EPA RESEARCH PROGRAMME 2021-2030

Adding Value to Strategic Environmental Assessment – Health Considerations in Practice

(2022-HE-1171)

Pro-Health SEA

Prepared for the Environmental Protection Agency
by
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1. Introduction

1.1. Aim of the Report

This report gathers insights from practitioners involved in the preparation of Strategic Environmental Assessments (SEAs) as well as experts in Health Impact Assessment (HIA) familiar with SEA on the value added by the effective consideration of health in SEA. We conducted a total of 16 interviews; five with practitioners involved in recent Irish SEA, four with practitioners involved in SEA from other European countries, and six interviews with HIA experts with experience in SEA. Qualitative data from interview transcripts were extracted and thematically analysed. Key insights from the interviews were then synthesised into recommendations for international good practice on the effective consideration of health in SEA.

2. Methodology

2.1. Key Informants and Associated Case Studies

Interviewees were identified based on a list of 20 representative case studies that were previously reviewed (Table 1 - see also Deliverable 4: 'Good Practice Case Studies – A Dossier'). These included 10 recent SEAs from Ireland, identified in consultation with the project Steering Committee, and 10 good practice examples from other European countries selected from a larger review of approximately 200 international SEA Environmental Reports (ERs) (Deliverable 3). Interviews were sought with practitioners involved in each case study. In some cases it was possible to contact the practitioner involved in the case study directly via email, while in other cases consultancies were contacted by either email or phone. Challenges with reaching SEA practitioners engaged in the case study SEAs led to modifying the participant selection strategy to include HIA experts with experience and familiarity in SEA. We interviewed four practitioners associated with five SEAs from Ireland and one HIA expert with SEA experience in Ireland, four practitioners associated with four SEAs from international European countries, and six international HIA experts with SEA experience.

Table 1. Selected Case Studies Included in Analysis.

Case ID	Origin	Level	Title	Year of SEA
1	Ireland	National	Common Agricultural Policy Strategic Plan 2023-2027	2023
2	Ireland	National	National Hazardous Waste Management Plan 2021-2027	2021
3	Ireland	National	National Climate Action Plan 2040	2024
4	Ireland	National	National Roads Strategy 2040	2022
5	Ireland	Regional	Eastern and Midland Regional Spatial and Economic Strategy 2021-2027	2019
6	Ireland	Regional	Fingal County Development Plan 2023-2029	2022
7	Ireland	Regional	Regional Water Resources Plan - Eastern and Midlands 2022	2022
8	Ireland	Local	Dublin City Local Authority Climate Action Plan 2024-2029	2023
9	Ireland	Local	Dundrum Local Area Plan 2023	2023
10	Ireland	Local	Limerick Shannon Metropolitan Area Transport Strategy 2022	2022
11	Netherlands	National	Dutch Built and Biophysical Environment Vision 2018	2019
12	Sweden	National	National Plan for the Transport System 2018–2029	2017

Case ID	Origin	Level	Title	Year of SEA
13	France	National	Report of the Strategic Environmental Assessment of the National Low-Carbon Strategy 2019	2019
14	Portugal	Regional	Innovation and Digital Transition Program 2030	2022
15	Czech Republic	Regional	Plan for the Development of Water Pipes and Sewers in the Ústí Region – Update 2020	2021
16	France	Regional	Occitanie Regional Biomass Plan 2020-2030-2050	2019
17	Sweden	Regional	Waste Plan for Eslöv, Höör and Hörby Municipalities - Action Plan for Resource Management and Circular Material Flows 2023-2026	2023
18	United Kingdom	Local	Glasgow City Region's Adaptation Strategy and Action Plan 2021	2021
19	United Kingdom	Local	Leeds Local Plan (Local Plan Update)	2023
20	Belgium	Local	Improving the Quality of Life for the Residents - Residential Area Klein-Rusland (Zelzate) 2017	2017

2.2. Data Collection and Analysis

Members of the research team developed an interview guide (Appendix A) that could be applied for all interviews. Questions inquired about the consideration of health in SEA, applicable to both SEA practitioners and HIA experts, as well as linked to practical examples associated with selected SEA case studies. The interviews explored definitions of "health", "good practice", and "health expertise" as they were applied in practical examples from key informants' practice and experience. Interviews were conducted online and transcribed in real-time using the built-in closed caption feature in Zoom/Teams. Text files were downloaded and cleaned for coherence. Data were then organised using a copy of the interview guide. Key sentences were then highlighted. Data were inductively coded and thematically analysed resulting in the following themes:

- the state of current practice;
- challenges; and
- recommendations.

2.3. Interviewees

We interviewed four practitioners associated with five SEAs from Ireland and one HIA expert with SEA experience in Ireland. These SEAs spanned a range of national, regional, and local planning tiers as well as different planning and policy areas/sectors from waste management to climate action, as well as spatial and economic development.

We interviewed four practitioners involved in good practice SEA from other European countries, and six international HIA experts with experience in SEA. Table **2** lists the interviewees and their category. The case studies and the interviewees are anonymised to ensure that the interviewees are not identifiable.

Table 2. List of key informants, categories and cases.

Interviewee ID	Category
1	SEA consultant, Linked to Irish case study
2	SEA consultant, Linked to Irish case study
3	SEA consultant, Linked to Irish case study
4	SEA consultant, Linked to Irish case study
5	SEA consultant, Linked to Irish case study
6	HIA expert with SEA experience –Ireland
7	Linked to case study – International
8	Linked to case study – International
9	Linked to case study – International
10	Linked to case study – International
11	HIA expert with SEA experience – International
12	HIA expert with SEA experience – International
13	HIA expert with SEA experience – International
14	HIA expert with SEA experience – International
14	HIA expert with SEA experience – International

2.4. Ethical Considerations

This research was approved by the Humanities Human Research Ethics Committee (HREC), University College Dublin, Ireland (Research Ethics Reference Number is: HS-LR-23-129-Gonzalez). Written informed consent for data collection and anonymised publication of feedback was given by all participants. A copy of the project information sheet and consent form can be found in Appendix B. Interview transcripts and data were anonymised for participant confidentiality (Appendix C).

2.5. Limitations

It was not possible to identify, and to contact, interviewees associated with each of the case studies named in Table **1**. The reasons for this were: people having moved organisation; it was not possible to locate contact details for the named authors; and absence of response from the named individual.

The recruitment of interviewees was influenced by the directness of the communication network. The response rate was higher when direct contact with the practitioner was possible via a known email address. Potential interviewees were less likely to respond when the initial contact was made via LinkedIn or a general consultancy email address. In one instance, individuals associated with the SEA and/or the relevant plan had moved on and there was no-one able to answer questions on the case study in question.

The selection strategy was expanded to include HIA experts with experience and familiarity in SEA. This change affects the findings of this research task, from being shaped by the breadth of the selected 20 SEA case studies, towards being shaped by a depth of different perspectives on some of the practical challenges and tangible recommendations for a more effective consideration of health in SEA.

3. Findings

Thematic analysis identified three themes in which the following findings of the report are presented:

- the state of current practice;
- challenges; and
- recommendations.

3.1. State of Current Practice

3.1.1 Irish Strategic Environmental Assessment and Health Impact Assessment Interviewees

Setting the scope of the topic 'human health' - The interviews revealed that the consideration of health in SEA is currently narrow and superficial. When asked to describe how health was currently considered within SEA practice, all five interviewees described how practice focuses on health through the other environmental topic areas. Some comments highlighted this, including:

> *"There [isn't] the threat of health really having much influence, you know, as ever it continues to be seen as, oh, well, haven't we already covered that through air quality and noise and soils and so on…It's a sort of, oh, well, yes we need to do the SEA because it's a requirement and health is in there but we don't even really understand what health means, you know, are we just talking about coverage in air quality and noise? Or are we talking that wider public health conversation*?" – ID05

> *"We kind of look at population and human health together…[they're] considered at the end, once you consider the noise, the air quality impacts, traffic and transport related impacts, other related impacts, and how they go on to interact and impact on human health." – ID03*

> "*[Health] may just become diluted … if at least it was considered on its own, it would give it more prominence." – ID01*

In addition to defining health in physical terms within SEA practice, four out of five key interviewees discussed the consideration of social, economic, emotional, and psychological aspects of health, including the wider determinants of health – always acknowledging that these considerations are currently weak in practice. This is succinctly captured by a particular observation:

> *"I think the official guidance has to say, in covering the statutory requirement for human health, you have to take a wider determinants of health approach and you need to include technical topics in*

health impact assessment. And I think that would, you know, really move us away from just considering health in a very narrow sense." – ID05

As one interviewee re-iterated, the current consideration and scope of health in SEA depends also on the nature, the scale, and the type of plan.

3.1.2 International Strategic Environmental Assessment Interviewees

Setting the scope of the topic 'human health' [and **legislation and statutory process]** – The interviewees in the international case studies described the importance of legislation and the remit of the organisation promoting the policy or plan to the scope of the SEA and the way in which health is approached. They described how this can lead to a narrow consideration of health in SEA practice.

"… it boils down to what their mandate of the transport system is … . And then health becomes very much an issue of noise and vibrations …" – ID07

"There is a new law on the spatial environment– this determines what the requirements should be for a healthy and safe environment." – ID10

Methodological innovation – The interviewees also described how, within the boundaries set by legislation. Etc., innovative approaches are being trialled.

"… health is very much a cumulative aspect in a way that we might not always see it in some of the other aspects we work with …" – ID07

"… there is no methodology for health but we developed it all for this document. It was very well received." – ID08

"… the assessment would gain if you'd bring this health perspective on the table. In fact, in our SEA, we try to emphasize the opportunities, not only the benefits and we always try to do that to go beyond the identification of impacts of negative effects." – ID09

3.1.3 International Health Impact Assessment Interviewees

Setting the scope of the topic 'human health' – as with the SEA interviewees, the HIA interviewees described how the standard scope of health in SEA does not align with the way in which health is addressed in the field of public health (and HIA).

"Most of the time … [health is defined] … in terms of environmental hazards. Air quality, for example. If there are cross-border implications then health is considered very vaguely." – ID11

"Within [devolved nation state] we have tried to broaden the understanding of health in SEA. It is traditionally quite narrow – for example, air quality, water and soil. For many years we have tried to influence this and we have had some success but not as much as I would like to have had." – ID12

"The directive and protocol talk about health but does not define it. WHO has an internationally agreed definition of health. It goes beyond environmental determinants of health and as health is influenced by environmental determinants we think this is the one to use." – ID15

Each of the HIA interviewees described how they used determinants of health to conceptualise the ways in which the policy or plan might affect health. For example:

"The way I think about HIA and health in other impact assessments is you don't start with outcomes you start with health determinants – at least consider, while scoping, a range of different determinants to health related behaviour ... A systematic approach to consider these – all systematically considered." – ID12

"I think we should apply the definition as we do in the health impact assessment that it's comprehensive and not only health outcomes, but also health determinants." – ID13

"From my perspective it would not only be looking at environmental determinants - which you have to do and which should not be excluded – it depends on the plan." – ID15

One interviewee described good practice as when the SEA used pathway analysis to show how determinants of health affected by the policy or plan are linked to changes in health outcomes.

"What is the pathway from the determinant to the health outcome and which are the most relevant health outcomes and the kind of discussion about the significance? Significance and relevance of that health outcome?" – ID11

No topic is static and this increases the importance of involving the correct expertise to inform the decision-maker.

"Our understanding of what is important to health changes all the time" – ID12

"It should be considered more broadly and not just human health but population health with a definition – social determinants; commercial determinants, inequalities and not just environmental health determinants." – ID14

It was recognised that it is not a straightforward matter to assess health within SEA.

"… how do we understand health, are we able to go to specific health outcome? For example, asthma or injuries or any other health outcome? Or do we just keep the overall health with a single measure? To my knowledge most of the impact assessments, and on the level of assessing health, indicate the determinant (the risk factor) and not really how the incidence of a disease is changing or how mortality is changing. And it's very logical that not going that far because it's unlikely anyone would do an investment which is doing major change in mortality but there might be changes in morbidity. So I mean go to the very end with health: define the health outcome. I try to find the health outcome as detailed by the ICD (International Classification of Diseases) but it is very hard." – ID11

HIA interviewees acknowledged the importance of a pragmatic approach that adheres to a timeline and a budget.

"… [a full assessment of each determinant is] definitely not necessary in every single case. I think here we need really to stick to the classical HIA methodology: screening, scoping etc. And sort out when do we need to go to the health outcome, to a specific individual health outcome, and where we are satisfied with the broader level." – ID11

There must be a balance between being practical and robust and that, given the time and resource restraints, assessments are not conducted to the same standards as scientific research. This has implications for what is considered 'good practice'.

"… the practitioners have a limited time period in which to do the work and limited resources and all this, so I wouldn't use the term good practice in sense of research." – ID11

"… If the population is satisfied, if the society is satisfied with this, that's good enough practice for me." – ID11

Methodological innovation – The interviewees described how SEAs incorporated the topic of health into the assessment.

"I immediately think of two or three examples: a national SEA and three SEAs of Local Development Plans … They [were good practice because they] considered health and inequalities and integrated them into the SEA, whether by doing standalone HIA and then working it in; by having health within from the start; stakeholder workshop. They considered the wider determinants - some may be scoped out, but all were considered." – ID14

"The way I think about HIA and health in other impact assessments is you don't start with outcomes you start with health determinants – at least consider, while scoping, a range of different determinants to health related behaviour." – ID12

3.2. Current Practice Challenges

3.2.1 Irish Strategic Environmental Assessment and Health Impact Assessment Interviewees

Methodological limitations – The interview results highlight some of the methodological and practical limitations to the requirement for health in SEA. One interviewee critically reflected on the existing challenge to have a single methodology to assess different types of data in different areas, and equate outputs across all SEA topics when there is simply so much diversity from health to biodiversity and cultural heritage. The same interviewee outlined how data availability for strategic alternatives, leading to a limited subset of comparable health indicators, would often dictate why health was considered so broadly, perhaps superficially, in SEA.

"This desire to have a single methodology that somehow…boils everything there is to say about public health down to 2 characters…I do think SEA is about having a shorter, quicker methodology, you know, it is more powerful to make strategic decisions, but, inevitably, there tends to be a bit more uncertainty at that level and a bit more speed to everything you're doing, but my experience is it can be done and it can be done effectively." – ID06

However, two out of four SEA practitioners indicated they failed to see how proportionate and effective consideration could work in practice. One of them noted that:

"*there's a bit of a disconnect there between the objective health of people in general and what planning is supposed to do about it. And then how SEA is supposed to assess that and actually affect a material or a tangible change in that planning." – ID02*

Quantification and measurement – The interviews revealed that the effective consideration of health in SEA is missing a connection with quantitative and qualitative human health measurements. This finding was also supported by the review of the selected 20 SEA ER cases, with less than a third of the ERs including reference to the quantitative or qualitative assessment of health outcomes (Deliverable 4). Two interviewees alluded to a bias towards the prioritising of quantitative measurement set out in other topic areas, as well as a knowledge gap around how

qualitative and mixed methodological approaches could be applied for the scientific assessment and measurement of health. One of these interviewees observed that:

> *"Maybe taking the more "science-based" approach, as opposed to a kind of qualitative assessment based approach, that's hard to do when you're dealing with plans and policies. As well, in all fairness, because it's not exactly quantifiable all the time, neither are the impacts, the potential impact isn't quantified." – ID03*

Two out of four SEA practitioners indicated how health as a concept and policy base was also associated with uncertainties about where health begins and ends and how to include the broader determinants of health within the existing SEA process. One interviewee highlighted in particular the challenges of addressing human wellbeing:

> "*I think it would be a challenge if wellbeing was to be brought in to the scope of the directive explicitly … Wellbeing is something that is much more challenging to address because of the lack of clear standards, the lack of clear enforceable standards and associated indicators. The ambiguity and the reason why we focus on the environmental vectors like air, soil, and water is, I guess, one of the reasons is that the European SEA guidelines and guidance point us in that direction." – ID04*

Expertise for the consideration of human health in SEA – The interviews revealed a range of understandings of the level of specialised experience and knowledge needed for the effective and proportionate consideration of health. Two interviewees openly acknowledged the limits of having generalists in SEA practice provide health expertise, one of them noting that:

> *"As a general SEA practitioner, we know a little bit about a lot of things, but we'll always need to defer to our colleagues that have more expertise… there's just an assumption that the people that are undertaking SEAs and EIAs are competent experts and bring in expertise as needed, proportionate to the type and nature of the plan that's being looked at." –ID02*

Interviewees also offered rationales as to why the engagement of appropriate health expertise was missing.

> *"There's no requirement to include specialists. Therefore, it doesn't happen very often … A lot of it comes down to resources, you know, it's a competitive commercial venture to bid to do an SEA and you know the most expensive best SEA is not likely to be the one that gets awarded the work. So, you know, I think there is a pressure for the work to be undertaken by generalists." – ID06*

3.2.2 International Strategic Environmental Assessment Interviewees

Expertise for the consideration of human health in SEA – Practice challenges relate to involving the correct public sector authorities and the absence of clear linkages and/or working practices between environmental authorities (including planning) and health authorities. This was highlighted, in particular, by two interviewees:

> *"I would say we don't have good practice on this. The reason is that the authority that decides on health or SEA and EIA guidance is the [member state] EPA and they are not really into health. We have an authority for health, but they are not anymore at all involved in impact assessments. They used to be a long time ago … The health [case] boils down to 'can we meet the standards of noise?'." – ID07*

> *"… one of the reason also that SEA doesn't come out as it could, or as it should, is the health authorities are not completely prepared to act on the SEA and so they don't have a strong word to say. Very often they are contacted but they don't respond through the public consultation process." – ID09*

This observation applies also to identifying the specialists to prepare the assessments.

> *"I would really like to see people that are much more into public health in this process we don't have them at all at the moment there. So it's people like that who do this, the majority of the people that do health impact assessments have other backgrounds and are generalists and so on." – ID07*

> *"The difficulty is that we get environmental specialists to work on this issue. This theme has been integrated into environmental impact studies or environmental assessment plans … the skills of the people who work on these subjects are not complete enough to bring a real in-depth knowledge on subjects that are for the time being major and we base ourselves on a lot of guides that bring a sufficiently simplified vision so that it can be treated and exploited, but we lack a lot of knowledge and a certain technical value in these subjects." – ID08*

One interviewee described how they overcame this by explicitly involving the public health authority in preparing the SEA.

> *"We worked with the [representative body of local health agencies] – they are the health agency of cities – all local municipalities have [the representative body of local health agencies] … Health was involved in scoping note – and in discussions about how we should define health as a topic … Later during assessment stage we organised expert sessions that were a mix of engineering firm consultants with external experts. This was in health but across other topics too. " - ID10*

This was not without challenge or risk but it was recognised as a worthwhile approach.

"Often seems to be scary both for client and engineering company – but in my view it added value – when the client saw what was coming through they were very happy. " - ID10

The issue of what arises from the health assessment was raised by one interviewee. This was phrased as compensation and it was recognised that setting a single standard was not the best way to proceed.

"I think that the [unintelligible] sequence, avoid, reduce, compensate, deserves to have perhaps more development on the subject of compensation. It's a very difficult subject, on which we also have debates to consider how, from a health point of view, there are compensatory measures … how do we give and provide compensation because the reduction may not be enough … The difficulty is also the proportionality of these compensation measures without falling into somewhat extreme subjects. To ask everyone that as soon as certain thresholds are exceeded, there must be compensation to be made to the neighbourhood or perhaps to the community, the municipality … " – ID08

3.2.3 International Health Impact Assessment Interviewees

Quantification and measurement – SEA is recognised as a high level assessment that needs to be conducted in a specific timeframe and to a specific budget. This means that there are, of necessity, some broad judgements being made.

"I would advocate for evidence -based, to the extent possible, I would say, because I know it's sort of a high -level assessment and time constraints and budget constraints and so on." – ID13

It is interesting to note that this applies even within a topic that is amenable to quantification.

"The other problem with noise is exactly the health outcome because there are several health outcomes starting with sleep disturbance, which is very hard to measure, and ending maybe with stroke, which we can measure based on hospitalization, based on mortality … But the decision pathway from on that point which health outcome to follow and how often and when it is relevant and when it is not relevant, that is very complicated, even in case of noise …" – ID11

The 'what' and the 'who'? In addition to considering determinants of health (the 'what'?), interviewees stressed the importance of considering which population groups (the 'who'?) are likely to be affected by the policy or plan.

"Three indicators of good practice that I like to see [in health in SEA]: holistic approach to health; attention to the wider determinants; and consideration of population groups." – ID14

"Should always look at the population that is affected and at vulnerable groups – the distribution of effects and how it can be managed. Then have to see dependencies on the plan, and to see what can be done and how it can be managed. Also – do not only look at negative effects." – ID15

"Inequalities very important – differential impacts hard to pick up – I'd want to see an explicit consideration of differential impacts. I have seen outcomes based SEA which have an indicator about outcomes but this is too broad – how are inequalities considered for each impact?" – ID12

Expertise for the consideration of human health in SEA – interviewees were unanimous that public health is the field from which expertise on human health should be sought.

"At least one person involved who has a public health background and who has an understanding of social determinants." – ID12

Public health is a broad field and interviewees considered the qualifications that would be possessed by the ideal SEA and health expert.

"I would say that public health background is more important than the impact assessment background … I think it's an advantage if you have a medical background, but that being said, if you have a medical background but no public health background, then it's not very helpful. For me, the most important probably is the public health." – ID13

"A health expert, I would definitely define a person who has a very good knowledge of broad public health. But now I'm going to be a little bit contradicting my own words: probably starting by environmental epidemiology or health promotion. Coming from health promotion and environmental epidemiology. The health promotion view brings in the social and economic determinants and the environmental epidemiology brings in the environmental determinants, and that both are always needed for impact assessment. And also a person with open mind and open eyes, respecting the needs of development and the population." – ID11

"Lots of local authorities want to do HIA but they have no people. Need a good understanding of determinants of health; of health pathways; and of health (and other) data and, crucially, how this all relates to the proposal." – ID12

3.3. Recommendations

3.3.1 Irish Strategic Environmental Assessment and Health Impact Assessment Interviewees

Supportive legislation and statutory process – Three out of five interviewees specified the importance of supportive legislation and of a statutory process for the proportionate and effective consideration of health in SEA.

> *"All good intentions, best practice, all lovely, but you know, it has to come down to a requirement to do something that's either in legislation or in policy, you know, that's the only time it actually ever happens." – ID06*

One interviewee spoke about how the training and capacity gap for health expertise in SEA could be addressed by having a clear, legal requirement. Two respondents referenced how SEA reports may give more attention to those topic areas which have a strong legislative policy base, such as climate, air, and water.

> *"Other than drinking water standards, what have we really got to protect human health? So the legislative basis to back up and to push for greater awareness of human health maybe isn't there" – ID01*

Consistent and shared methodology – The interviews also revealed the need for a more detailed and separate consideration of public health. For example, one interviewee recommended treating health separate to human population as a way of ensuring more effective consideration in SEA.

> *"If [SEA] went down the line of EIA, for population is separate to human health, and assessed [health] on its own 2 feet, that might give it a bit more weight. And if you had a legislative basis, that's a longer battle, but at least if [health] was considered on its own, it would give it more prominence." – ID01*

Another interviewee discussed how the principles and processes applied in HIA could be adapted and applied to ensure the proportionate consideration of health in SEA in an effort to elevate the public health implications of certain decisions being made.

> *"Recognizing that there isn't a set methodology for HIA, you know, HIA is about going on a journey, it's about a process of thinking about health and inequalities and delivering some recommendations. It doesn't have to be a detailed complex methodology, you know, there isn't a prescribed way of*

doing HIA, it doesn't have to be a massive community consultation every time. It's about being pragmatic, it's about being flexible and using different tools, different processes... It is almost amazing that you would make huge decisions that affects society and you wouldn't want to know what the public health implications of them were." – ID06

Consistent and early strategic engagement – In addition to having a consistent and shared methodology for the effective consideration of health in SEA, there also has to be the expertise, experience, and knowledge to implement that consideration and frame its outputs. As one interviewee suggested, however, there are practices that already exist that can developed further.

"[Bring] in the people who actually understand what [health] means and how you would deliver it… Including [health] experts would be valuable, and the methods by which you would do that can be developed. I think there are good touch points already but it's, I suppose, consistency." – ID06

The same interviewee emphasised that even small amounts of strategic input from health experts, early on in the SEA process, would have immense value in creating wider cost-saving societal benefits.

"The opportunity for strategic level public health involvement is just immense, you know, it's just massively cost-saving for society to have built this in at the beginning." – ID06

3.3.2 International Strategic Environmental Assessment Interviewees

Expertise for the consideration of human health in SEA – One interviewee described how public bodies have issued straightforward guidance on how to involve particular sectors:

"I've been in the public administration, not on health issues but on water and the nature conservation and sometimes these authorities have some sort of guides, like a structure, a typical structure that they follow even including invitations to participate in the public participation events. So, they have some sort of a guide or script to help them to participate in these processes. So, this would be also actually be another way to improve the collaboration of health authorities and we could help these authorities to improve those scripts for SEA processes." – ID09

This theme is echoed by the international HIA experts (see below).

3.3.3 International Health Impact Assessment Interviewees

Expertise for the consideration of human health in SEA – As noted by international SEA experts above, it is important to be clear and specific when making requests for assistance and/or input from public health teams and/or specialists.

> *"[Involvement of public health] … is often presented as a barrier: 'public health won't reply to our messages', etc. … I'd say be clear about what you want – i.e. we want your input to and attendance at a 2 or 3 hour workshop. Don't just send a 100 page report for review." – ID12*

> *"… there are parts when the health expert is silent and is given a clear task. For example, the pathway I mentioned at the beginning, invite the expert to the screening, invite to scoping, and tell them, OK, these are the determinants to change. It's your task now, describe which population and how and with what health impact is going to be affected." – ID11*

Interdisciplinary approach is critical to health in SEA:

> *"What I think is very important is interdisciplinarity, so that different disciplines, not only health, environmental, social and regulatory and whatnot, are part of the team." – ID12*

Climate as a key overarching topic:

> *"If you don't look at climate change then you are missing the big point – all has health impacts – need infrastructure in place to deal with impacts." – ID15*

3. Recommendations

The key recommendations put forward by the interviewed experts for the effective and proportionate consideration of health in SEA can be summarised as follows:

- Specific and supportive legislation and statutory process;
- Consistent definition of health and its scope within the context of the plan;
- Early strategic engagement of individuals with specific human health expertise, within an interdisciplinary team;
- Specificity when making requests for assistance and/or input from public health teams and/or specialists; and
- Consistent and shared methodology.

Acronyms

ER	Environmental Report
EIA	Environmental Impact Assessment
HIA	Health Impact Assessment
SEA	Strategic Environmental Assessment

Appendix A: Key Informant Interview Guide

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process?
2.	How do you think health *should* be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc.
	Defining "Good Practice"
3.*	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why?
4.	What are some indicator of "good practice" for the consideration of health in SEA?
	Defining "Health Expertise"
5.*	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with*] If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health?
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc.
7.	How can appropriate health expertise be engaged in different stages of the SEA process?
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)?
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes.

Appendix B: Information Sheet and Consent Form

Project Title: Toolkit for Proportionate and Consistent Consideration of Population and Human Health in Strategic Environmental Assessment

Project Lead: Assoc. Professor Ainhoa González, School of Geography, UCD.

Senior Research Scientist: Dr Bianca van Bavel, School of Geography, UCD.

Researcher: Birgitte Fischer-Bonde, BCA Insight Ltd.

Other Team Members: Ben Cave (BCA Insight Ltd.), Thomas Fischer (WHO Collaborating Centre), Monica O'Mullane (University College Cork) and Joana Purdy (Institute of Public Health).

Research Background and Objectives: We are interviewing twenty international Strategic Environmental Assessment (SEA) and health impact assessment experts for the project 'Toolkit for Proportionate and Consistent Consideration of Population and Human Health in Strategic Environmental Assessment'. The project is funded by the Irish Environmental Protection Agency and the Office of the Planning Regulator, and led by Assoc. Professor Ainhoa González from the School of Geography at UCD.

The key project objectives are:

- To establish how the interrelationships between population and human health and other environmental topics are currently dealt with in SEA practice, identifying any possible gaps and shortcomings
- To establish key aspects of proportionate coverage of population and human health in SEA
- To develop a health in SEA Toolkit for competent authorities and practitioners to proportionately and consistently consider and assess population and human health in SEA
- To build the capacity of SEA and health stakeholders in the proportionate and consistent consideration of health in SEA, while raising awareness in the wider impact assessment community

Interview Goals: The interviews will facilitate gathering expert insights and recommendations on international good practice, including what aspects need to be prioritised in different sectors and planning hierarchies for the appropriate consideration of population and health impacts in SEA, and supporting data/information.

We would appreciate the opportunity to learn from you and thus inform the outcomes of the project given your SEA and/or health impact assessment expertise. Participation in the interviews is voluntary. Indicative questions to guide the semi-structured interviews are provided below.

Privacy Protection and Data Management: To comply with the General Data Protection Regulation, we will ensure that interview responses are pseudonymised (reversibly de-identified, with key linking codes to names retained) for analysis purposes, and ultimately de-identified (i.e. anonymised) for input into the project's reports and deliverables. The individual records will be destroyed at project completion. By responding to this invitation for an interview, you agree to the manual recording of your responses.

Benefits and Risks of Taking Part in the Study: There are no risks associated with the interviews. You may benefit from discussions and knowledge exchange on the state-of-the-art in the coverage of health considerations in environmental assessment.

Withdrawing from the Study: You can withdraw your responses and input into this project entirely by notifying us by email (ainhoa.gonzález@ucd.ie) until 15th December 2024.

Further Information: Please contact Assoc. Professor Ainhoa González (ainhoa.gonzález@ucd.ie) or Dr. Bianca van Bavel (bianca.vanbavel1@ucd.ie) or Birgitte Fischer-Bonde (birgitte.fischer-bonde@bca-insight.com) or visit our website (https://www.ucd.ie/healthsea/) to find out more about the project and its deliverables.

Participant Consent Form	Specify Yes/No
I have been given a copy of the Information Leaflet and this completed consent form for my records.	
I have been given sufficient information about the research to enable me to decide to participate (or not) in the research	
I have had an opportunity to ask questions about the research	
I understand that my participation is voluntary, and that I am free to withdraw at any time, without giving a reason, and without penalty	
I am willing to take part in the research	
I will allow the research team to use anonymized quotes in presentations and publications	

On the basis of what is stated above, I AGREE to participate in this research project:

NAME and SURNAME of the participant ……..

Email…… (used for keeping in contact during the research)

SIGNATURE …… Date ……

Appendix C: Anonymised Interview Transcripts

Interview 01

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? *I would say it's A lot like how we used to do EIA. 10 years ago in that the kind of indirect effects of health like air quality, noise…those are assessed. But the jump from how that* ***affects health and well-being are not really addressed all that well at the moment****. In EIA, that used to be the case 10 years ago, but since the new EIA directive came into effect and it's specifically says health. EIA has got a lot better and we now would develop a, we would have a health chapter in the, in the EIA.* *In SEA. I never really thought about how we're assessing health until I got your email. And then I started to think: How are we doing this? So, typically,* ***we would include health in the baseline, the health of the nation or the health of the study area. And we would talk about areas that might be relevant to health like water quality or air quality or you know more indirectly things like climate change****. But certainly in the plan we worked on I wouldn't have said we made a direct link by well if hazardous waste policy does this. How will that affect human health? It's been more, well, how will that affect? Air quality and by extension human health like we included as a factor in our SEA as population human health. So rolled up in that you've got employment, you've got tourism, you've got socio-economic and all those factors as well as health so* ***it's a little bit dilute, and it tends to just hang off things like air quality****.*
2.	How do you think health *should* be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. *I'd be inclined to think a bit rather than population human health. Have a population factor. And the human health factor. Now, we used to. In the old days we would look at air quality in climate together. But they're very different animals and similarly* ***population in human health are there for very different animals****. Like a particular policy may be very positive for population because it may increase employment and you know, etc. in an area. But it may bring more traffic or it may bring more development that may be adverse for human health. It may be counterproductive. So I think it would be* ***more effective if there may be a split between the population effects and the health effects****.* ***We're only covering it really in the baseline and there is some reference to it when we do the analysis. But if you had to specifically address every project in terms of what's the health impact of that policy, then you'll do it in a little bit more details****. There is a an alternative way which would be to* ***go a step further like they do in the UK and do a health impact assessment****.* *Now, they've steered clear of doing that here. Even at project level for EIA. Except for something like the* [name] plan*.. I think if you were doing something like a new waste to energy plant you would probably do a kind of health impact assessment like they do in the UK. But other than that, it's not done that much here for projects.* ***So I don't see them going down that far for plans and policies****. Although I can see the value in doing that. But until somebody is going to say It's in the brief you have to do it. If we bring them in, we're just going to make ourselves less competitive. So* ***we do what we have to do in the Directive****.* *And maybe your analysis will show we're not doing what we have to do in the directive. That health is not being effectively addressed. And I wouldn't disagree with that point.*
	Defining "Good Practice"

3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why? ***None really. And the reason being that the plan was about the effective management of [xx]**. So everything that the plan was trying to do was to identify more hazardous waste, collect more hazardous waste and manage it properly. **So everything it was trying to do was positive for the environment and positive for human health**. In terms of collection, you know, things like asbestos. That if you have a plan in place that you're going to identify and collect asbestos that's good for the environment and it's good for human health. But maybe a different project that we would have worked on in the past was the nitrates program.* *We would have done that for the Department of Housing for the* [name] plan*. about 2 or 3 years ago and that was all about allowing more Nitrogen and Phosphorus to be applied onto lands for agricultural purposes. And obviously that had a detrimental environmental effect and a potentially detrimental health effect as well where that would get into to water. **But again, the balance was more the focus was more on the natural environment than necessarily human health**, I suppose.* *One very good example we have and it's going back about 10 years is the* [name] plan*. The whole reason for that was protection of human health from lead on the water pipelines. So that was **the purpose of the plan. So it was very positive for human health**. The counter then was, well, if we're putting phosphoric acid into wastewater treatment plants, it's not having an adverse health impact. But could that have an adverse? Impact on the natural environment through more phosphates in the water. So we would have had to model all of that. But it was very much focused on the positive health outcomes. For people who had more exposed to lead in their drinking water. But the SEA and the AA analysis were all about the How bad is the negative?* *By giving you those 3 examples, I'm telling you that **I can't tell you a single positive way that I think health has necessarily being assessed directly**. I can't recall I haven't been involved in a project where we have really got into detail, on this is particularly positive for human health.* *And I would say that maybe the 2 statutory processes of SEA and AA are unfairly tilted towards the natural environment because the barrier or the threshold for AA is beyond reasonable scientific doubt. So there's very **much a focus now in this country on putting in place mitigation for the AA process. And I think the SEA process can sometimes be seen as the poor cousin to that.** And while we've got very clear limits out there for surface water and groundwater and the AA covers biodiversity and we've got air quality limits and we've got climate policies and objectives. **Other than drinking water standards, what have we really got to protect human health?** So **the legislative basis to back up and to push for greater awareness of human health maybe isn't there** so it's easy to look at the baseline because you can look at the CSO data but how can you say that by better managing your hazardous waste or by mu gazing lead and drinking water. It necessarily becomes a very positive very negative health impact.* *Actually sorry I'm just reminding myself there something sorry to digress on the* [name] plan*.. We did have a health assessment. Where we would have committed to in the SEA. Essentially **this came out as a mitigation measure**.* *So for example, if you're in UCD, if your surface water, if your drinking water is coming from still Oregon, that they would have done an assessment for that catchment. So they will assume you'll dose a certain amount of phosphoric acid. Still organ that will go out into drinking water and they would have looked at how that dissipates then into the river daughter and that and what the environmental. But separate to that, they would have also done a **health assessment**, which would have looked at the **population exposure**. And the population dynamics in the catchment of the area, they would have looked at how many vulnerable people are in the area such as children under 6Ithink we're high risk and pregnant women in that area from the CSO statistics and they would have been able to say well, we might we might have this potential adverse impact on water*

	quality or we're going to have this positive health impact. And that was a quantitative measure, it came as a mitigation measure out of the SEA. It was required to have a health justification to do the lead dosing program - To justify why you were going to add more phosphates into the natural environment. Now it probably was not very detailed. It was based on CSO data on electrical districts. What the population was like, what the level of and how many we would have known from Irish water. Well, there's 2,000 people living in this area who have led pipes. And we would know then the dynamics would suggest that, you know, 300 of those are children under 6 and 50 pregnant women. So, you know, overall will reduce down the exposure by this and we'll reduce down the exposure of vulnerable groups by this. **The statutory SEA process went through the bare minimum, but it was the mitigation that fell out of that, that pushed Irish Water into doing more**. *None of that expertise was available. In this country and we brought in our guys from Bristol to do that for us.* *The* [name] plan.. *If I recall properly has a policy that supports a certain amount of thermal treatment So incineration of hazardous waste. But it doesn't say where. So you don't know is this a new waste to energy plant or is just an existing one so you're not in the situation where you could say well this would have potentially adverse effect for you know, people within 5 kilometers of this or even at that, you know,* **very hard to make that sort of quantitative decision**. *That's where the lead plan was, it was data rich.* **Whereas every other plan tends to be very high level** *as I say with the exception of climate we find it very hard to quantify any impact. And even with climate you're making a lot of assumptions,* **but you're using it as an illustrative example. That's a bit the best you can do.**
4.	What are some indicator of "good practice" for the consideration of health in SEA? *See detailed references to other SEAs and good practice in the* [name] plan *above.*
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with*]? If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? *No. What we would do for projects here, whether EIA or SEA, is that things like human health would be, for example, for EIA,* **human health might be covered by a mixture of the population experts, the noise experts, the air quality experts, that that information will be pooled**. *We would bring specific health specialists from for certain projects (for example, a road or a wind farm) but not for others (for example a flood relive scheme as the health impact is anticipated to be positive). For SEA, because it's kept quite general, it tends to be a mixture of people with a mixture of backgrounds. People that would be very informed who would have a good cross-spectrum knowledge. Having said that,* **if we were doing it a policy that was specifically related to public health or public well-being, that's probably when we would bring in somebody**.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *It's probably somebody who has* **the cross-discipline knowledge of all the various health effects** *because an air quality person will only see air pollution. A noise person will see noise. So it needs to be somebody that has an appreciation of. Whether that's radioactivity, traffic. all of the well-being, mental health, all of those aspects. So* **somebody who has some level of formal qualification**. *Or ideally* **a minimum number of years experience in health impact assessment**. *Now,* **in the absence of that requirement in Ireland, there's not too many of them around.**
7.	How can appropriate health expertise be engaged in different stages of the SEA process? *Most of our experts would be internal. And I would say they don't come in at screening stage, they don't come in at scoping stage. But once we start to see the draft policies come out, that's when*

	we would engage with experts. Like I would often get a phone call, can you give us a hand looking at the alternatives here? Or do a climate analysis of these alternatives? Or could you look at this specific policy and could you write us up some analysis? If it had a particular complexity that required an air quality or climate analysis they would come to me or they would come to if there was acoustics we have acoustics people or water quality people or biodiversity people. But **it would really always be at the environmental report stage***. Once you get into the details evaluation of policies, that's where it becomes. The. The sharp end of this process.*
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. ***Probably the SEA of the*** [name] plan.*. And that's probably what's happening at the moment.* *You're* ***likely to satisfy the ones that have a strong legislative or policy base*** *because you think they're the more important factors and I would say climate probably gets more attention. Climate and biodiversity get more attention than everything else because of the pressures associated with both. And then some of the other ones like air quality or water quality or they tend to come in next because they have a strong legislative basis. And then some of the others come in after that. And that's not to say they're not legitimate. But it's the* ***concern around Judicial review or legal challenge means you satisfy the policy in the legislation first*** *and maybe it's unfairly weighted towards those and that those other ones things like landscape or maybe cultural heritage, okay they have some protections but they're not, they don't know where near treated as significant as climate or biodiversity.* *So,* ***in terms of making it proportionate…Unfortunately, I would say it's probably proportionate to the policy and the challenge rather than the issue****. Except for say the Lead Plan where health was a big issue. So it became very much at the forefront because of the positive impact. So it was upfront in that project. But that's about the only one I can think of. Otherwise,* ***health becomes an afterthought… if there was a national policy on protecting health.it would be more forefront****. For water, for example, we have a framework directive so it gets attention… unfortunately people will say: you know health is an indirect effect of all these other things rather than a topic in itself.*
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? Health is quite broad, so it intercepts with all of those areas. And if then you're saying to "Well, when you think about air quality, you also think about health. When you think about noise, you all think about health. When you think about landscape, you also have to think about health". It may just become diluted. I think if the back to what I said earlier, if it went down the line of EIA for population is separate to human health, and assessed on its own 2 feet, that might give it a bit more weigh. And if you had a legislative basis, that's a longer battle. But if at least it was considered on its own, it would give it more prominence.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. You know, we were in the process of doing an SEA for a renewable energy policy. It got eventually halted. Now. Where do you stand with the human health effects on that? Because you've got noise and you've got shadow flicker and you've got landscape visual impacts but then you've got the longer term climate benefits of it…You could write a thesis on the human health impacts of that alone.

Interview 02

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? *I would say* ***health is considered broadly*** *as one of the topics listed in the SEA directive.* *And that…the* ***depth to which you can consider the population human health aspect is probably going to vary depending on the type of plan*** *that's being looked at. In terms of how much you can drill down to it, really. In my mind* ***it's mental health, it's physical health*** *[are], I suppose maybe, the 2 aspects of health as I understand them. And that there's economic and social implications for how our health kind of plays out and then a lot of personal decisions as well that goes into it.*
2.	How do you think health *should* be defined / considered in the SEA process? *Probably it will be defined…yeah,* ***it might be a little trickier because there's more of a social aspect to it and economic aspects to it****, whether if you're trying to describe, you know, what the hydrological cycle, and then there's water infrastructure, which I would put under material assets. So Probably, yeah, I would stick with the same. I would stick with the same definition for SEA.* [refer to above response] ***I think there's just possibly multiple different aspects to this in terms of, if you're actually trying to put a number on things****, is it how many people are just subjectively healthy say in Ireland? And what is SEA supposed to do about it? Because, just to use it a personal example, during COVID and lock downs I kind of I went down a rabbit hole of health. I overhauled my own health and you start to realize that a lot of health issues and why people are unhealthy is down to personal and lifestyle choices. And that, yes, you could flag as part of a land use planners part of the national planning framework. If you put in a thousand kilometres of cycleways. Is that a good thing for health? You could maybe do a health impact assessment on that or assess that policy and go, yeah, that would be great for health objectively and for tourism. But will people actually use it? So I feel like* ***there's a bit of a disconnect there between the objective health of people in general and what planning is supposed to do about it. And then how SEA is supposed to assess that and actually affect a material or a tangible change in that planning****. Again, unless it's something like a very specific plan or strategy…where there's clear social [ethical?] aspects, I fail to see…not that I fail to see, but maybe I can't see at the minute…like at the risk of just creating more word salad and confusion for people. And more layers of endless guidelines and descriptions of things but like* ***what does it actually mean****?*
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [name] plan? Why? *I would say The [name] plan is not a difficult plan, but It's an unusual one because the topic of climate action is so big. But it's so* ***cross sectoral and so intersectional*** *that it's covering everything and I frequently found myself getting overwhelmed many times during the SEA because* ***the policy base is so massive****. As needs to be updated every year and approved by government in December of every year. Extremely challenging timeline.* *You know, there's lots of co benefits to doing climate action. I think there's an inherent thinking that implementing climate action is just inherently a good thing. That you know it's only positive and I'm trying to roll in and go, Okay, that's great, but if you want to put trees everywhere, notwithstanding that you've done your own SEA and AA of the forestry plan, but if you're putting forest in everywhere, that can be good. What if it's all plantation forestry? And it's all Sitka spruce, which is an ecological dead zone, you know, okay, it ticks the carbon and the climate box, but it doesn't tick the, you know, soil or the biodiversity box. So I was trying to come in with these really*

	Big-ticket items and I found that really **probably the most material influence [the SEA process could have] on the [name] plan in general was in actually coming up with the alternatives.** *It wasn't really the policy base at all because when you start to assess the actions they are actually all very positive, notwithstanding those kind of forestry type things…a lot of what they're doing is just it's positive.* **It has a lot of co-benefits for population in human health**. **And we did flag that all along both in our baseline and throughout our assessment for the SEA** *was to say that in implementing climate action - when you're getting the transport sector to do modal shift, when you're reducing reliance on fossil fuels, and not burning solid fuels - you're automatically improving air quality. So a lot of these links...we did flag a lot of co benefits for human health. If you implement the suite of measures across all the sectors, you will yield co benefits for society and that has implications for adaptation and future resilience. But then really what I did kind of just flag, significantly, in the SEA was that really it's the pace of change that's just not happening in Ireland…***I thought the breakdown of the overall assessment approach for [name] plan extremely challenging given the type of plan that it was**. *…There's a lot of intersection with land use and planning, but some of these co benefits are just it's out of the control of the [name] plan team itself…[All the government departments are] doing their own thing and if it was a bit more cross-sectoral, if they talk to each other more, that would be good too. I did put in a mitigation in the [name] plan to say, you know, you've got these working groups for, you know, industry and for transport. What if you had one overarching working group that could see the synergies between them? But, you know, they're still stuck in their silos.* What are some examples of "good practice" that you recall from the SEA report for [Name] Plan? *Because the [name] plan is a land use plan, it really came down to the key issues for population and human health. [Broadly, the plan] is trying to address the historic settlement patterns that have just led to sprawl and unbalanced growth and that that has just had knock on effects over the past 20-30 years in terms of local authorities allowing one off houses all over the place. So you're trying to course correct on that with the 1st [name] plan and then the 3 [name] plans are trying to go right well how do we address this. We can't ignore the fact that [xx] is kind of powerhouse of the country, but it's also unsustainable the way it is now because it's just more and more suburban sprawl across the greater area and then what happens is, as flagged by [xx], and what [xx] are flagging now is that, well, the grid system is creaking and we want to add all this renewable energy to it, and, you know, we don't have enough headroom in the water supply. So that new houses can't go in because there is not a water connection for new houses. And then we've got a housing crisis.* **So I think all of these are kind of, they're maybe not, some of them are, health related, but they're just they're broad socio-economic issues that are flagged in that SEA.** *What we were saying, back then, I think, this was before the climate action plan had been published, but basically, you've got changing demographic patterns. we're going to have an aging population. We're going to have a growing population. If the projections are 1 million by 2040 new people on the island, where are they going to go? Where are they going to live? Are they going to have a water connection? We flagged that for the [name] plan. Especially at the [name] plan level, the regional authorities had to identify the growth in towns and settlements that they wanted to kind of do their compact growth. So we did a kind of an environmental baseline exercise of those towns and just kind of flagged what are the key issues for these towns.* *You pick something like [town], say. Okay, it's got a motorway connection, it's got a rail connection. Great. It's got lots of flooding around it, so that's not great in terms of future resiliency. You don't be putting businesses and houses into these areas that are prone to flooding, especially if it's only going to get worse with climate change. But then also is a town that is discharging raw sewage. It doesn't have a wastewater treatment plant. So that's not a great one for people's health in general. The fact that that is happening. Now there's massive dilution capacity because the outfall is to the Irish Sea, but then we're flagging that, you know. If you're trying to put more people into*

	places and you don't have infrastructure that is in place to meet that demand that has all sorts of environmental implications, not just population and human health, just the receiving environment in general. It's not right to be discharging our waste untreated. *So I think it was these kind of big issues that we were flagging. There's a lot of interplay with the [name] plan, in particular, between and the material assets aspect, as I said before, and the population in human health things - just these broad societal issues. There's jobs demand, there's health care demand, people need school places and child minding, and if none of this is planned for in deciding where to put people into the future, that's where all these complicated intersectional issues are going to arise in the coming years. That's just legacy planning in Ireland. If it's not thought about it's really hard to course correct. So that's what the SEA tries to do at that level. Let's just flag those issues and then hopefully the policy base is influenced or takes on board the mitigation.*
4.	What are some indicator of "good practice" for the consideration of health in SEA? *I was just thinking of like other SEAs that I've done. Where, for instance, a couple of years ago I did the SEA of the EPA's [name] plan. That is one area. 1 topic. Hazardous waste management. I can get into that.* ***There's a nice tight policy base and I can actually integrate proper mitigation and recommendations*** *and they did take on board stuff, which is good…* *…Because that was such a sectoral specific thing, I could come up with very specific mitigation and recommendations and they were built in as far as I know. Say one of their policies in that plan was to implement another Hazardous Waste Collection Day… So farmers from around the country can show up at these collection days and, you know they have lots of potentially hazardous waste on their farms that they don't know how to deal with, so the EPA sets up these collection days and they can bring their stuff to it. And then I wrote in with the SEA and said, okay, that's great that you're doing these days, but just make sure that when you're doing the next one, you have the appropriate planning from the local authority, which, you're the EPA, I'm sure you do. And just make sure that when you're setting up these bring days that it's not near sensitive sites and that, again I'm sure you're doing it already, but just to flag good practice for the area where you're storing this stuff on the day…[to avoid] the direct, you know, human impact as well.* *I think that's one plan where it was just so focused on one particular area that it was nice just to dive into hazardous waste and not have to worry about 10 other sectors. And so that to me was a very clear thing* ***where you know the mitigation from the SEA can really roll in and point out both environmental health and kind of human health protection and mitigate it.*** *Not that they weren't kind of doing it already, but it was just a flag the obvious again. I think that's what we do in SEA, a lot is just reiterating common sense in many cases.* *The [name] plan that's kind of related to climate action as well and it's more general social determinants I suppose in terms of the economic and maybe indirectly on mental health impacts. Ireland is saying, oh, we're shutting down turf cutting and you can't do this and you can't do that. But there has to be economically viable options to transition people into other employment aspects, you know, you can't just blanket shut down peat firing and then have no where for those people to go, especially, you know, if that was their livelihoods for, you know, generations…And that plan itself did undergo its own SEA and AA. So that could be an interesting one if you wanted to look at that just to see what they said on kind of* ***social aspects and transitioning people into greener employment or up-skilling, which are all kind of facets of population health, I think.***
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process *[name] plan*? If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health?

	No. Now we do have human health experts in the company and they tend to roll in on EIA level assessments. And from working on EIA with them at the project level, I've only worked on a couple of EIAs, but **what I find is that where [human health experts] roll in is really tied to the type of project.** *So one of the projects I'm working on is a new bypass scheme.* **And while the human health impact assessment has its own dedicated assessment, it uses the social determinants of health, it uses that language and assumes that there are vulnerable groups in an area**, *but it's really relying on the pathways for impact and really it's through, in this case, a new road development. It's going to be fugitive emissions and operational emissions from private vehicles, PM and NOx mainly. It's going to be noise and vibration issues during construction and operation. It's going to be how well you protect the environment during construction to make sure that there's no spillage that contaminates the groundwater or things like that. So it's* **really leveraging off of other topics that are already being examined.** *And I find that [when it goes up] to the SEA level. It's the same thing again. Especially for the CAP. It was really relying on,* **once you've kind of covered the impacts under the other SEA topics, you've kind of got the environmental health aspects covered.** **But in terms of actual health expertise it depends on the nature and scale of the plan.** *The [name] plan didn't really lend itself to needing to bring in specific expertise because, again, I think Government and [xx] will argue that just implementing climate action is itself inherently a good thing. That it's positive for the environment and it's positive for people. So I feel like they come at it from that angle. I didn't really flag any major issues under the population and human health aspect in the impact assessment.* *You know, all of these are good things for people. I think.* **No, it didn't it didn't really need specific expertise, not for this plan. I feel like there's probably scales of where expertise would need to come in and if you're getting a bit more nitty gritty or if you had a more sectoral specific plan or strategy where you could drill into the issues a bit more, there may be benefits**. **So maybe if you were doing**…*I can't remember what plan it was a few years ago, but it was, some drug treatment plan, I don't know if it underwent an SEA…***something that was maybe directly affecting people and health you would probably need to bring in an expert**. *But for something like the [name] plan. Again, it's so cross-sectoral, it's so strategic, it's hoovering up a lot of other plans and programs that are already happening under so many diverse sectors and just putting it under the umbrella of the [name] plan. That probably to bring in, there's little to no benefit, I would say on reflection,* **I know I wouldn't have brought in Health experts that couldn't add on anything that we'd already been flagging essentially.** *When you see the policy base, you may go, right, so we don't actually need that expert, but you know, we do put forward a team each time. Again, we look at the scope of the plan, the nature of the plan, and then you put forward experts on that basis. If we were doing a land management strategy or some kind of traffic management strategy you would definitely want to bring in someone that has, you know, a land use planning and maybe a traffic modeling background just so that if you need that expert you can draw on specific expertise.* **As a general SEA practitioner, we know a little bit about a lot of things, but we'll always need to defer to our colleagues that have more expertise. It's just going to depend on the type of plan**.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *I suppose a health expert is someone that understands not just environmental conditions the way maybe a typical environmental consultant, like myself, might do it but I suppose* **understands the other aspects.** *As well if you go back to the definition of human health it has to be social, economic, you know yourself, it's physical well being. So someone is going to be a more sensitive - not to call someone a receptor, but you know that's how I think in terms of EIA language - if someone is a*

	sensitive receptor, you know, ….say there's a road scheme right there and you're putting someone who is maybe not in the best health adjacent to that road scheme, you know, ***there's an overall greater impact potentially but even at EIA level I know that human health is assessed more at the population level it's not saying you know that person has this this in this condition it's assuming that those vulnerable groups are there and drawing a conclusion about what does the overall population health for an area being impacted look like. So I guess a health expert has to understand social aspects, physical health conditions, as well as environmental impact pathways, and the actual physical environment as well.***
7.	How can appropriate health expertise be engaged in different stages of the SEA process? *Refer to responses for questions 5 and 6 above.*
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. *I think there's maybe not someone that has a specific responsibility because, again, if I just think back to EIA and the tiering between the 2 it's, you could say, who has the responsibility for water, who has responsibility for land and soil, and making sure that that's adequately considered.* ***It's going to depend on the nature and the scale and the type of plan being looked at and whether a topic is scoped in or out.*** *For the national plans, we scope in all topics because you know they're so big they're so broad you couldn't rule something out and I think in a lot of projects you're not necessarily ruling out a particular SEA topic or EIA topic. It's just there are guidelines that are already out there. There are headings that are in the SEA and EIA directive that just have to be considered. And I guess* ***there's just an assumption that the people that are undertaking SEAs and EIAs are competent experts and bring in expertise as needed, proportionate to the type and nature of the plan that's being looked at.***
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? ***I feel like population human health is a bit like material assets. It's a very broad topic. There's lots of different aspects that can go into it.*** *I think it's just bearing in mind the different facets of it when doing SEA assessments so that you can flag these issues. You can flag* ***both the positives and the co-benefits. SEA, in doing its due diligence, has to flag the negatives as well.*** *You could ask the question [above] about material assets. Material assets is not well defined. It's not even that well-defined in the EIA directive. It's generally taken to mean built environment, infrastructure, physical assets, but there's a lot of intersections with that. You could just as easily try and come up with guidance or expertise. There is no material assets expert. So* ***it's going to be project specific or plan specific,*** *in terms of the types of material assets that you're looking at - just to draw a parallel with another topic.*
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. ***There's a lot of interrelationships and intersections between the different topics. And I think it's always a struggle whether you're doing an SEA or an EIA as to which box something goes into and in one sense it doesn't really matter as long as it's covered off somewhere and it's cross-referenced.*** *So I think if you're if you're dealing with a type of plan that the pathways for impact and for co benefits are quite clear - as long as there's signposting to that - I think it's coverage. Even just doing my own impact assessments for SEA, I always tend to group the air quality, the population human health and the material assets topics together - they just fall together more naturally.*

	When I'm talking about the impacts on the receiving environment of actually doing stuff, if you're building a road or a new railway, you're going to seal the land, you're going to lose an ecological corridor, or the land in the soils, the biodiversity, the water tend to go together nicely and then climate is kind of there over everything and then I think cultural heritage and landscape tends to be off by itself to the side. Again, they don't really get a huge look in at national level. ***It's really difficult to look at [cultural heritage and landscape] because the GIS data on landscape is so patchy and cultural heritage is just so site and setting specific.*** *It's really difficult to get into any kind of nitty gritty with that. All you can do is just flag it.* *With population human health assessments, just depending on the policy base that's being assessed because, if it's something like, we want 5 gigawatts of offshore wind, you're flagging that this is good for climate, it's good for people as well because we reduce our import dependency and increase our energy security and that's just good for society as a whole. But accepting if you put a load of wind firms on the coastline, you're gonna have landscape impacts and that's going to impact on people's appreciation and have a visual impact if you put in a load a solar farms or onshore wind turbines next to someone.* ***That's not necessarily human health issue*** *unless there's shadow flicker, which is very annoying, and then there's mental health impacts as well. And you can also flag there are mental health impacts from just the devastation that flooding causes and they're not doing enough to adapt and mitigate.*

Interview 03

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? *My interpretation would be anything that causes physical or emotional harm to a person, I think. And any impacts that create that. And really, in the SEA process, we kind of look at population and human health together…****considered at the end, once you consider the noise, the air quality impacts, traffic and transport related impacts, other related impacts, and how they go on to interact and impact on human health.***
2.	How do you think health *should* be defined / considered in the SEA process? *Consider, let's say, [what] the* ***physical impacts*** *coming out of the implementation of the plan might be, and if you're talking about that provides a framework for development. It's a good background. If you think of the* ***physical impacts*** *of infrastructure development through like the adoption of a land use plan and implementation of the largest plan. You know construction is going to generate noise, surface water runoff back to water quality, [etc.]. It's all those* ***physical impacts****, nearly all of them, end up kind of, potentially, in a way, affecting human health.* *With respect to traffic and transport, [they can] create unsafe conditions in a road, or noise impacts, car noise, and that's the way it is. That's the way it is, as I see it. Does the plan support what impacts might fall over that and what environment are they in. And then,* ***once you've determined that, you can kind of assess the effects on population as a result of all those impacts. Nearly at the end of the process, or towards the end of the process.***
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [name] plan? Why? *The assessment of human health specifically,* ***we treat in the same way as, or similar to any of the other environmental components*** *in terms of how it's approached and reported on and that, as I said, is one good practice.* ***And it's actually a requirement as well under the SEA regulations to ensure all interactions are considered.*** *So it's one thing to consider. The impact on water quality,*

	[for example,] but it's important to consider how that impact interacts with, say, traffic and transport, as I mentioned, and noise or odour, or other environmental components. It's important to consider that the impacts in those areas, and the interactions between those areas, and human health as well. ***So, essentially, just comprehensively evaluating the interacting impacts that have an effect on people.*** *So we worked oh the local authority climate action plan for [council], and one climate action in there, I can't remember what it was specifically, but it was essentially the energy retrofitting of structures within the city center context to reduce kind of embodied greenhouse gas emissions within construction and along urban fringes or whatever. When we carried out the SEA, we identified that carrying out such retrofit projects in the context of a historic city has the potential to generate impacts on protected structures and species. So if you take that these protected structures are valued by people, maybe their wellbeing, if they thought the protected structures were [valued]. And* ***it wouldn't necessarily impact their physical health, but maybe they're wellbeing, [if] protected structures were being, you know, destroyed or not conserved properly as a result of climate action in the city. Just one example that's not a very clear example.*** *Somebody might not understand off the top their head, how the impact of energy retrofits might impact human health. A very clear example would be the construction of an active travel greenway in close proximity to someone's home. The construction works, the noise, the dust, and if it's in, you know, within 50 meters of their home, that has a potential to impact [them] in their home as well. And so that's a little bit more clear, but those are 2 examples that kind of, have to be considered.* ***Tenuous is the word.*** *It's not very clear, but it is actually there, you know. I don't know if you're familiar with [xxx], but if somebody went in there and improved its energy efficiency but destroyed the protected features inside, that has the potential to really annoy people. But yeah, it's there, and in terms of how we consider this, that's sat within cultural heritage and it was also considered within interactions and related to human health.* ***Sometimes you just have to pick and choose what fits best where even though it might have interacting impacts*** *and, in that case cultural heritage, and it was also dealt with in biodiversity because of the potential of retrofitting derelict buildings that are home to species.* ***So, cultural heritage, biodiversity, that's where it fitted in, but we didn't know the interrelation impact on, I suppose, how people value those things too.***
4.	What are some indicator of "good practice" for the consideration of health in SEA? [No record of response]
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [name] plan? If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? *Yeah, I'd say myself, I guess, once I've got that kind of knowledge. And So I would have been project owner at the end, and there would have been a team of us, there would have been a* ***number of graduates and project scientists who probably have an understanding of that to a degree, but they just have less experience in the area****. And they would support more kind of straightforward elements of the SEA but I also have a colleague who's an ecologist specialist and an SEA specialist as well who would fit the same.* ***We'd be able to consider and evaluate the effects of air, noise, or door or on people as well. And how to avoid those effects.*** *In this case, no, we didn't [engage anyone from the local health authorities]. We engaged with a variety of, I suppose it's how you define it, we didn't engage with the health and safety authority, for example, but we would have been, we would have engaged with the EPA naturally enough. Okay. Is it the health and safety authority that you're thinking of, or locally, or?*

	But if I go to that report, I might have a look down at **who we consulted with, prior, during the SEA, when we're trying to scope and identify the issues of concern from an environmental perspective.** *I would be interested to know. And if there's anybody, any other organizations that should be consulted on human health related impacts as well…So* **there's no, as I said, there's no dedicated, you know, we didn't get in touch with environmental health officers, for example,** *although we did get in touch with the local authorities generally. And we didn't get in touch specifically with the health and safety authority. They probably focus more on workplace health and safety. Then I'm trying to think if there's anyone else. And we didn't get in touch with the health service. Have you seen other people get in touch with the health service executive as part of their consultation?* *I made a mistake there, when I mentioned EHO. It was my understanding there that they came under local authorities with they actually come under the health service. I think local authorities might have. people that act as, Environmental Health Officers, and come under the remit of,* **so I think if there's any identifiable impact or identifiable significant impact on human health, we should be consulting with them.**
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *I would say an* **Environmental Health Officer type person or somebody that has a similar range of experience, who understands the potential effects of environmental impacts on people***. Probably the best comparison would be an EHO professional, environmental health officer, with the local authority* [later corrected to local health team/HSE see below]. *And that would have a responsibility, for say, preventing noise nuisance and air quality, the impacts affecting humans.*
7.	How can appropriate health expertise be engaged in different stages of the SEA process? *[Answered already as part of question 5]*
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? *[Answered already as part of question 5]*
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? *It's a good question. I'm not sure I can think of anything kind of directly comparable between the chapters. I'm just saying the environmental components, I think, things like water quality and air quality, they can be not so much in the SEA, but more so in EIA, it can be kind of science-based.* **And maybe taking the more science-based approach, as opposed to a kind of qualitative assessment based approach, that's hard to do when you're dealing with plans and policies. As well, in all fairness, because it's not exactly quantifiable all the time, neither are the impacts, the potential impact isn't quantified. But maybe considering, it's good, a more science based approach. As opposed to kind of qualitative.**
10.	How might health be considered within and across other topic areas? *But yeah, it's there, and in terms of how we consider this, that's sat within cultural heritage and it was also considered within interactions and related to human health.* **Sometimes you just have to pick and choose what fits best where even though it might have interacting impacts** *and, in that case cultural heritage, and it was also dealt with in biodiversity because of the potential of retrofitting derelict buildings that are home to species.* **So, cultural heritage, biodiversity, that's where it fitted in, but we didn't know the interrelation impact on, I suppose, how people value those things too.**

Interview 04

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? *Human health is identified in the [SEA] directive as one of the environmental components that the assessment is based on, and the environmental report is based on as well. And it's also given another mention under another part of the directive relating to screening as well. So it must to be taken into account in full assessments and screening. The meaning of the effects encompassed by human health has been given a little expansion in the Directive, however the European guidelines and other guidance on SEA provide some details about how human health should be addressed.* *The Commission's SEA Implementation Guidance states: 'The notion of human health should be considered in the context of the other issues mentioned in paragraph (f)'. (Paragraph (f)47 lists the environmental factors including soils, water, air etc).* ***The focus, generally, of our assessments is through the environmental vectors that can impact upon human health**. When we're focused on human health in our population and human health [section] and [the assessments] tend to be **focused on how human health can be impacted upon by changes in water quality, in drinking water, bathing water, soils, soil contamination, flood risk; all of these environmental components have standards that are set in legislation.*** *And the good thing about focusing on those vectors is that…**there are very clear standards and there's very clear ways of setting out planned provisions for ensuring the protection of human health** [i.e.] specifying the amount of milligrams of pollution in water or drinking water standards or microns of PM10 in air. So, that's where we primarily focus our assessments with respect to the human health.* *The evaluation of effects on these pathways is carried out by reference to accepted standards (usually international) of safety in dose, exposure or risk. These standards are in turn based upon medical and scientific investigation of the direct effects on health of the individual substance, effect or risk. This practice of reliance upon limits, doses and thresholds for environmental pathways, such as air, water or soil, provides robust and reliable health protection criteria for analysis relating to the environment.'*
2.	How do you think health *should* be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. *I wouldn't go so far as to say it should or shouldn't [be considered]. That's might be for elected representatives, who are making the law to decide., **I think it would be a challenge if wellbeing was to be brought into the scope of the directive explicitly.** Now we touch on it in some of our assessments. I was having a look at a couple of them there…So, there has been an EPA report on blue and green ways that we reference sometimes in the assessments - highlighting the wellbeing effects of having green ways and blue ways. **Wellbeing is something that is much more challenging to address because of the lack of clear standards, the lack of clear enforceable standards and associated indicators. We focus on the environmental vectors like air, soil, and water and the European SEA guidelines and guidance point us in that direction – they direct** that the assessment of human health should be done with reference to the other components that are referred to in the directive. Whether wellbeing and happiness and other kinds of concepts like those should be considered in more detail, and it would be much more challenging to consider them, might be for the legislators to decide.*

	There would be guidance needed if the scope of the Directive was extended to wellbeing beyond interactions with environmental vectors because we'd have to ourselves read up on how it's measured.
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [name] *Plan*? Why? *There were a number of interrelationships, with respect to human health, covered under the heading of cumulative effects, in section 8.2, so human health and water quality and air quality and flood risk, for example, and then there were a number of different interactions or cumulative effects that highlighted how air quality related to human health. Water quality as well. And then, we identified in the environmental report as well that* ***the plan would contribute towards the protection of human health by facilitating, the development of the [xx] area, which is very well connected****. It's q relatively robust area that is largely developed already. And it's very well served as well by infrastructure.* ***And so that was a significant positive with respect to human health****.* *Potential adverse effects would be related to those on environmental vectors arising from new constructed development and the operation of that development as well.* ***There were interesting sustainable mobility transport interactions with human health as well because there was an area based transport assessment*** *prepared to inform the preparation of the Plan that resulted in a number of changes to how people will move around the area, and the local area plan, will contribute towards active travel and mitigation of emissions - those resulting effects will benefit the protection of human health as well. The assessment highlighted that* *An extent of travel related greenhouse gas and other emissions to air would arise as a result of implementing the Plan, but that this has been mitigated by provisions which have been integrated into the Plan, including those relating to sustainable compact growth and sustainable mobility.*
4.	What are some indicator of "good practice" for the consideration of health in SEA? *For all of the land use plan SEAs that we undertake,* ***a strategic flood risk assessment*** *is prepared, which provides information to the planning authority on the areas that are at most risk of flooding.* ***So that the planning authority can avoid directing inappropriate developments into those areas and risking human health.*** *An example of where we focused upon contaminated soils, as a result of a historic landfill, was for the [xx] Strategic Development Zone Planning Scheme.* ***We undertook a contamination and remediation risk assessment separate to the SEA, but informing the SEA****. The CRA facilitated a* ***risk-based analysis*** *to which areas in the in the SDZ were most likely to contain contaminated material and would need the most complex levels of remediation. T****hat analysis informed the SEA and the planning scheme.*** *And that's being implemented at the moment.* *Another example is the SEA undertaken for the [name] plan, which provides for a number of interventions in the city center, and allows for a higher volume of movements and more speedy volume of movements of public transport services, and provides for enhanced active travel measures. The SEA* ***identifies the benefits that would be likely to occur as a result of implementing that plan. These benefits focus on emissions, air quality, and noise and the interactions with human health****. Although the assessment didn't focus on it, the SEA did also refer to other key potential benefits of the implementing the Plan, including a more active and healthier population owing to the increased attractiveness of walking and cycling.* ***As part of our assessments, we always include [health] in the monitoring measures and as part of the baseline. We talk to the plan making team, searches published data and use our knowledge in order to identify if there's been any the spatially concentrated deterioration in in human health****. One such issue arose from a Cryptosporidium outbreak in [xx] in 2007 which resulted in illness in*

	hundreds of people. Where pollution or contamination is more diffuse, it becomes more challenging to quantify attribution to particular plans.
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*name] Plan?* If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? *We have sufficient environmental assessment expertise in-house to undertake an assessment of human health, taking into account our academic qualifications and our experience in undertaking assessments as well. Typically, we don't engage external health experts.* *For projects such as the [name] plan SEA, we consider detailed technical reports that were previously prepared on specific issues – the historical landfill and contamination issues in this case. These reports are often prepared by specialists with qualifications and expertise in specific fields that would not be help by our company in house. And so we often use desktop research and previously prepared reports by others.* *For flood risk assessments we use the best available, previously published, most sophisticated predictive models of flood risk, but would not necessarily undertake models in house. For [name] plan we utilised the area based transport assessment prepared for by a external transport consultancy.*
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *A definition would have to be based on experience and education. So, qualifications, do they have qualifications in that area, academic qualifications, and how much similar work have they taken on the past. So it would be an assessment based on those 2 factors.*
7.	How can appropriate health expertise be engaged in different stages of the SEA process? [No record of response]
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. *At scoping stage we identify the issues and the level of detail to which they will be considered – this information is provided in a draft scoping report. The Draft Scoping Report is circulated to the environmental authorities for comment and then updated to become a final scoping report.*
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? [No record of response]
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. *Material assets is an widely interacting that would be relevant to with human health.* [No record of response]

Interview 05

See Interview 02

Interview 06

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? *I was writing the health sections of [SEA reports], but you know, I think now having spent another 10-15 years doing health impact assessments, I can see, you know, that* ***was pretty superficial****. You know, you, you, you tend to be dealing with* ***very vague broad health information. It's about what information happens to be available for all your strategic alternatives.*** *So if you're looking at sort of, one of them was looking at multiple sites across the UK where you might do a sort of disposal facilities and it relied on having sort of comparable indicators for all the different jurisdictions, but I mean that was a massively complicated task because there was different data in different areas so that* ***the subset of comparable indicators you came down to for health was pretty limited and not quite as focused as I would like now.*** *I think* ***there wasn't the threat of health really having much influence****, you know, as ever it continues to be seen as, oh, well, haven't we already covered that through air quality and noise and soils and so on and* ***not the appreciation that actually the health assessment does look wider. It's what are the public health implications of this change, both [in terms of the] biophysical determinants but also the social, the economic, behavioral, institutional determinants.*** *So That's* ***a lot to unpack within an SEA, where it's very limited space****.* *It's possible…It's a sort of, oh, well,* ***yes we need to do the SEA because it's a requirement and health is in there but we don't even really understand what health means****, you know, are we just talking about coverage in air quality and noise? Or are we are we talking* ***that wider public health conversation?***
2.	How do you think health *should* be defined / considered in the SEA process? ***The opportunity for strategic level public health involvement is just immense, you know, it's just massively cost-saving for society to have built this in at the beginning****. Most of the pressures that we experience on our healthcare services are because we haven't properly invested in that sort of health promotion opportunity at the strategic early stage to sort of set up the structural landscape so that health is the easy positive choice rather than being something that everyone struggles with and, inevitably, that the health care services then have to take the weight of later.*** [response to discussion around the expectation of having an HIA for every single SEA] *That's very interesting to hear and it doesn't surprise me that that's part of the debate and I think I find it very helpful to always take myself back to the definition of health impact assessment, which is really sort of* ***recognizing that there isn't a set methodology for HIA, you know, HIA is about going on a journey, it's about a process of thinking about health and inequalities and delivering some recommendations.*** *It doesn't have to be a detailed complex methodology, you know, there isn't a prescribed way of doing HIA, it doesn't have to be a massive community consultation every time.* ***It's about being pragmatic, it's about being flexible and using different tools, different processes****. So, you'll always see sort of HIA at the top and then you can deliver it in just a whole load of different ways and some of them are giant standalone HIAs, some of them are integrated assessments in EIA, some of them are even* ***more strategic integrated assessments within SEA****. You know there's sort of the* ***principles and the process*** *steps that you would sort of mentally go through but* ***it doesn't have to be a huge endeavour every time****. It's just about making sure the thought process and the intent of HIA trickles through and is part of these other processes. Because, you know, it is almost* ***amazing that you would make huge decisions that affects society and you wouldn't want to know what the public health implications of them were****. Why, why wouldn't you, as an elected or even unelected person, making a decision? Wouldn't you just*

	assume that that was an important part of the information you would be provided with in order to reach a conclusion? *It's almost the counter argument, if you deliberately said we're going to give you everything except this, you know, they'd probably challenge that. And say actually I'd like to know what this does for long-term health outcomes of the population and inequalities, you know, are we building in the right direction or not? But* **they probably don't even think to ask what's missing in the current assessments***. To know how important that small extra bit of information might be to their decision-making and that they're making a good decision in good conscience.* *Maybe it's about articulating, you know, if you take the narrow approach, just* **articulating what you're missing** *you know, what wouldn't be taken into account by a decision and would everyone be comfortable with that?* **It would be kind of a huge blind spot. But because it's a blind spot, people aren't even aware that that's not part of what the information they're basing a decision on.** *So maybe, you know, that's another sort of way of exploring it and saying, well, if we go with a narrow, air quality biophysical approach, yes, we're definitely ticking off that side of things, but we're not going to tell you about* **what this might do for the wider sort of public health and community cohesion and socio-economic outcomes and everything else***.* *Anyway, I think I think it's wonderful this works happening to try and, you know, shed a bit more light on this and find the constructive way forward because* **that's not going to be a helpful approach to say there has to be a huge complex HIA every time that only uses that handful of technical specialists that exist. It has to be something pragmatic***. It has to be something that people can understand and that there's some sort of method that even people with very limited health impact experience can actually use. We're not going to probably move far off from doing SEA. But if the specialists can set up the process for them, set up the thought process, you know, then that's going to do a lot more good and hopefully they can also be encouraged to pick up the phone or the teams button to speak to the technical specialist and say, actually, this is the list of technical specialists that during this SEA we consulted, even if it was only for a few hours. You know***, there would be a process to make sure there wasn't that gap in detailed understanding and perspective.***
	Defining "Good Practice"
3.	In terms of the consideration of health, what are some examples of "good practice" that you recall from your experience with SEA? Why? *I mean, I've had projects, wasn't an SEA, but it was, it was a It was a strategic assessment of alternatives for a road scheme in Ireland. And you know* **I was involved fairly early** *and I could look at the different road options and* **I could evaluate them against the strategic determinants of health that are in the Institute of Public Health Guidance***, which provides a bit of information about how to do* **strategic level health impact assessment, which you could do in SEA***. So I adapted that methodology. Applied that and that meant I could, you know,* **broadly look at, you know, other issues around the biophysical, social, economic and lifestyle factors***. So that one it turned out, you know, looking at the options, one of the options was definitely the best apart from one issue, which was that they were going to build over the local sports field. And there was no sort of re-provision of that, you know, because it had slightly informal status, so I hadn't really been picked up anywhere else. So, you know, I was able to go back to them and say, look, well, clearly this option is going to be the best because it's going to take the road further from people. It's a safer you know bend angles and so on. Kind of points that would be picked up elsewhere probably through the process but then saying well actually you know for the community the issue with this option is the loss of the sports field. Informal designation though it might be. So actually, can we get the, you know, council sponsored road scheme you know can we get a re-provision of the sports pitch you know somewhere close to the community where they can still access it. It can still have a fairly informal status if it needs to if you know that's the way they run it. But there has to*

	be that re-provision and then we can put forward this option as definitely the preferred option. And you know, they were very up for that and it was that, you know, **pretty small intervention from health. It was looking fairly quickly, fairly broadly. And then focusing in.** *Oh, okay, well those things are kind of covered elsewhere, but* **this is the issue everyone's missed that would actually make a difference in this community in public health terms**. *We've got a* **specific recommendation we would like and if you can accommodate that then there is clearly a preferred option here from a health point of view**. *And, it just felt like that was the 1st time I'd ever had a* **strategic options appraisal health assessment actually be a useful exercise, but quite a manageable exercise**. **It didn't try and go down every determinant itself. It didn't try and create a huge massive baseline. It was quite focused. But got a good result.**
4.	What are some indicator of "good practice" for the consideration of health in SEA? *It could have formed part of an SEA, but it didn't quite take, again, it was it was a* **strategic master planning health impact assessment** *so it sort of sat separately rather than being integrated. This was in England and it was for a new settlement that was going to be built. I think it was about 20,000 new homes to a new little village, new small town. It was going to have a secondary school, I think 2 or 3 primary schools, shopping center, and then houses and health care hub. And* **what was fantastic was that we got involved really early**. *You know, it was almost a blank bit of paper. They were like, okay, we've got this amazing site where we're going to try and put it forward and we need to understand what would be the, not only the option that gets it most likely to get through planning, but also* **what's genuinely going to be good for health**, *you know, that the clients are very keen that this is a positive development.* *So we were able to do* **a strategic health impact assessment**, *which again, you know, was really trying to keep ourselves up at those* **strategic determinants of health to keep it focused**. *You know, they only wanted about a 20 page document. And we were able to summarize the* **local context** *in fairly high terms, think about, you know, what's the* **local populations need**. *We don't want it just to be a entirely new population coming into this area. So* **linking with what are the local public health challenges, what were the local health priorities, and then having a good meeting with the local public health team.** *And they were you know really interested in this you know they weren't committing either way to the development but we're able to talk through well if we had schools, you know, can we provide the access to them in such a way that actually prioritizes active travel. There isn't an area for drop off from parking except for you know children with additional mobility needs something like that you know the routes to school actually are going to pass the allotment areas they aren't going to go past, you know, the shops that probably sell sweets and hot food on the way to school, you know,* **really thinking about how do we do healthy place shaping** *for setting up, you know, the land allocations, mixing in green space, not only through the residential areas, but also in the in the employment areas, you know, so people can get out at lunchtime and have a walk and enjoy a sandwich outside rather than just being at the desk all the time. Thinking about how you might have a flexible hot desk workspace that's fairly near the nurseries and primary school for working parents who want to drop their kids off, do 4 or 5 h of work, and then just be able to pick their kids up and all walk back home again. So really sort of* **trying to design communities from a public health perspective**. *So, you know, just* **being in the conversation at that really early stage allowed us to have some fairly simple, straightforward, from public health point of view, no brainer, logical recommendations. But they got into the plan early and before everything was fixed, before everyone was committed and invested**. **And I felt it had a particularly strong influence. So that early strategic input, including some consultation with the local public health teams about what they felt was appropriate for their area, was particularly valuable.** *And whilst that was a standalone HIA, you know, it could equally have been part of a strategic environmental assessment. It doesn't quite fit into that normal SEA scoring or categorizing, sometimes you get these sort of huge sheets of plus minus colored things that apparently tell you which is the valid*

	option. So it wasn't that. **It was more narrative. It was more recommendations and design proposals for the strategic alternatives. It was more tangible and less about a single abstracted methodology that worked across over every single SEA topic. So bit of a contrast there.**
	Defining "Health Expertise"
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *I started my career as an ecologist first then as an EIA sort of project manager and then doing various […] as well, and then specializing in in public health and health impact assessment. So I did some pretty large SEAs, UK wide ones, sort of low-level nuclear waste strategy for the UK…Since then, I've struggled to even be in the conversation for SEAs, you know, I mean,* **I'm definitely a specialist in health impact assessment but we don't get involved. I think that part of the barrier is, if I was involved in SEAs, I know exactly how they work, I know the limitations, I know how I could do it better, but the requests don't come through…I think the process of linking up health specialists to SEAs is difficult.** *When I was doing SEAs, having been an EIA project manager, I was kind of the* **multi topic specialist***. I was doing a bit of everything. I was you know, I could call on the topic specialists, but I was basically the primary author. And back then, you know, I did,* **I did have a bit of public health experience, but, but not as much as I have now***. So, you know,* **I was writing the health sections of those [reports], but you know, I think now having spent another 10-15 years doing health impact assessments, I can see, you know, that was pretty superficial***.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? ***A lot of it comes down to resources****, you know, it's a competitive commercial venture to bid to do an SEA and you know the most expensive best SEA is not likely to be the one that gets awarded the work. So, you know,* **I think there is a pressure for the work to be undertaken by generalists.** *You know, in health impact assessment, we're kind of a specialist generalist, you know, we work across so many different topic areas. And if you've done it for, you know, as long as people like me and all the other people you've interviewed, you know, then you've sort of developed your generalist perspective to be actually a multi specialist. But, you know, that means* **you've got to find those people who either could undertake an SEA as a generalist but really have had good health exposure, or you've got to try and bring in the topic specialists and say, look, you know, the guidance, the requirement is that there is a listed competent expert for each of these topic areas and named expert who is inputted to this at some stage.** *And that way, it kind of forces the hand of, you know, not just having a low consultant level grade draft up a generalist assessment and then maybe it gets checked by a senior generalist.* **You actually got to try and bring in topic specialists even for a brief amount of time. Even a few hours of my time looking at a scheme at an early stage, you know, would probably be very valuable.** *I could instantly be able to tell them, you know, which are likely to be the better options from a public health point of view.* *That example I started with, you know, with the small road scheme, that was quite a small project, you know, I think it's sort of 3 to 4,000 pounds of my time, which in the scheme of things, you know, most large strategic health impact assessments would be in the 10 to 15,000 pounds sort of range…***So even a small amount of targeted input I think is valuable***. But there's not the requirement to include specialists. Therefore , It doesn't happen very often,** *is what is my experience.* *The only time I've really been doing SEAs was when I was having the generalist hat on, you know, not as an HIA person, but just as an* **EIA, SEA, generalist. But those people don't necessarily have the experience and the training to be able to deliver the other topic detailed points. So I think that is a challenge and also that this desire to have a single methodology that somehow pools everything in the same way and everything equates** *and we boil it all down to, sometimes you just see 2 pluses in a in a grid or 2 minuses or a 0 or something and you're like, wow, you know, have*

	you really boiled everything there is to say about public health down to 2 characters? Maybe that's what SEA needs, but, but, but I don't think it really adds, it's certainly not, you know, achieving the value it could add. And, I suppose, part of the issue is, do those people commissioning, do they really want to look into the strategic alternatives or do they just need a report that says we have looked into the strategic alternatives and surprise, surprise our preferred option is the preferred option. I mean, you know, it may be a little cynical, but **are they commissioning with a view to say, you know, are we getting the best option here for public health,** *have we checked that, are we satisfied, or did that not even sort of figure in their thinking, you know, it's a sort of, oh, well,* **yes we need to do the SEA because it's a requirement and health is in there but we don't even really understand what health means, you know, are we just talking about coverage in air quality and noise***? Or are we are we talking that wider public health conversation, you know, the opportunity for strategic level public health involvement is just immense, you know, it's just massively cost-saving for society to have built this in at the beginning.* ***If they are now including the specialist inputs more regularly, than I think, clearly, that's a precedent and it should mean that the health specialists should also be included on a similar basis.*** *I do think SEA is about having a shorter, quicker methodology, you know, it is more powerful to make strategic decisions, but, inevitably, there tends to be a bit more uncertainty at that level and a bit more speed to everything you're doing, but I think my experience is it can be done and it can be done effectively.* **It is having a method, but also you've got to have the expert who actually can just look at a proposal, a set of alternatives, and be asking the right questions and just, from all their experience and knowledge** *and the mental health impact assessment processes that are now hardwired into their brains, you know, actually say, look, it's just obvious to me, you know, that that's going to be better or actually, you know, none of these alternatives are particularly good, you know, how about doing this. So, I think* **including experts would be valuable, and the methods by which you would do that can be developed. I think there are good touch points already but it's, I suppose, consistency.**
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [No record of response]
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? Not answered.
10.	How might health be considered within and across other topic areas? *Boiling down to a plus minus sort of helps us at the end. It's not necessarily problematic, you know,* **it's what comes before that that means that you can have confidence that that is a fair, you know, summary and are there recommendations that actually sit around that in terms of the alternatives to do something** *you know. When I did develop, you know, a sort of adapted methodology, which was basically the Institute of Public Health Strategic HIA guidance and the draft SEA guidance, really sort of saying that, those are the 2 methodologies that are listed out there.* **How do we actually bring that together into some, fairly quick, sensible, little approach that actually is going to look across a range of determinants of health***? It's going to look at the specific context that we've got here. It's going to the School. You know, it did come out with a kind of a plus minus, that's the ultimate format they wanted, but there was a bit of a method and a process that sat behind that and it was also able to generate a specific recommendation. In this case about the school playing, the sports pitch, that needed re-providing to shift it from being not the preferred option to definitely being the preferred option. It has done very well on all the other determinants of health but just on the healthy lifestyle scoring, just because you'd removed the only outdoor*

	sports pitch for that village. **So, there was value in seeing how looking across the determinants felt in terms of other topics.** *I suppose, I'm probably not best placed to say exactly how they do it in SEA's any more, you know, it was quite a while ago when I was doing this.*
11.	If you were to give us 2-3 key recommendations for improving the proportionate and effective consideration of health in SEA, what would they be? *It always comes down to the hooks, you know, all good intentions, best practice, all lovely, but you know,* **it has to come down to a requirement to do something that's either in legislation or in policy, you know, that's the only time it actually ever happens.** *With all the best will in the world, some people say, oh, just create capacity, train everyone up, it will happen sort of slowly and diffuse, but I tend to disagree.* **(1) I think you need to have a bold, clear requirement. (2) I think the official guidance has to say, in covering the statutory requirement for human health, you have to take a wider determinants of health approach and you need to include technical topics in health impact assessment.** *And I think that would, you know, really* **move us away from just considering health in a very narrow sense.** *And it would mean you're* **bringing in the people who actually understand what this means and how you would deliver it.** *I've got a 3rd recommendation.* **(3)** *It would be to* **stick a methodology in the guidance**, *you know…as a sort of hybrid of the Institute of Public Health Guidance and the UNECE Guidance. And that's felt* **sufficiently quick and broad, but something that is easy to implement**

Interview 07

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? *The thing is that this case that you chose was [written by] the transport administration. And that administration has a very clear mandate and […] the instructions of what to do [regarding health] are very clear. And that means that when we did the SEA, we knew* **how we were going to define health because it's health as based on the transport system.** *What are the* **health aspects of a transport system**? *I know that what we used was the* **definition of the UN** *or something like that in that one.* **But it boils down to what their mandate of the transport system** *is. And then* **health becomes very much an issue of noise and vibrations.** *It goes straight into the details that people are going to* **move by cycle and walk so to get a healthy lifestyle.** *It becomes also very much about* **traffic safety -** *that we don't kill people, actually, so they go straight into that when they define health in their SEA of the national transport plan because that's everything that they do and it has to do with steering. This plan is going to go straight into projects.* *If we look at what* **the EPA of MEMBER STATE** *have decided to do; they have made some strange reasoning in their guidance. They* **combined health and population. And so they talk about population from a health perspective and forget everything else that has to do with populations.** *They have* **narrowed down population to health**, *which I think is unfortunate because population is so much more. We have to discuss social status and ethnicity and so on and all the other things. But they made it simple for them. They went straight into it and said that health is population and then they were finished. That's v***ery frustrating because health is one part and it connects to population, but it's not the only part of population.**
2.	How do you think health *should* be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc.

	I think **health should be defined from a systems analysis perspective and through accumulation**. *Because quite often it's all too simply defined. It's often just "ohh we have noise and vibration" and then it's probably double or not we don't know. So I think that in this perspective we should work much more with cumulation and much more with systems analysis.* *Saying, OK, this will lead to this and this and this and this and then we have a feedback loop into that part of the health concept, so I think that to think* **cumulatively** *in this way, and also use the* **systems approach** *would be the way forward. We've been experimenting with it, but we don't have any finalised results yet. It's as you say we can have a vulnerability in the population in one area of a certain part of the population and then we need to say that we will have these feedback loops and they will be worse. I think it's very much a qualitative assessment while we have quantitative data behind it. But quantifying all these feedback loops will not be useful in a way because we will be overwhelmed.* **So, for me, health is very much a cumulative aspect in a way that we might not always see it in some of the other aspects we work with.** *[The interviewee shows a systems approach / cumulative model they have worked on to be published later this year]*
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why? ***I would say we don't have good practice on this**. The reason is that the authority that decides on health or SEA and EIA guidance is the [member state] EPA and they are not really into health. We have an authority for health, but they are not anymore at all involved in impact assessments. They used to be a long time ago.* *So, all these things that have to do with population and people and health, they are just forced. So, what happens is that the transport administration, and that is probably why you found this one, they have to show that they are not ruining the health of people by building roads and rails and especially from the perspective of noise barrier effects, recreation, traffic safety and so on. That's why you find them [the cases]. Because they're actually the ones that do something. Uh, but it's from a transport perspective.* *The health boils down to are we can we,* **can we meet the standards of noise***? Can we meet like,* **are we not killing people***? It's really what it boils down to.*
4.	What are some indicators of "good practice" for the consideration of health in SEA? *I think that to start with it depends on the plan; because SEA is so broad. So, are we talking about a* **transport plan. Then we should define it based on what are the main negative impacts on health from the transport system**. *If I talk about an energy plan, we would need to talk about other things and one example of this is electromagnetic fields. It needs to be very central to a transport plan because of the rail. We have electromagnetic fields and that would be also for some of the energy plants while for municipal comprehensive plan and electromagnetic fields might not be at all be important.* *So, I think it is to define just like in social impact assessment or for the population and this might be why the EPA combines them. So, they look at what groups we have and how they will be affected and then look at what is specific for this type of plan. They look at what actions will happen and what will be the impact when it comes to health? And then it's not just health in being that you kill people or injure them, but it can also be well-being and being healthy. Transport plan is a good example because we know that there's a correlation with people cycling and then that we get better health in the population and so.*

	Because this plan is really how much money are we going to put on cycling, how much we put on rail? ***I mean, all these bags of money that we have and all those alternatives are just moving around bags of money and depending on where we put the bag, we will have negative and positive impacts on health from different perspectives.***
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with*] If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? *Interviewee: In the case that you have and in cases that I did also,* ***the health part was written and assessed by people at the transport administration that are responsible for health issues within the administration.*** *In this case they actually understood what EIA and SEA is all about. So, the transport national plans, they're always done in-house in the transport administration. The EPA had been upset with the previous SEA and they didn't understand why it was done the way it was. And so to start with we needed to explain that the national plan actually has an aim. SEA started to ask for the aim of the plan. This was a very basic process.* *When we got all the assessments during one summer, we just managed to get all this data into one SEA.* *It's horribly long this SEA, and it doesn't read well, but we managed to do something with it and the next time around which is not the case you're looking into, we started again and we had all our experts and then we started to again talk about the assessment criteria and it was much more a workshop process, but still the transport administration and the health team were completely new, so we had to teach them everything again so it was a completely new team for the second round.* Interviewer*: It's it sounds like when you say a workshop like approach that in this case those with health expertise that were internal to the transport administration, they were involved right from the start?* Interviewee*: Yeah, because the two that led the process also could do health because they were responsible for Traffic Safety in their organisation, they were responsible for noise and vibration, and they were also responsible for walking and cycling and the health aspects of that. So, they had an understanding of what the main negative impact on health are from the transport system.* *Interviewer: Can I ask in terms of their professional background. Were they engineers or are they actually sort of public health?* Interviewee*:* ***No, no, no*** *[in response to public health competencies]. One person in the transport administration was. They're retired now. They were a biologist to start with, and they had been in the Transport administration for their whole working life, more or less. So, they really understood all of what health is. I mean, what are the impacts; it comes from the natural science side and also on they were a climate person. So more climate than like, not that type of calculation modelling type and came from that side into this process and had been given uh also the task to deal with health issues in the transport administration.* ***I would really like to see people that are much more into public health in this process we don't have them at all at the moment*** *there. So it's people like that who do this,* ***the majority of the people that do health impact assessments have other backgrounds and are generalists and so on.*** *And we have tried to get people into these with health issues, but it never works. I don't know. And I've been thinking why it never works and one is that they don't understand, but I think we haven't been good in explaining what type of process they're in. Uh, but also I'm not sure that they're different*

	players or that they want to pay for it. I mean suddenly, then we need to have yet another issue that we need to pay experts for an impact assessment. **But that's not for SEA but for EIA we have also seen that when we are too clear in the impacts, negative impacts with regards to health, they would choose another consultant** *then and I would say that I did this impact assessment that you had, the case that you have. I did not as a researcher, but as a consultant.*
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *See the last question for the interviewee's perspective on this matter.*
7.	How can appropriate health expertise be engaged in different stages of the SEA process? *See the last question for the interviewee's perspective on this matter.*
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. *In this case that you have and the National Transport Administration acts as the consultant of the government or the ministry. So, the ministry have asked them, what would you propose as a plan and with that plan you need to do the SEA? Then after that, the government will take things out and put things in and back and forth into the plan. And then when they go to the Parliament, say please accept this plan. What has happened last year or the round that you are studying is that when the government are taking things in and out things that they make a new SEA? And that is why our introduction to this SEA has been quite harsh.* *We said that we just saw version 0.8 of the plan we have not seen the final plan. So, this is just showing the assessment of the almost final plan. And we also said if the government do things after this, we take no responsibility for what they're doing. It might not be in the beginning. We decided to write this and people were not really happy about this but that is what we had to do.* *So, on page 250, twenty 46, which says that we could not follow the end of the plan. So we have not seen the plan because when we write this here, it's still the plan would go to the printing office later than we have seen it. So, we were quite clear that this is why we were not happy with the process that was set out to us by the government. But this is so the government can do whatever they want after this [the assessment] and they don't have to do a new SEA.*
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? *I think that one is just to have the right experts that actually know what they're doing. I mean, it will never come to any and no one would really like to decide that we are going to do it.* **I'm an aeroplane engineer and I'm going to do the biodiversity assessment. I mean no one would come up with that idea.** *So, for country heritage, for the natural systems like flora and fauna and biodiversity, but also water and nowadays climate.* **Previously climate was handled in the same way as health, but now climate is now they realise that we really need to have experts.** *We can't do anything else here. So first of all, we need experts that know what they are doing and* **we also need not just experts because they come in and then they leave the process or the company or whatever, very soon, if they're not given time and resources to actually develop something, a framework to understand what they are doing***. Some kind of guide is needed.* **I mean the reason that we know what to do when it comes to climate change in transport systems is because we failed so many times** *and got so much criticism that we actually really know what to do. So, that is the first thing that we need to have the right experts. They need to get the resources and time to do this. This will take a couple of years.* **But also if the authorities, if they are not competent to receive this material, they will not ask the critical questions either***, so on the reviewing authorities*

	and the competent authority side to have expertise and know what to ask us for so we get this going back and forth, OK. **And by doing that we will improve the level of the standard.** *OK, uh, but now currently it's. I mean, there's* **no one really asking these hard questions**. *So, then they don't need to have this expert because the general assumptions about health seems to be alright. So why shouldn't they?* *In this case, when it's the transport plan the competent authority is the EPA. If it's an SEA for all the municipalities, almost all the other plans / SEA then the competent authority would be 21 County ministers.* *Yeah, this is a very unique case. It's done for four years. It's a Unicorn. This one is. It is a very unique case that we redo every four years and is linked straight into the budget process. So, it's not a traditional SEA in any way.*
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. *I think that the way forward is to do the systems approach to this where we are well aware, and the experts know how to map their subsystem - they're confident and they see that this will have an impact on health. I'm in soil and I will have an impact on health. Then we can start to discuss mitigation and so on. So, I think that what for example is done with accumulation and systems approach to SEA and so on. That is a very interesting approach that we need to explore further, and I think that is one of the solutions to deal with these issues, because it becomes so complex quite quickly. So, you have to know health and you need to know the population. And I again, I understand why EPA made it very simple for themselves, but suddenly then population equals health and that is not right. So, there are other issues. But of course* **if you don't have enough money, your health will be worse and we have one example: we can see from the dental status of four year old how much money their parents have**. *I mean, the correlation is there.* *And from that we can also jump from the dental status to say, OK, we have challenges in this or this region or this area. If you have problems with dental status when you're 4 year old, you will have all the other health issues coming in with it, because that it is due to bad food and then we have overweight or obesity and all the other things coming in.* **There is already so many indicators that we could use if we were a bit smart here, but we don't use them today**. *And especially with SEA, if you have large plans like a transport plan, you could utilize all these statistical data for example just to identify vulnerable areas and so on, but we don't do it because we didn't have time.* *And in poor areas they can also see many things, but that's maybe from an EIA perspective, but I've been meeting project managers and project leaders of transport and they say that people in this area are so not interested in their environment because they don't come to the public hearings or to public meetings. Well, they have four jobs, and you expect them to on Wednesday at 6:30 in the evening to leave the kids and go to a meeting and you saying they're lazy? You know they have four jobs. That's why they can't show up and they're juggling, kids and everything. And so,* **they are also vulnerable from the fact that, uh, they can't actually go into the processes because of the fact they don't have time**. *And we can see that those that came to the process. They have higher education than the average of the country, they were men over 65 years old. They were older because they were retired so they had time. The majority of them came there by car. Because it was impossible to come to if you, they said, Oh well, it's in school. We have always said public transport to school. Well, you can't have public transit. There's no public transport to school on Wednesday at 8:30 at night when they're going to try to get home to the kids that they have left with a neighbour. They have to walk instead, of course, so their prerequisite to come to these public meetings were a car.*

	So, health is very complex from this perspective, but now we talk more I think EIA than SEA, but I think health is also the living standard of people and the economy and so many of these issues are impacting our health, which we should explore much more, but we don't do it today. *Those who have the worst health, can't come because and there's a reason why they have worse health. There's the subway line through Stockholm. The expected lifetime is differing eight years, if you go through the red line.*

Interview 08

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? This is very special – there is no methodology for health but we developed it all for this document. It was very well received.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. Qualitative and quantitatively, using GIS…for example, smoking, air quality, water, emissions. This is a very big subject and it is easy to lose it.
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why? The difficulty is that we get environmental specialists to work on this issue. This theme has been integrated into environmental impact studies or environmental assessment plans. And the difficulty that we can see is that the skills of the people who work on these subjects are not complete enough to bring a real in-depth knowledge on subjects that are for the time being major and we base ourselves on a lot of guides that bring a sufficiently simplified vision so that it can be treated and exploited, but we lack a lot of knowledge and a certain technical value in these subjects.
4.	What are some indicator of "good practice" for the consideration of health in SEA? The architecture was built for all types of considerations and issues independently. We applied this to all the evaluation categories we did. Health in particular, as I said earlier, is a subject on which we have little, at least we, little scientific knowledge. So we started from this observation, to say to ourselves if health for us is a little bit sometimes, how can we put it, broad, too broad to be able to basically consider that there are tangible, factual elements on which we can work, and we had to do this original work to target exactly the important subjects that were to be considered. And so right away, as I said earlier, we limited ourselves to questions of agriculture, health, air quality, because it was on these subjects that we had to... Because the regional […] plan was going to have a real leverage effect. Because we have avoided subjects on which the regional biomass plan was not going to have a leverage effect and for which it would not have been useful to talk or consider. There could have been many other topics, but we broadly targeted this biomass issue.
	Defining "Health Expertise"

5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with*] If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? For me, as I said earlier, it's really a lack of competence, but we were able to target and deal with subjects that could be... Since we are in a very broad evaluation, on the scale of a region, it is very broad. So, the experts we can have on this theme are often experts who are linked to a target project and who have expertise because they can enter into an industrial process, they can bring very, very, very... It seemed to us that we could bring a sufficiently broad and at the same time precise vision to the scale of the region to do without a real expert. But, in my opinion, it would still have been better to have someone who brings this vision to the table. And here, for once, we don't know of any or very few who have, basically, this expertise.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. Qn: And have you received any feedback or support from health authorities? Ans: No. This is also very difficult for the environmental teams when the health authorities are so slow. What I could do is to go back a little more to the exchanges I had with the administrative services or the guides that I was able to use, to give you additional information by email, but it seems to me that I did not have any information on these subjects, But I'm going to dive back anyway to bring you additional elements by email.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? I think that this is a subject that must be uncorrelated with environmental issues. Yes, which must be, as I said earlier, the subject of health is taken from the point of view of environmental impact studies or environmental assessments. So, there has been progress in considering that on projects, there were health risk assessments which were specific aspects of the environmental impact study or the environmental assessment. Now, there is indeed a lack of skills and experts who carry out this theme and who might have to work only on these subjects, but apart from environmental impact studies. However, the subjects are intimately linked, since we are necessarily talking about water, we are talking about atmospheric discharge, we are talking about waste, we are talking about the degradation of an environment that inevitably leads to public health issues. But it's very difficult, I find, to, as an environmentalist, deal with subjects that can be very profound and that can be very profound. impactful and have a real importance because there is a real lack of depth of analysis on these health issues and, in my opinion, there is a lack of consultants and experts and perhaps a regulation that goes with it.
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. This is the main difficulty in any type of impact study and it is the subject on which many consultants, experts and design offices are breaking their teeth a little. This is the consideration of proportionality. In my opinion, this is a subjective question for which we cannot get away from the expert's vision, that is to say that the expert makes choices, makes hypotheses, and the power of environmental assessment is to explain them. It is to say that, in fact, we do not have, and this is what we have tried to do on the health aspect of this environmental assessment, it is to say, it is a bias that we are making, which may be subject to debate, but it is a bias to consider that we are going to focus on looking at one subject in the health component and not the others, that we are going to study that. It is a bias that we have to say that such and such a measure seems relevant to us and that is always to say experts.

	And for me, proportionality is there and it is not elsewhere, that is to say, to say to oneself So, I have been entrusted with a question. What is the impact of the regional biomass plan on health? I don't have all the answers, but from what I can see in my research, which is not academic research, I'm not here to do a thesis, so I have to be efficient in my research, targeted with what I can be given in terms of regulations, As a guide and what I can find in bibliographic data, I can say that with third of experts, I will focus on such and such a subject and I will proportionalise my study because I have seen that there is a fundamental importance on this subject and other subjects that were not less important and that do not deserve to develop them for reasons of proportionality and to ensure that the public, when it reads the study, is not lost in considerations that will not be important. Proportionality must be a fact of the expert on the basis of a methodology that he must explain and that he must detail by explaining that these are his choices, but he must bring them to light, he must carry them by saying that he explains the whole process that led him to consider that he was going to deal with such and such a subject and not that other. Dealing with a particular subject and not of others. And often, in our own design offices, I see it, either we have a consideration where we want to deal with everything and we are very incomplete because we don't have any... And we don't know how to predict and we finally give measurements that don't make sense because we have nothing to hold on to and precisely we always try to say to ourselves, let's explain to the public that we had to make choices and that the study does not claim to be exhaustive but the study claims to be relevant and that's why as an expert I have to bring relevance and that I must say to the public and the administration, I made the conscious choice not to talk about such and such a subject, on the other hand, I made the conscious choice to zoom in and put a real effort on such and such a subject.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? I think that the [unintelligible] sequence, avoid, reduce, compensate, deserves to have perhaps more development on the subject of compensation. It's a very difficult subject, on which we also have debates to consider how, from a health point of view, there are compensatory measures, impacts, impacts that are often qualitative, we can also quantify them anyway, but how do we give and provide compensation because the reduction may not be enough. And on that I think that there are few subjects, few cases dealt with in terms of It is a little bit the problem that we also have on our landscape impact studies, where we have difficulties in providing compensation when there are residual impacts after reduction measures. So I think this is the real difficulty and perhaps we could develop this subject on the basis of what is done in compensation for natural environments or in compensation for wetlands or in compensation of agricultural land consumption. Perhaps there would be subjects on which we could make progress, but it is true that we are asking so much of industrialists, some of whom are not major polluters, and the difficulty also comes from the fact that we treat everyone in the same way, under the same hat, and which means that we have small industrialists who have very reduced impacts and resources that are also quite small. and we ask them to treat the same as the largest industrialists, and that's also the difficulty of being able to have proportionality without immediately putting everyone on the same basket and not asking everyone to make the same efforts, because we know that the impacts on health will still be much more significant on large manufacturers than on the big manufacturers. a small industrialist who operates a small factory of a few hundred square meters, that is where he will be able to control his discharges quite well and without that we go much further and tell ourselves everything is fine. The difficulty is also the proportionality of these compensation measures without falling into somewhat extreme subjects. To ask everyone that

	as soon as certain thresholds are exceeded, there must be compensation to be made to the neighbourhood or perhaps to the community, the municipality, because they will have to make efforts to treat water, they may have to make efforts to improve air quality. That's it, and that's the difficulty we have.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. [question not posed as addressed in other answers]

Interview 09

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? It should be broad but is mostly environmental aspects.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. Person 1: So this wide perspective of health, not only physical or mental health. Maybe we would gain if we were doing a Green Park in the city or something like that, that that's a health issue too. It's a positive health issue and we don't see it on the analysis. I think that the assessment would gain if you'd bring this health perspective on the table. In fact, in our SEA, we try to emphasize the opportunities, not only the benefits and we always try to do that to go beyond the identification of impacts of negative effects. I think that maybe one of the reason also that SEA doesn't come out as it could, or as it should, is the health authorities are not completely prepared to act on the SEA and so they don't have a strong word to say. Very often they are contacted but they don't respond through the public consultation process. Or at least they don't react to the opportunity that consultation brings. So I think that there should be something done at the health authority level for sure. Person 2: I think for health issues to be further considered in these exercises, we also need a stronger link between environmental quality and health.
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for ([NAME])? Why? Person 1: I think there is two things that we try to do, which I like in this report. When I revisited one is the way that we introduce the *do no significant harm* issue, OK, that we tried to invert the process and to go beyond *do no significant harm*. We picked in all these five or six variables. Mitigation adaptation, etc. There's the six objectives of the sustainable taxonomy. And we transformed these issues into opportunities. OK, so we want to measure how what is the contribution of the digital transition to these objectives, sustainability objectives. So I like that approach. Also looked at positive effects arising

	from the strategy and at the importance of being able to stop and step away from the computer. I liked that. Person 2: So that when we do these exercises, we can try to relate to the concentration of particular illnesses. The different exercises that we do for SEA or even the relation between those illnesses and particular activities that they undertake, so to link for it's in this case OK to link particular illnesses with new technologies, such as working for longer hours. So indicators that link illnesses with environmental issues and particular activities.
4.	What are some indicator of "good practice" for the consideration of health in SEA? [No record of response]
	Defining “Health Expertise”
5.	Was anyone with health expertise engaged in the SEA process for the [NAME]? If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? *Who provided health expertise? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health?* [No record of response]
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. [No record of response]
7.	How can appropriate health expertise be engaged in different stages of the SEA process? Person 2: It would be good to have health issues along the process, not only in the beginning or in the middle or in the end. So I think the best way would be to have an expert in the team. And the expert in the team, despite the definition. But obviously with the background of health issues of medicine, and better with expertise on SEA preferably but into integrate the team and to help the other members of the team also to relate their expertise with the issues of Health. This should be along all the process and even to help in the public participation process to help the authorities that with whom we talk to help them to further consider health issues in the SEA. Sometimes they do not know how to do it and they need help from experts. Even then I've been in the public administration, not on health issues but on water and the nature conservation and sometimes these authorities have some sort of guides, like a structure, a typical structure that they follow even including invitations to participate in the public participation events. So they have some sort of a guide or script to help them to participate in these processes. So this would be also actually be another way to improve the collaboration of health authorities and we could help these authorities to improve those scripts for SEA processes.
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. Person 1: Well, regarding the question about responsibility, I see that the responsibility is both from who's doing who's doing the SEA and the authorities for sure. I mean the authorities have always the power to intervene in the process and to demand more. So that's their responsibility, but always obviously the consultants is also very, very important role in the process.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)?

	[No record of response]
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. Person 1: If I think that this, this study and probably because it has a lot of these critical factor for decision SEA making and so on in the study, it goes beyond what the SEA Directive demands. you know, because I think that if maybe we could think what would come out what would be these SEA if you'd have a environmental only approach.

Interview 10

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? Very specific about SEA for national spatial plan, [NAME] – [NAME] is on a national level so very high level. One of its components is strong and healthy cities and regions so health is already included. We looked at how the plan will reach its goals and the assessment is based on criteria. In some ways we have a loop as the plan is based on health and we assess for health. There is a new law on the spatial environment– this determines what the requirements should be for a healthy and safe environment. Since that law came into effect health has gained prominence – then (2016-2019??) it was still new so had to identify how to address health. How should we define health? We chose to do it in connection with the new law for the spatial environment because SEA for plans has its roots in this. This new law defines health and a 'healthy and safe environment'.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. We were quite ambitious in our assessment criteria we had *physical health risk* – [the national health body] is also working on how to define physical health risk It was not so clear and there are not so many tools for health in SEA so our approach was very qualitative. Air quality & noise pollution was our final choice of indicator. We were both qualitative and pragmatic – health risk is still the right approach but the definition should be more specific – still doing what we could do assessment based on expert judgement – we invited [the representative body of local health agencies] [the representative body of local health agencies] to be experts within the assessment team. The indicator is right – but we to make it more concrete. Because it's a national plan we cannot always translate to a map – that would be ideal – we could not quantify air quality or put it on a map for this national plan.
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for ([NAME])? Why?

	To open the assessment process and to include experts from agencies such as [the representative body of local health agencies] in health and with other authorities in specific topics. A lot of knowledge can be used from all these agencies. Nature and safety etc. Lots of knowledge which should be applied to the SEA and the Plan. It was strong that we connected definitions and set of criteria to the new law – I see it is often that the SEA is made with a list which can feel quite random – much stronger to connect to systems which are in place and to specific priorities at the time – e.g. nitrogen issue in [member state]. Health is a new topic which is not often used. It is very important to take time with experts from agencies. Also the way we visualised the effects was good practice. We used circles. The circle identifies the criteria – spider diagram – it presents the current situation and autonomous development and it shows a trend. We wrote the SEA like a trend analysis. We plotted impacts on these trends. What you normally do is specify positive or negative impacts. We tied it all to trends – we showed how [NAME] would affect the trend. This gave a different type of discussion with policymakers and was very successful.
4.	What are some indicator of "good practice" for the consideration of health in SEA? Environmental health risk – air quality indirect effect on health. Healthy behaviour – often see health as indirect impact of decreasing air quality while healthy behaviour is more of social impact analysis – but it is also very important – active mobility is linked to green neighbourhoods. Beside quantifying hard impacts the consideration of behaviour examines a different impact – the combination is very strong. Safety risks are a separate indicator – this also belongs a little to health – e.g. flooding risk, natural disasters, external safety.
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process for the NAME? If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? Who provided health expertise? We worked with the [the representative body of local health agencies] – they are the health agency of cities – all local municipalities have [the representative body of local health agencies]. The Ministry of Health was also in the process. – [the national health body] are working at a national level but we did not approach them. Slow process which took a long time – we had parliamentary elections in the middle – this meant we had time for the first stages. Health was involved in scoping note – and in discussions about how we should define health as a topic. Later during assessment stage we organised expert sessions that were a mix of engineering firm consultants with external experts. This was in health but across other topics too. *Did you feel this level of engagement and expertise was sufficient for the effective consideration of health?* Often seems to be scary both for client and engineering company – but in my view it added value – when the client saw what was coming through they were very happy.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. *How did you identify [the representative body of local health agencies]?* Quite quickly moved to local health agencies because they are the most practical knowledge available. One of the most

	important things – someone especially for SEA – someone who is capable of thinking and joining in discussion on high level. Applies to all topics. For example you might have an air quality expert who is able to make pragmatic and qualitative analysis with uncertainties and if so great but not all are able and willing – your expert team needs people capable of discussion on a high level with many uncertainties. Also, have to think about whether the expert has the full scope of expertise.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? Discussed under question 5
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. In [member state] there is a formal role the which is the 'authorised supervisor' ('competent authority'). This applies to government plans and those coordinating or responsible for the plan. They are responsible for the SEA and who to consult. Regular EIA & SEA thing – need to consult all who have a formal role. In this case all provinces and municipalities were consulted on the scope and the outcome of the assessment. The national commission for SEA & EIA – reviews the SEA. They do not have health expertise. That is the thing with new things. The authorities also do not have the right expertise for health (& other new topics). Health part not really recognised the way it should be. This also starts with engineering companies and with clients. *Whose idea was it to approach the [the representative body of local health agencies]?* Mine. Issue so important that we hardly have that expertise in-house. The ones that do it will not do it well enough. Discuss with client. Client threatened? Yes – advise and help client as a consultant.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? Standard lists – no Look at what plan is about and the real urgencies at that time. Not just expert opinion but debates within society. Make sure that the assessment answers those worries and concerns within society. If it has no impact and there is no added value then it is not worth looking at – every SEA should start blank and think what is it about rather working through a standard list.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. Possible links with air quality; noise; health and safety risks; degradation of biodiversity. Could have been stronger but did not have tools, time, budget. Health should be an integral part of SEA.

Interview 11

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process?

	My knowledge is limited to [member state]. Most of the time this is done in terms of environmental hazards. Air quality, for example. If there are cross-border implications then health is considered very vaguely.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. How should be defined definitely the broad health should be defined. I mean as I as I mentioned health is usually understood as environmental impacts. The social impacts are left out and that that should be included definitely. So the social and the economic impacts if we are having a subject, most likely for large multinational investment, which is expected to have an impact on a couple of countries then we should look at how is this going to change employment, how is this going to change education opportunities, and of course how it is going to change the environment. So all the key determinants, social, economic and environment, should be considered and health. I don't know whether this is the point to address it but the definition of health, or what do we how do we understand health, are we able to go to specific health outcome? For example, asthma or injuries or any other health outcome? Or do we just keep the overall health with a single measure? To my knowledge most of the impact assessments, and on the level of assessing health, they the indicate the determinant (the risk factor) and not really how the incidence of a disease is changing or how mortality is changing. And it's very logical that not going that far because it's unlikely anyone would do an investment which is doing major change in mortality but there might be changes in morbidity. So I mean go to the very end with health: define the health outcome. I try to find the health outcome as detailed as by the ICD (International Classification of Diseases) but it is very hard. I know myself from the [member state] experience. But, if we want to get closer to health, we really need to go to the substance. So which health indicator we expect a change, which health outcome? I do think it is setting the bar too high. And it's definitely not necessary in every single case. I think here we need really to stick to the classical HIA methodology: screening, scoping etc. And sort out when do we need to go to the health outcome, to a specific individual health outcome, and where we are satisfied with the broader level. Because, it is not even feasible for every case, definitely, because it's hard to get the data for individual health outcome. We don't really have a lot of causal relations to tell the truth from epidemiology. I mean, if you look to burden of proof database by the Institute of Health Metrics and Evaluation, there are basically 70 couples of risk factor and health outcome. So it would be very hard to do it for every case in impact assessment. But in scoping, I would say screening, scoping, we should try at least to describe the full pathway, which health outcome we expect a change, and then decide that, yeah, it is feasible or it is not feasible. And SEAs are a very broad level. So that really needs to be considered very carefully. It might not be feasible always, definitely.
	Defining “Good Practice”
3.	What are some examples of “good practice” that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why?

	That is hard because, as I said, I've seen very few SEA cases. But I think then we have to go to the good practice issue also because by saying what I just said that to the full pathway until the health outcomes, I'm not necessarily sure that's the good practice. It would be a little bit over driven because, of course, I'm looking as the researcher, the academician, where I'm back in the theory. But the practitioners have a limited time period in which to do the work and limited resources and all this, so I wouldn't use the term good practice in sense of research. If the population is satisfied, if the society is satisfied with this, that's good enough practice for me. And then probably if I would review SEA cases where the population, where the people who expect the impact, they are satisfied, then it's okay to me.
4.	What are some indicator of "good practice" for the consideration of health in SEA? Yeah, here I can add maybe if OK, but that's again the researcher view of good practice. To me, it would be if screening scoping part of a SEA describes which are the most important determinants of health to change or expected to change. What is the pathway from the determinant to the health outcome and which are the most relevant health outcomes and the kind of discussion about the significance? Significance and relevance of that health outcome? If that is included, that's good practice, for me.
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with*] If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? That's a shame on health society, I would say, or health expert society. Very rarely. The short answer is very, very rarely. I have my experience, and not only SEA, most of my experience, as I mentioned, is environmental impact assessment and health impact assessment and health within EIA. And for example, here in [member state], most of the cases, the health experts refuse to participate in the impact assessment. I mean, even I was a little bit, hard to say politely, not attacked, but a colleague of mine, a very well -distinguished international environmental epidemiologist, when I asked him to review the health guidance I made for health in EIA. And I said that I'm consulting this and practicing it with one of the consultancy companies in [member state] doing the assessment, both EIA, SEA. He said, no, that's business, and I'm not going into it. And that's, in my view, it's a shame because the health experts should take the responsibility and go there, really. Otherwise, I have a very good experience working with consultancies within projects, within this pathway from the terminal to health outcome. Unfortunately, I know that there is quite a hesitant approach, if I say it mildly, from health experts to join this. There are few, and I'm sure they might even be in this pool of invited experts, very good environmental epidemiologists, public health people who actively take part in impact assessment. They are doing impact assessments of different levels, but not in routine practice very rarely. [Interviewer] So you are describing there, a hesitancy on the part of public health to become involved in anything to do with private sector industry, really. Yeah, I noticed this at least here in [member state].

6.	How do you define "health expert"? prompt] Who, with what expertise, remit, etc. A health expert, I would definitely define a person who has a very good knowledge of broad public health. But now I'm going to be a little bit contradicting my own words: probably starting by environmental epidemiology or health promotion. Coming from health promotion and environmental epidemiology. The health promotion view brings in the social and economic determinants and the environmental epidemiology brings in the environmental determinants, and that both are always needed for impact assessment. And also a person with open mind and open eyes, respecting the needs of development and the population. So now it's not nice to say, especially when it is recorded, but I do say it, not a health terrorist. [Interviewer] Health imperialist? Yeah. Okay. Okay. In central Europe, we, we use this term in past when I used to work back in MEMBER STATE. I got it a couple of times from others that I'm a health terrorist. And I learned that yes, I was at some extent that time, because I think we, the health expert, maybe I tell it very easily this way. We should, we should see the, the needs of different population elements, meaning younger people, older people by age, employed, unemployed, investors and employees, employers and employees, the whole society, not only our health aim, really, because if we, if we stick to the, to the health aim only, then we might cause social damage. In fact, so we, we, you know, a decision maker need to listen to all parts of the society, not only the health part. This is what I mean. And the health expert should have a good health knowledge, public health knowledge on environmental social epidemiology, health promotion, but also be open -minded that, okay, there are also other priorities in this society and we have to find the trade -off. [Interviewer] one follow -up. Do you think that's the job of the assessor, or is that the job of the policymaker, or the decision -maker? Because the decision -maker will be doing that weighing up that you're talking about, but they need to hear the view from the expert on biodiversity, on air quality, on water, and on health. There is something about the assessor providing the health perspective, but also being aware of the other topics as well. Yes, absolutely. I agree. I think it's more the assessor who should provide all these views without prioritizing. I don't know. Is it correct to say simply provide independently the individual views, the individual impacts. Of course, signalize the connections between the impact, but it's the decision maker who then needs to decide based on this and hearing the voice of the population also.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? I mean, a health expert needs to be invited as part of the team from beginning, definitely. That's the best if the team invites a health expert for the whole time period, and they work together, that's probably the only and the best way to do it, active engagement. And of course, there are parts when the health expert is silent and give him a clear task. For example, the pathway I mentioned at the beginning, invite him to the screening, invite to scoping, and tell them, OK, these are the determinants to change. It's your task now, describe which population and how and with what health impact is going to be affected.

8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. I think it should be the person or the company responsible for the whole assessment process. So the consultants, or the assessors.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? That is very tricky because I'm often thinking, but again based on EIA experience, about noise, about noise which is very well integrated, very well addressed in assessments, but I still have a kind of hesitation with it because why it is well integrated is usually given by the existing limit values. That we have the limit values and we have the process. I've seen one of the MEMBER STATE consultancy companies, I don't want to mention the name because simply that's not proper. They sent me when we had this discussion their process diagram, how do they assess noise and it was very well developed, really well developed. So something like that can be a good example, but there is a large element given by availability of the limit values and of course the process diagram is oriented. If you exceed the limit value here, then you go that way. If you don't, then you go this way. I mean this is very user friendly for the SEA and I think it's very understandable also for the population, but still even with noise, the never-ending question of limit values. I mean the personal susceptibility, the personal perception. Fine, I accept the limit value, but maybe I am more sensitive and it doesn't work for everybody. [Interviewer] That's really interesting because that's an example where there are, as you say, limit values and things can be quantified, but also, as you say, to bring in the fact that they don't work for everybody, that they change. So by implication then, what you're saying is that if we can be clear about the process and clear about what is being measured in health, then that will help with the application of the process. Definitely. May I just a second with noise. The other problem with noise is exactly the health outcome because there are several health outcomes starting with sleep disturbance, which is very hard to measure, and ending maybe with stroke, which we can measure based on hospitalization, based on mortality. But the decision pathway from on that point which health outcome to follow and how often and when it is relevant and when it is not relevant, that is very complicated, even in case of noise, even in case of noise.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. There are, in principle, I see two options. One is the very, very resource demanding and time consuming. Go individually, soil pollutant health outcome, air pollutant health outcome, and you end up with several health outcomes and several pollutants usually. Extremely time consuming and not necessarily relevant to do. The other approach, which I am but only theoretically trying to explore in close future, hopefully I started somewhere but didn't proceed that much, using instead of individual health outcomes, looking to the burden of disease

	measures and specifically the years lived with disability, the element of the DALYs or the healthy life years, which are composite measures combining all exposures and all health outcomes. I see a potential, and there are a couple of applications on the EU level, I know. I found three or four studies from Spain, from China, where they looked at health impacts expressing the Dalis or the years lived with disability indicator. Not really on SEA until now, but I see a potential there despite of the methodological issues around the wild, but that can be useful.

Interview 12

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? My experience is from [devolved nation state]. Within [devolved nation state] we have tried to broaden the understanding of health in SEA. It is traditionally quite narrow – for example, air quality, water and soil. For many years we have tried to influence this and we have had some success but not as much as I would like to have had. The key phrase is whether health impacts directly relate to physical environment. Most will but they affect a whole range of physical and other determinants.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. The way I think about HIA and health in other impact assessments is you don't start with outcomes you start with health determinants – at least consider, while scoping, a range of different determinants to health related behaviour. Consider impacts that relate to, for example, economic and social environments and commercial determinants of health and health services and equality. And on lots of different populations. A systematic approach to consider these – all systematically considered . My impression is the way we in HIA understand scoping is different to those doing health in other impact assessments. In HIA at scoping we run a workshop and we have a checklist – this to prompt discussion and not to be answered on every line – we then pull from that the key areas of impacts so scoping based on these discussion. Other forms of impact assessment focus on things being 'scoped out' – this is more restrictive. Our understanding of what is important to health changes all the time – to my mind, the checklist is for discussion. There seems to be a different ethos in health in SEA. [In answer to interviewer comment] An approach that is more focussed on regulation is one of the reasons. The training people have and their backgrounds are too. I have seen that people with a public health background seem to be more comfortable with a slightly more organic approach – maybe there is a different culture in environmental management?
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why?

	Good practice examples of health in SEA are hard to identify. I have not been involved in SEA for some time as there are too many barriers to changing practice – as I say above, I have tried to change practice but have not been successful. Perhaps I should caveat that we have sometimes managed a chink of movement towards some wider determinants but not all. But to answer the why question – maybe I'm just not very persuasive! Or haven't tried hard enough – personally I've got lots of other work and haven't engaged with this for a long time now. Also maybe it's about maintaining control of the SEA process. SEA has a statutory basis and HIA doesn't, I feel that health folk have no power in this. But conversely, I think some SEA colleagues feel that environment has low power compared to socio-economic considerations in decision making, and adding more on health in SEA would open up a pandoras box of socio-economic impacts drowning out environmental ones (I've heard environment described as 'poor cousin' and SEA as the chance to counter that). In SG, health gets by far the biggest budget, which reinforces this view I think. And inertia, and the expertise of people doing and scrutinising SEAs, and as I said SEA process/structure doesn't help identify differential impacts.
4.	What are some indicator of "good practice" for the consideration of health in SEA? What I would like to see is when you are scoping health in or out, I would like to see a stakeholder workshop using a checklist that prompts consideration and structured discussion. At least one person involved who has a public health background and who has an understanding of social determinants. This would inform the rest of health input to SEA. Inequalities very important – differential impacts hard to pick up – I'd want to see an explicit consideration of differential impacts. I have seen outcomes based SEA which have an indicator about outcomes but this is too broad – how are inequalities considered for each impact? Discussion and priorities agreed by stakeholders.
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with*] If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? This comes up quite a lot. It is often presented as a barrier: 'public health won't reply to our messages' etc. I'd say be clear about what you want – i.e. we want your input to and attendance at a 2 or 3 hour workshop. Don't just send a 100 page report for review. There is lots of public health data around – it is mostly available online. Use some of the data meaningfully and use data about determinants. Ask for targeted advice about things that are relevant and meaningful. There is a language difference between public health departments and SEA teams/departments. There are one or two key agencies for SEA – [interviewee] has been a member of this group – and so I was involved in structuring what they would look at. This applied to big policies and was a good position for influence.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. This is a tricky question.

	Lots of local authorities want to do HIA but they have no people. Need a good understanding of determinants of health; of health pathways; and of health (and other) data and, crucially, how this all relates to the proposal?? Other forms of evidence. SEA has different types of evidence – intervention evidence with respect to injuries etc literature evidence. Lots of data on the baseline and a policy mapping. SEA often has a matrix with the outcomes and smiley faces – the method is not always clear – was it filled in in a group or by one person in a cupboard. It would be quite useful to know that, wouldn't it? Same can be asked of HIAs.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? You can engage them. Be clear about what they are expected to do and the level of commitment. SEAs do have stakeholder engagement. Public health people are often willing to go along to workshops if it will have an impact on policy. It is useful to ask. Might be it's the planning team and not the SEA team who will identify the relevant people – make sure you contact public health. That would be preferable. For example, in the SEA of a local development plan, the planning officer might lead on SEA and so that gives opportunity to phase it so I would hope the planning team would have some link with the public health team – if there is some relationship then they will know who the person is. Existing relationships are so important and what everything is built on.
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. The SEA team – they have been commissioned to do it. Also the planning team. If public health is involved. In [devolved nation state] the consultation authorities are sent the various reports – there is a formal responsibility will go to [the consultation authority]. [The consultation authority] have replied to say too much of wider dets are being covered. If there is a big issue about AQ it will go to AQ but no exp of wider dets of health etc. Not aware of going to boards
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? The consultation authority is very important – [the consultation authority] needs public health people. It has teams whose main job is to review SEA reports. If [the consultation authority] take on new people or if there is a new consultation auth e.g. [the national public health body]. This would need appropriate resource. This would make a difference. If [the national public health body] had this responsibility they would link to boards
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. In a sense health is central to most of other topic area. Do scoping at beginning – AQ chapter takes it so far – health takes output of AQ plus other issues and then reports I'm trying to think of a chapter that doesn't affect health – they all do. The health chapter would pull out the relevant issues and add on other aspects – eg equity – much more about populations that would be affected.

Interview 13

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? I find the title or the name, Strategic Environmental Assessment, a bit misleading and somehow limiting, because it speaks of environment only. And in the past, I just thought it's something in the environmental dimension. I didn't even think it has something to do with health, other than maybe indirect and whatnot determinants of health. So that's my first overall comment on how I find health, maybe already in the title, it's a bit neglected, but that's the same for maybe social aspects. So that's on the term. And then for the one I have been exposed to, health was sort of considered equal to the social and to the environmental dimensions. Although I'm unsure if this is, or I'm suspecting, this is because NAME is doing it, which is considering health and he's doing it with us, which are health experts. I can imagine that maybe in other SEAs, it's maybe as neglected as in environmental impact assessment in general, but that is speculation.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc. As in maybe first of the definition. I think we should apply the definition as we do in the health impact assessment that it's comprehensive and not only health outcomes, but also health determinants. And then with the social and environmental determinants, you know, this comprehensive and systematic approach to health, sort of. That's in terms of the definition. And then I think how the second part is, I think it should be equally important as the environment and the social aspects.
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why? I would advocate for evidence -based, to the extent possible, I would say, because I know it's sort of a high -level assessment and time constraints and budget constraints and so on. But yeah, make it evidence -based to the extent possible. What I think is very important is interdisciplinarity, so that different disciplines, not only health, environmental, social and regulatory and whatnot, are part of the team. How they are part of the team can be defined, you know, can be more, you know, as consultants, reviewers or whatnot. So, the interdisciplinarity. The other thing which we didn't really like in our SEA was that the stakeholder sort of consultation, we wanted to make it a real stakeholder consultation, where, you know, basically everyone could participate, and our client was a bit more restrictive in who they wanted to consult, which ended up in something that was not really a stakeholder public consultation, it was more a few stakeholders or a few experts, which I don't consider good practice. [interviewer] Could I just go back to your mention of evidence? What do you mean by evidence? As we try to secondary literature and our secondary data so literature for us in the health field it's also like scientific articles but then also grey literature as in like reports and what not and then

	always sort of reference it but then also stakeholder input it's also primary data basically and evidence -based. So build it on available data but then also reference it that it's clear where it's coming from and that being said we had a couple of times where people told us we actually have a regulation but we didn't find it you know we didn't because you know it's difficult to find all the regulations in REGION countries maybe but with the evidence base we had sort of a trail okay we have found it there and then they saw okay we didn't actually upload it on the internet our new regulation and whatnot so it just helps the robustness and the credibility of the assessment.
4.	What are some indicator of "good practice" for the consideration of health in SEA? I think for me and I'm applying a bit my knowledge from health impact assessment and environmental impact assessment. For me I would look if health is considered as important as for example the environment and the social. That being said it also depends on the plan or the policy or whatnot if it's something in the environmental sphere it's normal that environment is more prominent but just that it's considered proportional to the relevance of the policy. Then the other indicator for me would be whether you know they only go for, for example, air quality and soil quality and water quality or if they go to take this comprehensive approach with all the determinants of health and all the health outcomes and the indirect and cumulative and whatnot. That would be the indicators for me. And maybe, to be honest, also whether a health person or a health expert was involved or not.
	Defining “Health Expertise”
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with?* If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? Yeah, yes, for us, yes, definitely.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. Probably depending a bit on the proposed policy? It needs a specific expertise, but more generally speaking, a public health background. Impact assessment, I would say that public health background is more important than the impact assessment background. Maybe some would disagree, but impact, you know, you have an impact assessor that is leading maybe the SEA, they can still guide a public health expert to how to look at things. In terms of medical, what is definitely good is expertise, experience, someone that has experience already. And whether it's medical background or not, it's definitely an advantage, but not always necessary as well. I'm a bit biased. I think it's an advantage if you have a medical background, but that being said, if you have a medical background but no public health background, then it's not very helpful. For me, the most important probably is the public health. Honestly, I think the medical knowledge is just additional knowledge and you see some pathways and what could happen in terms of health to a person that maybe I won't see. You know there's a lot of medical stuff, I don't know, pathways of this exposure can lead to that that I don't know. It's just an advantage but yeah.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? I think to involve someone that is a public health expert, either as a full team member or later at the review stage or so, again, depending on the project. I think I would start with the health impact assessment experts.

	And where I would maybe also look is in the public health departments. That being said, I mean, there are definitely public health people, maybe not impact assessors. Universities, too.
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. It's a shared responsibility from the assessors themselves but then also from the proponents or yeah, yeah you get it and in an ideal scenario also from the affected communities um yeah which obviously then they would have to be given the opportunity as well as have themselves the capacity to bring it up sort of yeah which is not always evident but yeah so I think it's a bit everyone shared.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? I think here I'm applying more my experience from the HIA that we did like the integrated assessment that we did. I think the integrated because we did it really with the environmental experts and social experts. We just learned a lot from each other in methodological advice, but also having more stuff on the radar, like more pathways or interlinkages on the radar. What we can learn from them directly, I feel like they have a bit of an advantage in terms of your regulatory, because it's just a regulation in most countries. But I'm talking actually from a [region] background, because that's most my experience. They have a bit of an advantage because that's what most clients want is environment and social. I don't know, but I feel like in terms of approach, we do it systematically. We follow the same sort of methodological approach. I just think the interdisciplinarity and the fact that we do it together at the same time is very, very beneficial.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. Yeah, it's really doing it together at the same time. They have really nothing on the radar in terms of what health effects that could eventually have. So they learn more from us than we learn from them because we always work with their data and their reports and whatnot and they didn't ever have the feedback that you know this could be the health impact of that and that. So it's really working in interpersonal disciplinary teams that I would advocate for. And then obviously the policy changes that health is a requirement as well, which will then you know from top down like sort of make it happen that it's going to be interdisciplinary.

Interview 14

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? Human health is listed within SEA process but it is does not define it – so is open to interpretation.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment,

	economic, social and community context, individual characteristics and behaviours, health system; etc. It should be considered more broadly and not just human health but population health with a definition – social determinants; commercial determinants, inequalities and not just environmental health determinants. Other questions. What level of detail? How is this set out? There is scope for bias to creep in e.g. housing can be good for health but it can also be bad. Who is in the population and how will they be affected? The SEA or the Plan might on the surface, say the right things but you need to dig deeper. Does the assessment look at positive and negative? Does it talk about vulnerabilities? This is a good way of looking at things. For example, the SEA of a climate plan – does it critically unpick these issues? I'll be looking for population data; for the use of evidence and maybe also hazard pathways. Some of this will be in EIA rather than SEA. Above all, does the assessment strengthen and improve the quality of the plan?
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why? I immediately think of two or three examples: a [national] SEA and three SEAs of Local Development Plans. They considered health and inequalities and integrated them into the SEA, whether by doing standalone HIA and then working it in; by having health within from the start; stakeholder workshop. They considered the wider determinants - some may be scoped out, but all were considered
4.	What are some indicator of "good practice" for the consideration of health in SEA? Three indicators of good practice that I like to see: Holistic approach to health; Attention to the wider determinants; and Consideration of population groups.
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with?* If so, who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? All the SEAs I mentioned sought health expertise. They all included specialists from the local public health teams. [The interviewee] advised at national level [national] plan - health was involved right from the very start. For the local area plans: from start – workshops when preferred strategy was identified; put it in delivery agreement right at the start. Health proofed the deposit plan – the deposit is the final plan – not much influence at this stage e.g. tweaking a word here and there. Not much influence but the influence you do have is more likely to stick. That will influence the monitoring criteria and the policy. Sufficient? If it comes in the delivery agreement at the start then it sets the direction of travel. There are a couple of stages where it is also possible to feed in – the first stages are tricky as all is too fluid. The preferred strategy is when it's possible to feed in details.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc.

	Health expert? Somebody who is qualified to a competent level. Problem is that there is no definition – could be a medical doctor. For me we are looking to the public health workforce – by focussing on the medical workforce we are overlooking a huge swathe of the workforce. Health expert is an easy phrase to throw around but there are different levels to it.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? Up front at the start. If it's not there it can't follow through.
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc. Everybody's – those who write the plan – those who are commissioned and paid to carry out the assessment and those who review it Define proportionate – we might have ideas about how to do it. [regulator] have had training – their process is more flexible. Proportionate means flexible not reductionist.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? I don't see very much integration in the SEA reports. Health is often dumped into SEA reports. If they can have their own chapter, then why can't health? I see SEA reports in [devolved administration] with no separate chapter. This makes it hard for the health specialist who is reviewing to unpick it all. This is a bigger burden on the heath sector. It is hard enough to get them involved anyway. Or the health aspect might be reviewed by an Environmental Health Officer (EHO) who is happier with a focus on environmental determinants. That is not their fault – it is their expertise.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. By signposting or making explicit (including scope, definitions, etc.). If things are clearly scoped out then that is good but give an explanation. And allow for things to be scoped back in it can be proved that they should be. One thing that we have not mentioned is the definition of the word *significance* – a lot of what we have talked about hangs around that word.

Interview 15

	Defining "Health"
1.	In your own words, how is health currently defined / considered within the SEA process? Starting with the problem. It's not defined. The directive and protocol talk about health but does not define it. WHO has an internationally agreed definition of health. It goes beyond environmental determinants of health and as health is influenced by environmental determinants we think this is the one to use.
2.	How do you think health should be defined / considered in the SEA process? [prompt] i.e. specific physical and mental health outcomes; distribution of outcomes, exposures, vulnerabilities, interventions, within and between populations; physical environment, economic, social and community context, individual characteristics and behaviours, health system; etc.

	From my perspective it would not only be looking at environmental determinants - which you have to do and which should not be excluded – it depends on the plan. Should always look at the population that is affected and at vulnerable groups – the distribution of effects and how it can be managed. Then have to see dependencies on the plan, and to see what can be done and how it can be managed. Also – do not only look at negative effects.
	Defining "Good Practice"
3.	What are some examples of "good practice" that you recall from the SEA report for the [*insert name of the policy/programme they were involved with*]? Why? At moment I am looking at report from [city] – it's a very strategic project so it's looking at different options for a new airport in [city]. Automatically in discussion, they came up with health issues. Mainly related to noise and air pollution. Also economic values – where it will be more profitable to have an airport? Environmental factors are very important. So is cconnectivity. Polluted streets – will bring and be caused by traffic as well. The airport will exacerbate traffic
4.	What are some indicator of "good practice" for the consideration of health in SEA? How do you define indicator? First indicator is that it starts at the beginning and not when decision has been taken so health is really involved in the main discussion – this will inevitably raise health issues. So, for me it would be at the beginning.
	Defining "Health Expertise"
5.	Was anyone with health expertise engaged in the SEA process [*insert name of the policy/programme they were involved with?* If so, Who provided health expertise? At what stage of the SEA process were they engaged? Did you feel this level of engagement and expertise was sufficient for the effective consideration of health? From research we did the environmental authorities tend to say yes health is involved, but looking at the health consultants they say not really. Health is usually consulted when all is done. This is something that should change. The problem is that you then need health experts who know about the planning arena. They are usually in everything else – e.g. during C19 they were all occupied. At city level they are not necessarily involved in planning but in water and sanitation – there are simply not enough trained in environmental assessment. Environment and health is one topic among many others. Climate change is leading to a growth in discussion about environment. Finding the health experts can be the problem.
6.	How do you define "health expert"? [prompt] Who, with what expertise, remit, etc. I'd say real training in public health – medical also but especially public health. Maybe not even full university study but at least some additional training.
7.	How can appropriate health expertise be engaged in different stages of the SEA process? The important thing is to get involved at one of the early stages and not only when report is done. To work together with environmental expert – to use results they are coming up with and vice versa. If all is left to the end then health has no real influence.
8.	Whose responsibility is it to ensure that health is proportionately and consistently considered within SEA? [prompt] the consideration of health corresponds to the potential impact, outcomes, inequalities, etc.

	All involved. A: in the terms of reference – health should be there – and it should be stipulated that health is integrated. Responsibility of the one who commissions the SEA and who takes up the contract. B: of the authorities approving or deciding on the proposal. That is what the regulations say. Here we come back to the problem of what is health – how it's defined and how it should be assessed.
	Topic Areas
9.	Are there lessons that we can learn from how other environmental topic areas are integrated into the SEA process (i.e. air quality, biodiversity, cultural heritage, etc.)? If you look at biodiversity – lots of effort is rightly put into these studies. If there is so much effort, then why cannot studies be conducted into population? There are few SEAs with real health profile and then look at different groups. [in response to question from interviewer] Discussion about One Health: this is a complex topic with the main focus being on anti-microbial resistance (AMR) (unfortunately). This may be going beyond what is proportionate. Lots of tools around with air quality and the link with health is clear and can quantify on whole population and on different groups. If you don't look at climate change then you are missing the big point – all has health impacts – need infrastructure in place to deal with impacts.
10.	How might health be considered within and across other topic areas? [prompt] i.e. impact pathways related to air, soil, or water quality also determine health outcomes. Soil pollution is an example. What happens further on? e.g. contaminated sites – this gets to ground water – or to surface water – does it then come up near households because they are using the well. It's much more than just soil. And then what do you plan to do with the soil?