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## Next generation impact assessment: Exploring the key components

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### ABSTRACT

The world now has decades of experience with impact assessment and most assessment regimes have undergone revision over time. A positive consequence of the debates about these revisions is a rich base of experiential evidence about IA successes and failures, apparent core requirements, best practices and promising innovations. We have been working with the concept of next-generation assessment and associated frameworks for a number of years now and feel that there is a package of essential elements that represent a consolidation of lessons from experience. Here, we present a package of 14 essential elements of next-generation assessment that could serve as a set of globally applicable generic components and a working framework of criteria to inform assessment improvement efforts anywhere. This iteration of the essential elements is based on input from an international audience of IA practitioners, proponents, government representatives, and participants. We conclude that implementation of many of the elements in ways suitably tailored for different jurisdictions would result in an important evolution of assessment toward next-generation approaches.

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IA regime design and processes; IA evolution; policy modification; next generation

## Introduction

Legislated impact assessment requirements were first introduced over 50 years ago with the National Environmental Policy Act in the United States and have since spread to almost every jurisdiction around the world. Over time, assessment laws, policies, and structures have evolved, devolved, and shifted in many directions – in part due to learning and other changes well beyond the realm of assessment law, policy, and practice and reflecting the global diversity of socio-ecological and governance systems, and associated institutions and power structures.

Among the key influences have been expansions in the scale of concerns and opportunities. While the 1970s saw attention being brought to some issues of environmental degradation at a global scale (e.g. UN, 1972), assessment processes at this time were primarily focused on local matters, often involving tensions between desires for expansion of economic activities and fears of adverse contamination, resource depletion, and community disturbance. Over the following decades, assessments increasingly faced regional and international issues as well. Especially since the beginning of the 21st century, assessment regimes have been immersed in a world that is increasingly complex, demanding, and more obviously uncertain. The current global context for assessments is enormously richer in financial and technological capacities but also burdened by deeper concerns about

unsustainable socio-economic and ecological trajectories, inequities, climate change, pandemics, and other shared vulnerabilities (e.g. Raworth 2017; Steffen et al. 2018; UN 2019).

These and related shifts have encouraged greater attention to cumulative effects, uncertainty, and precaution (e.g. IAPA, 2012, 2013). They have fueled public insistence on process transparency and meaningful opportunities for engagement in IA (e.g. Sinclair, Diduck and Parkins 2021) and have encouraged extension of assessment application from individual projects to strategic level undertakings and regional assessments (e.g. Fischer 2003, 2007; Gunn and Noble 2015). More broadly, they have provided much of the impetus for moves we are seeing in some assessment regimes, such as in Canada, to go beyond mitigation of adverse environmental effects to deliver net positive contributions to lasting wellbeing (e.g. Bond et al. 2012; Morrison-Saunders et al. 2015; Doelle and Sinclair 2021). Not surprisingly, these expansions of demands and ambitions for assessment regimes have also raised concerns about added costs, decision delays, and uncertainties.

The initial diversity and further redesigns of assessment regimes have tested many different broad approaches and specific innovations. This evolutionary nature of IA has been captured by a number of scholars and has established the progression in thinking about

IA processes and resulting IA design (e.g. Sadler 1996, 2002; Wood 2003; Meredith 2004). And while most assessment regimes have undergone revision over the years, at no time have any two of them been identical. The differences have at times been problematic and not always justified by needs to serve differing contexts. A positive consequence, however, is a rich base of experiential evidence about successes and failures, apparent core requirements, best practices, commonly unmet needs, areas of deficiency, and promising innovations (e.g. Gibson et al. 2005; IAPA (Impact Assessment and Project Appraisal) 2012; Bond and Pope 2012; Dalal-Clayton and Sadler 2014; Morrison-Saunders et al. 2015; Gibson et al. 2016; Sinclair et al. 2018; Fonseca and Gibson 2020).

After several years working on assessment law and policy, we established the concept of next-generation assessment and associated frameworks, and proposed a package of core elements that consolidate lessons from experience and appreciation of the surrounding imperatives, pressures, possibilities, and learning to which assessment regimes must respond and from which they can draw. This package was developed in the context of moving IA law and practice to the next generation in the evolution of assessment process (e.g. Gibson et al. 2016; Sinclair et al. 2018). Our list of essential next-generation assessment elements is meant to be globally applicable as a working framework of general criteria to inform assessment improvement efforts anywhere. Most, if not all, of the elements we have been considering will be familiar to IA practitioners and scholars as long-advocated but too rarely practiced aspects of best practice assessment, but we are seeking here to re-cast these elements as the key interconnected and mutually supporting parts of a coherent whole that would help to guide design and implementation of next-generation assessment regimes and the processes that underpin them.

In light of this goal, we tested our ideas regarding the package with an international audience in order to understand the degree of 'buy-in' to the package notion and the proposed substantive contents. This paper shares the knowledge exchange regarding the proposed essential elements of next-generation assessment that occurred during a Theme Forum we organized at the International Association of Impact Assessment (IAIA) Conference in Brisbane in 2019.

## Next-generation IA

Our previous publications (Gibson et al. 2016; Sinclair et al. 2018; Doelle and Sinclair 2021) establish and review the extensive IA literature that provides the foundation for our work, including many foundation pieces such as Sadler (1996) Gibson et al. (2005) and the literature referenced below in relation to each of the next-generation elements. In fact, part of the

impetus for the IAIA session was the range of comments we received from both national and international reviewers to our 2018 paper. Based on this work, we developed eleven key elements, but through pre-conference discussion of these with an international audience of scholars, we added a twelfth before broadly sharing with delegates. The 12 essential elements presented to delegates at the IAIA 2019 Theme Forum were stated exactly as follows:

- (1) Sustainability-based assessments with explicit criteria, positive contributions to sustainability, avoidance/mitigation of adverse effects and minimization of trade-offs.
  - Standard criteria include biophysical effects, social effects, cultural effects, fair geographic distribution of effects, fair intergenerational distribution of effects, and full transparency, justification and accountability. A key design question is the final list of criteria, and the specific trade-off rules to help decide when a net negative effect in one area can be justified by a 'greater' net benefit in another area (e.g. Gibson et al. 2005; Bond et al. 2012; Lawrence 2013; Dalal-Clayton and Sadler 2014; Morrison-Saunders et al. 2015).
- (2) Comparative evaluation of alternatives including the null option.
  - Key here is the selection of appropriate alternatives and assignment of responsibility to provide the information needed to be able to assess whether the alternatives offer a better way forward than the proposed undertaking (e.g. Steinemann 2001; Gibson et al. 2005, 2013, 2016; Morrison-Saunders and Pope 2013; Hayes and Fischer 2015; Gibson 2017).
- (3) Integrated, tiered assessments covering all undertakings at the regional, strategic and project levels.
  - Among the issues here is establishing the role each tier of assessment plays in sustainability decision-making, how their roles are properly integrated into an overall system of decision-making, and what happens at the project level when there are gaps at the regional or strategic level (e.g. Acharibasam and Noble 2014; Doelle et al. 2013; O'Riordan 1976; Peterson et al. 1987; Spaling and Smit 1993; Partidario 1996; Brown and Thérivel 2000; Fischer 2007; Sadler et al. 2011; Gunn and Noble 2015; Gibson et al. 2016; Sinclair et al. 2017).
- (4) Assessment streams – process pathways with different demands.
  - Establish process pathways with different substantive and procedural demands of

- undertakings of different character, potential significance of adverse effects and benefits, and potential for public interest and concern to ensure we move beyond just assessing major projects (e.g. Lawrence 2013; Gibson et al. 2016).
- (5) Cumulative effects assessment.
    - All assessments emphasize attention to cumulative effects and pay attention to the respective role of each of the three tiers under #3, and the development of a reasonable range of future development scenarios to inform the cumulative effects analysis with a better understanding of the interaction of the proposed undertaking with future development (e.g. Ravetz 2000; Duinker and Greig 2007; Gibson et al. 2016; Sinclair et al. 2017).
  - (6) Cooperative project and regional/strategic assessments by all affected jurisdictions.
    - Among the issues, here is how to encourage affected jurisdictions to support and actively participate in the design and implementation of one comprehensive joint assessment involving all affected jurisdictions (e.g. Kennett 1993; deBoer 1999; Connelly 1999; Doelle 2008; Dereg 2011; Maclean et al. 2016; Fitzpatrick and Sinclair 2016).
  - (7) Co-governance with Indigenous Nations/Communities.
    - In the Canadian context, we have a commitment from the federal government to a Nation-to-Nation relationship with indigenous communities, and to the UN Declaration on the Rights of Indigenous People (UNDRIP). At the same time, there is continuing pressure to bring consultation with indigenous communities within the assessment process in the name of efficiency (O’Riordan and Sewell 1981; United Nations General Assembly 2007; MIAC 2016; Imai 2017; Papillon and Rodon 2017).
  - (8) Meaningful public participation, starting early, continuing throughout.
    - Effective public participation requires flexibility and good judgment. The challenge has often been that the flexibility is too often used in the name of efficiency rather than to ensure effective engagement, particularly when it comes to engaging those with limited capacity and resources, and those whose cultural norms clash with western norms of communication and engagement (e.g. O’Faircheallaigh 2010; Morgan 2012; Sinclair and Diduck 2016; Sinclair, Peirson-Smith and Boerchers 2017; Gibson et al. 2016; Expert Panel 2017).
  - (9) Learning facilitated throughout assessment stages and processes.
    - How do we realize the potential of assessments actually serving as a vehicle for mutual learning for all involved. Changing the mindsets of proponents, government officials, and intervenors from seeing assessment processes as a battle ground to advance their interests to a mindset that recognizes that it provides a unique opportunity to develop common ground in the pursuit of the public interest (Andrews 1976; Taylor 1984; Bartlett 1990, 1997; Webler et al. 1995; Sinclair et al. 2008; Jha-Thakur et al. 2009; Sheate and Partidario 2010; Sinclair and Diduck 2016; Gibson et al. 2016).
  - (10) Transparency and accountability.
    - Finding ways to more effectively create transparency and accountability to encourage the inevitable exercise of discretion at critical stages in the assessment process in the public interest, in the interest of sustainability (Sheate 2012; Gibson et al. 2016; WCEL, 2016).
  - (11) Independent follow-up – monitoring of effects and compliance, responsive adjustments, and ongoing improvement.
    - How do we ensure that as we move from the art of predicting effects of proposed undertakings to actually monitoring the effects of approved undertakings, we learn and adjust. Also, finding ways to ensure that we adjust the conditions of approval for implemented undertakings, and how do we learn to make better predictions for similar future proposals (Hunsberger et al. 2005; Marshall et al. 2005; Morrison-Saunders et al. 2007; WCEL (2016, 2016).
  - (12) Independent and impartial administration and assessment review.
    - Ensuring the credibility and impartiality of the process. Who is best placed to exercise discretion with respect to triggering, scope, process design, analysis and review, final decision-making and follow-up? How do we ensure that those tasked with making key decisions are independent, impartial, and accountable (e.g. Gibson et al. 2016; WCEL 2016).

## Methods

The IAIA conference ‘Theme Forum’ was a participatory session set up to qualitatively explore the twelve key elements in the context of experience in the various jurisdictions represented at the conference, to identify

opportunities and barriers for their implementation, and consider how we might bring about next-generation impact assessment adoption and application. Approximately 240 people attended the Theme Forum, which lasted for 90 min.

### **Session format**

Our Forum Facilitator introduced the session by offering the following framing question: 'Would the implementation of the integrated package of 12 components of next-generation assessment help us to realize the full potential of IA?' Each participant was provided with a copy of the 12 components, exactly as stated above, as well as an outline of the session and ethics approval material, all of which the facilitator acknowledged at the outset.

Two of the authors (Sinclair and Doelle) presented an overview of the 12 elements, the rationale for the session, the literature and practice that supported each of the elements and the notion of bringing these together into a package that would form the core of next-generation impact assessment.

The overview was followed with two rounds of 'scrawl on the wall' in which participants were asked to circulate to one of twelve stations around the room where they could write responses on the wall that others could read and discuss. Twenty minutes were allowed for each round plus 10 minutes of discussion and questions following each. This worked very well as the room was large with lots of wall space, giving people room to move around and participate in the activity. Ten helpers... circulated around the room looking for themes in the responses people were writing to identify points of convergence and raise discussion points as part of the feedback at the end of each 20-min scrawl session. Collectively, we noted lively discussion among participants at each station and generally in the room.

The first round of scrawl on the wall sought audience reaction to each of the 12 elements. Stations were set up for each element that included banners on the wall asking the following questions for each element, with room on the wall to respond to each:

- (i) Do you agree that this should be a component? If so, why is it important?
- (ii) What is needed to ensure this component is properly addressed?
- (iii) What are the key implementation challenges?

The second round of scrawl on the wall elicited audience reaction to the package of components. Again, twelve stations were set-up around the room each with the same set of questions:

- (i) If implemented as a package of 12 would the outcome be evolution, revolution, or status quo in jurisdictions you are familiar with?

- (ii) What are the key feasibility challenges to implementing the package?
- (iii) What is missing from the package – what have we not thought of?

The qualitative data resulting from each round of scrawl on the wall were collected, transcribed, and entered into Nvivo II software and analyzed for themes and patterns. An example of the type of data we obtained using the scrawl on the wall technique is provided in [Figure 1](#). In the first instance, the data were simply organized in Nvivo in relation to each element and the questions that we asked as indicated above. We then looked for themes that emerged from the data. Much of the data were found to centre on the nature and significance of the already identified themes. Others, however, identified additional considerations suggesting additional next-generation assessment elements or additional aspects to recognize in discussion of the initial suite of elements.

The results of the session are presented below under the heading, 'Reactions to the twelve elements of next generation assessment.' With these in hand, we returned to the original elements as presented at the start of the theme forum, as outlined above. We worked collaboratively to review the results following the steps proposed by Creswell and Poth (2017) for the scrutiny of qualitative data which included (1) reading through the organized data, (2) analysis with data coding, (3) description and representation of findings with the use of quotes and examples, and (4) interpretation of findings in relation to relevant literature and our 12 elements. The outcome of this work is captured in the section below titled 'A revised package.' It incorporates the addition of two new elements as well as modifications to the wording and descriptions of the initial suite of elements in order to ensure the full scope and intent of each element were clear.

Given this is qualitative research, when presenting the results we sometimes use terms including 'widespread support', 'strong support' and 'mixed' to describe the overall reaction of participants to a particular element. Widespread support was used to describe the data when almost all responses in the direction indicated, while strong support indicates that at least three-quarters of the responses reacted in the way described. Mixed is used when the reaction of respondents was virtually split.

## **Reactions to 12 elements of next-generation assessment**

### **Sustainability-based assessments**

Widespread support for the inclusion of an element related to sustainability-based assessment was underscored with comments such as 'super important', 'yes,



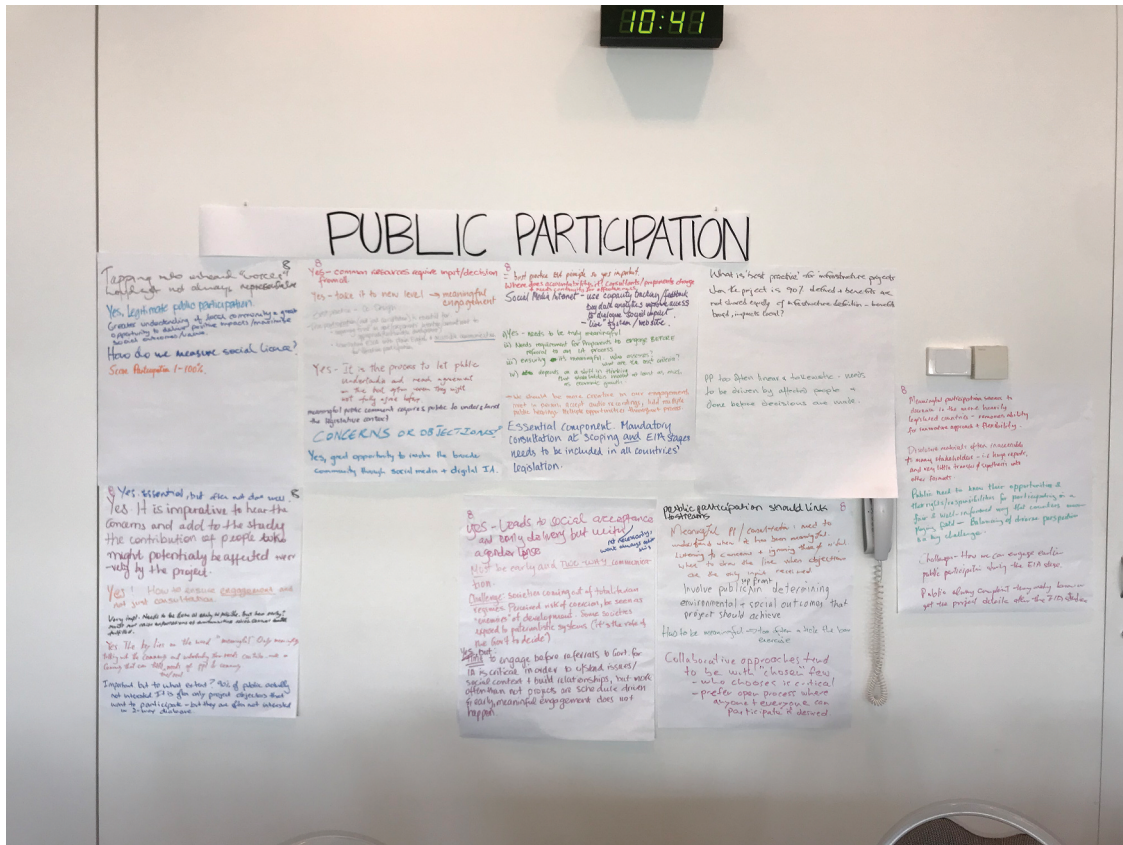


Figure 1. Example of 'Scrawl on the Wall' Participant Input

expansion to SA is vital', 'very important!!' and 'yes, it is vital for all large-scale projects'. However, participants, including some who identified this element as highly important, raised a number of questions related to implementation. Many questions were raised, for example, concerning definitions and measurement:

- 'Important but how to define the criteria is unknown as well as implementing follow-up and monitoring of whether the project carried out after a sustainability-based assessment is really sustainable.'
- 'Challenges of defining sustainability and of balancing trade-offs are not small.'
- 'Definition of sustainability should include whether proposed development is considered appropriate by the community for its environmental/social/cultural context. No social license = not sustainable.'
- 'Good. List you offer is useful. Can you offer some flexibility for local situations?'
- 'Do we yet know what "sustainability" is? Does the agenda 2030 set the priorities that we might need??'

**Comparative evaluation of alternatives**

There was agreement that 'alternatives for a project (e.g. alternative locations) and/or alternatives to a project (e.g. solar power vs hydro power)' were

essential considerations in next-generation assessment. As one participant indicated, 'Agree strongly, must include alternative [means] and alternatives to.' Also noted was the importance of alternatives considerations to include any 'other ways ... to meet the set target or aims' of the proposal. For most participants, 'alternatives to' included consideration of the 'null' or 'do nothing' alternative. Participants did raise questions about how the consideration of alternatives to a project would link to strategic impact assessment (SIA) and regional impact assessment (RIA), which are important considerations for next-generation IA. Questions were also raised about the role of the proponent and government in identifying alternatives, suggesting that they both need to be involved. Participants also mentioned that consideration of alternatives must begin very early in the IA process.

**Integrated, tiered assessments**

While there was no disagreement about the importance of integrated, tiered assessments, participants did note implementation issues and suggested responses. For example, commentators emphasized ensuring that 'levels of assessment "speak to" and "respond to" each other' and that key outputs (such as strategic assessment findings with project-level implications) be 'translated into operational directives'. Participants also recommended 'more communication between different levels so that each can feed into the other' and noted that

'social aspects are key components that should not be an add-on module to any level of assessment'. One important question raised by some participants was 'who pays for levels of assessment other than project; is it proponents, governments, who is responsible?'. One less optimistic participant stated that the notion of integrated, tiered assessments was 'Alice in wonderland'.

### **Assessment streams**

The reaction to the idea that streams of assessment was an important element of next-generation assessment was mixed. A few participants indicated that they did not understand the concept as we presented it and some mixed the concept of different streams with overlapping assessments by different jurisdictions. Several indicated that they felt it was important to 'Tailor the process to the project context' or 'If you mean tailor-made project IA, then ok'. At the same time, many participants recognized the need for strategic as well as project-level versions of assessment requirements and saw that quite different projects merited assessment. The vast majority of comments on assessment streams related to concerns and suggestions, including for example:

- 'Why do we need multiple levels of assessment? Problems for federated states, we should be thinking about streamlining the assessment process ...'
- 'Be careful of disintegration.'
- 'Careful of project splitting.'
- 'Must avoid overburdening the system. Normally competent authorities have limited capacities. Focus on high-risk activities.'
- 'Consider the ramifications on participants, i.e. capacity.'
- 'Competent EIA authorities could guide this if legislation is flexible enough.'
- 'It is important to be able to have different types of EIA. In my jurisdiction we do.'

Ultimately, those who were critical of this element seemed to interpret it as referring to some form of duplication or overlap of multiple assessments of the same undertaking or elements of an undertaking, rather than as we had intended, which was the availability of multiple assessment process options to ensure an appropriate assessment stream is available for undertakings of different scale, complexity and public interest or concern. Those who understood this element were generally supportive, even if some seemed to favour flexibility in the assessment process over multiple streams.

### **Cumulative effects**

Participants expressed widespread support for the inclusion of cumulative effects in the next-generation

IA package – 'Yes, is vital – invites range of approaches, both bottom up from projects and top down from government, and regional and strategic assessment – i.e. expectations/scoping for each important.' The second point made in this quote was picked-up by many participants, supporting the notion that cumulative effects assessment will be successful only if it is incorporated into higher tiers of assessment, particularly SIA and RIA: 'Doing cumulative effects assessment is useless in a singular EIA; CEA can only be effective if done in a regional assessment and SEA'; 'Integrated tier assessments could (should) help improve CEA'; and, 'Should place CEA within Regional Assessment but the project-level assessment needs to link to REAs < see tiering (upward tiering).' Others pointed out that cumulative effects assessment can be 'tricky' especially in terms of 'Who is responsible for the "tipping point"? Is it the first proponent or second, or last?' and in support of this comment, others questioned 'who is responsible?' It was also suggested that there needs to rather be 'adaptive management for cumulative effects ... with a long-term view of decades ...'.

### **Cooperative project and regional/strategic assessments by all affected jurisdictions**

Commentators supported greater emphasis on cooperation when more than one jurisdiction has responsibility for a project or regional assessment: 'Yes, of critical importance, needs for trans-boundary assessment must be included in legislation'; 'Opportunities for cooperative assessments in areas of multiple levels of jurisdiction are key'. A number of the commentators indicated, however, that the wording of this element was not clear. Many linked this point about cooperation with the point about tiers of assessment, commenting on the importance of, for example, 'looking at the bigger picture regional level and nesting in project assessment'. Other commentators picked up on the planning theme suggesting, for example, that REA would not be necessary where 'land use policies and objectives can substitute [for REA]'.

### **Co-governance with indigenous nations**

Many participants indicated strong support for incorporating co-governance tools in impact assessment, with comments including 'Important', 'Essential' and 'Fundamental anywhere Indigenous interests are involved'. A number of participants also noted, however, that this notion did not apply in their context: 'Irrelevant in many countries around the world' and 'Important in some countries, irrelevant or politically not possible in others'. In this regard, others noted that it was needed but not possible in their countries without a change in political culture, with Brazil and Australia given as examples. Some noted a serious need for 'political

leadership and commitment' to make necessary strides. Others argued that progress depended on wider-spread adoption of the UNDRIP. Still others noted barriers that have been raised in the literature such as co-governance being 'difficult where treaties/reconciliation do not exist' or asked whether 'Free, Prior and Informed Consent [was] sufficient for this?'. Another theme that emerged to improve Indigenous involvement was the importance of 'building relationships' with recognition of the time it takes to do this properly. Still others wondered how 'benefit agreements' and 'benefit sharing' fit with notions of co-governance.

### **Public participation**

Public participation garnered the most attention from participants based on the number of comments provided. The three sub-themes resulted including, need to be meaningful, appropriate timing, and barriers/concerns to be overcome. Many commentators held that participation must be 'meaningful' and 'legitimate': 'Yes, it is imperative to hear the concerns and add to the study of the contribution of people who might potentially be affected by the project'; 'Yes, take it to new level, meaningful engagement'; 'True participation is essential for gaining trust'; 'Has to be meaningful, too often a tick the box exercise'. It was also noted that to be meaningful 'a best practice is co-design' of participatory processes. Some commentators argued that 'participation needs to be done as early as possible', but such views were accompanied by uncertainties and 'how' questions, including 'how early?' and 'how can we engage earlier?'

Most of the barriers and concerns noted by commentators have been canvassed in the vast literature on public participation in IA. For example:

- 'The loudest participants are not always representative.'
- 'Members of the public need to know their opportunities and their rights/responsibilities for participating in a fair and well-informed way.'
- 'Key assessment materials, including huge reports, are often practically inaccessible to many stakeholders.'
- 'Public participation processes are too often linear and tokenistic.'
- 'Public participation can be particularly challenging in societies coming out of totalitarian regimes, due to perceived risk of coercion, and fear of being seen as "enemies" of development.'
- 'What is "best practice" for infrastructure projects when the project is 90% defined before assessment begins and benefits and risks are not shared equally.'
- 'Collaborative approaches tend to be with a chosen few on behalf of broader interests.'

Who chooses participants is critical. A declared preference for an open process where anyone and everyone can participate if desired.'

### **Learning facilitated throughout assessment**

Many participants saw value in impact assessment processes being learning-oriented and considered learning to be 'essential to continued improvement'. In this regard, some agreed with the notion that 'raising awareness among engineers and proponents through adding value is critical to success'. Others felt that 'good EIA [impact assessment] will hopefully teach all involved new things and trends'. Some also linked learning to other elements of next-generation assessment, particularly participation (that encourages learning) and follow-up, indicating that best practice follow-up needs to be learning oriented and that 'the full definition of follow-up in the IAIA best practice principles already includes this'. A few commentators mentioned barriers to learning, such as the 'adversarial style' of IA and the lack of 'accessible central storage places of EIA's [impact assessment documents] and of meta-analysis'.

Learning was, however, the only element that some participants judged not to be a necessary part of impact assessment, with comments such as:

- 'Not an essential component but good to have learning passed along to future.'
- 'Not a key component of EIA.'
- 'EIA can provide a vehicle for learning, but I don't see this as a component in itself. Tied to public participation and iterative nature of design.'
- 'It is nice, but it is not a must, maybe a result? It depends on the purpose or type of EIA.'

### **Transparency and accountability**

Participants offered very strong support for transparency and accountability, calling them 'Critical' and 'Evidence of best practice'. Several participants supported the comment 'Makes an IA legitimate'. Many also wrote about how transparency and accountability were central to 'building trust' in assessments and IA more generally. Transparency was often associated with 'accessibility', such as in the following comments: 'Transparency relies on enabling accessibility to feedback!'; 'Also need to be mindful of accessibility of information'; and 'Language is important to accessing documentation'. Participants also addressed means of ensuring transparency and accountability, noting for example, that 'Political will is critical' and 'Both EIA consultants and companies (proponents) must abide by best practices, values and ethics'. Some participants suggested that to be truly accountable IA decisions 'need to be subject to independent review'. A sub-theme of these comments related to who should do



the review (with some suggesting it should be independent of government decisionmakers) and who should fund it.

### ***Independent follow-up and monitoring***

Participants gave this element little attention, perhaps because it is already commonly recognized in the literature as an essential element. Those who did comment offered strong support, calling follow-up and monitoring ‘Absolutely essential’ and adding ‘... this is current generation in some jurisdictions’. One participant underscored the comments of others in indicating that we have ‘learned over the last 30 years, with proper follow-up it will help us in the next 30 years’. Most of the comments provided related to concerns about inadequate delivery: ‘Absolutely essential yet not incorporated’; ‘Who is responsible for evaluating the follow-up?’; and ‘Big challenge in developing countries’.

### ***Independent and impartial administration and review***

Assessment independence and impartiality attracted supportive comments from participants: ‘This is a priority of conducting an IA’ and ‘Essential – independent ensures “trust” with stakeholders’. However, commentators also expressed concerns about how the principle can be met. Two themes emerged. The first centred on ‘Who pays?’ The second related to concerns about the barriers and complexities facing efforts to enhance the impartiality/independence of reviews:

- ‘All institutions can be influenced.’
- ‘Will it really be impartial and independent?’
- ‘Who determines independent and how?’
- ‘Difficult to be certain of impartiality.’
- ‘What is democratic accountability?’

### **Gaps in the package of next-generation assessment elements**

In addition to views on the 12 elements, participants also pointed to apparent gaps in the package. These fell into the seven broad categories in (Table 1):

#### **A revised package**

The IAIA19 Theme Forum participants expressed strong support for the twelve elements of next-generation assessment, with the partial exception of the ‘learning’ element, which some participants conceived narrowly and thought could be adequately assigned to public participation and follow-up. This and other responses indicated the sensitivity of the elements to interpretations of the wording and the

importance of elaborating key concepts, being explicit about roles and relationships, defining terms open to various interpretations, and needs to expand the components or overall package to address the considerable list of needs and opportunities that participants felt were missing.

In light of the insights provided, we have reworked the initial package of next-generation assessment components. The improved version is presented below and is the result of our consideration of the responses received. The adjusted text remains true to the literature that we have referenced in relation to each element above. However, it aims for greater precision in framing the title and the short form elaboration of each component. It describes more clearly the basic thinking behind each component to capture the contributions of participants to the extent possible. In achieving these outcomes, we have sometimes used the direct input that respondents provided through the scrawl on the wall, while in other situations we had to develop the wording to respond to what we were told in relation to the issues raised by respondents.

Most significantly, we have added two elements in response to the input from the IAIA19 Theme Forum and other venues of next-generation discussion. Both new components, ‘early process initiation’ and ‘effective, efficient and fair process,’ were already reflected in existing components. However, we were convinced by participant comments as well as our own involvement in recent assessment law reform initiatives in Canada that early process initiation is so essential to effective and fair IA process that it deserves to be recognized as a stand-alone element. This is so especially because early process initiation opens discussion of the key alternatives, impacts and public perspectives when development of project (or strategic) thinking is just beginning and still malleable. We felt that the other gaps identified were themes that were already recognized in the elements, but we have embellished on these in text below to be sure that they are reflected. For example, comments related to accessibility, revolved mostly around information availability, which we feel is well captured in the revised elements 6 and In the case of indigenous knowledge, we have reoriented even the title of element 4 to address this noted gap.

We also agreed fully with participant comments and conference discussion of the importance of promoting the combination of effectiveness, efficiency and fairness in assessment design and implementation as an overall measure of best practice in next-generation IA, so we have added it as a stand alone element. We feel that this set of linked, cross-cutting characteristics reinforces the importance of treating the components as a package of mutually supporting parts and responds to the concerns raised by some

**Table 1.**

Theme	Representative participant comments
Accessibility	'Accessibility of information [is crucial]' (noted often); 'Accountability and transparency only as good as accessibility'; 'What about going digital?'; 'Digital EA will transform' and 'Need to consider the context of a changing world, digital IA, legal challenges, social media, etc.'
Accreditation	'Accreditation and capacity building nonexistent in most countries'; 'Accreditation/capacity building missing'; 'Systematic capacity building starting with universal definitions, adoption of IA principles by governments, training and accreditation so the conversations permeate outside IAIA conferences'
Outcomes	'Needs consideration of social procurement outcomes'; 'EIA output and how this links to implementation'; 'Need change in focus to assessment of best practicable outcomes, focus on no significant impact is limiting'; 'Outcomes-based focus (best case scenario vs. worst case paradigm); Need something about outcomes'; 'To align with ESD principle, ESIA needs to focus on best practice outcomes'
Indigenous knowledge	'How EIA uses Indigenous language and the gender lenses in determining mitigation measures'; 'Using indigenous knowledge in EIA as if it's its own knowledge system < not merging with conventional IA'
Decision-making	'Ability to appeal the decision'; 'Achieving administrative fairness, real and perceived'; 'Ways to deal with conflicted decision makers'; 'How IA is linked to decision process'; 'Strong links to statutory appraisal/decision making'; 'How is EIA used/mandatory aspect of decision-making'
Early planning	'Emphasis on early scoping of proponent requirements'; 'Moving the process up the assessment stream to early proponent considerations'; 'Start the process earlier in the decision cycle'
Government management	'Not reflective of challenges in achieving the multi-level including different jurisdictional boundaries'; 'Consideration of political power and economic imperatives overriding'; 'Lack of legislative framework in some countries'; 'More obligations on government/proponent to fund participation of Indigenous rights holders so they can fully participate, have voice, and decision making'

about picking only certain elements. Of course, participants also provided responses that indicated the importance of each of these, some noting the need for IA processes to be efficient and timely, while others emphasized the importance of effectiveness, as popularized in IA by Barry Sadler (1996), and fairness of process to all.

Despite some questioning by participants, we have retained 'learning' as a separate component. In our view, learning is a cross-cutting element needed for, and to be gained from, all stages and aspects of assessment application. While it certainly has important ties to participatory processes and follow-up monitoring, it is needed by and for all assessment participants, not just the public, and should strengthen all IA processes over time. We now offer the resulting 14 elements:

- (1) Sustainability-based purpose, scope and criteria for evaluations and decisions

The core purpose of any assessment regime should be to encourage government decisions that serve the lasting public interest through contributions to sustainability. That agenda widens the scope of relevant effects beyond the adverse and biophysical to the full range of sustainability considerations and their interactions. It includes direct and indirect, individual and cumulative, positive and adverse effects on health, culture, gender and other identity factors, climate change and equity in the social, geographic and inter-generational distribution of risks and benefits. Effective implementation entails application of explicit criteria that combine the basic requirements for progress towards sustainability with considerations specific to the case and local context. A starting point for the identification of criteria could be the UN's Agenda 2030 and its 17 SDGs, with due attention to their interactions and interdependencies. The public interest goal is to deliver the best options for mutually reinforcing and fairly distributed contributions to lasting wellbeing, while minimizing trade-offs and avoiding significant adverse effects.

- (2) Application of integrated, tiered assessments covering all potentially significant undertakings at the regional, strategic and project levels

Within the reach of any assessment regime's assessment requirements, IA should apply to regional and strategic tiers of assessment (policies, plans and programs) as well as the project tier, for projects large and small that may have important direct or indirect implications for long-term wellbeing. The application structure should feature linked regional/strategic and project level tiers so that project assessments help to identify needs for regional/strategic assessments and the latter provide credible and authoritative higher-level guidance for project planning and assessment, ensuring that all tiers inform and respond to each other. To enable such a structure, the tiers must share the same sustainability-based purposes, scope and generic criteria, and equivalent provisions for process credibility – including impartiality, rigour, transparency, meaningful engagement, explicit criteria, and comparison of alternatives. Process credibility is also crucial for decision-making on what projects and regional/strategic issues and undertakings will be assessed. The regime will need to be flexible to ensure suitable assessment for very different sorts of undertakings in different contexts, especially at the project level (see element 5).

- (3) Interjurisdictional cooperation, collaboration and upward harmonization

The issues to be faced in assessments at the regional/strategic and project levels rarely respect political and administrative boundaries. Especially in a federal

nation, overlapping jurisdictional authority and responsibility present predictable alignment challenges but also opportunities for mobilizing diverse contributing capacities. Each assessment regime should provide for diverse inter- or multi-jurisdictional assessment arrangements. Options include collaborative joint assessments, separate-but-aligned assessments, and cooperative regional/strategic studies leading to joint or parallel development and assessment of regional/strategic options and undertakings. To facilitate mutual learning and continuous improvement, regimes should also ensure all collaborations adopt the highest IA standards among the jurisdictions involved. Over time, case-by-case collaborative practice should reduce assessment process incompatibilities and encourage upward harmonization of processes to next-generation levels. The gold standard of cooperation should be recognized to be one comprehensive assessment carried out with the active involvement of all potential decision-makers.

#### (4) Respect for Indigenous knowledge, rights and authority and facilitation of reconciliation

Indigenous resilience through a long history of colonial appropriation, denial of Indigenous rights and efforts to extinguish Indigenous cultures has been gradually forcing an international shift to recognition and reconciliation. In some countries, including Canada, Australia and Brazil, assessment proceedings have been high profile venues for the conversations and conflicts involved. Today, they need to be venues for effective action on recognition and reconciliation. For legal, moral and practical reasons, assessment regimes must play roles in reasserting Indigenous rights, governance and understandings to ensure IA decision-making is in line with relevant international and domestic law and policy regarding the rights of Indigenous peoples in a given jurisdiction. The imperatives include those of clarifying and meeting constitutional obligations and international commitments such as UNDRIP, establishing mutually respectful Nation-to-Nation relationships, and accepting Indigenous rights to grant or withhold free, prior and informed consent to activities that may affect their rights or territories. Moreover, these elements are closely linked to respecting and providing space for Indigenous knowledge, perspectives and ways of seeing, and for Indigenous laws and process. For assessment applications, the relevant opportunities go beyond adjusting approaches to consultation and other assessment processes, to centre on sharing decision-making authority with Indigenous governing bodies.

#### (5) Assessment streams for assessments of projects and regional/strategic undertakings of different character and significance

Many quite different projects and regional/strategic undertakings merit assessment. For best use of all parties' resources, assessment regimes should pre-define more and less demanding basic assessment streams for these diverse undertakings based on such factors as size, complexity, time pressures, and public interest. Assessment streams are equally important for project, strategic and regional assessments. Process pathways in streams for all undertakings would meet next-generation assessment standards for rigour and credibility, but recognize different levels of sustainability concern (e.g. for matters such as climate change and inequity in the distribution of risks and opportunities), uncertainty and potential controversy.

Regional and strategic assessments would also accommodate needs in some cases to provide timely working guidance for on-going project assessments or other immediate applications, and in other cases to facilitate new research and analysis, inter-jurisdictional collaboration, extensive public deliberation and pursuit of innovative solutions. More demanding streams may involve more detailed proponent submissions, longer timelines, more extensive review by government agencies and independent experts, more openings for effective public engagement including public hearings, final decision-making by a higher authority (e.g. Cabinet rather than a minister) and/or opportunities for appealing key decisions throughout the assessment process. To ensure that proponents and other participants can anticipate and act upon the applicable requirements, regimes should pre-assign predictable types of undertakings to the appropriate streams. Also needed are provisions for streaming unanticipated undertakings, processes for shifting assigned undertakings to more or less demanding streams, and flexibility to tailor individual assessment requirements to the needs of the case. Such actions will allow for the best allocation of scarce resources through varying demands.

#### (6) Meaningful public participation

For process quality and credibility, effective mobilization of understanding and expertise, and enhancement of learning opportunities and assessment capacities, assessment regimes must encourage and facilitate meaningful public participation. Active involvement of the full range of interested and informed participants – members of the public, non-government organizations, stakeholders and independent experts as well as proponents, government bodies and other relevant authorities – should be a core feature of assessment deliberations. Provisions are needed to enable effective participation throughout the assessment process and in deliberations leading to other assessment related decisions (e.g. on application of

assessment requirements to particular undertakings, development of regulations and policy guidance and establishment of inter-jurisdictional agreements). Particularly important are measures to initiate meaningful engagement from the earliest point in deliberations (e.g. starting at the conception of undertakings subject to assessments). Basic requirements for meaningful participation in assessment law include, at a minimum, public notice, timely and easy access to information including through digital IA, realistic opportunities for informed public comment, public hearings, deliberative forums, mandatory reporting on how public contributions were addressed, and participant financial assistance, impartially administered.

#### (7) Full-process learning

Engagement in assessments has long-recognized potential to improve assessment practice. Assessment regimes that are designed to encourage individual and social learning can strengthen participative skills, foster deeper understanding, and improve the knowledge base needed for capable and credible assessments. More broadly, learning from assessments can contribute to informed democratic engagement and enable the transition to sustainability. Assessment literature and experience confirm that full-process learning has high potential to improve IA. To capture this potential, assessment regimes need to establish mutual learning as a fundamental process purpose and responsibility for all assessment participants, and facilitate collaborative multi-interest learning opportunities in all assessment components from initial identification of issues and options to preparation and implementation of follow-up plans. Learning can occur and should be promoted in at least three areas:

- Learning among participants in the process so that the collective knowledge, wisdom and perspectives can be utilized to achieve optimal outcomes for the undertaking under consideration and in future deliberations;
- Learning about the accuracy of predictions made during the assessment, resulting in improvement of the implementation of the undertaking, the regulatory and policy guidance for impact assessment and the accuracy of predictions in future assessments;
- Learning about and documenting IA process implementation to inform future regime modifications.

Key vehicles for learning in both project and regional/strategic assessment processes include early engagement, opportunities for collaborative partnerships, open access to information and science through searchable data platforms, independent and impartial

processes, full transparency and accountability, and participative engagement in specifying clear sustainability-based decision-making criteria. However, engaged mutual learning can also be encouraged in other deliberations and decision-making (e.g. in developing regulatory and policy guidance, determining when assessments should be required, and framing inter-jurisdictional agreements). In this way, learning among all participants has the potential to build individual and organizational capacity for effective engagement, increase the rationality of present assessment outcomes, help inform future assessments of related projects and regional/strategic undertakings, serve as civic education for participants, and provide information and reasoned positions and perspectives to enrich sustainability discourse – all of which can feed into informing and improving future assessments and our collective prospects for sustainability. Such considerations are essential to ensuring that the sustainability goals of the IA process are actually realized and for guaranteeing learning underpins regime evolution. An important part of this element is therefore the recognition that assessment processes need to constantly evolve to be effective.

#### (8) Early process initiation

Public engagement in early planning is critical for the design and implementation of undertakings that offer an optimal blend of net benefits to proponents and to society. Legislated assessment requirements are most effective if the public interest considerations are incorporated from the initial stages of thinking about a project or regional/strategic undertaking. Early initiation of assessments is essential to ensuring that potential proponents and other participants understand the requirements of the assessment process from the outset and begin to engage together in deliberations and consultations when initial purposes, issues and options are being identified, well prior to selection among alternatives for the undertaking. Mechanisms for early initiation include pre-identification of undertakings subject to assessment, early public notice, and delineation of early process steps with provisions for multi-interest consultation on matters such as key concerns and opportunities, desired future objectives, priorities for assessment attention, sustainability-based criteria for evaluations, selection of an appropriate process stream, and continuing means of ensuring meaningful engagement of the public, relevant jurisdictions and experts, and other key players. Early initiation is also needed to provide the time needed to discuss arrangements for inter-jurisdictional cooperation and/or collaboration, aiming to establish a single or at least smoothly coordinated, comprehensive assessment process incorporating next-generation assessment standards.



(9) Spacing? Rigorous and credible impact assessments focused on cumulative and interactive effects and uncertainties

While assessments need to identify and evaluate the particular effects of proposed projects and regional/strategic initiatives, the effects that matter in the end are cumulative results of interacting individual effects. Assessment regimes need to place cumulative effects – the combined effects of past, present and future activities on natural and human systems – at the centre of impact assessment at the project as well as regional/strategic levels. A focus on cumulative effects, however, must be combined with recognition that these are effects on and in complex systems characterized by dynamic interactions at multiple scales. These systems are typically not well understood. Consequently, assessment regimes must be careful to respect and report the implications of uncertainties affecting impact predictions and grounds for confidence in proposed mitigation measures and other responses. Recognition of uncertainties as well as demands for rigour add to reasons to draw on the best and most independent and impartial expertise from multiple sources of knowledge (including approaches to and areas of focus in modern science and Indigenous knowledge) and to favour precautionary approaches. Explicit justifications for selection among best practice assessment methods are also important. Finally, assessments regimes gain from multiple tiers of assessment application. For example, project-level assessments provide crucial specifics about the cumulative effects arising from individual project interactions with their larger context. Regional/strategic assessments, informed by project level findings, offer more comprehensive coverage of potential cumulative effects and their implications, and can identify appropriate means of avoiding adverse cumulative effects and enhancing positive ones. In turn, guidance from the regional/strategic level should make project level assessments more efficient and effective.

(10) Comparative evaluation of potentially reasonable alternatives, including the null option

To encourage design and delivery of best options in the lasting public interest, assessment regimes must require identification and comparison of fundamentally different approaches (alternatives to) as well as different design options (alternative means) for serving the public interest purposes involved. The comparative evaluation of potentially reasonable options should serve as the means of identifying the best option to propose in both project and regional/strategic level assessments, and the tiers of alternatives assessment should be linked so that each informs the other. At both levels, assessment processes should begin with

early identification of the range of potentially viable alternatives, determine responsibilities for gathering the necessary information, and remain open to considering further options that arise during the assessment. Also, the comparative evaluation must apply carefully specified sustainability-based public interest criteria and include identification and avoidance or minimization of trade-offs. The range of potentially reasonable alternatives may vary between public and private sector proponents at the project level. Assessments at the regional/strategic level are likely to be needed in cases where project level assessments lack the capacity to consider broader options that may contribute more positively to the lasting public interest. In all cases, the alternatives considered must include the null option (no project or regional/strategic initiative) and be identified early so as to maximize the time to gather information and assess options. It is also important to be open to adding additional alternatives identified during the course of any assessment process.

(11) Credible, accountable and authoritative decision-making for assessed undertakings, policy making and other core initiatives under IA

To be enforceable and effective, assessment regime decisions must rest on law-based authority. No less crucial, however, is credibility and accountability. Assessment decisions have important consequences for many interests. Often, they are controversial. They are most likely to spur conflict when the decision-making process is non-transparent and places few constraints on the discretion of decisionmakers. Better and more broadly accepted decision-making depends on common recognition that the assessment process and decisions are open, fair, well-informed and clearly justified. These qualities, in turn, depend on law that ensures access to information and participative deliberations and clarity on how the information is gathered, analysed and used by decisionmakers. As well, the law must establish arm's-length administration, mobilize impartial expertise, and require published analyses of options and justification of decisions in light of explicit sustainability-based criteria and trade-off rules. Parallel characteristics are needed for other assessment regime components including development of regulations and policies, decision-making on application of or exemption from assessment requirements, and negotiation of inter-jurisdictional agreements. Ultimate decision-making should be assigned to an elected authority, using the information base (assessment analyses, conclusions and recommended decisions and conditions, etc.) prepared by an arm's-length assessment body. Finally, the law should provide recourse to challenge decisions when their justifiability is in doubt. This could occur through the right

to appeal to a court or administrative tribunal tasked with ensuring consistent and effective application of legislative provisions. These elements are a critical package especially for assessments serving the long-term public interest in face of a persistent tradition of minimally transparent political discretion in assessment processes and decision-making.

(12) Follow-up of compliance with conditions, effect predictions, and effective response to monitoring findings

Assessment law must require and facilitate monitoring of effects and enforcement of compliance with decision conditions meant to ensure the sustainability of approved undertakings. Especially for sustainability purposes in conditions of complexity and uncertainty, the law must anticipate needs for timely response to unexpected emerging problems and opportunities, favour adaptable projects and regional/strategic undertakings, and establish arrangements for ongoing governance covering the implementation of decisions. For both effects monitoring and compliance enforcement, the law must enable clear assignment of powers and responsibilities. Follow-up effects monitoring must include comparison of actual and predicted effects, report on the effectiveness of mitigation and enhancement measures, and facilitate effective response to monitoring findings. Compliance follow-up must cover proponent commitments as well as the terms and conditions of approvals and must be supported with suitable sanctions and other tools for enforcement action. We envision government agencies overseeing follow-up and monitoring with the full engagement of the public and support of the proponent. Learning through attention to uncertainties, adaptive design, and follow-up monitoring is particularly important for supporting adaptive management, making better future predictions and improving regime design. More broadly, the law should provide for regular independent review and revision of follow-up programs and associated methods, and ongoing monitoring of how the overall assessment regime performs, including the strengths and deficiencies of impact predictions, public engagement efforts, trade-off avoidance, compliance and effects monitoring, all critical to full process learning.

(13) Independent and impartial implementation and administration

To build integrity and trust in assessment processes, assessment law must ensure that assessments are administered by an impartial, arm's-length body. This is especially important given the assessment tradition of leaving important elements of the process in the hands of proponents and the long record of political

controversies surrounding assessment decision-making. As a public agency in the governance system, the administrative body must be designed, located and empowered to be an independent and impartial servant of the long-term public interest, insulated to the extent possible from political influence that tends to favour immediate partisan priorities. Impartiality is also enhanced by consistent application of explicit sustainability-based criteria, published reasons for administrative and review process decisions, and the other credibility and accountability steps discussed above. The need for independent legitimacy is particularly obvious in deliberations on what projects and regional/strategic undertakings merit assessment and in key elements of individual assessments – ensuring well-informed critique and impartial review of proposals and supporting documentation from proponents, facilitating meaningful engagement of other participants, tapping independent expertise, preparing analyses in light of key decision considerations, drafting recommendations for decisionmakers, and establishing effective monitoring of effects and compliance. However, arm's length impartiality is no less important in cross-cutting work developing regulatory and policy guidance and criteria, supervising overall process review, encouraging full process learning, and facilitating inter-jurisdictional collaboration. The administrative body would also need to cooperate in independent review of assessment successes and limitations, including strengths and deficiencies of impact predictions, public engagement, trade-off avoidance, and compliance and effects monitoring.

(14) Effective, efficient and fair process

Assessment regime design has often been presented as a matter of selecting between effectiveness and efficiencies – between processes that are thorough and participative and ones that feature timely and certain results. The reality, however, is that effectiveness and efficiency are interdependent. The basic test of efficiency is how few resources and time need to be expended to deliver the desired effective result. Also, lasting effectiveness depends on the credibility of processes that are evidently both efficient and fair as well as strong in the handling of other substantive considerations. In assessment regimes, the best means of combining effectiveness, efficiency and fairness are distributed throughout the components discussed above. Key elements include an emphasis on early initiation of assessment deliberations, clarity and consistency in core process requirements while facilitating flexibility of application in different contexts (e.g. different process streams, generic but also context-specified sustainability-based criteria and trade-off rules, a range of approaches to ensuring meaningful public

participation, and defined but adjustable timelines), and full process learning to build and mobilize additional capacities while applying lessons from experience. Especially with the constitutional complexities many jurisdictions have, careful facilitation of inter-jurisdictional collaboration is crucial as is coordination with planning and regulatory bodies beyond the assessment process.

## Conclusions

There was considerable ‘buy-in’ to both the next-generation elements and to the notion that they represent a robust core package of elements for next-generation assessment from the approximately 240 leading practitioners, government representatives and academics that attended our session at IAIA. Participants felt strongly enough about the idea of a package of core elements to offer suggestions for adding to it. As expanded and recast above, the next-generation assessment elements (and package as a whole) reflect what we have learned is needed.

The participants’ evident support for the next-generation elements is not surprising. None of the elements is new. Most have garnered significant attention in the literature over several decades and we have years and years of practice and experience in at least experimental and ad hoc implementation. At the same time, it is clear from the data that, in most jurisdictions, implementation of the elements described above, and the next-generation package as a whole, would require significant evolutionary steps from current practice. Many elements of the next-generation package are demanding, and even longstanding components such as meaningful public participation remain closer to aspiration than achievement. Serious improvements in regime design and implementation seem likely to continue to depend on gradual gains underpinned by more experience and learning, and more courageous legislation.

Having recently promoted a next-generation approach to the reform of federal impact assessment in Canada, we share our participants’ awareness of significant implementation challenges. Moreover, each jurisdiction will have its own experience with IA practice and its own level of political will, implementation capacity and adequacy of background legislation on assessment matters and related areas such as Indigenous rights. This has been the history of IA globally. Nevertheless, as noted above, we have made significant progress in our thinking and practice since the 70’s through gradual revision of process and improvement of practice in light of experience and new circumstances. What we have termed next-generation assessment will also continue to evolve.

The history of IA globally has also consistently featured concerns about the potential costs of adopting

strong assessment regimes and doing good assessments, as did our participants. So far, surprisingly little of the associated discussion has considered the costs in time, money and credibility of weak or disregarded assessments and poorly executed development decisions. Deliberations on next-generation assessment regime design and implementation provide an opportunity to weight these matters more carefully. That will entail moving from the unhelpfully narrow question of whether we have the time and resources to do better assessment work, to a more realistic evaluation of whether the time and resources are worth it given the improved effectiveness of IA that would result, and whether there are ways to achieve this with reasonable investment in time and resources. Given the current global imperatives to move from unsustainable trajectories to more viable and desirable future options, the next-generation assessment package itself merits a duly comprehensive assessment.

Several practical steps flow from our conclusions that would help with the implementation of next-generation approaches to impact assessment. These at a minimum include:

- drafting a model law and/or other depiction of how the next-generation components would be integrated, organized and implemented;
- identifying current best practice examples, globally (with various combinations or strengths and limitations);
- proposing ways of establishing the needed sustainability guidance (strategies, scenarios and pathways, key indicators, and means of specifying criteria for particular cases and places);
- clarifying how implementation of a next-generation regime could be more efficient and manageable as well as more ambitious (e.g. emphasis on integrating now fragmented project and policy planning components, enhancing credibility and reducing conflicts, facilitating efficient cooperation through upward harmonization, building and mobilizing more capacity through learning . . .); and
- identifying a willing coalition of potential support that would encourage political will.

As this paper is being completed, governments in many jurisdictions are preparing for COVID-19 pandemic recovery initiatives, including stimulus spending on new infrastructure. Predictably, some authorities are seeing urgent recovery needs as justification for arbitrary weakening and avoidance of their assessment processes. However, these are also times of worsening climate change, declining ecological systems and, as the pandemic has revealed, deepening vulnerability for those on the short end of the inequitable distribution of benefits and opportunities. The lasting public

interest will be better served by jurisdictions with greater foresight that opt instead for a more carefully considered and deliberative shift to next-generation impact assessment.

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