



# EVOLUTION OR *Revolution:*

## Where next for impact assessment?

39th Annual Conference of the



**International Association for Impact Assessment**

29 April - 2 May 2019

Brisbane Convention & Exhibition Centre | Brisbane, Australia

## FINAL PROGRAM



IAIA19 Premier Sponsors



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## Table of contents

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# EVOLUTION or Revolution:

## Where next for impact assessment?

**E**volution sees the gradual development of organizations, practice, and systems from simple to more complex forms. **Revolution** represents a dramatic and wide-ranging shift to an entirely new paradigm.

- Will evolutionary development of IA be sufficient in the future?
- Is there a better way to ensure that impact-assessable matters are taken into account in project and policy decision making?
- If revolutionary change is needed, what might it look like?

IA has shown both flexibility and resilience, its processes being adapted and applied in a wide range of contexts and settings across the world. It has diversified its focus to strategic, economic, social, health, and cumulative assessment as well as sustainability assessment.

But the utility of IA is under question on many fronts. IA is not without its critics. It has been attacked by project and policy proponents for impeding development, and by environmental and community interests for failing to meaningfully influence decision making and to protect environmental and social values. Both groups criticize it for being costly, overly procedural, and political, and question the value it adds to development and environmental outcomes.

IA is generally mandated by statute law. But laws that fail to serve the interests of good governance of communities can become moribund and fail to be administered. IA will change as governments, proponents, and communities rationalize competing views about values.

The question is whether this should be a dramatic, revolutionary change—or an incremental, evolutionary change.

The conference theme is deliberately provocative, inviting delegates to consider IA from different viewpoints. It calls for reflection on the imperatives for change if IA is to be part of another half-century of good practice environmental management.

*Why is an evolution/revolution insert in my bag?*

We want to encourage discussion between delegates on our conference theme of "Evolution or revolution: Where next for impact assessment?"

Tell other delegates which way you are currently thinking by putting the insert in your name tag with the appropriate side facing out. Talk to delegates with a different view to understand their reasoning.

If you change your mind, turn your insert around. Maybe you can convince other delegates to turn theirs around.



**Sara Bice**

President, IAIA

The Australian National University, Canberra

## Welcome to Brisbane!

The International Association for Impact Assessment is thrilled to return to Australia for the first time in 11 years. It's been a while and we are so glad to be back, and so pleased you could join us!

Australia is a very appropriate home for IAIA's 39th annual international conference. It is a country where impact assessment plays an active and important role in environmental, social, health, and economic decision-making. From the savanna woodlands of Western Australia's Kimberley to Queensland's Great Barrier Reef, from the mining pits of Port Hedland to the urban development of Sydney's Harbour, impact assessment helps to protect and shape Australia.

Impact assessment also plays vital roles in raising awareness of and supporting the rights of indigenous peoples and vulnerable groups. This year's conference takes place on the traditional lands of the Turrbal people. Their custodial lands and traditional hunting grounds extend for over 1,300 square kilometers around the Brisbane River, just near the Convention Centre. In what was once Mianjin, today Brisbane, we extend our acknowledgment and respect to the traditional owners of this land. We invite you to find out more about the rich indigenous history of Brisbane and surrounds.

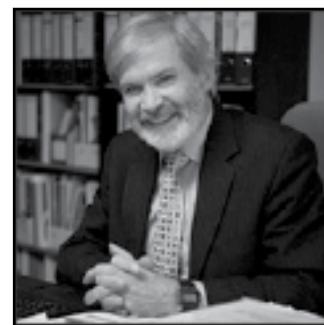
The many examples of impact assessment's reach and importance visible in Australia are reflected in the experiences and interests of our conference delegates. As we explore and debate the theme of "Evolution or revolution? Where next for impact assessment?" together this week, I encourage you to keep in mind all that impact assessment is and can be. You are among colleagues and friends who share your interests and beliefs in the centrality of impact assessment to supporting the very best decisions for the future of our planet and societies.

Here's to an exciting week!

**Lachlan Wilkinson**

Conference Chair

JBS&amp;G Australia Pty Ltd

**Bryan Jenkins**

President, Environment Institute of Australia and New Zealand

**The Hon Kate Jones MP**

Minister for Tourism Industry Development

It is my pleasure to welcome you to Brisbane for the 39th Annual Conference of the International Association for Impact Assessment (IAIA19). The Queensland Government is proud to support this event through Tourism and Events Queensland's Business Events Acquisition and Leveraging Fund.

Pursuing the theme "Evolution or Revolution: Where next for impact assessment?", this conference will challenge researchers and practitioners to consider how impact assessment can evolve. Technical visits across Brisbane will showcase the innovation being undertaken in our state's capital.

As well as being a leader in the area of impact assessment, Brisbane offers a desirable range of tourism experiences that delegates can enjoy in between conference commitments. I encourage you to explore the diverse tourism experiences on offer throughout the region—from our relaxed outdoor lifestyle to our beautiful islands, ecotourism experiences, and golden beaches.

On behalf of the Environment Institute of Australia and New Zealand, your conference host and an IAIA Associated Organization, we welcome you to Brisbane and the beautiful South Bank parklands.

It was back in early 2016 that the Brisbane conference bid team came up with the theme of evolution or revolution. We thought it was an important question to ask back then, and now, three years later, we think it is even more important. Every day, we see decision-making by governments and others that fails to consider sustainability. We see practitioners continuing to produce large impact assessment documents but with little change to the economic growth juggernaut. Yet impact assessment legislation is in place in almost all countries in the world. Can the impact assessment framework developed fifty years ago be adapted to meet the sustainable development goals of the 21st century? Or is it time for a revolution?

It is pleasing to see so many presenters and session chairs take up the challenge we put out in the theme. We're sure there will be many fascinating and stimulating discussions during the course of the conference. The goal is to provide you with new insights and innovative thinking that will generate improved practices for delivering sustainability and the role of impact assessment in that delivery. We want you to go home with fresh ideas and a renewed determination to make the tool of impact assessment more effective.

# Mobile App

## MOBILE APP AND DESKTOP PORTAL

### Experience IAIA conferences in a whole new way!



The mobile app is available from mid-April 2019.

All delegates registered by 5 April received an invitation email to download the app.

If you didn't receive the email:

1. Visit <https://crowd.cc/iaia19> (Desktop or Mobile Web) or <https://crowd.cc/s/2yOwk> (Apple or Android)
2. Download the CrowdCompass Attendee Hub.
3. Search for IAIA19 as an event.
4. Log in using "iaia19brisbane" as the password.

You must be a registered attendee to be able to view the restricted portions of the app such as attendee and speaker contact details.

### Keep important parts of the conference at your fingertips.

Use the **Desktop Portal**, the **Mobile App**, or both to:

- » Help others find you—complete your profile and upload a photo.
- » Search for sessions, speakers, and attendees.
- » Select your favorite sessions and create your personal agenda.
- » Download speaker handouts.
- » Take notes and send them to yourself.
- » Use the interactive map function to find rooms.
- » Receive instant notifications of program changes on-site.

Take your changes with you—data syncs between your desktop and mobile versions.

DON'T HAVE A SMARTPHONE? No problem. Use the app on your laptop or iPad.

Access information not included in the final program, including:

- About conference sessions
- Contact us
- Speaker tips
- Session format descriptions
- General information about IAIA19
- Brisbane info
- Technical visits

Need to recharge your device? Courtesy of sponsors **Inland Rail** and **Cardno**, charging stations are available in the Plaza Foyer.

### SHARE WITH PHOTOS

Individuals who are attending technical visits are encouraged to take photos and send them to Headquarters staff for posting on IAIA's Facebook page and other uses. Please identify the name of the technical visit, the individuals pictured, and the photographer, and send your photo(s) to [info@iaia.org](mailto:info@iaia.org).

If you are posting IAIA19 photos on your Instagram, Facebook, or Twitter account, please tag #iaia19 so the photos can be collected and shared throughout IAIA as well. You can share your photos on the Activity Feed of the IAIA19 app, too!

### LIVE TWITTER FEED #IAIA19

Are you keen to share your thoughts on a presentation or reflect on the day's events? Conference participants are encouraged to tweet throughout the event on the hashtag **#iaia19**.

### INTERNET ACCESS

Free wifi is available in the meeting rooms and public spaces of the convention center.

# 2019 Award and scholarship *Winners*



ARCTIC COUNCIL

## Global Award

The **Arctic Council** was chosen to receive the Global Award for promoting cooperation and coordination on issues of sustainable development and environmental protection in the Arctic.

*The Global Award is presented annually to a leading individual or institution that has made a substantial contribution to the practice of environmental assessment, management or policy at a global scale.*



## Individual Award

**Lori Anna Conzo** was selected for the Individual Award for her ongoing contributions to the field of biodiversity risk management, where her collaborative, inclusive efforts have brought together different sectors and spheres encouraging consistency and good practice.

*The IAIA Individual Award acknowledges personal contribution to the discipline of impact assessment. It recognizes major achievement and advancement in theory and/or practice over a period of time at an international level.*



## Lifetime Achievement Award

**Asha Rajvanshi** receives the Lifetime Achievement Award for her sustained and significant contributions to biodiversity-inclusive impact assessment as a dedicated trainer, governmental advisor, author, and practitioner.

*The IAIA Lifetime Achievement Award, previously known as the Rose Hulman Award, is awarded to long-term supporters and members of IAIA for major contributions to the field of impact assessment.*



## Outstanding Service to IAIA

The Outstanding Service to IAIA Award is presented to **Ana Maria Esteves** for her contributions and commitment to IAIA, displayed through her two terms on the Board, her leadership on the Resettlement Symposium in South Africa, and her championing of multiple IAIA initiatives.

*The IAIA Board of Directors selects the recipient of the Outstanding Service to IAIA Award, which recognizes one or a small number of key individuals within IAIA who have provided exceptional service to IAIA as an organization over a number of years.*



## Institutional Award

**Japan International Cooperation Agency (JICA)** was chosen to receive the Institutional Award for its effective environmental and social consideration guidelines and safeguard policies.

*The IAIA Institutional Award is presented to a national or international government or nongovernmental organization for outstanding contribution to impact assessment practice or other environment-related activity deserving of recognition.*



## IAPA Best Paper of 2018

The 2018 IAPA Best Paper Award is presented to **Ilse Aucamp** and **Antoinette Lombard** for their paper, "Can social impact assessment contribute to social development outcomes in an emerging economy?," published in IAPA 36(2) 173-185.



## Regional Award

The Western Australia Environmental Protection Authority (EPA) was selected as the recipient of the Regional Award for its sustained contributions to good practice in impact assessment in Australia, visible through its pro-active and pioneering work in developing policy and guidance material.

*The IAIA Regional Award is awarded to an individual or organization that has made a substantial contribution to the field of impact assessment and/or has taken a leadership role in promoting best practice in impact assessment within the general world region of the location of the conference for that year.*

If you would like to nominate an individual or organization for a 2020 award, please submit name and justification to [shelli@iaia.org](mailto:shelli@iaia.org).

Online nominations will open soon.



## Rita R. Hamm IA Excellence Scholarship

**Jillian Ash** (Australia) was selected as the recipient of this year's Rita R. Hamm IA Excellence Scholarship. Jillian is a practitioner with GHD's Engagement, Communication and Communities Global Service Line and the Social Impact Assessment technical discipline.

*The Rita R. Hamm IA Excellence Scholarship, in honor of the legacy that IAIA's former CEO left on the organization and the field of impact assessment, is offered in conjunction with each annual IAIA conference, allowing a young practitioner in the region of the host country to attend.*

# Conference Overview

## REGISTRATION DESK HOURS

|                   |                          |
|-------------------|--------------------------|
| Friday 26 April   | 15:00-17:00              |
| Saturday 27 April | 08:00-10:00, 15:00-17:00 |
| Sunday 28 April   | 06:30-10:00, 15:00-17:00 |
| Monday 29 April   | 07:30-17:00              |
| Tuesday 30 April  | 08:30-16:30              |
| Wednesday 1 May   | 08:30-16:30              |
| Thursday 2 May    | 08:30-14:30              |

## Program Overview

|              | Pre-conference<br>Friday<br>26 April                            | Pre-Conference<br>Saturday<br>27 April                          | Pre-Conference<br>Sunday<br>28 April | Conference Day 1<br>Monday<br>29 April |
|--------------|---|---|--------------------------------------|--|
| 06:30        |   |   |                                      |  |
| 07:00        |   |   |                                      |  |
| 07:30        |   |   |                                      |  |
| 08:00        |   | Registration<br>for training<br>courses and<br>technical visits | Technical visits                     |  |
| 08:30        |   |   |                                      |  |
| 09:00        |   |   |                                      |  |
| 09:30        |   |   |                                      |  |
| 10:00        |   |   |                                      |  |
| 10:30        |   |   |                                      |  |
| 11:00        |   |   |                                      |  |
| 11:30        |   |   |                                      |  |
| 12:00        |   |   |                                      |  |
| 12:30        |   |   |                                      |  |
| 13:00        |   |   |                                      |  |
| 13:30        |   |   |                                      |  |
| 14:00        |   |   |                                      |  |
| 14:30        |   |   |                                      |  |
| 15:00        | Registration<br>for training<br>courses and<br>technical visits | Registration<br>for training<br>courses and<br>technical visits | Registration                         |  |
| 15:30        |   |   |                                      |  |
| 16:00        |   |   |                                      |  |
| 16:30        |   |   |                                      |  |
| 17:00        |   |   |                                      |  |
| 17:30        |   |   |                                      |  |
| 18:00        |   |   |                                      |  |
| 18:30        |   |   |                                      |  |
| 19:00        |   |   |                                      |  |
| 19:30 onward |   |   |                                      |  |

# Conference overview

| Conference Day 2<br><b>Tuesday<br/>30 April</b> |                     | Conference Day 3<br><b>Wednesday<br/>1 May</b> |                     | Conference Day 4<br><b>Thursday<br/>2 May</b> |                        | Post-Conference<br><b>Friday<br/>3 May</b> |              |
|---|---------------------|--|---------------------|---|------------------------|--|--------------|
| Registration                                    | Committee meetings  | Registration                                   | Committee meetings  | Registration                                  | Theme forums           | Technical visits depart                    | 06:30        |
|   |                     |  |                     |   | Break                  |  | 07:00        |
|   | Theme forums        |  | Theme forums        |   | Break                  |  | 07:30        |
|   | Exhibits & posters  |  | Exhibits & posters  |   | Concurrent sessions    |  | 08:00        |
|   |                     |  |                     |   | Concurrent sessions    |  | 08:30        |
|   | Break               |  | Break               |   | Poster session         |  | 09:00        |
|   | Concurrent sessions |  | Concurrent sessions |   | Annual General Meeting |  | 09:30        |
|   |                     |  |                     |   | Lunch                  |  | 10:00        |
|   | Poster session      |  |                     |   | Concurrent sessions    |  | 10:30        |
|   |                     |  |                     |   | Concurrent sessions    |  | 11:00        |
|   | Lunch               |  | Lunch               |   |                        |  | 11:30        |
|   |                     |  |                     |   | Council meeting        |  | 12:00        |
|   | Concurrent sessions |  | Concurrent sessions |   | Lunch                  |  | 12:30        |
|   |                     |  |                     |   | Concurrent sessions    |  | 13:00        |
|   | Break               |  | Break               |   |                        |  | 13:30        |
|   | Concurrent sessions |  | Concurrent sessions |   |                        |  | 14:00        |
|   |                     |  |                     |   | Closing plenary        |  | 14:30        |
|   | Break               |  |                     |   |                        |  | 15:00        |
|   | Concurrent sessions |  | Concurrent sessions |   |                        |  | 15:30        |
|   |                     |  |                     |   |                        |  | 16:00        |
|   | Section meetings    |  | Section meetings    |   |                        |  | 16:30        |
|   |                     |  |                     |   |                        |  | 17:00        |
|   | Dine Outs           |  | Walking Dinner      |   |                        |  | 17:30        |
|   |                     |  |                     |   |                        |  | 18:00        |
|   |                     |  |                     |   |                        |  | 18:30        |
|   |                     |  |                     |   |                        |  | 19:00        |
|   |                     |  |                     |   |                        |  | 19:30 onward |

# Daily Schedule

FRIDAY 26 APRIL

15:00-17:00 Registration (M5)

Note: No lunch is provided. Cafes and restaurants are available in the BCEC neighborhood.

SATURDAY 27 APRIL

06:30-18:45 Technical visit A: Minjerribah (North Stradbroke Island)\*

08:00-10:00 Registration (Plaza Foyer)

09:00-17:00 Training courses

- 2. More effective IA: Tools (M9)
- 3. Cumulative effects assessment (P2)
- 4. Effective implementation of ESMPs (M1)
- 5. Strategic thinking SEA (P5)
- 6. Theory & practice biodiversity-friendly infrastructure (A1)
- 8. Resettlement planning and IA (M7 & M8)
- 9. Leadership, influencing, & communication (P4)
- 10. Ecological solutions and planning (M2)
- 11. SIA: Fit for the future (P3)

15:00-17:00 Registration (Plaza Foyer)

SUNDAY 28 APRIL

06:30-10:00 Registration (Plaza Foyer)

07:00-17:00 Technical visit C: Moreton Bay marine ecotour\*

08:00-17:00 Technical visit D: Biodiversity and offsets\*

08:30-17:00 Technical visit B: Biodiversity-friendly infrastructure\*

09:00-17:00 Training courses

- 2. More effective IA: Tools (M9)
- 3. Cumulative effects assessment (P2)
- 4. Effective implementation of ESMPs (M1)
- 5. Strategic thinking SEA (P5)
- 6. Theory & practice biodiversity-friendly infrastructure (offsite)
- 8. Resettlement planning and IA (M7 & M8)
- 9. Leadership, influencing, & communication (P4)
- 10. Ecological solutions and planning (M2)
- 11. SIA: Fit for the future (P3)
- 12. Stakeholder engagement & public participation (P6)

15:00-17:00 Registration (Plaza Foyer)

MONDAY 29 APRIL

07:30-17:00 Registration (Plaza Foyer)

08:00-11:45 Students and Young Professionals workshop (P8)

08:30-10:00 Impact assessment primers

- Agriculture, Forestry, and Fisheries (P6)
- Corporate Stewardship and Risk Management (P7)
- Disasters and Conflict (P9)
- Indigenous Peoples (P10)

09:00-12:00 World Bank Group Day (P3 & P4)

10:30-12:00 Impact assessment primers

- Cultural Heritage (P6)
- Governance & Implementation Systems (P7)
- Social Impact Assessment (P9)

\*Technical visit participants: Please meet at the BCEC Glenelg Street entrance a minimum of 15 minutes prior to departure.

13:00-14:30 Opening plenary (see page 14) (Plaza Terrace Room)

14:30-15:00 Break (Plaza Foyer)

15:00-16:30 Concurrent sessions

16:40-17:00 Screening: "Divided We Dance" (Plaza Terrace Room)

17:00-19:00 Welcome reception (Plaza Terrace Room)

TUESDAY 30 APRIL

07:00-08:30 Affiliates, Branches, & Associated Organizations Forum (P6)

07:30-08:30 Committee meetings

- IAPA Editorial Board (P5)
- Board Nominations Committee (P7)
- Professional Development Program Task Force (P11)

07:30-08:30 Section meeting

- Students and Young Professionals (P8)

08:30-16:30 Registration (Plaza Foyer)

09:00-10:30 Theme forums

10:30-11:00 Break (Plaza Foyer & Terrace Room)

11:00-12:30 Concurrent sessions

12:40-13:30 Poster session (Plaza Ballroom Foyer)

13:30-14:20 Lunch (Plaza Foyer & Terrace Room)

14:30-16:00 Concurrent sessions

16:00-16:30 Break (Plaza Foyer & Terrace Room)  
Break sponsored by Tourism and Events Queensland

16:30-18:00 Concurrent sessions

18:10-19:10 Section Meetings

- Agriculture, Forestry, and Fisheries (P5)
- Disasters & Conflicts (M1)
- Corporate Stewardship and Risk Management (P8)
- Governance & Implementation Systems (P3&P4)
- Indigenous Peoples (P11)

19:00 Dine Outs (see page 12)

WEDNESDAY 1 MAY

07:30-08:30 Committee meetings

- IAPA Journal Management Committee (P5)
- Training & Professional Development Committee (P6)
- Awards Committee (P8)
- Sections Coordinating Committee (P7)

Coffee breaks and lunches

Based on the data collected via registration forms, IAIA arranged for a percentage of vegetarian meals. This does not guarantee accommodation of individual preference.

Note: Lunch is NOT provided on 29 April.

# Daily schedule

## TECHNICAL PROGRAM: TOPICAL STREAMS

|             |  |
|-------------|--|
| 08:30-16:30 | <b>Registration</b> (Plaza Foyer)  |
| 09:00-10:30 | <b>Theme forums</b>  |
| 10:30-11:00 | <b>Break</b> (Plaza Foyer & Terrace Room)  |
| 11:00-12:30 | <b>Concurrent sessions</b>   |
| 12:40-13:30 | <b>Annual General Meeting and Lifetime Achievement Award Presentation</b> (M1)<br>All conference participants are encouraged to attend the annual business meeting of the Association. Meet the IAIA Board of Directors, hear the Treasurer's report, and be present for the prestigious Lifetime Achievement Award recipient's acceptance speech. |
| 12:40-14:20 | <b>Lunch</b> (Plaza Foyer & Terrace Room)  |
| 14:30-16:00 | <b>Concurrent sessions</b>   |
| 16:00-16:30 | <b>Break</b> (Plaza Foyer & Terrace Room)<br><i>Break sponsored by ExxonMobil PNG Limited</i>  |
| 16:30-18:00 | <b>Concurrent sessions</b>   |
| 18:10-19:10 | <b>Section Meetings</b><br>Biodiversity & Ecology (P5)<br>Climate Change (P8)<br>Cultural Heritage (P11)<br>Health (B1)<br>Public Participation (P6)<br>Social Impact Assessment (P7)  |
| 19:30-22:00 | <b>Walking dinner</b> (Brisbane City Hall: 64 Adelaide Street)   |

## THURSDAY 2 MAY

|             |   |
|-------------|---|
| 08:30-14:30 | <b>Registration</b> (Plaza Foyer)   |
| 09:00-10:30 | <b>Theme forums</b>   |
| 10:30-11:00 | <b>Break</b> (Plaza Foyer & Terrace Room)   |
| 11:00-12:30 | <b>Concurrent sessions</b>  |
| 12:40-13:30 | <b>Council meeting</b> (M1)<br>The Council is an advisory resource for the Board. Committee chairs, Section coordinators, Affiliate and Branch representatives, and conference program chairs for current and future conferences comprise the Council. All members are encouraged to attend and meet the leadership of IAIA. Presentation of the Outstanding Service Award. |
| 12:40-14:20 | <b>Lunch</b> (Plaza Foyer & Terrace Room)   |
| 14:30-16:00 | <b>Concurrent sessions</b>  |
| 16:00-16:30 | <b>Break</b> (Plaza Foyer)  |
| 16:30-17:30 | <b>Closing plenary</b> (see page 15) (Plaza Terrace Room)<br><i>Sponsored by OceanaGold</i>   |
| 16:00-19:00 | <b>Exhibit and poster dismantle</b>   |

## FRIDAY 3 MAY

|             |  |
|-------------|--|
| 08:00-18:00 | <b>Technical visit E: Gold Coast*</b>  |
| 09:00-13:00 | <b>Technical visit F: Brisbane wharf tour*</b>   |
| 09:30-16:30 | <b>Technical visit G: Environmental management at the Port of Brisbane and Brisbane Airport*</b> |
| 16:00-19:00 | <b>Technical visit H: Brisbane River sunset tour*</b>  |
| 3-5 May     | <b>Technical visit J: Southern Great Barrier Reef (Townsville)</b>                               |

The technical program is structured into two primary streams (thematic sessions focusing on evolution or revolution; and general impact assessment sessions, including topics that address issues of interest to IAIA's special-interest Sections) and one special-interests stream. Each morning, all delegates are invited to participate in a select number of theme forums, sessions which focus on cross-cutting issues relevant to the many specialties of impact assessment with topics that engage the conference theme.

### Conference theme

|  |    |
|--|----|
| Addressing the ongoing challenges of impact assessment: Is evolution or revolution the answer? .....     | 19 |
| Climate change impact assessment: Beyond adaptation or mitigation? .....                                 | 24 |
| Controversial topics in IA: The issues in IA that have been avoided .....                                | 24 |
| Cumulative impact assessment: Have cumulative impacts exceeded sustainable thresholds? .....             | 25 |
| Improving quality and effectiveness: Does the follow-up matter?.....                                     | 25 |
| Links between assessment, approval, and implementation.....  | 26 |
| Proponents-driven IA and its alternatives: Giving those who experience impact a central role in IA ..... | 27 |
| Socio-economic impact assessment: Evolution or revolution?.....  | 28 |
| Strategic and regional assessment: Importance of regions in an era of globalization .....                | 30 |
| The use of technology to advance environmental and social impact assessment .....                        | 32 |
| Theory and principles of IA.....   | 34 |

### IAIA Section and general topics

|  |    |
|--|----|
| Tools and methods of IA .....                    | 37 |
| Disasters and conflict.....                      | 38 |
| Infrastructure and transportation.....           | 39 |
| Resilience and sustainability.....               | 39 |
| Public participation.....                        | 40 |
| Energy, power generation, and transmission ..... | 40 |
| Cultural heritage.....                           | 41 |
| Health impact assessment.....                    | 41 |
| Indigenous Peoples.....                          | 41 |
| Social impact assessment .....                   | 42 |

### Special-interests stream

|  |    |
|--|----|
| Norwegian Oil for Development Program..... | 35 |
| Pacific Day.....                           | 36 |
| Special to IAIA.....                       | 36 |

*As a courtesy to all speakers and to help reduce disruptions, we kindly ask that you remain in the session you're attending for all presentations. Thank you for your consideration.*

# Technical program overview

Plenary  
 Theme forum  
 Concurrent session

|                         | Plaza Terrace | P1&P2  | P3&P4   | P9  | P10  | P11   | M1  | M2   |
|-------------------------|---------------|--|---|---|--|---|---|--|
| <b>Monday 29 April</b>  |               |  |   |   |  |   |   |  |
| 13:00-14:30             | Plenary       |  |   |   |  |   |   |  |
| 15:00-16:30             |               | Hits of the 1990s: From revolution to evolution? (p19)                         | Dot-to-dot isn't just for kids, silly wabbit (p37)                    | Meeting the marine biodiversity challenge (p19)                                     | IA in New Zealand: Lessons & strategies (p19)  | Addressing health & social equity through IA (p35)            | IA and the social & cultural implications of mine closure (p27)             | Scope & level of detail for SEA on national & regional scale (I) (p30)           |
| <b>Tuesday 30 April</b> |               |  |   |   |  |   |   |  |
| 09:00-10:30             |               | Charles or Che? (p16)  | Going digital (16)  | Operating in emerging countries with high biological & cultural diversity (16)      | PACIFIC DAY Safeguards policies & IA practice in the Pacific Island Countries (p16)    |   |   |  |
| 11:00-12:30             |               | IA the Australian way(s) (p19)   | Digital IA: The latest developments (I) (p32)                         | Integrating biodiversity & ecosystem services into mitigation hierarchy (I) (p20)   | Developments in EIA practice in the Pacific islands (p36)                              | Integrating indigenous rights & knowledge into IA (I) (p27)   | Disaster risk reduction (I) (p38)   | Scope & level of detail for SEA on national & regional scale (II) (p30)          |
| 12:40-13:30             |               | Poster Session (Plaza Ballroom Foyer)  |   |   |  |   |   |  |
| 14:30-16:00             |               |  | Digital IA: The latest developments (II) (p32)                        | Integrating biodiversity & ecosystem services into mitigation hierarchy (II) (p20)  | SEA & sustainable development (p36)  | Integrating indigenous rights & knowledge into IA (II) (p27)  | Disaster risk reduction (II) (p38)  | The cumulative dimensions of resource regions (I) (p25)                          |
| 16:30-18:00             |               |  | Filling the evolving IA governance gap (p31)                          | Integrating biodiversity & ecosystem services into mitigation hierarchy (III) (p25) | Advancing IA practice in the Pacific Island Countries (p36)                            | Integrating indigenous rights & knowledge into IA (III) (p27) | Disaster risk reduction (III) (p39)   | The cumulative dimensions of resource regions (II) (p25)                         |
| <b>Wednesday 1 May</b>  |               |  |   |   |  |   |   |  |
| 09:00-10:30             |               | Next generation IA: Exploring 12 key components (p17)                          | Mechanisms for independence in IA: How to be truly independent? (p17) | Seeing the forest for the trees: Are offsets the panacea? (p17)                     | Social & environmental assessment of automation technologies (p17)                     |   |   |  |
| 11:00-12:30             |               | Social closure & decommissioning lessons from experience & future trends (p21) | So much data, so little leveraging (I) (p25)                          | Practicing heritage conservation with IA (I) (p41)                                  | Evolution or revolution? The strategic value of SIA in regional development (I) (p31)  | Integrating indigenous rights & knowledge into IA (IV) (p28)  | Collaboration between engineers and environmental practitioners (I) (p21)   | Let's talk about this: Evolution or revolution for IA (I) (p21)                  |
| 12:40-13:30             |               | Annual General Meeting (M1)  |   |   |  |   |   |  |
| 14:30-16:00             |               | Real-world application of the mitigation hierarchy (p26)                       | So much data, so little leveraging (II) (p26)                         | Practicing heritage conservation with IA (II) (p41)                                 | Evolution or revolution? The strategic value of SIA in regional development (II) (p31) | Integrating indigenous rights & knowledge into IA (V) (p28)   | Collaboration between engineers and environmental practitioners (II) (p22)  | Let's talk about this: Evolution or revolution for IA (II) (p22)                 |
| 16:30-18:00             |               |  | Digital technologies for SIA & resettlement planning (p33)            | Practicing heritage conservation with IA (III) (p34)                                | Capacity building for HIA and for health in IA (p22)                                   | Integrating indigenous rights & knowledge into IA (VI) (p28)  | Collaboration between engineers and environmental practitioners (III) (p23) | Let's talk about this: Evolution or revolution for IA (III) (p23)                |
| <b>Thursday 2 May</b>   |               |  |   |   |  |   |   |  |
| 09:00-10:30             |               | IA and the SDGs (p18)  | Securing socio-economic development through unorthodox IA (p18)       | Is the oil & gas industry able to adapt to the renewable energy revolution? (p18)   | IA is only good when it is effective (I) (p18)   |   |   |  |
| 11:00-12:30             |               | Indigenous rights, land values, and cumulative effects (p23)                   | SIA: How early is too early? (p24)                                    | SIA & EIA of marine renewable energy (p33)  | IA is only good when it is effective (II) (p26)  | The recent reform of federal EA law in Canada (p23)           |   | Improving environmental & social performance on construction projects (I) (p33)  |
| 12:40-13:30             |               | Council Meeting (M1)   |   |   |  |   |   |  |
| 14:30-16:00             |               |  | How do we develop quality SIA practitioners? (p29)                    | ESIA leadership: The role of an ESIA coordinator (p24)                              | IA is only good when it is effective (III) (p26)                                       |   |   | Improving environmental & social performance on construction projects (II) (p33) |
| 16:30-17:30             | Plenary       |  |   |   |  |   |   |  |

# Technical program overview

| B1  | B2  | B3   | P6  | P7   | P8   | P5  |
|---|---|--|---|--|--|---|
|   |   |  |   |  |  |   |
| Can the ecosystem service concept improve the outcome for IA? (p19)         | Public-private partnerships & the Asian infrastructure gap (p26)                                | Orokohanga 2019: Operationalizing the Aashukan Declaration (p27)                           | Early planning in IA in Canada and other countries (p19)                | IA of project closure: Meeting the new expectations (p38)  |  | Meet the editors (p36)  |
|   |   |  |   |  |  |   |
| Transition from EIA to EMS (p26)  | <b>PACIFIC DAY</b><br>EIA systems, practice, guidance, and support in the Pacific islands (p36) | Economic IA (p28)  | Rethinking social license: Where to from here? (p28)                    | Access to remedy & IA (p37)  | Evolving & emerging IA challenges (p20)  | Why follow up? Managing social impacts of transport in urban cities (p39) |
| Poster Session (Plaza Ballroom Foyer)                                       |   |  |   |  |  |   |
| The rapidly-evolving dilemma of fossil fuels vs. renewable energy (p35)     | Power through partnership: The Tina River hydro case study (p36)                                | Asian S3EA: Strategic, spatial, & sustainable EA (I) (p30)                                 | Using case studies in teaching IA (I) (p34)                             | Conference of the birds: Evolving public participation to address community context and complexity (p40) | Environmental sustainability in large mining projects in developing regions (I) (p39)  | Formalizing revised EIA follow-up best practice principles (p34)          |
| Fossil energy vs. renewable energy: Role play of various IA scenarios (p35) | Institutionalizing SIA practice within government decision making (p29)                         | Asian S3EA: Strategic, spatial, & sustainable EA (II) (p31)                                | Using case studies in teaching IA (II) (p34)                            | China's EIA process: Reshape, challenges, & opportunities (I) (p37)                                      | Environmental sustainability in large mining projects in developing regions (II) (p39) | Solutions for conflicts between wind energy technology & birds (40)       |
|   |   |  |   |  |  |   |
| Teaching IA: Best practice principles & pedagogy (p34)                      | Harnessing offsets to achieve conservation goals (p20)  | Health assessments: Types & needs (p41)  | Community engagement from project policy, & IA perspectives (I) (p37)   | IA is a blunt tool for biodiversity: Yes or no? (p21)  | How to integrate climate change into IA: Tools & approaches (p24)                      | China's EIA process: Reshape, challenges, & opportunities (II) (p37)      |
| Annual General Meeting (M1)   |   |  |   |  |  |   |
| Without health there is nothing: Health impact achievements in Asia (p21)   | Country experiences with evolution in the energy sector & the IA requirements (I) (p35)         | Policy, methodology, & procedure in SIA of the displacement of vulnerable people (I) (p41) | Community engagement from project policy, & IA perspectives (II) (p39)  | Putting the "social" back into science: Quality SIA (I) (p29)  | International progress in regional-scale IA (I) (p31)                                  | SIA & baseline studies (I) (p42)  |
|   | Country experiences with evolution in the energy sector & the IA requirements (II) (p35)        | Case studies in methodology in SIA of the displacement of vulnerable people (II) (p42)     | Community engagement from project policy, & IA perspectives (III) (p38) | Putting the "social" back into science: Quality SIA (II) (p29)   | International progress in regional-scale IA (II) (p32)                                 | SIA & baseline studies (II) (p42)   |
|   |   |  |   |  |  |   |
| Establishing guidance for heritage & IA (p34)                               | Evolution of ESIA practice in Asia-Pacific developing economies (I) (p23)                       | Social indicators on SDGs for industry & university (p29)                                  | IAIA's climate change and IA next steps (p24)                           | Social license & IA of energy transitions (p40)  | Lessons learned from SEAs in Australia (p32)   |   |
| Council Meeting (M1)  |   |  |   |  |  |   |
| Shaking up biodiversity offset concepts (p24)                               | Evolution of ESIA practice in Asia-Pacific developing economies (II) (p24)                      | RE100: Ethical initiative in university (p30)  |   | Contribution of IA to sustainable hydropower development (p25)   |  |   |
|   |   |  |   |  |  |   |

# Special meetings and networking activities

## STUDENTS AND YOUNG PROFESSIONALS (SYP) WORKSHOP

The SYP Section invites early career IA researchers, practitioners, and post-graduate students to a half-day workshop to present their work, listen to seasoned IA practitioners and academics speak about their career path, and participate in a speed-mentoring activity. Stay connected by attending other SYP social activities during the week. See the agenda on page 46.

**Monday 29 April | 08:00-11:45 | P8**  
Pre-registration by 5 April required.

## IMPACT ASSESSMENT PRIMERS

Do you want to know a little bit about a specific topic of impact assessment before the conference begins? Is there an area of impact assessment that you've heard about but are not quite sure what it involves? Are you coming to the conference hoping to learn more about a specialty area, but aren't certain if it's where you should spend your time this week? Do you want to know more about IAIA's Sections and start your networking early by meeting delegates before the conference begins? If you answered "yes" to any of these questions, consider participating in the *Impact Assessment Primers*.

Join members of IAIA's Sections for 90-minute introduction sessions where seasoned IAIA members, experts in their field, will provide you with a brief introduction to the topic, an introduction to the Section and its activities, advice and information on which IAIA19 sessions are related to the topic, and how you can start to build your capacity in that area.

**Monday 29 April | 08:30-12:00**  
See page 13 for locations.

## UPDATE: WORLD BANK ENVIRONMENTAL AND SOCIAL FRAMEWORK

An update on the World Bank's new Environmental and Social Framework launched on 1 October 2018 with a focus on (i) the guidance notes backing up the ESF and (ii) the common approach in donor partnership.

**Monday 29 April | 09:00-12:00 | P3 & P4**  
Pre-registration by 5 April required.

## SPECIAL SCREENING: DIVIDED WE DANCE

Inspired by a technical visit during IAIA18 in Durban, "Divided We Dance" depicts the conflict between a community in the heart of Zululand, South Africa, and the coal mining industry. With the arrival of an open pit mine in 2017, the people of Somkhele have been denied the promise of clean water, roads, electricity, and jobs, receiving only a percentage of what was offered to them. However, they are at the losing end of dire impacts on their land and way of life. The community is divided between supporters and non-supporters of the mine. This short documentary navigates the complexities of resource extraction and its impact on largely poor rural communities. Their struggle is being taken to the courts by local activists and pro-bono lawyers. Will environmental justice prevail? (A film by David Quintero)

**Monday 29 April | 16:40-17:00**  
Plaza Terrace Room

## WORK SPACE AND "POP UP" MEETINGS

**Pop up meetings:** Do you have a meeting that just "popped up"? Do you need to meet with colleagues? Continue a discussion? Get together with a potential business partner or client? Merivales Boardroom 1 is available on a first-come, first-served basis for small meetings that "pop up" during the conference. Check the schedule on the room for available times and sign up.

**Work space:** Sometimes you have to check your email or finish the report that is overdue. If you need a place to work, Merivales Boardroom 1 is available any time the room is not reserved for a pop up meeting.

**29 April - 2 May | 09:00-18:00 | Merivales Boardroom 1**

## WELCOME RECEPTION

Catch up with old friends and meet new ones at the welcome reception. This will be conveniently held at the conference venue. Sample some of Queensland's finest food and enjoy Australian beer and wines. This relaxed event will provide the perfect opportunity to continue the evolution versus revolution debate!

Following the welcome reception, join the "After Party" at the Charming Squire downstairs.

**Monday 29 April | 17:00-19:00**  
Plaza Terrace Room  
Pre-registration by 5 April required.

## AFFILIATES FORUM

IAIA Affiliates, Branches, and Associated Organizations are broadening our reach for professional benefit. Meet with all of the representatives. It's about sharing ideas from across the globe toward building a community of professional practice. Share your needs. Tell us your aspirations. Summarize your challenges. Together let's build relationships and make plans for the future.

**Tuesday 30 April | 07:00-08:30 | P6**

## DINE OUTS

Spend an evening sampling local food at a "pay your own way" dinner. A local host will help you experience the cosmopolitan Australian cuisine and delights at our local restaurants. To join, sign up on the forms that are available in the registration area. Dine Outs are a great opportunity to meet new people and explore Brisbane's South Bank precinct in a relaxed atmosphere.

**Tuesday 30 April | 19:00**  
Meet at Grey Street entrance, BCEC

## WALKING DINNER

Australia is proudly a multicultural country, and nowhere is this more apparent than in our food. Join us in Brisbane's iconic City Hall where we will transform the beautiful copper-domed Auditorium into an exciting and welcoming night market with food selections showcasing our culturally rich and diverse nation. Wander around or make use of the relaxed seating to meet new friends and reconnect with old. Sample traditional Aboriginal bush tucker and be delighted by a performance from a local Aboriginal dance group.

Located in the heart of Brisbane and a 20 minute walk from the conference centre, City Hall has served as a community meeting place since 1928. Built using locally-sourced sandstone, Queensland maple, and silky oak timber, and with a 92-meter-high clock tower, the building is heritage-listed and a fascinating place to visit. Reflecting Brisbane's past but looking toward the future, City Hall provides the ideal venue to continue the discussion on the conference theme of evolution or revolution or, indeed, on any topic. We hope you will join us to enjoy the best of food and friendship that Australia and Brisbane have to offer.

**Wednesday 1 May | 19:30-22:00**  
Brisbane City Hall: 64 Adelaide Street  
Pre-registration by 5 April required.

Monday 29 April

08:30-10:00

10:30-12:00

IAIA's special-interest Sections are comprised of exciting and hardworking members who work together in their related field to promote and improve their work on topics and areas including social impact assessment, climate change, biodiversity, and much more!

The purpose of these introductory sessions is to give you an inside look into how these experts contribute to the IAIA community on their related topic and are applying rigorous solution sets and best practices. This is also a chance to learn how you can become a member of a Section and become proactive in the IAIA community. Join us!

## Agriculture, Forestry and Fisheries (P6)

### The "invisible" impact drivers

Few governments regulate AFF activities—we promote impact assessment in our sectors internationally and nationally and seek to ally with local and regional groups interested in promoting this work.

*Chairs: Ijeoma Vincent-Akpu, Ann Pacey*

## Corporate Stewardship & Risk Management (P7)

### Being human in impact assessment

The CSRM section chairs welcome you to IAIA19, starting with an introduction to the Section, with a focus on human rights in impact assessment and vulnerable groups. Through an interactive session, the chairs will share key challenges and lessons learnt from recent experiences working with companies, followed by a Q&A with attendees.

*Chair: Nora Gotzmann*

## Disasters and Conflict (P9)

### Disasters, conflict, and the environment: Why it is important

Focused on immediate threats to life and welfare, the Disaster & Conflict Section seeks to understand disaster-and-crisis environmental impacts to reduce lives lost and promote sustainable recovery.

*Chair: Charles Kelly*

## Indigenous Peoples (P10)

### Indigenous Peoples and impact assessment: Ensuring continuity in an increasingly self-centered world

Self-centered behavior manifests at many different levels and has the unintended impact of further marginalizing the already marginalized. Many movements begin as critical responses to injustice, but once established and if successful can create opportunities that motivate self-centered behavior. Is it time to reset the Indigenous Peoples Section's focus?

*Chair: Kēpa Morgan*

## Cultural Heritage (P6)

### Introduction to Cultural Heritage Section

This session will provide an introduction to the role of cultural heritage in IAIA, the integration of cultural heritage into impact assessment, and the development process. We also will introduce an ongoing collaboration with IUCN and ICCROM on Best Practice and World Heritage.

*Chairs: Arlene Fleming & Chris Polglase*

## Governance and Implementation Systems (P7)

This Section on impact assessment governance and implementation systems addresses in a holistic way the entire ESIA process and its implementation by countries and institutions.

*Chair: Cheryl Wasserman*

## Social Impact Assessment (P9)

### Social impact assessment: Pushing boundaries

SIA addresses both the positive and negative social consequences of projects, programs and policies. Its primary purpose is to bring about more sustainable and equitable outcomes for communities. Approaches to SIA are diverse. Keep up to date with the latest in theory and practice through the SIA section.

*Chair: Katherine Witt*

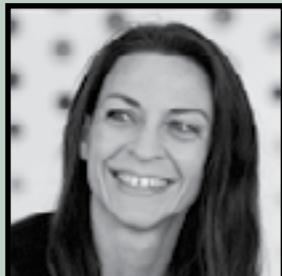
# Opening Plenary

## Opening address



**Lachlan Wilkinson**  
IAIA19 Conference Chair

## Welcome comments



**Sara Bice**  
IAIA President

## Greetings from the host



**Councillor Adrian Schrinner**  
Lord Mayor, Brisbane City Council

## Presentation of the IAIA Global Award



ARTIC COUNCIL

**Luis Sánchez**  
IAIA Awards Committee

## Charlie Wolf Memorial Lecture "Queensland: Booming one day, catching up the next?"



**Alan Chenoweth**  
Senior Consultant, Cardno



**Lesley Chenoweth**  
Professor Emeritus, Griffith University



**Charlie Wolf**

The Charlie Wolf Memorial Lecture introduces the unique environmental, social, and cultural features of the conference location.

## Keynote Address



**David Morris**  
Chief Executive Officer  
NSW Environmental Defenders  
Office

## "Impact assessment through the lens of an environmental lawyer acting for the disempowered, dispossessed, and disenfranchised"

### Keynote Speaker

David Morris is the Chief Executive Officer of the New South Wales Environmental Defenders Office (EDO), a community legal center specializing in public interest environmental law. David joined the NSW office in October 2017 after four years as the Northern Territory EDO's Principal Lawyer and Executive Officer. His work with the EDO has involved representing community groups and First Nation groups (Traditional Owners) in a range of projects subject to impact assessment, including mining, gas, and water related projects, as well as advocating on cultural heritage issues.

Under David's leadership, EDO clients have achieved a number of successful litigation outcomes. A recent landmark decision in the NSW Land and Environment Court refused a coal mine based on significant social and climate change impacts. David has also played a leadership role in policy and law reform advocacy and taught environment and planning law subjects at Charles Darwin University.

Awarded the Young Environmental Lawyer of the Year in 2016 by the Law Council of Australia, David is considered one of the emerging leaders of the environment movement in Australia.

David brings a unique range of experiences related to impact assessment, in particular from community and cultural perspectives, and will provide a thought-provoking presentation that will challenge conference delegates to address the future of impact assessment: evolution or revolution?

# Closing Plenary



*Closing plenary sponsored by OceanaGold.*

## Debate

Evolution or revolution: What is the future for impact assessment? In this final debate, the next generation of impact assessment professionals will reflect on the past four days of discussion and resolve the question for us!

## Awards

Luis Sánchez, Awards Committee • Sara Bice, IAIA President  
Individual Award • Regional Award • Institutional Award • IAPA Best Paper of 2018

## Presidential address

Luis Montañez-Cartaxo, IAIA President (incoming)

## Invitation to IAIA20-Seville

Iñigo Sobrini and IAIA20 Committee

## Close of conference

Lachlan Wilkinson, IAIA19 Conference Chair

*3 ideas to take away*

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Smaller than plenaries and larger than concurrent sessions, theme forums include “cut-above” presentations and discussions which address the conference theme, bring together on a particular topic the various aspects of impact assessment, and examine how those aspects apply to different sectors and issues.

## Going digital: Is this evolution or revolution?

Tuesday 30 April | 09:00-10:30 | P3&P4

Panel Discussion

Chair(s): Paul Eijssen

What does a shift to a digital way of working mean? We will explore what's possible today in working digitally and with experts and the public. We will explain from various perspectives what "going digital" means for our field of work, how it can add value in decision-making, and how it can be implemented successfully.

### What an opportunity

Verheem, Rob (Netherlands)

### What about legislation?

Sinclair, John (Canada)

### Social media and EIA

Pearson-Smith, Timothy J. (Hong Kong)

### Market or government?

Friday, Kathy (Australia)

### Revolution or evolution?

Barten, Bart (Netherlands)

## Charles or Che? Choose your champion for the future of impact assessment!

Tuesday 30 April | 09:00-10:30 | P1&P2

21st Century town hall debate

Chair(s): Jack Krohn, Tanya Burdett, Megan Jones

Which way forward for impact assessment? Listen to passionate champions for evolution and revolution, challenge them and make your own stand. Make your contribution to the pivotal debate for IAIA19! Choose your colors, fly your flag! Are you for Charles or for Che?

### A procedural revolution

Gronow, Claire

For EIA to reduce the environmental impacts of development proposals, proponents need to be held accountable for their planning and design decisions. Current procedure fails to do this and a revolution is needed.

## Operating in emerging countries with high biological and cultural diversity

Tuesday 30 April | 09:00-10:30 | P9

Panel Discussion

Chair(s): Jane Mogina

This theme forum is sponsored by ExxonMobil PNG

This forum will provide an overview of the challenges and opportunities of developing world-class projects in sensitive environments and emerging nations, where biodiversity and cultural diversity shape the IA processes. In addition, lessons learned from various project experiences will be shared to encourage an open forum discussion of evolving IA concepts.

## Conservation for development projects in Ecuador

Aleman, Melanie; Aleman, Pablo

In balancing the need to develop and conserve, several long-term and ongoing biodiversity conservation strategies are being implemented for a large-scale project in Ecuador's southern Amazon region.

## We need to talk about Albania: Achieving net gains

O'Donnell, Tim

Experiences in establishing biodiversity offsets in post-communist Albania to compensate for residual impacts under IFC PS 6 and the EBRD Performance Requirement 6.

## Guyana's EIA process in the context of the oil and gas sector

Simmons, Denise; Bynoe, Paulette

The extent to which the oil and gas sector in Guyana has presented challenges for the country's EIA system and how the challenges were/ are being addressed.

## Impact assessment in a diverse and protected area

Wessels, Jan-Albert; Douglas, Anneli

Vital learning about conducting meaningful impact assessments in a diverse and protected area can be made by administering unique EIA follow-up methods.

## Safeguards policies and IA practice in the Pacific islands

Tuesday 30 April | 09:00-10:30 | P10

Panel Discussion

Chair(s): Ross Butler, Jean Williams

Panelists from an IFI, the government, civil society, and the private sector will address the current state of environmental and social safeguards policies and standards to meet the needs of people and environments in the Pacific Island states. It will cover country safeguards systems, donor policies, regional initiatives to strengthen ESIA practice, and emerging practices and challenges, including gender equality, customary rights, and social inclusion.

## Mechanisms for independence in IA: How to be truly independent?

Wednesday 1 May | 09:00-10:30 | P3&P4

*Panel Discussion*

*Chair(s): Rob Verheem*

This theme forum addresses the issue of independence in IA, as the often lack of such is explicitly mentioned in IAIA19's theme. Examples of existing independency mechanisms are presented, and how these have contributed to IA quality. Followed by an audience discussion on how to promote effective IA independency mechanisms.

### The role of the independent Hong Kong Advisory Council on the environment

*Lam, Kin Che*

ACE in Hong Kong, if skillfully leveraged, can be an important independent party in quality assurance and public consultation. Nonetheless, there are constraints and opportunities.

### The role of independent EIA practitioners

*Tarr, Peter*

This short presentation is expected to stimulate discussion on what is best practice in terms of ensuring independence in EIA.

### The role of the independent Netherlands Commission for Environmental Assessment (NCEA) in the Dutch EA system

*Verheem, Rob*

The NCEA was established in 1987 by the Dutch government, but deliberately made independent from it, to enable credible quality reviews of impact assessments. How successful is this approach?

## Social and environmental assessment of automation technologies

Wednesday 1 May | 09:00-10:30 | P10

*Workshop*

*Chair(s): Jiri Dusik*

We will focus on the expected uptake of Industry 4.0 through digital connection of newly emerging general purpose technologies such as 3D printing, advanced robotics, autonomous transport, Internet of Things, and Artificial Intelligence. We will discuss potential environmental (and social) impacts of these cyber-physical systems and the growing calls for responsible innovation and enhanced use of technology assessments. The concluding panel discussion will explore opportunities for impact assessment professionals to contribute to debates on the planned technological transformation that will shape our economies and societies in the coming decade.

An initial framework for identification of environmental issues and concerns associated with the key disruptive technologies is summarized at [bit.ly/seauto0](http://bit.ly/seauto0). A full scoping working paper is available at [bit.ly/seauto1](http://bit.ly/seauto1). The forum participants will be welcome to either respond to the issues raised or bring forward their own perspectives.

The forum will include two opening presentations, followed by panel discussion.

### Key environmental concerns surrounding automation

*Dusik, Jiri and Saric, Ivana*

### How responsible innovation and technology assessment processes can help in assessing the impacts of automation technologies

*Ashworth, Peta*

### Panel discussion

*Fischer, Thomas*

*Vanclay, Frank*

*Ashworth, Peta*

*Saric, Ivana*

## Next generation impact assessment: Exploring twelve key components

Wednesday 1 May | 09:00-10:30 | P1&P2

*Workshop*

*Chair(s): John Sinclair, Meinhard Doelle*

This participatory session will offer a short overview of the key components of next generation IA law followed by comments from discussants and open dialogue on topics such as the applicability of the components in diverse jurisdictions, and enablers and barriers to implementation to encourage an open sharing of ideas.

### Reflections from an Australian perspective

*Pope, Jenny*

The twelve key components of next generation impact assessment will be considered from the perspective of impact assessment law and practice in Australia.

### Next generation impact assessment law

*Bond, Alan*

Alan Bond, School of Environmental Sciences, University of East Anglia

### Clara U

*U, Clara*

Chair of Hong Kong Institute of Environmental Impact Assessment

## Seeing the forest for the trees: Are offsets the panacea?

Wednesday 1 May | 09:00-10:30 | P9

*Panel Discussion*

*Chair(s): Mervyn Mason*

Panel discussion and debate on the effectiveness of biodiversity offsets.

### The past, present, and future of environmental offsets

*Ewing, Christopher*

Do we, as experts in technical matters associated with offsets, hold a view that the present framework is an improvement on the past? Do we see any opportunities for further reform?

### Biodiversity offsets in practice

*Key, Alan*

A discussion of biodiversity offsets in practice: identifying, securing, managing, measuring, and acquitting offsets on the ground.

## The myths and opportunities of offsetting

*Murphy, Chris*

Offsetting is a plastic concept which can be shaped to meet any requirements. So the potential for offsetting is only constrained by the imagination for innovation.

## Considering the future urban forest in EIA

*Miller, Cameron*

National and international trends in addressing urban forest expectations within impact assessments. What lessons can be learned from the past?

## Biodiversity offsets using whole of landscape management

*Flynn, Sarah; Boothroyd, Ian*

Delivering offsets that achieve biodiversity conservation in the right places, through the whole of landscape management.

## Poison or panacea? The role of infrastructure

*Rees, Gareth*

A review of the efficacy of offset policy within Queensland and Australia and the potential for a collaborative effort to pursue enhanced outcomes from the view of an infrastructure developer and operator.

## Modeling to evaluate biodiversity offset policies

*Gordon, Ascelin; Peterson, Isaac*

We present a new approach to evaluate whether biodiversity offsets are achieving no net loss using a newly-developed modelling software. This is illustrated using simulated and real data.

# Theme forums

## Impact assessment is only good when it is effective (I)

Thursday 2 May | 09:00-10:30 | P10

Panel Discussion

Chair(s): Ben Cave, Alan Bond

The focus is on IA quality and how it can be improved with a view to delivering substantive effectiveness. We welcome papers which consider innovations in the development and application of quality evaluation methods, and papers which demonstrate system quality. Any submission should be clear on whether evolution or revolution is needed.

## Capacity development for effective SEA

Bond, Alan; Beier, Mat; Fothergill, Josh; King, Mark; Mari Kågström, Daniel

Slunge, Arend Kolhoff,

The continuing worldwide growth of SEA leads to significant capacity development challenges. The authors propose a research agenda to meet these challenges and seek input from the audience.

## The role of tiering in delivering effective EAs

Kalle, Heikki; Faith-Ell, Charlotta; Arts, Jos

For effectiveness, careful linking of different planning levels (from strategic to operational tiers) is vital. This paper discusses the role of EA tiering in delivering substantive effectiveness.

## The hidden influence of governance in SEA: Organizational environments

Monteiro, Margarida; Partidário, Maria

This paper explores the importance of understanding the internal function of organizations, as their commitments toward SEA may function as blockers or enablers of its use.

## EIA under pressure: Deregulation efforts in Austria

Stoeglehner, Gernot

EIA in Austria is under pressure of deregulation. This article discusses strategies to increase EIA quality and raise its legitimacy from perspectives of planning theory and different stakeholders.

## Strength and weakness of Japanese EIA law

Masuzawa, Yoko; Koyano, Haruka;

Toi, Akiko

Compared to international and foreign laws concerning EIA, features of Japanese EIA law which may enhance or diminish its effectiveness or potentials are discussed.

## Is the oil and gas industry able to adapt to the renewable energy revolution?

Thursday 2 May | 09:00-10:30 | P9

Paper Session

Chair(s): Arne Dalfelt, Peter Tarr

*This is a Norwegian Oil for Development Program session*

The global oil and gas industry is directly and indirectly causing global climate change, ocean pollution, and environmental degradation. The industry needs to refocus production towards renewable energy with fossil fuel resources reserved for those sectors that cannot do without. The impact assessor is in a unique position to assist in this change.

## A new type of impact assessor is needed to create a more sustainable world

Croal, Peter

To avoid predicted catastrophic global changes due to climate change, the impact assessment practitioner must develop new assessment methods that move the energy industry to a more sustainable path.

## The endgame is on: Options for oil-producing countries

Grotli Skogen, Svein

Questions about an end game for oil and gas is no more about "if." Now it's all about "when" and "how." We look at governmental options for those still having ambitions as producers.

## How green is green?

Walmsley, Bryony

There is an urgent need to conduct full, objective life cycle assessments of our energy projects to determine how green they really are throughout the whole supply chain.

## The digital edge: Transforming responsible development

Wright, Nigel H.

The oil and gas industry is reinventing itself through digital data for delivering renewable energy, better performance, and safeguarding the environment.

## Securing socio-economic development through unorthodox impact assessment

Thursday 2 May | 09:00-10:30 | P3&P4

Panel Discussion

Chair(s): Timothy Hart

This panel will explore non-orthodox ways to mobilize impact assessment with the purpose of securing socio-economic development outcomes. Discussion themes include:

- Should IA be a sub-discipline of development management?
- Is engagement too narrow?
- Including managers and development partners
- IA as a full project cycle management tool

## International development and IA: Bridging the gap

Ellis, Jeanne

Examines the intersection between impact assessment and international development programs and how these programs are tailoring IA practices to achieve sustainable development goals.

## Protocol for environmental assessments

Stroebel, Kelly

Using the knowledge gained from the SNSDP, a protocol will be developed for aiding disadvantaged communities with obtaining environmental authorization for their projects that can be used globally.

## Impact assessment and Sustainable Development Goals

Thursday 2 May | 09:00-10:30 | P1&P2

Panel Discussion

Chair(s): Maria Partidário, Rob Verheem

Impact assessment, in its various forms, is relevant in enabling the 2030 agenda. What are possible forms of action to make the SDGs more clear in IA practice, without losing IA effectiveness? How can a focus on SDGs improve inclusiveness of stakeholders and inter-connectivity of environmental and social themes in IA?

## Comparison of SDGs and IA

Jenkins, Bryan

Coverage and concepts of IA and Sustainable Development Goals (SDGs) are compared. IA coverage is increasing but SDGs are broader and involve proactive achievement of outcomes rather than reactive assessment of effects as in IA.

## Addressing the SDGs—One farmer at a time

Walmsley, Bryony; Musonda, Antonia

You don't need huge amounts of money, institutional capacity, or complex legislation to contribute to the Sustainable Development Goals (SDGs). See how one small organization is helping Zambian farmer achieve the SDGs.

# Concurrent Sessions

## Early planning in impact assessment in Canada and other countries

Monday 29 April | 15:00-16:30 | P6

Panel Discussion

Chair(s): Lisa Walls

The session will focus on the importance of early planning to impact assessment. Panelists will present perspectives from Canada and other countries and discuss components of early planning including meaningful public engagement, partnership with Indigenous Peoples, and cooperation with jurisdictions.

### Indigenous knowledge meets Western science

Perritt, Jessica; Mayhew, Melissa

Early planning for the long-term management of Canada's used fuel benefits from interweaving Indigenous Knowledge with western science. We describe operationalizing NWMO's Indigenous Knowledge policy.

### Stakeholder engagement in IA: Time for a revolution

Wilkinson, Lachlan

Engaging stakeholders during the regulatory IA process is too late—it needs to happen during early project planning and focus on the environmental/social outcomes that a project should achieve.

### The role of the regulator in early engagement

Craven, Paul

Early planning phases as part of the formal EA process are increasingly being demanded by the public in Canada. The presentation will discuss their objective and the role the regulator should play.

### Evolutionary and revolutionary approaches to early decision making

Gronow, Claire

EIA procedure neither prompts nor rewards proponents to incorporate environmental considerations into early decisions. Suggestions are made for evolutionary and revolutionary changes to address this.

### Opportunities and challenges of the World Bank's new Environmental & Social Framework (ESF)

Leonard, Peter

The World Bank ESF became effective 1 October 2018. The presentation will discuss how the ESF should enhance project outcomes and the challenges in doing so.

### Impact assessment the Australian way(s)

Tuesday 30 April | 11:00-12:30 | P1&P2

Workshop

Chair(s): Geoff Ralphs, Helen Murphy, Rob Piccinin

How is impact assessment working in practice in Australia? What is going well and what could be better? If you work in IA anywhere in Australia, come and help explore the priority evolutionary or revolutionary improvements for the system(s) that you work with and know best.

### IA the Western Australian way

Jones, Megan

This presentation will provide a synopsis of the current practices of the Western Australian IA system.

## ADDRESSING THE ONGOING CHALLENGES OF IMPACT ASSESSMENT: IS EVOLUTION OR REVOLUTION THE ANSWER?

### Meeting the marine biodiversity challenge

Monday 29 April | 15:00-16:30 | P9

Panel Discussion

Chair(s): Neil Cousins

Addressing marine biodiversity impacts is often considered to be a challenge. Issues relate to complexity, but also accepted processes and their interpretation. Good outcomes are also often constrained by accepted paradigms. This session will identify issues, demonstrate where solutions can be found, and importantly, set an agenda for improvement.

#### Panelists

Dupont, Jennifer

Environment & Regulatory Supervisor at ExxonMobil

Carter, Robin

Lwandle Technologies (Pty) Ltd., South Africa

Marsh, David

Independent consultant (Australia)

Fletcher, Claire

The Biodiversity Consultancy

Victurine, Ray

WCS's Business and Conservation Program

Shumway, Nicki

The University of Queensland

### Hits of the 1990s: From revolution to evolution?

Monday 29 April | 15:00-16:30 | P1&P2

Debate

Chair(s): Jos Arts, Francois Retief

In this session we discuss critical lessons from when IA was perhaps going from revolution to evolution(?). Share with us what you consider to be key wisdom from IA publications in the 1990s. What were the main debates, trends, concepts, cases, professionals and publications? What are lessons for today's IA?

### IA in New Zealand: Lessons and strategies to enhance practice

Monday 29 April | 15:00-16:30 | P10

Workshop

Chair(s): Richard Morgan, Dyanna Jolly

With increasing pressure on the NZ environment, what can we learn from IA practice at project and strategic level to improve future practice and achieve sustainable management of natural and physical resources?

### Overview of IA in NZ/Aotearoa

Morgan, Richard

Richard Morgan (Univ of Otago, NZ): The wider picture of IA practice in NZ, from project to policy levels, old habits, and new opportunities.

### Changing frameworks, changing practice?

Rennie, Hamish

Assoc Prof Hamish Rennie (Lincoln University, NZ): A hearings commissioner and academic, with a particular interest in the regulatory frameworks

that shape EIA practice in New Zealand's planning processes.

### Ecological impact assessment in New Zealand

Boothroyd, Ian

Dr Ian Boothroyd (Boffa Miskell Ltd., NZ): A hearings commissioner and consultant, with an interest in the evolving approach to ecological impact assessment and ecological mitigation in NZ.

### Cultural impact assessment in NZ/Aotearoa

Jolly, Dyanna

Dyanna Jolly (PhD Candidate, University of Otago): A cultural impact assessment practitioner interested in how the Treaty of Waitangi shapes impact assessment in New Zealand.

### Can the ecosystem service concept improve the outcome for impact assessment?

Monday 29 April | 15:00-16:30 | B1

Workshop

Chair(s): Martina Girvan, Ed Cooper

A session for impact assessment practitioners, stakeholder specialists, designers and those interested in integrating the concept of Ecosystem Service Assessment into their Impact Assessments. Case studies will be presented with a discussion around the challenges and benefits of incorporating and standardizing the approach.

### Beyond impact assessment results: Soto Norte

Amaya, Andres; Ruiz, Mónica

Incorporating ecosystem service assessment results in a positive outcome IA at Soto Norte. In-depth understanding of relationships between social and environmental aspects results in robust management.

### Can ESIA enforce payment for ecosystem services?

Buhanga, Edgar

Highlighting Uganda Wildlife Authority's experiences in implementing payment for ecosystem services and seeking experiences from elsewhere on whether the ESIA can be used to enforce payment for ecosystem services.

### Increasing accuracy of species distribution model

Chung, Hye In

Suggesting a new methodology for increasing accuracy of species distribution model, focusing on both presence/absence accuracy.

### Ecosystem IA of built infrastructure monetization and metrics

Girvan, Martina

# Concurrent sessions

## Summary of mining EIA in South Australia

Zeman, Nathan; Marshall, Andrew; Querzoli, Andrew  
This paper and presentation will provide a brief overview and summary of mining EIA in South Australia.

## Impact assessment in the Australia way(s)

Munday, Jane  
The view from the top: regulatory reform and fracking challenges in the Northern Territory.

## Review of EIA in NSW Australia

van den Honert, Erica  
The New South Wales (NSW) Department of Planning and Environment is undertaking a project to review and improve EIA.

## Impact assessment the Victorian way

Ralphs, Geoff  
Victorian EIA is a paradox. Underpinned by seemingly out-of-date legislation with limited statutory parameters, the system implemented is modern and adaptable, but with room for improvement.

## Evolving and emerging IA challenges

### Tuesday 30 April | 11:00-12:30 | P8

Paper Session  
Chair(s): Aaron Goldschmidt

As technology and social shifts propel emerging concepts, IA must evolve ahead of these actions. From cannabis permitting, cultivation, and transport to privatization of space transport, IA is evolving. Case studies requested to share evolving IA experience with emerging issues, including IA approaches unique to one or common to all.

## To infinity and beyond where no IA has gone before

Scott-Brown, Miles; Quintero, Juan  
Come join us where no IA has gone before! We examine four emerging areas of IA practice and how you can get ready for them before it is too late!

## How law has (had) to change to effect evolution

Van Reenen, Amanda  
This discussion focusses on how South African environmental laws needed to be (and still need to be) amended to ensure impact assessment keeps up with development needs and trends.

## Using protocols to strengthen biodiversity

Bahindwa, Abigail  
The South African National Biodiversity Institute is supporting the National Department of Environmental Affairs in developing biodiversity protocols, which aim to ensure a consistent method is applied in assessing impacts in biodiversity sensitive areas.

## The project itself or the impact assessment process

Reifsneider, Natasha  
As IA practitioners, do we have a responsibility to assess not only the impacts of the project on communities, but the impact of the impact assessment process?

## Integrating biodiversity & ecosystem services into the mitigation hierarchy (I)

### Tuesday 30 April | 11:00-12:30 | P9

Paper Session  
Chair(s): Laura Sonter, Luis Sánchez  
IAIA Section: Biodiversity & Ecology

The mitigation hierarchy is used to achieve no-net-loss of biodiversity; however, it is also now applied to ecosystem services – nature's contributions to people. Our session explores the consequences of integrating ecosystem services into the mitigation hierarchy, and asks what is needed to improve outcomes for biodiversity and human wellbeing.

## Review of biodiversity mitigation measures

Kamijo, Tetsuya  
The study explains the review results of biodiversity mitigation measures and proposes to activate alternatives by application of no net loss policy and a wise use of ecosystem services.

## SEA for biodiversity: The Australian experience

Gutierrez, Marco  
We examine how biodiversity and ecosystem services have been considered in SEAs in Australia and present a preliminary framework for evaluating SEA practice in relation to conservation.

## Mitigation measures for wildlife in Chile: Example

Perez, Cristian  
This research analyzes mitigation measures implemented for biodiversity in Chile that have been sanctioned by the enforcement agency as a way to understand their relationship with the EIA process.

## Integration of conservation planning and the mitigation systems

Grantham, Hedley  
The importance of biodiversity assessment and planning process for designing mitigation systems.

## Integrating biodiversity & ecosystem services into the mitigation hierarchy (II)

### Tuesday 30 April | 14:30-16:00 | P9

Paper Session  
Chair(s): Laura Sonter, Luis Sánchez  
IAIA Section: Biodiversity & Ecology

The mitigation hierarchy is used to achieve no-net-loss of biodiversity; however, it is also now applied to ecosystem services – nature's contributions to people. Our session explores the consequences of integrating ecosystem services into the mitigation hierarchy, and asks what is needed to improve outcomes for biodiversity and human wellbeing.

## Choosing prevention or cure when mitigating biodiversity

Bull, Joseph; Milner-Gulland, E.J.  
When mitigating the biodiversity impacts of economic development, a crucial yet overlooked issue is how much impacts can be avoided (instead of offset). We explore that here.

## Integrated offsets approach

O'Donnell, Nikki; Lowe, Angela  
Case study examining the necessity of incorporating ecosystem services into biodiversity offsets programs.

## Pluralism and deliberation in offsetting: Lessons

Quétier, Fabien  
Through Archipel, multiple interests and values are embedded into offset design and implementation through deliberative governance structures put in place to regulate rural land markets.

## Including cultural values into biodiversity NNL

Griffiths, Victoria; Baker, Joseph; Milner-Gulland, E.J.  
Biodiversity offsets should not make people worse off. However, there is a lack of empirical research on including cultural ecosystem services into the mitigation hierarchy and the offsetting process.

## Las Bambas efforts to protect highland wetlands

Valencia, Claudio; Cano, Noema  
Las Bambas has made numerous efforts to protect its local biodiversity, including a mitigation and compensation program for highland wetlands - fragile ecosystems that offer many ecosystem services.

## Harnessing offsets to achieve conservation goals

### Wednesday 1 May | 11:00-12:30 | B2

Paper Session  
Chair(s): Jeremy Simmonds, Martine Maron

Compensatory actions, like biodiversity offsets, are required where projects have residual impacts. Yet, there is little clarity on how compensation contributes to broader conservation objectives. In this session, we aim to showcase how compensation can be harnessed to promote desirable outcomes for biodiversity and stakeholders.

## From biodiversity offsets to target-based compensatory actions

Simmonds, Jeremy  
Overview of a framework that links compensation for project-level impacts to biodiversity, with the achievement of broader conservation goals.

## Compensation to meet biodiversity targets in South Africa

von Hase, Amrei  
South Africa provides a useful example of a mitigation and compensation approach that is directly linked to the country's overarching biodiversity targets and desired conservation outcomes.

## Offsets as a means to achieve No Net Loss of biodiversity

Costa, Hugo Miguel; Rainey, Amrei; Quétier, Fabien  
The biodiversity offset mechanism being developed for Mozambique seeks to align the national Environmental Impact Assessment framework with international best practice and the country's targets.

## How do different compensation approaches contribute to conservation goals?

Sonter, Laura  
A typology of compensation approaches and, using a suite of case studies, an illustration of their varying impact on biodiversity, ecosystem services, and project costs.

# Concurrent sessions

## Challenges of moving to target-based mitigation

Quétier, Fabien

Using examples from Africa, Europe, and elsewhere, we discuss the challenge of embedding the mitigation hierarchy into conservation: protected areas, species action plans, etc.

## Impact assessment is a blunt tool for biodiversity: Yes or no?

Wednesday 1 May | 11:00-12:30 | P7

Debate

Chair(s): Robin Mitchell

IA is widely promoted as a tool to safeguard biodiversity in development but meanwhile much of the world's biodiversity continues to slide towards extinction. Maybe we should think again and find better methods. This session will debate whether IA is a good tool for safeguarding biodiversity or not and if not, how it needs to change.

No: Boothroyd, Ian

Yes: Quintero, Juan

## Biodiversity in IA: Different shades of grey

Rajvanshi, Asha; Mathur, Vinod B.

This debate must acknowledge that there are shades of grey between the bold black and white when it comes to recognizing the imprint of IA on biodiversity.

## Social closure and decommissioning lessons from experience and future trends

Wednesday 1 May | 11:00-12:30 | P1&P2

Panel Discussion

Chair(s): Katharine Gotto Walton, Roger Coupland

This panel session focuses on extractive and major facility social closure planning with the panelists and participants seeking to: 1. Identify emerging trends in social closure planning; 2. Consolidate practical lessons about social issues in a closure process; 3. Consider potential significant implications for future social closure planning.

## Diversify or die

Esteves, Ana Maria; Johnston, Caroline

This case study of Neves Corvo (Lundin Mining) will reflect on efforts to reduce post-closure impacts through economic diversification initiatives and will highlight implications for closure planning.

## Collaboration between engineers and environmental practitioners (I)

Wednesday 1 May | 11:00-12:30 | M1

Paper Session

Chair(s): Jacqui Hex, Adriaan Oosthuizen

Has the industry evolved and embraced the concept of engineers being part of the environmental team? How can having engineering expertise from the onset of the EIA enhance the benefits of the project? Can we move from the resource to waste mindset towards a waste to resource approach through collaborative cradle to grave thinking?

## Engineers and environmentalists:

### Closer than we think

Strickland, Luke; Storey, Fran

This paper challenges the perspective that engineers are an obstacle in environmental assessment and proposes that engineers and environmental practitioners have much in common.

## Environmental design criteria for project design

Catchpole, Simon

The environmental criteria for project design are specifications based on an aspects analysis, followed by the application of defensible rules according to regulations, guidelines, and best practice.

## Environmental assessment for long-term infrastructure

van Eck, Gosewien

Aging infrastructure is a challenge from an engineering perspective but also as a driver for sustainable redevelopment. How is environmental assessment included in this approach?

## IUFMP experience in environmental management

Ojo, Adeolu; Adesina, Evelyn

This paper presents an overview of collaboration between engineers and environmental/social practitioners to achieve optimal results in flood alleviation projects in Ibadan, Oyo State, Nigeria.

## Underground closure risk assessments

Oosthuizen, Adriaan; Hex, Jacqui

A quantitative closure risk assessment is carried out by engineers and environmental practitioners to determine the risks of not achieving closure as well as the associated mitigation measures and costs.

## Let's talk about this: Evolution or revolution for IA (I)

Wednesday 1 May | 11:00-12:30 | M2

Paper Session

Chair(s): Garry Middle, Galina Williams, Lachlan Wilkinson

This conference asks, "Is the future of IA evolution or revolution?" Presenters will answer: are you an IA evolutionist or revolutionist? What two changes to IA would you make? The session discussions will seek your views. At the end, we will try to pull all the arguments together.

## Impact assessment: A whale in a cup or Nemo in a spa

Sanda, Ahmed

How dynamic are IA's aspirations, expectations, and tools with reference to facts, fiction, and tales? What has it achieved and what can it achieve in light of hearsay and politics?

## Reinvigorating IA through complexity theory

Murphy, Chris

The narrow legal framework of analysis of IA has resulted in calls for a revolution. However, administering IA as a complex non-linear system unlocks significant opportunities for IA to evolve.

## Early lessons from the UN Environment's initiatives

Yi, Yunae

The presentation will demonstrate cases of linking impact assessment to the achievements of the SDGs. While in early stages, there are efforts to lay the ground toward the SDGs.

## Interrelationships of environmental assessment and industrial ecology

Aschermann, Ralf

This paper identifies potential synergies between two key tools from different fields—Environmental Impact Assessment and Life Cycle Assessment—in order to explore the benefits of this approach.

## Evolution or revolution for IA in Thai context?

Chanchitpricha, Chaunjit; Bond, Alan

The IA system in Thailand is evolving, and it requires attention to make it work. This paper discusses what kind of changes are still required.

## Without health there is nothing: Health impact achievements in Asia

Wednesday 1 May | 14:30-16:00 | B1

Caravan

Chair(s): Emma Marsden, Filipe Silva

HIA initiatives in Asia: HIA within ADB's safeguards, countries' legislations, the HIA Network Asia-Pacific, the regional HIA framework for Special Economic Zones, and strengthening capacity on HIA for DFIs, countries and proponents working on or looking to strengthen HIA or Health in EIA elsewhere.

## Asian Development Bank: The business case for health impact assessment (HIA)

Marsden, Emma; Roth, Bruce; Suga, Michiko

ADB strengthened health impact assessment (HIA) over the last 3 years, developing capacity in member countries, supporting policy and guideline development, and undertaking HIA demonstration projects

## Advancing health impact assessment in Lao PDR

Fengthong, Tayphasavanh; Sinsamphanh, Filipe; Shandro, Janis

Lao PDR has been an early and successful adopter of HIA. Recent HIA policy and practice achievements under ADB stewardship and priorities for further improvement will be presented.

## HIA case studies and transboundary health issues

Silva, Filipe; Roth, Gene; Shandro, Janis

HIA were undertaken on pilot projects from key infrastructure sectors to inform the institutional evidence base. Challenges, priorities, and key issues are presented.

## Toward the establishment of the HIA Network Asia

Brown, Helen; Peralta, Susann

The HIA Network Asia Pacific aims to enhance health and equity outcomes from development in Asia and the Pacific and is an integral part of HIA capacity building.

## HIA for economic zones in the Greater Mekong Subregion

Shandro, Janis; Peralta, Susann

There are over 500 industrial zones across the Greater Mekong Subregion. This HIA framework has been developed to identify, mitigate, and manage health risks and impacts.

# Concurrent sessions

## Hazardous material management in Thilawa special economic zone (SEZ)

Peralta, Gene; Wynn, Min; Pho, Pyi Pyi; Shandro, Janis; Roth, Susann

The Thilawa Special Economic Zone is the first operational SEZ in Myanmar and one of the largest industrial development. It has adopted aspects of health impact assessment as a risk management tool.

## Thai experiences on health impact assessment (HIA) from policy to practice

Rodsawad, Jittima; Charoensuk, Panita

This paper describes Thailand's comprehensive HIA system that evolved in the last 10 years. Thailand has a unique situation on HIA since it is specified in their Constitution.

## Collaboration between engineers and environmental practitioners (II)

### Wednesday 1 May | 14:30-16:00 | M1

Paper Session

Chair(s): Jacqui Hex, Adriaan Oosthuizen

Has the industry evolved and embraced the concept of engineers being part of the environmental team? How can having engineering expertise from the onset of the EIA enhance the benefits of the project? Can we move from the resource to waste mindset towards a waste to resource approach through collaborative cradle to grave thinking?

## Factors for siting a used nuclear fuel facility

Mayhew, Melissa; Evans, Matt

Benefits and challenges of identifying a site for a used nuclear fuel facility when engineering constraints, bio-physical factors, and social considerations are integrated early in project planning.

## Reducing the environmental footprint for PNG LNG

McDowell, Julie

Learn how the PNG LNG Project ensured effective collaboration between engineers and environmental and socio-economic practitioners and systematically applied the ESHIA principles at all levels of work.

## Enabling collaboration using BIM and GIS tools

Storey, Fran; Strickland, Adam; Skinner, Ben; Mair, Laura; Montgomery, James

This paper explores opportunities to use building information modeling (BIM) and geographic information systems (GIS) to ensure better information exchange between environmental and engineering teams, achieving better outcomes.

## Let's talk about this: Evolution or revolution for IA (II)

### Wednesday 1 May | 14:30-16:00 | M2

Paper Session

Chair(s): Garry Middle, Galina Williams, Lachlan Wilkinson

This conference asks, "Is the future of IA evolution or revolution?" Presenters will answer: are you an IA evolutionist or revolutionist? What two changes to IA would you make? The session discussions will seek your views. At the end, we will try to pull all the arguments together.

## Being agile: Evolving IA in a changing world

Sutton, Anthony; Morrison-Saunders, Angus

Recent Western Australian innovations in evolving environmental impact assessment procedures and practice for increasing agility in a rapidly changing world are showcased in this paper.

## IA evolution or revolution? It depends on whom you ask

Jones, Megan

This presentation considers how an understanding of stakeholder expectations has the potential to assist in determining whether evolution or revolution is the best way forward for future IA practice.

## Environmental impact statements in Queensland

Rowland, Philip; Ahern, Kathleen

Challenges faced in EIS assessment of large resource projects in Queensland, Australia, to develop the innovative changes required to keep the EIS process relevant and effective for all stakeholders.

## Are offsets in Australia fit enough to survive?

Francis, David; Hooper, Tracey

We address the evolution of Australian offset frameworks, their effectiveness in addressing environmental harm, and the future evolution of meaningful metrics for genuine ecological outcomes.

## Integrating the net gain goal in the EIA process

Coroi, Mihai; Kirby, Alan

Why and how no net loss and net gain goals should be integrated early in the EIA process with an example of biodiversity net gain approach on a large infrastructure project in the UK.

## Capacity building for HIA and for health in IA

### Wednesday 1 May | 16:30-18:00 | P10

Paper Session

Chair(s): Ben Cave, Thomas Fischer

Capacity for assessing health is not evolving even though its importance is recognized. Is there tension between the imperatives of capacity-building for the health sector and for engagement across sectors? We invite presentations on capacity-building initiatives. The session will build towards a strategy for global capacity for health in IA.

## Health capacity in EA: Reflections on a case study

Yehia, Jade; Shandro, Michael

My findings show that the social determinants of health were not factored into the EA as per HIA guidance. I provide suggestions for improving capacity in the health sector and beyond.

## Audit of HIAs undertaken on health sector proposal

Harris-Roxas, Ben

Despite being promoted intersectorally, HIA's use in the health sector remains limited. This audit describes HIAs conducted and suggests ways to enhance reporting and capacity building.

## More than a classroom: Training and capacity building

Green, Liz

This paper outlines the new Training and Capacity Building Strategy for HIA in Wales and the associated Knowledge and Skills Framework, which includes a breakdown of the roles played in HIA.

## HIA capacity building initiative in Brazil

Winkler, Mirko

To support the promotion of HIA of large capital projects in Brazil, a 3-year HIA capacity building initiative was implemented, involving many institutions and sectors from all over the country.

## Combining EIA and HIA: An Austrian case study

Aschermann, Ralf; Fuchs-Neuhold, Kathrin; Amort, Frank; Bauer, Lisa

This case study deals with the combination of an EIA and an HIA for the transport sector in Austria and shows, and how these tools can support and supplement each other.

## Collaboration between engineers and environmental practitioners (III)

### Wednesday 1 May | 16:30-18:00 | M1

Paper Session

Chair(s): Jacqui Hex, Adriaan Oosthuizen

Has the industry evolved and embraced the concept of engineers being part of the environmental team? How can having engineering expertise from the onset of the EIA enhance the benefits of the project? Can we move from the resource to waste mindset towards a waste to resource approach through collaborative cradle to grave thinking?

## In the war room: Soto Norte mining project experience

Amaya, Andres; Palacio, Mónica; Ruiz, Yaddy

Project design or IA: which is first? The art of collaboration, balance, and feasible outcome in the Soto Norte Mining project. Applying single-team common-view model within a war room.

## IA of a hydroelectric, waste rock and tailing storage facility

Haywood, Marissa; Hall, Michael; Moriarty, Daniel

The Frieda River Copper-Gold Project proposes an innovative engineering solution: an integrated storage facility for waste rock and tailings storage and generation of hydroelectric power.

## Eco-shoreline design for ecological impact mitigation

Gallacher, David

This presentation describes the development of an innovative eco-shoreline design to mitigate marine ecological impacts associated with land reclamation, including a discussion of multi-disciplinary process to achieve cost-effective solutions.

# Concurrent sessions

## Predictive opencast mine rehabilitation

Oosthuizen, Adriaan; Hex, Jacqui

A predictive opencast rehabilitation design is carried out by engineers and environmental practitioners to determine a mine's final end state for closure costing and planning purposes.

## Let's talk about this: Evolution or revolution for IA (III)

Wednesday 1 May | 16:30-18:00 | M2

Paper Session

Chair(s): Garry Middle, Galina Williams, Lachlan Wilkinson

This conference asks, "Is the future of IA evolution or revolution?" Presenters will answer: are you an IA evolutionist or revolutionist? What two changes to IA would you make? The session discussions will seek your views. At the end, we will try to pull all the arguments together.

## Outcome-based management for sustainability

Jenkins, Bryan

Outcome-based management is compared with effects-based management. Outcome-based management is needed to achieve sustainable development rather than the current reliance on effects-based approaches.

## Professional ethics, impact assessment and blind science

Chenoweth, Alan; McAuliffe, Darryl

IA practitioners and community trust in IA would benefit from specific ethical guidelines, including bias reduction principles similar to expert witness or "blind" science trials.

## Can SEA have a word in sustainability transitions?

Partidário, Maria; Monteiro, Margarida

This paper suggests that strategic thinking SEA can be instrumental in creating enabling conditions for transition initiatives to drive transformative change.

## Indigenous rights, land values, and cumulative effects

Thursday 2 May | 11:00-12:30 | P1&P2

Paper Session

Chair(s): Gillian Gregory, Rachel Olson

Uncertainty remains in how to best account for and evaluate impacts to indigenous and rural rights in cumulative effects assessment. Given ongoing industrial development, and growing pressure to reduce inequalities and increase sustainability, alternative methods are needed. What challenges or opportunities can we identify from global case studies?

## Indigenous participation in cumulative IA

Gregory, Gillian; Olson, Knut

Indigenous knowledges are critical in cumulative impacts assessment. Drawing on Canadian case studies, we demonstrate that greater participation by indigenous groups in CIA is key to improving impact assessment governance.

## A revolutionary approach to social and intercultural integration opportunities

Thibault, Diane

Illustrating the opportunities and challenges of state-owned hydroelectric projects on indigenous Cree traditional land. An example of how social and intercultural integration can be a viable outcome.

## Past, present and future social impacts

### at Ranger uranium mine

Crispin, Christine; Boele, Richard

A reflection on SIA over four decades at the Ranger uranium mine and the important early work of two (revolutionary?) Australian scholars, Richard Howitt and Helen Ross.

## The recent reform of federal EA law in Canada: Evolution or revolution? (I)

Thursday 2 May | 11:00-12:30 | P11

Paper Session

Chair(s): John Sinclair, Meinhard Doelle

The session will include an overview of the new Canadian IA process and short panel presentations about key IA issues related to the law in order to encourage an open sharing of ideas regarding the reforms that have been put in place and any needed regulations, policy and guidance.

## Proposed IA process: From revolution to reality

Walls, Lisa

This presentation will highlight key implementation measures that would be needed should the proposed Impact Assessment Act be passed into law.

## Implementing sustainability in Canada's new IA Act

Johnston, Anna

Canada's new Impact Assessment Act introduces a sustainability model to federal assessment. How does the Act stack up to leading thinking, and what further regulatory and policy reforms are needed?

## Significance in IA in Canada under Canada's proposed IA Act

Ross, Bill

The new Canadian Impact Assessment Act has virtually done away with the word "significance." This presentation will examine the change and suggest how to make the new act work in spite of the loss.

## Integration of cumulative effects, regional and strategic assessment

Blakley, Jill

Observations are offered on the incorporation of cumulative effects, regional, and strategic assessment into the reformed Canadian federal IA process.

## Bill C-69: Hang out a shingle for HIA (r)evolution

McGetrick, Jennifer Ann; Nykiforuk, Matthew

Bill C-69 is an evolution of polycentric governance for health impact assessments in theory, requiring revolution among academic, government, and private sector interests to achieve HIA in practice.

## From discretion to sound decision making

Doelle, Meinhard

This paper will consider the role of discretion, decision-making criteria and the appropriate allocation of decision-making responsibilities in the implementation of the Impact Assessment Act's (IAA) assessment process.

## Evolution of ESIA practice in Asia-Pacific developing economies (I)

Thursday 2 May | 11:00-12:30 | B2

Paper Session

Chair(s): Emma Waterhouse, Tara Halliday

When many ESIA regimes around the world are focused on increasingly sophisticated approaches, this session will look at the evolution of ESIA in developing economies of the Pacific and SE Asia, with participants gaining an understanding of the different responses to economic, social and environmental pressures and potential impacts.

## Key influences shaping Asia-Pacific ESIA practice

Waterhouse, Emma

Regulatory frameworks and ESIA practice have evolved differently in Asia-Pacific developing countries, often linked to rapid expansion of extractive industries and international investment.

## Gearing impact assessments to financing mechanisms

Haymon, Kirsty

Investors often require ESIA with a broader scope than what is needed for regulatory approvals. Drawing on examples in Southeast Asia, recommendations for improvements to scoping will be provided.

## Serving multiple regimes: Reflection on the gaps

Sembel, Andrew; Mitchell, Lucy

This presentation will discuss and share experiences in Indonesia on the gaps and synergies between impact assessments for national regulations and international lender requirements.

## Determinants of the EIA report quality

Kamijo, Tetsuya

Alternatives and public involvement could be the determinants of the EIA report quality and their linkage could increase the report quality.

## Incorporation of environmental justice in the Korean EIA system

Lee, Sangyun

Since environmental justice is one of the important components in EIA, this presentation diagnoses whether environmental justice can be incorporated in the Korean EIA system.

# Concurrent sessions

## ESIA leadership: The role of an ESIA coordinator

Thursday 2 May | 14:30-16:00 | P9

Paper Session

Chair(s): Ross Marshall, Claire Gronow

Viva la revolution! ESIA coordinators are the assigned leaders responsible for ensuring that IA is undertaken effectively and efficiently. Their role and influence are broader than just project management and EIS delivery. This session explores the role and how effective ESIA coordinators are at increasing the impact of IA.

### Early experience as an EIA coordinator

Chisholm, Amanda

Experience as an EIA coordinator in the late 1990s was challenging but rewarding. Did it assist EIA effectiveness?

### Effective impact assessment scoping

Sinclair, Belinda

A presentation on achieving efficient, proportionate, and meaningful impact assessment through effective scoping without losing the integrity of the process.

### The ESIA that went wrong: Seven habits of highly effective ESIA coordinators

Scott-Brown, Miles; Baranao, Pablo

Come listen to the two inspirational EIA speakers present the Seven Habits of Highly Effective ESIA Coordinators and how you can avoid the ESIA that went wrong!

## Evolution of ESIA practice in Asia-Pacific developing economies (II)

Thursday 2 May | 14:30-16:00 | B2

Paper Session

Chair(s): Emma Waterhouse, Tara Halliday

When many ESIA regimes around the world are focused on increasingly sophisticated approaches, this session will look at the evolution of ESIA in developing economies of the Pacific and SE Asia, with participants gaining an understanding of the different responses to economic, social and environmental pressures and potential impacts.

### Progression of EIA guidelines in the Philippines

Frayna, Celeste

New EIA guidelines were recently imposed in the Philippines which aim to incorporate best practice principles and standardize procedures of public participation in all stages of the EIA process.

### Reforming EIA system: What should Indonesia do?

Kurniawan, Ali Rahmat; Murayama, Shigeo

Evolution of Indonesia's EIA is first described, including a historical overview and the latest regulation. This analysis resulted in a set of actions for improving implementation effectiveness of EIA.

### Improving PNG's regulatory requirements for LNG

Yasi, Nicole

PNG LNG project helping PNG's Conservation and Environmental Protection Authority (CEPA) make adjustments to permit requirements that are world and industry standard.

## Global and local perspectives on ESIA practice

Ash, Jillian

This paper explores global and local perspectives on ESIA practice of proposed nickel projects in the Solomon Islands to broaden understanding on the disparity in ESIA policy and practice.

## CLIMATE CHANGE IMPACT ASSESSMENT: BEYOND ADAPTATION OR MITIGATION?

## How to integrate climate change into impact assessment: Tools and approaches

Wednesday 1 May | 11:00-12:30 | P8

Paper Session

Chair(s): Jill Baker

It is a daunting challenge to consider climate change in impact assessments given the complexity of climate science and abundance of climate information. This session will provide insights into the latest models, scenarios, adaptation, and mitigation approaches, with a view of improving how to effectively integrate climate change into assessments.

### Development of integrated model ("MOTIVE")

Song, Young-il; Jung, Hyeokgyun

Development of integrated impact assessment models (Model Of InTegrated Impact and Vulnerability Evaluation (MOTIVE) for climate change risks, including agriculture, will be presented.

## Global-scale analysis of climate change impact on global vegetation trends

Lamchin, Munkhnasan; Lee, Woo Kyun

Regarding temperature during the last 33 years, hot-spot areas and the largest temperature increases were found in the Amazon, Central America, southern Greenland, east Africa, and southeast Asia.

### Using climate scenarios for impact assessments

Roy, Rene; Charron, Isabelle

We are addressing some of the challenges practitioners of IA and adaptation to climate change often face in using climate information, helping to guide their use into IA practices.

### Integrating climate change mitigation into EIA

Wiesner, Barry

How to integrate climate change mitigation measures, as opposed to adaptation measures, into project-specific EIA, specifically, the use of carbon footprint assessment in the EIA process.

## IAIA's climate change and impact assessment next steps

Thursday 2 May | 11:00-12:30 | P6

Roundtable

Chair(s): Weston Fisher, Kin Che Lam, Shirley Lee, Arend Kolhoff, Ana Maria Quintero, Peter Croal

How are IAIA and IA practitioners responding to changes to climate policy and impact assessment political challenges related to the recommendations outlined in the Paris Agreement on climate change? We review actions taken by IAIA and identify other actions we might take as IA practitioners to reduce carbon emissions and mitigate climate impacts.

## CONTROVERSIAL TOPICS IN IA: THE ISSUES IN IA THAT HAVE BEEN AVOIDED

### SIA: How early is too early?

Thursday 2 May | 11:00-12:30 | P3&P4

Panel Discussion

Chair(s): Richard Boele, Deanna Kemp, Richard Parsons,

The way in which stakeholders experience a change depends on the design and implementation of the change. The session wrestles with the tension between waiting to conduct SIA until there is "enough" information, and conducting it early so the results can meaningfully influence the design and implementation process.

### Opening a can of worms: SIA as a dialogic process

Parsons, Richard

Conceptualized as a process of dialogue, SIA cannot start too early, since it promotes context-specific co-design of projects, meaningful community participation, and community wellbeing.

### Post-construction review: Lessons learned

Sunderland, Chris

Lessons learned from the coal seam gas to liquefied natural gas (LNG) industry highlight the value of earlier assessment and investment when examined against social impacts and missed opportunities in LNG developments globally.

### What SIA can learn from Australian-rules football

Marsh, Daniel

The paper works with an analogy of Australian Rules Football and its indigenous origins to explore the opportunities presented in the two cases for being more precise about strategy and tactics in developing a game plan.

### Back to the future: Avoiding social impacts

Darby, Sefton; Loxton, Richard

Australian mining case studies highlight SIA as a dynamic, iterative process, with early assessments embracing uncertainty, removing harmful options, and encouraging multidisciplinary conversations.

## Shaking up biodiversity offset concepts

Thursday 2 May | 14:30-16:00 | B1

Fishbowl

Chair(s): Guy Williams, Lucie N'Guessan, Ginny King, Jane Mogina

Putting biodiversity offset theories to the test to develop more practical and sustainable solutions. Bring your ideas and experiences to the fishbowl. What works? What has not worked? What could be (re)considered?

Williams, Guy: Offset in industry

King, Ginny: Offsets the concept

N'Guessan, Lucie: Offsets the concept

Mogina, Jane: Offsets and national protected areas networks

# Concurrent sessions

## CUMULATIVE IMPACT ASSESSMENT: HAVE CUMULATIVE IMPACTS EXCEEDED SUSTAINABLE THRESHOLDS?

### The cumulative dimensions of resource regions (I)

Tuesday 30 April | 14:30-16:00 | M2

Paper Session

Chair(s): Daniel Franks, Rauno Sairinen, Susan Joyce

The cumulative impacts of development in resource regions worldwide have placed pressure on regional environments, economies and communities. This session will interrogate the effectiveness of new and traditional impact assessment, management and policy approaches, highlighting examples from Queensland, Australia and around the globe.

#### Exploring futures of Ayeyarwady basin, Myanmar

Foran, Tira; Grigg, Nicky

Critical reflection on the potential of interdisciplinary strategic assessment techniques to improve on developmental narratives for the Ayeyarwady river basin in Myanmar.

#### Laws addressing cumulative effects: A broader view

Nelson, Rebecca

Legal responses to cumulative environmental effects (CEEs) are often thought inadequate. Analyzing both EIA and natural resources laws builds a framework of broader legal approaches to addressing CEEs

#### Multiple pressures on reindeer husbandry in Sápmi

Rosqvist, Ninis Gunhild; Inga, Carl; Fohringer, Christian

We combine traditional knowledge and science data to show the effects of multiple pressures from climate and land use change on reindeer husbandry in northern Sweden.

#### Social aspects of small deposit mining in Bosnia

Sidorenko, Olga; Sairinen, Rauno

The paper explores how the cumulative impacts can be addressed in small deposit mining in the Balkans.

### The cumulative dimensions of resource regions (II)

Tuesday 30 April | 16:30-18:00 | M2

Paper Session

Chair(s): Daniel Franks, Rauno Sairinen, Susan Joyce,

The cumulative impacts of development in resource regions worldwide have placed pressure on regional environments, economies and communities. This session will interrogate the effectiveness of new and traditional impact assessment, management and policy approaches, highlighting examples from Queensland, Australia and around the globe.

#### Greenhouse gas emissions from offshore oil and gas

Watson, Sarah

Current governance gaps regulating greenhouse gas emissions from offshore oil and gas activities could potentially be addressed by improving EIA processes within Regional Seas Programmes' frameworks.

## Cumulative impacts of mega infrastructure projects

Narain, Divya

We examine the role of investor standards in mitigation of cumulative biodiversity impacts of China's Belt and Road Initiative (BRI), a trans-boundary multi-jurisdictional infrastructure mega-project.

## Consultation and cumulative impacts in Queensland

Meissner, Katie

Don't mention the other mines: a study of participant experience and cumulative impacts in the consultation process for four proposed coal mining developments in Queensland's Galilee Basin.

## Environmental conflicts in Chile and EIA absence

Araya, Gino; Johson, Juan Eduardo

Analysis of the distribution of the main socio-environmental conflicts that occurred in 2018 in Chile and their relation with the facilities of projects without environmental licenses.

## Contribution of IA to sustainable hydropower development

Thursday 2 May | 14:30-16:00 | P7

Paper Session

Chair(s): Caroline Aguti, Tom Okurut

Sustainability of hydropower development is premised on use of appropriate impact assessment tools, protocols, best practices and implementation of appropriate mitigation measures in the design, construction and operation. The session will discuss aspects of environmental flows, social impact assessments and livelihood to achieve maximum social acceptance, governance and minimize environmental challenges and share a tool used for gap analysis.

## Environmental, social, and governance gap analysis

Clarke, Michael; Khandkar, Zaglul

The Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool (ESG) enables project proponents to identify and address gaps against international good practice by assessing projects according to environmental, social, and governance criteria.

## Impact avoidance in hydropower projects

Beche, Leah; Nathan, Fabien

We propose innovative methods for hydropower impact avoidance in early project stages and examples of their application in design choice and modification.

## A practical hydropower project social impact assessment

Hamilton, John

A practical example is provided for undertaking a social impact assessment for the Naoro Brown Hydropower Project in Papua New Guinea in 2017-18 according to IFC and World Bank requirements.

## Bureaucratic distortion of impact assessment of hydropower

Pilgrim, John

Impact assessment may be the mechanism for poor governance and misplaced development of livelihoods restoration.

## Integrating biodiversity & ecosystem services into the mitigation hierarchy (III)

Tuesday 30 April | 16:30-18:00 | P9

Paper Session

Chair(s): Laura Sonter, Luis Sánchez

IAIA Section: Biodiversity & Ecology

The mitigation hierarchy is used to achieve no-net-loss of biodiversity; however, it is also now applied to ecosystem services – nature's contributions to people. Our session explores the consequences of integrating ecosystem services into the mitigation hierarchy, and asks what is needed to improve outcomes for biodiversity and human wellbeing.

## A biodiversity net gain case study in Nevada

Edwards, Stephen; Asante-Owusu, Chris; Gunn, Briana; Anstee, Stuart

This presentation will share key learnings from an external review of the application of the mitigation hierarchy to biodiversity and ecosystem services management for Newmont Mining's operations.

## Evaluating the impacts of an environmental offsets

Nkosi, Sabelo B.

How environmental offsets can be considered and managed within spatial planning processes and if that leads to the evolution or revolution of the impact assessment process.

## Lessons for mitigating impacts on ecosystem services

Sánchez, Luis

Design of mutually compatible biodiversity- and social-impact mitigation can be enhanced by addressing ecosystem services shows the review of a large iron mining project in Brazil.

## IMPROVING QUALITY AND EFFECTIVENESS: DOES THE FOLLOW-UP MATTER?

## So much data, so little leveraging: How best to collect, visualize, and share (I)

Wednesday 1 May | 11:00-12:30 | P3&P4

Panel Discussion

Chair(s): Jennifer Dupont

Data, data, everywhere, and some of the folks aware. Data, data, everywhere, nor any info to share.

## Biodiversity data sharing: The good, the bad, and the ugly

Williams, Guy

Review of the challenges, limitations, and possible solutions to making private sector biodiversity data openly available.

## Setting the scene in EIA

Stypel, Ari

Scoping is an integral step in environmental impact assessment. A review of scope across various projects will be conducted to see if scoping has influenced the size of impact assessments.

# Concurrent sessions

## PNG terrestrial biodiversity data informs the EIA

*Armstrong, Kyle; Richards, Iain; Kale, Enoch; Aplin, Ken*  
In PNG, new electronics-based and genetic terrestrial biodiversity survey tools and semi-automated analysis are leading to more refined knowledge in environmental impact assessment and monitoring.

## Drones used to achieve more accurate IA results

*Valencia, Claudia; Ibarguren, Lucia*

Three case studies show how digital tools such as drones and cameras are used to obtain accurate information of sensitive ecosystems and species at different steps of the mitigation hierarchy.

## Real-world application of the mitigation hierarchy

Wednesday 1 May | 14:30-16:00 | P1&P2

Workshop

Chair(s): *Lucie N'Guessan*

Following an introduction of industry good practice guidance and case studies on successes and challenges of the application of the mitigation hierarchy to resettlement and livelihood restoration as well as cultural heritage, the audience will explore opportunities to improve the application of the concept in emerging Pacific island nations.

## Mainstreaming the mitigation hierarchy

*Palandro, David*

Use of the mitigation hierarchy is good practice for managing impacts to biodiversity and ecosystem services. Effectiveness of IAs can be improved by aligning mitigation actions with impacts.

## Resettlement and livelihood restoration for PNG LNG

*Ivahupa, Sharryl*

Lessons learned during resettlement for the PNG LNG project and changes made to improve the process will be shared.

## Multiple value systems applied to cultural heritage

*Hagoria, Julia*

Cultural heritage management can be a challenge in an area known for its cultural and linguistic diversity. Lessons learned from PNG LNG projects will be shared in this paper.

## So much data, so little leveraging: How best to collect, visualize, and share (II)

Wednesday 1 May | 14:30-16:00 | P3&P4

Panel Discussion

Chair(s): *Jennifer Dupont*

Data, data, everywhere, and some of the folks aware. Data, data everywhere, nor any info to share.

## An innovative approach to environmental data

*Albraki, Omar; Alhammadi, Omar; Tulloch, Megan; Almazrouei, Omran; Hani Abdalla, Saif Dulaimi*

The use of sophisticated systems for data collection and management not only enhances the quality of environmental assessment but also reduces the associated costs.

## Towards an ESHIA digital expert platform

*Jamieson, Andrew*

Laying the building blocks for internal ESHIA process enhancements using innovative digital technology. How an international oil company is looking at new ways to collect, consume and leverage data.

## Beyond species richness: Applying phylogenetic diversity

*Lee, Who-Seung; Sagong, Yong-Joon*

Using the method of phylogenetic diversity based on big genetic data, we showed species diversity assessed by phylogenetic diversity is better than species diversity based on arithmetic methods.

## Impact assessment is only good when it is effective (II)

Thursday 2 May | 11:00-12:30 | P10

Paper Session

Chair(s): *Ben Cave, Alan Bond*

The focus is on IA quality and how it can be improved with a view to delivering substantive effectiveness. We welcome papers which consider innovations in the development and application of quality evaluation methods, and papers which demonstrate system quality. Any submission should be clear on whether evolution or revolution is needed.

## A method that can revolutionize impact assessment

*Napier, Barton*

Tools and guidelines on impact assessment methods are often improperly applied, resulting in inadequate assessment and undesirable outcomes. An alternative method overcomes this challenge.

## Continuous improvement in IA at Parks Canada

*Cumming, Katherine*

Parks Canada's continuous improvement program uses 3 methods annually to evaluate progress and facilitate learning. The program is designed for a national organization using limited resources.

## All I ask is a tall ship and a star to steer her by

*Burnett, Peter*

Good environmental decision making is essential to achieving environmental goals. To play its part, EIA must be guided by plans or decision-rules and supported by comprehensive information systems.

## From assessments to execution: A case of implementation

*Seruma, Monicah Elizabeth*

The Uganda Roads Authority invests millions of dollars in conducting impact assessments and preparing world-class resettlement action plans. The divide between plans and practice is still wide.

## Impact assessment is only good when it is effective (III)

Thursday 2 May | 14:30-16:00 | P10

Paper Session

Chair(s): *Ben Cave, Alan Bond*

The focus is on IA quality and how it can be improved with a view to delivering substantive effectiveness. We welcome papers which consider innovations in the development and application of quality evaluation methods, and papers which demonstrate system quality. Any submission should be clear on whether evolution or revolution is needed.

## The role of environmental assessment (EA) in Iranian water management

*Khosravi, Fatemeh*

We reflect on the effectiveness of environmental assessment (EA for, e.g., projects, policies, plans, and programs) in Iranian water management.

## Assessing sustainable impacts amidst institutional constraint

*Imbrogiano, Jean-Pierre; Stemn, Carol J.*

We elucidate theoretically and empirically why and how societal institutions impede sustainable changes in business practices and discuss implications for impact assessments.

# Concurrent sessions

## Effectiveness of EIA as a tool in addressing impacts

Namara, Justine

EIA is a useful tool in decision making for projects, especially in sensitive areas like wildlife protected areas. However, as shared in this paper, sometimes it may not yield results as expected.

## PROONENTS-DRIVEN IA AND ITS ALTERNATIVES: GIVING THOSE WHO EXPERIENCE IMPACT A CENTRAL ROLE IN IA

## Impact assessment and the social and cultural effects of mine closure

Monday 29 April | 15:00-16:30 | M1

Paper Session

Chair(s): Ciaran O'Faircheallaigh, Rebecca Lawrence

Mine closure has to date been mainly treated as a technical, environmental or economic issue, with relatively little attention being paid to its social and cultural implications. We invite papers that explore these implications and the role that Impact Assessment can play in identifying, preparing for and managing them.

### Social planning for mine closure: Whose responsibility?

Mandke, Pallavi; Ash, Lauren

SIA as a tool to understand and unlock roles and responsibilities of various stakeholders in managing mine closure impacts and working towards a sustainable and positive legacy.

## Mine closure and sustainability in Latin America

Gregory, Gillian

This paper systematically reviews mine closure frameworks in Latin America, demonstrating the need to better integrate the socioeconomic dimensions of mine closure into regional assessment and sustainability.

## Mine closure and the Aboriginal estate

Lawrence, Rebecca; O'Faircheallaigh, Ciaran

Mine closure has enormous environmental, social, and cultural impacts for Indigenous Peoples, yet Australian laws and negotiated Aboriginal-industry agreements usually fail to address these issues.

## Beyond the mine: Possibilities of a ten-year plan

Crispin, Christine; Boele, Edwina; Murphy-Oates, Shellee  
A reflection on the collaborative development of the Granites-Kurra Ten Year Plan for the Newmont Tanami gold mine and how we can improve social outcomes from mine closure.

## Orokohanga 2019: Operationalizing the Aashukan Declaration

Monday 29 April | 15:00-16:30 | B3

Workshop (Wānanga)

Chair(s): Kēpa Morgan, Tumanako Ngawhika Faāui

IAIA Section: Indigenous Peoples

The Indigenous Peoples Section organized Aashukan, designed to build bridges between communities and proponents through IA. Orokohanga seeks to build on Aashukan in this second pre-conference event. Panelists will share the collectively evaluated Māori case studies that exemplify the Aashukan Declaration principles.

## Identification of worldview bias in the setting of speed limits

Morgan, Kēpa; Manuel, Robyn

## Integrating indigenous rights and knowledges into impact assessment (I)

Tuesday 30 April | 11:00-12:30 | P11

Paper Session

Chair(s): Rebecca Lawrence, Jenny Wik

This session explores different ways of doing impact assessment, where impacted indigenous communities, and their rights and knowledges, take center stage. Presentations will explore alternatives to proponent-driven IAs, including community-based IAs, but also the role of media and corporate campaigns, the law, and political protest.

## Community-based impact assessment: Sámi community

Fjällås, Anders Erling

This presentation will describe a community-based impact assessment (CBIA) process that was undertaken by the Semisjaur Njarg Sámi reindeer herding community together with researchers.

## Reifying rights: Sámi approach to impact assessment

Raitio, Kaisa

Insights from an ongoing project led by an indigenous Sámi community to develop a methodology for cumulative impact assessment regarding Sámi culture, livelihoods, and rights.

## Culture and rights-based collaborative methodology

Lepine, Melody

Methodology for assessing potential impacts on the exercise of aboriginal and treaty rights in the context of the proposed Frontier Oil Sands Mine Project.

## Integrating indigenous rights and knowledges into impact assessment (II)

Tuesday 30 April | 14:30-16:00 | P11

Paper Session

Chair(s): Rebecca Lawrence, Christina Allard

This session explores different ways of doing impact assessment, where impacted indigenous communities, and their rights and knowledges, take center stage. Presentations will explore alternatives to proponent-driven IAs, including community-based IAs, but also the role of media and corporate campaigns, the law, and political protest.

## Proactive indigenous community-based impact assessment

Hinchley, David; Hernandez, Pamela; Boucher, Martin

Shows how the impact of development on social, cultural, and natural values can be simultaneously considered in community-based impact assessment that supports decision-making by Indigenous Peoples.

## Kallak: Mineral exploration on indigenous Sámi lands

Vannar, Jonas

How we, as an indigenous reindeer herding community, have used our own GIS-programs and traditional knowledge to describe our land use to stakeholders and governmental decision makers.

## How far have we come? CIA in Aotearoa, New Zealand

Jolly, Dyanna; Anderson, Candace

To what extent does cultural impact assessment (CIA) deliver effective influence and appropriate priority to indigenous interests in Aotearoa, New Zealand?

## Integrating indigenous rights and knowledges into impact assessment (III)

Tuesday 30 April | 16:30-18:00 | P11

Paper Session

Chair(s): Rebecca Lawrence, Jenny Wik

This session explores different ways of doing impact assessment, where impacted indigenous communities, and their rights and knowledges, take center stage. Presentations will explore alternatives to proponent-driven IAs, including community-based IAs, but also the role of media and corporate campaigns, the law, and political protest.

## Where indigenous stewardship and assessment collide

Dertien-Loubert, Kim; Witzke, James

Examining the collision of indigenous stewardship, rights, and impact assessment in the Alberta Oilsands of Canada through conflicting traditional plant harvesting protocols and reclamation approaches.

## Health impact assessment for Indigenous Peoples

Shandro, Janis

This presentation highlights a new guideline developed for conducting health impact assessment for Indigenous Peoples in Canada.

# Concurrent sessions

## Redefining health with a First Nation community

Lewis, Diana

Methodology matters and a new approach to environmental health risk assessment is warranted when assessing impacts of industrial development on the health and well-being of indigenous communities.

## Integrating indigenous rights and knowledges into impact assessment (IV)

Wednesday 1 May | 11:00-12:30 | P11

Paper Session

Chair(s): Rebecca Lawrence, Anders-Erling Fjällås

This session explores different ways of doing impact assessment, where impacted indigenous communities, and their rights and knowledges, take center stage. Presentations will explore alternatives to proponent-driven IAs, including community-based IAs, but also the role of media and corporate campaigns, the law, and political protest.

## Occluded waters: Cumulative effects of hydropower

Vannar, Jonas

Insights from two retrospective impact assessments of the cumulative effects of hydropower on Sámi reindeer herding communities that identified ways to improve landscape functionality.

## Using Sámi knowledge to improve impact assessment

Inga, Nilla; Stina Roos, Jan; Seurujärvi, Osmo; Aikio, Esko; Pyykkö, Jarmo

The cumulative effect of mining, infrastructure projects, and tourism together with changes in weather/climate now severely impedes sustainable reindeer herding in Swedish Sápmi.

## Is there room for another generation of reindeer herders in Sápmi?

Vannar, Sanna; Jannok, Janni

This presentation will address the concerns of Sámi youth: shrinking pasture lands for the traditional Sámi livelihood of reindeer herding, and stressful situations for the Sámi youth who want to pursue reindeer husbandry.

## Sámi strategies: To collaborate or to protest?

Raitio, Kaisa; Lawrence, Rebecca

Analysis of the diverse ways indigenous Sámi communities have engaged in collaboration and/or protest to respond to increasing exploitation pressure on their traditional lands.

## Integrating indigenous rights and knowledges into impact assessment (V)

Wednesday 1 May | 14:30-16:00 | P11

Paper Session

Chair(s): Rebecca Lawrence, Christina Allard

This session explores different ways of doing impact assessment, where impacted indigenous communities, and their rights and knowledges, take center stage. Presentations will explore alternatives to proponent-driven IAs, including community-based IAs, but also the role of media and corporate campaigns, the law, and political protest.

## Reindeer husbandry land use as a case study of power relations

Fjällström, Anna-Maria

This presentation will examine what indigenous knowledges and Sámi land use reindeer herding strategies are used and considered legitimate in decisions about extractive industries in northern Sweden.

## Evolution: Consultation, collaboration, and consent

Stockman, Fern

The building of a new EA process that implements UNDRIP and supports free, prior, and informed consent. How EAs in British Columbia (Canada) have evolved to embrace this opportunity.

## Prequel to impact assessment:

### Northern Québec mine

Talec, Pernilla; Klöcker Larsen, Kaisa; Lawrence, Rebecca; Wik Karlsson, Jenny

In the particular case of the Cree First Nation in Northern Québec, the two parties decided to work collaboratively toward sustainable development.

## Integrating indigenous perspectives: Evolution

O'Faircheallaigh, Ciaran; Rosqvist, Pia

Only a radically different approach based on indigenous-controlled assessment of indigenous impacts can ensure integration of indigenous knowledges and interests into IA.

## Integrating indigenous rights and knowledges into impact assessment (VI)

Wednesday 1 May | 14:30-16:00 | P11

Paper Session

Chair(s): Rebecca Lawrence

This session explores different ways of doing impact assessment, where impacted indigenous communities, and their rights and knowledges, take center stage. Presentations will explore alternatives to proponent-driven IAs, including community-based IAs, but also the role of media and corporate campaigns, the law, and political protest.

## Recognition of indigenous Sámi rights in Sweden

Wik, Jenny

This presentation by the National Swedish Sámi Association will address the urgent need to address Sámi rights to land and water.

## The Nordic Sámi and the legal framework for impact assessments

Allard, Christina; Bailey, Scott

A comparative review of Swedish and Norwegian laws on impact assessments, focusing on the participation of affected Sámi groups and Sámi parliaments in natural resource exploitations.

## Indigenous-led impact assessment:

### Canada's New regime

Wright, David V.

This paper examines the new, significantly expanded authority for integrating indigenous rights and knowledge into impact assessments in Canada, including through assessments led by indigenous groups.

## What's new? Rights and legislative change

Smith, Trefor

A critical examination of the promise of new environmental assessment legislative regimes in Canada and British Columbia to fully integrate indigenous rights assessment into major project EA.

## SOCIO-ECONOMIC IMPACT ASSESSMENT: EVOLUTION OR REVOLUTION?

## Economic impact assessment

Tuesday 30 April | 11:00-12:30 | B3

Paper Session

Chair(s): Galina Williams

Economic Impact Assessment (EIA) is usually done at a state or country level. There are challenges and opportunities for IA practitioners to develop a range of EIA tools that can be used at regional level. A range of international case studies that demonstrate the potential use of these tools is provided.

## Does coal mining benefit local communities?

De Valk, Jeremy

Economic analysis, using a cost benefit framework, reveals the historical contribution of coal mining industry to regional Queensland (Australia) with the focus on the environmental disturbance.

## An optimization model for ecosystem services

Kuik, Swee

Using a multi-objective optimization, the economic costs and benefits of coal mining in Queensland (Australia) are assessed for different development goals.

## Beyond zero: Social cost of carbon in impact assessment

Wright, David V.

This paper/presentation explores potential roles of the social cost of carbon in impact assessment, offering insights into key constraints, considerations, and potential next steps.

## Corporate sustainability in Belarus: Feasible?

Sushko, Alla

This paper explores current conditions existing in Belarus for businesses to exercise environmental and social responsibility. Authors present preliminary analysis of macroeconomic indicators for corporate sustainability initiative in the country.

## Rethinking social license: Where to from here?

Tuesday 30 April | 11:00-12:30 | P6

Panel Discussion

Chair(s): Thomas Measham

This session is sponsored by Reflexivity Pty Ltd

This panel discussion considers whether the term "social license" remains valid or not. If not social license, then what? The relative merits of alternative terms, e.g., "social performance," will be discussed. Each panelist will provide an opening statement, then the discussion will be opened up to the audience for Q&A.

# Concurrent sessions

## Applied research on social license

Measham, Tom

## Relationships and dialogue as key elements of social license

Witt, Katherine

## Speaker

Miceski, Elena

## Institutionalizing SIA practice within government decision making

Tuesday 30 April | 16:30-18:00 | B2

Panel Discussion

Chair(s): Sheridan Coakes, Rachel Maas

This session addresses the history of SIA in government decision making both within Australia and overseas, through experiences of key government and consultant practitioners. Kurt Lewin's method of "Force-field Analysis" (FFA) is used to better understand the drivers of, and barriers to, the institutionalization of SIA in government and corporate decision-making contexts.

## Implementing the SIA guideline in New South Wales

Parsons, Richard

Developing the SIA guideline in New South Wales highlighted tensions between SIA and planning frameworks. Implementing it, meanwhile, has illuminated the countervailing forces that influence uptake.

## Consideration of social impacts in the NT approval

Vogel, Paul

The development and application and consideration of social and economic impact assessment in the Northern Territory (NT) government project development context.

## Involving stakeholders in monitoring and inspection

Esteves, Ana Maria

Considering the absence of conducive legislation and institutional capacity, this presentation will highlight mechanisms for monitoring and inspection of SIMP implementation.

## Improving IA through integration of Indigenous values

Keane, Julie

This paper explores the options of integrating the two processes to facilitate more effective engagement with indigenous parties engaged in the indigenous land use agreements (ILUA) process with the IA process.

## Putting the "social" back into science: Quality social impact assessment (I)

Wednesday 1 May | 14:30-16:00 | P7

Paper Session

Chair(s): Jane Munday, Rachel Maas

What is needed to evolve the practice of social impact assessment so it meets the aspirations of our founder Charlie Wolf's 1982 state-of-the art paper, IAIA Principles (Vanclay 2003) and Guidelines (Vanclay et al. 2015). Is impact assessment still a 'technocracy'? Is evolution enough? Is it time for a new paradigm?

## SIA and DRA commonalities: SA regulatory comparisons

Kruger, Leandri

Comparisons between South African environmental management and disaster risk management legislation suggest potential opportunities for the integration between SIA and disaster risk assessment, leading to improved SIA status and practice in South Africa.

## Evaluation of three geothermal project SIA reports

Suliman Abdelrahman, Nadine

Framework for comparative evaluation of social impact assessments (SIA) applied to geothermal power plant project ESIA reports from three countries to investigate the effectiveness of the SIA process.

## From an SIA to a resilience lens: Implications

Ross, Helen

Communities are proactive. SIA can learn from understanding of and practice in community resilience, but it is important not to assume community resilience can and should compensate for impacts.

## Differentiating social risk and impact in mining

Worden, Sandy

Many project teams are challenged by the social dimensions of mining. To improve the way social risk is assessed by these teams, its relationship with SIA must be clearly understood.

## Evolution, revolution, or reinventing the wheel?

Munday, Jane

Evolution, revolution, or reinventing the wheel? A 50-year audit of impact assessment in northern Australia tracks cycles of power, economies, and reform and what's been lost on the way.

## Putting the "social" back into science: Quality social impact assessment (II)

Wednesday 1 May | 16:30-18:00 | P7

Paper Session

Chair(s): Jane Munday, Rachel Maas

What is needed to evolve the practice of social impact assessment so it meets the aspirations of our founder Charlie Wolf's 1982 state-of-the art paper, IAIA Principles (Vanclay 2003) and Guidelines (Vanclay et al. 2015). Is impact assessment still a 'technocracy'? Is evolution enough? Is it time for a new paradigm?

## Evolving SIA to address construction fatigue

Cavanagh, Bonnie

Construction fatigue may occur in communities during prolonged infrastructure growth. SIA, consultation, and management practices increasingly need to adapt to identify and adequately manage this issue.

## Our future world: Ready or not?

Cavanagh, Naomi; Wilson, David

This paper addresses how social impact assessments should include future trends, to ensure we undertake the right projects and complete them in a way that benefits future generations.

## Can the discipline of evaluation help SIA evolve?

Kung, Anthony; Gildea, Catriona

Evaluation and SIA are separate disciplines with distinct principles and tools. There is much overlap, too: both aim to untangle complex cause-and-effect in social systems. What lessons can they share?

## Technocratic SIA: Proponents to win and community to lose

Lkhagva, Tselmegsaikhan; Chultemsuren, Tamir

The paper explores how technocratic-oriented SIA practice, which primarily fulfils the international financial institution's minimal standards, defines who is a clear winner and loser in mining projects.

## The power in SIA and the power of SIA

Hiruy, Kiro

This paper argues the need for power analysis in SIA recognizing the hiatus between the intention and practice of SIA regarding the empowerment of vulnerable groups in the community.

## Social indicators on SDGs for industry and university

Thursday 2 May | 11:00-12:30 | B3

Panel Discussion

Chair(s): Takako Hashimoto

This session will provide our basic information and experience on sustainable commerce and society for achieving SDGs in Asia and discuss how we can globally promote sustainable commerce and society with social indicators.

## Social indicators in corporate activities considering SDGs

Presenter

Hashimoto, Takako (Chiba University of Commerce)

Commentators

Harashina, Sachihiko (Chiba University of Commerce)

Leonard, Peter (World Bank)

## Social indicators on USR activities for achieving SDGs

Presenter

Saito, Noriko (Chiba University of Commerce)

Commentator

Murase, Noriaki (JICA)

## How do we develop quality SIA practitioners?

Thursday 2 May | 14:30-16:00 | P3&P4

Workshop

Chair(s): Jeffrey Jacquet, Will Rifkin

IAIA Section: Social Impact Assessment

This workshop session focuses on identifying challenges and opportunities to building a robust work force of SIA practitioners. Presenters will include the perspectives of an academic practitioner, trainer, and manager; presenters and the audience will together consider the future of SIA work force development.

## What makes quality social impact assessment practitioners?

Sunderland, Chris

The perspective of an SIA practitioner explores the challenges, opportunities, insights, and solutions to better develop SIA practitioners.

# Concurrent sessions

## Institutional hurdles to reproducing ourselves

Rifkin, Will

Institutional and practical hurdles to growing the SIA workforce—and how to overcome them—will be discussed, with a focus on particular challenges of a multi-disciplinary field.

## "Have we got a job for you?"

Coakes, Sheridan

This paper explores the trials, tribulations, and triumphs involved in developing, mentoring, and managing a diverse team of social scientists in undertaking best practice SIA.

## Challenges of teaching SIA in a university setting

Jacquet, Jeffrey

This presentation outlines the mismatch between the university and teaching SIA skills, as well as recommendations to design effective SIA curriculum offerings at the university level.

## Certification of SIA: The right next step?

Bice, Sara

Participants will be provided with recent evidence on professionalization and certification related to SIA practice, and be invited to enter the fray of this debate to consider key challenges and opportunities.

## RE100: Ethical initiative in university

### Thursday 2 May | 14:30-16:00 | B3

Panel Discussion

Chair(s): Takako Hashimoto

This session is sponsored by CUC

## Holistic approach to university's ethical decisions

### Presenters

Teshima, Susumu; Tanaka, Shinichiro  
Tanaka, Shinichiro (Chiba University of Commerce)

## Toward Ethical Commerce: The first penguin of RE100

Harashina, Sachihiko (Chiba University of Commerce)

## Heart-Ware for RE100 University and Sustainable Actions

Sugimoto, Takuya (Chiba University of Commerce), and Ebato, Junji (Chiba University of Commerce)

## STRATEGIC AND REGIONAL ASSESSMENT: IMPORTANCE OF REGIONS IN AN ERA OF GLOBALIZATION

## Scope and level of detail for SEA at national and regional scale: Non-sectoral (I)

### Monday 29 April | 15:00-16:30 | M2

Paper Session

Chair(s): Gosewien van Eck

An SEA for a national or regional strategic vision is a useful instrument for highlighting the impact of different strategic policy choices. It also poses challenges. Especially in defining the scope and level of detail of the SEA and strategic vision. How can we develop an SEA with the right scope an appropriate level of detail?

## Just how "strategic" are SEAs?

Ross, Mitchell; Banhami-Zakar, Zsuzsa

Development of a criteria to assess strategic thinking in SEAs. An assessment of Australian Strategic Assessments under the EPBC Act (1999).

## Defining scope of SEAs: Particularities in EU cooperation

Palerm, Juan; Crabbe, Bernard

Examining the diverse factors and objectives that intervene in defining the scope of an SEA in the context of EU development cooperation.

## Overcoming SEA challenges at Wood Buffalo National Park

Cumming, Katherine; White, Lisa

Scoping and level of detail challenges for the Wood Buffalo National Park WHS SEA in Canada included stakeholder input timing, multi-faceted OUV, and a large geographical region.

## Scope and level of detail for SEA at national and regional scale: Sectoral (II)

### Tuesday 30 April | 11:00-12:30 | M2

Paper Session

Chair(s): Gosewien van Eck

An SEA for a national or regional strategic vision is a useful instrument for highlighting the impact of different strategic policy choices. It also poses challenges. Especially in defining the scope and level of detail of the SEA and strategic vision. How can we develop an SEA with the right scope an appropriate level of detail?

## Integration of climate change adaptation to framework plan

Lee, Youngsoo; Lee, Minho

Integration of climate change adaptation to Korea's framework plan for transportation will give direction and guidance to executive plans for infrastructure for transportation.

## Integrating ecological spatial governance into SEA in China

Siyang, Zhou; Wei, Li

In order to integrate ecological spatial governance into SEA in China, the study probed a combination of ecosystem services value assessment and space simulation methods.

## Phase 2 SEA for renewable energy developments in South Africa

Adams, Abulele

Strategic environmental assessment for the effective rollout of wind and solar photovoltaic renewable energy in South Africa.

## Learnings from a regional water plan SEA in Mexico

Tejeda, Juan Carlos

Lessons from the performance of a strategic environmental assessment of a regional water plan in the Altiplano Potosino region in Mexico.

## ESIA for Mozambique mining and gas sector

Sefane, Sergio

The strategic environmental and social assessment prepared for the mining and gas sectors in Mozambique.

## Asian S3EA: Strategic, spatial, and sustainable EA (I)

### Tuesday 30 April | 14:30-16:00 | B3

Pecha Kucha

Chair(s): Kiichiro Hayashi, Jong-Gwan Jung

The advancement of remote sensing technology and information technology, spatial analysis with a variety of environmental, social and economic items received a big attention. This session will focus on IA examples which support the strategic decision including SEA and utilized the well-organized spatial scale analysis for achieving SD in Asia.

## A study on environmental impact assessment business

Namgung, Hyung

We explore the problems in the current Korean environmental impact assessment system and give suggestive for improvements regarding the substantiability of EIA.

## SDGs and IA in Japan from talks in Kuching 2018

Harashina, Sachihiko

UN-SDGs are goals toward sustainable society and EIA should be the tool for this. The challenges of EIA systems toward creating a sustainable society in Japan will be discussed.

## A nexus frame for solutions in the livestock issue

Jung, Jong-Gwan

Key factors are odor, infectious disease, manure, and carcass landfill. The nexus frame can highlight synergies between sector interventions for "win-win" solutions, helping stakeholders to develop insights into different options.

## Biodiversity vulnerability under climate change

Seo, Changwan; Jeon, Manseok; Adhikari, Pradeep; Kim, Hyun Woo

Climate change vulnerability assessment on biodiversity provides essential information for conserving ecosystems, to make appropriate adaptation policies to protect existing and future areas as refugia under climate change.

## Energy and environmental integrated spatial analysis

Hayashi, Kiichiro; Villa, Ferdinando

Spatial assessment of energy and environmental items were conducted by utilizing the K.Lab system which was developed by BC3, Spain. A case study was conducted in Japan.

## How human activity supports species migration

Choi, Yuyoung; Lim, Jieun; Sung, Hyun Chan; Jeon, Seong Woo

This study assessed the adaptability of species in northeast Asia under climate change through spatially explicit prediction of bioclimatic change and quantify bioclimate connectivity.

## Rainfall interception effect by different foliage

Yang, Byungsun; Heo, Dong Kun

By using terrestrial laser scanners and measured data, the effect of tree canopy character including leaf area density and other morphology on rainfall interception has been analyzed.

# Concurrent sessions

## Filling the evolving IA governance gap

Tuesday 30 April | 16:30-18:00 | P3&P4

Paper Session

Chair(s): Aaron Goldschmidt

IA guidance may be developed and implemented consistently, or not. National leadership can strengthen or weaken compliance. Collaboration can bridge policy gaps; heated conflict arises between regional and national entities with competing interests.

### Beyond bilateral agreements in Australian IA

Pears, Erin

Australia has an effective system for coordinated, multi-jurisdictional IA for most projects, but when this doesn't apply, the system is fraught with duplication and complexity. There is a better way.

### Federal jurisdiction over next-gen EA in Canada

Johnston, Anna

Canada's proposed Impact Assessment Act introduces reforms with jurisdictional implications. What is federal jurisdiction to assess broader sustainability factors, and to do so on a regional basis?

### The challenges and opportunities of a centralized system

Edema Taako, George; Karatu, Edward

Implementing a centralized IA system in a decentralized governance system without local governments capacity building poses a great challenge to the effectiveness of IA. Doing so provides dividend for IA.

### The path of least resistance

Carberry, David; Lenel, Malinda

Environmental approvals processes vary significantly across Australia. Proponents are increasingly seeking advice on the approvals "path of least resistance." Australia needs an approvals framework.

### Research capacity and knowledge in IA

Darling, Samantha; Ogden, Gordon

Using primary research data, we show that the interactions between research, community, and governance capacities are central to realizing societal objectives related to incorporating knowledges into IA.

## Asian S3EA: Strategic, spatial, and sustainable EA (II)

Tuesday 30 April | 16:30-18:00 | B3

Pecha Kucha

Chair(s): Myungjin Kim, Takehiko Murayama

The advancement of remote sensing technology and information technology, spatial analysis with a variety of environmental, social and economic items received a big attention. This session will focus on IA examples which support the strategic decision including SEA and utilized the well-organized spatial scale analysis for achieving SD in Asia.

### Gradual or sudden: System and science in IA

Kim, Myungjin

Lessons and experiences learned from gradual or sudden development in system and science of IA are being discussed.

## Stakeholders' attitudes and consultation for CCS

Murayama, Takehiko; Nagaoka, Shigeo

Carbon capture and storage facilities are one effective device to mitigate the impacts of carbon dioxides. This presentation covers attitudes of stakeholders and local residents in Hokkaido (Japan).

## Comparison between climate impact and preferred adaptation measures

Park, Chae Yeon; Lee, Jiyeon

For supporting local government climate change adaptation plan, we made priorities of adaptation measures and compared that with climate impact.

## Community acceptance of small scale wind power

Nishikizawa, Shigeo; Umezawa, Takehiko

While environmental conflicts in the development process of small scale facilities have not yet been found so far, local governments' concerns and local residents' complaints have been increasing.

## Effects of watershed environmental changes on water quality

Sohnju, Yu; Eunjung, Lee

Water quality impact assessment following changes in the watershed environment help to understand implementation effect of water quality policies and respond to climate change in Paldang Reservoir (Korea).

## A new approach to determining impacts to GDEs

Roberts, Ben

This interactive presentation reviews how remote sensing technology can be used to help identify groundwater dependent ecosystems (GDEs) and their ongoing condition monitoring.

## Daily water quality forecasting system

Hwang, Sang Chul; Kim, Ji Won; Choi, Jung Kyu

We have developed integrated systems and centralized simulation machines which run all models, link all input and output together, and visualize results every day.

## Algal bloom monitoring using unmanned aerial vehicles

Byun, Chang Young; Kim, Ji Won; Lee, Seung Jae

We tried to wide-range algal bloom monitoring technology using UAV. It is effective monitoring compared with manual sampling methods.

## Evolution or revolution? The strategic value of SIA in regional development (I)

Wednesday 1 May | 11:00-12:30 | P10

Paper Session

Chair(s): Angelo Jonas Imperiale, Frank Vanclay

IAIA Section: Social Impact Assessment

Can SIA enhance regional development and support community development plans to better inform development planning about local needs and desired social outcomes? Is evolution or revolution the answer? This session reflects on lessons learned, and on constraints to, and demands on, SIA to enhance its strategic value in regional development.

## Re-evolutionizing Soto Norte region

Ruiz, Yaddy; Romero, Andres

The evolution of SIA results in a proposal to re-evolutionize the Soto Norte region. The SIA process assists communities in envisioning the future and becomes a key tool in strategic regional planning.

## Social impact assessment for 21st century economies

Harkins-Small, Laura

It is only when enterprises large and small can incorporate SIA as a part of their day-to-day strategy and operations will the practice be able to deliver transformational regional development.

## Evolution or revolution? The strategic value of SIA in regional development (II)

Wednesday 1 May | 14:30-16:00 | P10

Paper Session

Chair(s): Angelo Jonas Imperiale, Frank Vanclay

IAIA Section: Social Impact Assessment

Can SIA enhance regional development and support community development plans to better inform development planning about local needs and desired social outcomes? Is evolution or revolution the answer? This session reflects on lessons learned, and on constraints to, and demands on, SIA to enhance its strategic value in regional development.

## Is SIA cosmetic in Indian road development schemes?

Chandra, Tanya

Evaluating the role of SIA in road infrastructure development in India through policy and anthropological research.

## A revolution in ESIA scoping

Strickland, Luke; Mair, Adam; Montgomery, James; Corai,

Mihai; Skinner, Ben

This paper will consider how a focus on UN Sustainable Development Goals could provide a better framework to scope ESIA against than simply defining significance of effects, improving outcomes.

## The strategic role of SIA in EU regional development

Imperiale, Angelo Jonas

Drawing from the intended social outcomes in EU regional development policy, we reflect on SIA's potential role in regional development planning for enhancing social outcomes in vulnerable regions.

## International progress in regional-scale impact assessment (I)

Wednesday 1 May | 14:30-16:00 | P8

Paper Session

Chair(s): Jill Blakley

Regional-scale impact assessment is proliferating worldwide to address, often in a strategic manner, the cumulative impacts of rapid and intensive multi-sectoral development. This session showcases international initiatives, including their partnership models, strategic elements, approach to cumulative impact assessment, connections to policy, etc.

## Assessing regional and cumulative impacts of mine retirements

Roemer, Kelli; Haggerty, Julia

This paper uses the cumulative impact assessment framework to illuminate the combined impacts of plant and mine retirements in the Powder River Basin (USA) region and opportunities for multi-scalar policy intervention.

# Concurrent sessions

## IA for a combined resource and regional development

Hall, Kristen; Moriarty, Michael

The proposed development of one of the largest known undeveloped copper resources in the world has provided the opportunity to support a regional development project: the Sepik Development Project.

## Assessing GI differences in the UK and Mexico

Tejeda, Juan Carlos; Fischer, Samuel

Strategic environmental assessment of the green infrastructure planning framework in Mexico based on UK's expertise.

## Scotland's marine planning framework

Chisholm, Amanda

Impact assessment has been a key tool in the preparation of national and regional-level marine plans in Scotland. This paper explores lessons learned, including assessment and plan effectiveness.

## International progress in regional-scale impact assessment (II)

Wednesday 1 May | 16:30-18:00 | P8

Paper Session

Chair(s): Jill Blakley

Regional-scale impact assessment is proliferating worldwide to address, often in a strategic manner, the cumulative impacts of rapid and intensive multi-sectoral development. This session showcases international initiatives, including their partnership models, strategic elements, approach to cumulative impact assessment, connections to policy, etc.

## Impacts of coal resource development on water

Schmidt, Becky; Henderson, David; Lewis, Steven

The Bioregional Assessment Programme provided transparent scientific information to better understand the potential impacts of coal resource developments on water and the environment.

## Models for integrating approvals and procurement

Hyett, David

A key strategic decision for transport infrastructure proponents is how to coordinate their approvals and procurement processes. The pros and cons of two competing models are explored.

## Addressing food security in regional impact assessment

Blakley, Jill

This paper explores ways to address food security within regional strategic environmental assessment.

## Lessons learned from SEAs in Australia

Thursday 2 May | 11:00-12:30 | P8

Panel Discussion

Chair(s): Carolyn Cameron

This interactive panel session will present emergent "big-picture" lessons gleaned from a decade of SEA practice in Australia and illustrate these with short targeted case studies before opening to the floor to explore targeted questions.

## SEA using landscape as a driving concept

Middle, Garry

This paper presents the outcomes of research into the notion of "landscape" and SEA. Landscape could offer a way to develop an Australian IA reflecting links between nature and culture.

## What difference does SEA make anyway?

Burdett, Tanya

Has Australia missed the boat on SEA? What difference does SEA make anyway? The case for transparency, inclusion, early optioneering, and scrutiny at the strategic decision-making level in Australia.

## Using structured decision making in SEA

Hemphill, Peter

A case study of the application of structured decision making to SEA in Western Sydney is presented. It covers the key steps, concepts, and high-level findings of the work.

## THE USE OF TECHNOLOGY TO ADVANCE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

## Digital impact assessment: The latest developments (I) Tools and methodologies

Tuesday 30 April | 11:00-12:30 | P3&P4

Paper Session

Chair(s): Paul Eijssen, Martin Budd

This session highlights the latest achievements and innovations in digital impact assessment reporting, reviewing and communication. Our paper-based session shares and discusses state-of-the-art IA projects and interactive tools to support informed decision making.

## Ecosystem service-based reduction strategy of fine particulate matter

Lim, Chul-Hee; Ryu, Jieun

Ecosystem service-based approach to reducing ambient fine particulate matter using spatial trend-correlation analysis with the valuation of ecosystem function and service.

## Intelligent repository for ESHIA practitioners

Klein, Travis; Jamieson, Andrew

Improve ESHIA process and quality through the development of a digital ESHIA repository with natural language search functionality, free-flowing questions, and machine learning.

## Improving alternatives using optimization algorithm

Lee, Jongook; Lee, Eun Joo

Alternatives choice is an important task during the impact assessment process to minimize possible impacts to environment. Use of an optimization algorithm can help to improve the propose of alternatives.

## Maturity model for enterprise-scale stakeholder engagement

Lieutenant, Louis

This paper will help practitioners gain deep understanding of their current maturity level of data management for stakeholder engagement and outline a process to achieve enterprise-scale digital maturity that easily proves the rigor of their IA program. We will compare the issues, risks, and benefits linked to each maturity level.

## A collaborative process for creating report cards

Kung, Anthony; McIntosh, Poh-Ling; Lant, Paul

Report cards are widely used to communicate environmental and social performance. This paper directs attention to the process of creating report cards. A collaborative process is presented and unpacked.

## Digital impact assessment: The latest developments (II) Reporting and public involvement

Tuesday 30 April | 14:30-16:00 | P3&P4

Paper Session

Chair(s): Paul Eijssen, Martin Budd

This session highlights the latest achievements and innovations in digital impact assessment reporting, reviewing and communication. Our paper-based session shares and discusses state-of-the-art IA projects and interactive tools to support informed decision making.

## Public participation and digital impact assessment

Barten, Bart

Advantages and dilemmas of e-participation and digital IA for road infrastructure projects in the Netherlands.

## Tracking stewardship of resources using "Big Data"

Wright, Nigel H.

Cutting-edge applications of big data analytics to track corporate and government resource stewardship and new corporate social responsibility (CSR) dimensions.

## Enabling proportionate EIA through digital process

Storey, Fran; Skinner, Adam; Strickland, Luke; Mair, Laura; Montgomery, James

This paper explores how a digital paradigm can enable more accessible, integrated, and proportionate outcomes in EIA, ending the era of epic and unreadable environmental statements.

## Having a clear vision of spatial data frameworks and sharing for better digital IA

Chen, Jonathan

A consistent and collaborative approach to spatial data frameworks and sharing can lead to a more efficient and informative impact assessment.

# Concurrent sessions

## Evolving the utility and potential of social media

Gurtner, Yetta

Exploring lessons from other disciplinary areas to appreciate how social media may be better utilized to facilitate open communication and public participation in the social impact assessment process.

## Digital technologies for social impact assessment and resettlement planning

Wednesday 1 May | 16:30-18:00 | P3&P4

Paper Session

Chair(s): Tulsi Bisht

This session will include presentations and discussions on use of ICT in social impact analysis for involuntary resettlement planning to ascertain whether ICT use can improve the effectiveness of safeguard implementation and enhance efficiency.

## Digital in-field social data capture and mapping innovation

Choudhury, Chapal; Young, Grant

An innovative approach and mobile GIS/GPS technology helped to rapidly and electronically collect a large volume of accurately mapped land use, asset, and socioeconomic data by locals in remote PNG.

## Use of IT for land appraisal and valuation in involuntary resettlement planning

Subedi, Laxmi Prasad

Appraising land attributes and valuation in projects to a single plot is exhausting in paper-based systems. This presentation shares an IT system developed in Nepal to systematize land valuation and compensation.

## Maturity model for enterprise-scale stakeholder engagement

Lieutenant, Louis

Gain a deep understanding of their current maturity level of data management for stakeholder engagement and IA programs.

## Use of digital technologies during resettlement planning

Hayrapetyan, Zaruhi

Application of drones, Google Earth, Microsoft Access and MSQl databases and their advantages and limitations are demonstrated per project preparation and implementation stages, including grievance redress.

## ICT for involuntary resettlement impact assessment

Bisht, Tulsi; Novikova, Irina

This paper presents the pilot study outcomes of using information and communications technology (ICT) in SIA for involuntary resettlement planning and argues that ICT use can improve the effectiveness of safeguards implementation and enhance efficiency.

## SIA and EIA of marine renewable energy

Thursday 2 May | 11:00-12:30 | P9

Paper Session

Chair(s): Taeyun Kim

In the oceans, various human activities are being carried out, and many species are inhabited. This session focuses on the social and environment impacts of marine renewable energy. The session will present social and environmental impacts resulting from marine renewable energy development and discuss ways to resolve or reduce them.

## Socio-economic impacts of offshore wind farms

Glasson, John; Durning, Bridget

Research findings, drawing on the monitoring of EU North Sea projects, on the potential of offshore wind projects to bring socio-economic benefits to often-deprived local and regional coastal communities.

## Communication process of offshore wind development

Takeuchi, Ayano

This study focuses on the communication process between fisher and developer for offshore wind energy in Goto City, Nagasaki Prefecture.

## Zoning approach to control wind farms: Japan case

Murayama, Takehiko

This paper cover the discussion process of a guideline on zoning system to control wind farm construction projects and some local governments' efforts and challenges to implement this system.

## A case study on offshore wind farm in South Korea

Kim, Taeyun; Maeng, Jinsung

The study aims to identify the social and environmental impacts that may arise from offshore wind farms in close to the coast and suggest ways to minimize or mitigate the impacts.

## Improving environmental and social performance on construction projects (I)

Thursday 2 May | 11:00-12:30 | M2

Paper Session

Chair(s): Patrick Francis

The true value of environmental and social management measures lies in their implementation. This session explores strategies to improve their performance in construction projects. Measures may include user-friendly plans, handheld and cloud-based tools to update and access field data in real time and contractual incentives for good performance.

## Improved compliance through effective interface

Houldsworth, Nick

Ramboll's team has compiled a library of lessons learned and recommendations to improve the environmental management performance of projects during construction and operation.

## Overcoming waste management challenges in PNG

Otmar, Colman

Overcoming waste management challenges in a mega project in a developing country. Sharing the PNG LNG experience.

## Maturing to tangible IA on construction projects

Gordhan, Bharat

IA evolution can be achieved on a construction project as a tangible result, once the efficacy of the management of environmental harm is determined (e.g., adaptive management of on-site water).

## Improving environmental and social performance on construction projects (II)

Thursday 2 May | 14:30-16:00 | M2

Paper Session

Chair(s): Patrick Francis

The true value of environmental and social management measures lies in their implementation. This session explores strategies to improve their performance in construction projects. Measures may include user-friendly plans, handheld and cloud-based tools to update and access field data in real time and contractual incentives for good performance.

## Land access good practice on the onshore pipeline

Liliura, Jeremiah

Systematic approach to land access using pre-construction survey data and the mitigation hierarchy in project planning and schedule. A good practice on the PNG LNG Onshore Pipeline Project.

## From impact assessment to beyond compliance

Brazier, Rachel; Powell, Marissa

How can we harness the impact assessment process to support a shift in focus from compliance to beyond compliance outcomes in transport construction projects in Australia?

## Right-of-way management system in Cambodia

Chea, Samnang; Vaddhanak, Takayuki; Yamashita, Akira; Ochi, Masaki; Kumagai, Takahiro

Ministry of Public Works and Transport of Cambodia supported by JICA has developed a right-of-way management system by using UAV mapping and database to identify current situation and prevent new encroachment along the national roads.

## Building environmental performance: Construction

Haylock, Bill

Environmental training needs cut-through. It needs to be impressed upon workers who are at risk of polluting the environment or damaging heritage. This presentation uncovers tools to get cut-through.

## Better environmental performance during construction

Francis, Patrick

The true value of environmental and social management measures lies in their implementation. This presentation explores strategies to improve their performance in construction projects.

# Concurrent sessions

## THEORY AND PRINCIPLES OF IA

### Formalizing revised EIA follow-up best practice principles

Tuesday 30 April | 14:30-16:00 | P5

Workshop

Chair(s): Angus Morrison-Saunders, Jos Arts

A revised set of IAIA best practice principles for EIA follow-up are currently in preparation by Angus Morrison-Saunders, Jos Arts, and Ross Marshall. This builds on the process that commenced at IAIA18. Come along to this workshop to contribute to their development and finalization. All contributions are welcome.

### Using case studies in teaching impact assessment (I)

Tuesday 30 April | 14:30-16:00 | P6

Paper Session

Chair(s): Garry Middle

The use of case studies in teaching IA offers a practical way to demonstrate best and worst IA practice, and providing insights into theory. This session has 2 parts. There will be an interactive session of good case studies in "short and sharp" presentations. Second, a proposal to establish an IA case study teaching network will be discussed.

### Environmental systemic vision on swine production

Giberti, Verónica; Jhanjanam, Manchala; Thummeda, Ravikiran; Conti, Carolina Martha

The primary sector of the pig in Argentina has undergone a marked transformation in the last 15 years. An environmental evaluation was made from a systemic view.

### Project Sea Dragon: Case study of a large-scale project

McBean, Kate

This presentation explores the assessment approach adopted to overcome a number of challenges and gain both Territory and Commonwealth approval within less than two years of commencement.

### The Life of Project (LoP) approach to environmental compliance

Aryeetey, Henry

The "Life of Project" training approach focuses on environmental compliance and environmentally sound design and management across the project life cycle. USAID West Africa increased staff and IPs knowledge from 2.9 to 4.10 on a 1-5 scale.

### Synergies of confusion: When political risk and environmental risk collide

Middle, Garry

This case study explores how both political risk and environmental risk played out inane EIA of a proposed coal mine in a prime tourist area in Western Australia.

### Using case studies in teaching impact assessment (II)

Tuesday 30 April | 16:30-18:00 | P6

Paper Session

Chair(s): Garry Middle

The use of case studies in teaching IA offers a practical way to demonstrate best and worst IA practice, and providing insights into theory. This session has 2 parts. There will be an interactive session of good case studies in 'short and sharp' presentations. Second, a proposal to establish an IA case study teaching network will be discussed.

### Teaching SIA for future practitioners

Gallou, Eirini

Challenges in co-developing a methodology for Social impact assessment (SIA) between university and community organizations in London's urban planning scene.

### IA training: Challenges of follow up and use

Brown, Glenn

Principles and tools that help students retain and use knowledge and skills after training, using examples from workshops about using organized reasoning in IA practice.

### Teaching IA case studies: A revolutionary approach

Baxter, Tom

This paper presents a case study of Gunns Limited's pulp mill proposal and its use in university teaching to demonstrate IA law and practice. It exemplifies the best and worst of Australian IA.

### How EIA has furthered the conservation of endemic freshwater crab

Stanton, David

Online publication of Hong Kong's EIA reports allows for the review of distribution and status of some lesser-studied taxa, freshwater crabs, in Hong Kong.

### Teaching impact assessment: Best practice principles and pedagogy

Wednesday 1 May | 11:00-12:30 | B1

Workshop

Chair(s): Jenny Pope, Megan Jones

Teachers and trainers of impact assessment are invited to this workshop to share experiences of teaching techniques; to reflect on how these align with IAIA's draft Best Practice Principles for Teaching Impact Assessment; to learn from others; and to contribute developing collective understanding of best practice teaching of impact assessment.

### Establishing guidance for heritage and impact assessments

Thursday 2 May | 11:00-12:30 | B1

Workshop

Chair(s): Eugene Jo, Chris Polglase

IAIA Section: Cultural Heritage

The workshop will serve as the basis of formulating the scope and content of a new holistic guidance to recognize natural and cultural heritage in impact assessments, by developing new guidance material and ultimately capacity building on World Heritage and impact assessment.

### Developing a toolkit for IAs for heritage

Court, Sarah

ICCROM and IUCN's World Heritage Leadership Programme includes a module on impact assessments. Discussion will focus on tools needed by practitioners to improve IAs related to heritage.

### Challenges in cultural heritage impact assessment

Mackay, Richard

This paper will consider challenges and potential approaches for effective evaluation of cultural heritage impact of on the attributes which contribute to the Outstanding Universal Value of World Heritage Properties.

### Stakeholder identification and consultation

Fleming, Arlene

The importance of stakeholder identification, consultation, collaboration, and training in creating and promoting guidance.

### Cultural heritage IA and mining: Rio Tinto

Bradshaw, Elizabeth

This presentation overviews Rio Tinto's community-engaged cultural heritage management standards for its mining developments and presents a range of project case studies.

### IUCN's perspectives on the new IA guidance

Shadie, Peter

Identifying the key elements of IUCN's World Heritage Advice Note and recognizing current gaps will contribute to the discussion on developing a single guidance for all World Heritage.

### Protecting cultural heritage

Keller O'Loughlin, Shannon

American Indian and Alaska Native Tribes are highly active in protecting their cultural heritage, including cultural heritage sites.

### Practicing heritage conservation with impact assessments (III)

Wednesday 1 May | 16:30-18:00 | P9

Paper Session

Chair(s): Eugene Jo, Arlene Fleming

The session will collect good cases of impact assessments that have addressed the need for heritage conservation and sustainable development, by focusing on heritage values assessment and community engagement in its methodology. It will serve as the basis for establishing better guidance materials for addressing heritage within IAs.

### Considering indirect and cumulative impacts on World Heritage

Sánchez, Luis; Kunzer, Mark

Considering Outstanding Universal Value of World Heritage sites as valued components in cumulative effects assessment provides key guidance for selecting drivers and planning mitigation.

### World Heritage examples: Good practice EIA/SEA

Shadie, Peter

Presenting good practice EIAs and SEAs for World Heritage in line with IUCN's World Heritage Advice Note on Environmental Assessment.

# Concurrent sessions

## Spatial analysis in ESIA and World Heritage

Fleming, Arlene

Challenges involved in an integrated landscape approach to cultural analysis in impact assessment and world heritage.

## Addressing health and social equity through impact assessment

Monday 29 April | 15:00-16:30 | P11

Paper Session

Chair(s): Ben Harris-Roxas

IAIA Section: Health

HIA, SIA and other forms of IA have been promoted as mechanisms to ensure potential differential health impacts and vulnerabilities associated with proposals are identified and acted upon. This session reports on the use, progress, and methodological of IA to address health equity.

### Where are the residents? How to carry out resident engagement

Den Broeder, Lea

In a newly built area, we experiment with multi-method participation approaches, engaging proxy groups and temporary users reflecting the city's superdiversity.

### Repeated surveys to measure health equality and equity

Knoblauch, Astrid

Repeated health surveys help to reveal inequalities and inequities between host and migrant communities and provide a platform to promote equality and equity.

### Equity-focused HIA: Case of a place-based approach

Kim, Jinhee; Harris-Roxas, Melinda; Powell, Libby; Hua, Myna; D'Astoli, Mark; Dixon, Julie

A rapid equity-focused HIA of a multi-agency, place-based initiative in southeastern Sydney, Australia, and its benefits, challenges, and implications for future efforts.

### Health, safety, and environmental impact assessment (HSEIA) to address health and social equity issues

Lee, Jongook; Lee, Dong Kun

Integrated HSEIA can be a methodology of impact assessment to address health and social equity issues. The benefits of HSEIA will be presented with a case study and template.

## NORWEGIAN OIL FOR DEVELOPMENT PROGRAM

### The rapidly-evolving dilemma of fossil fuels vs. renewable energy

Tuesday 30 April | 14:30-16:00 | B1

Workshop

Chair(s): Morgan Hauptfleisch

Fossil energy production leads to serious climate change impacts and rapid environmental degradation. The industry is facing an evolving public and political demand for change and a transition to renewable energy sources. This workshop session will allow Oil for Development participants and others to discuss how their own countries tackle the dilemma, and the IA practitioner's role.

### Fossil energy vs. renewable energy: A role play of impact scenarios

Tuesday 30 April | 16:30-18:00 | B1

Role-playing workshop

Chair(s): Morgan Hauptfleisch

A fun and interactive role play of a public meeting where fossil energy producers meet the new times with advocates for renewable energy. The issue is a controversial (fictitious) gas development project being planned by the government, while the opposition party favors a renewable energy approach. The session simulates a public hearing about the development plan and improves participant's understanding of how impacts and options are perceived by different stakeholders. The session is concluded with an analysis of the participant's engagement and negotiating techniques employed.

### Country experiences with evolution in the energy sector and IA requirements (I)

Wednesday 1 May | 14:30-16:00 | B2

Paper Session

Chair(s): Arne Dalfelt, Peter Croal

There is an accelerating evolution in global thinking focusing on the negative impacts of oil and gas production, particularly in developing countries where more energy is urgently needed at the same time as climate change and environmental degradation is most critical. What can an IA practitioner do in this situation?

### Preliminary environmental cost accounting for Olkaria

Mwangi-Gachau, Elizabeth

Decision-making in the areas of energy and environment calls for an evolution, to better evaluation of the possible impacts of any envisaged policy and measure.

### How impact assessors can and must be catalysts

Croal, Peter

This presentation will show how and why impact assessment and its practitioners can and must play more of a change agent role in the energy sector, especially in emerging economies.

## Environmental IA for offshore oil and gas projects

Kitagawa, Mizuki; Nakajima, Masaru

The research revealed general features of EIA for offshore oil and gas projects around the world and suggested what EIA should be like in this industry.

## Risk assessment in EIS: Better decision-making?

Massote Caldeira Pereira, Marilia; Naked Haddad, Alvaro

Is the environmental risk assessment important during the EIA of the oil and gas industry? We compared some countries' regulations looking for answers and a better framework to help decision-making.

### Country experiences with evolution in the energy sector and IA requirements (II)

Wednesday 1 May | 16:30-18:00 | B2

Paper Session

Chair(s): Svein Grotli Skogen

There is an accelerating evolution in global thinking focusing on the negative impacts of oil and gas production, particularly in developing countries where more energy is urgently needed at the same time as climate change and environmental degradation is most critical. What can an IA practitioner do in this situation?

## A study on long-term liability and EIA

Komatsu, Eiji; Yanagi, Akihiro

Carbon dioxide capture and storage (CSS) is expected to become large-scale greenhouse gas (GHG) reduction technology. This paper addresses appropriate long-term management and legal framework and role of EIA to realize the long-term liability for CCS.

## Incorporating climate-related uncertainties into EIA

Kunz, Nadja; Guimaraes, Alice

The study evaluates how climate-related uncertainties have been currently incorporated into Brazilian EA process and how the Canadian strategic assessment on climate change could serve as a model for Brazilian EAs.

## A co-design and outcomes-based impact assessment model

Dansey, Anne

There has been significant and rapid change within energy policy in Australia. The Agriculture Energy Investment Plan provided a strategic response for farmers.

## Challenges facing best-practice

### EIA in the solar industry

Nixon, Bronte

EIA for solar farms is a relatively new concept for Australia. This paper considers the lack of consistency across EIAs and considers the poorly understood issue of the potential heat-island effect.

# Concurrent sessions

## PACIFIC DAY

Sponsored by World Bank Group, Asian Development Bank, Japan International Development Agency, and Australian Aid.

### Developments in EIA practice in the Pacific Islands

Tuesday 30 April | 11:00-12:30 | P10

Paper Session

Chair(s): Easter Galuva

Extractive industries such as liquefied natural gas (LNG) and various types of mining offer considerable potential for economic development in the larger islands of the Western Pacific, but there are also challenges to thoroughly assess environmental and social impacts and to meet international standards and best practice. This session considers case studies and the development of EIA practice in the Pacific Island Countries.

### Rainforest regeneration: lessons from PNG LNG

Dem, Francesca

Spontaneous rainforest regeneration after small-scale disturbance in forested landscape progresses, albeit at a slower pace, along the succession trajectories broadly similar to the natural rainforest.

### Seeing it through national content, good practice

Mosby, Anita

Sharing good practices based on experiences from the construction and operation of the PNG LNG in a country with a challenging terrain and more than 800 languages and cultures.

### Strengthening impact assessment in Vanuatu

Tor, Naomay

This presentation will focus on processes of impact assessments in Vanuatu and the challenges that the country through the Department of Environmental Protection and Conservation is currently facing.

### Strengthening the EIA system in Samoa

Savaiinaea, Della

Improving Samoa's EIA system by strengthening the capacity of private sector stakeholders to properly inform the preparation and development of EIA reports.

### The steady evolution of ESIA for extractive projects

Moriarty, Daniel; Joku, Lemas

PNG has taken a pragmatic approach to ESIA that focuses on "real" environmental and social issues. It is important to maintain this focus and avoid distraction by "second order" issues.

### EIA systems, guidance, and support in the Pacific Islands

Tuesday 30 April | 11:00-12:30 | B2

Paper Session

Chair(s): Nick Taylor, Jope Davetanivalu

In the Pacific Islands, impact assessment (IA) is used to plan, assess and implement a wide range of development projects and strategic planning activities with the goal of achieving more sustainable and resilient futures. This session reflects on processes to strengthen IA practice and build local capacity.

### The role of SPREP in supporting EIA in the Pacific

Barbara, Gregory; Galuva, Easter; Davetanivalu, Jope Secretariat of the Pacific Regional Environment Programme (SPREP) continues to provide EIA support in the Pacific, so why are some of the same issues identified in the late 1980s still occurring? It's because things keep changing.

### Strengthening EIA in the Pacific

Galuva, Easter; Barbara, Greg; Davetanivalu, Jope Secretariat of the Pacific Regional Environment Programme (SPREP) has recently revised the guidelines for environmental impact assessment in the Pacific. These guidelines reflect the needs of Pacific Islands as well as providing practical tools for better EIAs.

### The role of multilateral development banks

Butler, Ross

The current and potential future roles of multilateral development banks including the World Bank and Asian Development Bank in strengthening impact assessment in the Pacific.

### Safeguard Performance in the Pacific Islands

Leonard, Peter; Quintero, Juan; Mathur, Aradhna

The challenges for implementing safeguards in the Pacific island countries.

### SEA and sustainable development

Tuesday 30 April | 14:30-16:00 | P10

Paper Session

Chair(s): Jope Davetanivalu, Vanessa Freed

This session considers the challenges in promoting and using SEA and achieving sustainable development in the small island states. Applications include rural development, agroforestry, ridge to reef management strategies, biodiversity, and oceans management. Discussions will consider the use of EIA as a sustainable development tool.

### The challenges of promoting SEA in small island states

Dalal-Clayton, Barry; Freed, Vanessa

The first ever SEA undertaken in the Federated States of Micronesia aims to inform integrated land and sea planning and management. Its design addresses the challenges faced by remote Pacific islands.

### Piloting SEA in Timor-Leste for rural development

Palerm, Juan; Toselli, Manuel; Pinto, Augusto; Medez, Manuel

The first SEA in Timor-Leste, prepared for the rural development sector under EU cooperation, informs the EU's future support strategy and provides policy-making elements to the government.

### The importance of EIA and oceans management

Latu, Kosi; Davetanivalu, Jope; Galuva, Easter  
Pacific Islanders depend on the health of island and ocean ecosystems for their sustenance and livelihoods; therefore, sustainable development through EIA is essential in the Pacific.

### EIA a sustainable development tool in the Pacific

Davetanivalu, Jope; Barbara, Gregory

This presentation will discuss the use of the EIA process in the Pacific, drawing upon case studies and best practice across the region.

### Power through partnership: The Tina River hydro case study

Tuesday 30 April | 14:30-16:00 | B2

Panel Discussion

Chair(s): Paul Roughan, Nick Taylor

Tina River Hydro in Solomon Islands points towards a much deeper integration of measures for positive local benefit than classic impact assessment would countenance. It is a flagship energy project working to secure customary land and share benefits with indigenous land owners and related community members.

### Advancing IA practice in the Pacific Island Countries

Tuesday 30 April | 16:30-18:00 | P10

Panel Discussion

Chair(s): Peter Leonard

This will be a facilitated question and answer session to advance impact assessment practice in the Pacific Island Countries. The session will address the complex needs of people and environments in the region, and ways of supporting environmental and social impact assessment practice in relation to infrastructure development. It will consider coordinated ways to build practice and strengthen institutional capacity and environmental and social governance of island states. It is intended that the session will build further the community of practice and provide momentum towards a Pacific Islands network affiliated with IAIA.

### Speakers and panelists

Tor, Naomay (DEPC, Vanuatu)

Waqairamasi, Senivasa (Fiji)

Wele, Francis (UNDP, Fiji)

Ofea, Allen Kisi (Solomon Islands)

Thelander, Kate (DFAT)

Murase, Noriaki (JICA)

Williams, Jean (ADB)

Pohl, Wolfhart (World Bank)

Butler, Ross (World Bank)

Puna, Nga (Cook Islands)

## SPECIAL TO IAIA

### Meet the editors

Monday 29 April | 15:00-16:30 | P5

Workshop

Chair(s): Thomas Fischer

Are you considering writing an article or professional practice paper on impact assessment but aren't sure where to start? The editor and managers of IAIA's journal, *Impact Assessment and Project Appraisal*, will present ways to write a good article and get it published. Bring your questions and ideas for articles or guest issues.

# Concurrent sessions

## TOOLS AND METHODS OF IA

### Dot-to-dot isn't just for kids, silly wabbit

Monday 29 April | 15:00-16:30 | P3&P4

"Press conference"

Chair(s): Virginia (Ginny) King, Rick Gillan

The press conference is announcing the evolutionary approach in balancing energy provision, economic generation, and environmental protection through revolutionary integration of various components of the IA process.

### Not-for-profit organization and land owner

Gillan, Rick

### Natural capital strategist

King, Virginia (Ginny)

### Biodiversity management and offset specialist

Rodrigues, Patricia

### Wetland expert, permitting and IA strategist

Walker, Scott

## Access to remedy and impact assessment

Tuesday 30 April | 11:00-12:30 | P7

Panel Discussion

Chair(s): Nora Götzmann

IAIA Section: Corporate Stewardship and Risk Management

This panel discussion connects the practice of impact assessment and right to access to remedy of affected stakeholders. The role of project-level grievance mechanisms will be discussed through practical case studies, as well as the role of the accountability mechanisms of international financial institutions and state-based mechanisms.

### Social impacts of land acquisition in Punjab (India)

Sidhu, Sukhwant

The unintended social impacts of agricultural land acquisition in India. Compensatory justice should be holistic, should include all stakeholders, and should include SIA as an integral part.

### The lessons from Dingleton

Wellmann, Gwendolyn

The Dingleton resettlement offers us lessons: how consultation processes fail and why internal grievance mechanisms fail to the extent that legal action is the last resort for both sides.

### Enhancing capacity and participation for effective integration of human rights

Götzmann, Nora

The contribution to the panel will focus on practical steps and practices for enhancing capacity and participation of companies and communities for effective integration of human rights into ERM.

## China's EIA process: Reshape, challenges, and opportunities (I)

Tuesday 30 April | 16:30-18:00 | P7

Panel Discussion

Chair(s): Jiang Ling, Clara U Kam Wa

This forum explores the reshaping of environmental impact assessment framework to address the environmental impacts of local and regional mega infrastructure in order to safeguard the environment, integrate the need of community, and develop sustainable development strategy. Case studies from the Mainland and other places will also be demonstrated.

### China's EIA at the crossroads: What next?

Lam, Kin Che

Confronted with environmental issues of new scale and nature, the Chinese EIA system has to undergo paradigmatic changes in approach and orientation making use of the market and public engagement.

### The institutional change of EIA in China

Bao, Cunkuan; Xu, Jia

The paper will demonstrate the brief development history, identify the existing problems, and discover the political and policy factors that will cause the change of EIA in China.

### Compliance and enforcement of EIA in Hong Kong

Choi, Yee On Dorothy; U, Mei Ho, Mable

Environmental permit (EP) contains conditions to capture commitments from the EIA process. Practice of EP enforcement and continuous evaluation of project environmental performance are reviewed and discussed.

### A new reality for industrial facilities in China

Hu, Yinghua

This paper aims to share the insights of the changes in the permit procedure and implication on private sector in relation to sustainable investment in China.

### Public participation in Hong Kong's EIA: 20 years

Ng, Cho Nam

This paper reports an overview of the public participation process in the EIA system in Hong Kong and discusses its effectiveness, deficiencies, and major challenges for improving it.

## China's EIA process: Reshape, challenges, and opportunities (II)

Wednesday 1 May | 11:00-12:30 | P5

Panel Discussion

Chair(s): Jiang Ling, Clara U Kam Wa

This forum explores the reshaping of environmental impact assessment framework to address the environmental impacts of local and regional mega infrastructure in order to safeguard the environment, integrate the need of community, and develop sustainable development strategy. Case studies from the Mainland and other places will also be demonstrated.

### Mainstreaming biodiversity impacts into China's SEA system

Li, Wei

A risk-based approach is raised on integrating biodiversity considerations into the SEA system in China.

## Enhance the efficiency of EIA by guideline revision

Zhang, Qiannan

The revision of current guideline is an important channel to enhance the efficiency of EIA. Establishing scientific and efficient assessment methods and indicators is the most challenging part.

## Post-EIA follow-up and EM&A for projects in Hong Kong

Isa, Mohamed Hasan; Yeung

Effectiveness of environmental monitoring and audit programme for mega-scale government infrastructure projects against private sector residential development.

## Environmental acceptance of construction projects

Zhou, Peng

In 2017-2018, the Appraisal Center for Environmental & Engineering Ministry of Environmental Protection undertook the monitoring of construction projects and investigated the EIA reports. This paper aims discusses the challenges and propose the solutions for the monitoring.

## PEIA methods study of industrial projects in China

Sun, Hui; Zhao, Weichao; Li, Shi; Ouyang, Zhenyu; Fang,

Qiyuang

Taking the modern coal chemical project with Chinese characteristics as a case, studying the technical methods of post-environmental impact assessment of industrial pollution projects.

## Community engagement from project policy, and IA perspectives (I)

Wednesday 1 May | 11:00-12:30 | P6

Paper Session

Chair(s): Alexandra Blood

A diverse range of global case studies and practical learnings, from government, project, and community viewpoints, will share perspectives and outcomes of engagements with communities and IA ranging from reflection upon impacts to promoting awareness, project participation, and legal and policy implications.

## Experience of doing IA by the local community

Raiissyan, Behzad

A local community has been trained and coached to use IA for their tourism initiative to test how effectively IA can be used by the community itself where no resources are available to hire a consultant.

## The potential of peace and conflict impact assessment

Searle, Catherine

Development projects in regions affected by conflict have an extra layer of risk. The emerging field of peace and conflict impact assessment offers new tools and opportunities for peacebuilding.

## From attendance to participation to consultation

Ruiz, Yaddy; Romero, Andrés; Palacio, Alfonso

Soto Norte case study. Successful community engagement process results in an enriched IA process, from audience attendance to participation to consultation.

# Concurrent sessions

## Environmental impact assessment, community engagement

*Bynoe, Paulette; Simmons, Denise*

This study examines the role of local community engagement in the EIA process and its contributions to sustainability. The study also highlights the challenges, opportunities, and lessons learned.

## Community engagement from project, policy, and IA perspectives (II)

Wednesday 1 May | 14:30-16:00 | P6

Paper Session

Chair(s): Alexandra Blood

A diverse range of global case studies and practical learnings, from government, project, and community viewpoints, will share perspectives and outcomes of engagements with communities and IA ranging from reflection upon impacts to promoting awareness, project participation, and legal and policy implications.

## Community involvement in EIA process in Nigeria

*Ojile, Meshach; Samuel, Andrew*

This study reports on levels of participation/involvement of stakeholder communities in EIA process in oil/gas project planning in part of Niger Delta, Nigeria.

## Move over Habermas: how deliberative can the law make IA?

*Sinclair, John*

Provisions for public participation under the new Impact Assessment Act in Canada are considered to establish the extent to which these provide an appropriate foundation for the evolution of meaningful participation.

## Neighborhood perception of areas affected by fine particulate matter

*Khoironi, Adian; Sri Oetari, Poerna*

In viewing the existence of Tanjung Jati power plant, the neighborhoods of the study areas have diverse thoughts due to lack of knowledge about the impact of pm 2,5 for their health risk.

## Solving conflicts from livestock farms

*Hwang, Sang-il; Cha, Eunji*

This presentation shows how a local consultant finds out a way to solve conflicts between livestock farmers and nearby residents in a small community.

## Impact assessment of project closure: Meeting the new expectations

Monday 29 April | 15:00-16:30 | P7

Paper Session

Chair(s): David Snashall

This session is sponsored by ERM

Planning and managing project closure has become a major concern in the mining and oil and gas industries, with increasing scrutiny from governments and communities leading to higher corporate standards. Within this context impact assessment is emerging as key tool to assess closure options and identify and mitigate impacts.

## Lessons from the closure of the Leigh Creek Coalfield

*Zeman, Nathan; Querzoli, Andrew; Marshall, Greg; Williams, Brad*

An overview of the sudden closure of the Leigh Creek coalfields in northern South Australia.

## Engaging stakeholders in post-mining transition

*Everingham, Jo-Anne; Rolfe, Susan; Akbar, Delwar; Lechner, Alexander; Morrish, Fleur*

Mining contributes to many regional economies, yet has major impacts on land use. This paper outlines five models for incorporating stakeholder expectations in planning post-mining land uses.

## Social license to exit: A flawed concept

*Haggerty, Julia*

## Hazelwood: Leading the way in the Latrobe Valley

*Burnett, Alicia; Fridell, Adam; Scrase, Antonia*

Hazelwood Power Station and Coal Mine was the first of three large coal-fired power stations in Latrobe Valley to close. This paper highlights how we are facing IA challenges head on.

## Reliable mine rehabilitation and closure

*Unger, Corinne; Bond, Jo-Anne*

This paper identifies processes for undertaking mine closure with minimal negative impacts. Using the theory of high reliability organizing, it analyzes documents about four mining-related cases.

## Community engagement from project, policy, and IA perspectives (III)

Wednesday 1 May | 16:30-18:00 | P6

Paper Session

Chair(s): Alexandra Blood

A diverse range of global case studies and practical learnings, from government, project, and community viewpoints, will share perspectives and outcomes of engagements with communities and IA ranging from reflection upon impacts to promoting awareness, project participation, and legal and policy implications.

## Mikisew Cree vs Canada, CEAA 2012 and Bill C-69

*Stuckless, Daniel*

In 2013, Mikisew Cree First Nation challenged Canada's dismantling of environmental laws as they pertain to Treaty Rights. This paper evaluates the outcome of the courts and the work on Bill C-69.

## Siting process for a UK geological disposal facility

*Gough, Mark*

Consent-based siting for the geological disposal of higher level radioactive waste: how environmental and socio-economic assessments can facilitate community engagement and social acceptance.

## "Fresh Fish with FPIC" scalable consultation

*Blood, Alex*

Case study comparison of consultation for complex port and infrastructure projects in two Pacific nations, including similarities, challenges, and technical free, prior, and informed consent (FPIC) foundations behind the approaches.

## ESIA on solid waste management policies

*Zhuo, Qiannan; Yan, Wanglin*

Assessing waste management policies in Minamata City, Japan, from a social aspect: how the socio-economic factors affect household recycling activities.

## Delivering Australia's inland rail

*Connelly, Sarah*

Assessing and managing the social, environmental, and economic aspects of a 1700km freight railway project in Australia: challenges and opportunities of delivering the Inland Rail Project.

## DISASTERS AND CONFLICT

## Disaster risk reduction and community resilience (I)

Tuesday 30 April | 11:00-12:30 | M1

Paper Session

Chair(s): Charles Kelly, Angelo Jonas Imperiale

IAIA Section: Disasters and Conflict

The session will cover the use of impact assessment to reduce harm from disasters and other crises and responses to these events. Lessons from the assessment of response recovery reconstruction and development-disaster linkages are welcome.

## Exploring the endogeneity of risk perception and resilience

*Yeom, Jaeweon; Park, Dongoh; Lee, Dalbyul; Jung, Juchul*

The purpose of this study is to identify impacts on resilience strategies of risk perception considering endogeneity between two factors.

## Integrated assessment: Evolving sustainability pillars

*Timms, Stephen; Ward, Martin*

This presentation will explain the lessons learned post-earthquake in Christchurch, and the role of integrated assessment in making better informed decisions for disaster risk reduction, community resilience, and urban planning.

## An introduction of disaster impact assessment in Korea

*Kwak, Changjae*

This paper introduces Korea's disaster impact assessment and presents development plans.

## Disaster risk reduction and community resilience (II)

Tuesday 30 April | 14:30-16:00 | M1

Paper Session

Chair(s): Charles Kelly, Angelo Jonas Imperiale

IAIA Section: Disasters and Conflict

The session will cover the use of impact assessment to reduce harm from disasters and other crises and responses to these events. Lessons from the assessment of response recovery reconstruction and development-disaster linkages are welcome.

## Impact assessment on coastal area of South Korea

*Ku, Hyeyun; Maeng, Kwangwoo*

This impact assessment of sea-level rise is performed to obtain fundamental data and key insight on coastal disaster reduction against typhoon-induced surges.

## Emergency response planning for flood control

*Ojo, Adeolu; Adedigba, Moses*

An overview of the emergency response plan and activities for flood events in Ibadan, Oyo State, Nigeria.

## Catastrophe, risk, and oil-by-rail: Insights for IA

*Junod, Anne; Jacquet, Jeffrey*

Social, economic, and infrastructure conditions associated with oil train disaster risks are discussed in the context of four rail communities to better inform energy development and disaster IA.

# Concurrent sessions

## Impacts from a 7.5 magnitude earthquake in PNG

Taule, Kalyna

A description of lessons learned from the safety, environmental, and community impacts of the 7.5 magnitude earthquake that hit PNG will be presented in the context the PNG LNG project.

## Disaster risk reduction and community resilience (III)

Tuesday 30 April | 16:30-18:00 | M1

Paper Session

Chair(s): Charles Kelly, Angelo Jonas Imperiale

IAIA Section: Disasters and Conflict

The session will cover the use of impact assessment to reduce harm from disasters and other crises and responses to these events. Lessons from the assessment of response recovery reconstruction and development-disaster linkages are welcome.

## The role of SIA in post-disaster reconstruction

Imperiale, Angelo Jonas

We present the role SIA can have in post-disaster reconstruction to enhance disaster risk reduction (DRR) and community resilience. The paper focusses on an ongoing reconstruction process in L'Aquila post-disaster context.

## Impact assessment in a post-disaster context

Rennie, Hamish

IA practice and frameworks in post-disaster Kaikoura (NZ) and their implications for IA and its role in building future rural resilience in a developed country are evaluated.

## What now? Looking to the future of EIA

Kelly, Charles

The presentation reviews current environment and humanitarian efforts and considers what should now happen to ensure further progress to ensure negative environmental impacts associated with humanitarian response.

## INFRASTRUCTURE AND TRANSPORTATION

## Why follow up? Managing the social impacts of transport in urban cities

Tuesday 30 April | 11:00-12:30 | P5

Panel Discussion

Chair(s): Lara Mottee

Public transport-infrastructure engenders social and spatial change in urban cities endured long after the ESIA report is published. Follow-up processes to manage impacts continually fail to meet expectations and generate accountability. This session invites papers and discussion about ESIA Follow-up of urban transport-infrastructure projects.

## The missing link: Can we follow up without ESIA?

Mottee, Lara

Does applying good practice follow-up require an ESIA? This paper discusses lessons learned about the management of social impacts during the development of the North-South Metro Line in Amsterdam.

## EA followup in Sweden: A contradicting practice

Faith-Ell, Charlotta

Monitoring and evaluation of the impacts of a project or plan are core elements of environmental assessment. The Swedish case shows a very contradictory practice when it comes to EA follow-up.

## Considering impacts of major infrastructure projects

Sherry, Rob

How can project proponents and relevant regulators bring local communities along on the journey in a positive manner during the construction of linear infrastructure projects?

## EIA licenses, enforcement, and sanction models

Bergamini, Kay

Analysis of the models of enforcement, sanction, and control of EIA licenses in six countries, as well as their organization at national, regional, and local levels and main characteristics.

## RESILIENCE AND SUSTAINABILITY

## Environmental sustainability in large mining projects in developing regions (I)

Tuesday 30 April | 14:30-16:00 | P8

Paper Session

Chair(s): Leandro Arruda, Lucio Bedê

This session looks at strategies for dealing with social and environmental impacts of large mining projects in developing regions. We describe how these strategies are taking regional development, biodiversity conservation and strengthening of socio-cultural diversity in view of multi-stakeholder partnership for environmental governance.

## Securing strategic water source areas

Nzimande, Mthobisi

The South African National Biodiversity Institute is exploring the broad range of legislative tools available to secure strategic water source areas.

## Impacts of education and training interventions

Maurice, Simon; Johnston, Nathan

This case study of Lundin Foundation's community education intervention and skills training program will reflect on the social, economic and political impacts for community and examine business value.

## Environmental compliance in extractive industries

Waqairamas, Senivasa; Banhalmi-Zakar, Zsuzsa

Fiji operates an old mine monitored against new environment legislation. This poses a challenge for environmental compliance in extractive industries. The study aims to present on environmental compliance.

## Ecological theory meets impact assessment

Novotny, Vojtech

Academic ecological research and impact assessment practice have some shared goals, methods, and practices but could benefit from more open exchange of ideas, method protocols, and data.

## Evolution of environmental impact assessment in India

Reddy, G.V.

The evolution of EIA in India from 1976 and the role of various stakeholders in shaping the current regulation is presented in this paper.

## Impacts of the Fundão Dam failure

Edwards, Stephen; Sánchez, Luis

This presentation shares recommendations of the Rio Doce Panel outlining key steps to restoring health to this deeply-damaged watershed in Brazil, significantly impacted from a tailings dam collapse.

## Environmental sustainability in large mining projects in developing regions (II)

Tuesday 30 April | 16:30-18:00 | P8

Paper Session

Chair(s): Leandro Arruda, Lucio Bedê

This session looks at strategies for dealing with social and environmental impacts of large mining projects in developing regions. We describe how these strategies are taking regional development, biodiversity conservation and strengthening of socio-cultural diversity in view of multi-stakeholder partnership for environmental governance.

## Are we adding value? Perceived benefits of EA

Roos, Claudine

This paper investigates the perceptions of South African government officials (directly and indirectly involved in the EIA process) regarding the benefits of impact assessment for society.

## The National Environmental Screening Tool

Moodley, Sargoun Marlanie

Pre-screening is a process by which the anticipated environmental consequences of a proposed development are considered, prior to the proposal being authorized or rejected.

## Potash Amazonas Project: ESIA contributions

Bedê, Lucio

The implementation of Potash Project involves territorial and environmental governance challenges. A territorial development strategy was based on ecosystem services and social participatory approach.

# Concurrent sessions

## PUBLIC PARTICIPATION

### Conference of the birds: Evolving public participation to address community context and complexity

Tuesday 30 April | 14:30-16:00 | P7

Paper Session

Chair(s): Amy Gildea

Communities. We are the birds in Attar's literary masterpiece. All of us have our own ideas and ideals, our own fears and anxieties, as we hold on to our version of the truth. Like the birds of this story, how we involve the public in impact assessment evolves through the process itself: we may take flight together, but the journey itself will be different for each of us. This session tells us of the individual and collective experiences of communities from Africa, Northern Europe, North America, Asia and Australia and how approaches to public participation in IA are evolving.

### Extractives: A conversation with the Turkana

Mutiso, Alex

A lesson from the Turkana on the EIA process in the oil and gas extractives industry: we should be patient enough to be taught from those we seek to impact.

### Skewed agenda, blank canvases, and red herrings

Pearson-Smith, Timothy J.; Kwong, Louis

A critique of a public participation exercise for land supply in Hong Kong. Was it a fair, biased, or corrupted process?

### Social context and accidental changes in EIA

Hung, Shiu Fung; Fischer, Thomas

This paper uses Hong Kong as an example to argue that there are often unexpected changes in EIA practices that are driven by the dynamics of civil society.

### Learnings on regulatory transparency

Lock, Erik; Querzoli, Andrew; Marshall, Greg; Zeman, Nathan

An overview of the evolution of regulatory transparency in SA's mining sector, and the challenges and opportunities presented by increased transparency.

### A path, not a destination

Del Vecchio, Lucas; Hernandez, Aurora

In 2011, Goldcorp signed an agreement with the Grand Council of the Crees/Cree Nation Government and the Cree Nation of Wemindji which included entire chapters dedicated to environment and social responsibility.

## ENERGY, POWER GENERATION, AND TRANSMISSION

### Solutions for conflicts between wind energy technologies and birds

Tuesday 30 April | 16:30-18:00 | P5

Workshop

Chair(s): Ricardo Tomé, Jack Krohn

Wind energy is vital for climate change mitigation. But it needs to be good for the environment on all levels. We target a participated discussion on the state of the art about avoiding, minimizing, offsetting and further researching risks to birds from wind energy technologies. A participatory session.

### SEA for wind power and biodiversity in Kenya

Putri, Tami; Bennun, David; Mitchell, Robin; Williams, Guy

A strategic environmental assessment for wind power in Kenya is identifying overlaps of sensitive species and wind potential to inform impact avoidance by site selection.

### Ecological risk-based management for wind energy

Repas, Miguel; Copping, Elise; Gorton, Alicia

A risk-based management framework directed at the responsible development of the wind energy industry to support and facilitate regulatory processes while supporting the production of renewable energy.

### Turbine shutdown on demand: A key mitigation measure

Tomé, Ricardo; Leitão, Nadine; Vieira, Nuno; Canário, Filipe

Radar Assisted Shutdown on Demand of turbines has been applied very successfully in wind farms in migratory flyways for soaring birds, rendering very low mortality and negligible production losses.

### Social license and impact assessment of energy transitions

Thursday 2 May | 11:00-12:30 | P7

Panel Discussion

Chair(s): Lavinia Poruschi, Simone Carr-Cornish, David Fleming

In the context of increasing diffusion of renewable energy technologies and the increasing pressure on industries to decarbonize and demonstrate a social license, this session deliberates on methods for social and economic benefit, vulnerability, and (cumulative) impact assessment in energy resources extraction and generation projects and the regions that host them.

### Economic and land use implications of utility scale renewable energy projects

Poruschi, Lavinia; Measham, Tom

Utility-scale renewable energy projects are rapidly becoming a reality, but what does this mean in terms of employment, land use, or other local impacts and benefits?

## The decarbonization vulnerability index

Fleming, David A.

Decarbonization is necessary to mitigate climate change, but it will generate socioeconomic impacts on communities dependent on greenhouse gas (GHG)-intense industries. This paper presents a decarbonization vulnerability index to reflect this implication across regions.

### Beyond a regulatory license to operate

Calderwood, Kym

This paper explores the challenges faced by public policy managers and proposes provisional solutions to managing the diversity of stakeholder perspectives associated with extractive resource project development.

### Regional and cumulative impacts of mine and coal-fired generating facilities

Roemer, Kelli

This paper uses the cumulative impact assessment framework to illuminate the combined impacts of plant and mine retirements in the Powder River Basin (USA) region and opportunities for multi-scalar policy intervention.

### Assessing social impacts of mine closure

Everingham, Jo-Anne; Mackenzie, Sarah

Uranium mining towns like Arlit (Niger) and Jabiru (Northern Territory, Australia), plus towns in Central Queensland's coal basin must each assess potential socio-economic and governance impacts of impending mine closure.

### The public's response to a hydrogen energy system

Carr-Cornish, Simone; Lamb, Michelle

With Australia's emerging hydrogen energy technologies industry as a case, an approach is shared for understanding the public's response and identifying social impacts that are likely to have an influence.

### Social licence across three different industry phases

McCrea, Rod; Walton, Andrea

The paper presents survey data on social licence from three different host communities each in a different phase of unconventional gas development: pre-approval, early operations, and 20-year history of gas.

# Concurrent sessions

## CULTURAL HERITAGE

### Practicing heritage conservation with impact assessments (I)

Wednesday 1 May | 11:00-12:30 | P9

Paper Session

Chair(s): Eugene Jo, Arlene Fleming

IAIA Section: Cultural Heritage

The session will collect good cases of impact assessments that have addressed the need for heritage conservation and sustainable development, by focusing on heritage values assessment and community engagement in its methodology. It will serve as the basis for establishing better guidance materials for addressing heritage within IAs.

#### Cultural heritage, IA, and project implementation

*Polglase, Christopher*

This paper will present case studies that highlight the range of cultural heritage results that can take place during the implementation phase of large, complex projects.

#### Good practices for landscape integration

*García Sánchez-Colomer, Manuel Ramón*

We have developed a handbook to support landscape assessment in impact evaluation and project design. We have grouped more than 600 recommendations for landscape integration in projects.

#### Applying SIA in assessing contribution of cultural heritage

*Gallou, Eirini*

Application of SIA methodology for assessing social impacts of heritage conservation projects: the potential to achieve truly people-centered approach to conservation.

#### Community-engaged heritage management: Rio Tinto

*Bradshaw, Elizabeth*

The paper overviews Rio Tinto's community-engaged approach to cultural heritage management and community agreements for its mining developments and presents a range of project case studies.

### Practicing heritage conservation with impact assessments (II)

Wednesday 1 May | 14:30-16:00 | P9

Paper Session

Chair(s): Eugene Jo, Arlene Fleming

IAIA Section: Cultural Heritage

The session will collect good cases of impact assessments that have addressed the need for heritage conservation and sustainable development, by focusing on heritage values assessment and community engagement in its methodology. It will serve as the basis for establishing better guidance materials for addressing heritage within IAs.

#### Managing heritage impacts associated with urban development

*Kong, Ping; Dornbusch, Ramona*

To ensure an effective transmission of heritage values in urban development, heritage values and associated attributes shall be assessed at a strategic level and integrated with development objectives.

## Dutch best practice of heritage impact assessment

*Patiwaal, Patrick*

This paper discusses the aspects that made the Dutch Heritage impact assessments to be considered as best practice.

#### Protecting heritage in Africa through IA

*Odiaua, Ishanlozen*

An examination of the situation in some African countries with respect to the association between cultural/natural heritage protection, EA legislation, and development projects.

#### Guidance for heritage and IA: A collaboration

*Odiaua, Ishanlozen; Alonge, Bolanle*

This contribution will examine how effective collaboration between IA and heritage professionals can contribute to successfully responding to the needs in the field.

## HEALTH IMPACT ASSESSMENT

### Health assessments: Types and needs

Wednesday 1 May | 11:00-12:30 | B3

Paper Session

Chair(s): Geetha Ramesh

IAIA Section: Health

This session aims to bring the practitioners from around the globe to compare and contrast different health assessments they conduct in relation to projects and the specific regulatory requirements or needs that help identify prospective impact assessment of projects, programs and policies on human and community health.

#### The evolution of health impact assessment in Wales

*Green, Liz*

The paper outlines the new statutory requirements for HIA in Wales and what it entails, how this has come to fruition, and how Wales' learning could be transferred across sectors and the globe.

#### USAID/Ghana environmental compliance field evaluation

*Aryeetey, Henry*

Indoor residual spraying for malaria control is employed where malaria occurrence exceeds 40% parasitemia in children under 5. The outcome of environmental compliance conducted in 2015 is discussed.

#### So what is next? Health mitigation plan implementation

*Xiao, Yina; Uberti, Erasmo; Mwatembo, Raphael*

Eni conducted an internal review to appraise health impact assessments mitigation plan implementation in diverse countries and projects to identify possible factors affecting the mitigation implementation.

#### Health impacts of mercury use in artisanal mining

*Aguti, Caroline*

Mercury use in artisanal gold mining is a health risk, and health impact assessment and implementation is key to ensuring safe use and development of alternative technologies.

## The Mexican National Action Plan (NAP) in business and human rights

*Garcia-Chiang, Armando; Parriman, Joseph; Weisenberger, Frank; Heiner, Michael*

In 2016 the Mexican Government was going to present a National Action Plan in Business and Human Rights. This paper presents the antecedents of the NAP, and analyzes the reasons for its being unpublished.

## INDIGENOUS PEOPLES

### Policy, methodology, and procedure in SIA of the displacement of vulnerable people (I)

Wednesday 1 May | 14:30-16:00 | B3

Paper Session

Chair(s): John Pilgrim, Susanna Price

The session addresses the policies, methodology, and procedure employed in social impact assessment of development projects giving rise to the displacement of vulnerable peoples, and their effectiveness in retaining their livelihoods and optimizing their contribution to and participation in development.

#### Resettlement of displaced persons: national policies

*Sapkota, Nogendra*

The paper draws on the study of the People's Republic of China's national policies regarding reservoir-related population displacement, including a resettlement case study from Yudongxia reservoir.

#### Social procurement: Ticking the box

*Diffee, Esther; Buswell, Ellen*

To advance good practice in social procurement, do we need to redefine what success looks like and how we measure social value outcomes?

#### Expropriation or negotiated settlements?

*Price, Susanna*

Expropriation or negotiated settlements? Choosing the least disruptive option means reframing the public interest, addressing livelihoods and all losses, and distributing benefits equitably among land owning groups.

#### EIA and indigenous rights in Guyana

*Bynoe, Paulette*

This study adopts a case study approach to examine critically the role of Free Prior Informed Consent, as a core principle for engaging indigenous people in the EIA decision making process in Guyana.

#### DFI's social safeguards and economic displacement

*Olmos, Santiago*

Development finance institutions (DFIs) have experienced challenges in addressing issues of displacement of populations in the context of development projects which they finance. Particularly challenging has been the issue of economic displacement of vulnerable populations involved in the informal economy.

# Concurrent sessions

## Case studies in methodology and procedure in SIA of the displacement of vulnerable people (II)

Wednesday 1 May | 16:30-18:00 | B3

Paper Session

Chair(s): John Pilgrim, Susanna Price

The session examines methodology and procedure employed in social impact assessment in the light of case studies of development projects giving rise to the displacement of vulnerable peoples, and their effectiveness in retaining their livelihoods and income.

### To move or not to move: Perceptions about risks

Wang, Han

The stronger the degree of risk perception is, the weaker the willingness to resettle will be. The willingness of affected persons should be valued and respected.

### Oil infrastructure and involuntary resettlement

Ogwang, Tom; Vanclay, Arjan

The paper examines how oil and gas infrastructure development will lead/have led to involuntary settlements in the Albertine Graben and its impacts on the livelihood of the affected people.

### Social impacts associated with the transmission line

Kawadza, Annah

The study assessed the social impacts of the transmission line in the KwaZulu Natal Province of South Africa. Social impacts associated with the relocation of the affected households were assessed.

### Influence of inter basin water transfer project

Xu, Junshuo

Based on a questionnaire survey and field interviews, this paper discusses the impact of land acquisition for large-scale water conservancy projects on the old-age care of affected people.

### IA in a volatile environment: Kandadji dam case

Bella-Corbin, Aimee; Bella-Corbin, Mbianyor

How can we ensure a better way to use IA to guaranty an effective decision-making process in an explosive and high-security-risk region for a complex large scale project implementation?

### Livelihoods assessment of involuntary resettlement

Zhang, Ruilian

Based on the actual case of the fishermen in the fishing area of the DJK reservoir (DJK section) of the South to North Water Diversion Project in China, this paper identifies and analyzes the high poverty vulnerability of the fishermen.

## SOCIAL IMPACT ASSESSMENT

### Social impact assessment and baseline studies adapted to local contexts (I)

Wednesday 1 May | 14:30-16:00 | P5

Paper Session

Chair(s): TBC

Effective social impact assessment should be built on quality, comprehensive and relevant baseline studies. Too often, existing data is used which have collected by government agencies and research institutions, and these data tend to describe regional trends rather than give an accurate description of social conditions at the local level. This session aims to explore this problems and examine how baseline studies can be adapted to local contexts.

### International standards and local realities in ESIA

Rigby, Grace

This paper draws on fieldwork experiences for an ESIA in East Africa to analyze incongruencies between international standards and local realities, using examples of vulnerability and decision-making.

### Energy reform in Mexico and the evolution of SIA

Garcia-Chiang, Armando

An overview is presented on the evolution of social baseline studies towards social impact assessments within the energy sector in Mexico.

### Indigenous knowledge of ecosystem services builds

Toki, Beth

Participatory inclusion of Indigenous Knowledge provides robust assessment of climate change impacts to critical ecosystem services and fosters local custodianship of nature-based mitigation.

### Social impact assessment and baseline studies adapted to local contexts (II)

Wednesday 1 May | 16:30-18:00 | P5

Paper Session

Chair(s): TBC

Effective social impact assessment should be built on quality, comprehensive and relevant baseline studies. Too often, existing data is used which have collected by government agencies and research institutions, and these data tend to describe regional trends rather than give an accurate description of social conditions at the local level. This session aims to explore this problems and examine how baseline studies can be adapted to local contexts.

### Onshore pipeline land access process as good practice

Liliura, Jeremiah

A systematic joint approach to land access using pre-construction survey data and the mitigation hierarchy in project planning and schedule. A good practice on the PNG LNG Onshore Pipeline project.

### Undertaking SIA at an island level

Russell, Katherine; Taylor, James; Balanovic, Jovana;

Aley, Joanne; Harbrow, Michael

Designing engagement for small island communities requires a full social profile to ensure appropriate engagement and participation in SIA as seen in the Predator Free Rakiura strategic SIA.

### Social impacts of a stop-start university campus

Chen, Chen

A university campus, like a factory, may influence the community deeply, positively and negatively, which should be taken into serious consideration.

## Biodiversity and ecology and ecosystem services

### 40 years of impacts on lakes and reservoirs

Giberti, Verónica; Boveri, María

We have an opportunity and a need to evaluate the environmental impact of four decades of economic and social development in Argentina upon its lakes and reservoirs.

### Nature surveys and biodiversity offsets in Finland

Kallioleva, Hanna; Vuorisalo, Timo; Salo, Matti

Approach to assess nature values and finding potential compensation areas for biodiversity offsetting based on a large database of nature inventories conducted in Finland.

### Analysis of change in urban ecological networks: Focus on Busan, Korea

Kang, Jung Eun; Choi, Hee-sun; Hwang, Hee-soo; Lee, Sang-hyeok

This study examined ecological network change affected by the 2020 invalidation of decisions on urban parks with a focus on Busan, Korea.

### Assessing offshore biodiversity in EIAs: Experience from the Nordics

Mikkelsen, Ditte Marie

Ramboll Environment & Health has significant experience working with large-scale multidisciplinary offshore EIAs, especially in the Nordic countries.

### Mitigation measures for wildlife in Chile: Examples from the real world

Perez, Cristian; Araya, Gino

This research analyzes mitigation measures implemented for biodiversity in Chile that have been sanctioned by the enforcement agency as a way to understand their relationship with the EIA process.

## Disasters and conflicts

### Earthquake risk assessment in Korean IA: Status and future

Kwon, Sun-Yong

In this study, the current status of earthquake risk assessment in Korean IA was examined and a direction for improvement was suggested.

### Assessment of building damage risk by natural disasters in South Korea

Lee, Junhoo; Yoon, Seonghwan

The purpose of this study is to identify the relationship between weather variables and buildings damaged in natural disasters. We used four datasets on building damage history and 33 weather datasets.

## EIA

### KSEIA: Retrospect and prospect

Kim, Myungjin; Jung, Jong-Gwan; Jeon, Sookjin

In retrospect we have learned IA lessons from KSEIA and we will develop IA in prospect. The future of KSEIA is the future of IA.

## Energy

### Strategic impact assessment and public acceptability for renewable energy in Korea

Cho, Kongjang; Seo, Aram; Maeng, Junho

The results of a scenario workshop with residents near the wind project planned site showed that this can be a useful method for participatory renewable energy project planning.

### Offshore wind farming in southwestern Korean coastal farms

Maeng, Junho; Kim, Taeyun; Seo, Jinsung

This study aims to provide environmental impact assessment and ocean safety standards for the construction of the offshore wind farms on the southwest coast of South Korea.

### Nuclear power plant (NPP) decommissioning project and EA in Korea

Shin, Kyung-Hee

Comprehensive environmental impact assessment of NPP decommissioning projects in Korea is required to complete the site closure successfully without concern about radiological and non-radiological impact.

### Study on assessment plan of underwater noise in offshore wind turbine

Sun, Hyosung; Lee, Byungkwon

This study is focused on the suggestion for the assessment plan of the underwater noise impact in the development of an offshore wind turbine.

### SIA for geothermal development in Japan and New Zealand

Shibata, Yuki; Hori, Ayumi; Kawasaki, Daiki

This paper discusses lessons learned from advanced geothermal planning system in New Zealand for Japanese geothermal SIA.

## Environmental justice

### Analysis of lawsuit of national big projects related to EIA of Korea

Lee, Youngsoo

Through examination of four main reasons connected to an EIA-related lawsuit case, we can suggest solutions to improve EIA legislation in Korea.

## Governance

### SRF quality standards and management could influence EIA effectiveness

An, Junyeong; Kim, Yu-Mi

In this poster presentation, we review the laws and institutions of South Korea for production and use of solid refused fuel (SRF), and reveal that SRF quality standards and management might influence EIA effectiveness.

### ESIA, licensing, and enforcement in Latin America

Baldwin (Jr.), Gunnar

This poster presents the findings of a comparative study of environmental licensing and enforcement systems in Latin America in the context of activities subject to the ESIA process.

### Promoting SEA in achieving sustainable development: Taiwan case study

Feng, Chun-Cheng

Taiwan government has actively pushed SEA since the Environmental Impact Assessment Act was promulgated in 1994. We have compiled 19 cases of SEA.

### SEA in New Zealand: Do s32 reports pass the test?

Morgan, Richard; Whitby, Chantal

Are s32 reports under the NZ RMA really the equivalent of SEA? Our project looked at 55 reports to find out.

### Resource communities and Community Benefit Agreements: Long-term benefits from short-term projects

Rose, Jackson; Haggerty, Julia

Community Benefit Agreements may be important to secure long-term benefits from short-term extractive projects, and this work explores their reception and application in a rural U.S. community.

### On monitoring and follow-up in northern Quebec

Hickey, Gordon; Che, Tian Que

Identifying issues and opportunities presented by EIA monitoring and follow-up practices in Northern Quebec to enhance the inter-connections between the governance, communities, and resources management.

# Posters

## Health

### Neighborhood perception of areas affected by fine particular matter (pm2.5) from Tanjung Jati (Indonesia) power plant

Sriyanti, Poerna; Khoironi, Adian

In viewing the existence of Tanjung Jati power plant of Tanjung Jati, Jepara, Indonesia, the neighborhoods of study areas have diverse thoughts due to lack of knowledge about the impact of fine particular matter (pm2.5) on their health.

### Unseen impacts of project location

Swangjang, Kanokporn

This study aims to analyze some hidden impacts of project location. Two groups of projects according to Thai legislation, including EIA level and EHIA level, were evaluated.

## SEA

### The Tallinn Forum: An international cooperation on capacity building in SEA

Faith-Ell, Charlotta; Marshall, Ross; Kalle, Heikki

The Tallinn Forum is a cooperative initiative that has been developed by some of Europe's leading practitioners in order to meet this need for reflection and capacity building in SEA.

### Assessing the effectiveness of SEA in agricultural water resource planning: South Korea

Kim, Kyoungho

SEA in water resource planning can be improved by focusing on sustainable water use that integrates water security and socio-ecological effects rather than environmental impacts of the proposed plan.

### Limitation of malodor assessment for SEA of city project

Kim, Yumi; An, Junyeong

The current status and problems of malodor assessment for strategic environmental impact assessment of city development project in South Korea were investigated.

### A performance evaluation of SEA in South Korea

Sagong, Hee; Joo, Yong-Joon; Lee, Who-Seung; Kang, Eugene

We have conducted a performance analysis to evaluate how the determination of appropriate alternatives and scoping were used in SEA in Korea.

### SEA of a regional oil and gas project in Argentina

Sarandón, Ramiro

The SEA of a regional non-conventional oil and gas project in Argentina recommend prioritizing environmental issues to transform this opportunity into a sustainable regional development plan.

## Tools and methods

### How are you communicating your impacts?

Aldous, Kerrie

As impact assessments evolve towards performance-based outcomes, this poster presents a visual exploration of the way impacts may be communicated for a reference design versus a more detailed design.

### Understanding the effects scale on EA screening and scoping

Cilliers, Dirk

Scale is a key characteristic associated with spatial information and should be carefully considered in any process where spatial information is used to inform decision making.

### Public participation in the practice of China's EIA by analysis of an integrated framework

He, Jia; Yao, Xinyue; Bao, Cunkuan

The poster will set up an integrated framework to categorize different public participation patterns in EIA practices and analyze their features to find a more effective type of public involvement.

### Theory of Planned Behavior within the context of China

Lan, Lan; Jia, He; Cunkuan, Bao

This poster uses the Theory of Planned Behavior and quantitative methods to analyze the behavior choice and influencing factors of public participation in EIA.

### Conversion of EIA information to regional basis data

Lee, Moung Jin; Cho, Namwook

This study suggests the implications for institutional development through a case of Korea's environmental impact assessment information.

### A study on the cases and operation of drones in EIA

Lee, Suenghyun; Se-Hoon, Jung; Jong Chun, Kim; Seung Sup, Lee; Hyoung Sum, Han; Ki Tae, Baek

Using drones for post-management of environmental impact assessment will enable active management of environmental changes in development projects.

### New environmental management mode: 4Ls

Liu, Xiaoli

It is a key task for Chinese environmental protection departments to actively implement the requirements of the reform of the ecological civilization system and deepen the reform of the EIA system.

### Compendium: National EIA professional recognition

Marshall, Ross; Fothergill, Josh

The poster presents the updated findings of an IAIA 2017 research grant-funded study exploring national recognition schemes for individual EIA practitioners.

## Tourism

### Environment planning tool for sustainable tourism

Barbara, Gregory; Davetanivalu, Jope; Galuvao, Easter

These guidelines highlight the importance of EIA, impact management, and mitigation for promoting sustainable tourism development by avoiding or minimizing potential damage to the environment.

### Changing gear: The impacts of tourist activity around a new cycle trail

Mackay, Michael; Taylor, Nick; Perkins, Harvey

A 300km cycle trail in New Zealand was designed to have positive effects on local communities and environments; however, issues arise around potential impacts and sustainable outcomes.

## Urban planning

### Heat wave impact variation due to urban canopy change

Park, Chae Yeon; Lee, Dong Kun

Development in urban areas can change the heat wave impact on outdoor people. We assessed the change of the heat wave impact by changing form and materials of the urban canopy.

### JICA's Right of Way Management Project in Cambodia

Tsuchida, Takayuki; Tauch, Chankosal; Chhim, Phalla;

Pin, Vuthea; Pork, Novida; Yamashita, Akira

Outputs from JICA's Technical Cooperation Project in Cambodia, Right-of-Way Management System, consists of mapping, database, and preventive activities.

### Urban green space spatial distribution impact on flash flood reduction

Yang, Byungsun; Lee, Dong Kun

By using a simplified hydrological model, we simulated urban green space runoff reduction effect according to spatial distribution and flash flood reduction.

# Exhibits | Annual General Meeting

EXHIBITORS

## ANNUAL GENERAL MEETING

Wednesday 1 May | 12:40-13:30 | M1

This is the annual business meeting of the Association and a time to recognize one of IAIA's outstanding members.

All conference participants are encouraged to attend, learn more about IAIA's operations, what we accomplished over the past year, and what lies ahead for the next. In addition, come celebrate one of IAIA's finest as we give out the Lifetime Achievement Award to Asha Rajvanshi.

## Agenda

1. Welcome, introductions, confirmation of the 2018 AGM Minutes
  2. Report from the President, Sara Bice
  3. Report from the Executive Director, David Bancroft
  4. IAIA's Financial Report from the Treasurer, Morgan Hauptfleisch
  5. Presentation of the IAIA Lifetime Achievement Award and address by the recipient, Asha Rajvanshi
  6. Q & A from members

## .....

## Notes



Boréalis • Cardno • CQUUniversity

City of Brisbane • Green Ticket

Hydrobiology • IAIA20

NGH Environmental • Taylor and Francis  
Tetra Tech

Titley Scientific

#### AFFILIATE, BRANCH, AND ASSOCIATED ORGANIZATION POSTERS

Check out the posters to learn about these groups and their latest activities!

- **Korea:** Korean Society of Environmental Impact Assessment (KSEA)
  - **Environmental Institute of Australia & New Zealand (EIANZ)**
  - **New Zealand:** New Zealand Association of Impact Assessment (NZAIA)
  - **Portugal:** Associação Portuguesa de Avaliação de Impactos (APAI)

*Tables are provided in the Plaza Foyer for IAIA members to display information, distribute conference papers, or announce/distribute non-commercial items. Delegates must attend the conference to display materials. IAIA reserves the right to remove documents or materials without notice.*

*Only official exhibitor posters and/or technical posters approved by the Program Committee during the review process may be displayed.*

# Ballot/SYP Agenda

Help identify outstanding presentations!

Based on delegates' feedback, select presenters will be invited to record their presentations for online viewing.

Please drop off your ballot at the registration desk by 14:30 on Thursday 2 May, or complete the session's "Presentation Survey" in the mobile app.

## OUTSTANDING PRESENTATIONS

**Submitted by** .....

**Presenter's name** .....

**Presentation title** .....

| <b>Session Date</b> | <b>Session Time</b> |       |       |       |
|---------------------|---------------------|-------|-------|-------|
| Monday 29 April     |                     |       | 15:00 |       |
| Tuesday 30 April    | 09:00               | 11:00 | 14:30 | 16:30 |
| Wednesday 1 May     | 09:00               | 11:00 | 14:30 | 16:30 |
| Thursday 2 May      | 09:00               | 11:00 | 14:30 |       |

**What makes this presentation outstanding?**

**Presenter's name** .....

**Presentation title** .....

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**What makes this presentation outstanding?**

**Presenter's name** .....

**Presentation title** .....

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| Tuesday 30 April    | 09:00               | 11:00 | 14:30 | 16:30 |
| Wednesday 1 May     | 09:00               | 11:00 | 14:30 | 16:30 |
| Thursday 2 May      | 09:00               | 11:00 | 14:30 |       |

**What makes this presentation outstanding?**

## STUDENTS AND YOUNG PROFESSIONALS (SYP) WORKSHOP

**Monday 29 April | 08:00-11:45 | P8**

To foster the integration of students and young professionals in IAIA conferences, the Students and Young Professionals (SYP) Section, together with the Headquarters and the IAIA19 Program Committee, have organized a half-day "Student and Young Professionals Workshop" as a pre-event of IAIA19.

### PROGRAM

**07:30 - 08:00**

**Registration** (Main IAIA19 registration desk - Plaza Foyer)

**08:00 - 08:10**

**Workshop opening.** Sara Bice (IAIA President) will do the honors of welcoming the SYP Section members to the workshop.

**08:10 - 09:30**

**Keynote speakers presentations.** Four invited speakers from different sectors present their experience and share their points of view about career issues related to IA career development.

Luis E. Montañez Cartaxo (Consultancy sector)

Ntsako Baloyi (Industry sector)

John Pilgrim (Academic sector)

Jon Womersley (Public sector)

**09:30 - 09:45**

**Presentation of an EIA training course by John Boyle**

**09:45 - 10:00**

Coffee break

**10:00 - 10:30**

**Elevator-pitch presentations by SYP.** Five SYP members (pre-chosen volunteers) will present what they are working on (4 minutes each) and all the participants of the workshop will be able to benefit from the experience of others.

**10:30 - 11:30**

**Speed mentoring.** Just like speed dating, the SYP will introduce himself/herself to an experienced member of the IAIA (the mentor) and have 3 minutes for an exchange. At the expiration of the 3 minutes, the SYP will move to meet the next mentor. The objective of this speed mentoring is to meet new people and develop your network.

**11:30 - 11:45**

**Close of workshop.** Lachlan Wilkinson, IAIA19 Conference Chair

# Supporter Messages



Making a difference.  
**Sustaining  
Communities**

At Cardno, we work with communities to understand their social and ecological environment. We work to minimise project impacts and maximise benefits across the development project cycle.

With a keen focus on the intersection of sustainability and development, our ultimate goal is to protect and restore natural and social resources while facilitating productive and beneficial development. Whether performing ecological screenings or remediating historically degraded sites, for a partner who knows how to make a difference, contact Cardno.

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[www.cardno.com](http://www.cardno.com)



A MID-TIER, MULTINATIONAL GOLD PRODUCER WITH GLOBAL OPERATING, DEVELOPMENT AND EXPLORATION EXPERIENCE

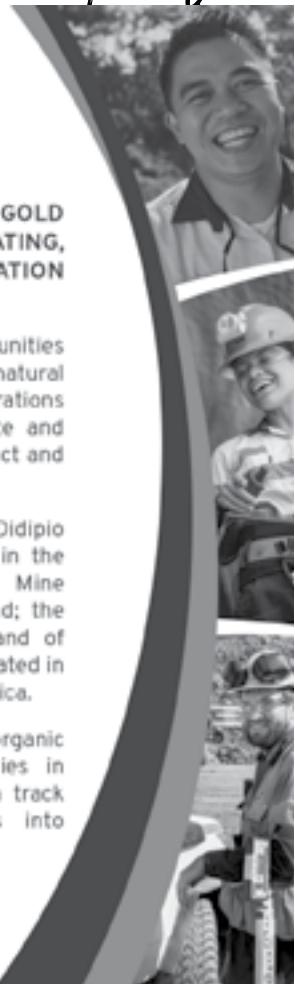
We're committed to our communities and investing in the people and natural environment that make our operations successful. We continuously innovate and improve the way we explore for, extract and process minerals.

Our operating assets include: the Didipio Gold-Copper Mine on Luzon Island in the Philippines; the Macraes Goldfield Mine on the South Island of New Zealand; the Waihi Gold Mine on the North Island of New Zealand; and Haile Gold Mine located in South Carolina, United States of America.

We have a significant pipeline of organic growth and exploration opportunities in Australasia and the Americas and a track record for converting discoveries into production.

Come take a look.

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## Towards the First 100% Renewable Energy University in Japan

### What is a 100% renewable energy university?

It means offsetting the total energy consumed by CUC by the energy generated by CUC.



#### Environmental Goals

**Clear!**  
Goal for 2018 To make CUC the first "100% renewable energy university of electricity" in Japan.

Goal for 2020 To make CUC the first "100% renewable energy university of final energy consumption" in Japan.



**CUC Chiba University of Commerce**  
Chiba University of Commerce [www.cuc.ac.jp](http://www.cuc.ac.jp)



Royal HaskoningDHV

Consultancy, Engineering & Management

## Enhancing Society Together

Royal HaskoningDHV is an independent, international engineering and project management consultancy with over 135 years of experience in challenging and complex infrastructure planning and design. We are frontrunners in digital interactive reporting (iReport), making reporting more transparent, concise and accessible.

HaskoningDHV Australia Pty Ltd, a company of Royal HaskoningDHV  
Sydney | Newcastle | Gold Coast

[royalhaskoningdhv.com](http://royalhaskoningdhv.com)

# Supporter messages

# PACIFIC DAY

April 30th, 2019

Join us for a special event to discuss and share experiences in the application of Environmental and Social Assessment to meet the challenges of sustainable growth and development in the Pacific Region. The Pacific Day will address issues such as:

- Key challenges and experiences in applying safeguards policies and standards for the Pacific Island Countries.
- How to strengthen Impact Assessment practice and build local capacity.
- Challenges for SEA, sustainable development, climate change and oceans management.

- Collaboration among different sectors including the private sector.
- Advancing impact assessment practice across the Pacific Island Countries.

*Speakers and panelists include representatives from government, financing institutions, academia, civil society, private sector and IA Experts.*



WORLD BANK GROUP

26 - 29 May 2020

## SMARTENING IMPACT ASSESSMENT

SCIENCE, TECHNOLOGY, AND GOVERNANCE ADVANCEMENTS TOWARD EFFICIENCY AND EFFECTIVENESS



Want to ask a question of all IAIA members?  
Get Section members' opinions on a topic?  
Continue a discussion started at a conference to involve those who couldn't attend the conference?

Check out IAIA's professional online community, IAIAConnect, to engage and network with IAIA members around the world. In addition to the main IAIA Members group, you can join sub-groups for each of IAIA's special-interest Sections (Health, Biodiversity and Ecology, Climate Change, and more).

Not an IAIA member? You can view Section group discussions but cannot comment.

Visit [www.iaia.org/iaia-connect.php](http://www.iaia.org/iaia-connect.php) for more information and to log in.

**INLAND RAIL**

## INLAND RAIL'S COMMITMENT TO SUSTAINABILITY

Inland Rail is a once-in-a-generation project that enhances Australia's national supply chain and completes the backbone of the national freight network between Melbourne and Brisbane via regional Victoria, New South Wales and Queensland. Comprising 13 individual projects, this new 1,700 km line is the largest freight rail infrastructure project in Australia and one of the most significant infrastructure projects in the world.

We aim to deliver and operate Inland Rail sustainably to ensure new economic benefits reach the people of Australia at a local, regional and national scale. We also strive to minimise our environmental footprint and engage respectfully and meaningfully with our Indigenous stakeholders to provide positive outcomes across the Inland Rail Programme. We will:

- ▶ Embed sustainability into our planning, design, construction and operation
- ▶ Track, score and publish our sustainability performance through the use of the Infrastructure Sustainability Council of Australia rating system
- ▶ Embrace innovation and challenge 'business as usual' design and construction methods and processes.

### SUSTAINABILITY ON INLAND RAIL

The diagram shows a central vertical axis with a building icon. To the left, there are icons for Procurement (truck), Carbon & Energy (flame), Biodiversity (leaf), and Environmental Management (house). To the right, there are icons for Water (leaf), Waste (train), Materials (truck), Climate Adaptation (leaf), and Community (people).

For more information  
1800 732 761 [inlandrailenquiries@artc.com.au](mailto:inlandrailenquiries@artc.com.au)

[inlandrail.com.au](http://inlandrail.com.au)

**ARTC**

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC) in partnership with the private sector.

# GREEN TICKET

## Manage impacts!

- Risk management
- Environmental awareness
- Environmental compliance
- Due diligence

### DIGITAL ENVIRONMENTAL TRAINING

- Train workers efficiently and effectively
- Topics include vegetation and land disturbance, chemical management and spills clean up, waste management, erosion and sediment control

[www.greenticket.com.au](http://www.greenticket.com.au)

# FIND YOUR PERFECT NEXT EVENT

Held just over one hour north of Brisbane by car, The Planting is a cultural, environmental and culinary festival with a program featuring talks and panel discussions, visual arts workshops and cooking demonstrations. Originally started as a working bee, The Planting has remained true to its root and encourages participation in tree-planting activities to provide shade and habitat for wildlife.

The Planting  
Woodford, Sunshine Coast Hinterland  
3 - 5 May 2019

[QUEENSLAND.COM/EVENTS](http://QUEENSLAND.COM/EVENTS)

**IT'S LIVE!**  
*in Queensland*

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## LEGACY PROJECT

With the koala as the logo for IAIA19, it is fitting that our legacy project will protect and enhance koala habitat in southeast Queensland through a contribution of US\$5 for each registration. This will also help to offset carbon emissions from the conference. The area is on a property named "Jingera", one hour from Brisbane in the Scenic Rim Region, and adjoins the Lamington National Park. As well as providing koala habitat, vegetation on the property supports species of conservation significance such as the long-nosed potoroo, cascade treefrog and black-breasted button quail. Our offset area will also provide an additional buffer to protect the critically endangered regional ecosystem comprising semi-evergreen vine thicket with broad-leaved bottle tree.

## TOURISM INFORMATION

We are pleased to have Tourism and Events Queensland and Brisbane Marketing as conference sponsors. Brisbane has so much to offer and our website has all the information you need: <https://conferences.iaia.org/2019/visit-brisbane.php>. Are you planning to make use of your time in Australia to see some of the other spectacular Queensland attractions? Go to <https://conferences.iaia.org/2019/visit-queensland.php>.

To help with your visitor information and tour bookings, Brisbane Marketing has an information booth at the conference in the Plaza Foyer.

## VIDEO/AUDIO POLICY

To foster sharing of information and open discussions, IAIA encourages presenters and panelists to speak freely and respectfully share their knowledge and experiences. During technical sessions, individuals are not permitted to record with personal audio or visual equipment or other recording devices such as cell phones, cameras, or recorders, without permission from the speaker.

Any media attending the event will be designated with a "MEDIA" name tag. Media will be allowed to take photographs, notes, and interviews, but video/audio recording by media will be allowed only during the opening and closing plenaries. Any recording by media during technical sessions requires prior permission from the speaker.

By attending the conference, you agree to allow your image to be used by IAIA.

## PAYMENT AND REFUND POLICIES

IAIA will refund registration fees upon written request received before 5 April 2019. A US\$125 processing fee will be retained. After 5 April, no refunds will be issued for cancellations or no-shows. Substitutions for paid registrants may be made in writing without financial penalty. Refunds will be issued after the conference.

## INSURANCE AND LIABILITY

IAIA, the organizing committee, and the venue will not be responsible for medical expenses, accidents, losses or other unexpected damage to property belonging to conference participants, either during or as a result of the conference and during all tours and events. Participants are strongly advised to arrange their own insurance for health and accident, lost luggage and trip cancellation.

## ACCESSIBILITY

Attendees with a disability and/or special accessibility needs were asked to contact IAIA HQ by 5 April to make arrangements. If you have a disability and/or have special accessibility needs and require assistance, please advise IAIA staff at the registration desk. However, we cannot guarantee accommodation of requests made on-site.

## ANTI-HARASSMENT POLICY

IAIA is committed to providing a safe and harassment-free conference/event experience for everyone. IAIA does not tolerate harassment of, or by, conference/event participants or invitees in any form. Conference/event participants violating these rules may be sanctioned or expelled from the conference/event without a refund at the discretion of IAIA. IAIA also reserves the right to report the incident to relevant authorities. IAIA's anti-harassment policy and information on how to file a report can be found at <https://conferences.iaia.org/2019/anti-harassment-policy.php>.

## SUSTAINABLE CONFERENCES

IAIA takes the following steps and many more to mitigate the impacts of our conferences:

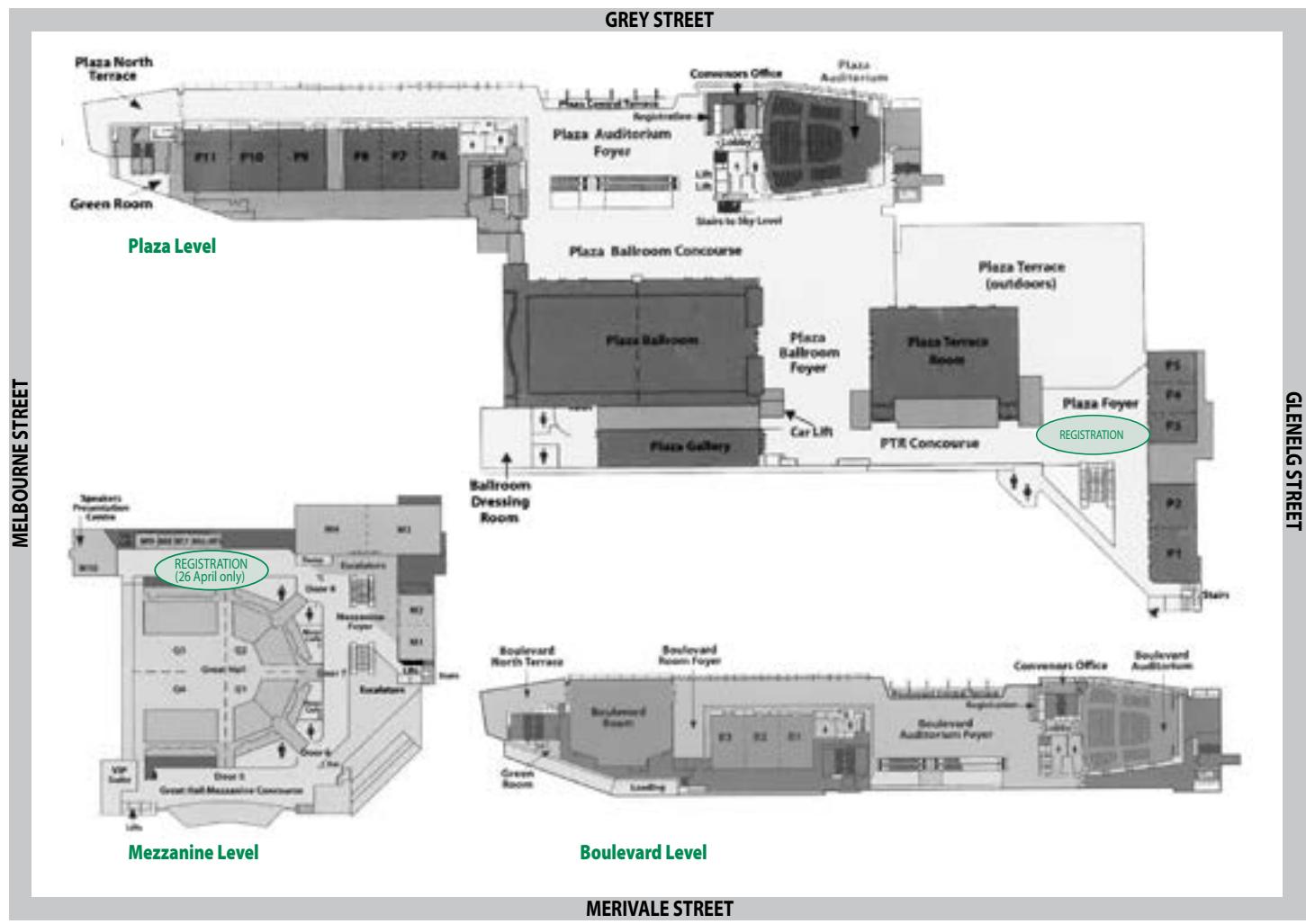
- Limit printed materials; communicate via e-mail and Web to the extent practical and possible.
- Contract with venues that participate in green programs (e.g., hotels that provide a linen and towel reuse program).
- Use bulk servings and pitchers rather than individual bottles; use china and silverware rather than disposables.
- Participation in a carbon offset program.

## CONFERENCE BAGS

This year's conference bags are provided by **bundarra**, who says, "Community is a big thing for us, whether it be partnering with a festival, promoting local businesses and events, or sponsoring our youth through numerous programs and initiatives. Through the years, bundarra has organically grown to become a platform to promote Indigenous culture." The artwork on the bags is by Nathan Peterson, an Aboriginal artist, whose piece depicts the flowering gum tree as cold weather ends and spring begins.

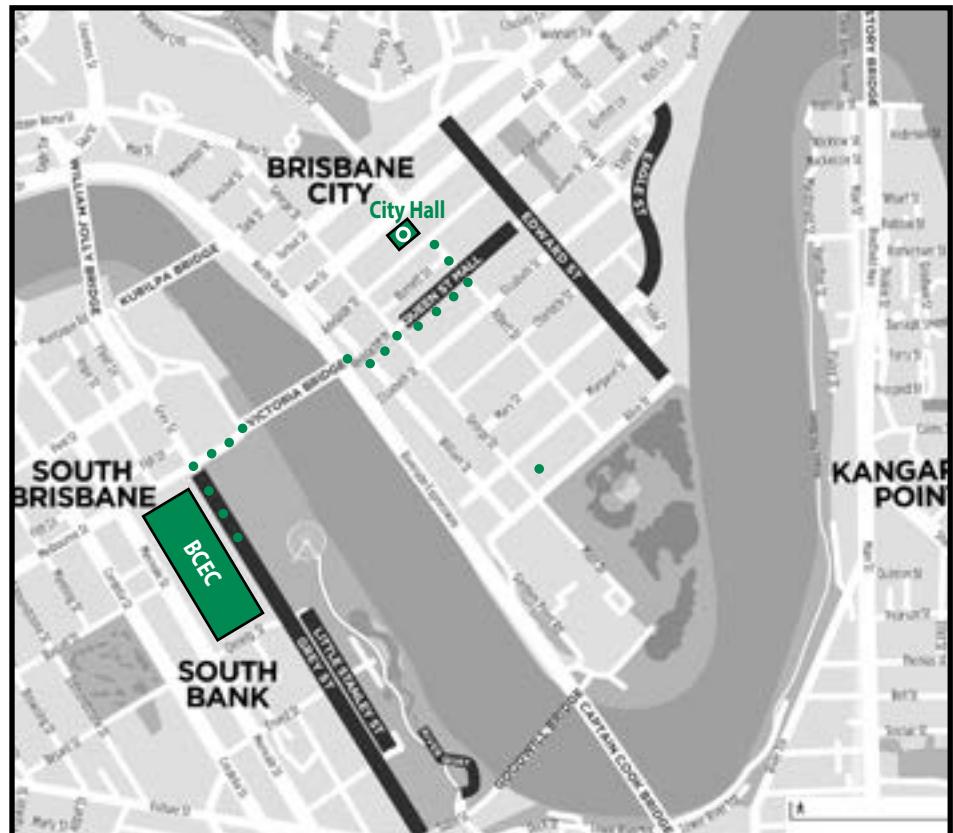
For more information about bundarra and their indigenous artists, see <https://www.bundarra.org/>.

# Maps



**BCEC**  
Merivale Street & Glenelg Street

**Brisbane City Hall**  
20-minute walk from BCEC  
64 Adelaide Street  
Tall clock tower



We appreciate the work of these volunteers who made this conference possible.  
If you meet one of them, please take a moment to say thank you!

## ABOUT IAIA

The **International Association for Impact Assessment** was organized in 1980 to bring together researchers, practitioners, and users of various types of impact assessment from all over the world. IAIA members number over 5,000 from over 125 countries, including those from its 17 national affiliates. IAIA activities are carried out locally and regionally through its extensive network of affiliates and branches.

**IAIA's Vision:** IAIA is the leading global network on best practice in the use of impact assessment for informed decision making regarding policies, programs, plans and projects.

**IAIA's Mission:** To provide the international forum for advancing innovation and communication of best practice in all forms of impact assessment so as to further the development of local, regional, and global capacity in impact assessment.

**IAIA's Values:** IAIA promotes the application of integrated and participatory approaches to impact assessment, conducted to the highest professional standards.

IAIA believes the assessment of the environmental, social, economic, cultural, and health implications for proposals to be a critical contribution to sound decision-making processes, and to equitable and sustainable development.

IAIA is committed to the promotion of sustainability, the freedom of access to information, and the right of citizens to have a voice in decisions that affect them. When we assess the impact of policies, plans, programs, or projects, we promote the free flow of complete, unbiased and accurate information to decision makers and affected parties. We believe that impact assessments should be inclusive and comprehensive, addressing the broader social and health impacts as well as any impacts on the biophysical environment. Respect for human rights and human dignity should

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Founded in 1987, the Environment Institute of Australia and New Zealand (EIANZ) is the peak self-governing professional association for environmental practitioners in Australia and New Zealand. It is a membership-based organization that:

- Advocates for good practice environmental management.
- Regulates the activities of its membership through a code of ethics and professional conduct.
- Certifies the proficiency of environmental practitioners, including impact assessment specialists.
- Accredits academic training for those seeking to enter the profession.
- Publishes a respected academic journal dealing with environmental management.

Its membership is drawn from all areas of environmental practice, and includes practitioners with industry, government, community, and academic careers. For more information, go to [www.eianz.org](http://www.eianz.org).

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