Haskoning
Enhancing Society Together

The Bright Future of EIA

Impact Assessment as a catalyst for sustainable development and informed decisions on complex future challenges



Introduction

Strategic Environmental Assessment (SEA) and Environmental (and Social) Impact Assessment (EIA or ESIA), hereinafter collectively referred to as IA, can and should be a catalyst for delivering sustainable development. It is a highly valuable tool in the decision-making process and could have a major impact on the urgent and complex challenges ahead. However, IA faces significant challenges

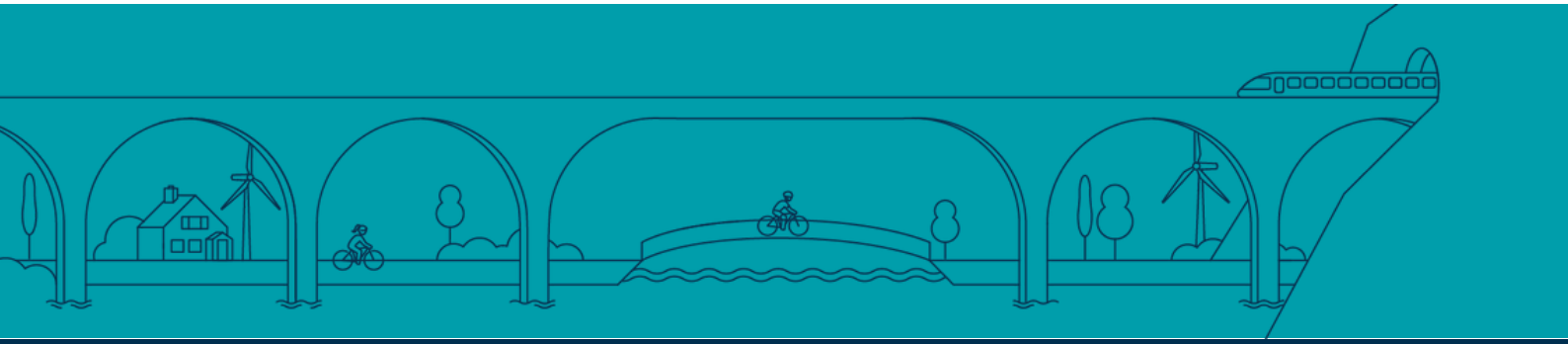
The workload has been increasing in recent years, while the availability of well-trained and experienced IA experts has diminished. Digital and technical developments offer opportunities but require time to fully explore and implement and will not provide a solution for everything. The ever-expanding scope and level of detail demanded in IAs cause many to view it as a cumbersome, time-consuming, and expensive hurdle. Rather than as a useful tool that helps develop good policies, plans and projects. In short, a different approach is needed to unlock and maximise the potential of IA. This whitepaper explores how this can be done.

Background and purpose
This whitepaper is based on insights gained through years of practice, conversations with colleagues at other consultancy firms, governments, and reviewers, and a range of publications, some of which we cite here. Our goal is to raise awareness of the underlying issues and provide a starting point for possible solutions. To do this we must establish a results-oriented dialogue within the field, making full use of the knowledge and experience available. As an industry we can work towards a better approach and spotlight the value IA can add to the decision-making process.

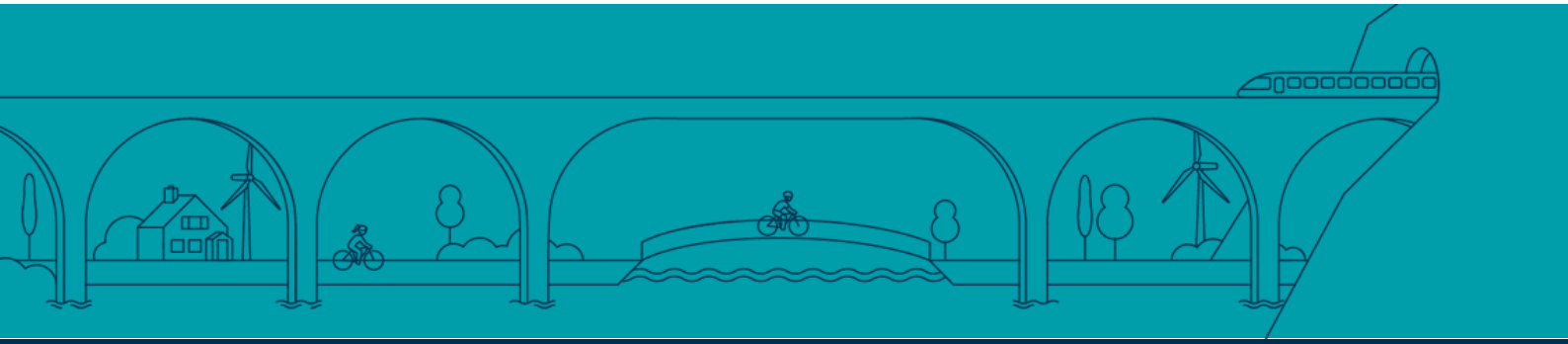
EIA's role of major global challenges
This white paper focuses primarily on solutions to some of the issues currently preventing the effective and efficient implementation of the IA process. We believe significant improvements are possible without a need to change the current (legal) frameworks of the instrument.

There are also questions about the role of IA in today's world on a more fundamental level. Is its current design fit for purpose in tackling global challenges such as climate change and biodiversity loss? Is it flexible enough to contribute to the various transitions the world is facing? Can it contribute to pursuing the Sustainable Development Goals (SDGs)? And is IA robust enough in its current form to remain relevant in the current populist or authoritarian political climates in various regions of the world?

These highly relevant issues deserve their own consideration so will not be directly addressed in this paper. Here we will focus on improving the effectiveness and efficiency of IA within the current framework.



The ideal vision for IA
IA focuses on the design process and decision-making around plans and projects with significant impacts on the environment. IA must be integrated into the process from the start and be as concise and accessible as possible. Only then can IA provide relevant information at the right time to make choices about fundamental questions such as: How likely is it that a plan or project will lead to unacceptable environmental impacts? Do we as society (decision-makers, stakeholders, public etc) still want to proceed with this plan or project, given the expected environmental impacts – can the benefits and cost outweigh each other? Or are there distinctive (realistic) alternatives, variants, or measures that significantly mitigate the environmental impact? Perhaps we should go further and ask questions like: In what way does a plan or project support resilience, regeneration or justice?



Where it hurts

Society faces significant challenges in keeping the world around us liveable for ourselves and future generations.

IA plays a crucial role in the development of many plans and projects that affect our environment. IA can offer opportunities for better planning and decision-making, but it can slow progress. This is due to several factors. We will discuss four of them:

1. Scale and complexity of challenges
2. Proportionality in IA
3. Scarce expertise
4. Insufficient use of the digital toolbox.

The first factor also briefly provides context as to why there is a high urgency to take a critical look at the current way in which IA is undertaken. This urgency stems from the unprecedented scale and complexity of the issues at stake.

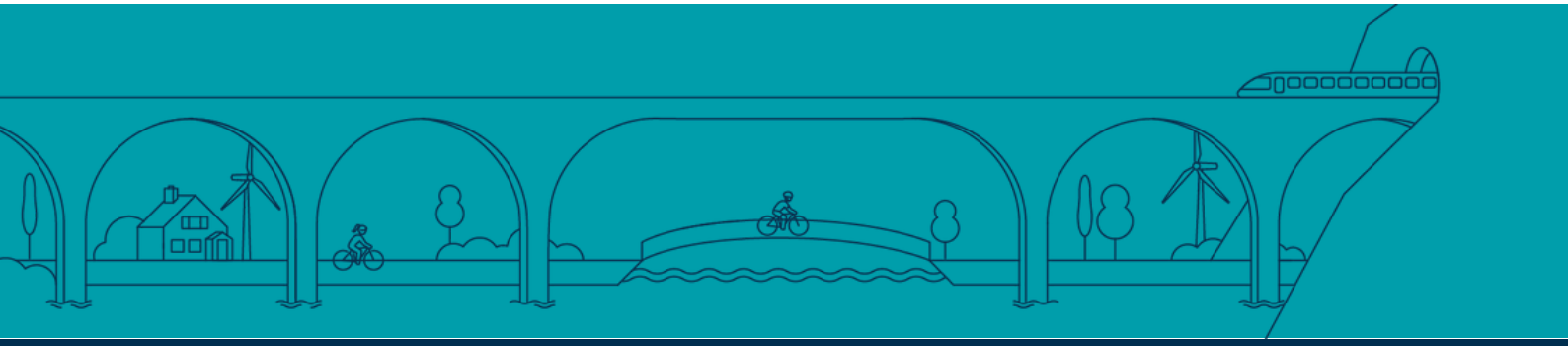
Scale and complexity
Just as society and decision-makers are, IA professionals face multiple interconnected challenges. Our attention must be split between the energy transition, climate adaptation, food transition, use of rural areas, nature conservation, water quality, and a massive housing task alongside 'regular' spatial-economic developments. In recent decades, these demands have become increasingly urgent, and pressure on our climate, environment, nature, and living space continues to increase[1]. The degree of complexity increases as factors become ever more interdependent.

The recent urgency has translated into the multitude of new plans and projects that must be realised in the short term. These include spatial plans, permit decisions, heat programs for municipalities, and regional plans and programs such as the EU's Natura 2000 management plans to name just a few.

Proportionate IA
For many years, both nationally and internationally, the need to properly define the scope and depth of an IA has been discussed. Yet in practice they often still cover too many topics and too many details. Whilst well-intentioned, the ever-broadening scope of the IA is leading to information overload causing the IA to miss its goal.

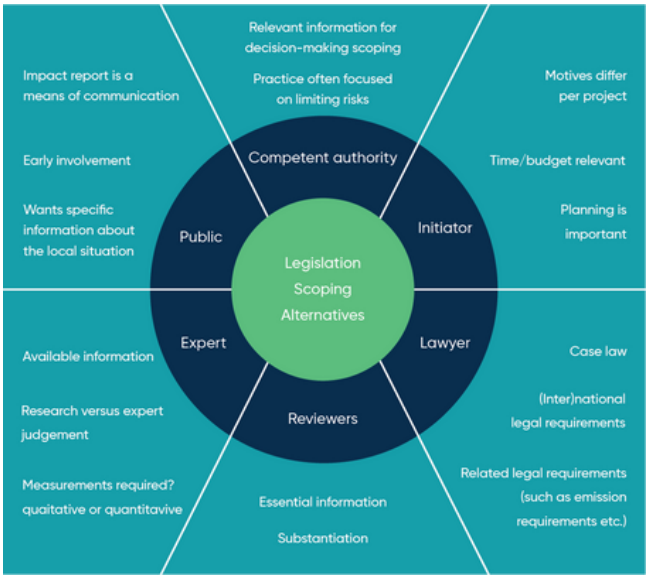
How far should realistic alternatives be considered within an IA?
How far should a proposer go in considering alternatives for an initiative? If a competent authority is over-demanding, this leads to an increased research burden and thus time and costs. On the other hand, limiting the number of alternatives to be considered can also be undesirable when realistic alternatives are excluded for various reasons. This question is therefore difficult to answer in general terms but deserves a critical look in practice.

[1] E.g.: IPPC (2023); Climate Change 2023 Synthesis Report, Summary for Policymakers



Scope and the role of the key actors
Logically, the scope of the IA follows the themes that are considered important in society and play a significant role in the specific plan or decision. The competent authority must therefore always assess whether the requested information is truly essential for decision-making. This part of the process can be subject to attempts to influence by key stakeholders keen to align findings with their specific interests (see figure below). In practice, this often results in too broad an approach where not all information generated is relevant or required for decision-making.

It is crucial to find and maintain the right balance. Varied interests must be taken seriously but might not qualify for equal weighting. The competent authority must have the courage to make substantiated choices about what should and should not be investigated.



Key-actors in the process and the main factors influencing their approach to IA [2]

Detailed and quantitative
Also contributing to the research burden is the increasing level of detail and the trend towards quantitative research. Several factors play a role in this, such as:

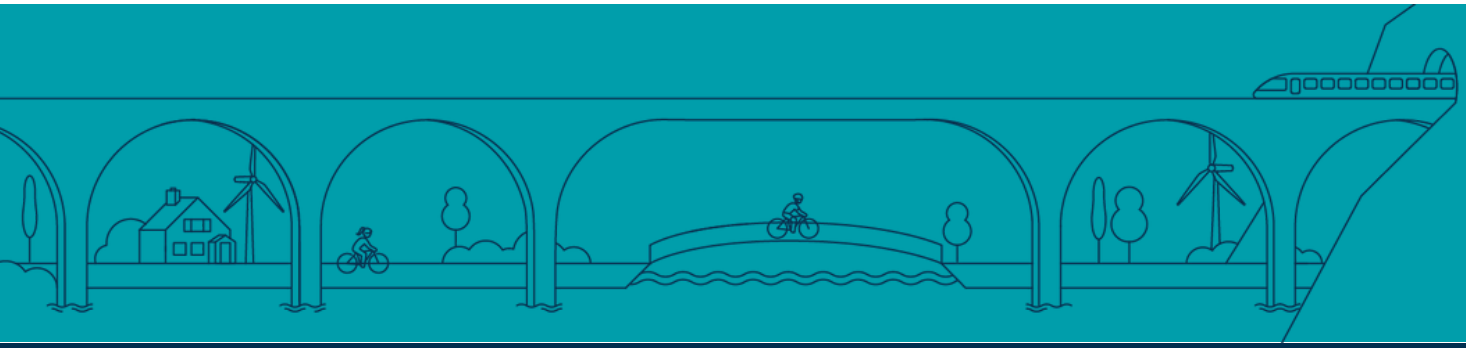
a) More is better
As professionals, our intention is to do everything as well as possible and avoid risks. This quickly results in an approach where 'more is always better', and 'quantitative research is better than qualitative'. Quantitative research takes up time and resources and generates more information yet in many cases it might not contribute to better decision-making.

b) Legal compliance
In our view, a misconception has grown up that IA must demonstrate that a project complies with laws and regulations.

In The Netherlands, this is not a formal requirement. It would be interesting to check whether IA regional legislation requires an IA to prove a project is compliant with environmental minimum standards. If not, then the IA could just show compliance is plausible with less detail. The burden of proof for compliance is subsequently transferred to the project decision itself and only for the preferred alternative.

c) Threat of litigation
Stakeholders are increasingly using courts to challenge development, causing projects to be delayed or even halted. To guard against this and strengthen any defence, extensive, detailed and quantitative research is often undertaken as a precaution.

[2] Source: Paul Eijssen, Sandra Mols (2009), Optimal! But for whom? Different actors, different perspectives, Toets 04 09, 27-29



This additional information often makes it more difficult to understand the true implications of decision-making (see below), which then detracts from the quality of that decision-making. As a byproduct, a more extensive and detailed IA can increase the likelihood of inconsistencies creeping into the IA, which can then provide opponents with grounds to successfully challenge the project or plan in court.

Making IA accessible to everyone
One final point we want to make is that information overload does not help the reader. Information should be accessible to everyone; readable, preferably also visual, understandable and concise. Whilst this sounds feasible in theory, in practice it is a significant challenge to achieve for research that has become so extensive, technical, and legal in nature.

Omitting information can help
Researching alternatives, the scope of subjects to be investigated, and the level of detail to which that assessment is conducted, all contribute to more rather than less being investigated in an IA. The IA process lacks a mechanism or incentive to stop. As a result, the IA is at the mercy of both the best intentions and risk exclusion and a mindless copying of the ingrained working method. As an IA community (and the actors involved) we don't challenge ourselves enough about this. Perhaps we simply do not dare to hit the brakes. As an industry, we need to convey that omitting information that doesn't impact decision-making, or is subordinate, can greatly help the decision-maker.

Scarce expertise
The IA field faces a growing resource crisis: the scarcity of qualified professionals with specialised knowledge and expertise. This shortage spans the entire IA ecosystem, affecting practitioners, regulatory authorities, and reviewing agencies alike, resulting in diminished capacity where it is most needed.

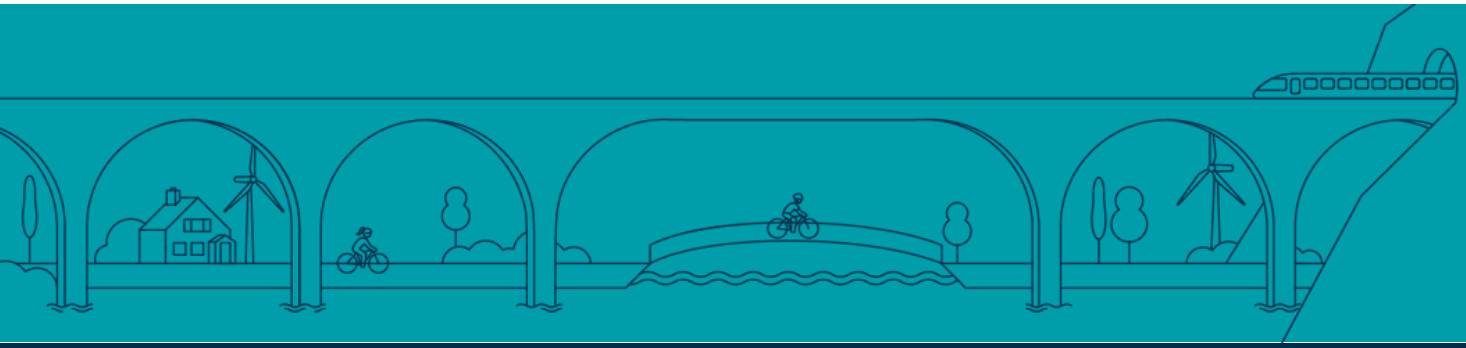
Decades ago, IA was high on the agenda. There were specific courses at universities, experts worked full-time in the field, ministries had departments focused on IA and manuals were published.

For years now it is difficult for governments, consultancies, and other organizations to maintain a high level of knowledge due to a lack of knowledge sharing and transfer regarding environmental impact assessment in education. It's often not a priority[3]. From experience we see that newcomers to the field are trained by colleagues. Support from governments has been reduced to a minimum and experts with years of experience are retiring. All this while strategic expertise is needed to tackle the major issues mentioned earlier.

In addition, there has been a shift of expertise from governments to the market and the situation at lower levels of government where IA is only sporadically encountered, no expertise is built up and maintained.

This decline in expertise might be the result of a lack of attention to the IA field in university and college education. Or perhaps it is better formulated by saying that society isn't asking educational institutions to pay more attention to IA. Something that has been noted by the academic world itself[3].

[3] Jos Arts (2023), Knowledge about EIA underexposed in the Dutch education system, Environmental Impact Assessment Annual Report 2023 (Ministry of Infrastructure and Water Management).



Thanks in part to this lack of exposure, and to the IA's reputation as a bureaucratic 'paper tiger', the pipeline of people with the required level of expertise is drying up. And with senior IA professionals retiring, the talent pool is becoming increasingly shallow.

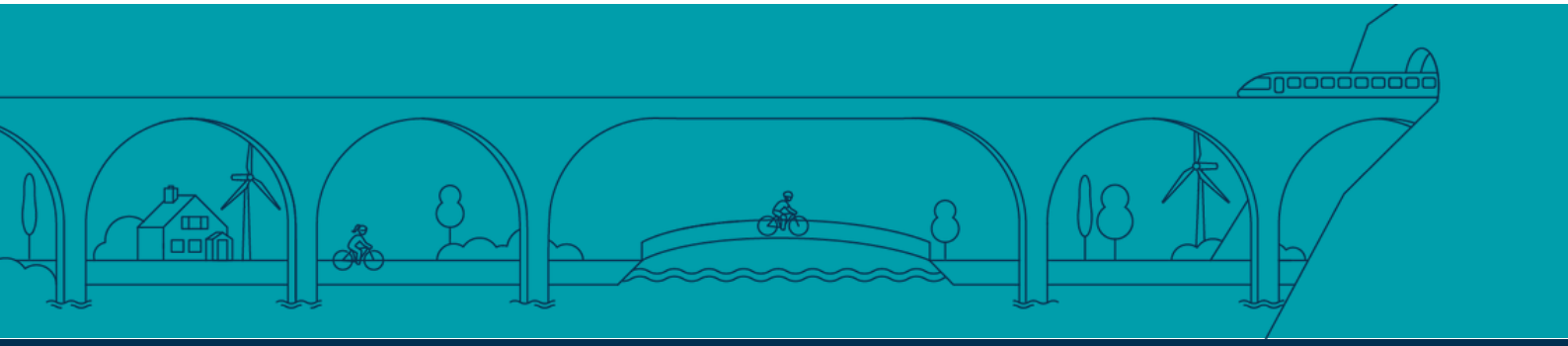
Without good professionals, there's a risk that IA studies may not be completed quickly and effectively, or that the work simply remains undone. As demand increases, this problem will only grow larger.

The Digital Toolbox
Digital knowledge and technology offer exciting opportunities but are still in development and are not yet fully integrated. Processes are generally becoming more data driven. This can significantly enhance quality and lead to substantial efficiency gains. Digital reports can replace paper reports and make the information more visual and accessible to a wider audience. Digital participation could be used to involve a wider audience during the IA process. So, technology offers a growing range of opportunities. For example, after a cautious arrival use of artificial intelligence (AI) is increasing rapidly, for instance in combination with geographic information systems (GIS).

However, digital tools, with AI currently in the spotlight, are not a panacea. With all the possibilities of AI, and threats of course, human involvement remains crucial. For instance for complex spatial decision-making: models and simulations can optimise spatial use, but only when there is broad consensus on values and goals. Progress requires robust discussions based on reliable information, AI-generated or not, where experts and stakeholders can share perspectives and learn together.

Ultimately political decisions are necessary and these cannot be outsourced to AI technology, which lacks the capacity to generate genuine political will or draw upon lived experiences essential for meaningful solutions. Despite advances in AI, human expertise remains indispensable in IA where it concerns, for example, interpretation and judgement, stakeholder engagement and ethical and value-based decision-making. However, standardisation and automation offer good opportunities to facilitate or improve certain parts of IA and to limit the tedious, routine work, but not to take over the entire process.

Digitalisation as a tool for monitoring and evaluation
Digital integration can also give a boost to a part of IA procedure that has almost been completely overlooked for years: monitoring and evaluation. This includes recording monitored environmental information in databases and collecting and assessing information to test and improve prediction methodologies. Although monitoring and evaluation is mandatory, it hardly happens. As a result, we in The Netherlands, have not recorded over 35 years of relevant information that could have been used in subsequent projects. Consequently, we have learned little from practical experience. Herein lies important opportunities for a more efficient process in the future and digital tools can help to finally start learning from previous processes and use that information to optimise IA and reduce the impact of a future IA brain drain.



Towards solutions

The question is: How can we innovate IA in such a way that this valuable instrument becomes a sought-after tool to aid decision-making?

Some of the factors described in the first part of the whitepaper are also discussed in this next part although in a slightly different order.

About proportionality: Simplifying and reducing the IA task
IA can, and must, be simpler, both in terms of scope and in the required level of detail. This will lead to a concise and transparent result with less effort and costs.

We see the list below as steps towards achieving this. In embracing these steps, we can harness the potential of IA to achieve significant gains in time and money which will lower the threshold for key-actors to (want to) work with the instrument.



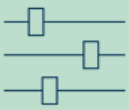
Competent authority as well as practitioners must ensure that the information and analysis required and/or provided is truly necessary for understanding and managing potential effects. Good guidelines are often our best hope for ensuring a focused and efficient IA but there are more options to help achieve greater efficiency in impact assessments[4].



Early deployment of the IA process combined with high-level consideration of realistic and relevant alternatives. This brings problems, opportunities, and alternatives to light early, and is precisely where IA proves its value.



We should move away from the idea (or habit) that alternatives in IA must be equally elaborated on. Often, a qualitative consideration when weighing up realistic alternatives makes it sufficiently clear why a particular preferred alternative is chosen. With more detailed and quantitative research only added if necessary. This approach, from a qualitative assessment at the beginning, limits the workload within a project.



We must commit to monitoring and evaluation, learning from projects, and structurally building a database of the information that is collected from each assessment.

[4] Bonnell, S. (2025). Chekhov's Gun and Occam's Razor: improving impact assessment efficiency for renewable energy developments. Impact Assessment and Project Appraisal, 43(3), 188–197

Better use of digital technology and data
The large number of IAs for plans, programmes, and projects, which can be complex in nature, requires good experts. And these experts could certainly use help. Therefore, the IA community should embrace all possible digital technology and knowledge that can make the practice of IA more efficient, effective and attractive. Digital systems can alleviate routine work and create order in the multitude of information or solution directions. They can also check whether anything important is overlooked or if there are duplications or contradictions in the IA report.

This digital assistance is not only in AI but also in the use of GIS, databases, and a range of other tools and visualisation options. The latter can present the often extensive and complex information in a way that stakeholders without specific technical knowledge can understand.

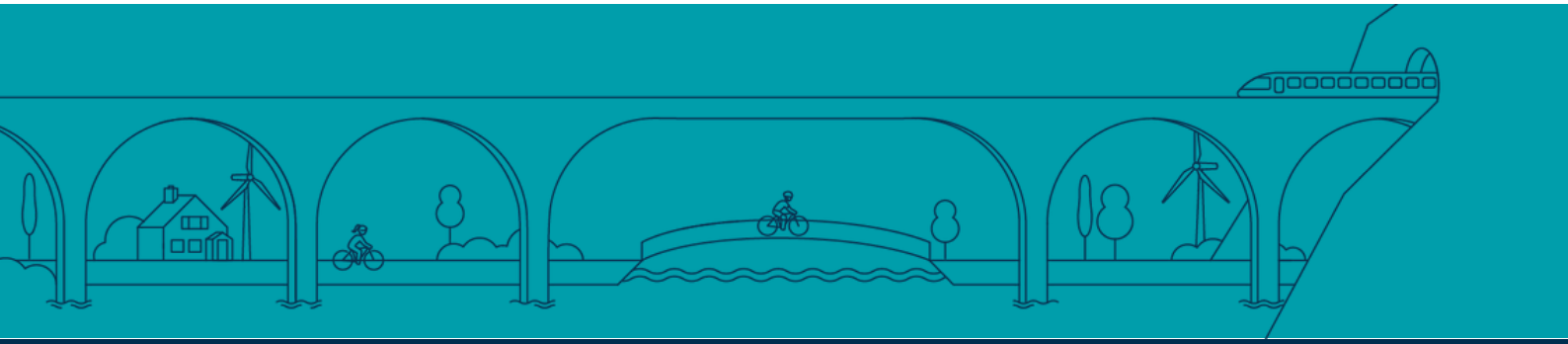
And this development is broader: the many available tools and systems can increasingly be connected, as an integrated part of the entire work process. The opportunities and possibilities are great. We're already seeing this, and the future is promising.

Of course, we must guard against pitfalls that come with these new possibilities, such as generating biased information that can influence decision-making.

The digital toolbox is not only good for the IA process and supports meaningful participation. It is also a must for attracting new generations of experts. For them, the combination of substantive knowledge and digital tools increases the appeal of the profession.

Ensuring sufficient and enthusiastic people
As already discussed, there is a growing shortage of knowledgeable IA professionals, among authorities, reviewing agencies, and consultancy firms. In some parts of the world e.g. The Netherlands, the IA profession has virtually disappeared from the education landscape. In the Netherlands at least, the availability of postgraduate courses and training in the context of lifelong learning (LLL) can be counted on one hand. Generating interest and improving knowledge amongst the next generation is essential to the profession's future.

Training, training, training
Put simply, we need to train more people, in various ways and to reach different target groups – such as those working for municipalities, reviewers, practitioners etc. This training should range from higher vocational education that is really focused on practice; university education with a well-established link to practice; postgraduate education for professionals who want to retrain or further their education, and shorter training courses for people who are indirectly involved with IA, aimed at different roles within the IA procedure. The responsibility for this sits with all industry contributors. Consultancy firms, government, and reviewers must engage with educational institutions to ensure the educational offer aligns with market demand. It is important that training programmes not only focus on the formal side of IA but also on effective practical application, where it is crucial to distinguish between major and minor issues. And preferably also with attention to a more visionary view of the long-term development around IA in line with developments in society.

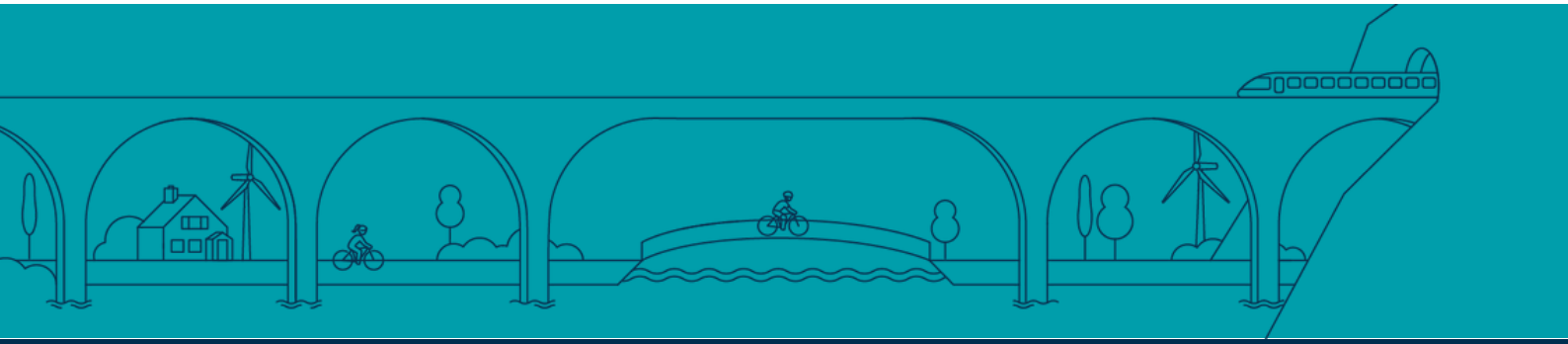


Cherish experience and blend it with new talent
There are still veterans of IA operating in the field. Whilst they may be nearing retirement many still have a desire to contribute to the industry and work on challenging projects. They also have invaluable knowledge and experience to pass on to the next generation. A more flexible approach to retirement may help retain these stalwarts for longer. Improving mentoring opportunities and creating channels through which information can be more easily passed would allow us to harness both the experience and knowledge of the older generation and the environmental awareness and digital readiness of the younger one. Providing the right coaching and training for the next generation will lay the foundation for a bright future for IA.

Cracking the code
Just as the four factors discussed are intertwined (See 'Where it hurts'), so are the solutions. Smart digital systems improve the process, saving time, generating useful insights and highlighting anomalies. But they are not the whole answer; to use them well, you need people who have mastered the subject matter and are therefore positioned to interpret, select and judge the outputs. At the same time, the interaction between content and digital tools makes the profession more interesting, and technology can take over much of the routine work. That is a positive in the search for knowledgeable and motivated talent in the challenging labour market.

Early deployment of IA and limiting its scope and depth to a proportional level makes the workload more manageable, saving time and money. It is also good for the image of the process, both in the labour market and in the political-administrative world: positioning IA as an instrument that does not irritate but inspires.

At the same time, if IA is not made more concise, the willingness to engage with the process will be limited.
So, it is about the sum of everything to unlock the potential of IA for a governable and liveable environment. We need to adjust the various levers, while carefully considering the interrelationships. It is like the code of a safe: all numbers must be correct, otherwise, the safe will not open. Finding the code is our joint task.



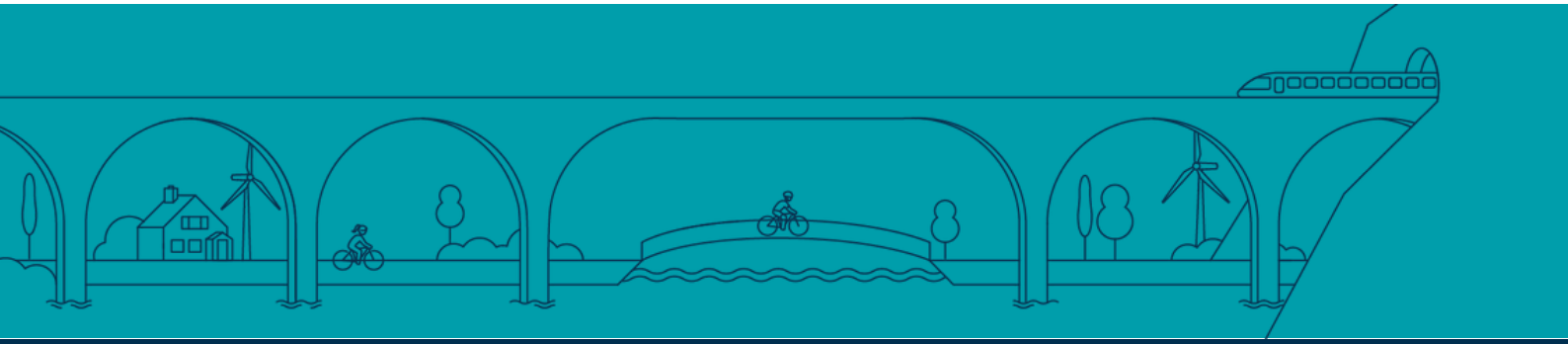
The next step

In 2024, several renowned IA professionals wrote an interesting article with the provocative title 'What would environmental impact assessment look like if we started from scratch today?'[5] Apart from the suggestions in the article, the title itself is valuable. What would we do if there were no such thing as IA and we started with a blank sheet of paper? What would IA look like? What incentives would we build in to stay on course without placing the process in a straitjacket?

To improve the instrument, we must dare to think outside the box, even considering unorthodox solutions. This will allow us to refresh IA to deliver a useful tool that is attractive to both project owners and IA professionals alike. Compact, targeted, and flexible, with smartly integrated digital systems, and included in plans and projects from the start. Such an IA ensures better decision-making around the major challenges we face all around the world.

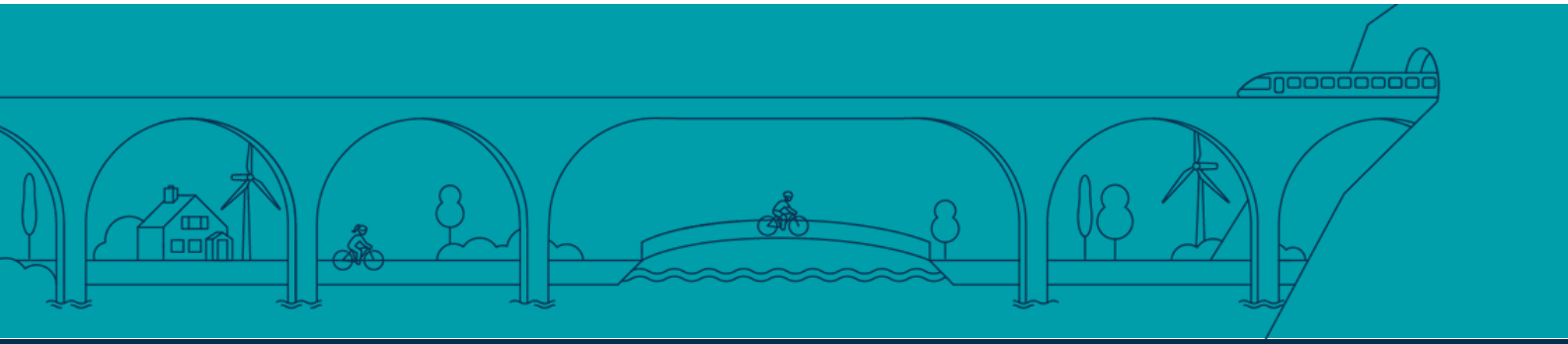
It is urgent that as an industry we work together to achieve this. It will require energy and motivation from all involved parties: the clients; the reviewing agencies; the consultancy firms; and the competent authorities. At Haskoning, we notice almost daily that in practice IA creaks and squeaks. We have developed our own in-house training programme to support new professionals but also to improve the skills amongst other experts. This allows the IA workload to be shared and the expertise more widely embedded. We are ready to contribute to innovation and improvement, to make our knowledge and experience available to help shape a bright future for IA.

[5] Alan Bond, Francois Retief, Reece Alberts, Claudine Roos, Dirk Cilliers, Jurie Moolman (2024), What would environmental impact assessment look like if we started from scratch today? Designing better EIA for developed neoliberal nations, Impact Assessment and Project Appraisal, 24:5, 410-422



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About us



Paul Eijssen is a strategic advisor at Haskoning with 36 years of experience in impact assessment. As a strategic advisor, he focuses on complex and strategic projects, knowledge exchange, and innovation. He is involved in digital interactive reports to make information more attractive, accessible, and transparent.



Hugo Woesthuis is an experienced advisor at Haskoning in planning and impact studies in multidisciplinary projects, ranging from integrated spatial plans to infrastructural and industrial projects. Besides project work, he is involved in innovation and knowledge development in the field of environmental impact assessments at Haskoning.



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About Haskoning

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Based on our mission Enhancing Society Together, we take responsibility for having a positive impact on the world and contributing to the United Nations Sustainable Development Goals.

We challenge ourselves and our clients to develop sustainable solutions for issues relating to the built environment, infrastructure and industry. Our more than 6,800 employees are spread across offices in more than 25 countries worldwide – working together with clients on future-proof solutions.

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