Reframing EIA: A tool for better design for people and planet

Introduction

Over thirty years have passed since Environmental Impact Assessment (EIA) was initially established in the United Kingdom through the Town and Country Planning Regulations in England and Wales and the Environmental Assessment Regulations for Scotland and Northern Ireland in 1988. It was expanded into other legislation and regulations for other sectors and projects including highways, utilities and marine works and is an important aspect of the DCO process. The original purpose of EIA was to provide information on the likely environmental impacts of proposed developments through establishing the environmental baseline and then predicting and, where possible, quantifying the likely impacts.

This information is then designed to be used as a basis for decision-making around developments and serves to support the public in accessing and understanding the potential impacts of a development. The development of mitigation as part of the process was, and remains core to, minimising harm and risk to the environment. The increased use of EIA as a means to enable greater consultation on developments and their environmental implications has been beneficial but also comes with the risk of perceived 'greenwashing'.

There have been a number of updates to the EC Directive on which the EIA process in the EU was founded and from which the UK's EIA Regulations are derived. However, none of the updates have truly kept pace with developments in various environmental topics or the politics of individual countries. With the advent of new and emerging concepts such as Biodiversity Net Gain, Air Quality Positive approaches, Climate Change Resilience and Whole Life Carbon Assessment, as well as proposed legislation updates, it is a pertinent time to review whether EIA remains fit for purpose or should be reframed as a tool for promoting benefit to the environment, rather than simply limiting damage.

This position paper sets out the IES EIA Community's working group views on the key challenges facing EIA professionals and outlines their vision for EIA in the next 30 years.

The philosophy behind EIA

Science at the centre

EIA is first and foremost a science and evidence led process. Technical aspects of EIAs are essential to fully understanding the potential impacts of a project and developing robust and well-informed mitigation methods, but the information encapsulated in Environmental Statements (ES) must be presented in a way that is both accessible to a range of stakeholders and clear in communicating the findings of the EIA to enable robust decision-making. Integral to supporting better environmental outcomes from projects is the integration of EIA within the wider design process so that science informs decision-making from the outset.

Built-in rather than bolt-on: EIA as a design tool

It is a long-held belief by many practitioners that EIA should not be seen as merely a tick-box exercise, a necessary 'evil' or a barrier to development. Rather than being a static report which is produced in the later stages of the project lifecycle, EIA should be reframed as a tool for supporting good project design and embedding environmental and sustainable principles from the outset. The benefits of designing out impacts rather than bolting on mitigation are well established, both in terms of environmental gain and financial savings on project budgets, with the likelihood of aborted development costs, for a

project that does not gain consent, being avoided. This refocus of EIA's purpose and function will also facilitate and simplify the principle of promoting environmental benefit from developments, rather than purely limiting harm. There are very few developments that fail on environmental grounds. We have become very good at mitigating all impacts to "acceptable" levels and this has led to cynicism from the public and other stakeholders about the value of EIA and ESs. Reframing the narrative to highlight more of the benefits of good environmental design and how EIA has positively contributed to the design process will go some way to addressing this cynicism. It may also garner support for developments that are seen to positively contribute to the environment and communities in which they sit, which is increasingly a central concern for stakeholders.

The question of proportionality

Proportionate EIA has increasingly been discussed as a way of improving the EIA process. Despite the large focus on this issue there has been no significant progress in addressing it. The addition of new topics for consideration, such as on carbon emissions and health impacts, has in some cases resulted in EIAs becoming more unwieldy.

ESs and EIA reports regularly run to hundreds of pages and for major infrastructure projects can run to thousands and even tens of thousands of pages. But it is not just the output that requires proportionality, it is the scoping of EIA that needs to be reviewed to be more rigorous and evidence-based, and to streamline the process and improve its efficiency and accessibility. This can draw on precedents from other sites if appropriate and making clear the commitment to mitigation/further work if necessary. Any move to scope down EIA needs to be carried out in a way that does not compromise or side-line the science.

The legislative context

The legislative landscape around EIA is currently in flux, given the publication of the Levelling Up Agenda, and the long-promised consultation on EIA which is yet to materialise. How the planning process is likely to change is still uncertain, but it is expected that there will be a focus on simplifying the planning process and increasing the use of digital tools. The Environment Act 2021, now enshrined in law, also has implications on EIA, particularly around the Biodiversity Net Gain requirement for developments.

Reviewing how EIAs are done and how they can be simplified is a welcome plan in theory, but it is essential that changes keep science at the centre, ensuring that science is not compromised or side-lined leading to negative environmental outcomes simply for the purpose of speeding up the planning process. There are plans to replace ESs with new Environmental Outcomes Reports, although the Government is yet to define what such "outcomes" will be and how they will be applied to projects. The uncertainty surrounding these changes makes it difficult to predict how the EIA process and professionals will be protected.

Competency is key

Following the update to various EIA regulations in 2017, which included new requirements for 'individuals involved in the preparation of EIA to be competent experts, and the competent authority to have, or have access to, sufficient expertise', it would be pertinent to provide definitions for competency in tandem with the regulations which defines competency not just for practitioners, but also those involved in the review of EIAs. The IES has previously defined the experience and qualifications to demonstrate competence in different EIA roles.

The importance of local planning, regulatory and consenting authorities having sufficient resources and competence to carry out ES reviews should not be underestimated. There is very limited guidance available for local authorities in this space and thus a reduced capability to handle the requirements of critically evaluating the technical quality of ESs and related technical chapters. Tackling this skills gap will be a vital part of realising the full benefits of the EIA process.

The revised National Planning Policy Framework

sets an expectation that all local authorities should prepare local design guides or design codes, using the ten principles outlined in the National Design Guide as a basis for good design. In accompanying government guidance, it is essential that the importance of integrating EIA professionals into the design team at the outset is highlighted and encouraged as best practice. This will help to inform local design guides which support the involvement of EIA professionals in design teams, helping to normalise and cement the early involvement of environmental professionals in the project planning and design process.

The EIA process

Central to the design team

It is essential that wider project teams understand the value that EIA professionals can add to project design and development. Emerging policy can boost this, but EIA professionals must also become advocates in this area and work to influence stakeholders and articulate how incorporating environmental and sustainability principles can provide tangible benefits to the development, both in terms of the acceptability of environmental impacts and by refining cost. It is recognised that sometimes mitigation, embedded or added later, can have cost implications but EIA should not be judged by developers purely in financial terms. Some additional cost to address environmental impacts may be the difference between a successful and an unsuccessful planning application. Moreover, beyond environmental benefits embedded mitigation can deliver wider benefits (such as socio-economic and health benefits), thereby supporting sustainable development.

EIA professionals must be fully integrated within the project design team at the outset of a project, ideally at the feasibility and options appraisal stage. This will help create a design ecosystem in which sustainable principles can be fully embedded within a project, rather than trying to shoehorn mitigation into a predetermined design. By the time the reporting stage has been reached in an EIA, the potential to influence design is usually very limited, and mostly consists of additional mitigation in the construction phase or through other planning controls. Major design changes at this late stage can involve significant cost to the project and will understandably be resisted by project promoters unless there is an unequivocal need. This makes it potentially harder to agree more significant design changes that could have the potential to bring forward wider environmental, socio-economic, health and financial benefits.

In order to fully realise EIA as a tool for design, it is therefore essential that EIA professionals are seen as part of the framework for design rather than an add-on to the project. EIA coordinators could then be seen as design integrators, as has been done in some Nationally Significant Infrastructure Projects (NSIPs), where scrutiny of the EIA process and, importantly, the outcomes is much greater. Redefining the role of EIA professionals is thus integral to ensuring environmental issues and impacts are properly considered throughout the project lifecycle and that the mitigation hierarchy can be fully realised.

Early engagement

One of the key issues in the field of EIA is the variability in the approaches taken on different projects. Although most EIA professionals use best practice and well-established assessment methodologies, the approach varies by location, scale and type of project. Across all project types, EIA professionals need to be seen as just as critical to project delivery as architects, designers and planners. Facilitating collaboration among EIA professionals and the wider design team will allow for better design from the start.

There needs to be a shift in the culture surrounding developments so that EIA is not seen as a barrier or a bureaucratic process, but instead as a value-adding and potentially cost-saving opportunity which provides incentives for beneficial outcomes for both project and environment. Learning from examples of larger projects where multidisciplinary working is the norm would be beneficial, so that these approaches can be replicated across all project types.

Improving the scoping process

An effective scoping process, which ensures that only the assessments that are needed are performed, is essential to address the issues of proportionality and accessibility. This would lead to lengthier scoping reports but would significantly reduce the subsequent ES and would make it much more accessible for stakeholders. This would also ensure that disproportionate EIA was not resulting in a reduction in the robustness of the underlying science by reducing the size of technical chapters.

However, to effectively scope out topics it is essential that there is a robust existing evidence base to support the scoping decisions. The utilisation of open data is key to this, so that scoping out decisions can be evidence-based. This will assist EIA professionals in explaining to risk-averse stakeholders why certain topics do not need to be assessed.

Greater integration of Strategic Environmental Assessment (SEA) and EIA could also support improvement of the scoping process, particularly for topic areas which are more relevant at the regional, rather than development, scale.

The establishment of a national centralised database on the outcomes of assessments and underlying raw data would be invaluable in supporting a more science-led approach to the entire EIA process, including the ability to scope out more topics. It would also allow for access to robust monitoring data which could provide insights on the success of certain mitigation approaches. The difficulty in establishing a database of this kind is the commercialisation of data in this space and dealing with issues of intellectual property. Bringing together already publicly available data would be a good first step, and a publicly owned company (such as Defra, Greater London Authority etc.) should lead by example to normalise the sharing of data.

We can learn from similar initiatives being run by other countries, such as the Netherlands Commission for Environmental Assessment.

Monitoring

Monitoring is an essential component for gathering data to inform the pre-project status of the surrounding environment and to understand the benefits and disbenefits that different mitigation and design approaches may provide. This can ultimately aid in highlighting the effectiveness of EIAs and provide evidence for the utility and cost-benefit of different mitigation measures. The feedback loop between post-project monitoring and embedded mitigation methods is crucial for a science-led approach. Monitoring data is also an important tool for validating the accuracy of modelling methods. Monitoring information should be made openly available. This will not only provide an incentive for more robust post-project monitoring but will also inform baseline data for future projects and information on intervention effectiveness. This will assist in alleviating stakeholder concerns about specific measures and will also help to drive innovation and new thinking around impact mitigation.

Under the current EIA Regulations, consideration should be given to monitoring beyond that which is typically undertaken prior to and during construction. This is a complex issue with no established guidance or case law on how the effects predicted in the EIA should be confirmed and the effectiveness of mitigation monitored. Issues around the provision of long-term funding, uncertainty as to who would be responsible for carrying out monitoring and what, if any, sanctions and enforcement would be applied in the event of adverse results, mean that to date this aspect of EIA has been largely side-stepped.

Digital EIA could play a role in facilitating the collection and accessibility of monitoring data, particularly if supported by national systems. The newly established Office for Environmental Protection and Environmental Standards Scotland should play a key role in establishing a centralised nationwide system for this purpose, alongside taking on the role of enforcement of relevant regulations.

Mersey Gateway. © Richard | Adobe Stock

Box 1. Mersey Gateway Case Study

The Mersey Gateway is a 1km long, six lane cable stayed bridge over the River Mersey between Runcorn and Widnes in the north west of England. The project also included an additional 9km of road and sustainable transport and environmental improvements.

The design and environmental teams were integrated early into the project, to assist the client in developing the scheme from conception to construction in what is a challenging and sensitive environment. This included use of iterative design processes which were tied to the environmental impact assessment, and project programme.

This allowed early identification of environmental constraints, and development of option appraisals to allow the environmental, social and economic benefits and opportunities to be realised.

The power of digital

The environmental sector is starting to embrace the benefits of digital methods to report the outcomes of EIA and enable more granular interrogation of the sometimes lengthy and complex ESs. This goes far beyond just providing an electronic (pdf) version of documents with a few hyperlinks embedded within the text.

Digitalisation provides much more space for creativity and innovation in the way information is presented and communicated. Digital forms of EIA can also allow for a more science-based approach; data can be analysed in more sophisticated ways and different data sets can be merged to allow for a more holistic oversight of different receptors, impacts etc. The rise of big data also provides a valuable opportunity for more powerful analysis of available data which could help professionals glean new insights.

However, digital EIAs also come with the risk of data and information being manipulated in a way to make

developments appear less impacting than they are and that readers may not fully appreciate the scale of impacts, instead focussing on specific areas of interest. One challenge will be, for example, how a planning authority can review a digital ES in terms of its compliance with the relevant regulations and guidance, as well as providing sufficient environmental information. In the short term at least, there will likely continue to be a need for a traditional ES document that can be read by those who want to see all the information and data used in the assessments.

Digital EIA does not just mean the final output of the process. It can also be a way of working. Developing a digital workspace in which a proposed development can be created and environmental data added to allow impacts to be modelled in 3D could revolutionise the way projects are developed and tested. Being able to modify a design and almost instantaneously see how this would change the impacts on any given environmental parameter would be a huge step change in the way major developments are brought forward. Virtual reality (VR) and augmented reality (AR) are already being used in the EIA process and are likely to improve in frequency and application over the next 30 years.

Our vision for the future of EIA

This paper has set out the key challenges facing EIA and its ability to support better environmental outcomes of developments. Addressing these challenges must be a priority to ensure that EIA continues to be a science-led process which supports effective decision-making.

The key challenges:

- EIA is seen as a tick-box exercise
- EIA professionals are brought into the design process too late
- The legislative environment is in flux and EIA regulations are not reflective of new legislation, i.e., Net Zero, Biodiversity Net Gain etc.
- Limited guidance available on competency
- EIAs remain bulky, lengthy, and cumbersome limiting accessibility
- Lack of monitoring leading to a lack of evidence base on mitigation methods
- Skills gaps across stakeholders

Over the next 30 years we need to see a number of significant changes in the EIA process and the wider environmental assessment ecosystem in order to achieve our vision for EIA: as a science-led tool for better design for people and planet.

1. Rebranding EIA

EIA needs to be reframed as a tool central to sustainable development that benefits the environment and society and is economically sound. To do this, we need a culture shift in the planning process, with a greater emphasis on interdisciplinary collaboration between planners, engineers, EIA professionals and wider stakeholders.

EIA needs to be seen as a value-adding opportunity, rather than a barrier. EIA professionals must become advocates in this area and work to influence stakeholders and articulate how incorporating environmental and sustainable principles can provide tangible benefits to the development, both in terms of environmental impacts and cost. Capturing design input by EIA professionals and the resultant impacts should be a priority so that the evidence-base for how EIAs can add value to a project is developed.

2. Making EIA central to the design process

EIA professionals should be involved early in the design process, ideally at the options appraisal or feasibility stage. Key to integrating EIA professionals more widely within design teams is the adoption of best practice guidelines from other disciplines which specify the need for environmental professionals to be involved in the early design stages. We should learn from example from BREEAM which specifies certain activities according to the RIBA Plan of Work stages. Incorporating EIA into the design process could involve developing an environmental design code aligned with the RIBA stages and setting out what environmental input is needed at different stages of a project and what should be recorded as part of the design process. This would help to rebalance the focus of EIA from reporting to design.

3. Changing statutory requirements

a) Changes in legislation can have a large impact on the ability for EIA professionals to exert more influence. The addition of a statutory element to the feasibility or options appraisal stages, with the requirement for an environmental component within them, would facilitate the involvement of EIA professionals earlier in the development process.

b) A pre-screening stage should be added to the EIA process to account for how a project will meet the requirements of relevant legislation, such as BNG, Air Quality Limits, Net Zero etc. This would ensure that only projects which were congruent with this legislation move on to the formal EIA stages. Pre-screening could also be used to highlight to project developers how they could ensure that their project meets these legislative requirements. This pre-screening stage could result in a separate document leaving the screening and scoping reports more succinct.

c) Schedule 4 of the Town and Country Planning Regulations should be amended to add a requirement for reporting on design alternatives and how environmental professionals have fed into design and influenced the final proposal. This could be made more prescriptive still by bringing in the requirement for reporting on particular topics, such as climate change resilience and energy efficiency, and how alternative designs have been explored. This would support the development of a robust rationale for the design option chosen; developers would have to demonstrate that the design option they have chosen has strong environmental credentials compared with other viable options.

4. Championing competency

Competence among EIA professionals should be fully defined and agreed across stakeholders, including what constitutes competence for the different role types within EIA. All EIA professionals need to have a balanced skillset and broad cross-disciplinary knowledge. The relevance of an individual's experience is the key component to their competence to undertake work on a given project. Active engagement in CPD activities is essential for maintaining this knowledge. There should also be clear routes for challenging poor practice in EIAs, with Statements of Authority provided for technical chapters and ESs to allow for easier identification of experts responsible for EIA content.

5. Upskilling and collaboration

It is vital that EIA professionals have influence and persuasion skills, and are empowered to apply these skills within multidisciplinary teams. EIA professionals should proactively pursue opportunities to use these skills to promote better environmental outcomes from projects. Theirs should be an advisory role: helping contractors and clients achieve their objectives whilst promoting sustainability principles. The focus of degree courses is often on the technical aspects of work, which are vitally important, but softer skills around communication, team-working and leadership also have a place in the practitioner's arsenal. Professional bodies representing the diverse professions involved in development should collaborate to help support their members in working in these cross-disciplinary teams and providing them with a foundational knowledge in key principles pertinent to the different disciplines. This will help integrated design teams communicate and work together more effectively. Education and knowledge in these areas needs to be cascaded throughout design teams through CPD, training, guidance etc. so that there is a common language between different members of the design team.

Those working in local authorities should also be provided with better guidance to assess ESs to support evidence-based decisions making. The vast amounts of guidance and regulation in the area and related areas should also be rationalised and centralised so that it is easily accessible and understandable. A consolidated set of guidance around the principles of environmental design, including Biodiversity Net Gain, net zero etc., would make the process clearer and would highlight any existing gaps in guidance. This would also be beneficial for understanding different guidance/regulations for different authorities so professionals working across boundaries can access relevant information.

6. Embracing digital

Digital EIA is a key component for tackling the accessibility issues of EIA. Moving to a digital format would allow for a more interactive and potentially immersive experience with EIAs, whereby users can access the non-technical summary as well as the full ES and technical appendices in a user-friendly way. The ability to focus in on a specific location and visualise a development and the impacts would enable someone to better understand the way a proposed development would sit within and interact with the receiving environment.

7. Creating an environmental impact continuum

Creating a framework linking SEA and EIA together and improving the utility of SEA as a tool to support development rather than a discrete activity disconnected from project design and implementation will be key to addressing wider environmental concerns and clarifying the remit of each. Utilising SEA to assess topics at a regional level where they are often more relevant (for example human health, climate change, water demand etc.) would allow local plans and policy/guidance to be better informed and directional and would allow for these topics to be scoped down/out at a project level and thus not need to be covered by EIAs.

8. Centralised and accessible data

Data on SEAs and EIAs should be centralised and accessible to support evidence-based decision making and to allow for a reduction in duplicate assessments. This should include information on how public consultations have been taken into account in the project as well as survey data and monitoring data. Details on costs of mitigation methods, monitoring etc. from previous projects should be available to inform costs of future projects.

On the horizon for EIA...

A number of regulatory and legislative changes are on the horizon which are likely to affect the work of EIA professionals:

- The Levelling Up and Regeneration Bill (LURB) outlines the intention to replace EIAs and SEAs with a system of Environmental Outcomes Reports (EORs). This has the potential to represent a significant transformation of the role environmental assessments play in planning. One change that is clear from the Bill is the Government's shift in focus away from addressing environmental harms to securing environmental outcomes.
- The Nationally Significant Infrastructure Projects (NSIP) action plan also outlines a number of reforms that will be delivered with the aim of streamlining planning processes for major infrastructure projects. The plan intends to allow for shorter timelines for projects to be awarded Development Consent Orders (DCOs) related to offshore wind, transport links and wastewater management.
- Biodiversity Net Gain requirements for all NSIP projects in terrestrial and intertidal settings is due to be in place from November 2025 and an approach to achieving marine net gain is in the pipeline, highlighting the importance of EIA professionals being upskilled in BNG approaches and measurement.

Flux in the regulatory landscape around planning and environmental management must not undermine the work of EIA professionals in promoting better environmental outcomes. As such EIA professionals must ensure that they are equipped with skills to meet the challenges of the next 30 years and champion a science-led approach to EIA.

About the Institution of Environmental Sciences (IES)
The IES is a visionary organisation leading debate, dissemination and promotion of environmental science and sustainability. We promote an evidence-based approach to decision and policy making.

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About the IES Environmental Impact Assessment (EIA) Community
The EIA Community is a multidisciplinary community providing a forum for thought-provoking, critical conversations around EIA from a science perspective. We connect and support environmental scientists and practitioners working across a range of specialisms involved in the EIA process and facilitate meaningful discussions on topical issues related to EIA.

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