & Cave, B. (2026) 'Law, public health and Health Impact Assessment: Time to recognise the crossover?'. Ch. 4. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Acheson, D. (1988) *Public Health in England: The Report of the Committee of Inquiry into the Future Development of the Public Health Function*. Department of Health, HMSO. Available at: <https://wellcomecollection.org/works/wa4arbxy>
- Arts, J. & de Vries, H. (2023) 'Don't shoot the messenger – reflections on streamlining and simplification of Environmental Assessment in the Netherlands'. *Impact Assessment and Project Appraisal*, 41, 238–243. Available at: <https://doi.org/10.1080/14615517.2023.2204286>
- Banken, R. (2001) 'Strategies for institutionalising HIA'. World Health Organization Regional Office for Europe. ECHP Health Impact Assessment Discussion Papers no. 1. Available at: <https://iris.who.int/handle/10665/107404>
- Barbiero, V. (1979) 'Health impact guidelines for the design of development projects in the Sahel (2 Vols)'. Family Health Care, Inc. Available at: <https://www.cabidigitallibrary.org/doi/full/10.5555/19811879986>
- Bever, E., Arnold, K.T., Lindberg, R., et al. (2021) 'Use of Health Impact Assessments in the housing sector to promote health in the United States, 2002–2016'. *Journal of Housing and the Built Environment*, 36, 1277–1297. Available at: <https://doi.org/10.1007/s10901-020-09795-9>
- Bever, E., Dills, J., Lindberg, R., et al. (2022) *Minimum Elements and Practice Standards for Health Impact Assessment (HIA)*. Version 4. Available at: <https://hiasociety.org/MEPS/>
- Birley, M. (1991) 'Guidelines for forecasting the vector-borne disease implications of water resources development'. World Health Organization. Community Water Supply and Sanitation Unit & WHO/FAO/UNEP/UNCHS Panel of Experts on Environmental Management for Vector Control. WHO/CWS/91.1; PEEM Guidelines. Geneva. Available at: <https://iris.who.int/handle/10665/62038>
- Birley, M. (1994) *The Health Impact Assessment of Development Projects*. London: HMSO.
- Birley, M. (2011) *Health Impact Assessment: Principles and Practice*. London: Earthscan.
- Birley, M., Boland, A., Davies, L., et al. (1998) *Health and Environmental Impact Assessment: An Integrated Approach*. London: Earthscan and British Medical Association.
- Birley, M. & Peralta, G. (2018) 'Health Impact Assessment: A good practice sourcebook'. Asian Development Bank, Manila, the Philippines. Available at: <https://doi.org/10.22617/TIM189515-2>
- Birley, M.H. & Peralta, G.L. (1992) 'Guidelines for the Health Impact Assessment of development projects'. Asian Development Bank. ADB Environment Paper no. 11. Manila, Philippines.
- Black, D., Chang, M. & Kirton-Darling, E. (2026) 'Health Impact Assessment in urban development in the United Kingdom: Current and future pathways through complex systems of policy, law and practice'. Ch. 10. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Bond, A.J. & Wathern, P. (1999) 'EIA in the European Union'. In: Petts, J. (ed.) *Handbook of Environmental Impact Assessment*. Oxford: Blackwell Science. Available at: <https://ueaeprints.uea.ac.uk/id/eprint/27235/>
- Bos, R., Birley, M., Furu, P., et al. (2003) *Health Opportunities in Development: A Course Manual on Developing Intersectoral Decision-making Skills in Support of Health Impact Assessment*. World Health Organization, Geneva, Switzerland. Available at: <https://apps.who.int/iris/handle/10665/196618>
- Boswell, J., Cairney, P. & Hirono, K. (2026) 'Does Health Impact Assessment struggle to have an impact?'. Ch. 3. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Burton, I., Wilson, J. & Munn, R.E. (1983) 'Environmental impact assessment: National approaches and international needs'. *Environmental Monitoring and Assessment*, 3, 133–150. Available at: <https://doi.org/10.1007/bf00398843>
- Calvin, S. (2026) 'A One Health Approach to Risk Assessment'. Ch. 28. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.

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- Cambaco, O., Landtwing, J., Cossa, H., et al. (2024) 'Adolescent health and well-being in the context of impact assessment of natural resource extraction projects: A scoping review'. *Environmental Impact Assessment Review*, 105, 107360. Available at: <https://doi.org/https://doi.org/10.1016/j.eiar.2023.107360>
- Cavalcanti, D.M., de Oliveira Ferreira de Sales, L., da Silva, A.F., et al. (2025) 'Evaluating the impact of two decades of USAID interventions and projecting the effects of defunding on mortality up to 2030: A retrospective impact evaluation and forecasting analysis'. *The Lancet*, 406, 283–294. Available at: [https://doi.org/10.1016/S0140-6736\(25\)01186-9](https://doi.org/10.1016/S0140-6736(25)01186-9)
- Cave, B., Claßen, T., Fischer-Bonde, B., et al. (2020) 'Human health: Ensuring a high level of protection. A reference paper on addressing Human Health in Environmental Impact Assessment as per EU Directive 2011/92/EU amended by 2014/52/EU'. International Association for Impact Assessment and European Public Health Association. Fargo. Available at: <https://www.iaia.org/uploads/pdf/Human%20Health%20Ensuring%20Protection%20Main%20and%20Appendices.pdf>
- Cave, B., Fischer-Bonde, B., González, A., et al. (2024) 'Bibliographic database (Deliverable 3 for the ProHealth SEA project)'. Prepared for the Environmental Protection Agency by University College Dublin and BCA Insight Ltd.
- Cave, B., Pyper, R., Fischer-Bonde, B., et al. (2021) 'Lessons from an international initiative to set and share good practice on human health in Environmental Impact Assessment'. *International Journal of Environmental Research and Public Health*, 18, 1392. Available at: <https://doi.org/10.3390/ijerph18041392>
- Chilaka, M.A. & Ndioho, I. (2019) 'Health impact assessment in Nigeria: An initiative whose time has come'. *Journal of Public Health in Africa*, 10, 1014. Available at: <https://doi.org/10.4081/jphia.2019.1014>
- Commission on the Social Determinants of Health. (2008) 'Closing the gap in a generation. Health equity through action on the social determinants of health'. World Health Organization. Available at: <https://iris.who.int/handle/10665/43943>
- Cowling, K., Lindberg, R., Dannenberg, A.L., et al. (2017) 'Review of Health Impact Assessments informing agriculture, food, and nutrition policies, programs, and projects in the United States'. *Journal of Agriculture, Food Systems, and Community Development*, 7, 139–157. Available at: <https://doi.org/10.5304/jafscd.2017.073.009>
- Dann, P. & Riegner, M. (2019) 'The World Bank's Environmental and Social Safeguards and the evolution of global order'. *Leiden Journal of International Law*, 32, 537–559. Available at: <https://doi.org/10.1017/S0922156519000293>
- Dannenberg, A.L. (2016) 'A brief history of Health Impact Assessment in the United States'. *Chronicles of Health Impact Assessment*, 1, 1–8. Available at: <https://doi.org/10.18060/21348>
- Dannenberg, A.L., Rogerson, B. & Rudolph, L. (2020) 'Optimizing the health benefits of climate change policies using health impact assessment'. *Journal of Public Health Policy*, 41, 139–154. Available at: <https://doi.org/10.1057/s41271-019-00189-y>
- Dardier, G., Christie, D.P.T.H., Simos, J., et al. (2026) 'Health Impact Assessment on road infrastructure projects: Current practice and way forward'. Ch. 17. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- de Leeuw, E. (2025) 'The planet in our backyard: Public health should step up'. *Journal of Global, Public and One Health*, 1, 1–7. Available at: <https://doi.org/10.61034/JGPOH-2025-08>
- de Leeuw, E. (2026) 'Avoid the H word – what exactly is assessed?'. Ch. 2. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Dietler, D., Lewinski, R., Azevedo, S., et al. (2020) 'Inclusion of Health in Impact Assessment: A review of current practice in sub-Saharan Africa'. *International Journal of Environmental Research and Public Health*, 17, 4155. Available at: <https://doi.org/10.3390/ijerph17114155>
- Dogliotti, E., Achene, L., Beccaloni, E., et al. (2019) 'Linee guida per la valutazione di impatto sanitario (DL.vo 104/2017)'. Istituto Superiore di Sanità. Rapporti ISTISAN 19/9. Roma. Available at: http://www.salute.gov.it/portale/documentazione/p6_2_2_1.jsp?lingua=italiano&id=2850
- Douglas, M., McDermott, R., Haigh, F., et al. (2026) 'Achieving best practice in Health Impact Assessment – how can Health Impact Assessment guidance support the principles and values?'

- Ch. 13. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Edelstein, M.R., Moreira, S., Ross, H., et al. (2026) 'Psycho-social impacts and Health Impact Assessment'. Ch. 26. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- EHESP. (n.d.) *Rapports EIS (France)* [Online]. École des hautes études en santé publique. Available at: <https://campus.ehesp.fr/mod/folder/view.php?id=86894>
- Environment & Health Impacts Hub & University of Liverpool. (n.d.) *Welcome to Impacts Hub. A Community Space to Share and Learn Good Practice about Impact Assessment* [Online]. Available at: <https://www.impactshub.com/>
- Erlanger, T.E., Krieger, G.R., Singer, B.H., et al. (2008) 'The 6/94 gap in health impact assessment'. *Environmental Impact Assessment Review*, 28, 349–358. Available at: <https://doi.org/10.1016/j.eiar.2007.07.003>
- European Parliament & Council of the European Union. (2001) 'Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment'. L197. Available at: <https://data.europa.eu/eli/dir/2001/42/oj>
- Federation of Swedish County Councils (1998) 'Focusing on health: How can the health impact of policy decisions be assessed?'. Stockholm, Sweden.
- Fengthong, T. (2010) 'A Practical Guideline on Health Impact Assessment in Lao PDR'. Environmental Health Division, Department of Hygiene and Prevention, Ministry of Health. Vientiane, Lao.
- Fischer, T.B. & González, A. (2021) 'Introduction to *Handbook on Strategic Environmental Assessment*'. Ch. 1. In: Fischer, T.B. & González, A. (eds.) *Handbook on Strategic Environmental Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing. Available at: <https://doi.org/10.4337/9781789909937.00009>
- Fischer, T.B. & Gulis, G. (2026) 'Roles of academia in the development of Health Impact Assessment and health in environmental assessments – reflections on higher education teaching and research'. Ch. 9. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Forbat, J., Dubreuil, M., Cantoreggi, N., et al. (2026) 'Health Impact Assessment of sports mega-events'. Ch. 21. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Gase, L.N., DeFosset, A.R., Gakh, M., et al. (2017) 'Review of education-focused Health Impact Assessments conducted in the United States'. *Journal of School Health*, 87, 911–922. Available at: <https://doi.org/10.1111/josh.12566>
- Gilmore, A.B., Fabbri, A., Baum, F., et al. (2023) 'Defining and conceptualising the commercial determinants of health'. *The Lancet*, 401, 1194–1213. Available at: [https://doi.org/10.1016/S0140-6736\(23\)00013-2](https://doi.org/10.1016/S0140-6736(23)00013-2)
- Gostin, L.O., Monahan, J.T., Kaldor, J., et al. (2019) 'The legal determinants of health: Harnessing the power of law for global health and sustainable development'. *The Lancet*, 393, 1857–1910. Available at: [https://doi.org/10.1016/s0140-6736\(19\)30233-8](https://doi.org/10.1016/s0140-6736(19)30233-8)
- Green, L., Ashton, K., Birley, M., et al. (2026) 'Competence and the development of competency frameworks in the field of Health Impact Assessment'. Ch. 14. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Hanigan, I.C. & Vyas, A. (2026) 'Climate change and Health Impact Assessment'. Ch. 23. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Hanna, P., Wiik, F. & Grisotti, M. (2026) 'The role of local communities in Health Impact Assessment'. Ch. 8. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Harris, P., Harris-Roxas, B., Harris, E., et al. (2007) 'Health Impact Assessment: A practical guide'. Centre for Health Equity Training, Research and Evaluation (CHETRE). Part of the UNSW Research Centre for Primary Health Care and Equity, UNSW, Sydney. Available at: <https://doi.org/10.26190/unswworks/549>

- Harris-Roxas, B. & Harris, E. (2011) 'Differing forms, differing purposes: A typology of health impact assessment'. *Environmental Impact Assessment Review*, 31, 396–403. Available at: <https://doi.org/10.1016/j.eiar.2010.03.003>
- Harris-Roxas, B., Viliani, F., Bond, A., et al. (2012) 'Health impact assessment: The state of the art'. *Impact Assessment and Project Appraisal*, 30, 43–52. Available at: <https://doi.org/10.1080/14615517.2012.666035>
- Health Canada. (2004) *Canadian Handbook on Health Impact Assessment. Volume 1: The Basics*. Available at: <http://publications.gc.ca/pub?id=9.695399&sl=0>
- Hebert, K.A., Wendel, A.M., Kennedy, S.K., et al. (2012) 'Health impact assessment: A comparison of 45 local, national, and international guidelines'. *Environmental Impact Assessment Review*, 34, 74–82. Available at: <https://doi.org/10.1016/j.eiar.2012.01.003>
- Hirono, K., Chilaka, M. & Haigh, F. (2026) 'Equity and intersectionality in Health Impact Assessment: Challenges and opportunities for practice'. Ch. 15. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Hom, E., Dannenberg, A.L., Farquhar, S., et al. (2017) 'A systematic review of Health Impact Assessments in the Criminal Justice System'. *American Journal of Criminal Justice*, 42, 883–908. Available at: <https://doi.org/10.1007/s12103-017-9391-9>
- IAIA. (2010) 'What is impact assessment?'. International Association for Impact Assessment. Fargo, ND, USA. Available at: https://www.iaia.org/uploads/pdf/What_is_IA_web.pdf
- ICMM. (2010) 'Good practice guidance on Health Impact Assessment'. International Council on Mining & Metals. London, UK. Available at: <http://www.icmm.com/en-gb/guidance/health-safety/guidance-hia>
- IFC. (2009) 'Introduction to Health Impact Assessment'. International Finance Corporation. Washington DC. Available at: www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_healthimpactassessment_wci_1319578475704
- Institut de la Francophonie pour le développement durable. (2021) 'Guide méthodologique pour la prise en compte des enjeux de santé dans l'évaluation environnementale et sociale'. IFDD. Québec, Canada. Available at: <http://www.ifdd.francophonie.org/publication/prise-en-compte-des-enjeux-de-sante-dans-levaluation-environnementale-et-sociale/>
- Institute for People, Place and Possibility. (2023) *HIA for Researchers* [Online]. Available at: <https://hia.communitycommons.org/researchers/>
- IPIECA. (2005) 'A guide to health impact assessments in the oil and gas industry'. International Petroleum Industry Environmental Conservation Association, International Association of Oil and Gas Producers.
- IPIECA & DIHR. (2013) 'Integrating human rights into environmental, social and health impact assessments: A practical guide for the oil and gas industry'. International Petroleum Industry Environmental Conservation Association, The Danish Institute for Human Rights. Available at: <https://www.humanrights.dk/publications/integrating-human-rights-environmental-social-health-impact-assessments>
- IPIECA & IOGP. (2016) 'Health impact assessment: A guide for the oil and gas industry'. International Petroleum Industry Environmental Conservation Association and International Association of Oil and Gas Producers. Available at: <https://www.ipieca.org/resources/health-impact-assessment-a-guide-for-the-oil-and-gas-industry>
- Jackson, R.J., Bear, D., Bhatia, R., et al. (2011) *Improving Health in the United States: The Role of Health Impact Assessment*. Washington DC, USA, Committee on Health Impact Assessment. Board on Environmental Studies and Toxicology, Division on Earth and Life Studies, National Research Council of the National Academies.
- Kemm, J. (2013) *Health Impact Assessment: Past Achievement, Current Understanding, and Future Progress*. Oxford: Oxford University Press.
- Kemm, J. & Parry, J. (2004) 'The development of HIA'. Ch. 2. In: Kemm, J., Parry, J. & Palmer, S. (eds.) *Health Impact Assessment: Concepts, Theory, Techniques and Applications*. Oxford: Oxford University Press.

- Kemm, J., Parry, J. & Palmer, S. (2004) *Health Impact Assessment: Concepts, Theory, Techniques and Applications*. Oxford: Oxford University Press.
- Kim, J. (2026) 'The view of governments: Institutionalising Health Impact Assessments in the Republic of Korea'. Ch. 5. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Kim, J., Dannenberg, A., Haigh, F., et al. (2024) 'Let's be clear – Health Impact Assessments or Assessing Health Impacts?'. *Public Health Reviews*, 45. Available at: <https://doi.org/10.3389/phrs.2024.1607722>
- Kim, J. & Haigh, F.A. (2021) 'HIA and EIA are different, but maybe not in the way we thought they were: A bibliometric analysis'. *International Journal of Environmental Research and Public Health*, 18, 9101. Available at: <https://doi.org/10.3390/ijerph18179101>
- Knoblauch, A.M., Krieger, G.R., Divall, M.J., et al. (2026) 'Health Impact Assessment in the extractive industries sector: History, practical experience and a best practice example from sub-Saharan Africa'. Ch. 18. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Krieger, G.R., Utzinger, J., Winkler, M.S., et al. (2010) 'Barbarians at the gate: Storming the Gothenburg consensus'. *Lancet*, 375, 2129–2131. Available at: [https://doi.org/10.1016/S0140-6736\(10\)60591-0](https://doi.org/10.1016/S0140-6736(10)60591-0)
- Lamprecht, N., Erlanger, T.E., Utzinger, J., et al. (2024) 'Prospects and perspectives of Health Impact Assessment: A systematic review of the peer-reviewed literature from June 2007 to January 2023'. *Public Health Reviews*, 45, 1606649. Available at: <https://doi.org/10.3389/phrs.2024.1606649>
- Lebel, A., Pigeon, L.-É., Tremblay, É., et al. (2026) 'The Metropolitan Land Use Plan as a tool for health promotion and sustainable development: the role of Health Impact Assessment in Québec City'. Ch. 22. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Leuenberger, A., Winkler, M.S., Lyatuu, I., et al. (2022) 'Incorporating community perspectives in health impact assessment: A toolbox'. *Environmental Impact Assessment Review*, 95, 106788. Available at: <https://doi.org/10.1016/j.eiar.2022.106788>
- Listorti, J.A. & Doumani, F.M. (2001) 'Environmental health: Bridging the gaps'. World Bank, WDP 422. Available at: <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/401061468740664116>
- Logue, C., Werner, C. & Douglas, M. (2022) 'Practitioners' perspectives on health in Strategic Environmental Assessment of spatial planning policies in Scotland'. *Public Health*, 202, 49–51. Available at: <https://doi.org/10.1016/j.puhe.2021.10.011>
- MacDonald, G. (1955) 'Medical implications of the Volta River Project'. *Transactions of The Royal Society of Tropical Medicine and Hygiene*, 49, 13–27. Available at: [https://doi.org/10.1016/0035-9203\(55\)90079-1](https://doi.org/10.1016/0035-9203(55)90079-1)
- Machalaba, C., Prist, P.R., Cybulska, L.C., et al. (2026) 'One Health in impact assessment to tackle emerging infectious diseases and other threats'. Ch. 24. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Meuter, C., Elkins, B., Jokinen, L., et al. (2026) 'Health Impact Assessment and Indigenous Peoples'. Ch. 19. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Mindell, J., Hansell, A., Morrison, D., et al. (2001) 'What do we need for robust, quantitative health impact assessment?'. *Journal of Public Health Medicine*, 23, 173–178. Available at: <https://doi.org/10.1093/pubmed/23.3.173>
- Miraglia, S.G.E.K. & Abe, K.C. (2026) 'Health Impact Assessment in the urban context'. Ch. 16. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Morgan, R.K. (2012) 'Environmental impact assessment: The state of the art'. *Impact Assessment and Project Appraisal*, 30, 5–14. Available at: <https://doi.org/10.1080/14615517.2012.661557>
- Mueller, N., Iungman, T., Khomenko, S., et al. (2026) 'Quantitative, research-driven Health Impact Assessment of urban planning and transport policies'. Ch. 20. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.

- Naundorf, S. & Radaelli, C.M. (2017) 'Regulatory evaluation ex ante and ex post: Best practice, guidance and methods'. Ch. 11. In: Karpen, U. & Xanthaki, H. (eds.) *Legislation in Europe: A Comprehensive Guide for Scholars and Practitioners*. Oxford: Hart Publishing.
- Nkyekyer, E.W. & Dannenberg, A.L. (2019) 'Use and effectiveness of health impact assessment in the energy and natural resources sector in the United States, 2007–2016'. *Impact Assessment and Project Appraisal*, 37, 17–32. Available at: <https://doi.org/10.1080/14615517.2018.1519221>
- O'Mullane, M. (2013) *Integrating Health Impact Assessment (HIA) into the Policy Process: Lessons and Experience from Around the World*. Oxford: Oxford University Press. Available at: <http://ukcatalogue.oup.com/product/9780199639960.do>
- One Health Initiative Task Force. (2008) 'One Health Initiative Task Force report'. American Veterinary Medical Association. Available at: <https://www.avma.org/resources-tools/reports/one-health-ohitf-final-report-2008>
- ONREPP. (2007) 'Guideline for health impact assessment in environmental impact assessment'. Office of Natural Resources and Environmental Policy and Planning. Bangkok, Thailand.
- Packer, J.M., Belvedere, L.M., Dannenberg, A.L., et al. (2020) 'Review of health impact assessments informing alcohol, tobacco, and marijuana prevention and control policies'. *Journal of Drug Abuse*, 6. Available at: <https://www.primescholars.com/articles/review-of-health-impact-assessments-informing-alcohol-tobacco-and-marijuana-prevention-and-control-policies-107185.html>
- Pan American Health Organization. (2013) *Health Impact Assessment: Concepts and Guidelines for the Americas*. Washington DC. Available at: <https://iris.paho.org/handle/10665.2/57422>
- Permanent Forum on Indigenous Peoples. (n.d.) *Recommendations on Health* [Online]. United Nations Department of Economic and Social Affairs. Available at: <https://www.un.org/development/desa/indigenouseoples/mandated-areas1/health/recs-health.html>
- Pirvu, S.-V., Law, W.P.S., Russomano, T., et al. (2026) 'How can AI enhance Health Impact Assessments?'. Ch. 29. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Public Health England. (2017) *HIA Gateway* [Online]. Available at: <https://webarchive.nationalarchives.gov.uk/20170106081244/http://www.apho.org.uk/default.aspx?RID=40141>
- Public Health England. (2020) 'Health Impact Assessment in spatial planning. A guide for local authority public health and planning teams'. London. Available at: <https://www.gov.uk/government/publications/health-impact-assessment-in-spatial-planning>
- Public Health Scotland. (2025) 'A guide to Health Impact Assessment'. Available at: <https://publichealt.hscotland.scot/publications/a-guide-to-health-impact-assessment/>
- Pyper, R., Birley, M., Buroni, A., et al. (2024) 'Competent expert for Health Impact Assessment including health in environmental assessments'. Institute of Environmental Management and Assessment. Available at: <https://s3.eu-west-2.amazonaws.com/iema.net/documents/IEMA-Competent-Expert-for-Health-RD-v3.pdf>
- Pyper, R. & Cave, B. (2026) 'A walk through the steps of Health Impact Assessment'. Ch. 11. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Pyper, R., Cave, B., Purdy, J., et al. (2021) *Health Impact Assessment Guidance: A Manual and Technical Guidance*. Institute of Public Health in Ireland. Dublin and Belfast. Available at: <https://publichealth.ie/hia>
- Pyper, R., Lamming, M., Beard, C., et al. (2022a) *Guide to Effective Scoping of Human Health in Environmental Impact Assessment*. Institute of Environmental Management and Assessment (IEMA). Available at: <https://www.iema.net/media/s35fughe/iema-eia-guide-to-effective-scoping-of-human-health-nov-2022.pdf>
- Pyper, R., Waples, H., Beard, C., et al. (2022b) *Guide to Determining Significance For Human Health in Environmental Impact Assessment*. Institute of Environmental Management and Assessment (IEMA). Available at: <https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf>
- Quigley, R., den Broeder, L., Furu, P., et al. (2006) 'Health Impact Assessment: International Best Practice Principles'. International Association for Impact Assessment. International best practice principles. Special publication series No. 5. Available at: <https://www.iaia.org/best-practice.php>

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- Rasella, D., Cavalcanti, D., da Silva, A.F., et al. (2026) 'Introduction to quantitative Health Impact Assessment'. Ch. 27. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Ricklin, A., Madeley, M., Whitton, E., et al. (2016) 'The state of Health Impact Assessment in planning'. American Planning Association. Available at: <https://www.planning.org/publications/document/9148434/>
- Rodríguez Rasero, F.J., Moya Ruano, L.Á., Vela Ríos, J., et al. (2015) 'Manual para la evaluación de impacto en salud de proyectos sometidos a instrumentos de prevención y control ambiental en Andalucía [Guideline for HIA of projects subject to EIA regulation]'. Andalusian Regional Ministry of Health. Available at: www.juntadeandalucia.es/export/drupaljda/manual_preencion_control_ambiental02.pdf
- Ross, C.L., Orenstein, M. & Botchwey, N. (2014) *Health Impact Assessment in the United States*. New York and Heidelberg: Springer.
- Roue Le Gall, A., Van Gastel, B., Dardier, G., et al. (2024) *Health Impact Assessment Guidelines in Georgia: Practical Application of Health in Environmental Assessment*. EHESP, School of Public Health. Available at: <https://www.expertisefrance.fr/documents/20182/861856/Health+Impact+Assessment+Guidelines+in+Georgia/4c918cec-e035-3032-ab18-e670af9a85b8>
- Ruiz Alvarado, M. (2026) 'The view of International Financial Institutions on Health Impact Assessment'. Ch. 6. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Scott-Samuel, A. (1996) 'Health impact assessment. An idea whose time has come'. *BMJ*, 313, 183–184. Available at: <https://doi.org/10.1136/bmj.313.7051.183>
- Scott-Samuel, A., Birley, M. & Ardern, K. (1998) 'The Merseyside Guidelines for health impact assessment'. Merseyside Health Impact Assessment Steering Group: Liverpool Public Health Observatory. Liverpool.
- Scott-Samuel, A., Birley, M. & Ardern, K. (2001) 'The Merseyside Guidelines for health impact assessment'. International Health Impact Assessment Consortium. 2nd edition. Liverpool.
- Silva, F. & Vohra, S. (2025) 'Evaluación del impacto en la salud [Health Impact Assessment]'. Banco Interamericano de Desarrollo [Inter-American Development Bank]. Available at: <https://doi.org/10.18235/0013439>
- Simos, J., Spanswick, L., Palmer, N., et al. (2015) 'The role of health impact assessment in Phase V of the Healthy Cities European Network'. *Health Promotion International*, 30 Suppl 1, i71–i85. Available at: <https://doi.org/10.1093/heapro/dav032>
- Singh, P.K. (2018) 'Collaborating centres: Rediscovering an extended arm of World Health Organization'. *Indian Journal of Medical Research*, 147. Available at: https://doi.org/10.4103/ijmr.IJMR_118_18
- Sommerville, D. & Xiao, Y. (2026) 'Health Impact Assessment in energy companies'. Ch. 7. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- SOPHIA. (2025) *Welcome to SOPHIA!* [Online]. Available at: <https://hiasociety.org/>
- Staatsen, B., Elberse, J. & den Broeder, L. (2026) 'Community participation in Health Impact Assessment'. Ch. 12. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Tiffen, M. (1991) *Guidelines for the Incorporation of Health Safeguards into Irrigation Projects through Intersectoral Cooperation with Special Reference to the Vector-borne Diseases*. 2nd ed. Geneva: World Health Organization. Available at: <https://iris.who.int/handle/10665/62032>
- Transport Infrastructure Ireland. (2024) 'Population and human health assessment of proposed national roads – Standard'. PE-ENV-01108. Available at: <https://publications.tii.ie/document/?id=3370>
- Tremblay, É., Lemire, M., Lebel, A., et al. (2026) 'Implementation of Health Impact Assessment in Québec: A history of collaboration between provincial, regional and local levels'. Ch. 25. In: Cave, B., Viliani, F. & Winkler, M.S. (eds.) *Handbook of Health Impact Assessment*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.
- Tsouros, A.D. (2015) 'Twenty-seven years of the WHO European Healthy Cities movement: A sustainable movement for change and innovation at the local level'. *Health Promotion International*, 30, i3–i7. Available at: <https://doi.org/10.1093/heapro/dav046>

- Turnbull, R.G.H. (1992) *Environmental and Health Impact Assessment of Development Projects: A Handbook for Practitioners*. London and New York. Published on behalf of the World Health Organization Regional Office for Europe and the Centre for Environmental Management and Planning by Elsevier Applied Science. Available at: <https://policycommons.net/artifacts/18260441/environmental-and-health-impact-assessment-of-development-projects/>
- UKOOG. (2015) *Guidelines for Addressing Public Health in Environmental Impact Assessment for Onshore Oil and Gas*. United Kingdom Onshore Operators Group.
- UN Committee on Economic Social and Cultural Rights (CESCR). (2000) 'General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)'. E/C.12/2000/4. Available at: <https://digitallibrary.un.org/record/425041?ln=en>
- UN General Assembly. (1966) *International Covenant on Civil and Political Rights*. Treaty Series. United Nations. Available at: <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-civil-and-political-rights>
- UN General Assembly. (2022) 'The human right to a clean, healthy and sustainable environment: Resolution'. A/RES/76/300. New York: United Nations. Available at: <https://digitallibrary.un.org/record/3983329?ln=en>
- UNDP. (2025) *Human Development Index (HDI)* [Online]. United Nations Development Programme. Available at: <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI>
- United Nations. (1948) *The Universal Declaration of Human Rights*. Available at: <https://www.un.org/en/about-us/universal-declaration-of-human-rights>
- United Nations Economic Commission for Europe. (2023) 'Assessing health impacts in strategic environmental assessment'. ECE/MPEIA/SEA/2023/10. Geneva. Available at: <https://unece.org/environment/documents/2023/09/session-documents/assessing-health-impacts-strategic-environmental>
- United Nations Economic Commission for Europe & Regional Environmental Center for Central and Eastern Europe. (2006) 'Resource manual to support application of the UNECE Protocol on Strategic Environmental Assessment'.
- United Nations Economic Commission for Europe & Regional Environmental Center for Central and Eastern Europe. (2012) 'Resource manual to support application of the UNECE Protocol on Strategic Environmental Assessment'. New York and Geneva. Available at: <https://unece.org/environment-policy/publications/resource-manual-support-application-sea-protocol>
- United States of America Senate & House of Representatives. (1969) 'The National Environmental Policy Act of 1969, as amended. Public Law 91-190, 42 U.S.C. 4321-4347. Available at: www.energy.gov/nepa/downloads/national-environmental-policy-act-1969
- van Bavel, B., González, A., Cave, B., et al. (2024) 'Good Practice Case Studies of Health in SEA – A Dossier (Deliverable 4 for the ProHealth SEA project)'. Prepared for the Environmental Protection Agency by University College Dublin and BCA Insight Ltd. Available at: https://www.ucd.ie/healthsea/t4media/Prohealth_SEA_WP2_D4_Case%20Studies_Final11Sept2024.pdf
- Vanclay, F. (2015) 'Changes in the Impact Assessment family 2003–2014: Implications for considering achievements, gaps and future directions'. *Journal of Environmental Assessment Policy and Management*, 17, 1550003. Available at: <https://doi.org/10.1142/s146433215500039>
- Viliani, F. & Clarke, E. (2013) 'Realities and opportunities for health impact assessment in Africa'. Ch. 14. In: O'Mullane, M. (ed.) *Integrating Health Impact Assessment (HIA) into the Policy Process: Lessons and Experience from Around the World*. Oxford: Oxford University Press. Available at: <http://ukcatalogue.oup.com/product/9780199639960.do>
- Waheed, F., Ferguson, G.M., Ollson, C.A., et al. (2018) 'Health Impact Assessment of transportation projects, plans and policies: A scoping review'. *Environmental Impact Assessment Review*, 71, 17–25. Available at: <https://doi.org/10.1016/j.eiar.2017.12.002>
- WHIASU. (2012) 'Health Impact Assessment: A practical guide'. Wales Health Impact Assessment Support Unit. Cardiff, Wales. Available at: <https://phwwhocc.co.uk/wp-content/uploads/2020/07/Health-Impact-Assessment-A-Practical-guide.pdf>
- Whitehead, M. (1991) 'The concepts and principles of equity and health'. *Health Promotion International*, 6, 217–228. Available at: <https://doi.org/10.1093/heapro/6.3.217>

- Whitmee, S., Haines, A., Beyrer, C., et al. (2015) 'Safeguarding human health in the Anthropocene epoch: Report of The Rockefeller Foundation & Lancet Commission on planetary health'. *The Lancet*, 386, 1973–2028. Available at: [https://doi.org/10.1016/S0140-6736\(15\)60901-1](https://doi.org/10.1016/S0140-6736(15)60901-1)
- WHO. (1986) 'Ottawa Charter for Health Promotion'. First International Conference on Health Promotion. WHO/HPR/HEP/95.1. Ottawa. Available at: <https://iris.who.int/bitstream/handle/10665/349652/WHO-EURO-1986-4044-43803-61677-eng.pdf?sequence=1&isAllowed=y>
- WHO. (1988) 'The Adelaide recommendations'. Conference statement of the Second International Conference on Health Promotion. WHO/HPR/HEP/95.2. Adelaide, South Australia. Available at: <https://www.who.int/teams/health-promotion/enhanced-wellbeing/second-global-conference>
- WHO. (1989) 'Constitution'. World Health Organization. Geneva. Available at: <https://iris.who.int/handle/10665/36851>
- WHO. (1997) 'The Jakarta Declaration: On leading health promotion into the 21st century [Déclaration de Jakarta sur la promotion de la santé au XXIe siècle]'. World Health Organization. WHO/HPR/HEP/4ICHP/BR/97.4. Geneva. Available at: <https://iris.who.int/handle/10665/63698>
- WHO. (1998) 'Health Promotion Glossary'. Geneva. Available at: <https://iris.who.int/handle/10665/64546>
- WHO. (2001) 'Health Impact Assessment (HIA). Report of an inter-regional meeting on harmonization and mainstreaming of HIA in the World Health Organization and of a partnership meeting on the institutionalization of HIA capacity building in Africa. Arusha, 31 October–3 November 2000'. World Health Organization. WHO/SDE/WSH/01.07. Geneva, Switzerland. Available at: www.who.int/iris/handle/10665/69825
- WHO. (2010a) 'Adelaide Statement on Health in All Policies: Moving towards a shared governance for health and well-being'. World Health Organization and Government of South Australia. Report from the International Meeting on Health in All Policies. Adelaide, South Australia. Available at: <https://iris.who.int/handle/10665/44365>
- WHO. (2010b) 'Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies'. World Health Organization. Geneva. Available at: <https://iris.who.int/handle/10665/258734>
- WHO. (2019) 'Adelaide statement II on health in all policies: Implementing the Sustainable Development Agenda through good governance for health and well-being: building on the experience of health in all policies'. World Health Organization. Available at: <https://iris.who.int/handle/10665/331585>
- WHO. (2020) 'Healthy cities effective approach to a rapidly changing world'. World Health Organization. Geneva. Available at: <https://iris.who.int/handle/10665/331946>
- WHO. (2021) 'Health Promotion Glossary of Terms 2021'. Geneva. Available at: <https://www.who.int/publications/i/item/9789240038349>
- WHO. (2022) 'Global competency framework for universal health coverage'. World Health Organization. Geneva. Available at: <https://iris.who.int/handle/10665/352710>
- WHO (2024) *Quality Criteria for Integrating Health into Nationally Determined Contributions (NDCs)*. Geneva, World Health Organization. Available at: <https://iris.who.int/handle/10665/380214>
- WHO. (2025) 'Economic and commercial determinants of health in small island developing states: Noncommunicable diseases, mental health conditions, injuries and violence'. World Health Organization. Geneva. Available at: <https://iris.who.int/handle/10665/380811>
- WHO. (n.d.a) *WHO Collaborating Centre for Climate Change and Health Impact Assessment* [Online]. Available at: <https://apps.who.int/whocc/Detail.aspx?Ar3zxkTJ/U14FRqKpIWGmw==>
- WHO. (n.d.b) *WHO Collaborating Centre on Health in Impact Assessments* [Online]. Available at: <https://apps.who.int/whocc/Detail.aspx?hjqWn8iH8ZeDGVk+d5K5xQ==>
- WHO Regional Office for Europe. (1978) 'Declaration of Alma-Ata'. World Health Organization, Regional Office for Europe. WHO/EURO:1978-3938-43697-61471. Copenhagen. Available at: <https://apps.who.int/iris/handle/10665/347879>
- WHO Regional Office for Europe. (1998) 'HEALTH 21: Health for all in the 21st century: An introduction'. Available at: <https://iris.who.int/handle/10665/107327>
- WHO Regional Office for Europe. (2014) 'Health in impact assessments: Opportunities not to be missed'. Available at: <https://iris.who.int/handle/10665/137369>
- WHO Regional Office for Europe. (2022) 'Learning from practice. Case studies of health in strategic environmental assessment and environmental impact assessment across the European Region of the

- World Health Organization'. World Health Organization Regional Office for Europe. Available at: <https://apps.who.int/iris/handle/10665/353810> License: CC BY-NC-SA 3.0 IGO
- WHO Regional Office for Europe. (2023a) 'Implementation of health impact assessment and health in environmental assessments across the WHO European Region'. Copenhagen. Available at: <https://iris.who.int/handle/10665/368238>
- WHO Regional Office for Europe. (2023b) 'Policy briefs on health impact assessments and incorporating health into environmental assessments: An overview'. Copenhagen. Available at: <https://iris.who.int/handle/10665/373941>
- WHO Regional Office for Europe & European Centre for Health Policy. (1999) 'Health impact assessment: Main concepts and suggested approach. Gothenburg consensus paper'. WHO Regional Office for Europe, ECHP. Brussels. Available at: <https://hiap.goeg.at/sites/hiap.goeg.at/files/2019-10/Gothenburg%20Consensus%20Paper.pdf>
- WHO Regional Office for South-East Asia. (2025) 'Mapping the commercial determinants of health in countries of the WHO South-East Asia Region: Conceptualizations, impacts and actions'. World Health Organization. Regional Office for South-East Asia. New Delhi. Available at: <https://iris.who.int/handle/10665/380673>
- WHO Regional Office for the Western Pacific. (1993) 'Workshop on Environmental Health Impact Assessment, Kuala Lumpur, Malaysia, 15–19 November 1993: Report'. Kuala Lumpur: World Health Organization Western Pacific Regional Environmental Health Centre (EHC). (WP)ICP/RUD/001. Available at: <https://iris.who.int/handle/10665/207831>
- Wilkinson, R.G. & Marmot, M. (2003) 'Social determinants of health: The solid facts'. World Health Organization. Available at: <https://iris.who.int/handle/10665/326568>
- Winkler, M.S., Furu, P., Viliani, F., et al. (2020) 'Current Global Health Impact Assessment Practice'. *International Journal of Environmental Research and Public Health*, 17, 2988. Available at: <https://doi.org/10.3390/ijerph17092988>
- Winkler, M.S., Villiani, F., Knoblauch, A.M., et al. (2021) 'Health Impact Assessment International Best Practice Principles'. International Association for Impact Assessment. Special Publication Series. Fargo, USA. Available at: https://www.iaia.org/uploads/pdf/SP5%20HIA_21_5.pdf
- Winslow, C.E. (1920) 'The untilled fields of public health'. *Science*, 51, 23–33. Available at: <https://doi.org/10.1126/science.51.1306.23>
- Wismar, M., Blau, J., Ernst, K., et al. (2007) *The Effectiveness of Health Impact Assessment: Scope and Limitations of Supporting Decision-making in Europe*, World Health Organization on behalf of the European Observatory on Health Systems and Policies. Available at: <https://iris.who.int/handle/10665/326506>