

出國報告（出國類別：國際會議）

出席國際影響評估協會  
（International Association for  
Impact Assessment, IAIA）  
西元 2016 年研討會出國報告書

服務機關：行政院環境保護署

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派赴國家：日本

出國期間：105 年 5 月 10 日至 105 年 5 月 15 日

報告日期：105 年 8 月 11 日

# 摘 要

本屆國際影響評估協會（International Association for Impact Assessment, IAIA）西元 2016 年研討會主題為「彈性與永續發展」（Resilience and Sustainability），本次研討會報告範疇為環境對天然災害復原能力、人為災難之準備、恢復生物多樣性及生態影響評估、國際永續發展合作、亞洲地區永續發展合作及環境資訊基礎設施的永續發展等多元主題，以冀提高對環境的緊急應變能力及抵禦傷害的彈性能力，並藉由國際間合作，與各國經驗交流，增進環境的永續發展。

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## 壹、出國目的

國際影響評估協會（International Association for Impact Assessment, IAIA）成立於 1980 年，為一國際性民間組織，其涉足之領域涵括環境、社會、經濟、文化、生態及健康風險等各項領域，在國際間之影響評估範疇中，為最具規模者。本次除參與 2016 年研討會議外，並以海辦及說明方式展示我國「核能發電廠除役計畫環境影響評估作業-以台灣電力股份有限公司核能一廠為例」環評審查經驗，與其他國家相互交流，分享我國核能發電廠除役環境影響評估審查作業重點，並期藉由參與本次會議，瞭解國際間環境影響評估發展之趨勢，作為我國環境影響評估制度檢討與改進之參考。

## 貳、行程

日期	地點	工作內容
5 月 10 日	臺北至日本（名古屋）	啟程
5 月 11 日	日本（名古屋）	報到，海報張貼
5 月 12 日	日本（名古屋）	研討會
5 月 13 日	日本（名古屋）	研討會
5 月 14 日	日本（名古屋）	研討會
5 月 15 日	日本（名古屋）	返程

## 參、關於日本名古屋

名古屋市位於日本中部愛知縣西部，瀕臨伊勢灣，是僅次於東京、大阪和橫濱的第 4 大城市，也是日本的工業重鎮和著名港口城市，且因為它是中部地區的商、工業，交通的中心地，而且位於東京和京都的中間，所以又被稱作中京。

名古屋市古名為「那古野」，於 1889 年設市，1945 年第二次世界大戰期間，城區大部分被炸毀，戰後重建成為一個面積約 376 平方公里的城市，人口目前約 219 萬人。全市劃分為 14 個行政區。中區、熱田區及其毗鄰地帶是市中心。而市中心的名古屋城屬於日本 3 大名城之一；該城建於 1609 年，由歷史知名的德川家康將軍下令建造，並於 1612 年完工。然而該城在第二次世界大戰時被炸毀，戰後當地政府為重拾人民信念，並因應人民要求，於 1959 年將這代表名古屋精神象徵的古城重新再建造，現為名古屋重要的觀光景點。當地其他古蹟有熱田神宮、大須觀音寺（即真福寺寶生院）等。

過去，在幕府時代名古屋誕生了有日本戰國 3 英傑之稱的偉大著名武將－織田信長、豐臣秀吉及德川家康；二次大戰時期，也因為製造彈藥、兵器及飛機而成為工業重鎮。從近代到現代，從陶瓷器、紡織品等傳統產業到汽車、飛機、機床等支持現代社會經濟發展的產業都很發達，工業年產值更僅次於東京和大阪。現在，名古屋因位於日本中央位置，是重要的交通轉運點，往往也成為旅遊的中繼站；作為一個擁有豐厚歷史背景的國際都市，名古屋當地也相當重視文化資產的保存，因此被視為融合傳統與現代的國際城市。

## 肆、活動地點及內容

西元 2016 年「國際影響評估協會 (International Association for Impact Assessment, IAIA) 年會」於 2016 年 5 月 11 日至 5 月 14 日在位於名古屋大學的名古屋國際會議中心 (Nagoya Congress Center) 舉行。

本次會議內容共有 13 場主題討論會議 (Theme Forums)、100 場次以上的分項座談會 (Concurrent Sessions)、360 篇以上論文發表 (Papers) 及 36 篇海報展示 (Posters) 等，大會議程詳如附錄。



圖 1 2016 年國際影響評估協會暨研討會舉辦地點 - 名古屋國際會議中心(Nagoya Congress Center)



圖 2 2016 年國際影響評估協會暨研討會舉辦地點 - 名古屋國際會議中心 (Nagoya Congress Center) 入口處(左)及中庭(右)

## 伍、參加人員

本次年會參加人員包含日本（地主國）、義大利、英國、丹麥、冰島、瑞典、挪威、德國、芬蘭、阿根廷、瑞士、荷蘭、西班牙、法國、中國、香港、韓國、泰國、美國、加拿大、澳洲、墨西哥、巴西、秘魯、印度、南非、巴拿馬、迦納…等國家的人員參加，共約 770 餘位。我國除本署派 2 人代表參加外，另有社團法人台灣環境管理協會 2 名人員參加，及國立臺灣大學馬鴻文教授團隊於會中發表論文。

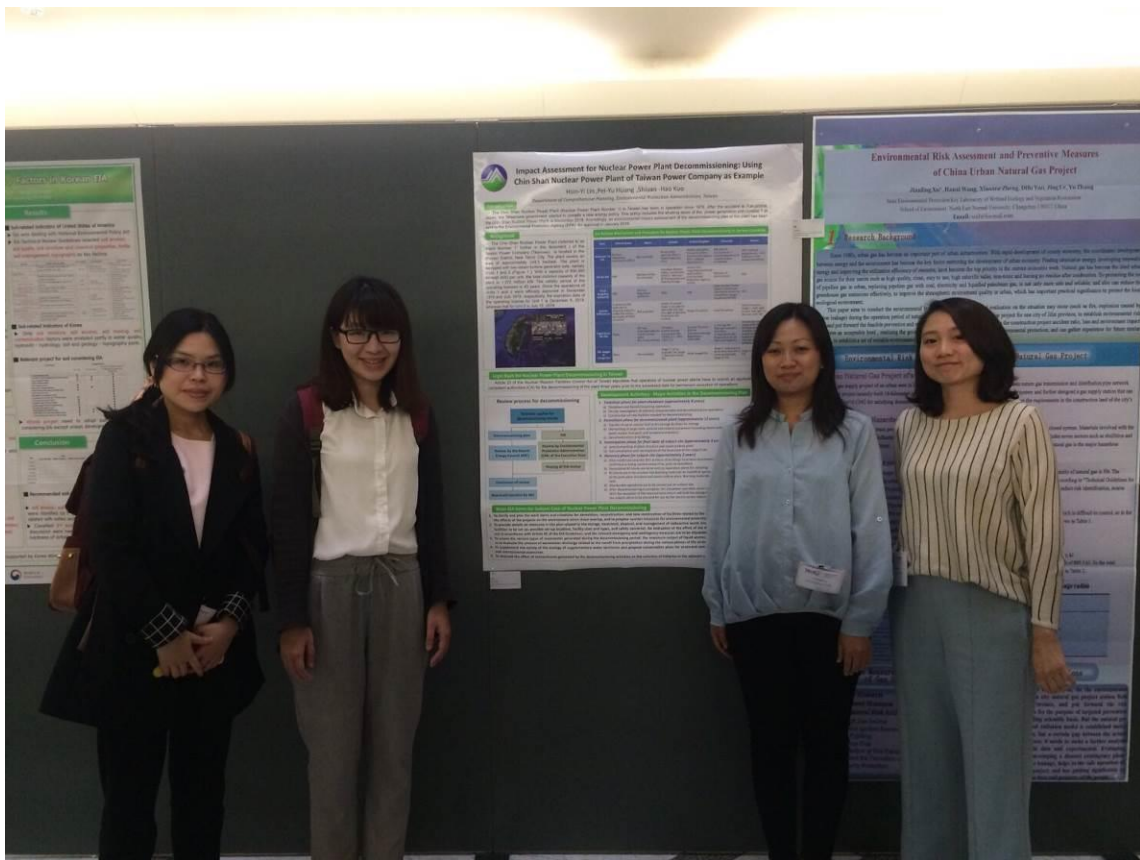


圖 3 我國參加 2016 年國際影響評估協會暨研討會成員



## 陸、IAIA 2016 年會概要

### 一、本次會議主題

本屆研討會會議主題為「Resilience and Sustainability（彈性及永續發展）」，在「彈性及永續發展」的議題中，研討會的引言人說明，「彈性」為 21 世紀全球最重要新興關鍵詞之一，自生態系統領域發展，且普及運用於環境影響評估、社會和健康影響評估、國際發展、氣候變遷、天然災害及人為災難應變等各項領域。另根據西元 2011 年日本東北地方大地震及核電廠事故的經驗顯示，增加抵禦傷害之彈性能力，是日本社會目前面臨亟待解決的問題。不僅在日本，對世界各地而言亦如是，提高對環境的緊急應變能力，為經營永續發展所面臨之常見問題。

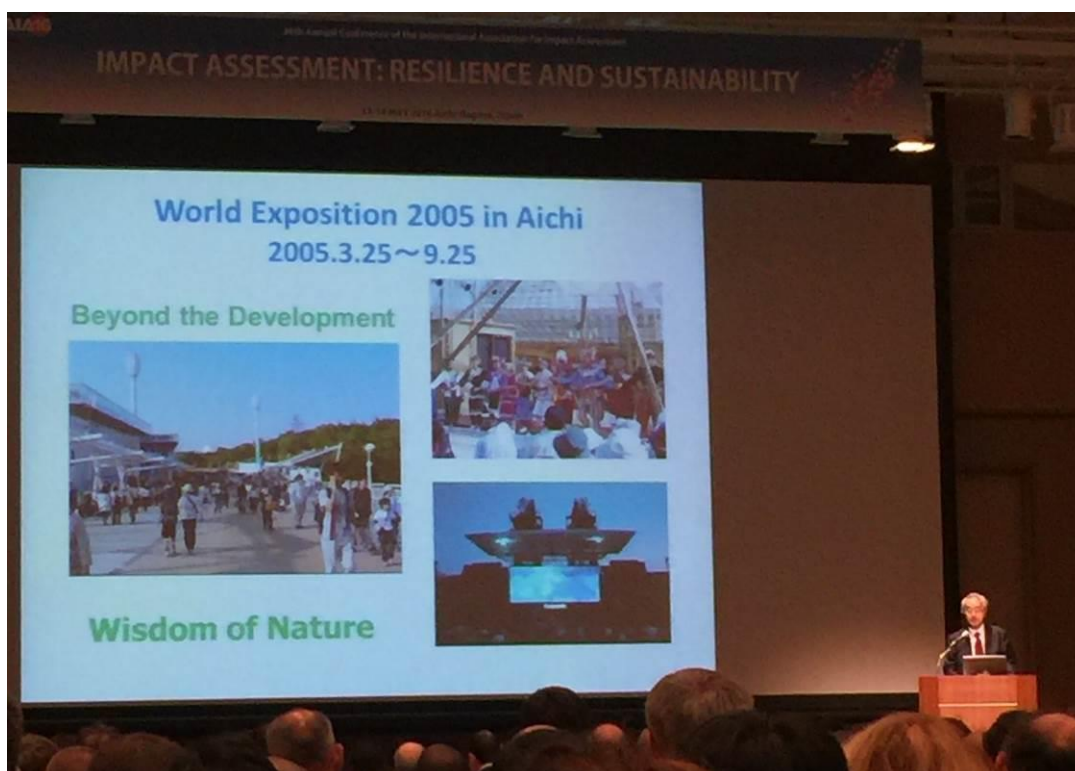


圖 4 2016 年國際影響評估協會暨研討會開幕式演講

## 二、主題論壇 (Theme Forums)

本次會議主題論壇共有 13 場，本次會議主題進行討論議題包括天然災害及復原能力(Natural disasters and resilience)、人為災難之準備、應急應變及復原(Man-made disasters: preparedness, emergency response and rehabilitation)、恢復生物多樣性和生態影響評估(Biodiversity restoration and ecological impact assessment)、人口變化和永續發展評估(Population change and sustainability assessment)、國際永續發展合作(International cooperation and sustainable development)、亞洲地區的永續發展合作(Collaboration for sustainability in Asian region)、環境資訊基礎設施的永續發展(Environmental information infrastructure for sustainable development)、交通運輸、土地利用與永續發展(Transportation, land use and sustainability)等議題之探討，並依各議題之相關性，透過論壇方式，分不同會場討論，藉以瞭解分享各個國家在影響評估領域之意見及經驗。

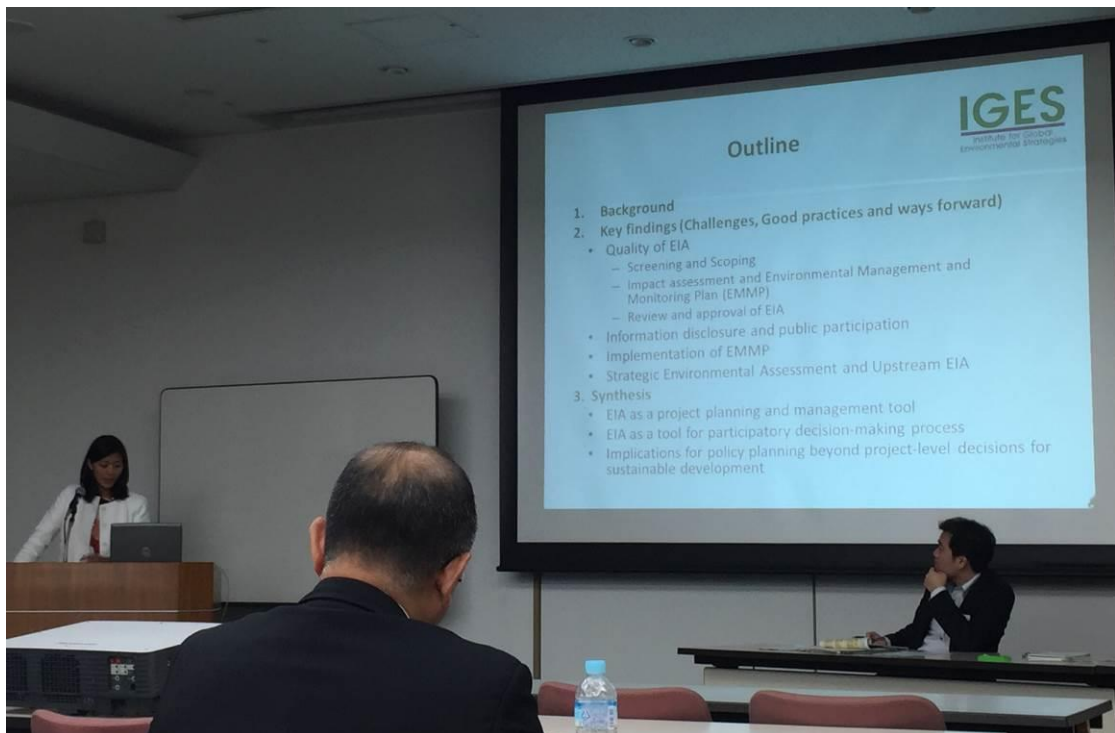


圖 5 2016 年國際影響評估協會暨研討會情形

### 三、本署發表內容

本次年會本署代表以海報展示及說明方式，分享我國「核能發電廠除役計畫環境影響評估作業-以台灣電力股份有限公司核能一廠為例(Environmental Impact Assessment for Nuclear Power Plant Decommissioning: Using Chin Shan Nuclear Power Plant of Taiwan Power Company as Example)」之經驗，依主辦單位安排，海報展示及說明於開幕當天下午舉行，全部與會者均參與展示，參與人員多對我國海報分享內容表示興趣。

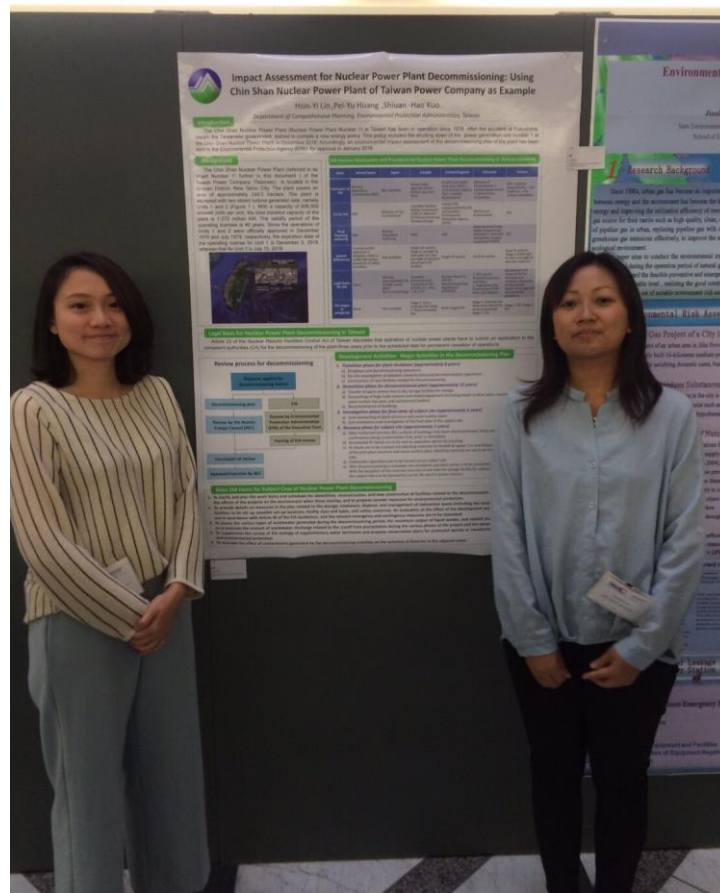


圖 6 海報發表情形

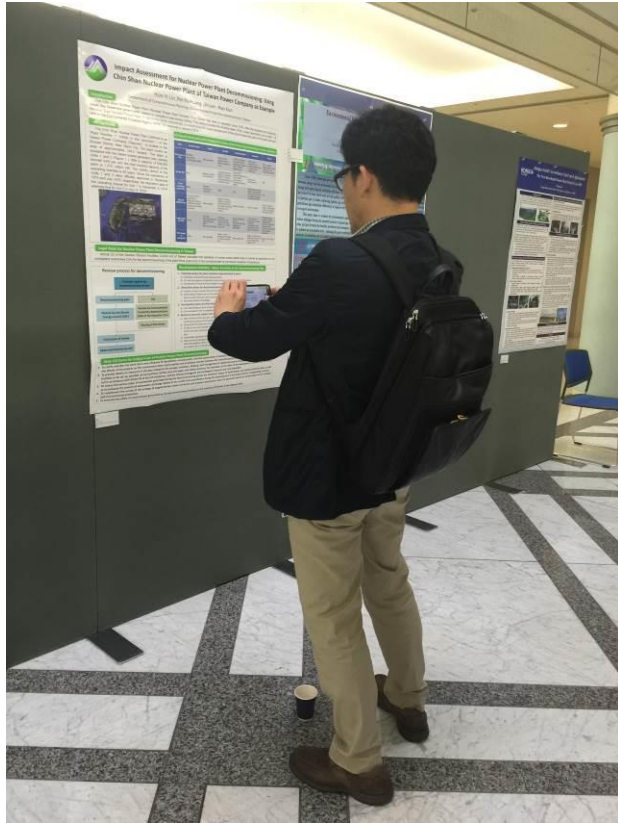


圖 7 各國與繪者詳讀我國發表海報情形（一）

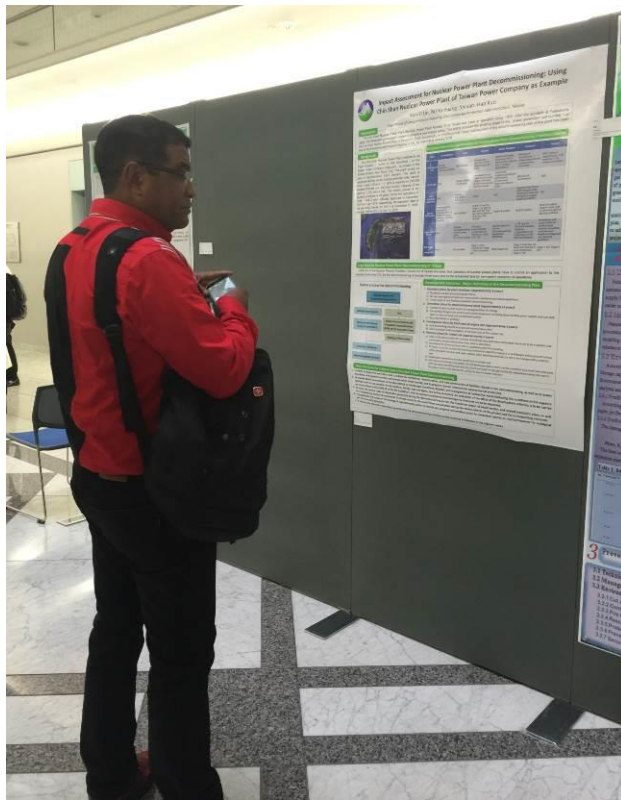


圖 8 各國與繪者詳讀我國發表海報情形（二）

#### 四、分項座談會 (Concurrent Sessions)

本次會議論文發表相當踴躍，總計有 360 篇以上的論文發表，100 場以上的分項座談會，大會安排同時間不同場次的分項座談會進行分組探討，主要議題除包含「亞洲日」發展夥伴論壇(Asia Day Development partners forum)、恢復生物多樣性和生態影響評估(Biodiversity restoration and ecological impact assessment)、亞洲地區的永續發展合作(Collaboration for sustainability in Asian region)、面對新問題的彈性及永續發展(Emerging issues on resilience and sustainability)、環境資訊基礎設施的永續發展(Environmental information infrastructure for sustainable development)、國際永續發展合作(International cooperation and sustainable development)、人為災難之準備、應急應變及復原(Man-made disasters: preparedness, emergency response and rehabilitation)、天然災害及復原能力(Natural disasters and resilience)、人口變化和永續發展評估(Population change and sustainability assessment)、交通運輸、土地利用與永續發展(Transportation, land use and sustainability)、企業管理和風險管理(Corporate stewardship and risk management)、企業永續發展(Corporate sustainability)、文化遺產(Cultural heritage)、災害和衝突(Disasters and conflicts)、能源(Energy)、健康(Health)、原住民(Indigenous peoples)、公眾參與(Public participation)、社會影響評估(Social impact assessment)及戰略環境評估(Strategic environmental assessment)等。



## 五、會議參與情形摘述

本次主辦單位因應於日本舉辦此次研討會，除邀請許多亞洲國家專家學者發表環境影響評估相關研究外，另特別安排 5 月 12 日舉辦「亞洲日」座談會活動，該分項座談會係安排讓亞洲各國（中國大陸、日本、韓國、泰國、馬來西亞、緬甸、印尼等）出席與會人士齊聚一堂，針對亞洲各國環境影響評估、國家及相關團體間相互支援之辦理方式、政策環境影響評估(Strategic Environmental Assessment, SEA)及文化影響評估(Cultural Impact Assessment, CIA)之運作情形、建設容量及國家體制等議題進行討論，並作經驗分享。

有鑑於國內近年來有關環境影響評估審查制度中，公眾參與之議題、環境影響評估辦理審查單位及開發單位扮演角色議題，陸續引起各界討論與關注。故本次會議除參與本次會議主題之論壇外，亦參與多場次涉及公眾參與及開發單位自行辦理環境影響評估與當地民眾溝通經驗分享之座談會議，以下就日本政府及其他國家環境影響評估之公眾參與、資訊公開及開發單位與各方溝通之經驗案例等相關內容摘述如下，其餘內容，請詳見附錄。

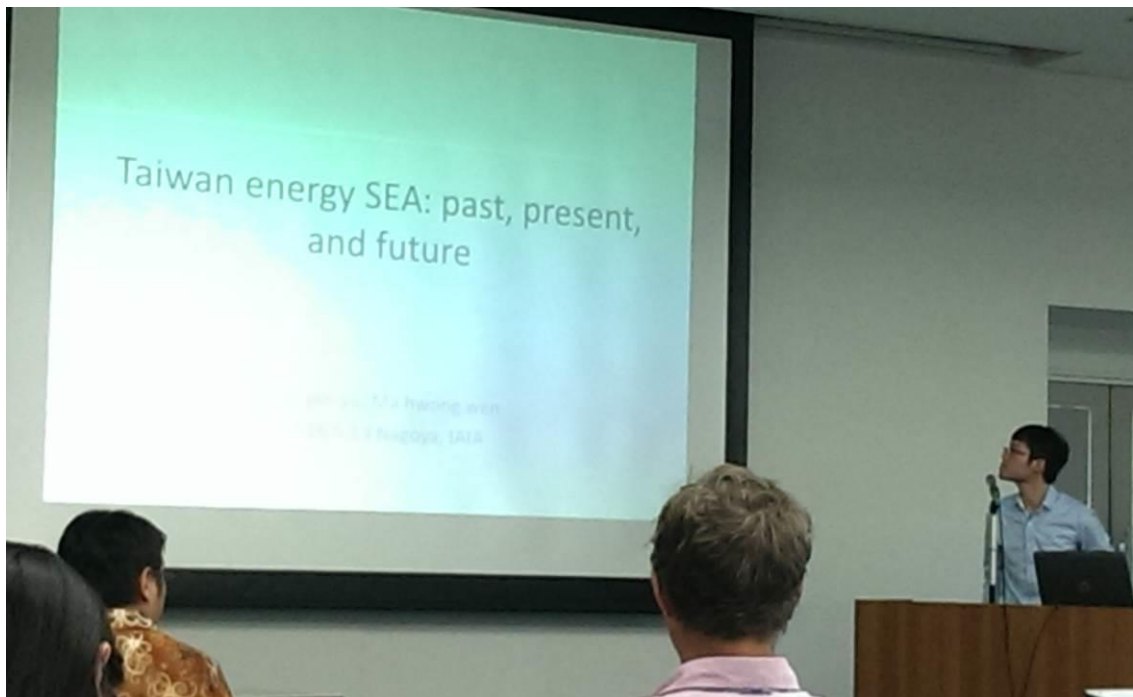


圖 9 2016 年國際影響評估協會暨研討會情形-臺灣大學馬鴻文教授團隊論文發表

### (一) 分項座談會參與情形

分項座談會之論文發表中有日本學者發表「日本面臨社會影響評估之挑戰」(Social impact assessment challenges faced by Japan)，說明日本國土交通省推動公眾參與，然使用分析和管理計劃解決社會問題的方法，目前在全球被稱為社會影響評估(Social Impact Assessment, SIA)，並說明數個日本實際案例，自西元 1970 年以來，日本已有相關社會基礎設施（包括公路和機場）之建立、維護和改進，是透過民眾有效性的參與討論，進而採納其必要性的建議；此外說明北海道二風谷(Nibutani)大壩施工對當地社區的影響，亦進行了包括環境、農業和文化等項目的影響評估。日本法規規範社會影響評估相關事宜，始於西元 1992 年的「城市規劃法」修正案，規範由當地市政府負責實施提供城市規劃強制性公眾參與措施。另在西元 2003 年及西元 2008 年，分別為國土交通省公布「國土交通省負責之公共項目規劃階段公眾參與的程序之指導方針」和「起草規劃階段過程公共項目之指導方針」，特別是西元 2008 年的指導方針中提出了廣泛的評估分析方法，不僅包括自然科學，還包括社會科學，如社會學，經濟學和人類學等範圍。

發表者亦說明是社會影響評估應依據「官方意見」，或需藉由廣大市民的意見推動參與式方法，或由公共管理部門所主導，一直是非常爭議的部分。目前在社會影響評估的共識是，有效的公共參與方式是一個好影響評估的條件之一。涉及影響的社區分析可能會納入各種潛在的重要的社會影響，例如：社會關注、利益、信念、價值觀、期望、對利益相關者的緩解策略及當地現況等，其中大部分是無經專家分析過程。一些科學家堅信，定量方法更科學，比定性的方法更嚴謹。但是，定性方法不應該使用在社會影響評估，而是應需要充分體驗社會影響程度。

此外，在分項座談會中另有香港學者發表「在數位時代中意外抵抗之香港新社會政策面貌」(“Unexpected” Resistance Under Hong Kong’s New Socio-Political Landscape in the Digital Age)，主要為提醒政府、政府顧問及城市規劃單位對香港不斷變化的社會政治環境，在數位時代的時代下，民眾參與是反應社會、經濟及政治之最直接方式，並且透過推特(Twitter)及 Facebook 等網絡社交平台，社會運動已獲得更快的傳播，「新的」全球性社會運動正在積極挑戰現況的新自由主義，且係直接透過民間基層發起的行動，並透過橫向參與民主實踐這個充滿活力的「開放式社會過程」開始，目標是促進建立新自由世界之社區認同。

社交網絡如 Facebook、Google+，以及微博、推特(Twitter)等，在同一時間舉

行民眾參與的同步討論和論壇討論兩種功能，為了跟上 Web2.0 的發展步伐，世界各地之地方和國家各級政府都熱衷於引進電子政務的理念到他們的制度中。電子政務是指政府利用技術，特別是基於網絡的互聯網應用，以提高政府信息和服務公民、業務夥伴、員工、其他機構，以及政府對公民增加傳遞資訊的機會，將更加有效和符合成本效益；政府和公眾之間的關係亦將透過更容易參與的民主方式而有改善。

然而在香港，經過無數次的政治衝突事件，市民和政府之間的信任度，創下新低。人民對香港政府信任程度的最新民意調查結果（2016 年 3 月）顯示，有 44.3 % 的人表示對政府「很不信任」或「極不信任」，比起 10 年前同項目的調查結果 7.1% 顯著提高。為解除兩者之間的緊張局勢，建立「獨立顧問」的模式（類似我國現有之「專家會議」及「第三方意見」方式），可能會有幫助。因為專業機構和民間學者能夠在參與各階段的政策規劃過程中，透過資訊及利用先進通信技術之公眾參與，貢獻自己的專業知識。前述「獨立」的意思是指專業機構或民間學者，僅依據本身擁有的專業知識及現有證據提出建言，不受到利益引誘或其他各種形式的迫害方式而改變最終建議。



圖 10 2016 年國際影響評估協會暨研討會情形-香港學者論文發表



## (二) 海報展示參與情形

本次會議海報展示中亦有日本學者發表「永續社區利用三維虛擬實境技術自願性辦理環境影響評估之範例」，說明藉由與經營者合作協助非營利組織(Nonprofit Organization, NPO)的案例辦理較小規模環境影響評估，採用三維(3 Dimensions, 3D) 虛擬實境(Virtual Reality, VR)技術評估潛在影響，並邀請當地居民進行討論，進行溝通以確保達成對環境保護的目的。其定義自願性環境影響評估作業為不受政府法規規定之強制性環境影響評估，係由經營者與當地居民在各活動項目之環境影響規模較小項目所自願發起之環境影響評估，並與當地居民溝通，使得社區規劃過程提升環保意識及貢獻，且因屬於自願發起之環境影響評估，故無嚴格之規則及程序作為依循。在論文中列出數個真實案例作為說明，包括礦場、太陽能發電廠及垃圾焚化爐等開發行為。

前述由魚苗孵化池改建為太陽能發電廠的開發案例中，提及當地政府最初考量此開發案恐對當地景觀產生負面影響，因此不同意開發，惟經開發單位自行辦理環境影響評估，並公開與當地居民討論影響評估項目，將各種利用 3D VR 模擬之景觀變化及陽光反射等結果登載於公開網站。同時舉行各種研討會議，密切與當地居民進行討論，以求找到解決方法或減輕對策。最終，以評估後提出的新方案獲得政府同意開發。然而，在另一個開發單位被居民提起訴訟的案例中，開發單位亦經由自行辦理環境影響評估，並充分有效地與民眾溝通，向民眾說明交通影響的因應對策，最終亦得到民眾認同。

該篇海報中亦提到日本政府於西元 2015 年 4 月開始建立網站，提供開發單位填寫確定開發行為是否須進行環評的簡易問卷、評估開發影響之免費軟體、參考文獻及各項環境背景資料等資訊，鼓勵並協助開發單位自行辦理環境影響評估。此官方網站亦對一般民眾開放，這也使得開發單位可即時評估政府機構及民眾所提出之建議，作為商業規劃參考。同時為了推廣自行辦理環境影響評估的觀念，日本政府也舉辦各種研討會及環境教育課程，並提供網路協助及雲端服務。

我國現行的環境影響評估法規也已建立完善資訊公開制度，如建置環境影響評估開發案論壇及環境影響評估書件查詢系統，提供民眾於開發案件環境影響評估進行前及進行階段，預先瞭解開發行為內容，並充分表達意見及建議，使開發單位可即時評估民眾意見，或作為商業規劃參考，落實公眾參與及資訊公開。



圖 11 2016 年國際影響評估協會暨研討會閉幕式-介紹 2017 年研討會議



圖 12 2016 年國際影響評估協會暨研討會閉幕式-介紹參與人員

## 柒、心得及建議

### 一、分享臺灣經驗，強化國際交流合作，提升我國環保形象：

在環境影響評估領域中，國際影響評估協會(IAIA)年會為國際間最具規模之大型國際研討會，其每年皆廣邀各國人士進行專題演講、發表論文及經驗分享，每年皆有近百國、500 人以上參與，為環境影響評估(Environmental Impact Assessment, EIA)國際交流與學術研討之重要平台。該年會今年參與之人員除歐美人士占大多數外，因於日本舉辦，故亞洲鄰近國家參與度提升許多，並積極透過各分項座談會分享成功之環境影響評估經驗，並藉此宣揚各國之環境保護績效。

我國自 83 年公布環境影響評估法至今，環境影響評估制度已實行 20 餘年，規範各種開發行為，在規劃階段應同時考量環境因素，無論是環境影響評估承諾及審查結論之落實、標準化之環境影響評估審查流程、專業之審查技術規範、多元化之公眾參與管道、資訊公開及政策環境影響評估之推動…等皆有相當之成果，上述成果如能透過專家學者、開發單位、環保團體、其他政府機關代表及本署代表…等，以專題演講、發表論文或海報展示等方式，多元展現於國際影響評估協會(IAIA)年會上，相信將可吸引更多國際人士進一步認識我國環境影響評估審查制度及環境保護上之努力，對於我國政績之宣揚極有助益。因此，建議未來可考量透過補助計畫，鼓勵專家學者或環保團體積極參與國際影響評估協會(IAIA)年會，或於能源政策、石化高值化產業、電廠開發及高科技產業園區開發等重大開發案環評審查結束時，邀請經濟部（工業局、能源局）、科技部或國營事業等單位，一同參與該年度之年會，適度擴大參與程度，並強化國際交流合作，及分享我國在環境影響評估制度之努力成果。

### 二、與世界接軌注重環境災害應變在環境影響評估之課題

本屆研討會會議主題為「Resilience and Sustainability」，在「彈性及永續發展」的議題中，研討會的引言人說明，「彈性」為 21 世紀全球最重要新興關鍵詞之一，自生態系統領域發展，且普及運用於環境影響評估、社會和健康影響評估、國際發展、氣候變遷、天然災害及人為災難應變等各個領域。根據西元 2011 年日本東北地方大地震和核電廠事故的經驗顯示，增加抵禦傷害之彈性能力，是日本社會目前面臨亟待解決的問題。不僅在日本，對世界各地而言，提高緊急應變能力，為經營永續發展所面臨之常見問題，希望藉由本次研討會中來自世界各地的與

會代表，一同分享這個主題的訊息及相關經驗，並進行討論及交流。

今年的會議共約有 770 餘位各國人士參加，總計有 13 場主題討論會議，100 場次以上之分項座談會，360 篇以上的文章發表，36 篇海報展示，除彈性及永續發展的影響評估主題外，主題討論議題亦包括天然災害及復原能力、人為災難之準備、緊急應變及復原、恢復生物多樣性和生態影響評估、人口變化和永續發展評估、國際永續發展合作、亞洲地區的永續發展合作、環境資訊基礎設施的永續發展、交通運輸、土地利用與永續發展等，且有許多與議題相關之案例分享。主辦單位依各議題之相關性，透過論壇方式，分不同會場討論，與會人員可以選擇當日有興趣之議題參與，藉此瞭解其他國家在影響評估領域之意見及案例。因與本署辦理環境影響評估審查所涉及議題相關，並可得之目前國際間環境影響評估主要發展趨勢，有助於推動相關業務。

本屆會議主題為彈性及永續發展，研討會中有學者指出「彈性」意即在社會、環境面對災害時，透過制定實質的保護對策及調適方案，作為抵抗、適應的一種調適能力及系統應變方式；然而，政府在公共政策制定及實際作法上的應變能力，建議應以政策週期性調整並維持政策的彈性為發展及制定的方向。又指出政策的實踐是需要藉由過去經驗，由政府各層單位進行仔細的評估和審查。此概念亦符合我國現針對環境影響評估制度，著手進行由政府各層以分權分責方式執行的檢討方向。

此外，在研討會參與過程發現我國在公眾參與的制度上，已領先他國許多，然而我國現行的環境影響評估法規雖已建立完善的公民參與機制，提供民眾申請報名旁聽審查會議、提供完善方便之環境影響評估相關資訊查詢系統，充分落實資訊公開及公眾參與，仍針對公民參與機制不斷改進，以冀有更多管道供各方表達觀點。今年研討會參與聆聽多篇論文發表及詳閱海報內容後發現，各國針對環境影響評估，不僅由政府單位提供各種軟、硬體資源及教學，提供公眾參與管道外，更有開發單位自辦環境影響評估，主動增加與民眾溝通及交流的機會，並藉此提供評估資訊，供政策執行與否之決策單位作為決策參考。為因應世界潮流，建議未來我國可參考他國經驗，鼓勵並協助政策執行單位自行辦理環境影響評估，並參考他國面對災害及環境變遷的評估經驗，進而考量我國可能面對的環境變遷及災害，納入我國環境影響評估作業參考。

36th Annual Conference of the International  
Association for Impact Assessment

# IMPACT ASSESSMENT: RESILIENCE AND SUSTAINABILITY

11-14 May 2016 | Aichi-Nagoya, Japan



## LOCAL HOST AND ORGANIZER

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## IN ASSOCIATION WITH

- Ministry of the Environment
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- Japan External Trade Organization
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- Japan Society for Impact Assessment
- Japan Association of Environmental Assessment
- Japan Tourism Agency
- Japan National Tourism Organization
- Aichi Prefecture
- City of Nagoya
- Nagoya Convention & Visitors Bureau
- Nagoya Congress Center



# IAIA

International Association  
for Impact Assessment

## FINAL PROGRAM





# Committees | Host

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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:** IAIA provides an international forum for advancing innovation and communication of best practice in all forms of impact assessment 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.

We strive for excellence by maintaining and enhancing our own knowledge and skills, by encouraging the professional development of co-workers, and by fostering the aspirations of potential members of the profession.

We do not advance our private interests to the detriment of the public, our clients or employing institutions.

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**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 18 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.

# Welcome!



**Sachihiko Harashina**  
Co-Chair, IAIA16



**Takehiko Murayama**  
Co-Chair, IAIA16



**Yaw Amoyaw-Osei**  
President, IAIA | Director, CEHRT Environmental Consulting, Ghana

It is my great pleasure to welcome you to IAIA16, Aichi-Nagoya, as a co-chair of IAIA16 and on behalf of the Japan Branch of IAIA. It is quite important that an annual conference is being held in Japan to promote the exchange of information and ideas on impact assessment. We hope to hear about your diverse experiences in impact assessment, especially in relation to this year's theme of "Resilience and Sustainability."

Impact assessment is implemented all over the world as an important tool to support rational and fair decision making for policies, plans, and projects so as to mitigate environmental impacts of various human activities. Thus impact assessment should be "manners" for sustainable society.

From our experiences of great earthquakes and the nuclear power accident in Fukushima, we believe that resilience is essential for sustainability. Japan had been struggling to resolve environmental problems caused by rapid industrialization — and has been successful. Nagoya City and other parts of Aichi Prefecture are well placed to show the legacy.

You can also take in the wonderful sights the city and the region have to offer. Please enjoy Japanese culture and warm hospitality during your stay.

— Sachihiko Harashina

It gives me great pleasure to welcome you to the 36th Annual Conference of IAIA, IAIA16, in Aichi-Nagoya. In the true tradition of IAIA, we have assembled once again from over 70 countries and regions of the world as impact assessment (IA) professionals to promote the cause of IAIA; share and advance knowledge in IA; enhance our professional prospects and careers; and develop business, academic, and other networking opportunities.

"Resilience and Sustainability" is the theme for the conference. It takes IA back to its roots of contributing to safeguarding "environmental systems," and is most appropriate for the emerging sustainability challenges of contemporary developments.

The theme for this year's conference best suits the choice of location—the unique cultural, historic, and environmental setting of the Nagoya region. While waiting to captivate our imagination—the UNESCO World Heritage sites, Mt. Fuji and the Japanese Alps, etc., etc.—the pleasure of adventure will nevertheless not overshadow the conference experience.

We had looked forward with great anticipation since Florence, and now here we are—Nagoya! Please do enjoy the conference and not only all the pleasure that Nagoya offers, but also the great reunions and camaraderie of new and old friends.

— Yaw Amoyaw-Osei



## NEW IN 2016 CHARLIE WOLF MEMORIAL LECTURE

Starting at IAIA16, one of the founding members of IAIA will be honored through a new lecture series. The Charlie Wolf Memorial Lecture, to be held annually during the opening plenary, will introduce the unique environmental, social, and cultural features of the conference location.

# Mobile app

## IAIA16 MOBILE APP AND DESKTOP PORTAL

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

Keep important parts of IAIA16 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 and speakers.
- » Select your favorite sessions and create your personal agenda.
- » Submit nominations for outstanding presentations and 2017 awards.
- » Take notes and send them to yourself.
- » Use the map function to find rooms.



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

Get access to your information anywhere. Log in, make changes, and they will sync to both the desktop AND the mobile version.

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

*The IAIA16 mobile app is proudly sponsored by ARCADIS and Korea Environment Institute.*

<b>AVAILABILITY</b>	The mobile app is available from the week of 2 May.
<b>DESKTOP PORTAL</b>	<a href="http://bit.ly/iaia16app">http://bit.ly/iaia16app</a>
<b>MOBILE APP</b>	
Apple or Android:	Search for "IAIA" or "IAIA Event"
Blackberry or Windows:	<a href="http://showcase.genie-connect.com/iaia/">http://showcase.genie-connect.com/iaia/</a>
<b>LOGIN DETAILS FOR REGISTERED DELEGATES</b>	
Username:	[your email address]
Password:	iaia

### 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 IAIA16 photos on your Instagram, Facebook, or Twitter account, please tag #iaia16 so the photos can be collected and shared throughout IAIA as well.

### LIVE TWITTER FEED

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 #iaia16. A summary of the tweets will contribute to the main conclusions and recommendations at the closing plenary.

### INTERNET ACCESS

Free wifi is available in the public spaces of the Nagoya Congress Center. It is not available in the meeting rooms.

### VIDEO/AUDIO POLICY

Individuals officially identified by IAIA may photograph, videotape, and/or audiotape conference events. By attending the conference, you agree to allow your image to be used by IAIA.

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.

### SUSTAINABLE CONFERENCES

IAIA takes the following steps 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
- Provide recycling bins for discarded paper products
- Ask delegates to confirm their attendance at events and functions to reduce waste and leftovers
- Encourage delegates to purchase carbon-offset credits for their flights
- Encourage delegates to return name badge holders
- Prepare a sustainable event report

### Reducing the Carbon Footprint

IAIA continues to strongly support the need to reduce the carbon footprint around our conferences.

To this end, we will be partnering with a local program selected by our host to offset our footprint. IAIA is contributing \$5.00 of your registration toward a donation to the program.



# Award winners



## Global Environment Award

**C.S. "Buzz" Holling** was chosen to receive the IAIA Global Environment Award for his sustained commitment to research, education, and policy surrounding ecology and global climate change. His research provided new perspectives on the interaction between human and natural systems, leading to new methodologies of impact assessment.

*The Global Environment 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

**Lone Kørnøv** was selected for the Individual Award for her dedication to improving and promoting environmental assessment through her research, teaching, and practice, and for her work in establishing the Danish Centre for Environmental Assessment.

*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

**Juan D. Quintero** receives the Lifetime Achievement Award for his sustained and significant contribution to impact assessment practice, which has helped to mainstream conservation into infrastructure projects around the world.

*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 **Arne Dalfelt** for his contributions to IAIA and capacity building, displayed through his commitment to the Oil for Development stipend program, his role as program chair at IAIA06 in Norway, and his long-term efforts to strengthen the EIA Professional Network for Capacity and Linkages in Environmental Assessment in Africa (CLEAA).

*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.*

THE  
CARTER CENTER



## Institutional Award

The **Carter Center's Mining Governance Program** was chosen to receive the Institutional Award because of its promotion of human rights impact assessment as a tool for change in the Democratic Republic of Congo.

*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.*



## Regional Award

**Kin Che Lam** was selected as recipient of the Regional Award for his ongoing and sustained contributions to impact assessment in Asia, including his role in organizing regular regional meetings on topics such as Strategic Environmental Assessment and his work in promoting climate change activities in the region.

*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.*



## Rita R. Hamm IA Excellence Scholarship

**Toma Rani Saha**, Bangladesh, was selected as the recipient of this year's Rita R. Hamm IA Excellence Scholarship. Toma is a scientist working in the climate change, climate variability, and impact assessment fields.

*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.*

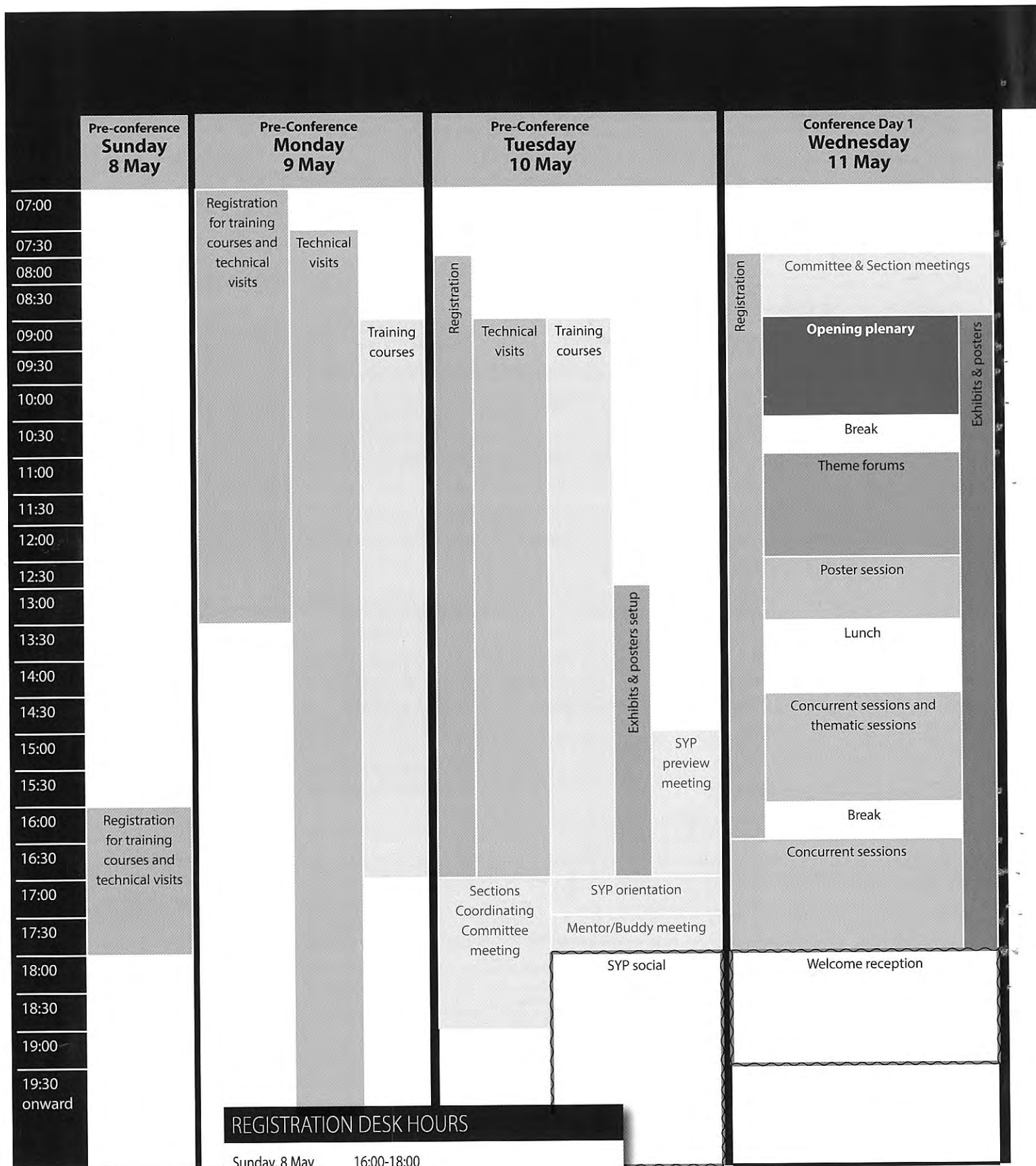


## IAPA Best Paper of 2015

The 2015 IAPA Best Paper Award is presented to Alan Ehrlich and Bill Ross for their paper, "The significance spectrum and EIA significance determinations," published in IAPA 33(2).

*If you would like to nominate an individual or organization for a 2017 award, please submit name and justification in the IAIA16 mobile app or e-mail shelli@iaia.org. Online nominations will open soon.*

# Conference overview



**REGISTRATION DESK HOURS**

Sunday, 8 May	16:00-18:00
Monday, 9 May	07:00-13:30
Tuesday, 10 May	08:00-17:00
Wednesday, 11 May	08:00-16:30
Thursday, 12 May	08:30-16:30
Friday, 13 May	08:30-14:30

TWEET ABOUT YOUR SESSION AT #IAIA16!

# Conference overview

Conference Day 2 Thursday 12 May		Conference Day 3 Friday 13 May		Conference Day 4 Saturday 14 May		
	Fun Run					07:00
						07:30
	Committee meeting Affiliates, Branches, & Associated Organizations Forum		Committee meetings			08:00
Registration	Theme forums	Registration	Theme forums		Concurrent sessions	08:30
	Exhibits & posters		Exhibits & posters		Exhibits & posters	09:00
	Break		Break		Break	09:30
	Concurrent sessions		Concurrent sessions			10:00
	Annual General Meeting		Council meeting			10:30
	Lunch		Lunch			11:00
	Concurrent sessions		Concurrent sessions and thematic sessions		<b>Closing plenary</b> IAIA Presidential Address IAIA16 report & summary Introduction to IAIA17	11:30
	Break		Break			12:00
	Concurrent sessions		Concurrent sessions			12:30
	Section meetings				Technical visit	13:00
	Dine Outs		Banquet		Exhibits & posters dismantle	13:30
						14:00
						14:30
						15:00
						15:30
						16:00
						16:30
						17:00
						17:30
						18:00
						18:30
						19:00
						19:30 onward

ALL DELEGATES ARE INVITED TO THE AGM

VOTE FOR YOUR FAVORITE POSTER BY 11:00 TODAY!

NOMINATE AN OUTSTANDING PRESENTATION BY 11:00 TODAY!

# Daily schedule

## SUNDAY 8 MAY

16:00-18:00 Registration

## MONDAY 9 MAY

07:00-13:30 Registration

07:30-20:30 Technical visit A: World Heritage: Mt Fuji's landscape

09:00-17:00 Training courses (room locations will be provided at check-in)

- Integrating Ecosystem Services into Development Planning
- How to Maximize the Value and Effect of Social Impact Assessment
- Quality Assurance in EIA: Guide and Review
- State of the Art Sustainability Assessment

13:00-17:30 Technical visit B: EIA & Sustainable Decisions

## TUESDAY 10 MAY

08:00-17:00 Registration

09:00-17:00 Training courses (continued from Monday)

09:00-18:00 Technical visit C: Ecofriendly Development

09:00-16:00 Technical visit D: History of Ise Grande Shrine

13:00-17:00 Exhibit and poster setup (211+212)

15:00-17:00 Students and young professionals presentation preview meeting (232)

17:10-17:30 Student Fee Waiver Program orientation (232)

17:30-19:00 Committee meeting  
Sections Coordinating Committee (233)

17:40-18:00 Mentor/Buddy meeting (232)

18:00 onward Students and young professionals social (meet at IAIA registration desk)

### \* Coffee breaks and lunches

You may pick up your beverages, break snacks, and lunches in the 1st floor hallway outside the meeting rooms in Building 2 and enjoy your food and beverages in the conference rooms, the public space of the venue, or the garden of the venue.

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

## WEDNESDAY 11 MAY

07:45-08:45 Committee meeting (222)  
IAPA Journal Management Committee

07:45-08:45 Section meeting  
Students and Young Professionals (221)

08:00-16:30 Registration

09:00-10:30 Opening plenary (Shirotori Hall)  
*Opening address*  
**Takehiko Murayama** and **Sachihiko Harashina**, IAIA16 Co-chairs

*Welcome and opening comments*  
**Yaw Amoyaw-Osei**, IAIA President

*Greetings from the host country*  
**Hideaki Omura**, Governor, Aichi Prefecture  
**Takashi Kawamura**, Mayor, Nagoya City  
**Masaaki Kobayashi**, Vice-Minister for Global Environmental Affairs, Ministry of the Environment

*Presentation of the IAIA Global Environmental Award*  
**Peter Croal**, IAIA Awards Committee Chair

*Keynote addresses*  
**Kazuhiko Takeuchi**, Professor, University of Tokyo and Vice-Rector, United Nations University  
**Maria do Rosário Partidário**, Professor, Instituto Superior Technico, Portugal

*Inaugural Charlie Wolf Memorial Lecture*  
**Sachihiko Harashina**, Dean and Professor, Chiba University of Commerce; Professor Emeritus, Tokyo Institute of Technology

10:30-11:00 Break \*

11:00-12:30 Theme forums and concurrent sessions

12:40-13:30 Poster session (211+212)

13:30-14:20 Lunch \*

14:30-16:00 Concurrent sessions

16:00-16:30 Break \*

16:30-18:00 Concurrent sessions

18:15-20:15 Welcome reception (pre-registration required; see page 46)  
(Shirotori Hall)

## THURSDAY 12 MAY

07:00-08:00 Fun Run (pre-registration required; see page 46)

07:45-08:45 Committee meeting (222)  
IAPA Editorial Board

07:45-08:45 Affiliates, Branches, and Associated Organizations Forum (221)

08:30-16:30 Registration

09:00-10:30 Theme forums and concurrent sessions



# Daily schedule

10:30-11:00	Break *
11:00-12:30	Concurrent sessions
12:40-13:30	<b>Annual General Meeting and Lifetime Achievement Award Presentation (224)</b> 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.
13:30-14:20	Lunch *
14:30-16:00	Concurrent sessions
16:00-16:30	Break *
16:30-18:00	Concurrent sessions
18:10-19:10	<b>Section Meetings</b> Agriculture, Forestry, & Fisheries (224) Biodiversity & Ecology (233) Climate Change (234) Corporate Stewardship & Risk Management (234) Cultural Heritage (232) Disasters & Conflicts (224) Health (231) Indigenous Peoples (223) Oil, Gas, & Renewable Fuels (436) Power Generation & Transmission (222) Public Participation (141+142) Social Impact Assessment (437) Strategic Environmental Assessment (221)
18:30 onward	Dine Outs (see page 46)

## FRIDAY 13 MAY

07:45-08:45	<b>Committee meetings</b> Training & Professional Development (221) Publications (222) Awards (223)
08:30-14:30	Registration
09:00-10:30	Theme forums and concurrent sessions
10:30-11:00	Break *
11:00-12:30	Concurrent sessions
12:40-13:30	<b>Council meeting (221)</b> 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.
13:30-14:20	Lunch *
14:30-16:00	Concurrent sessions
16:00-16:30	Break *
16:30-18:00	Concurrent sessions
18:30-21:00	<b>Banquet (pre-registration required; see page 46) (Atsua-Jingu Shrine)</b>

## SATURDAY 14 MAY

09:00-10:30	Concurrent sessions
10:30-11:00	Break *
11:00-12:30	<b>Closing Plenary (Reception Hall)</b> <i>Chair: Hiromichi Fukui, Professor, Chubu University</i> <i>Conclusions</i> <b>Takehiko Murayama</b> and <b>Sachihiko Harashina</b> , IAIA16 Co-chairs <i>Presentation of IAIA Awards</i> <b>Peter Croal</b> , IAIA Awards Committee Chair <i>Regional Award</i> <i>Institutional Award</i> <i>Best IAPA Paper</i> <i>Presidential Address</i> <b>Ana Maria Esteves</b> , IAIA President-Elect <i>Invitation to IAIA17</i> <b>Delegates of IAIA17 Canada Committee</b> <i>Concluding Remarks</i> <b>Sachihiko Harashina</b>
13:30-17:30	<b>Technical visit F: Resilience Earthquake &amp; Flood</b>
13:30-16:00	<b>Exhibit and poster dismantle</b>

## TECHNICAL PROGRAM: TOPICAL STREAMS

### CONFERENCE STREAMS

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Collaboration for sustainability in Asian region .....	16
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Natural disasters and resilience .....	26
Population change and sustainability assessment .....	28
Transportation, land use, and sustainability .....	29

### GENERAL IA TOPICS and IAIA SPECIAL-INTEREST SECTION SESSIONS

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# Technical program overview

	#141+142	#224	#234	#431+432	#221	#222
<b>Wednesday, 11 May</b>						
09:00-10:30	Shirotori Hall <b>Opening Plenary</b>					
11:00-12:30	Quantifying biodiversity impacts & resilience potential (p13)	JICA's leadership in impact assessment capacity development (p16)	Building resilience for long-term wellbeing (p21)	New approaches for planning & designing ecosystem & climate friendly smart-green infrastructure (p13)		
12:40-13:30	<b>Poster Session</b>					
14:30-16:00	Biodiversity offsets: The Asian experience (I) (p13)	Power & transmission: Resilience assessment of power transmission systems (p26)	IFIs accountability mechanisms: Resilience & sustainability (I) (p23)	How to enhance EIA in Asia (16)	How to respond to public concerns on resilience & sustainability (p21)	HIA as a creation of deliberative society for sustainable development (p16)
16:30-18:00	Biodiversity offsets: The Asian experience (II) (p14)	Systems approaches to impact assessment for resilience & sustainability (p28)	IFIs accountability mechanisms: Resilience & sustainability (II) (p23)	Asian SEA, EIA & ecosystem service assessment: Biodiversity & ecosystem service (I) (p17)	Best practice in adopting a strategic approach to sustainable development (p17)	Health & wellbeing in infrastructure planning: How does IA fit? (p35)
<b>Thursday, 12 May</b>						
09:00-10:30	International comparison of public participation indicators (p17)	Sustainable transport: Current situations & challenges (p29)	The link between resiliency & climate smart(er) impact assessment (p27)	<b>Asia Day</b> The role of safeguards in supporting the challenges of PPP in Asia (p13)	What does IA that delivers resilience & sustainability look like? (p21)	
11:00-12:30	Early stakeholder engagement during site selection & project design (I) (p36)	Disasters, conflict & impact assessment (I) (p27)	Climate change & IA: Good practice cases (I) (p23)	<b>Asia Day</b> Supporting countries in the use of SEA and CIA in Asia (p13)	Increasing communities' roles in HRIAs of private sector investment projects (p35)	As good as it gets: Working toward quality in impact assessment (I) (p21)
12:40-13:30	<b>Annual General Meeting</b>					
14:30-16:00	Early stakeholder engagement during site selection & project design (II) (p38)	Disasters, conflict & impact assessment (II) (p27)	Optimizing adaptation to increase resilience in a context of climate change (p27)	<b>Asia Day</b> Capacity building & country systems (I) (p13)	Developments & trends in HIA & health in EA in Asia & Pacific regions (p17)	Renewable energy landscapes: Livability threat or NIMBY? (I) (p34)
16:30-18:00	Collaboration & capacity building: The key to resilient IA practice? (p24)	Disasters, conflict & impact assessment (III) (p27)	Climate change & IA: Good practice cases (II) (p24)	<b>Asia Day</b> Capacity building & country systems (II) (p13)	Review of IAIA SEA Performance Criteria (p39)	Renewable energy landscapes: Livability threat or NIMBY? (II) (p34)
<b>Friday, 13 May</b>						
09:00-10:30	Social sustainability assessment in societies with decreasing populations (p29)	Oil pollution & gas leakages, social & natural resources resilience (p26)	Resilience, IA, & coping with major project-induced change (p29)	Nuclear disasters: Preparedness, emergency response, & rehabilitation (p25)		
11:00-12:30	ASEAN EIA update & roundtable (p18)	Boom town effects from oil & gas development (p29)	ODA & the role of IA for sustainability (p39)	Innovative communication of project & impacts (p22)	Asian SEA, EIA & ecosystem service assessment: Biodiversity & ecosystem service assessment (II) (p18)	Business & human rights: Where to now? (p32)
12:40-13:30	<b>Council Meeting</b>					
14:30-16:00		Impact assessment for smart cities (I) (p31)	Sustainability: Solid ground or a slippery piece? (p15)	ESIAs in the extractive sector (I) (p35)	Asian SEA, EIA & ecosystem service assessment: EIA & SEA (I) (p18)	As good as it gets: Working toward quality in impact assessment (II) (p22)
16:30-18:00		Impact assessment for smart cities (II) (p31)	The role of IA in reaching the Sustainable Development Goals (p24)	ESIAs in the extractive sector (II) (p35)	Asian SEA, EIA & ecosystem service assessment: EIA & SEA (II) (p19)	As good as it gets: Working toward quality in impact assessment (III) (p22)
<b>Saturday, 14 May</b>						
09:00-10:30			Getting a fair share (p25)	Environmental Information Platform for a resilient & sustainable society (p22)	Asian SEA, EIA & ecosystem service assessment: EIA & SEA (III) (p19)	Connecting transportation planning & IA: Theory & practice (p31)
11:00-12:30	Reception Hall <b>Closing Plenary</b>					

# Technical program overview

#223	#231	#232	#233	#436	#437	<b>Wednesday, 11 May</b>											
Shirotori Hall <b>Opening Plenary</b>						09:00-10:30											
<ul style="list-style-type: none"> <li>■ Plenary</li> <li>■ Theme forum</li> <li>■ Concurrent session</li> </ul>												11:00-12:30					
<b>Poster Session</b>						12:40-13:30											
The role of EA in the "One Belt One Road" initiative (I) (p23)		SIA: Experience & development (p38)		Advancing EIA outcomes & processes through learning-centered approaches (I) (p36)		Economic impact assessment & sustainable regional development (p38)		Landscapes in development context (I) (p33)		Roundtable: Status of the IAIA Climate Change Action Plan (p26)		14:30-16:00					
The role of EA in the "One Belt One Road" initiative (II) (p23)		Social impacts from energy-related projects (p38)		Advancing EIA outcomes & processes through learning-centered approaches (II) (p36)		Corporate sustainability assessments (p32)		Landscapes in development context (II) (p33)		Hits of the 1970s: Wisdom from the early days of IA (p38)		16:30-18:00					
<b>Thursday, 12 May</b>												09:00-10:30					
Indigenous cultural landscapes & impact assessment (I) (p33)		EIA & monitoring protocols for seabed mining in deep-sea environments (p24)		Performance & innovation in resettlement & livelihoods restoration (p34)		Improving confidence in biodiversity baseline studies (p14)		Business-led approaches for promoting biodiversity in impact assessment (p14)		Putting out the fire with gasoline: Logistic secrets of PP events (p36)		11:00-12:30					
<b>Annual General Meeting</b>						12:40-13:30											
Indigenous cultural landscapes & impact assessment (II) (p33)		Ecosystem services: Why so little used in planning? (p14)		Poverty, inequality, & resilience (p28)		Tools & approaches for integrating biodiversity in impact assessment (p14)		Ecological knowledge & the application in IA (p14)		Resettlement impacts & creating shared value (p39)		14:30-16:00					
Indigenous peoples in IA & resilience (p35)		Planning for disaster debris (p34)		Cultural heritage: Disaster planning, mitigation, & response (p25)		Habitat & ecosystem restoration as an impact mitigation option (p15)		Making resilience thinking relevant for impact assessment (p39)		Developing good practice in resettlement & livelihoods planning & implementation (p29)		16:30-18:00					
<b>Friday, 13 May</b>												09:00-10:30					
Integrated policies toward sustainable resource management in Asia (I) (p18)		Fisheries resilience & sustainable aquaculture (p15)		Building excellence in impact assessment (p29)		The role of SEA as a facilitator for sustainable planning (I) (p39)		More than men: Managing impacts associated with workforce influx (p26)		Country experiences with oil spills & the resilience of ecosystems (p26)		11:00-12:30					
<b>Council Meeting</b>						12:40-13:30											
Integrated policies toward sustainable resource management in Asia (II) (p19)		Ethical dilemmas in impact assessment (p40)		Impact assessment as a design tool (I) (p40)		The role of SEA as a facilitator for sustainable planning (II) (p40)		How SEA & EIA contribute to more resilient plans, programs, & projects (p40)		Social license to operate & community resilience (I) (p32)		14:30-16:00					
Meet the editors (p41)		Assessing environmental impacts with compliance gaps (p41)		Impact assessment as a design tool (II) (p40)		Does impact assessment improve ecosystem resilience? (p15)		Is resilience a valid argument when negotiating impact mitigation? (p26)		Social license to operate & community resilience (II) (p32)		16:30-18:00					
<b>Saturday, 14 May</b>												09:00-10:30					
Environmental creation from disaster (p28)		The contribution of SEA & EIA to Resilient PPP (p41)		Impact assessment of small things (p25)		Picture this: Images of resilience & sustainability (p21)		Is nature's resilience a valid argument for expanding the oil industry? (p26)		Corporate Stewardship & Risk Management Section: World Café (p32)		11:00-12:30					
Reception Hall <b>Closing Plenary</b>																	



# Keynote speakers



## Kazuhiko Takeuchi

Kazuhiko Takeuchi is Director and Professor of the Integrated Research System for Sustainability Science (IR3S) at the University of Tokyo and Senior Vice-Rector of the United Nations University. He has served, among others, as a member of the Science Council of Japan and Editor-in-Chief of the journal Sustainability Science (Springer).



## Maria do Rosário Partidário

Maria is an international consultant in public and private sectors and Professor at the University of Lisbon on strategic thinking for sustainability in integrated, environmental, and social assessment approaches. She has a long track record on strategic environmental assessment (SEA) as a researcher, author, trainer, and consultant. She is the author of *Strategic Environmental Assessment Better Practice Guide*, a methodology for strategic thinking in SEA, and a former International Association for Impact Assessment (IAIA) President and winner of the 2015 IAIA Lifetime Achievement Award for significant contribution to SEA theory, education, and practice.

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# Concurrent sessions: Conference theme

## ASIA DAY DEVELOPMENT PARTNERS FORUM

### The role of safeguards in supporting the challenges of public-private partnerships (PPP) in Asia

Thursday 12 May | 09:00-10:30 | 431+432

Chair(s): Michael Quinn, DFAT

#### Overview of Asia Day by Sachihiko Harashina and Stephen Lintner

##### Speakers

- IFC: Lakhdeep Babra
- JICA: Jun Watanabe
- WB: Peter Leonard, Sofia De Abreu Ferreira

### Supporting countries in the use of SEA and CIA in Asia

Thursday 12 May | 11:00-12:30 | 431+432

Chair(s): Stephen Lintner, Independent Advisor

##### Speakers

- ADB: Mark Kunzer
- DFAT: Michael Quinn
- EIB: Adina Relicovschi

### Capacity building and country systems (I)

Thursday 12 May | 14:30-16:00 | 431+432

Chair(s): Mark Kunzer, ADB

##### Speakers

- ADB: Jean Williams
- WB: Yiren Feng

### UP/WB: Aura Matias, Sofia De Abreu Ferreira Capacity building and country systems (II)

Wednesday 12 May | 16:30-18:00 | 431+432

Chair(s): Peter Leonard, World Bank

##### Speakers

- ADB: Harvey Himberg
- IFC: Alex Indorf
- JICA: Noriaki Murase
- USAID: Christopher Dege
- Wrap up by Sachihiko Harashina and Stephen Lintner

## BIODIVERSITY RESTORATION AND ECOLOGICAL IMPACT ASSESSMENT

### Quantifying biodiversity impacts and resilience potential

Wednesday 11 May | 11:00-12:30 | 141+142

Panel discussion

Section: Biodiversity & Ecology

Chair(s): Akira Tanaka, Sangdon Lee, Pamela Gunther

A focus on methods used to quantify biodiversity impacts and mitigation efforts to ensure resiliency and sustainability of local ecosystems. Presentations include application of habitat evaluation procedure to dam removal, biodiversity offset bank trial, new funds of ecosystem mitigation for highway construction, and wetland mitigation to achieve no net loss.

#### Quantifying biodiversity impacts

Tanaka, Akira

This forum focuses on methods used to quantify biodiversity impacts and mitigation activities including biodiversity offsets/banks. We will discuss what these methods should be and why.

#### Applying HEP to dam removal ECIAs in Japan

Yagi, Hiroto

Habitat evaluation procedures were used to quantitatively evaluate multiple habitat scenarios for *Plecoglossus altivelis* (sweetfish) associated with the first dam removal in Japan.

#### Practical research of biodiversity offset in Japan

Watanabe, Yosuke; Arai, Seiji; Inukai, Hironobu; Matsuoka, Akihiko; Matsumiya, Ayaka

Based on a questionnaire for stakeholders and hypothetical case studies of biodiversity offset projects, possibilities and challenges of introducing biodiversity offset have practically been examined.

#### Ecosystem mitigation funds: Highway construction

Lee, Sangdon

Highway construction leads to problems in habitat degradation and fragmentation. This study seeks mitigation to minimize construction by measuring funds of ecosystem mitigation in Korea.

#### Quantifying biodiversity impacts and mitigation

Gunther, Pamela

US methods for quantifying ecological values for impacts and mitigation using wetland loss and replacement examples that could aid in developing methods elsewhere.

## New approaches for planning and designing ecosystem and climate-friendly smart-green infrastructure

Wednesday 11 May | 11:00-12:30 | 431+421

Proudly sponsored by ADB and JBIC

Theme forum

ADB/JBIC Session

Chair(s): Pavit Ramachandran

This session will address emerging smart green infrastructure (SGI) approaches in Asia, followed by a panel discussion on elements of a possible approach for the integration of SGI principles in environmental assessment processes and economic development planning.

##### Speakers

- Bruce Dunn, Asian Development Bank (ADB)
- Kate Newman, World Wildlife Fund (WWF)
- Lothar Linde, Greater Mekong Subregion Environment Operations Center
- (TBC) Japan Bank for International Cooperation

### Biodiversity offsets: The Asian experience (I)

Wednesday 11 May | 14:30-16:00 | 141+142

Paper session

Section: Biodiversity & Ecology

Chair(s): Vinod Mathur, Asha Rajvanshi

Biodiversity offsets can be both useful as well as controversial. There is a need to learn from experience gathered in other countries and to factor it in harmonizing conservation and development.

#### Offsetting challenges

Berube, Michel

Offsetting challenges for environmental impact assessment practitioners: a qualitative and regional approach is better.

#### Holistic modeling to design basin-wide offsets

Kunzer, Mark; Zakaria, Vaqar

Environmental flow assessment using holistic models was conducted for a hydropower project located in critical habitat. Flow and park protection scenarios were simulated to design the project and develop offsets.

#### Examining biodiversity assessment methods in Japan

Hamasaki, Rina; Tanaka, Akira

In this study, we collected examples of biodiversity assessment methods that have been used in Japan. We then clarified the trends and problems of biodiversity assessment methods.

# Concurrent sessions

## Biodiversity offsets: The Asian experience (II)

Wednesday 11 May | 16:30-18:00 | 141+142

Paper session

Section: Biodiversity & Ecology

Chair(s): Vinod Mathur, Asha Rajvanshi

Biodiversity offsets can be both useful as well as controversial. There is a need to learn from experience gathered in other countries and to factor it in harmonizing conservation and development.

### Examining the process for Satoyama banking

Matsumiya, Ayaka; Tanaka, Akira

We survey the current state of biodiversity banks in the U.S. and consider the process of establishing and introducing Satoyama banking in Japan.

### Planning biodiversity offsets in India

Mathur, Vinod; Rajvanshi, Asha

Biodiversity offsets can be both useful and controversial. There is a need to learn from experience gathered in other countries and to factor it in harmonizing conservation and development.

### The state of environmental offsets in Australia

Middle, Garry

The submissions to an inquiry into offsets in Australia are examined to seek evidence of their effectiveness and whether their use is impacting the application of the mitigation hierarchy.

## Business-led approaches for promoting biodiversity in impact assessment

Thursday 12 May | 11:00-12:30 | 436

Panel discussion

Section: Biodiversity & Ecology

Chair(s): Hideyuki Ito

Learn about efforts by the Cross Sector Biodiversity Initiative (CSBI) to provide leadership in developing and sharing good practices related to managing biodiversity across the oil and gas, mining, and financial industries. These efforts support the "Best Practice Principles for Biodiversity in IA."

### EBRD experience with CSBI tools and guidance

Moore, Peter

European Bank for Reconstruction and Development (EBRD) shares experience using Cross-Sector Biodiversity Initiative (CSBI) tools and guidance to promote "biodiversity-inclusive" impact assessments.

### Best practice through the mitigation hierarchy

Pilgrim, John

Recent Cross-Sector Biodiversity Initiative (CSBI) guidance offers an opportunity to increase integration of biodiversity into impact assessment, right through the mitigation hierarchy.

### Mizuho experience using CSBI tools

Joshi, Aditi; Graver, Lovely

Mizuho shares experiences using Cross-Sector Biodiversity Initiative (CSBI) tools to promote biodiversity-inclusive impact assessment.

## Improving confidence in biodiversity baseline studies

Thursday 12 May | 11:00-12:30 | 233

Paper session

Chair(s): Mervyn Mason

We will explore solutions for improving the confidence in biodiversity baseline studies for ESAs, as well as the application and interpretation of the IFC's Performance Standard 6, as foundations for more robust and practical impact assessment.

### Skewed biodiversity baseline

data: Indian EIA limitations

Borkar, Manoj

Despite extant legislation and systems of appraisal, contemporary EIA protocols in India undermine biodiversity impact concerns due to skewed biological baseline studies misrepresenting and diluting the actual endowments.

### Biodiversity assessment and monitoring for windfarms

Indorf, Alexander W.

Guidance for the preparation of biodiversity assessments for wind energy facilities in the World Bank Group Environmental, Health and Safety (EHS) Guidelines.

### Integrating IFC PS6 requirements into your ESHIA

van Bochove, Jan-Willem; Pilgrim, John; Bennun, Leon; Mitchell, Robin; Ekstrom, Jonathan

This talk presents a strategy for integrating biodiversity into an environmental and social health impact assessment (ESHIA) following IFC Performance Standard 6. Key steps in this process are supported by real-world examples of successful application.

## Ecological knowledge and the application in IA

Thursday 12 May | 14:30-16:00 | 436

Paper session

Chair(s): Kichiro Hayashi

### Biodiversity in agribusiness: The IFC experience

Babra, Lakhdeep; Mousseaux, Louis Philippe; Savy, Conrad

This contribution to the panel will share IFC's experiences in applying Performance Standard 6 to a range of agribusiness projects.

### Risk communication for offshore wind project

Takeuchi, Ayano

The purpose of the research is to clarify the status of risk communication for offshore wind projects in Japan, using a project's impact on salmon as an example.

### Method for evaluating usage of Satoyama

Nojima, Yuriko; Tanaka, Akira

The purpose of this study is understanding usage of Satoyama and developing quantitative evaluation procedures for introducing Satoyama banking.

## Tools and approaches for integrating biodiversity in impact assessment

Thursday 12 May | 14:30-16:00 | 233

Panel discussion

Section: Biodiversity & Ecology

Chair(s): Stephen Edwards

Biodiversity in impact assessment – do it right! Ensure your baseline covers its bases, screening identifies biodiversity risks, and your reports are accurate. Learn how to make sure your due diligence is just that and biodiversity is accurately reflected in your impact assessment!

### Use of biodiversity data to improve IA

Pilgrim, John

The efficiency and cost-effectiveness of impact assessment can be improved through targeted use of existing biodiversity datasets to focus the process from the early stages.

### Good practices for the collection of biodiversity

Moore, Peter

The presentation will provide an overview of the key principles addressed in the multilateral financing institutions (MFI) biodiversity good practice document "Good Practices for the Collection of Biodiversity Baseline Data."

### Tools to guide IA: Practical experiences

Jones, Matt

The Integrated Biodiversity Assessment Tool is used by companies to help scope IA. These experiences will highlight how the tool can support effective and consistent implementation of good practice.

### Enhanced baseline and monitoring approaches

Weikel, Marielle Canter; Viano, Leonardo

Conservation International's (CI) Rapid Assessment Program (RAP) handbook and Tropical Ecology Assessment & Monitoring (TEAM) protocols support more robust and replicable biodiversity baselines and long-term project monitoring.

### Partnerships for effective impact assessment

Whitaker, Samir; Suzue, Keiko

Effective partnerships are vital to understand, assess, and avoid biodiversity impacts and to ensure that avoided areas are maintained in the long-term.

## Ecosystem services: Why so little used in planning?

Thursday 12 May | 14:30-16:00 | 231

Workshop

Chair(s): Ulrike Troeger, Roel Sloatweg

Ecosystem services assessments are often merely add-ons to impact assessments. Rarely are they used proactively, allowing us to look at planning in an integrating way. We will explore what hinders ecosystem services from being used in IA in a meaningful way and discuss with the audience how we can overcome this.

# Concurrent sessions

## Ecosystem services in land-use planning in Namibia

*Scheffler, Ulrich; Hager, Claus-Peter*

We will share experiences and preliminary results of an ecosystem services analysis integrated into an SEA in Namibia. We will discuss impacts, limitations and difficulties encountered.

## The relevance of river flows for decisions on dams

*Rajvanshi, Asha; Mathur, Vinod B.*

The presentation focuses on how ecosystem services of a river became a critical factor for decision making with respect to construction of several dams on a river in India.

## Capacity building for integrating ecosystem services

*Mathur, Vinod; Rajvanshi, Asha*

Mismatches between theory and practice in the area of capacity-building need to be reduced. Recent experiences at Wildlife Institute of India in this direction would be good "takeaways."

## The practical application of the WRI's ESR

*Mason, Mervyn; Dower, Aisling*

A case study on the application of the WRI's ecosystem services review (ESR) for IA method, supplementary data-gathering and analysis approach, and assessment of project impacts and dependencies on priority ecosystem services.

## Habitat and ecosystem restoration as an impact mitigation option

Thursday 12 May | 16:30-18:00 | 233

Paper session

Chair(s): *Agi Kiss*

The reversibility or irreversibility of ecological impacts can be fundamental to assessing project risks. How can EIAs assess the likelihood that ecosystem services and stable species populations can be restored, and what are the practical requirements (legal framework, baseline data, financing, etc.) that must be in place?

## Cumulative effects, caribou, and NEB regulation

*Pfeiffer, Zoe; Eyre, Marcus; Kerkhof, Sandra; Titman, Stephanie*

This presentation will discuss the experience of Canada's National Energy Board with caribou habitat restoration and offset condition requirements on linear oil and gas projects.

## Restoring ecosystems degraded by petroleum activities

*Namara, Justine; Buhanga, Edgar*

Oil companies have been making efforts to restore degraded areas in Uganda's National Parks due to their activities. In some areas it has worked, but in other areas it has left the area more degraded.

## Ecological restoration of coastal zone in Xiamen

*Fang, Jing; Li, Qingsheng; Lin, Zhilan; Wu, Yaojian; Chen, Fenggui*

The natural coastal zone has been degraded for inevitable reasons. A series of methods has been used to restore the fragile ecosystem. Fortunately, some of them have achieved good results.

## Offsetting and compensating B&ES losses in mining

*Sánchez, Luis; Rosa, Josianne; Novachi, Gady*

Biodiversity offsets adopted in a mining project in Brazil are reviewed. Potential gains exceed losses, but ecosystem services are not fully compensated. Guidance to compensate impacts are proposed.

## Fisheries resilience and sustainable aquaculture

Friday 13 May | 11:00-12:30 | 231

Paper session

Section: *Agriculture, Forestry, & Fisheries*

Chair(s): *Shigeo Nishikizawa*

Fisheries tend to be impacted by their own activities, other sectors' activities, and the environment. We discuss experiences of the peculiarity of fisheries activities and how effective mitigation is possible to reduce impact on the fisheries sector.

## Evaluation of water quality status of Ciliwung River

*Effendi, Hefni*

An assessment of Ciliwung River quality in four water classes, by a pollution index calculation based on the Indonesia Ministry of Environment Decree No 115/2003, showed improvement in water quality from 2012 to 2014.

## Benthic fish change after bottom trawling was abandoned

*Shea, Mark; Sun, Jie*

By comparison of data collected before and after the bottom fish-trawling abandoned, this paper presents benthic fish changes and comments on effectiveness of such mitigation on local fish community.

## Enhancing fishermen's commitments in a Mexican MPA

*Valdivia-Jiménez, Paloma Alejandra; Pérez-Valencia, Sergio Alejandro; Turk-Boyer, Peggy; Polanco-Mizquez, Elina Inés; López-Herrera, Leonor; Wong López-Cuellar, Efrain*

Comprehensive education and social participation programs were implemented to give fishermen tools and create enabling conditions for willing engagement in an impact assessment in a Mexican marine protected area (MPA).

## Sustainability: Solid ground or a slippery piece?

Friday 13 May | 14:30-16:00 | 234

Paper session

Section: *Biodiversity & Ecology*

Chair(s): *Asha Rajvanshi, Vinod Mathur*

This session draws experience from around the world and especially from Asia on the performance and role of impact assessment in halting the loss of biodiversity and inspiring future assessments to promote biodiversity as a key element of sustainability assessment of development proposals.

## Residential development and butterfly conservation

*Cheung, Richard; Chu, Ophelia*

The author attempts to answer the question "Residential Development for Human and Conservation of Butterflies: Which is More Important?" Fung Yuen Butterfly Reserve is ten years old now.

## IA of bio-economic projects in Region Zealand, DK

*Lybæk, Rikke; Kjær, Tyge; Palsberg, Aske*

Creating new pathways for sustainable ready-to-implement bio-economic projects within Region Zealand, Denmark, based on available biomass resources and existing and proven technology concepts.

## Protecting ecosystem services for sustainable growth

*Rajvanshi, Asha; Mathur, Vinod B.*

The paper presents examples of development models from India and highlights the need of reforms in regulatory instruments to capture ecosystem values.

## EIA and wetland biodiversity in Hong Kong

*Leven, Michael*

Biodiversity conservation is required under Hong Kong's EIA process, but success is variable. Factors favoring success are reviewed and identified.

## Does impact assessment improve ecosystem resilience?

Friday 13 May | 16:30-18:00 | 233

Paper session

Section: *Biodiversity & Ecology*

Chair(s): *Akiro Tanaka*

Papers address whether IA improves ecosystem resilience in practice. Key topics include land use planning, mitigation hierarchy, ecological restoration, species versus ecosystem metrics, and the extent to which the revised IAIA Best Practice Principles might improve efforts towards strengthening ecosystem resilience.

## Biodiversity in sugarcane industry EIA

*Sánchez, Luis; Dibo, Ana Paula*

This paper reviews twenty-six recent EIAs of sugarcane projects in São Paulo State for their contents on cumulative impacts on biodiversity.

## Characterization of the ECIA in Strategic EIA

*Li, Wei; Yan, Rui Feng; Dong, Yayuan; Feng, Yuanyuan; Cao, Li; Liang, Zhouxuan*

This study attempts to characterize the ecological impact assessment (ECIA) in strategic environmental impact assessment (EIA) for the eleven coal mining areas in Shanxi province.

## EIA challenges to coral reef resiliency

*Goldschmidt, Aaron*

As marine biologists approach coral reef resilience in the face of global coral bleaching, EIA experts must address how preservation measures are evaluated in the context of established regulations.

# Concurrent sessions

## COLLABORATION FOR SUSTAINABILITY IN ASIAN REGION

### JICA's leadership in impact assessment capacity development

Proudly sponsored by JICA

Wednesday 11 May | 11:00-12:30 | 224

Paper session

Chair(s): Yoshio Wada

JICA is a donor agency involved with impact assessment around the world. This session will share JICA's leadership in capacity development for environmental and social impact assessment, followed by presentations and discussions with the government officials of Myanmar and Cambodia on the present challenges for strengthening their capabilities.

### JICA's Environmental and Social Guidelines

Wada, Yoshio; Fujita, Yasuo

JICA presents the outline of its Guidelines for Environmental and Social Considerations as an introduction to the forum "JICA's Leadership in Impact Assessment Capacity Development."

### Operations of the JICA advisory committee

Murayama, Takehiko

A chairperson of the Advisory Committee reports its operations under JICA's Environmental and Social Guidelines.

### JICA's capacity development on EIA in Myanmar

Linn, Sein Htoon; Usui, Kanji

JICA's project on EIA capacity development in Myanmar shows the project proponents how EIA capacity development can go smoothly in the initial stage of EIA introduction.

### Capacity enhancement of resettlement in Cambodia

Chankosal, Tauch; Yamashita, Akira

JICA's project on capacity enhancement of environmental and social considerations for resettlement in Cambodia introduces the project's achievements and tackles ongoing issues to improve implementation quality in the field.

### HIA as a creation of deliberative society for sustainable development

Wednesday 11 May | 14:30-16:00 | 222

Panel discussion

Section: Public Participation

Chair(s): Wiput Phoolcharoen, Kanittha Saeiew

HIA has its application for initiation of deliberative society in a broader involvement of stakeholders and community. The presentation and discussion can bring the critical point of HIA implementation and exemplification of methodology and guidelines to be discussed for further sustainable development.

### 2020 Tokyo Olympics and health impact assessment

Ashiya, Noriko; Yanagi, Kenichiro

A discussion of the role of the HIA in promoting Green Growth, both in a general sense and in a particular sense for the Tokyo 2020 Olympic Games.

### Health impact assessment: A new guidance

Uberti, Filippo; Macera, Erasmo; Mortara, Simone; Xiao, Yina; Linzalone, Nunzia; Viliani, Francesca

An IOGP/IIPECA task force updated the guidance document on health impact assessment (HIA). The guidance presents a unified understanding of concerns, principles, and practices of HIA for the oil and gas industry.

### Slotermeer health dimensions:

#### Developing community

den Broeder, Lea; van Kempen, Elise; Holstein, Age Niels; van den Berg, Frits; Kauw, Karin; Hofland, Aafke

Community engagement in developing indicators of a healthy neighborhood yields a holistic picture of neighborhoods and innovative indicators. The development process activates residents to become involved in local policy development. This provides a good basis for community-based HIA.

### Open pit mines: Health effects at zero kilometers

Barss, Peter

Major open mines dug in close proximity to already-existing cities are rare. Human health effects may be expected to increase alarmingly as proximity increases.

### Community HIA: Biomass power plant case in Thailand

Chusakul, Wichitra; Sukanthapong, Piyasak

The purposes of this research in Surin Province, Thailand, were to study the impact of biomass power plants on health and environment, to empower people in the communities through participation in the research, and to advocate recommendations to involved organizations. Consequently, the Energy Regulatory Commission issued a Code of Practice for Very Small Power Producers.

### Community participation in CHIA, Thailand

Benjatanawat, Suvapak; Isaramalai, Sang-Arun

The level of community participation is different due to the context in each area. However, it is important to support each community to meaningfully participate and reach the empowerment level.

### How to enhance EIA in Asia

Wednesday 11 May | 14:30-16:00 | 431+432

Paper session

Chair(s): Kenichiro Yanagi

Over 16 Asian countries and international organizations attended the Asia EIA conference 2016 at Nagoya. It was a good opportunity for mutual learning about good practices and lessons of EIA in Asia. In this session, summaries and examples of good practices in the conference will be reported.

### MOEJ's initiatives to strengthen EIA in Asia

Abe, Tatsuya; Omori, Keiko; Fikushima, Keizo; Aizawa, Hirofumi; Sakata, Shuichi

Ministry of Environment Japan (MOEJ) will hold an international conference on the day before IAIA16 for matching needs and good practices by way of further cooperation between Asian countries and international organizations.

### Toward sound implementation of EIA in Asia

Matsumoto, Ikuko; Genjida, Naoko; Sano, Daisuke; Takahashi, Yasuo; Tuji, Masami; Urago, Akiko

This paper is based on an EIA system and implementation study in seven Asian countries and identifies key challenges, support needs, and good practices corresponding to the key challenges.

### JICA's initiatives to strengthen the EIA system

Shibuya, Yukihiko

Japan International Cooperation Agency (JICA) introduces efforts to strengthen EIA systems in Asian countries by providing capacity development opportunities, and illustrates activities for environmental and social considerations (ESC) in infrastructure development projects.

### Ecosystem services and the development of pioneering programs

Dunn, Bruce; Kunzer, Mark

Quantification of ecosystem services leads to improved planning and management of Asia's large-scale ecosystems. Pioneering programs utilizing ecosystems services data have resulted in improved management of large-scale ecosystems.

### KEI's EA Index: A tool for guiding development projects

Kim, Ji Young; Yoo, Heonseok

Korea Economic Institute's (KEI) EA Index was designed to measure governance of the EIA review system in Korea. The index may be used as an indicator of being more environment-friendly.

# Concurrent sessions

## Asian SEA, EIA and ecosystem service assessment: Biodiversity and ecosystem services (I)

Wednesday 11 May | 16:30-18:00 | 431+432

Paper session

Chair(s): Kii Hayashi

This Asian session will give you good knowledge on biodiversity and ecosystem service assessment good practices in this region in particular, as well as provide you with a good human network in Asia. We welcome your participation.

### Examples of biodiversity offsets in Japan

Aida, Yoshiaki; Mizuochi, Tomoko; Omori, Keiko; Aizawa,

Hirofumi; Fukushima, Keizo

The aim of this presentation is to introduce how offset areas are being managed in communities, using examples of mitigation measures of negative impact to biodiversity in Japan.

### The evaluating method of marine ecological damage

Chen, Fenggui; Wu, Yaojian; Lin, Zhilan; Fang, Jing; Li, Qingsheng

The evaluation of marine ecological damages involves multidisciplinary crossing and combination, which needs to be constantly improved and modified in theory and practice.

### Study of *Gobiobotia Naktongensis*

Na, Jin-Young; Hwang, Sang-Chul; Yoo, Ji-Yeon; Yang, Hyun

In this study, restoration for *Gobiobotia Naktongensis* of Naeseong stream is confirmed. Discharged fry moved along the stream and successfully adapted themselves to the natural environmental condition.

### Quantitative analysis of Chinese national EIA

Xu, Jiaying; Murayama, Takehiko; Nishikizawa, Shigeo

This paper studies the characteristics of EIA reports on the national level by analyzing the EIA documents of the whole year of 2014 from the viewpoint of quantitative analysis perspective.

### Applying soundscape ecology to ecosystem evaluation

Ainota, Koji; Tanaka, Akira

We investigated the soundscapes of 26 urban green areas and calculated the proportions of biophony and anthrophony. As a result, there was positive correlation between biophony value and green ratio.

## Best practice in adopting a strategic approach to sustainable development

Wednesday 11 May | 16:30-18:00 | 221

Panel discussion

Chair(s): Pavit Ramachandran

Strategic environmental assessment (SEA) is gaining traction as countries recognize the imperative of integrating environment and social considerations into policy and planning processes. This session will share knowledge on country uptake of SEA in the Greater Mekong Subregion and more widely the Asia-Pacific region and best practice in its application.

### Strategic environmental assessment and AECEN

King, Peter

Use of SEA as an upstream environmental planning tool in the Mekong region as a useful compliance strategy for AECEN.

### Best practice in SEA in the GMS

Watson, Iain

Strengthening of the SEA system in the Greater Mekong Subregion (GMS) will require establishment of enabling legal environment, overcoming negative perceptions, an effective communication strategy, technical capacity development, and establishment of monitoring and evaluation (M&E) systems.

### SEA of power development plan in Viet Nam

Pokhrel, Sumit; Soussan, John; Nguyen Thi Thu, Huyen

Application of SEA resulted in a better power development plan in Viet Nam, incorporating measures for better energy security, lower investment costs, and improved environmental and social safeguards.

## International comparison of public participation indicators

Thursday 12 May | 09:00-10:30 | 141+142

Theme forum

Section: Public Participation

Chair(s): Kenichiro Yanagi, Noriko Okubo, Yukari Takamura, Yayoi Isono, Naoyuki Sakumoto, Takehiko Murayama

This session contributes to the development of criteria and indicators of public participation and consensus building by grasping the current status of public participation in Asia.

### Public participation in EIA

Isono, Yayoi

The reality of inadequate public participation is made clear through SEA cases in Japan and China. An appeal system and roundtable or deliberation should be required as indicators of public participation.

### Public participation indicator in EIA

Okubo, Noriko

This presentation discusses participatory instruments of some Asian countries in EIA, compares them with other regions, and identifies the important factors to promote an effective participation.

### Access and storage of EIA reports after disclosure

Urago, Akiko; Kasagi, Hiroo

EIA documents are disclosed in a defined period in Japan. But most of the documents cannot be accessed and no storage rules exist. The authors researched various laws and accessibilities to EIAs.

### EIA participation in Southeast Asia as democratization development process

Sakumoto, Naoyuki

EIA participation is highly recommended to accelerate the democratization process. Whether environmental democracy indexation about Asia can reflect the "real" situation is questioned. Discussions are made to fill the perception gaps.

### Aarhus Convention and Japanese EIA systems

Harashina, Sachihiko

The Aarhus Convention is a norm for sustainable development, and IA should be the major way. Various Japanese EIA systems, domestic and international cooperation, were assessed on this point.

## Developments and trends in HIA and health in EA in Asia and Pacific regions

Thursday 12 May | 14:30-16:00 | 221

Paper session

Section: Health

Chair(s): Robert Bos, Salim Vohra

The purpose of this session is to contribute toward a shared understanding of how health and wellbeing can be better included in infrastructure planning and approvals through impact assessment. The session will be comprised of presentations and a facilitated group discussion.

### HIA capacity building needs assessment in SE Asia

Inmuong, Yanyong; Chandanachulaka, Siriwan

This presentation will discuss HIA capacity development needs in SE Asia and the achievements to date of the HIA Thematic Working Group of the Ministerial Regional Forum on Environment and Health.

### ADB and HIA: Improving health and equity in SE Asia

Birley, Martin; Silva, Filipe

ADB is investing over 1M USD on strengthening HIA within ADB and the Greater Mekong Subregion (GMS). This presentation will discuss early findings and bring together participants to discuss how this project is taken forward.

### ADB: Economic, social, and health development in Asia

Roth, Susann

ADB is a pioneer in promoting health in development in SE Asia. This presentation will discuss ADB efforts to promote regional public health and its future direction for healthy development.

# Concurrent sessions

## Role of NGOs in HIA capacity building of Mongolia

*Lkhagvasuren, Oyunaa; Tamburrini, Ame-Lia; Janes, Craig; Bayanbileg, Battugs; Gonchig, Temuujin; Sugar, Saruulbat*

HIA in Mongolia is a new subject, and there are very few professionals who understand its importance and have knowledge and skills to conduct it. Non-governmental organizations (NGOs) can play a crucial role in this process.

## Drinking water quality in public sector schools

*Ayub, Abida; Gulkhan, Yasir*

Using EIA as a tool to assess health and environmental impacts of the current drinking water distribution system in public sector schools in Lahore.

## ASEAN EIA update and roundtable

Friday 13 May | 11:00-12:30 | 141+142

Panel discussion

Chair(s): *Matthew Baird, Peter King*

The Association of Southeast Asian Nations (ASEAN) EIA roundtable will provide excellent discussion on the future of EIA in the ASEAN economic community (AEC). We examine recent developments in Myanmar, Thailand, Cambodia, Indonesia, Laos PDR, and Viet Nam. There will be lots of opportunities for questions.

## Regional overview of EIA in ASEAN

*Baird, Matthew*

This will be an overview over the recent changes to EIA in ASEAN, with a particular focus on the changes to public participation in EIA.

## Regional collaboration on EIA: A model for ASEAN

*Owen, Christy*

Increased economic integration in ASEAN will lead to increased investment in infrastructure. This presentation will present a model for collaboration on EIA to aid in reducing the regional impacts.

## Myanmar's evolving EIA framework

*Cosier, Martin*

The evolution of Myanmar's EIA framework and its significance to the country's ongoing democratization and political reform processes, with a focus public participation and capacity-building efforts.

## Compliance and enforcement of EIA and EMPs in Asia

*King, Peter*

Outlining the value of AECEN in ensuring compliance and enforcement of EMPs and mitigation measures in EIAs in Asia.

## Asian SEA, EIA, and ecosystem service assessment: Biodiversity and ecosystem services (II)

Friday 13 May | 11:00-12:30 | 221

Paper session

Chair(s): *Myungjin Kim*

This Asian session will give you good knowledge on biodiversity and ecosystem service assessment good practices in this region in particular, as well as provide you with a good human network in Asia. We welcome your participation.

## Evaluation for regional-scale ecosystem services

*Ooba, Makoto; Hayashi, Kiichiro; Ito, Hideyuki*

We discuss a system developed to screen for regional-scale offset sites based on an integrated evaluation of terrestrial ecosystem services (ES); the importance of ecosystem continuity, especially in urban areas; and usefulness of the methodology for eval

## Valuing ecosystem services from Rapid Resource Analysis (RRA)

*Sanchez-Escalona, Katherine; Emmanuel, Lleva;*

*Nicomedes, Briones*

Strengthening current EIA practice by appending economic analysis to the study.

## Equivalency of forest culture ecosystem services in Nagoya

*Hayashi, Kiichiro; Ooba, Makoto*

Forest-related cultural ecosystem service was studied as a case study in Nagoya, Japan. A combination of field survey and a questionnaire survey was conducted.

## Random walk simulator as an EIA tool

*Kim, Ji Young; Ro, Tae Ho*

Ecological Network Simulator using random walker was developed to estimate changing patterns of animal movements caused by artificial barriers imposed to the present state after project completion.

## Integrated policies toward sustainable resource management in Asia (I)

Friday 13 May | 11:00-12:30 | 223

Paper session

Section: *Impact Assessment Law and Policies*

Chair(s): *Helmut Tabar*

This session will explore the potential strategies to promote sustainable resource management in Asia, including technology innovation to improve resource productivity, integral policies to decouple economic growth from environmental pressure, promotion of technology transfer, and collaboration between developed and developing nations.

## Impacts of existing policies on emission trading

*Xu, Yuan; Zhou, Xiuru; Zhang, Bing*

Non-economic incentives, especially command-and-control policies, could seriously distort mitigation decisions and the effectiveness of emission trading.

## Verification of clean air technologies in GTCC

*Yamamoto, Taizo; Masatsugu, Mitsuru; Okada, Osamu*  
Clean air technologies for non-air-pollution in gas turbine combined cycle (GTCC) makes EIA simple and the construction period short.

## Sustainability assessment in Hong Kong: Who cares?

*Ng, Cho Nam*

This paper presents a preliminary review of the role of the sustainability assessment system in Hong Kong and discusses the key institutional, methodological, and operational issues of the system.

## Simulation of water and outflow temperatures in the Ertan Reservoir

*Changjun, Qi*

Mike11 Reservoir module was applied to establish the two-dimensional vertical stratification temperature model for simulating the reservoir water temperature and discharge water temperature in the Ertan Reservoir.

## Issues and constraints in the implementation of the Water Quality Management Fund

*Dayao Manaog, Melanie; Metin, Rolando; Peneyra,*

*Rommel; Caparas, Elvira*

The study attempts to determine the issues and constraints in the implementation of the Water Quality Management Fund and provide the recommendations to address technical gaps.

## Asian SEA, EIA, and ecosystem service assessment: EIA and SEA (I)

Friday 13 May | 14:30-16:00 | 221

Paper session

Chair(s): *Makoto Ooba*

This Asian session will give you good knowledge on EIA/SEA assessment good practices in this region in particular, as well as provide you with a good human network in Asia. We welcome your participation.

## Taiwan energy SEA: Past, present, and future

*Wu, Yenyu; Ma, Hwongwen*

Energy SEA in Taiwan has been conducted for eight years. We try to investigate the challenges and the applicability of SEA process. Finally, we try to create suitable SEA processes in Taiwan.

## Impact of awareness raising on waste separation

*Murase, Noriaki; Murayama, Takehiko; Sato, Yuriko;*

*Nishikizawa, Shigeo*

This research measures the impact of awareness-raising of the project on residents' behaviors for waste separation by Cluster Randomize Control Trial and analyzes changes in their behaviors.

## Evaluation of the EIA system in Bangladesh

Ahmed, Tanvir; Ferdousi, Shakil Ahmed

EIA in Bangladesh is presently used as a tool for project justification rather than as a project planning tool. The limitations of the current EIA system and possible ways to overcome it is discussed.

## System thinking: Extended producer responsibility

Sulami, Antonius Priyo Nugroho; Murayama, Takehiko; Nishikizawa, Shigeo

Study about the potential of Extended Producer Responsibility (EPR) implementation in Indonesia, considering current regulations, system, and the gap with the selected case studies.

## Water quality simulation of flood control dam

Lee, Han-Jin; Jung, Yong-Moon; Hwang, Sang-Chul; Hwang, Hyun-Dong

This study was carried out to simulate the changes of water quality before and after dam construction for flood control using Hydrologic Simulation Program Fortran (HSPF) watershed model and Environmental Fluid Dynamics Code (EFDC).

## Integrated policies toward sustainable resource management in Asia (II)

Friday 13 May | 14:30-16:00 | 223

Paper session

Section: *Impact Assessment Law and Policies*

Chair(s): *Helmut Yabar*

This session will explore the potential strategies to promote sustainable resource management in Asia, including technology innovation to improve resource productivity, integral policies to decouple economic growth from environmental pressure, promotion of technology transfer, and collaboration between developed and developing nations.

## Environmental management zonation for coal mining

Hai-qing, Geng

To make "one size fits all" policies more suitable to regional resources and environmental capacities, the concept of environmental management zones for industries has been brought forward and practiced in coal mining of Inner Mongolia.

## Renewable energy policy in the Asia Pacific

Haymon, Kirsty

Investors in renewable energy projects are currently hindered by weak legislative frameworks. Drawing on recent project experience, key challenges and measures to compensate will be illustrated.

## Changes and achievements in Chinese IR and SIA

Shi, Guoqing; Zhou, Jian

Changes and achievement in the policies and practices of involuntary resettlement and social assessment in China from the 1980s to 2010s.

## Regional collaboration on EIA: A model for ASEAN

Owen, Christy

Increased economic integration in ASEAN will lead to increased investment in infrastructure. This presentation will present a model for collaboration on EIA to aid in reducing the regional impacts.

## Asian SEA, EIA, and ecosystem service assessment: EIA and SEA (II)

Friday 13 May | 16:30-18:00 | 221

Paper session

Chair(s): *Oyunaa Lkhagvasuren*

This Asian session will give you good knowledge on EIA/SEA assessment good practices in this region in particular, as well as provide you with a good human network in Asia. We welcome your participation.

## Risk assessment on Korean agro-industrial complex

Hong, Sang-pyo; Kim, Tae-keun

Environmental risk assessment was implemented to minimize the risk of highly pathogenous characteristics of biological products manufacturing at a Korean agro-industrial complex.

## An analysis on risk assessment in China's EIA

Xu, Juan; Murayama, Takehiko; Nishikizawa, Shigeo

As for China, EIA and safety assessment are independent. EIA documents, however, are required to contain risk assessment. This research aims to find the features of risk assessment (RA) in Chinese EIA system.

## Impact analysis of wind power plant in Thailand

Smuthkalin, Chanokporn; Murayama, Takehiko; Nishikizawa, Shigeo

This research, focused on negative impacts of a wind turbine on a nearby community, concluded that the project has had significant impacts of noise pollution, overshadowing, and visual impacts, and that the community wants government to reconsider the actual environmental impact of the project.

## Research on environmental comparison and selection

Lin, Zhilan; Wu, Yaojian; Li, Qingsheng; Chen, Fenggui; Fang, Jing

Both environment and cost shall be taken into consideration in scheme comparison and selection. The result could be practical and feasible.

## New socio-political ecology of Hong Kong

Ng, Paddy; Ip, Fu-keung; David, Chu, Jeremy; Yeung, Theresa

New approach and perspective is needed for engaging the digital-raised generation in policy consultation, as they request "horizontal" participation in public decision making through a dynamic "open-ended social process."

## Asian SEA, EIA, and ecosystem service assessment: EIA and SEA (III)

Saturday 14 May | 09:00-10:30 | 221

Paper session

Chair(s): *Seong-Ryong Ha*

This Asian session will give you good knowledge on EIA/SEA assessment good practices in this region in particular, as well as provide you with a good human network in Asia. We welcome your participation.

## Assessment of land use change in Khon Kaen

Ito, Hideyuki; Ko, Sho; Watanabe, Keiji; Fujii, Takahiro; Hayashi, Kiichiro

This paper analyzes the various impacts of land use change in Khon Kaen, Thailand.

## Ecological impact assessment and conformance

Swangjang, Kanokporn

To better incorporate ecological-based objectives in environmental impact assessments, connections between eco-content and different stages of an EIA are strongly recommended, particularly the importance of relationships between guidelines and environment

## Comparison of EIA systems between Thailand and Japan

Suwanteep, Kultip; Murayama, Takehiko; Nishikizawa, Shigeo

The study aimed to compare the procedures of EIA systems between Thailand and Japan using transportation projects as a case study. Key aspects of the system in the project will be summarized.

## Environmental burden of tanneries in Bangladesh

Ahmed, Tanvir; Chowdhury, Zia Uddin Md.

The environmental hotspots in leather production were identified and the ecological and human health burden of these processes were evaluated using life cycle assessment (LCA) method adopting a "cradle to gate" approach.



# Concurrent sessions

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- ▶ How can we **support IA professionals** in effectively meeting challenges associated with water IA, management, and planning?
- ▶ What are the **new approaches** in impact assessment?



## ABSTRACTS INVITED THROUGH 31 MAY



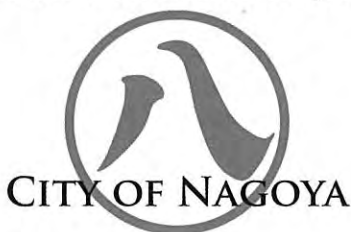
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## EMERGING ISSUES ON RESILIENCE AND SUSTAINABILITY

### Building resilience for long-term well-being

Wednesday 11 May | 11:00-12:30 | 234

Theme forum

Chair(s): Yoichi Kumagai, Maria do Rosário Partidário

- This session looks into what builds resilience for long-term wellbeing and how we can make that happen. Main questions: What are the key elements in building resilience? How to incorporate them in planning and assessment instruments? How to create awareness on the difference between good and bad resilience?

#### Resilience and well-being: An SIA perspective

Aucamp, Ilse

- This paper explores what resilience and well-being entails in a social context, and how the practice of SIA should change to ensure that social development outcomes result from SIA processes.

#### Resilience in spatial planning and project design

Nuesink, Jan

- Discussing mainstreaming resilience thinking as an inclusive and cross-cutting theme in planning and design. Focusing on social values of nature and green spaces in urban development, with case examples.

#### Incorporating a resilience-based perspective on IA

Ramirez-Sfeir, Daniella

- This paper reviews some emergent experiences (Canada and OECD), reflecting on the entry points and challenges of those attempts, and analyzes the opportunities and gaps in the incorporation of this focus on a Global South country, like Chile, particularly vulnerable to climate change.

#### Natural disasters: Flooding and resilience

Isa, Mohamed Hasan

- Flooding, one of the natural disasters, is also a man-made disaster caused by ignorance of mankind to climate change globally. Designers now rethink and build resilience structure against flooding.

#### Building city resilience in practice

Onishi, Risa; Tang, Thomas S.K.; Ip, Marcus; Furukawa, Kazuto

- This paper examines how different cities are using the cities resilience scorecard in practice, and what challenges they are facing to implement resiliency strategies.

### How to respond to public concerns on resilience and sustainability

Wednesday 11 May | 14:30-16:00 | 221

Paper session

Section: Health

Chair(s): Sachihiko Harashina, Giuseppe Magro

IA should be a communication channel to respond to public concerns on resilience and sustainability. This forum invites input from various societies to review the state of the art of concise EIA/IA systems. How to introduce such systems to respond to public concerns will be discussed.

#### Global search for both efficiency and effectiveness

Wasserman, Cheryl

The paper describes recent country successes to make EIA and related planning, permitting and enforcement more efficient and effective through linked and flexible information technology platforms potentially for use internationally.

#### EIA information of evaluation on public works

Sugimoto, Takuya

This presentation clarifies an actual situation of reference of environmental information based on EIA in the ex-ante evaluation in Japan.

#### Public behavior and public participation in Turkey

Albayrak, Ali; Turan, Volkan

Turkey has a variety of cultural differences between the regions. Due to this reason, the behavior of the public shows different interests even for similar types of EIA projects in Turkey.

#### ESIA for a large PPP hospital project in Turkey

Ichikawa, Nobuko

The presentation shows key issues and mitigation measures of the ESIA carried out for a large-scale greenfield PPP hospital project in Turkey.

### Picture this: Images of resilience and sustainability

Saturday 14 May | 09:00-10:30 | 233

Paper session

Chair(s): Angus Morrison-Saunders, Reece Alberts

A picture says a thousand words! Presenters will display and explain their images that communicate about resilience or sustainability in impact assessment. Audience participation to select the best image at the session is invited.

#### St. Helena Island airport project EMP

Walmsley, Bryony; Van Neel, Annina

Change management was essential on this huge, remote airport construction site on St. Helena Island to ensure that the environmental management plan (EMP) remained relevant, practical, auditable, and up to date.

#### Sustainability assessment of Tokyo Olympic plans

Kumagai, Yoichi

The study specifies and applies a sustainability assessment framework to the 2020 Tokyo Olympic plans to see whether modest application of the framework provides useful insights for learning.

## ENVIRONMENTAL INFORMATION INFRASTRUCTURE FOR SUSTAINABLE DEVELOPMENT

### What does IA that delivers resilience and sustainability look like?

Thursday 12 May | 09:00-10:30 | 221

Theme forum

Chair(s): Angus Morrison-Saunders, Jack Krohn

Come and join our World Café discussions on state-of-the-art impact assessment for resilience and sustainability. Network, meet new people and discuss the big conference themes:

- What must IA for resilience/sustainability include?
- How can offsets deliver genuine resilience/sustainability?
- How can long time-frames be included?
- How should IA for resilience/sustainability be implemented?

### As good as it gets: Working toward quality in impact assessment (I)

Thursday 12 May | 11:00-12:30 | 222

Paper session

Chair(s): Ben Cave

Quality underpins successful IA practice. But quality can be elusive. What makes a good quality assessment? How this can be delivered? We will foster partnership between IA practitioners and academics. We will hear examples from different cultural contexts. Join us on our search for good quality IA.

#### Ensuring offensive quality assurance in EIA

Kørnø, Lone

How to create good quality IA—that makes a difference—through professional competence development and partnerships.

#### Impact significance in EIA reports

Reddy, Gopu Venugopala; Jyothirmayi, Janjanam; Reddy, Manchala Srinivasa

The criteria for impact significance as mentioned in the scoping documents was assessed in 120 EIA reports submitted by project proponents to Moefcc and in guidance manuals of EIA.

#### EIA performance analysis in the case of Korea

Kim, Taehyoung; Kang, Eugene

Korea Environment Institute (KEI) analyzed numerous data related to EIA, elicited the environmental indicators of each area reflecting each project, and estimated the economic value on the EIA performance analysis.

#### Proactive quality

Fothergill, Josh; Murphy, Jo

Quality in IA is no accident! The UK has spent the last decade building its EIA community of practice to proactively collaborate. Listen as we share our story and what we learned.

# Concurrent sessions

## Innovative communication of project and impacts

Friday 13 May | 11:00-12:30 | 431+432

Paper session

Chair(s): Margret Ardadottir, Runar Dymundur Bjarnason

The session focuses on creativity informing the public on the EIA process and improving decision making. A new form of an online digital non-technical environmental statement for a wind farm will be presented, followed by presentations of innovation and new techniques to present information in more accessible formats.

## Communicating a new energy option and its impacts

Bjarnadóttir, Jóna

A new online non-technical environmental statement for wind farms in Iceland will be introduced along with other means to inform and engage the public.

## Resilience in IA reporting: Drive for innovation

Eijssen, Paul; Nuesink, Jan

Impact assessment reporting is still very much about old-school text and paper formats. We explore the need for a step change and present opportunities and challenges for digital IA.

## EIA reporting for energy and mining projects

Krichbaum, Randall

This presentation discusses current EIA reporting methods in the energy and mining sectors, and looks at some new techniques being used to present this information in more accessible formats.

## Back to the Future: 30 years of Australian EIA

Lamb, Melissa; Weston, Donna

Lessons from EIA of development proposals in Australia over the last 30 years. Can the last 30 years be used to project EIA practices in 2045?

## Challenges for the EIA in post-industrial Lombardy

Sciunnach, Dario

Post-industrial sustainable redevelopment in Lombardy (northern Italy) can be supported by a procedurally simplified, scientifically sound and accountable EIA. Local stress factors require specific consideration to prevent social conflict.

## As good as it gets: Working toward quality in impact assessment (II)

Friday 13 May | 14:30-16:00 | 222

Paper session

Chair(s): Rob Verheem

Quality underpins successful IA practice. But quality can be elusive. What makes a good quality assessment? How this can be delivered? We will foster partnership between IA practitioners and academics. We will hear examples from different cultural contexts. Join us on our search for good quality IA.

## Spot checking to assure environmental integration

Beier, Anja-Christina

In order to improve quality assurance and focus more on implementation, IAs are complemented with a spot check on how thematic issues such as environment are being implemented in practice.

## Legal regulation role on Thailand IA effectiveness

Chanchitpricha, Chaunjit

Evolving IA legal regulation enforcement in Thailand is investigated along with the extent to which it can contribute to quality and effectiveness of IA practice.

## Ensuring impact assessment requirements in the legal process

Ushijima, Hitoshi

This paper argues how we ensure regulatory, environmental, and social impact assessment requirements in the legal process, if these requirements are not fully complied with and/or enforced by relevant parties.

## Improving the method of alternatives analysis

Kamijo, Tetsuya

This paper proposes alternatives analysis using principle component analysis, which may clarify reasons for selecting the most suitable option, and be a very simple and practical technique.

## As good as it gets: Working toward quality in impact assessment (III)

Friday 13 May | 16:30-18:00 | 222

Panel discussion

Chair(s): Alan Bond

Quality underpins successful IA practice. But quality can be elusive. What makes a good quality assessment? How this can be delivered? We will foster partnership between IA practitioners and academics. We will hear examples from different cultural contexts. Join us on our search for good quality IA.

## SEA quality assurance: Contextual variation

Onyango, Vincent

This paper applies comparative analysis to explore the role of contextual factors in determining quality assurance in nine SEA systems, representing developing, emerging, and developed countries.

## Quality and evidence: An epidemiologist's view

Orenstein, Marla

An estimated 95% of published research findings are false. This presentation describes some of the approaches and criteria used by epidemiologists to determine if published research findings are "any good."

## Advisory committees to improve IA quality

Harashina, Sachihiko

Advisory committees could make the quality of IA better. As a good examples in Japanese local governments, Fujimae wetland, Nagoya's case and JICA's environmental and social considerations (ESC) system will be illustrated and examined.

## Environmental Information Platform for a resilient and sustainable society

Saturday 14 May | 09:00-10:30 | 431+432

Panel discussion

Chair(s): Hiromichi Fukui

This forum examines how an Environment Information Platform (EIP) can help make our society resilient and sustainable and shows some use cases. Information technologies such as GIS capacities are radically changed, and we face new challenges: more data, large heterogeneity, variable quality, and new tools to support—especially citizen science.

## Indirect impact assessment of a road in Paraguay

Villalba, Alberto; Reymondin, Louis

Using satellite imagery to detect deviations from the usual vegetation patterns, this study analyzes the past, current, and potential future deforestation resulting from a planned road improvement in Paraguay.

## Assessing sustainable water use and local economy

Kim, Ikjae; Kong, Inhye; Kim, Yeonjoo

This study is meaningful to encompass various drivers which affect sustainable water use in multi-structural approaches. We also explore the relationship between local economic status and conditions.

## In support of big data for better EA

Jacobsen, Kyla; Scott-Brown, Miles; Taylor, Tim

Making sense of big data can lead toward better decisions in environmental impact assessment.

## INTERNATIONAL COOPERATION AND SUSTAINABLE DEVELOPMENT

### IFI's accountability mechanisms: Resilience and sustainability (I)

Wednesday 11 May | 14:30-16:00 | 234

Paper session

Section: *Impact Assessment Law and Policies*

Chair(s): *Alfredo Abad, Dingding Tang*

The session will present lessons learned in the course of the activities of the IFI's independent accountability mechanisms. Participants are invited to discuss how to use these lessons to build sustainable projects and respond to the needs of the citizens and communities affected by the projects financed by IFIs.

#### Inspection panel lessons:

##### Environmental assessment

*Castro de la Mata, Gonzalo; Barlas, Dilek; Milsztajn, Tamara*

This presentation will discuss lessons from the last 22 years of the World Bank Inspection Panel's cases related to environmental assessment in a range of regions and sectors.

##### From compliance to problem solving: The EIB model

*Alcarpe, Felismino*

This session will illustrate the European Investment Bank's (EIB) model of citizen-driven accountability, using specific examples of compliance reviews and other problem solving techniques, and focusing on lessons learned.

##### Enhancing accountability through community engagement

*Marquez-Mees, Victoria; Heiss, Eva*

The intervention of the Independent Accountability Mechanism's facilitating a dialogue process helped the effective implementation of ensure that Inter-American Development Bank's (IADB) safeguards and led to increased community engagement in the project.

### The role of EA in the "One Belt One Road" initiative (I)

Wednesday 11 May | 14:30-16:00 | 223

Paper session

Chair(s): *He Xu, Kin Che Lam, Rob Verheem, Hu Tao*

This session focuses on implication of EA to the hot strategy "One Belt One Road." There are a lot of questions to be discussed, such as what are the guidelines and criteria to be followed by the project owners? How to deal with the projects where the host countries have pretty weak environmental governance systems? Is it necessary to let international organizations be involved in the EA?

#### What kind of EIA is needed for OBOR initiative?

*Lam, Kin-Che*

With regard to the interests and priorities of different parties involved, this paper examines what kind of EIA is needed to assure sustainability and how the IA profession can contribute.

### SIA for China-Pakistan economic corridor region

*Zhang, Ruilian; Shi, Guoqing*

The China-Pakistan Economic Corridor (CPEC) is playing the bridgehead role in the development of China's "One Belt, One Road" (B&R) strategy. SIA for the CPEC region is mainly to reduce the negative risks.

### The role of EA in the "One Belt One Road" initiative (II)

Wednesday 11 May | 16:30-18:00 | 223

Paper session

Chair(s): *He Xu, Kin Che Lam, Rob Verheem, Tao Hu*

This session focuses on implication of EA to the hot strategy "One Belt One Road." There are a lot of questions to be discussed, such as what are the guidelines and criteria to be followed by the project owners? How to deal with the projects where the host countries have pretty weak environmental governance systems? Is it necessary to let international organizations be involved in the EA?

#### EA institutional for countries in Silk Road

*Ren, Wei; Song, Jian*

This paper explores impact assessment legislation and institutional backgrounds on infrastructure investment for six countries in the Silk Road economic belt.

#### The SEA of the "Belt and Road"

*Yao, Rong; Xu, He; Wang*

This SEA enhances "The Belt and Road" with its advice on effective use of resources and environmental advantages. We discuss improving environmental quality through investment guidance.

#### Social risk of transport projects in Pakistan

*Shang, Wu*

This article analyzes social risks of transport infrastructure projects under the framework of the "China-Pakistan Economic Corridor."

### IFI's accountability mechanisms: Resilience and sustainability (II)

Wednesday 11 May | 16:30-18:00 | 234

Paper session

Section: *Impact Assessment Law and Policies*

Chair(s): *Alfredo Abad, Dingding Tang*

The session will present lessons learned in the course of the activities of the IFI's independent accountability mechanisms. Participants are invited to discuss how to use these lessons to build sustainable projects and respond to the needs of the citizens and communities affected by the projects financed by IFIs.

### Conflict drivers in development projects and tools

*Barbieri, Gina; Gratacos, Osvaldo*

This discussion focuses on the following tools, utilizing case examples of their application: contextual assessment (Chad Oil Pipeline), capacity building (Uganda Forestry Project), joint impact assessments (Mongolia Mining Project), third party facilitators (Uganda Forestry Project, Albania Oil Project) and joint development forums (Uganda Forestry Project).

### Decade of ADB accountability policy implementation

*Shah, Jitendra (Jitu)*

This presentation will summarize the Asian Development Bank (ADB) Accountability Mechanism's ten years of experience with the processes, cases received, outcomes of compliance review and problem solving, and lessons learned.

### Accountability and engagement in AFD projects

*Touré, Sekou*

The performance of the independent review mechanisms shows various trends in complaints filed about African Development Bank projects.

### Climate change and IA: Good practice cases (I)

Thursday 12 May | 11:00-12:30 | 234

Paper session

Section: *Climate Change*

Chair(s): *Arend Kolhoff*

This session will provide the opportunity for people and organizations to share their good practice experiences with the integration of climate change issues in EIA as well as SEA.

#### Can science save us from ourselves?

*Andrus, Karina; Martin, Lee*

In 2013, flooding occurred in southern Alberta and affected over 100,000 people. Can rebuilding after natural disasters utilizing predictive science and modeling adequately address global climate change?

### International cooperation for REDD+ in Mozambique

*Bettencourt, Pedro; Maia, Diogo; Dias, Ana*

Importance of international cooperation for designing/implementation of Mozambique's National Strategy for Reducing Emissions from Deforestation and Degradation and its impacts in rural communities.

### Tool to assess U.S. climate change vulnerability

*Blue, Julie*

A robust Vulnerability Assessment Tool is able to make large amounts of relevant information, including well-researched climate information at defensible scales, easily accessible.

# Concurrent sessions

## How Canada integrates climate change in EA

*Groulx, Erin*

Integrating climate change into environmental assessments conducted under the Canadian Environmental Assessment Act 2012 and discussion of mitigation and adaptation approaches applied in Canada.

## Optimized site selections for CCA & BMP measures

*Lee, Ji heon; Han, Hae jin; Kim, Byung Sik; Ha, Sung Ryong*

To establish better strategic river basin planning for climate change analysis (CCA) and best management practice (BMP) measures, spatiotemporal distribution of BOD, T-N, and T-P loads were analyzed based on RCP scenarios and regional development plans.

## EIA and monitoring protocols for seabed mining in deep-sea environments

Thursday 12 May | 11:00-12:30 | 231

Panel discussion

Chair(s): *Hiroyuki Yamamoto*

Deep-sea environments are faced with cumulative effects from human activities. Recent environmental issues relevant with seabed mining appeared and the reality of impact are discussed. Practical methods of survey, monitoring, and EIA for deep-sea habitats are developed. Ecosystem-based management is needed for sustainable usage of deep-sea environments.

## Effects of seabed mining: New Zealand experience

*Clark, Malcolm R.; Rowden, Ashley A.; Lamarche, Geoffroy; MacDiarmid, Alison*

Recent work on deep-sea mining issues in New Zealand is described, including ecological risk assessments and guidelines for environmental impact assessments. Two case studies highlight key scientific requirements.

## EIA in relation to ocean resource development in Japan

*Fukushima, Tomohiko*

An overview of the history of a Japanese environmental assessment study in relation to deep-sea mineral resources development and introduction of a new project initiated in 2014.

## Starting up a marine science sustainable partnership

*Henocque, Yves*

Whatever kinds of deposits are at stake, one place for scientists to take an active role is certainly in communicating the full value of deep-sea communities.

## Collaboration and capacity building: The key to resilient IA practice?

Thursday 12 May | 16:30-18:00 | 141+142

Paper session

Chair(s): *Jash Fothergill*

Collaboration is a key trait in progress toward sustainability. This paper session will explore how the IA community is collaborating to make practice more resilient to the increasing scale and complexity of global sustainability challenges

## Improving IA through international collaboration

*Suzuki, Yohei; Sakaguchi, Manabu; Kaku, Tomoko; Green, Rebecca*

This presentation summarizes a project to develop the implementing capacity of EIA in Sri Lanka and Lao PDR through the bilateral arrangement with Japan.

## Collaboration effectiveness between IEMA and HKIEIA

*Leung, Henry; Fothergill, Josh*

Effectiveness of the collaboration and capacity building for the MOU entered between IEMA (Institute of Environmental Management & Assessment) and HKIEIA (Hong Kong Institute of Environmental Impact Assessment) is examined in terms of communication tools, capacity, and skills development for the IA industry.

## Local teams lead the way in Solomon Islands

*Wilson-Clark, Charlie*

A consultation program for a Solomon Islands environmental and social impact assessment (ESIA) has demonstrated how collaboration with local experts and culturally-appropriate approaches to engagement can provide the building blocks for productive relationships and local capacity building.

## Collaborative moose health monitoring program

*Lis, Doron "Rocky"; Shandro, Janis*

A progressive approach to environmental assessment of mines includes monitoring traditional foods. An example of this approach is described with a collaborative moose health monitoring program.

## USAID's EIA capacity building: Lessons 1995-2015

*Fisher, Weston; Stoughton, Mark; Hall, Patrick*

Lessons from USAID's EIA Capacity Building Program in small-scale development activities (1995-present).

## Climate change and IA: Good practice cases (II)

Thursday 12 May | 16:30-18:00 | 234

Paper session

Section: *Climate Change*

Chair(s): *Arend Kolhoff*

This session will provide the opportunity for people and organizations to share their good practice experiences with the integration of climate change issues in EIA as well as SEA.

## Climate change and IA for development cooperation

*Emerton, Wendy*

This paper will share the lessons learned from the incorporation of climate change into an IA for a community-based climate change adaptation project in Timor Leste.

## Flood prevention as a resilience measure

*Lee, Shirley*

Carefully planned and designed flood prevention projects that optimize benefits and mitigate impacts are effective resilience measures to combat climate change associated heavy rainfall phenomena.

## Climate resilience: Bringing the community back in

*Nakamura, Akihiro; Crowley, Kate*

This paper comparatively analyzes disaster preparedness in Japan and Australia and investigates the optimum policy framework for bringing the community back in.

## Analysis of facility vulnerability to climate change

*Sage, Paul; Bilney, Mick; Yorzyk, Jeff*

This presentation will provide an overview of how this risk-based approach was used to assist NOAA in determining potential threats of climate change to its mission-critical facilities and operations.

## Impact of climate variability on Aman rice yield

*Saha, Toma Rani; Quadir, Dewan Abdul*

The paper deals with the relationship of monthly temperature and rainfall with Aman's rice yield. The result will help to develop the model for predicting Aman's rice yield with climate variability.

## The role of impact assessment in reaching the Sustainable Development Goals

Friday 13 May | 16:30-18:00 | 234

Workshop

Section: *Health*

Chair(s): *Geetha Ramesh, Filipe Silva*

This workshop will explore the role of impact assessment, and especially HIA, and how practitioners have played in supporting the achievement of the Millennium Development Goals; what opportunities and challenges the new Sustainable Development Goals (SDGs) present for IA; and how we as a community of practitioners can play our role in supporting their realization.

## Getting a fair share

Saturday 14 May | 09:00-10:30 | 234

Panel discussion

Chair(s): Ana Maria Esteves, Galina Williams

The interactive panel will explore and debate the role of international finance and development agencies in influencing governments and the private sector in pursuing local community benefit-sharing objectives for large-scale extractives, energy, and infrastructure projects. Recommendations will be made for the field of impact assessment.

### Panelists

- Ana Maria Esteves, Director Community Insights Group
- Felismino Alcarpe, Head of Complaints Mechanism, European Investment Bank
- Ben Li, Social Development Specialist IFC Hong Kong
- Maria da Cunha, IADB Lead Safeguards Specialist
- Yukiko Imanaka, JICA Senior Safeguard Officer
- Galina Williams, Senior Lecturer in Economics, CQUniversity, Australia

## Impact assessment of small things

Saturday 14 May | 09:00-10:30 | 232

Paper session, facilitated discussion

Section: Social Impact Assessment

Chair(s): Rauno Sairinen, Ilse Aucamp

Impact assessment is dominated by big things: large dams, mega-infrastructure, massive mines. Large-scale projects rightfully demand careful planning and management, and have the capacity to devote substantial resources toward impact assessment. Development and global environmental change, however, are often the sum of a great number of small things. Hundreds of millions of people are involved in small-scale mining, farming, forestry, fishing, textile, and manufacturing activities. We discuss the impact assessment of those small things: What are the processes? Who is responsible? And how is it funded? The session highlights the relevance for cumulative and strategic impact assessment.

### Assessing small hydro in the Indian Himalaya

Diduck, Alan; Johnson, Richard; Edwards, Esther; Sinclair, John; Pratap, Dinesh; Gardner, James

This paper examines the impacts of small hydro and identifies ways to improve small hydro planning and approval processes, e.g., local involvement in site selection and cumulative effects assessments.

### Social impact assessment in higher education

Adusei, Kwadwo; Awidi, Isaiah; Hancock, Peter

The paper highlights the need for further exploration and integration of the concepts of "enrollment," "attrition," and "retention" into the SIA framework, particularly in the realm of higher education.

### Proposal of EIA for private business in Japan

Domon, Yusuke; Andou, Nobuhiko; Ootani, Shouta; Nakada, Toshihiro; Kataoka, Tsuyoshi

We discuss self-regulated environmental impact assessment (SREIA) for private business in Japan.

### Social impact assessment of university deregulation

Adusei, Kwadwo; Hancock, Peter; Awidi, Isaiah

This paper presents findings of the social impact of the proposed university deregulation on prospective country university students in Western Australia.

## MAN-MADE DISASTERS: PREPAREDNESS, EMERGENCY RESPONSE, AND REHABILITATION

### Cultural heritage: Disaster planning, mitigation, and response

Thursday 12 May | 16:30-18:00 | 232

Paper session

Section: Cultural Heritage

Chair(s): Warren Paul Mayes

Cultural heritage places and objects are threatened by natural disasters and armed conflict that may make assistance and management difficult. Prospects for protection and salvage are increased if plans exist for mitigating damage. This session explores examples of successful plans and action to protect heritage places during natural disasters and armed conflict.

### Effect of disaster information on tourist areas

Sakai, Kohei; Cui, Mingji; Toyoda, Yusuke; Kanegae, Hidehiko

This study reveals how providing disaster preparedness information in tourism areas does not have negative effects on tourists' images.

### Role of cultural arts in post-disaster recovery

Spranger, Mike; Cantrell, Randy; Allen, Katherine

The paper discusses how a cultural arts approach in post-disaster community recovery can have positive outcomes in economic revitalization, community sustainability, and citizen engagement.

### HIAs under international scrutiny

Strasser, Peter; Goedkoop, Maaik; Koos, Michael; Lisitzin, Katri; Neugebauer, Carola; Pereira Roders, Ana

We review the decisions of the Committee *vis-à-vis* HIAs and analyze the national legal situation in the corresponding World Heritage properties.

## Nuclear disasters: Preparedness, emergency response, and rehabilitation

Friday 13 May | 09:00-10:30 | 431+432

Theme forum

Section: Disasters & Conflict

Chair(s): Takehiko Murayama

This session deals with actual situations on local and national impacts by nuclear disasters in Fukushima, reality and feasibility of regional disaster prevention plan for nuclear power plant disasters, and nuclear disaster-prevention activities in Asian regions, as well as European efforts on disaster prevention related to nuclear accidents.

### Past, present and future of the Fukushima accident

Suzuki, Hiroshi; Murayama, Takehiko

Through experiences from post-accident reconstruction and a 2015 UN Conference workshop, the authors discuss issues of governance among stakeholders as well as reconstruction processes and lessons.

### Current conditions of widely-evacuated people

Takahashi, Wakana

Through an analysis on questionnaire survey for evacuees, this paper aims to find their actual conditions, as many of them are not covered by compensation and reconstruction measures.

### EIA technical guidance on radioactive materials

Aizawa, Hirofumi; Omori, Keiko; Aida, Yoshiaki; Mizuochi, Tomoko; Fukushima, Keizo; Abe, Tatsuya

This presentation provides an outline of the Environmental Impact Assessment Technical Guidance on Radioactive Materials by the Japanese Government and how Japanese policy addresses radioactive materials.

### European activities and challenges after Chernobyl

Hériard-Dubreuil, Gilles

This paper discusses activities after the Chernobyl accident with the government, UNDP, European member states, and NGOs, as well as current European projects toward preparedness for nuclear accidents.

### Governance on disposal of radioactive materials

Isono, Yayoi

Eastern Japan was contaminated with radioactive substances by the Fukushima Daiichi nuclear power plant accident. This paper will discuss the current situation and issues on governance for radioactive waste disposal.



# Concurrent sessions

## Oil pollution and gas leakages, social and natural resources resilience

Friday 13 May | 09:00-10:30 | 224

Theme forum

Norwegian Oil for Development (OfD) Program

Chair(s): Peter Tarr, Arne Dalfelt

The oil and gas industry, including its transport, are prone to accidents leading to oil spills, pollution, and gas leakages. The ability of affected natural resources and communities to restore their original productive capacities and status depends on their inherent resilience. IAs need to consider resilience as a principle.

### Community adaptation to oil spills

Croal, Peter

The presentation will look at the issues faced by communities that suffer an oil spill. In particular, a case study will be examined to demonstrate the current gaps in managing an oil spill crisis.

### Ecosystem resilience assessment: Policy challenges

Thummarukudy, Muralee; Skehan, Conor

How can one assess the capacity of ecosystems within the context of oil industry to ensure that industrial accidents do not lead to irreversible loss of the ecosystem services for the local community?

### Resilience in Lebanon: Getting ready for oil and gas

Abou Ibrahim, Assem

Lebanon is building on lessons learned to improve its capacities for resilience, particularly in the wake of the upcoming oil and gas activities in its offshore.

## Country experiences with oil spills and the resilience of ecosystems

Friday 13 May | 11:00-12:30 | 437

Paper session

Norwegian Oil for Development (OfD) Program

Chair(s): Arne Dalfelt

Most oil-producing countries sooner or later experience industrial accidents leading to oil spills and serious pollution. Damage inflicted depends on the resilience of affected ecosystems and communities. This session will present experiences by governments in combatting oil spills where ecosystem resilience was important.

### Experiences from the 2011 MV Rena disaster, NZ

Fa'au, Tumanako; Morgan, Kepa; Hikuroa, Daniel

An assessment of the pre-grounding and post-grounding states of the affected environment due to the 2011 MV Rena disaster, and its impact upon the system's resilience.

### A resilience and sustainability framework in oil and gas

Henriques, Marto

### Local content activities and the oil sector in Ghana

Amisshah, Afua

### The role of Zanzibar Environmental Management Authority in environmental management and oil spill mitigation in Zanzibar

Mbarouk, Farhat Ali

## More than men: Managing impacts associated with workforce influx

Friday 13 May | 11:00-12:30 | 436

Workshop

Chair(s): Janis Shandro, Tim McLaughlin, Koji Nishimiya

The influx of workers during the construction phase can pose a wide variety of risks. This is especially the case in emerging Asian markets where density, worker health and well-being, and behavior are influencing factors. This interactive session will explore key risks, strategies, and recommendations toward effective influx management.

## Is resilience a valid argument when negotiating impact mitigation?

Friday 13 May | 16:30-18:00 | 436

Role-playing workshop

Norwegian Oil for Development (OfD) Program

Chair(s): Morgan Hauptfleisch, Peter Tarr

All oil and gas development projects carry significant risks of oil spills and pollution, and natural ecosystems and local communities may be exposed. The concerns of these communities must be taken seriously and their arguments heard. Public hearings are part of the process, and resilience is part of the arguments.

The chairpersons will initially explain the purpose and the process, and thereafter divide participants into smaller groups who will represent various interest groups. These groups will, after some internal group discussions, present their viewpoints, and a public hearing and a negotiating process will follow.

## Is nature's resilience a valid argument for expanding the oil industry?

Saturday 14 May | 09:00-10:30 | 436

Debate/Partnerships development

Norwegian Oil for Development (OfD) Program

Chair(s): Peter Tarr, Peter Croal, Bryony Walmsley, Morgan Hauptfleisch

There is still limited knowledge of ecosystem resilience to oil spills and accidents, both off-shore and on-shore. This session debate will throw light on real-life experiences, knowledge and arguments related to ecosystem and natural resources resilience to accidents in the oil and gas sector, and seek to form partnerships.

After an short initial explanation of the session, the chair will open up the discussion to participants to see where partnerships can be forged. Groups of people will self-organize so that half of each group would be on one side or another of the core question, "Is nature and community resilience a valid argument for expanding the oil industry?". Each group could explore each others' views and come out with recommendations for partnerships to move forward.

## NATURAL DISASTERS AND RESILIENCE

### Roundtable: Status of the IAIA Climate Change Action Plan

Wednesday 11 May | 14:30-16:00 | 437

Workshop

Section: Climate Change

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

The results of the Climate Change and IA Workshop Roundtable will be used to advance the actions recommended in the discussion document, as well as other recommendations participants suggest should receive priority attention.

### Power & transmission: Resilience assessment of power transmission systems

Wednesday 11 May | 14:30-16:00 | 224

Panel discussion

Section: Power, Generation, and Transmission

Chair(s): Steef van Baalen

The current energy transition has a large impact on transmission systems. But in what way are we prepared for disasters? Are we able to build enough resilience into our system? All speakers will give a short introduction sharing their experiences, followed by an interactive panel with the audience.

### SEA for strategic grid planning in South Africa

Mabin, Marshall; Lochner, Paul; Fischer, Dee

Toward a streamlined and integrated environmental impact assessment approach for strategic electricity grid infrastructure projects in South Africa.

### Industrial risks associated with natural events

Defromont, Virginie; Jacotot, Nicolas; Labarraque, Dorothee

Analysis method of the industrial risk associated with internal events and extreme natural events. Does a differentiated approach bring a difference between internal and natural risk control?

### System developing from GTCC to GTCCs

Yamamoto, Taizo; Yasukagawa, Tsunetaka; Nomura,

Tomohiro; Fukada, Koji; Miki, Shunmei; Tajima, Osamu

An advanced gas turbine combined cycle (GTCC) will deliver the flexibility of power plant planning and create resilience for a global society.

## The link between resiliency and climate smart(er) impact assessment

Thursday 12 May | 09:00-10:30 | 234

Theme forum

Section: Climate Change

Chair(s): Weston Fisher, Arend Kolhoff

The Paris Summit outcomes can be used to advance the importance of IA and ensure that IA processes are used effectively in addressing the world's growing environmental and social climate change challenges. This forum is intended to help guide IA practitioners and the IAIA community in responding to the Paris directives.

## The science and the policy of climate change for IA: COP21 and IA

King, Nicholas

How well do the COP21 agreements match the scientific requirements to address climate change? What are the implications for IA? Essential principles of the new planning approaches required are presented.

## COP21 agreement: How we might all best respond?

Lauridsen, Rasmus

The new international agreement on climate change to keep global warming below 2°C and the challenges and financing of the transition toward low-carbon, resilient economies before and after 2020.

## Does IA result in climate-smarter projects?

Kolhoff, Arend

Does the use of climate change considerations in impact assessment result in climate-smarter projects or plans? The findings of a worldwide inventory will be presented to answer this question.

## Screening to assessment: Risk-based approaches

Herron, Hope

This presentation will explore moving from climate change risk screening and assessment using several case study examples.

## The US EPA's urban resilience evaluation tool

Blue, Julie

A tool to evaluate urban resilience to climate change across eight sectors: water, energy, transportation, public health, economy, land use, the natural environment, and telecommunications.

## Disasters, conflict and impact assessment (I)

Thursday 12 May | 11:00-12:30 | 224

Paper session

Section: Disasters & Conflict

Chair(s): C. Kelly

These three sessions bring together papers on conflict and disasters from a range of viewpoints and experiences to provide practical examples of how disasters and conflict can be included in impact assessment. The concept of resilience to disasters and from conflict will be a cross-cutting theme in the sessions.

## Disaster management in Elgon's fragile ecosystem

Buhanga, Edgar; Namara, Justine

Mount Elgon National Park is an important ecosystem for the surrounding communities. Its degradation puts at stake the lives of over 1 million people around it. Saving it is the only option.

## Comparing the efficacies of flood early warning systems

Sanda, Ahmed

This paper discusses the efficacies of flood early warning systems across communities in relation to their adaptive capacity and according to their level of education.

## Disasters, conflict and impact assessment (II)

Thursday 12 May | 14:30-16:00 | 224

Paper session

Section: Disasters & Conflict

Chair(s): C. Kelly

These three sessions bring together papers on conflict and disasters from a range of viewpoints and experiences to provide practical examples of how disasters and conflict can be included in impact assessment. The concept of resilience to disasters and from conflict will be a cross-cutting theme in the sessions.

## Enhancing resilience of urban transport networks

Wang, Junwei; Zhou, Yaoming; Song, Mingying

This paper presents work on emergency resource allocation problem, particularly on determining the optimal sequence of contraflow in evacuation after disaster, considering demand generated on links.

## Crisis preparedness: How to prevent the stampede

Dong, Youhang; Rong, Zhi

A discussion on how to prevent stampedes in large-scale activities based on case studies of New Year's Eve celebrations in Shanghai (2014) and New York.

## Attitude on post-disaster environmental management

Tajima, Ryo; Tasaki, Tomahiro

The psychological structure of the attitude on post-disaster environmental management will be discussed, based on in-depth interviews and focus group interviews with the victims of the Tohoku Earthquake.

## Climate change impacts in conflict assessments

Simonsson, Louise; Wikström, Per; Liljedahl, Birgitta; Waleij, Annica

How climate change impacts can be assessed in conflict situations to avoid unintended negative consequences and develop sustainable security for the area of interest and operations personnel.

## Optimizing adaptation to increase resilience in a context of climate change

Thursday 12 May | 14:30-16:00 | 234

Paper session

Chair(s): Manon Circe

Adaptation is key to the resilience of communities facing natural disasters. In a climate change context, adaptation becomes critical and communities need to make smarter choices. This session aims at sharing practical cases that demonstrate how impact assessment combined with other processes can lead to sustainable solutions.

## Alaskan climate change vulnerability assessment

Wilcock, Ronni

This study assesses vulnerabilities of Alaskan resources, environmental services, and infrastructure to potential future climates. The assessment is used to increase resilience through management and adaptation strategies.

## Sustainable adaptation for coastal communities

Da Silva, Laurent

The presentation focuses on how coastal communities facing climate change challenges can make better adaptation choices by relying on analyses integrating environmental, economic, and social impacts.

## Climate change adaptation using the Mauri Model

Morgan, Kupa; Ubels, Piet

Adaptation to climate change in Nepal was impeded by the Gorkha earthquake. How did the Mauri Model evaluation of adaptation measures integrate the worst natural disaster in more than eighty years?

## Climate change adaptation in Tyrolean agriculture

Grüneis, Heideinde

Adaptation to climate change is a necessity for vulnerable mountain agriculture. Integrated actions, which are not only driven by climate change, seem promising in addressing regional climate change impacts.

## Disasters, conflict and impact assessment (III)

Thursday 12 May | 16:30-18:00 | 224

Paper session

Section: Disasters & Conflict

Chair(s): C. Kelly

These three sessions bring together papers on conflict and disasters from a range of viewpoints and experiences to provide practical examples of how disasters and conflict can be included in impact assessment. The concept of resilience to disasters and from conflict will be a cross-cutting theme in the sessions.

# Concurrent sessions

## SEA in defense planning of operations

*Waleij, Annica; Liljedahl, Brigitta; Simonssen, Louise*  
The Swedish Defence Research Agency was commissioned to develop a customized SEA approach with complementing tools to support the Swedish Armed Forces' planning and decision making processes.

## Mapping health/social impacts of the Syrian conflict

*Sangalang, Stephanie; Barsallo Alvarado, Gabisel; Ghazaryan, Gohar; Fellahi, Anis*  
We used geographic information systems (GIS) to map hotspots of internally displaced persons and polio during the Syrian conflict. Improved communication technologies are recommended to mitigate conflict-related health impacts like future polio outbreaks.

## Toward migration impact assessment in Flanders/Belgium

*De Mulder, Jan*  
This paper offers a practitioner perspective to the use of expert knowledge (including impact assessment) in the Flemish regional policy approach regarding the integration of migrants as part of a European Union policy.

## Anticipating terrorism: Considering the role of IA

*Kelly, Charles*  
This presentation investigates how the process of impact assessment can contribute to anticipating the social, economic, political, and environmental impacts of terrorist events.

## Environmental creation from disaster

**Saturday 14 May | 09:00-10:30 | 223**

*Paper session*  
*Section: Disasters & Conflict*  
*Chair(s): Makoto Ooba*

Through conducting integrated research, environmental emergency research seeks to contribute to both reconstruction and environmental creation in areas affected by a disaster. In this session, we discuss environmental emergency research from environmental monitoring and simulations for reconstruction planning to policy suggestion, with a focus on methods and practices.

## Impacts of the 2011 tsunami on tidal flat ecosystems

*Kanaya, Gen; Taru, Masanori; Miura, Osamu; Yuhara, Takeshi; Unagami, Tomoo; Tanaka, Masaatsu*  
We report the changes in tidal flat ecosystems including associated biota (e.g., macrozoobenthos and marsh plants) along the northeastern Pacific coast in Japan after the 2011 tsunami disaster.

## Tackling biodiversity monitoring of Fukushima

*Yoshioka, Akira; Mishima, Yoshio; Kumada, Nao; Fukasawa, Keita*  
Exploring better protocols, biodiversity monitoring of the Fukushima evacuation zone has started from 2014 as a part of a research project of the National Institute for Environmental Studies, Japan.

## Population dose estimation of the Fukushima disaster

*Takagi, Mai; Takeuchi, Ayano; Tanaka, Atsushi; Nakayama, Shoji*  
Exposure models for both external and internal exposure to excessive radiation doses caused by the Fukushima disaster were developed and applied to estimate general residents' exposure.

## Population dynamics after evacuation from disaster

*Gomi, Kei*  
Population scenarios after evacuation are simulated and presented considering demographic structure, willingness to return, and economic activities in the areas affected by tsunami and radioactive contamination.

## Effect of energy-saving campaign in Fukushima

*Shiraki, Hiroto; Tanaka, Hiroki; Nakamura, Shogo*  
The effect of an energy saving campaign for fifty households in Fukushima prefecture was estimated. The analysis using a fixed-effect model shows that the campaigns have some negative effect on electricity consumption.

## POPULATION CHANGE AND SUSTAINABILITY ASSESSMENT

### Systems approaches to impact assessment for resilience and sustainability

**Wednesday 11 May | 16:30-18:00 | 224**

*Paper session*  
*Chair(s): Jenny Pope*

This session will explore how systems approaches to impact assessment can enhance practice and promote resilience and sustainability. Such approaches include resilience assessment, systems thinking, and all forms of systems analysis, including system dynamics and soft systems methodology. Both theoretical contributions and practical case studies will be presented.

#### Potential contribution of system dynamics to IA

*Pope, Jenny; Grace, William*  
This paper responds to calls for systems thinking to be incorporated into impact assessment by exploring the potential contribution of quantitative systems analysis tools such as system dynamics.

#### Track and respond to cumulative effects: Systems approach

*Rifkin, Will; Witt, Katherine; Everingham, Jo-Anne*  
A systems approach to cumulative socioeconomic impact assessment and monitoring of energy resource development characterizes changes in towns of rural Queensland, Australia. Catalytic and flow-on effects were identified as well as regional interactions and effective town-level adaptive strategies.

## Better EIA through resilience-centered baseline studies

*Raissyian, Behzad*  
Comparing the baseline studies of an oil field development project with the results of the project implementation reveals that resilience-centered baseline studies could have improved the EIA.

## Transforming IA in NZ for enhanced resilience

*Morgan, Kapa; Fa'au, Tumanako*  
New Zealand's worst maritime environmental disaster has transformed sustainability assessment. The Mauri Model meets all Bellagio STAMP principles and is the most relevant approach regardless of community.

## Evaluating the capacity of community readiness

*Homket, Yuttana; Nima, Sawpheeayah*  
The community readiness was insufficient to conduct a community health impact assessment for the biomass power plant construction in Southern Thailand. Thus, it needs to prepare well before an implementation.

## Poverty, inequality, and resilience

**Thursday 12 May | 14:30-16:00 | 232**

*Paper session*  
*Chair(s): Riki Therivel*

This session explores the links between poverty, inequality, and resilience, from the individual to the international level. It aims to improve the consideration of these issues in impact assessment and lead to more resilient and fairer projects and plans.

#### SIA in the context of poverty and inequality

*Aucamp, Ilse*  
Social impact assessment is analyzed in the context of poverty and inequality, and ways in which it can be used to contribute to the eradication of these factors are suggested.

#### Integrating poverty and social analysis in SEA

*Sánchez-Triana, Ernesto; Enriquez, Santiago*  
Integrating poverty and social analysis into policy strategic environmental assessments to enhance sustainability: policy reforms in South Asia and Latin America.

#### Changing power dynamics in a flawed food system

*Tomir, Irit*  
Assessing climate risks and measuring incomes is the first step toward paying a living income to farmers, providing adaptation tools, and building resilience in a flawed food system.

#### Poverty, inequality, and resilience

*Therivel, Riki*  
This paper explores links between poverty, inequality, and resilience by reviewing how different groups overcame shocks (e.g., floods). It tests whether poverty and inequality have similar effects on resilience.

## Developing good practice in resettlement and livelihoods planning and implementation

Thursday 12 May | 16:30-18:00 | 437

Workshop

Chair(s): Eddie Smyth, Frank Vanclay

Increasing evidence of the negative impacts of resettlement on large projects has resulted in calls for more guidance. The IFC is planning a new resettlement handbook and IAIA is planning to organize a special symposium on resettlement and livelihoods in Manila in February 2017. This open discussion forum provides contributors with 2 minutes to provide input into these important developments.

## Social sustainability assessment in societies with decreasing populations

Friday 13 May | 09:00-10:30 | 141+142

Theme forum

Chair(s): Hidefumi Kurasako, Xiong Li

In a society with decreasing population, we face new sustainability problems, including decreasing working-age population, abandonment of farming and planted forest, and diminishing local communities. We discuss how we can launch a social sustainability assessment in population-decreasing societies as a new area of assessment activities.

## Population decline in Japan and sustainability

Li, Xiang; Kurasako, Hidefumi

Population declines over next twenty-five years in the agricultural and the manufacturing industries will be severe, emphasizing the importance of policy reforms to tackle labor issues.

## I=PAT vs. SATOYAMA: Paradigms of SD indicators

Sato, Shun

Many sustainable development indicators are based on I=PAT model (environmental Impact = Population \* Affluence \* Technology), although the Satoyama model (humans intervene and play good roles) is also needed.

## The political involvement of future generations

Miyazaki, Fumihiko

Strategies to make political involvement of future generations effective, as identified through workshop analysis by our research group.

## Residents' recognition of local information supply

Shimizu, Hiroari; Sakai, Kohei; Honda, Ayaka; Kanegae, Hidehiko

Discussion of a survey using theory of planned behavior and sense of place (SOP) to measure local information flows to new residents in areas facing population decline.

## Boom town effects from oil and gas development

Friday 13 May | 11:00-12:30 | 224

Roundtable

Chair(s): Will Rifkin, Jenny Pope, Julia Haggerty, Jeffrey Jacquet

Oil and gas boom towns face development that is large and fast due to international market forces, financing, and government decisions. Case studies of cumulative social and economic impacts, supported by videos and extensive data, are the focus of a roundtable discussion in this session.

## Building excellence in impact assessment

Friday 13 May | 11:00-12:30 | 232

Roundtable

Chair(s): Charlotte Bingham

We will share and discuss techniques of building excellence in impact assessment through policy making, good practice tools, development of guidance, training courses and lessons learned from monitoring programs using examples from health impact assessment, health and gender, sustainable hydropower, biodiversity, and marine protected areas.

## Building excellence into health impact assessment

Green, Liz

This paper describes the methods, successes, and knowledge obtained by the Wales Health Impact Assessment Support Unit (WHIASU) in developing and delivering high quality HIAs through its training program.

## Tools for sustainable hydropower development

Quintero, Juan; Mathur, Aradhna

This paper lays out and illustrates good practices to integrate environmental and social considerations in hydropower development including standards, tools, and methodologies for early planning.

## Mainstreaming biodiversity into country safeguards

Phuc, Pham

The support of ADB for biodiversity conservation through project TA 7566, "Strengthening and Use of Country Safeguards Systems—Mainstreaming Biodiversity Considerations into Viet Nam Environmental Safeguards."

## EIA in MPA of Mexico:

### Accomplishments and lessons

Pérez-Valencia, Sergio Alejandro; Turk-Boyer, Peggy; Vadivía-Jiménez, Paloma Alejandra; Polanco-Mizquec, Elia Inés; Rodríguez-Uceda, Alejandro

In 2009 an EIA was first applied to small-scale fisheries inside a marine protected area (MPA) of Mexico. We outline accomplishments of four operative programs and lessons learned.

## Improving practice on health and gender in EAs

Walmsley, Bryony; Ofosu-Koranteng, Benjamin; Hailu, Betty

Ongoing advocacy and training workshops in thirteen African countries have raised stakeholder awareness and strengthened policies, laws, and practice on health and gender in EIAs.

## TRANSPORTATION, LAND USE, AND SUSTAINABILITY

### Sustainable transport: Current situations and challenges

Proudly sponsored by Toyota

Thursday 12 May | 09:00-10:30 | 224

Theme forum

Chair(s): Hideharu Morishita

Since Agenda 21 was published in 1992, the UN has been dealing with transportation issues as key elements for sustainability. This session will deal with current efforts of Austria, USA, and Asia as well as future challenges for sustainable transport from the environmental, economic, and social points of view.

### Sustainable transport in "Smart Cities": Graz

Aschemann, Ralf

Sustainable transport in the context of "smart cities" by taking the Austrian City of Graz as an example.

### Achieving sustainable transport and land use together with higher quality of life

Hayashi, Yoshitsugu

The paper presents 1) concept of QOL measurement method, 2) measurement of QOL for Nagoya, Nagjing and Singapore, 3) the way to find out transport - land use strategies based on the performance, measured by QOL of transport infrastructure, 4) demonstration of strategies' selection.

### Sustainable mobility project in Bangkok: Sathorn Model Project

Okayama, Yutaka

Representing Toyota Motor Corporation, which is committing this project, Mr. Okayama discusses how the Sathorn Model Project copes with traffic congestion in Bangkok through traffic demand control and traffic flow management by cooperation between the private sector, government, academia, and citizens.

### Resilience, impact assessment, and coping with major project-induced change

Friday 13 May | 09:00-10:30 | 234

Theme forum

Section: Health, SIA, CSR, Indigenous Peoples, Disasters & Conflict

Chair(s): Leo den Broeder, Francesca Viliani

Major projects typically lead to transformational changes in the physical and human environment. How do communities cope with the change that accompanies major projects? In this interactive forum session presenters will discuss the emotional, physical, psychological and relational aspects of resilience and the lessons for HIA, SIA and EIA.

# Concurrent sessions

## Inclusive and Dynamic Development



Japan International Cooperation Agency



<http://www.jica.go.jp/english/>

## COOPERATING FOR SUSTAINABILITY

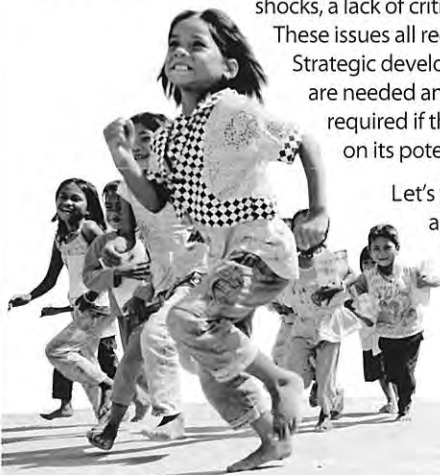
Asia and the Pacific is changing fast. Two decades of remarkable economic growth has pulled more people out of poverty than ever before. The region's gains have been impressive; now they must become sustainable.

Asia and the Pacific is exposed to a variety of risks that can roll back its progress: climate change and natural hazards, economic shocks, a lack of critical infrastructure.

These issues all require huge financing. Strategic development partnerships are needed and close cooperation is required if the region is to deliver on its potential.

Let's work together for a better Asia and the Pacific.

To know more, visit [www.adb.org](http://www.adb.org).



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## IMPACT ASSESSMENT'S CONTRIBUTION TO THE GLOBAL EFFORTS IN ADDRESSING CLIMATE CHANGE

**SESSION PROPOSAL DEADLINE  
30 JUNE 2016**

[www.iaia.org](http://www.iaia.org) > IAIA17



## The nexus of resilience, disaster recovery, and IA

*Kelly, Charles*

The presentation will explore the nexus of resilience, disaster recovery, and impact assessment to identify how impact assessment can aid in making individuals and societies more resilient.

## Indigenous people, resettlement, and well-being

*Mendoza Sammet, Angeles*

The relocation of Indigenous Peoples must consider their well-being and the ecosystem services they need to preserve their identity, culture, and livelihood.

## Shifting the paradigm upstream in outbreak control

*Villani, Francesca*

Outbreak management should start upstream during project conceptualization and impact assessment. This will lead to understanding of interlinkages among induced changes and increase resilience for both projects and communities.

## Empowering residents to lead

### EIA in an aging society

*Kuwabara, Yoichi*

Japan has been shifting to an aging society. It is critical to empower self-governance of EIA by concerns of seniors heard tailoring standards securing quality of life at each community.

## Impact assessment for smart cities (I)

Friday 13 May | 14:30-16:00 | 224

*Paper session*

*Chair(s): AC Chung*

Urbanization is a global trend, giving pressure to the local community from land use, town planning, transportation, and infrastructure. This session aims to invite experience sharing on smart city development with case studies on the latest impact assessment practices toward ultimate sustainability.

### Resilient city: Opportunities for cooperation

*Melkunaite, Laura; Guay, Fanny*

An analysis of the relationship between urban planning and civil protection in conceptualizing resilient and smart cities development processes in Denmark.

## City index for sustainable development

*Kim, Myungjin; Yun, Hyerngdu; Choi, Intae; Han, Bongho*

Environmental Sustainable City Index (ESCI) is developed and applied in Korean cities and is discussing for improvement.

## Facing up to sustainability in Lisbon and Tokyo

*Kumagai, Yoichi; Partidário, Maria do Rosário; Gibson, Robert B.*

This paper compares how Lisbon and Tokyo have faced up to sustainability-related issues to inform future planning in the two cities, with lessons for other cities facing similar challenges.

## Impact assessment for smart cities (II)

Friday 13 May | 16:30-18:00 | 224

*Paper session*

*Chair(s): AC Chung*

Urbanization is a global trend, giving pressure to the local community from land use, town planning, transportation, and infrastructure. This session aims to invite experience sharing on smart city development with case studies on the latest impact assessment practices toward ultimate sustainability.

### Assessment and evaluation of odor impact from waste gases

*Lok, Ka Ming; Lee, Shun Cheng; Cheung, Yee Ling*

This study investigates the odor impact and effectiveness of treatment of odorous waste gases on sludge from wastewater treatment facilities.

### A mobile-assisted traffic impact assessment

*Chuersuwan, Nares; Muangnak, Nappatsorn*

A mobile phone application was a tool for assessing the traffic emissions in a city. Constructed driving cycle provided more accurate data suited to local conditions and gave better emission estimates.

### Assessing land-use heterogeneity at city fringes

*Wadduwage, Suranga; Millington, Andrew*

This study assesses the non-linear land-use characteristics of city fringes in a spatial context. Urban to rural land-use and feature gradients were used to interpret the anticipated changes.

## Connecting transportation planning and IA: Theory and practice

Saturday 14 May | 09:00-10:30 | 222

*Panel discussion*

*Chair(s): Yuki Shibata*

This panel session explores new theoretical possibilities, methodological advances, and/or practice-based innovations to make transportation plans and project impact assessment more integrated, efficient, and effective to advance sustainability concerns.

### Bahia's west corridor: Changing land uses

*Bettencourt, Pedro; Silva, Nuno; Fernandes, João*

The west corridor of Bahia State, Brazil, aims to transform regional development opportunities through careful management of environmental and social impacts.

### Assessing robustness of urban transport network

*Zhou, Yaoming; Song, Mingying; Wang, Junwei*

This paper provides a new method for measuring robustness of urban transportation network considering both disturbances from demand uncertainty and capacity interruption from supply.

### Smarten transport IoT for impact assessment

*Chung, AC; To, WM*

An innovative approach to estimate environmental impacts for transportation planning projects by smartening existing Internet of Things (IoT) to capture and process real-time, big traffic data.

### University parking cost analysis using WTP

*Ha, Gyoungjun; Jung, Juchul; Lee, Dalbyul; Park, Hyungjun*

This study calculates parking costs through willingness to pay (WTP) as a measure, which can induce the reduction of vehicle traffic volume following the increase of parking fees of university campuses.

# Concurrent sessions: General topics

## CORPORATE STEWARDSHIP AND RISK MANAGEMENT

### Business and human rights: Where to now?

Friday 13 May | 11:00-12:30 | 222

Panel discussion

Section: Corporate Stewardship & Risk Management

Chair(s): Sara Bice

As industry continues to contend with understanding its human rights-related risks and responsibilities, some businesses have been able to navigate this contentious and often complex area of rights based impact assessment. Businesses are starting to also realize the opportunities that positive engagement in the context of human rights can bring in a broad range of areas such as supply chain management, indigenous engagement, and community investment.

### Methodologies for human rights impact assessment

Gotzmann, Nora; Bansal, Tulika

The presentation focuses on key discussion points in the area of human rights impact assessment methodology development in the field of business and human rights.

### Developing a model for a multi-stakeholder HRIA

Bansal, Tulika; Szoke-Burke, Sam; Aubry, Manon

This presentation suggests a multi-stakeholder approach to human rights impact assessment (HRIA) in order to overcome some of the challenges posed by company-led HRIAs and community-driven HRIAs.

### Do SIAs address business and human rights needs?

Tarnir, Irit

Human rights impact assessments (HRIAs) provide a framework for what is required under the UN Guiding Principles and should be included in the planning process of any large-scale investment project or supply chain.

### Social License to Operate and community resilience (I)

Friday 13 May | 14:30-16:00 | 437

Paper session

Section: Corporate Stewardship & Risk Management

Chair(s): Sara Bice

The term "social license to operate" (SLO) is used to describe the business case for company engagement with stakeholders and issues, especially in resources industries. This session explores the connections between a project's SLO and community resilience.

### Creating successful projects with communities

Palmer, Sarah; Lauria, Mary Lou; Bracken, Robert

Integration of environment and society into the siting, design, procurement, construction, and operation of a facility creates successful and resilient projects for communities and companies.

### Social license: Benefits in project delivery is key

Gilbert, Michele; Lauria, Mary Lou; Wright, Stewart

Facilitating access to project opportunities coupled with capacity building within communities is crucial to the success of project delivery. Non-technical risks need to be understood and planned for.

### Project-induced in-migration: Extractives Sector

Serra, Andrea; Buldeski, Jo; Ellis, Jeanne

In-migration studies can be a useful tool for assessing the potential scale and impacts of project-induced influx. We will discuss the opportunities, lessons learned, and limitations of these studies.

### Social licensing, partnerships, and resilience

Dunn, Marc; Murdoch, Paul John; Courcelles, Réal

Communities play an important role in obtaining a social license, so proponents need to put in place strong collaborative frameworks. This will have an important influence on community resilience.

### Social License to Operate and community resilience (II)

Friday 13 May | 16:30-18:00 | 437

Paper session

Section: Corporate Stewardship & Risk Management

Chair(s): Sara Bice

The term "social license to operate" (SLO) is used to describe the business case for company engagement with stakeholders and issues, especially in resources industries. This session explores the connections between a project's SLO and community resilience.

### The new great game and resilience in the Caucasus region

Jijelava, David; Vanclay, Frank

This paper discusses how BP's activities to gain social license to operate (SLO) for its Baku-Tbilisi-Ceyhan (BTC) oil pipeline project in the Trans-Caucasus region have affected the resilience of local communities.

### Social license to operate: How to measure it

Murdoch, Paul John; Courcelles, Réal

A joint proponent-impacted community presentation shedding light into how social license to operate requires the active collaboration and resilience of communities and a means to jointly measure this.

### Understanding community attitudes toward coal seam

Zhang, Airon; Moffat, Kieren; Lacey, Justine; Rodriguez, Michelle

An empirical study reveals that strengthening governance is the fundamental mechanism for getting the public on board in order to address issues of energy security and climate change mitigation.

## Corporate Stewardship & Risk Management Section

Saturday 14 May | 09:00-10:30 | 437

World Café

Section: Corporate Stewardship & Risk Management

Chair(s): Sara Bice

Are you a corporate representative? A consultant or IA practitioners working with business? The CSR/M Section is building a vibrant community of practice in 2016. As part of this, we need your ideas! Join us for a World Café to canvass leading ideas in stewardship and risk management and become part of our network.

The session will involve a series of World Café rounds consisting of CSR/M members and attendees in a conversation about building a "community of practice" in 2016 and setting an agenda for future section work.

## CORPORATE SUSTAINABILITY

### Corporate sustainability assessments

Wednesday 11 May | 16:30-18:00 | 233

Paper session

Chair(s): Jerome Donovan, Thomas Borgert

Increasingly the private sector is experiencing more pressure to not only engage in sustainability, but also to demonstrate its commitment to it through systematic processes to incorporate it into business operations. This session directly engages in this topic, with four papers exploring the changing private sector engagement with sustainability.

### Sustainability in Sarawak: Exploring existing sustainability

Amin-Chaudhry, Anjum; Donovan, Jerome D.; Masli, Eryadi; Topple, Cheree

This paper explores the existing practices and future direction of sustainability in Sarawak, Malaysia. Specifically, this paper evaluates how existing regulations and private sector activity have been directed towards sustainability.

### It doesn't really matter...

Borgert, Thomas; Donovan, Jerome D.; Masli, Eryadi; Topple, Cheree

Through the lens of a sustainability assessment framework, this paper will explore voluntary activities that multinational organizations are undertaking in Indonesia to address sustainable development.

### Corporate sustainability assessments in Thailand

Topple, Cheree; Donovan, Jerome D.; Masli, Eryadi

This presentation explores how the private sector undertakes corporate sustainability assessments. Using 16 multilevel case studies from Thailand within the manufacturing sector, a framework for addressing sustainability assessments is presented.

## Assessment of the Social Development Management Program for mining

*Dayao Manaog, Melanie; Lourdes, Maria; Guerin, Nanette*  
The study attempt to assess the required Social Development Management Program required for mining companies to determine if it has achieved sustainability goals.

## CULTURAL HERITAGE

### Landscapes in development context (I)

Wednesday 11 May | 14:30-16:00 | 436

Paper session

Section: Cultural Heritage, Indigenous Peoples

Chair(s): Inge Lindblom, Veronique Simon

This session focuses on how to manage cultural and natural heritage in urban and suburban landscapes within EIAs and SEAs. In a broader context, this session also welcome different methods on how to characterize landscape as a tool for managing values in spatial planning.

### Heritage impact assessment for living UNESCO sites

*Neugebauer, Carola; Lisitzin, Katri; Kloos, Michael; Pereira Roders, Ana; Strasser, Peter*

Referring to evaluation theory, the paper analyzes and compares systematically the local contexts, practices, and effectiveness of heritage impact assessments in European UNESCO sites.

### Road planning and impact on landscape in development

*Anker, Matilde*

Are the EIA methods used for road planning in Norway satisfactory for sustainable development of landscape and cultural heritage? Is it time to adjust the method to fit for urban areas?

### The tipping point

*Bolger, Michelle*

The tipping point is where resilience ends and the landscape changes beyond recognition or repair. How do cumulative assessments judge when enough is enough?

### European landscape convention: Useful or not?

*Berg, Einar*

The European Landscape Convention is aspiring and bold in its objectives, but is it too vague? This paper discusses what has been achieved from it through fifteen years in use.

### Landscapes in development context (II)

Wednesday 11 May | 16:30-18:00 | 436

Paper session

Section: Cultural Heritage, Indigenous Peoples

Chair(s): Inge Lindblom, Veronique Simon

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### Vision completed: The symbolic image of landscape assessment

*Fiskevold, Marius*

Cultivating the landscape analysis as a symbolic construction, visual experience may be used to bridge the gap between the traditional world of the analyst and the everyday world of anyone.

### Guidelines for landscape impact assessment

*Bergamini, Kay; Moreno, Osvaldo*

This work presents the "Guidelines for Landscape Impact Assessment in the SEIA" developed in Chile, which is now mandatory to guide the landscape impact assessment procedure.

### Effects of land-use change on biodiversity

*Hovstad, Knut Anders; Wehn, Sølvi; Johansen, Line*

The effects of abandonment of agricultural land on biodiversity and ecosystem services are examined and information on historical land-use is used to understand present distribution of plant species.

### Indigenous cultural landscapes and impact assessment (I)

Thursday 12 May | 11:00-12:30 | 223

Paper session

Section: Cultural Heritage, Indigenous Peoples

Chair(s): Patricia McCormack

Indigenous landscapes are often invisible to outsiders yet are critical for cultural heritage, identity, and resilience. This session addresses issues related to the complexity of these landscapes and what constitutes adequate impact assessment, drawing on indigenous approaches.

### Capacities of traditional cultural landscapes

*Curti, Giorgio H.; Moreno, Christopher M.*

We discuss how material capacities of Indigenous cultural landscapes must be considered for more informed and effective resilience and sustainability decision making practices and impact assessments.

### Avoiding the assessment of indigenous rights

*Behr, Towagh*

A review of Canadian impact assessments demonstrates how poorly and infrequently impacts to aboriginal title, aboriginal rights, and treaty rights are assessed. Innovations in assessing these impacts will be presented.

### Cultural impact assessments that build resilience

*Dyck, Thomas; Stuckless, Daniel*

The sustainability of Indigenous communities across Canada and globally is at risk if cultural impacts from industrial development are assessed without considering the needs of communities.

### Strengthening indigenous coastal management

*Marteleira, Michelle; Chang, Stephanie E.*

Building resilience for Indigenous coastal management through the collaborative adaptation of a vulnerability reduction tool with Coast Salish communities in the Strait of Georgia, British Columbia.

### Indigenous cultural landscapes and impact assessment (II)

Thursday 12 May | 14:30-16:00 | 223

Paper session

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Chair(s): Patricia McCormack

Indigenous landscapes are often invisible to outsiders yet are critical for cultural heritage, identity, and resilience. This session addresses issues related to the complexity of these landscapes and what constitutes adequate impact assessment, drawing on indigenous approaches.

### EIAs and the Sami people's cultural heritage

*Pinto-Guillaume, Ezequiel*

The Sami people's cultural heritage is seldom taken into consideration in environmental impact assessments in the Sápmi region. What has happened since the first environmental impact assessments were made?

### The cultural impacts of the 2011 Rena disaster, NZ

*Fa'au, Tumanoko; Chang, Stephanie*

This paper presents the cultural impacts of the 2011 Rena disaster in New Zealand as part of a holistic assessment using the Mauri Model decision-making framework.

### Impact of resource development on Tl'azt'en Nation

*Jokinen, Loura; Rabers, Rachel; Tom, Verne; Shandro, Janis;*

*Kerr, Kandace; Ostry, Aleck*

This presentation discusses community health risks, impacts, and opportunities associated with resource development experienced by Tl'azt'en Nation, a First Nation community in Canada.

# Concurrent sessions

## DISASTERS AND CONFLICTS

### Performance and innovation in resettlement and livelihoods restoration

Thursday 12 May | 11:00-12:30 | 232

Panel discussion

Chair(s): Warren Paul Mayes

This session includes presentations on challenging resettlement projects as well as current topics and debate in resettlement, land acquisition, and livelihoods restoration. The session will explore solutions that go beyond compliance with legislation and ensure mitigation of impacts and delivery of benefits to project-affected peoples.

### From resettlement toward integrated development

Circe, Manon

In Mali, 800 displaced families became the prime beneficiaries of an irrigation project. The integrated approach adopted for resettlement led to improving their livelihood beyond expectations.

### PPPs in resettlement and livelihood improvement

Palmes, Mirko; Pollard, Magali; Saad, Asmahaney;

Muyobo, Marion; Kasibayo, Kristina; Oteng, Moses

The presentation will look at the status of the public-private partnerships for the management of private-led resettlements to ensure livelihood sustainability and community resilience.

### Resettlement induced by dams in China

Shi, Guoqing; Zhou, Jian; Yu, Qingnian

A summary of China's experience of success and lessons from failures in the past decades.

### Human rights-based resettlement

van der Ploeg, Lidewij; Vanclay, Frank

This paper describes how resettlement processes and outcomes can be improved, taking into account human rights principles and standards, specifically the Criteria of the Right to Adequate Housing.

### Planning for disaster debris

Thursday 12 May | 16:30-18:00 | 231

Panel discussion

Chair(s): Karl Kim, Van Romero, Kiyomi Kawamoto, Eric

Yamashita, Kay Bergamini,

The session considers debris generated from earthquakes, tsunamis, tropical storms, and other natural and cascading disasters. It emphasizes the need for pre-event planning and highlights the use of new technologies and approaches for data collection and debris management.

### Introduction and overview: Relevance of environmental assessment and disasters

Kim, Karl

### Analysis land planning EIA after disaster in Chile

Bergamini, Koy; Moris, Roberto

This paper exhibits an analysis of the risk studies, specifically debris flow and flood, incorporated into the EA process of land planning instruments of a group of towns in a disaster zone in northern Chile.

### Bonding, bridging, and linking networks for efficiency

Kawamoto, Kiyomi; Kim, Karl

This study showed how bonding, bridging, and linking networks contribute to the efficiency of earthquake waste management over the longer-term recovery period.

### Debris and damage assessment after tropical storm

Yamashita, Eric; Kim, Karl

This study examines the case of Tropical Storm Iselle and the debris damage caused by the toppling of albizia trees, cutting off transportation and damaging homes.

### The case of the waste isolation pilot plant (WIPP) and remediation

Romero, Van

## ENERGY

### Renewable energy landscapes: Livability threat or NIMBY? (I)

Thursday 12 May | 14:30-16:00 | 222

Paper session

Section: Power, Generation, and Transmission

Chair(s): Margaret Trias

The renewable energy transition boom features large windfarms, PV parks, and geothermal or hydropower projects affecting natural landscapes and rural communities. Few locals benefit; many resent the impact burden and protest. Just old school NIMBY, or should we reframe IA processes and rebalance impacts and "externalities" of providing sustainable energy to urban centers?

### Future energy glory for Africa: The Grand Inga dam

Bella-Corbin, Aimee; Bakia, Mbiannyor; Konare, Amadou

This paper illuminates potentials and opportunities for Africa, using the Grand Inga as a showcase for future renewable energy opportunities in Africa. With a capacity of 40,000 megawatts and an estimated cost of \$80 billion, the proposed Grand Inga Dam in the Democratic Republic of Congo is one of the largest hydropower projects in Africa.

### Procedure for construction of a hydrogen station

Mihara, Takumi; Nishikizawa, Shigeo; Murayama,

Takehiko

This study focuses on the hydrogen station and analyzes the characteristics of site location and the procedure for construction.

### Offshore wind farm considering climate change

Kim, Taeyun; Cho, Kwangwoo; Jang, Sun-Ju

This study aims at developing a decision making model of selecting the feasible sites for an offshore wind farm in the Southwest Sea, South Korea.

### Reducing EIA-induced barriers in renewable energy projects

Schumacher, Kim D.G.

A comparative analysis of procedural reform efforts aimed at reducing EIA-induced barriers that bear the potential to stifle large-scale renewable energy (RE) project development in Japan and the U.S.

### Renewable energy landscapes: Livability threat or NIMBY? (II)

Thursday 12 May | 16:30-18:00 | 222

Paper session

Section: Power, Generation, and Transmission

Chair(s): Jan Nuesink

The renewable energy transition boom features large windfarms, PV parks, and geothermal or hydropower projects affecting natural landscapes and rural communities. Few locals benefit; many resent the impact burden and protest. Just old school NIMBY, or should we reframe IA processes and rebalance impacts and "externalities" of providing sustainable energy to urban centers?

### Dialogue regarding new power plants in Iceland

Bjarnadóttir, Jóna

When developing new power plants, their location as well as the route for power lines is often an issue of public debate.

### Public acceptance of wind power developments in Japan

Nishikizawa, Shigeo; Hanada, Tetsuya; Murayama,

Takehiko

This presentation focuses on the public acceptance of wind power developments in Japan. Some challenges and future directions for sound implementation of wind power will be discussed.

### Link between public protest and assessment of social impacts

Vammen Larsen, Sanne; Merrild Hansen, Anne; Lyhne,

Ivar; Bjørn Aaen, Sara; Nielsen, Helle

Three Danish EAs show inclusion of a variety of social impacts, but lack of assessment. We discuss whether and how EA can handle social impacts linked to public resistance.

### Lessons from a stranded 380 kV powerline planning process

De Vries, Johan; Nuesink, Jan; Eijssen, Paul; Arts, Jos

Large infrastructure initiatives face complex balancing of national interests and societal acceptance. This case presentation discusses a halted 380 kV planning process, exploring the role impact assessment could play.

## ESIAs in the extractive sector (I)

Friday 13 May | 14:30-16:00 | 431+432

Paper session

Section: Oil, Gas, and Renewable Fuels Section

Chair(s): Aimee Bella-Corbin, Mbianyor Bakia, Amadou Konare

This session presents an overview of the environmental and social assessment requirements, challenges, and opportunities in the extractive sector. We draw on experiences from the oil and gas, solid minerals, and other cross-cutting areas of the sector.

### Managing non-technical risk in E&P projects

Adekoya, Adebajji; Ekpenyong, Emmanuel

Proactive management of non-technical risk helps to protect value in exploration and production (E&P) operations while also contributing to better management of the impact of oil and gas operations.

### Shale gas in The Netherlands: SEA on national level

van Baalen, Steef J.A.; de Groot, Ivo; van der Wel, Karin

Dutch Ministry of Economic Affairs initiated SEA on national level, to gather a more generic insight into the impacts of shale gas developments. The results of the SEA will be presented by the author.

### Project-induced migration and impact assessment

Bruce, Amelia

There is a need for resource projects to better understand their contributions to regional-level population influx and deflux over the development lifespan in order to more accurately predict their impacts.

### A mine we can be proud of: Assessing legacy social impacts

Jones, Reisha

How do you assess legacy social impacts? How do you address challenges from years of cultural and land use effects? This presentation shares experiences from a Canadian copper operation.

## ESIAs in the extractive sector (II)

Friday 13 May | 16:30-18:00 | 431+432

Paper session

Section: Oil, Gas, and Renewable Fuels Section

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This session presents an overview of the environmental and social assessment requirements, challenges, and opportunities in the extractive sector. We draw on experiences from the oil and gas, solid minerals, and other cross-cutting areas of the sector.

### Impact assessment of offshore oil activities in the Arctic

Vammen Larsen, Sanne; Merrild Hansen, Anne

In Greenland, several impact assessments are carried out before oil production. This paper presents a comparative study of the legislation for impact assessment in Greenland, Denmark, Norway, Alaska, and Canada.

### The inexact science of community investment plans

Streather, Tom

Community investment programming is not an exact science; however, community investment plans (CIP) can be used to successfully contribute to community development through adaptability and appropriate stakeholder engagement.

### Importance of assumption in South Pacific ESIAs

Grinham, Alistair; Albert, Simon; Gibbes, Badin; Fisher, Paul

This study represents a first of its kind in understanding coastal water quality in the Solomon Islands, highlighting the need for local datasets and the dangers of assumption within this region.

### Review of the SEA approach used to improve efficiency of authorization process

Fischer, Dee; Annegarn, Harold

Review of the "business unusual" approach based on an SEA methodology to improve on the efficiency of site-specific EIA authorization processes for renewable energy and large-scale linear projects.

## HEALTH

### Health and well-being in infrastructure planning: How does IA fit?

Wednesday 11 May | 16:30-18:00 | 222

Paper session

Section: Health

Chair(s): Geetha Ramesh

This session aims to bring together policy-makers, practitioners, and academics to explore developments and trends in HIA and health in EA in the Asia and Pacific regions. This presentation-led session will discuss experiences and lessons learned as well as the likely future opportunities and challenges.

### Health impact assessment integration in oil and gas

Uberti, Filippo; Macera, Erasmo; Mortana, Simone; Xiao, Yian; Linzalone, Nunzia; Viliani, Francesca

The paper illustrates how to incorporate the health impact assessment (HIA) process into the complex oil and gas industrial project designing phase, integrate with other sectors, and favor the implementation of more comprehensive HIA assessments under the specific requests of certain countries.

### ERHI assessment of CSG in Queensland, Australia

Werner, Angela; Watt, Kerriane; Vink, Sue; Jagals, Paul

An environmentally-related health impact (ERHI) assessment of coal seam gas (CSG) development in Queensland, Australia, presenting subjective and objective health outcomes data.

### HIA in NHS infrastructure investment planning

Green, Liz

This paper expands on the recently-introduced "NHS Wales Infrastructure Investment Guidance," how HIA became a requirement and has been implemented, and the lessons learned so far.

### HIA as a tool for decision making process for licensing

Inmuong, Uraiwann

The Thai Public Health Act 1992 incorporated HIA into the municipality-level decision making process of renewing a company's health license. This study could help communities better know and understand the health-regulated licensing process, leading the communities to "trust" the Municipality.

### Community-led HIA effectiveness: Stakeholder views

Chanchitpricha, Chaunjit

Different perspectives of stakeholders toward voluntary community-led HIA effectiveness were explored regarding procedural, substantive, trans active, and normative aspects.

### Increasing communities' roles in HRIAs of private sector investment projects

Thursday 12 May | 11:00-12:30 | 221

Workshop

Section: Corporate Stewardship & Risk Management

Chair(s): Sarah Zoen, Irit Tamir, Peter Nestor

Through case studies and role play, the workshop will critically examine approaches to seeking communities' expectations and assertions of rights during an HRIA and what results ensued. Practical approaches to, and tools available for, will also be explored for community participation during impact assessments as well its subsequent management plans.

## INDIGENOUS PEOPLES

### Indigenous Peoples in IA and resilience

Thursday 12 May | 16:30-18:00 | 223

Panel discussion

Section: Indigenous Peoples

Chair(s): Angeles Mendoza Sammet, Mark Dunn, Kepa Morgan

Speakers and audience will discuss how IA processes can better integrate indigenous cultural realities and practices, thereby improving their overall resilience. Special attention will be given to using and maintaining traditional ecological knowledge for community resilience.

### Land development and community relocation in China

Song, Jing

The assessment of inequality and resilience for indigenous communities illustrates the social impacts of development projects, including social inclusiveness, fairness, and sustainability.



# Concurrent sessions

## The importance of socio-cultural aspects in IA

Hanna, Philippe; Vanclay, Frank; Arts, Jos; Langdon, Esther Jean

A lack of consideration of local culture can lead to situations where mitigation plans do not effectively address the impacts they were intended to mitigate and might even end up causing more impacts.

## Impacts of cultural keystone species restoration

Haggerty, Julia H.; Rink, Elizabeth

A community-based participatory research project (CBPR) project offers an opportunity to refine and field test the concept of community resilience and its applicability to evaluating restoration endeavors in indigenous communities.

## ESIA and IBAs: Parallel or complementary processes

Monaghan, Tania D.; Hernandez, Aurora M.; LeBlanc, Kelly  
Exploring the dynamic between the environmental and social impact assessment (ESIA) and impact benefit agreement (IBA) processes by demonstrating the benefits and limitations of each process as assessed through the lens of an environmental Cree communication strategy.

## PUBLIC PARTICIPATION

### Advancing EIA outcomes and processes through learning-centered approaches (I)

Wednesday 11 May | 14:30-16:00 | 232

Paper session

Section: Public Participation

Chair(s): A. John Sinclair, Alan P. Diduck

EIA is recognized as a means to broad-based individual and social learning that could enable transitions to sustainability. The purpose of this session is to expand our knowledge of learning-centered approaches in EIA, with a special focus on the potential for such approaches to promote legitimacy, sustainability, and resilience.

### Learning through EA? Some European experiences

Fischer, Thomas

This paper will look at evidence and opinions of selected EA experts in Europe on whether EA is currently supporting a transition to sustainable practices and resilience, and if so, to what extent.

### Stimulating learning processes with CDF

Partidário, Maria do Rosário

The strategic-thinking approach for sustainability (ST4S), anchored in Critical Decision Factors (CDF), engages multiple perspectives and provides opportunities for knowledge brokerage and enabling constructive approaches to promote learning for sustainability.

### Strengthening EIA outcomes and follow-up in HK

Wong, Chi Chung

This paper highlights a desire to learn from past experience and to formulate regular proactive procedures to minimize potential environmental damage while enhancing the oversight role of the public.

### Social learning in public participation

Neste, Jenni; Simpson, Nicholas

The importance of social learning as an aspect of a good EIA has been consistently highlighted in the literature, but it is still not visible in the EIA reports.

### Learning-centered approaches to project EA and sustainability

Sinclair, John; Diduck, Alan

We introduce the special session on advancing EIA outcomes and processes through learning-centered approaches by sharing related findings from our research.

### Advancing EIA outcomes and processes through learning-centered approaches (II)

Wednesday 11 May | 16:30-18:00 | 232

Paper session

Section: Public Participation

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### Learning through adaptive management in follow-up

Fitzpatrick, Patricia; Diduck, Alan P.

Adaptive management is an important design principle in follow-up and monitoring programs. This presentation explores the adaptive management-learning nexus using three recent Canadian energy projects.

### Impact assessment as a learning process

Mitchell, Ross; Sánchez, Luis

Learning both within the IA process and potential learning outcomes that may arise from IA are discussed and illustrated by a learning-centric conceptual reclamation plan for oil sands development.

### Individual learning through SEA

Sinclair, John; Walker, Heidi; Spaling, Harry

This research examined two SEA cases to identify individual learning outcomes attributable to participation in SEA and to consider whether learning outcomes encouraged social action on sustainability.

### Putting out the fire with gasoline: Logistic secrets of public participation events

Thursday 12 May | 11:00-12:30 | 437

Workshop/Roundtable

Section: Public Participation

Chair(s): Timothy Peirson-Smith, Chris Wong

Poor planning and inattentive logistics can derail effective and meaningful EIA public participation (PP). This informal workshop/roundtable offers an open platform for participants to share their wisdom, international best practice, key learnings, ripe anecdotes, and the requirements for "blank canvas" agenda-free engagement and post-event follow-up for preventing incendiary PP disasters.

### Early stakeholder engagement during site selection and project design (I)

Thursday 12 May | 11:00-12:30 | 141+142

Paper session

Chair(s): Monica Fundingsland-Tetlow, Karina Andrus

Early stakeholder engagement is arguably key to an effective EIA process, but it is not without challenges for developers. This session aims to identify success factors for effectively managing stakeholder concerns and expectations early in the process when the feasibility of alternative project sites and design solutions is uncertain.

### Benefits of early approach with Colla communities

Contreras, Guillermo; Fernandez Lira, Cristina

Early approach and voluntary agreements with Colla indigenous communities in the north of Chile: in the middle of climate disaster, not only an engagement process but also also rescue and reconstruction of history.

### Community influencing project design in Greenland

Factor, Gabriela; Carlsen, Rikke

How the SIA process, meaningful stakeholder engagement, and proactive proponents influenced the design of two mining projects in Greenland and averted a challenging start.

### Mitigating impacts from LNG and pipeline development

Andrus, Karina

The selection of a site for liquefied natural gas (LNG) export in British Columbia has been influenced predominantly by non-engineering, non-technical criteria: environmental sensitivities, cumulative effects, land tenure and use, and the likelihood of gaining social license.



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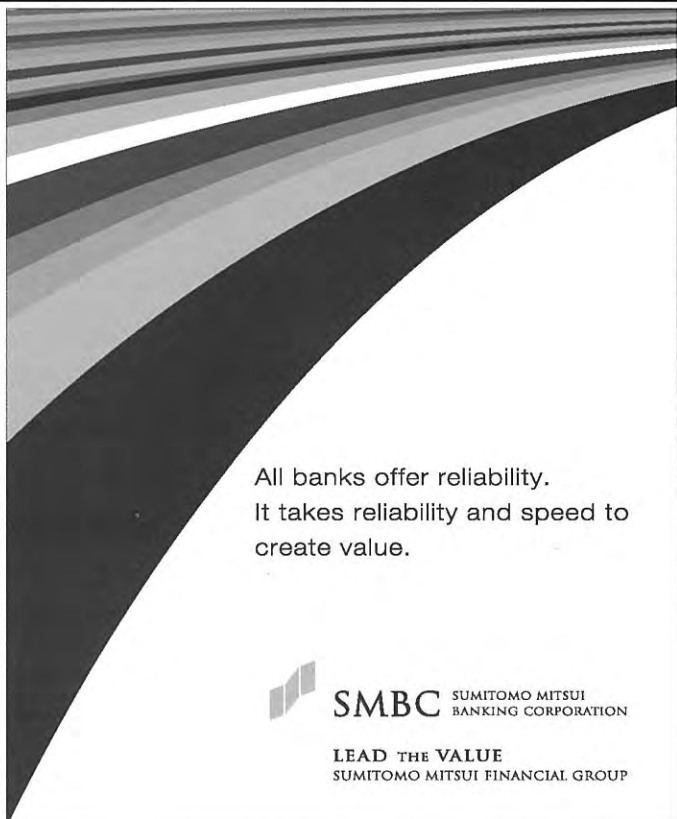
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# Concurrent sessions

## Early stakeholder engagement during site selection and project design (II)

Thursday 12 May | 14:30-16:00 | 141+142

Paper session

Chair(s): *Monica Fundingsland-Tetlow*

Early stakeholder engagement is arguably key to an effective EIA process, but it is not without challenges for developers. This session aims to identify success factors for effectively managing stakeholder concerns and expectations early in the process when the feasibility of alternative project sites and design solutions is uncertain.

### Legal barriers against stakeholder engagement

*Toi, Akiko*

This paper analyses the legal context of the ongoing EIA process of the mega wind farm in the Soya area and identifies the legal barriers against the effective stakeholder engagement.

### Nationwide risk map for bird collisions in Japan

*Kitamura, Wataru*

The generated risk map considering bird sensitivities can be used effectively with other data relating to deciding on construction areas for wind turbines, such as geological information or wind conditions.

### Public involvement focusing on alternatives

*Kamijo, Tetsuya*

The local people showed little interest in alternatives to a bridge project in Cambodia. The reasons could be the complicated analysis and a lack of environmental awareness of project proponents. The countermeasures were discussed.

### An integrated and people-focused scoping approach

*Factor, Gabriela; Villani, Francesca*

A case from the textile industry is used to present a scoping integrated approach to better include social, health, and human rights perspectives, relying on stakeholder engagement and multidisciplinary teams.

## SOCIAL IMPACT ASSESSMENT

### Social impact assessment: Experience and development

Wednesday 11 May | 14:30-16:00 | 231

Paper session

Chair(s): *Sanne Vammen Larsen*

In this session, focus is on the development of and experience with assessment of social impacts in four different jurisdictions: Finland, Canada, Japan, and USA.

### Social impact assessment in Finland

*Sairinen, Rauno*

The presentation analyzes the development of social impact assessment in Finland and makes some conclusions about the current challenges.

### SIA: Evolving perspectives and emerging approaches

*Mitchell, Ross*

This paper discusses how SIA has evolved over time, with new approaches that consider community capacity and resilience. A case study from Canada illustrates key challenges and outcomes for SIA.

### Social impact assessment challenges faced by Japan

*Irie, Noriko; Kawahara, Naoko; Esteves, Ana Maria*

This paper analyzes the challenges related to social impact assessments (SIAs) in the context of Japanese project evaluations, and their relevance in international discussions on SIAs.

### Psycho-social and environmental justice assessment

*Edelstein, Michael*

SIA and environmental justice (EJ) assessments in American and Canadian practice are often perfunctory; deep analysis is resisted. Efforts to engage in substantive assessment of psycho-social impact are discussed.

### Economic impact assessment and sustainable regional development

Wednesday 11 May | 14:30-16:00 | 233

Paper session

Section: *Social Impact Assessment*

Chair(s): *Galina Williams*

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

### Land development suitability assessment of Pingtan

*Li, Qingsheng; Wu, Yaojian; Lin, Zhilan; Chen, Fenggui;*

*Fang, Jing*

It is feasible to choose ecological and economic indicators to evaluate the suitability of island development based on geographic information systems (GIS) and analytic hierarchy process (AHP), and some suggestions can be proposed to improve planning.

### Gaining credit points in green building: Solid waste reduction

*Dewi, Mesi Shinta*

The green building (GB) concept could be used to reduce the carbon footprint, but its success depends on the occupants' awareness. A lack of awareness about reducing solid waste is related to the occupants' level of income.

### Transformation of resource-based cities in China

*Zhu, Xun*

In this study, the impact of a renewable energy supply on resource-based cities and the function of renewable energy in the transformation of resource-based cities in China will be explained.

### Communities, local economies, and oil and gas development

*Haggerty, Julia*

Early findings from research on local perceptions of post-facto impacts of oil and gas development in the USA.

### Social impacts from energy-related projects

Wednesday 11 May | 16:30-18:00 | 231

Paper session

Chair(s): *Sanne Vammen Larsen*

In this session we will focus on social impacts and assessment related to different kinds of energy projects, describing challenges and discussing ways forward.

### Naturally evolving: Flawed SIAs in oil sands EIA

*McCormack, Patricia*

SIAs for Canadian oil sands hearings are fundamentally flawed. They lack expertise by consultants and review panels & adequate empirical data and build on flawed concepts of "natural evolution."

### Coordinating cross-disciplinary research on energy

*Jacquet, Jeffrey; Haggerty, Julia*

This paper describes challenges in coordinating energy-related SIA and outlines a new project funded by the U.S. National Science Foundation to support coordinating social science research on energy.

### Social impacts from geothermal development

*Shibata, Yuki; Kanasugi, Mihoko; Uechi, Jouju*

This paper presents a result of fieldwork study of stakeholders' concerns about social impact of geothermal power development on traditional tourism businesses on a small volcanic island in Japan.

## STRATEGIC ENVIRONMENTAL ASSESSMENT

### Hits of the 1970s: Wisdom from the early days of IA

Wednesday 11 May | 16:30-18:00 | 437

Panel discussion

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

In this session we discuss critical lessons from the formative years of IA. What were the main ideas, debates, trends, concepts, and publications? Come and join this session to discuss with the panelists what the lessons are from the "hits of the 1970s" for today's IA.

Panelists

- Charlotte Bingham
- Lex Brown
- Inga Carlman
- Bill Ross

## Resettlement impacts and creating shared value

Thursday 12 May | 14:30-16:00 | 437

Paper session

Chair(s): Takehiko Murayama

Land readjustment or the idea of reassembling land parcels by a new layout plan together with the development of new infrastructures represent an opportunity to provide new ways to solve the old need to involuntarily resettle people as the only solution to acquire land to build infrastructure in cities.

### 3-D ROW to minimize involuntary resettlement

Ogura, Kenji; Nakatsubo, Shusaku

This paper proposes infrastructure development by utilizing three-dimensional Right-of-Way (3-D ROW) to minimize involuntary resettlement in highly dense urban areas. Involuntary resettlement is unavoidable for building an urban highway network system; thus, 3-D ROW minimizes resettlement and enables livelihood restoration in the same community area.

### Social impacts of an airport expansion in Tanzania

Mteki, Nyandaro; Murayama, Takehiko; Nishikizawa, Shigeo

This study offers insights on the socio-economic impacts experienced by the affected community in Tanzania and the local context in addressing involuntary resettlement.

### Shared value: A silver bullet?

Bruce, Amelia; Crispin, Christine

Exploring early examples of shared value approaches to social impact measurement in Australia and whether they can deliver more transparent social and environmental management.

## Making resilience thinking relevant for impact assessment

Thursday 12 May | 16:30-18:00 | 436

Workshop

Chair(s): Roel Sloodweg, Mike Jones

Resilience thinking defines pathways towards sustainability in an unpredictable world. While relevant for SEA, resilience language is rather inaccessible to practitioners. By presenting concepts and a case example, and linking these to SEA, we want to open a discussion on what is needed to make more effective use of resilience thinking in SEA practice.

## Resilience and Australia's underground resources

Bice, Sara

This research project examines what "resilience" means for Australian communities undergoing energy transitions away from coal and toward more renewable energy sources.

### Concepts in resilience thinking

Jones, Mike

### How does resilience thinking fit the SEA framework?

Sloodweg, Roel

## Review of IAIA SEA Performance Criteria

Thursday 12 May | 16:30-18:00 | 221

Workshop

Chair(s): Monica Fundingsland-Tetlow

Following IAIA 15, a task force was set up to progress the review of the IAIA SEA Performance Criteria. The purpose of this session is for task force members to agree on the scope, work process, and timeline for finalizing the review.

## ODA and the role of IA for sustainability

Friday 13 May | 11:00-12:30 | 234

Paper session

Chair(s): Jong-Gwan Jung

Adaptation of safeguard policy in performance of official development assistance (ODA) is mainly focused on the three objectives. Avoiding adverse impacts of projects on the affected local communities, and it minimizes or mitigates for the projects.

### Effective SA in development cooperation?

Huge, Jean; Mukherjee, Nibedita; Fertel, Camille; Waub, Jean-Philippe

Does sustainability assessment work in development cooperation? We aim at conceptualizing effectiveness based on a participatory approach and linking it to its expected functions in decision making.

### Impact assessment of ODA on water resource project

Lee, Jong Ho

Resident participation, governance, and impact assessment based on the OECD DAC guidelines are necessary for official development assistance (ODA) projects, which should be done not for donor countries, but for recipients.

## JICA's new guidelines: Its practice and problem

Ninamiya, Kosuke

How can two or more countries cooperate for sustainable development through official development assistance's (ODA) environmental and social consideration process?

### Safeguard implementation of regional development banks

Tsuji, Masami; Fujikura, Ryo

Challenges of safeguard implementation were identified through a comparative study of projects that have become subject to compliance review of regional development banks that are AsDB, AfDB, EBRD, and IDB.

## The role of SEA as a facilitator for sustainable planning (I)

Friday 13 May | 11:00-12:30 | 233

Paper session

Chair(s): Charlotta Faith-Ell, Thomas Fischer, Berit Balfors, Kristina Lundberg, Ulrika Gunnarson Östling, Christina Hörnberg

There seems to be a need for a better understanding of the interrelationship between SEA and planning in order to achieve a better integration of sustainability in planning. In this session we explore the role of SEA in planning and discuss recent experiences of reforming SEA in different legal systems.

### Changes needed for EA to be used in planning

Faith-Ell, Charlotta; Lundberg, Kristina; Balfors, Berit

This paper discusses proposals for changes to EA and planning systems in order to increase the use of EA in planning.

### SEA integration in sustainable planning frameworks

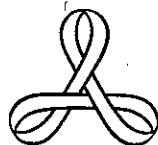
Baresi, Umberto

Comparing the Australian and Italian legislative frameworks, we explore stakeholders' perspectives to identify how SEA is actually perceived and utilized, and how this tool could be improved.

### Recent SEA experience in South Africa and national principles

Lochner, Paul

Reflections on recent SEAs in South Africa for energy planning against the SEA principles for South Africa, to capture learning to inform future SEAs in support of the National Development Plan.



CHANGEDESIGNWORKS 

Act as change agent in sustainable communities.

# Concurrent sessions

## Is it surprising that EA is not used in planning?

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

This paper discusses differences between discourses in planning and EA for understanding why linking them is cumbersome in order to find keys for improving the use of EA in planning.

## The role of SEA as a facilitator for sustainable planning (II)

Friday 13 May | 14:30-16:00 | 233

*Paper session*

*Chair(s): Charlotta Faith-Ell, Thomas Fischer, Berit Balfors, Kristina Lundberg, Ulrika Gunnarson Östling, Christina Hörnberg*

There seems to be a need for a better understanding of the interrelationship between SEA and planning in order to achieve a better integration of sustainability in planning. In this session we explore the role of SEA in planning and discuss recent experiences of reforming SEA in different legal systems.

## Survival of the fittest: Adaptive strategies

*De Vries, Johan; Nuesink, Jan; Eijssen, Paul; Arts, Jos*

Large infrastructure initiatives face complex decision making, balancing national interests and societal acceptance. This paper explores adaptive strategies to deliver successful outcomes and the role impact assessment could play.

## Making SEA deliver environmental sustainability

*Amoyaw-Osei, Yaw*

SEA application in Ghana is largely voluntary, with unmet sustainability expectations in developmental efforts. Appropriate governance arrangement could make SEA deliver environmental sustainability.

## Participation in SEA: Inputs to sustainability

*Partidário, Maria do Rosário; Siqueira, Cynthia Danielle*

This presentation addresses contributions of public participation in strategic environmental assessment as a mechanism that can provide input to sustainable development in decision making processes.

## Need and desirability in EIAs: Proxy for planning?

*Moolman, Jurie; Nel, Johan*

Is the mandatory assessment of "need and desirability" of any project proposal deemed to be a substitute for supporting strategic level environmental decision making and planning?

## Ethical dilemmas in impact assessment

Friday 14 May | 14:30-16:00 | 231

*Panel discussion*

*Chair(s): Marla Orenstein*

This interactive, panel-based session seeks to foster discussion on some of the uncomfortable ethical issues that impact assessment practitioners encounter. By sharing our problems, experiences and solutions, participants will realize they are not alone and may learn new approaches for resolving ethical dilemmas.

### Panelists

- Charlotte Bingham
- Sachihiko Harashina
- Miles Scott-Brown
- Gary Middle
- Janis Shandro

## How SEA and EIA contribute to more resilient plans, programs, and projects

Friday 13 May | 14:30-16:00 | 436

*Paper session*

*Chair(s): Ryo Tajima*

The EU environmental impact assessments on plans (SEA) and projects (EIA) have a built-in long term dimension. This session discusses how the EU IAs could contribute to more resilient plans and projects and help prevent future costs and damage, in particular in a transboundary context.

### EIA: A resilient process?

*Krohn, Jack*

EIA as a process is criticized by various interest groups. What can make it resilient and sustain its credibility as a practical, relevant tool for modern-day decision-makers?

### Extensive integration of SEA in spatial planning

*van Straaten, Dick; Debeuckelaere, Katrien*

Flanders has adapted its SEA and spatial planning regulation to an extensive integration of the SEA and planning process to obtain better environmentally substantiated spatial plans.

### Resilience of the SEA process: Evidence from sensitivity analysis

*Onyango, Vincent*

The study found that the English SEA process is not resilient: it is too stable and not robustly capable of self-regulation, hampered by a lack of adequate feedback mechanisms. In order to establish a more effective self-regulatory SEA process, and more effective regulatory feedback mechanisms should be established.

## Impact assessment as a design tool (I)

Friday 13 May | 14:30-16:00 | 232

*Workshop*

*Chair(s): Elsa João, Lex Brown*

In this session we explore the issues involved in using impact assessment as a design tool, share experiences gained in this regard, and discuss how to make it work in practice with regard to the timing of embedding environmental issues within design and engagement of people skeptical of the benefits of IA.

### Impact assessment as a design tool

*João, Elsa; Brown, Lex*

This paper discusses conceptual points on the use of IA as a design tool, re-emphasizing the importance of considering IA as an "environmental opportunity assessment" tool, including cumulative opportunities when considering multiple projects.

### Enhancing IA's influence on design

*Gronow, Claire*

A quantitative literature review and Australian-based qualitative research on the effects of IA on proposal design assists in understanding opportunities and constraints of IA as a design tool.

### Eco-design: A new approach for IA

*Defromont, Virginie; Jacotet, Nicolas; Pich, François; Labarraque, Dorothée*

The eco-design approach applied to linear infrastructure projects conforms to the impact assessment approach by enabling the avoidance and reduction of mitigation measures at all stages of a project.

## Impact assessment as a design tool (II)

Friday 13 May | 16:30-18:00 | 232

*Workshop*

*Chair(s): Elsa João, Lex Brown*

In this session we explore the issues involved in using impact assessment as a design tool, share experiences gained in this regard, and discuss how to make it work in practice with regard to the timing of embedding environmental issues within design and engagement of people skeptical of the benefits of IA.

### Designing development to achieve the 2030 SDGs

*King, Nicholas*

How might new, rapidly-emerging technological, environmental, and social trends enable better design and approaches to IA to ensure contribution of development decisions to meeting the sustainable development goals (SDG)?

### Advances and key challenges in economic IA

*Williams, Galina*

Economic impact assessment (EclA) plays an important role in determining the overall worthiness of a project. EclA tools that can be used at local and regional levels are discussed.



## Creative conservation and planning tools for (S)EIA

*Golobic, Mojca; Cof, Alenka; Marusic, Janez*

The presented examples will show the potentials of landscape planning and design concepts and tools for the optimization of the development proposals sites, design, and technology.

## Assessing environmental impacts with compliance gaps

Friday 13 May | 16:30-18:00 | 231

Paper session

Chair(s): Yuan Xu

Proposed solutions to potential environmental problems in EIA and SEA may not be exactly fulfilled due to compliance gaps. Optimistic assumptions about compliance could underestimate environmental impacts and risks. This session diagnoses the resulting divergence and explores how the gaps could be narrowed.

## Compliance and enforcement implementation in Canada

*Chapman, Steve; Hallman, Ron*

Implementing a compliance and enforcement program for Canada's federal environmental assessment regime.

## Effectiveness of mitigation measures on power plants

*Yang, Zhenzhong; Xu, Yuan*

This paper develops a top-down approach to track and evaluate the effectiveness of SO<sub>2</sub> and NO<sub>x</sub> mitigation measures on large coal-fired power plants in China from 2006-2013.

## Required actions for EIA regulation in Turkey

*Albayrak, Ali; Turan, Volkan*

Current EIA implementation in Turkey should be improved and some actions should be required for better implementation of EIA processes, such as use of guidelines and improving expertise for sectors.

## Perceptions about uncertainty disclosure in EA

*Leung, Wanda; Noble, Bram; Jaeger, Jochen; Gunn, Jill*

Uncertainty disclosure in EA can be seen as risky. Perceptions about uncertainty differ between proponents and those affected. EAs that disclose uncertainty are not seen as lacking credibility.

## The contribution of SEA and EIA to Resilient PPP

Saturday 14 May | 09:00-10:30 | 231

Paper session

Chair(s): Akiko Urago

Participants discuss how SEA and EIA can contribute to developing resilient policies, plans, and projects. Papers cover the integration of PPP in transboundary issues as well as export finance's use in impact assessment.

## Fostering integration of EA with planning and policy

*Olagunju, Ayodele; Gunn, Jill*

An investigation of how the integration of EA with planning and policy-making is fostered in a transboundary context and how such initiatives can translate into meaningful environmental and social outcomes.

## An export credit agency's use of impact assessment

*Griffin, Max*

The presentation summarizes UK Export Finance's use of environmental and social impact assessment as a key step in evaluating relevant projects which seek export credit agency (ECA) support.

## Notes

## SPECIAL TO IAIA

### Meet the editors

Proudly sponsored by Taylor & Francis Group

Friday 13 May | 16:30-18:00 | 223

Panel discussion

Chair(s): Thomas Fischer

Are you considering writing an article or professional practice paper on impact assessment? Discuss your ideas for articles or guest issues, and learn about how to write a good article with the new editor of *Impact Assessment and Project Appraisal*, Thomas Fischer; the editor of *Environmental Impact Assessment Review*, Alan Bond; and Ken Kimlicka from Taylor & Francis's publications team.

## Biodiversity, ecology, and ecosystem services

### 10-Year monitoring of Songdo Reclamation Project and its implications (36)

*Bang, Sang-Weon; Cho, Hanna*

In order to examine whether the counter measures derived from the EIA of Songdo Reclamation Project had been efficient enough or poorly predicted, and whether any unpredicted impacts were observed, we comparatively investigated and analyzed EIA reports, reviews, and quarterly environmental monitoring reports from 2005 to 2014.

### Invasion of IAPs at Hwangguji River maintenance project sites in Korea (65)

*Bang, Sang-Weon*

We investigated how and what extent a development project facilitates a chance for IAPs to invade and establish in disrupted grounds, and how to set up counter measures against invasion of IAPs in the EIA procedures.

### Long-term monitoring of water quality degradation in Sagami Lake, Japan (16)

*Ham, Young-Sik*

This research reports on water quality degradation of the Sagami Lake drinking water resource in Kanagawa Prefecture and Yokohama City in Central Japan.

### Ecosystem service mapping in 1955 and 2008 (24)

*Kobayashi, Wataru; Hayashi, Kiichiro; Ooba, Makoto*

In this study, the comparison of the potential provisions of the ecosystem services for 1955 and 2008 was conducted in Nagoya City, Japan.

### 75 years of habitat recovery in open pit mines (56)

*Rodrigues, Patricia; Malveiro, Sónia; Amaral, Ana*

An assessment of 75 years of habitat monitoring of two sand and clay exploitations in Portugal, near 3 Natura 2000 sites, is presented. Recovery benefits versus lost ecological values are analyzed.

### Geometric morphometrics as field survey instrument (66)

*Sanchez-Escalona, Katherine*

Geometric morphometrics is an important tool for biodiversity study.

### Application of SDM techniques to deep-sea animals (28)

*Takeuchi, Seiji; Nakajima, Ryota; Yamakita, Takehisa;*

*Hoque, Roxana; Miwa, Tetsuya; Yamamoto, Hiroyuki*

To construct helpful knowledge in planning a protected area for deep-sea animals, we applied SDMs to five species which inhabited in a hydrothermal field of the Okinawa Trough, Japan.

### Earthquake and habitat mapping in the deep sea (34)

*Yamakita, Takehisa; Yamamoto, Hiroyuki; Ikehara, Ken;*

*Yokoaka, Hiroyuki; Fujiwara, Yoshihiro*

We produced maps of brittle stars using Species Distribution Models (SDMs) and used them for Ecologically and Biologically Significant Area (EBSA) identification and EIA of the 2011 earthquake and tsunami.

### Urban climate information system development (43)

*Yi, Chaeyeon*

Urban climate information system is developing as a tool to assess urban climate modifications caused by urbanization and to support the urban climate friendly decision-making.

## Climate change and resilience

### IEMA's EIA Guide to Climate Change Resilience and Adaptation (61)

*Fothergill, Josh; Montgomery, James; LeGouais, Phil;*

*LeBrecht, Henry*

The UK's contribution to advancing climate change resilience and adaptation across EIA practice.

Access it free at [www.iema.net/eia-cc](http://www.iema.net/eia-cc).

### Socio-economic assessment of Sargassum in the coastal waters of Ghana (60)

*Gbeckor-Kove, Peace; Kudjuwu, Jewel; Ameka, Gabriel;*

*Degraft-Johnson, Kweku*

This poster presentation identifies *Sargassum* species in the coastal waters of Ghana and assesses the socio-economic impact of the presence of the *Sargassum* species in 36 coastal towns in Ghana.

### Water quality simulation of flood control dam (68)

*Lee, Han-Jin; Jung, Yong-Moon*

This study was carried out to simulate the changes of water quality before and after flood control dam construction using watershed model (HSPF)-reservoir water quality model (EFDC).

## EIA

### Improving uncertainty communication in EA (352)

*Gunn, Jill; Crowley, Claire; Jaeger, Jochen; Noble, Bram*

This study investigates practices of uncertainty consideration, avoidance, and disclosure in the context of a Canadian EA case (Joslyn North oil sands mine) and makes recommendations for improvement.

### 3D simulation for voluntary EIA by community (23)

*Kasagi, Hiroo*

The nonprofit organization (NPO) in Omachi City, Japan conducted voluntary EIAs using 3D virtual reality technology.

### EIA guidelines for thermal power plant projects (20)

*Maeng, Junho; Kim, Eunyoung*

This study is to formulate EIA guidelines for thermal power plants, in order to assess how thermal power plant construction projects influence marine environment and to establish impact reduction plans.

### EIA follow-up in Korea: The present and future (27)

*Park, Ji Hyeon; Choi, Jaon Gyu*

This is a study on the current status and future challenges of EIA follow up in Korea. We considered the current situation, derived a goal of EIA follow up, and established a strategy to achieve it.

### Improvement plan for the indoor measurement method of road traffic noise (39)

*Park, Young Min; Kim, Kyoung Min; Kang, Kwang Kyu*

A suggested improvement plan for the measurement method of road traffic noise in apartment buildings, including a proposed amendment of the method for assessing reflected noise.

### EIA protocol for deep-sea ecosystems (26)

*Yamamoto, Hiroyuki; Nakajima, Ryota; Yamakita,*

*Takehisa; Fukushima, Tomohiko; Miwa, Tetsuya*

The development of an EIA protocol and equitable marine management system including deep-sea ecosystems is needed, and it should be based on scientific knowledge and advanced monitoring technology.

### Selecting relevant projects/factors in Korean EIA (51)

*Yang, Jihoon; Hwang, Sang-il; Park, Sunhwan*

We recommend that soil texture, soil water content, soil erosion, soil sealing, soil structural degradation and compaction could be used as assessment factors for soil conservation in EIA procedure.

## Energy

### EFA trial in EIA for development of hydropower (HP) in Uganda (45)

*Kabenge, Isa; Kityo, Robert; Kajubi, Lammeck; Kalibbala, Herbert*

Environmental flow assessment (EFA) was conducted along with EIA for Ayago Hydropower Project on River Nile. The EFA provided useful information to ensure healthy river ecosystems. The detailed procedure using GIS is presented.

### Nuclear power plant decommissioning project EIA (25)

*Lin, Hsin-Yi; Huang, Pei-Yu; Kuo, Shiu-an-Hao*

A demonstration of the environmental impact assessment of a nuclear power plant decommissioning project in Taiwan.

### Risk assessment and preventative measures of urban natural gas project (44)

*Xu, Jianling; Wang, Hanxi; Zheng, Xiaoxue; Yao, Difan; Lv, Jing; Zhang, Yu*

To promote the development of natural gas safety technology, we use the fault tree analysis (FTA) method to find out risk factors, analyze the potential risks of gas pipelines, and put forward corresponding preventive measures.

### Effectiveness of mitigation measure on power plant (49)

*Yang, Zhenzhong; Xu, Yuan*

A top-down approach to track and evaluate the effectiveness of SO<sub>2</sub> and NO<sub>x</sub> mitigation measures on large coal-fired power plants in China from 2006-2013.

## Health

### Hongsa health surveillance start-up and approaches (18)

*Phusuwan, Suranee*

A health surveillance program has been started up and implemented for a community based on planning and process and creating alliances among project-affected persons, the government of Laos, and Hongsa Power Company.

## Impact assessment and decision making

### Adding organized justification of decisions to IA (46)

*Brown, Glenn; Seagel, Graham*

A flow chart and guidelines demonstrate how and where to integrate organized reasoning to better support decisions like scoping and significance determinations into the steps of a typical IA project.

### Air pollution prevention and control in airport (35)

*Cui, Qing; Zhu, Xiulian; Lin, Qi; Chen, Fan*

Air pollution prevention and control in an airport area from four different aspects, such as airport planning, technical, airport operation management, and environmental management.

### Mangrove restoration in the Kwanza River mouth (53)

*Rodrigues, Patricia; Costa, Esperança*

The results of a mangrove restoration program undertaken in the Kwanza River mouth, Angola, as an impact mitigation measure of the construction of a touristic resort.

### Synthesis for phase transition as a set point (75)

*Suzuki, Haruka*

Using cases in Japan, the goal of this study of assessment systems is to solve "unassessmentability" by a systems synthesis, regardless of the field.

### A life cycle approach to temporary infrastructure (54)

*Waleij, Annica; Hedström, Johan; Berggren, Jimmy; Liljedahl, Birgitta*

To manage the complex relationships that occur during various temporary infrastructure establishments, an ability to manage and store several different types of models in single system is an asset.

### Landscape pattern in Xiangning coal mine areas (29)

*Yan, Ruifeng; Li, Wei; Dong, Yayuan; Cao, Li; Feng, Yuanyuan; Liang, Zhouxuan*

This study employed ERDAS2013 to decode the remote sensing images of Xiangning Coal Area taken from 2009 to 2014 to perform the retrospective environmental assessment for potential adjustment.

## SEA

### Urban SEA for alternatives negotiation in Mexico (67)

*Clausen, Javier; Palerm, Juan; Gomez, Grace; Gutiérrez, Marco; Román, Rigoberto; Marin, Beatriz*

Triggered by pressing environmental concerns and political strain, the first Mexican SEA will be integrated to a city's urban planning—championed by local IAIA associates and young practitioners.

### SEA for a spatial policy plan for Flanders (64)

*Debeuckelaere, Katrien; van Straaten, Dick*

How SEA is integrated in the preparation process of the spatial policy plan for Flanders.

### SESA for spatial development plan in Mozambique (69)

*Mabote Nunes, Deolinda; Panguene, Khovete*

Strategic environmental and sustainability assessment (SESA) influences the life of development corridors, from concept to design, from implementation and operation, and from adopting long-term perspective where increasing wealth and well-being is based on sustainable use of natural resources.

### How feasible is an online EIA/SEA system? (59)

*van Straaten, Dick*

Online EIA/SEA is possible in the future, on the basis of existing knowledge of impact assessment and environmental information, including assessment of mitigation measures and alternatives.

## SIA

### Characteristics of public facility restructuring (37)

*Ono, Satoru*

Public facility restructuring is required in Japan. By describing the characteristics of the planning process, achievements and problems are discussed from the viewpoint of SIA.

### SIA for community resilience in the Upper Waitaki (42)

*Taylor, Nick; Mackay, Michael*

Social and economic impacts of water uses are important for planning and management that achieves resilient community outcomes. Major sectors impact social and economic wellbeing of both residents and visitors.

Posters are listed by general topic areas and then in order of the lead author's family name. Use the ballot provided to vote for your favorite poster by 11:00 on Friday, 13 May! Leave your ballot at the registration desk.

The poster panels are located in 211+212.

# Exhibit hall | Annual General Meeting

## EXHIBITORS



**Biota-Estudos e Divulgação em Ambientes, Lda**



**City of Nagoya**

**Chubu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism**

**Development Bank of Japan Inc.**

**FALCON Corp. and IDEAS, Chubu University  
IAIA17**

**Japan Association of Environment Assessment (JEAS)**

**Royal HaskoningDHV**

**Taylor & Francis**

**Center for Environmental Creative Studies**

**Digital Earth Research Center for Synthesis of Knowledge (DESK),  
Chubu University**

**Esri Japan Corporation**

**International Digital Earth Applied Science Research Center (IDEAS),  
Chubu University**

## AFFILIATE, BRANCH, AND ASSOCIATED ORGANIZATION POSTERS

Check out the posters in 211+212 to learn about these IAIA Affiliates, Branches, and Associated Organizations and their latest activities!

### IAIA Affiliates

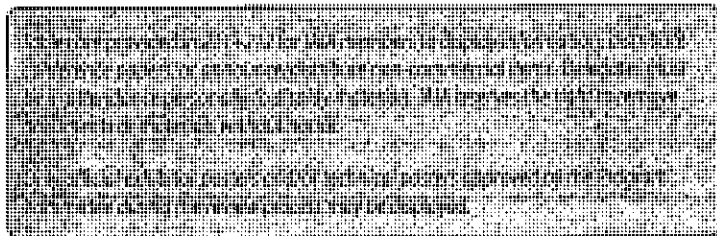
- IAIA Italia
- Iranian Association for Environmental Assessment (IAEA) (pilot)
- Korean Society of Environmental Impact Assessment (KSEIA)
- New Zealand Association for Impact Assessment (NZAIA)
- Association for Environmental Impact Assessment of Nigeria (AEIAN)
- Associação Portuguesa de Avaliação de Impactes (APAI)
- Asociación Española de Evaluación de Impacto Ambiental (AEEIA)

### IAIA Branch

- Ireland-UK Branch

### Associated Organizations

- Environmental Institute of Australia and New Zealand (EIANZ)
- Center for Research in Corporate Governance & Financial Regulation (CCG) - Boğaziçi University



## ANNUAL GENERAL MEETING

**Thursday 12 May | 12:40-13:30 | 224**

This is the annual business meeting of the Association. All conference participants are encouraged to attend, learn more about the operations of IAIA, hear about what lies ahead for the next 12 months, and ask questions.

### Agenda

1. Welcome, introductions, confirmation of the 2015 AGM Minutes
2. Report from the President (Yaw Amoyaw-Osei): 2015-16
3. Report from the Executive Director (Jill Baker): 2016-17
4. IAIA's Financial Report (Miles Scott-Brown, IAIA Treasurer)
5. Presentation of the IAIA Individual Award to Lone Kørnø
6. Presentation of the IAIA Lifetime Achievement Award and address by the recipient, Juan D. Quintero
7. Q & A from members

### Notes

A large rectangular area with horizontal dashed lines, intended for taking notes during the meeting.

*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 11:00 on Saturday, 14 May, or vote in the mobile app.*

### OUTSTANDING PRESENTATIONS

Presenter's name .....

Presentation title .....

Session Date	Session Time			
Wednesday 11 May	11:00	14:30	16:30	
Thursday 12 May	09:00	11:00	14:30	16:30
Friday 13 May	09:00	11:00	14:30	16:30
Saturday 14 May	09:00			

What makes this presentation outstanding?  
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Presenter's name .....

Presentation title .....

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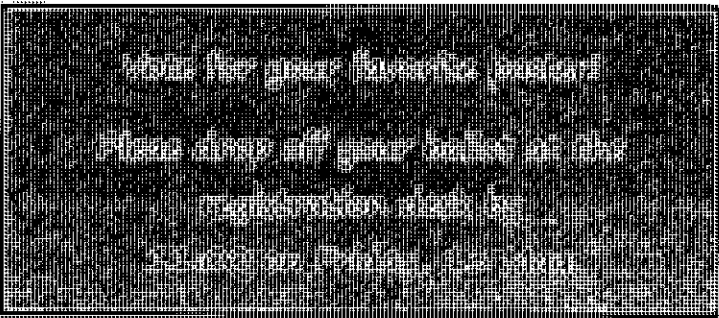
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Saturday 14 May	09:00			

What makes this presentation outstanding?  
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### BEST POSTER: PUBLIC CHOICE

**My vote for Best Poster**

Poster #:  
\_\_\_\_\_

Please return this ballot to the IAIA registration desk by 11:00 on Friday, 13 May.

# Networking activities and events

---

## WELCOME RECEPTION

---

The IAIA16 welcome reception will feature a light meal as well as drinks, including a variety of sake (Japanese rice wine). Come to enjoy conversation between participants from all over the world and celebrate the opening of IAIA16.

**Wednesday, 11 May**

**Location:** Shirotori Hall

**Pre-registration is required.**

---

## BANQUET

---

You won't want to miss this unique experience. Enjoy dinner with your colleagues at Atsuta-Jingu-Kaikan in Atsuta-Jingu Shrine, founded nearly 1,900 years ago and one of the greatest shrines in this region. The shrine stands in a spacious, wooded park with narrow streams running throughout—a lovely place.

Planned activities include a barrel opening event by rice wine brewers, painting in the eye of a “dharma doll” to memorialize Charlie Wolf, and a Tsugaru-shamisen performance.

**Dinner will be served promptly at 7:00pm.** The doors open at 6:30 so that you can select your seating. You may wish to arrive earlier than 6:30, to stroll the grounds before the doors open and appreciate the atmosphere that exists at this ancient site.

**Friday, 13 May | 18:30-21:00**

**Location:** Atsuta-Jingu Kaikan

**Pre-registration by 18 April was required.**

No refunds will be given after 18 April, and no cash transactions will be accepted on-site.

---

## DINE OUTS

---

Spend an evening sampling local food at a “pay your own way” dinner. Japan, as a long archipelago, has a great diversity of seasons throughout the country. This environmental abundance has led to the unique traditions of delicacies, such as sushi, sukiyaki, and tempura. The term “Nagoya-Meshi” references the local cuisine in Aichi-Nagoya. It is characterized by a salty-sweet harmony of subtle sweetness and spices, flavors found in neither Tokyo nor Kyoto. A local host is organizing the Dine Outs and will help you experience Japanese cuisine and try some of the best “Nagoya-meshi” in its place of origin. To join, sign up on the forms that will be available in the registration area. Dine Outs are a great opportunity to meet new people and see different parts of the city in a jovial atmosphere.

**Thursday, 12 May**

**18:30 onward**

**Sign up on the message boards**

---

## FUN RUN

---

The Fun Run is a great way to start the day and network with fellow runners and walkers. The 2.3km route along the Horikawa River near the Nagoya Congress Center will refresh your mind and body and offer a chance to meet people you might not otherwise meet during formal sessions. Everyone is welcome: runners, walkers, and spectators!

**Thursday, 12 May | 07:00-08:00**

**Starting point:** Entrance of Nagoya Congress Center

**Pre-registration by 18 April required.**

---

## TECHNICAL VISITS

---

Participants must be pre-registered and pre-paid to participate. Delegates are not expected to pay tips to the servers. The tours are hosted in English. Casual clothing and walking shoes are recommended. Tours depart from the main entrance of the Nagoya Congress Center. Please plan to check in for the visit a minimum of 15 minutes prior to the noted departure time. Buses will not wait for latecomers. Participants will be required to sign a liability release waiver upon check-in for the visits.

---

## AFFILIATES, BRANCHES, AND ASSOCIATED ORGANIZATIONS FORUM

---

A special session is dedicated to the activity of IAIA's Affiliates, Branches, and Associated Organizations. This session is open to all conference participants, and the agenda will be circulated when finalized.

Posters are also being displayed by many of these groups. Stop by during the poster session to visit with representatives of the Affiliates, Branches, and Associated Organizations and learn more about their activities.

**Thursday, 12 May | 07:45-08:45 | 221**

---

## STUDENT FEE WAIVER PROGRAM ORIENTATION

---

Students who were selected for this program are invited to this meeting to know each other and familiarize themselves with the IAIA16 organizational and administrative duties that were distributed.

**Tuesday, 10 May | 17:10-17:30 | 233**

---

## STUDENTS AND YOUNG PROFESSIONALS

---

**Presentation Preview:** Students and young professionals are invited to preview, practice, and peer review their presentations the day prior to the conference.

**Tuesday, 10 May | 15:00-17:00 | 233**

**Social:** A students and young professionals meet-and-greet/fun social activity will take place following the presentation previews and mentor/buddy meetings.

**Tuesday, 10 May | 18:00 onward**  
**Meet at the IAIA registration desk**

---

## MENTOR/BUDDY PROGRAM

---

This program helps students and young professionals (SYPs) and first-time conference attendees feel more comfortable and less overwhelmed with their conference experience.

The mentor is an experienced IAIA member who acts as a discussion partner for a mentee. Mentees do not shadow mentors, but rather meet at the conference to begin conversation that extends beyond the conference. Mentors and mentees with similar interests are matched wherever possible.

Matching of mentors and mentees took place prior to the conference. If you would like to be a mentor or mentee at a future conference, e-mail [impact@iaia.org](mailto:impact@iaia.org) or notify staff at the registration desk.

**Tuesday, 10 May | 17:40-18:00 | 233**

---

## “POPOP” MEETINGS

---

Do you need to meet with colleagues? Continue a discussion? Get together with a potential business partner or client? Room 434 is available for small meetings on a first-come, first-served basis: check the schedule on the room for available times and sign up.





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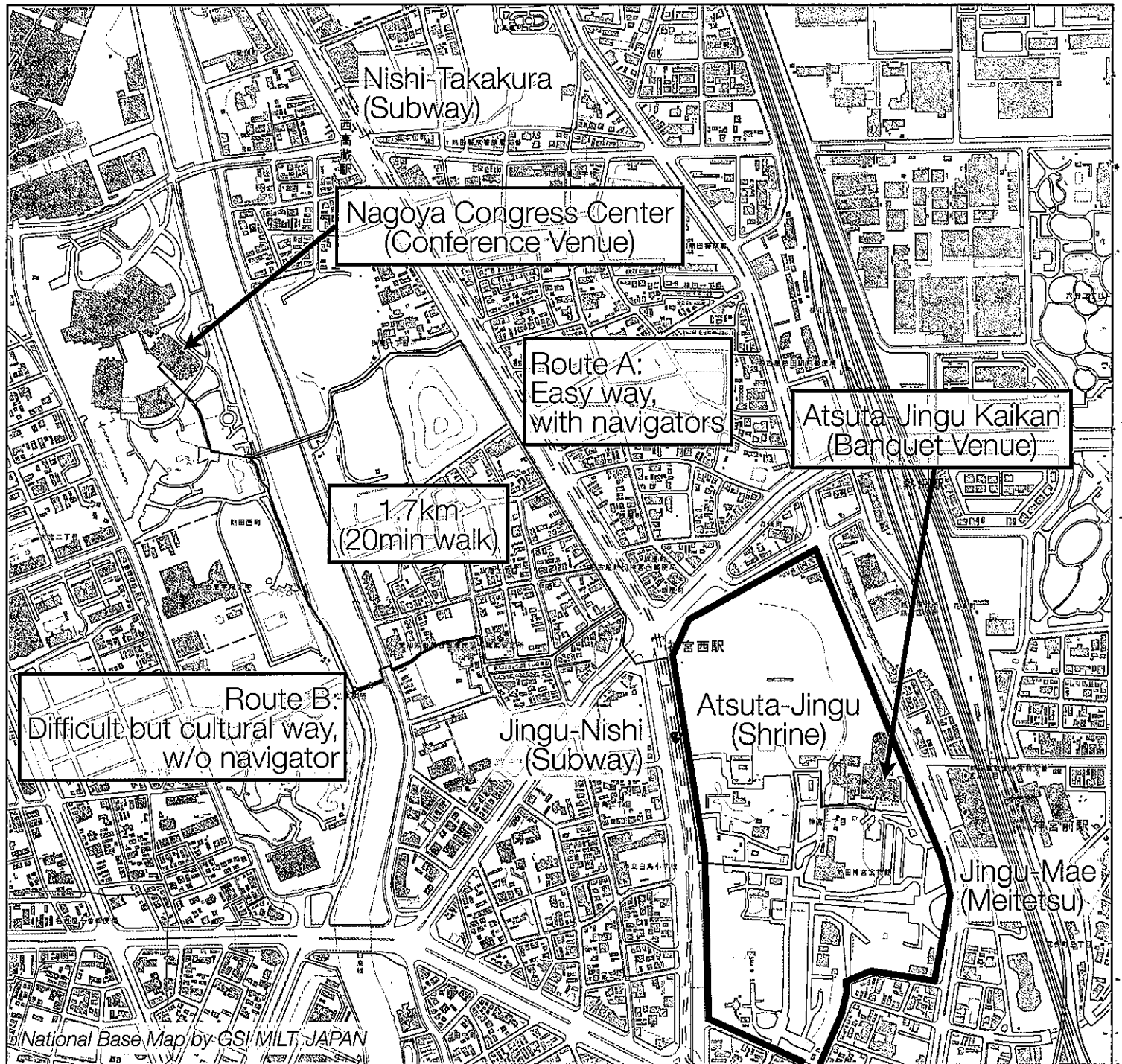
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# Maps

## Atsuta-Jingsu Kaikan (banquet location)



### Atsuta Jingu Kaikan

Address: 1-1-1 Jingu, Atsuta-ku, Nagoya, Aichi 456-8585 JAPAN

#### How to get to Atsuta Shrine:

- Walk from the conference venue (20 minutes). Navigators will be standing on the route.
- Take the subway from Nishi-Takakura/M28 to Kanayama/E01, M01, then transfer to Meitetsu line, then go to Jingu-Mae station.
- Take the subway from Nishi-Takakura/M28 to Jingu-Nishi/M27, then walk through the Atsuta Shrine forest (8 minutes).

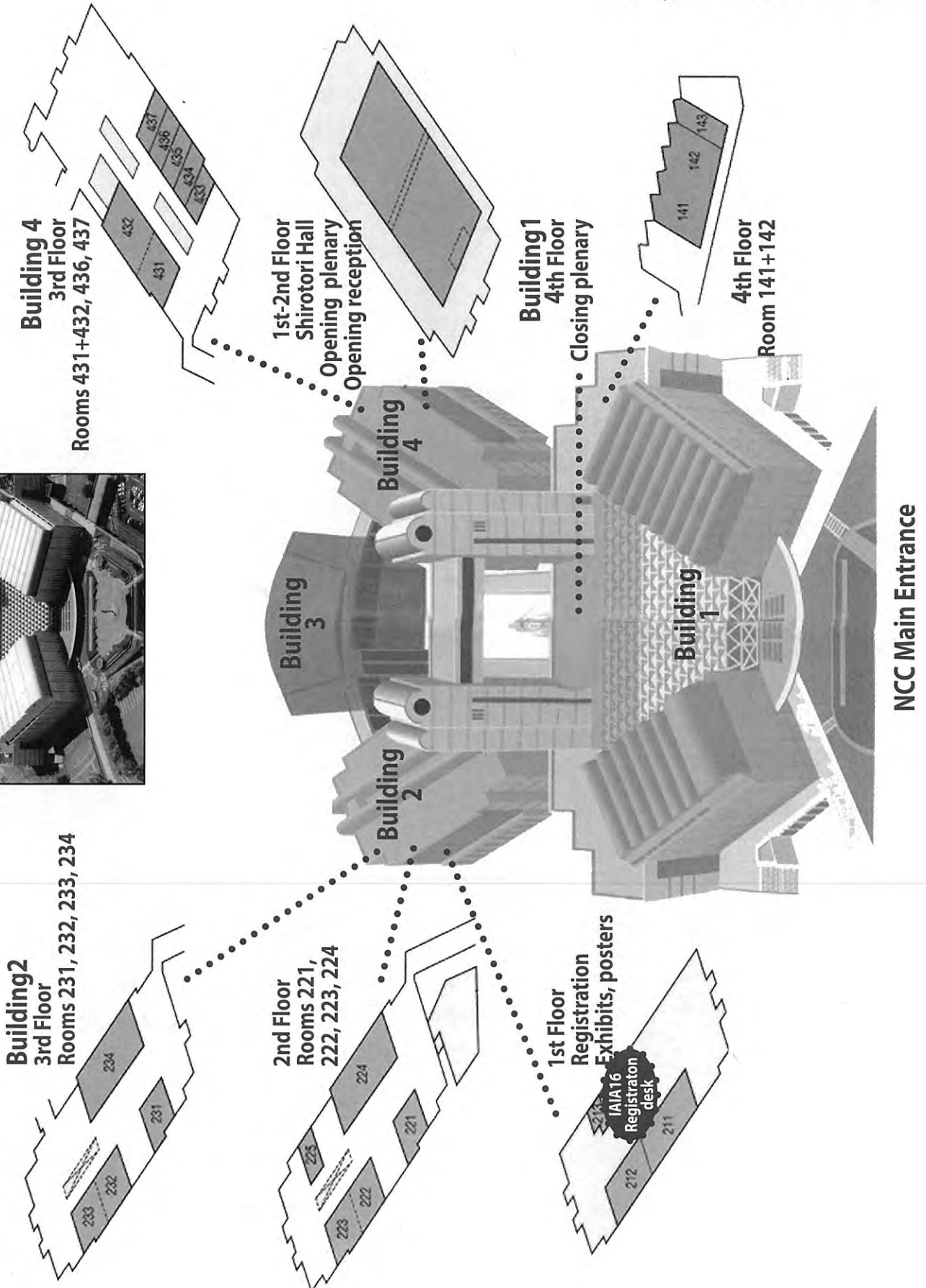
#### How to return to your hotel:

- At Jingu Mae station, you can catch taxis or get on the Meitetsu railway. The station is 5 minutes' walk from Atsuta Shrine.

**Please note: Dinner will be served promptly at 7:00pm.** The doors open at 6:30 so that you can select your seating. You may wish to arrive earlier than 6:30, to stroll the grounds before the doors open and appreciate the atmosphere that exists at this ancient site. See page 46 for additional details.



# Maps Nagoya Congress Center



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# Impact Assessment for Nuclear Power Plant Decommissioning: Using Chin Shan Nuclear Power Plant of Taiwan Power Company as Example

Hsin-Yi Lin, Pei-Yu Huang, Shuan-Hao Kuo

Department of Comprehensive Planning, Environmental Protection Administration, Taiwan

## Introduction

The Chin Shan Nuclear Power Plant (Nuclear Power Plant Number 1) in Taiwan has been in operation since 1978. After the accident at Fukushima, Japan, the Taiwanese government started to compile a new energy policy. This policy includes the shutting down of the power generation unit number 1 at the Chin Shan Nuclear Power Plant in December 2018. Accordingly, an environmental impact assessment of the decommissioning plan of the plant has been sent to the Environmental Protection Agency (EPA) for approval in January 2016.

## Background

The Chin Shan Nuclear Power Plant (referred to as "Plant Number 1" further in this document) of the Taiwan Power Company (Taipower) is located in the Shimen District, New Taipei City. The plant covers an area of approximately 248.5 hectare. The plant is equipped with two steam turbine generator sets, namely Units 1 and 2 (Figure 1). With a capacity of 636,000 kilowatt (kW) per unit, the total installed capacity of the plant is 1.272 million kW. The validity period of the operating licenses is 40 years. Since the operations of Units 1 and 2 were officially approved in December 1978 and July 1979, respectively, the expiration date of the operating license for Unit 1 is December 5, 2018, whereas that for Unit 2 is July 15, 2019.



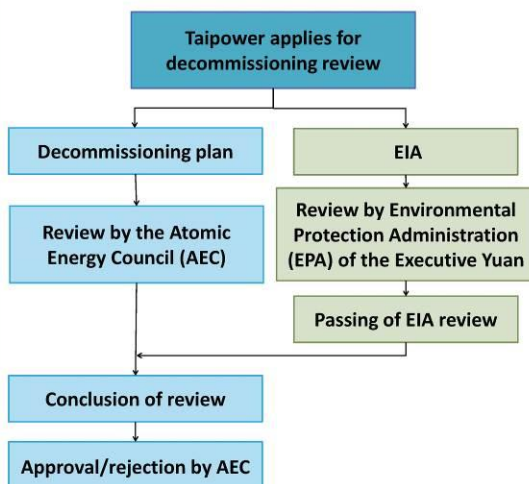
## EIA Review Mechanism and Procedure for Nuclear Power Plant Decommissioning in Various Countries

Item	United States	Japan	Canada	United Kingdom	Lithuania	Taiwan
Evaluator of EIA	Nuclear Regulatory Commission (NRC)	Not available	Responsible agencies (RAs) + federal agencies (FAs)	Health and Safety Executive (HSE) + Environment Agency (EA) + related departments	Ministry of Environment + related departments + panel review committee	EPA + related departments + EIA taskforce + EIA review committee
CA for EIA	NRC	Ministry of the Environment	Canadian Nuclear Safety Commission (CNSC) + Minister of Environment and Climate Change	mainly HSE; supplemented by EA and Scottish Environment Protection Agency (SEPA)	Ministry of Environment	EPA
Final licensing authority	NRC	Nuclear Regulation Authority	CNSC	HSE	State Nuclear Power Safety Inspectorate (Valstybinė atominės energetikos saugos inspekcija/VATESI)	AEC
System differences	A universal EIA approach is adopted, which is unlike EIA review processes of other countries	Not available	Single CA system; Stage 1: no right to veto with EIA, but has right of decision (must pass EIA review)	Single CA system	Dual CA system	Dual CA system; Stage 1: both right to veto and right of decision with EIA
Legal basis for EIA	None	EIA Law (not applicable for nuclear power plant decommissioning)	Canadian Environmental Assessment Act (CEAA), S.C. 2012, c.19, s.52	Nuclear Reactors (EIA for Decommissioning) Regulations (EIADR99)	1. EIA Law for Planned Economic Activities; 2. Regulations for Preparation of EIA Plans and Reports	Breakdown and scope of EIA for development activities should be implemented based on recognized and standard guidelines
EIA stages or categories	None	Not available	Stage 1: CA to evaluate EIA; Stage 2: Panel to review EIA	Multi-staged EIA	Stage 1: Selection (to determine that EIA is to be conducted); Stage 2: EIA	Stage 1: EIS; Stage 2: EIA

## Legal Basis for Nuclear Power Plant Decommissioning in Taiwan

Article 23 of the *Nuclear Reactor Facilities Control Act* of Taiwan stipulates that operators of nuclear power plants have to submit an application to the competent authorities (CA) for the decommissioning of the plant three years prior to the scheduled date for permanent cessation of operations.

## Review process for decommissioning



## Development Activities: Major Activities in the Decommissioning Plan

### 1. Transition phase for plant shutdown (approximately 8 years)

- Shutdown and decommissioning operations
- On-site investigation of radiation characteristics and decontamination operations
- Construction of new facilities needed for decommissioning.

### 2. Demolition phase for decommissioned plant (approximately 12 years)

- Transfer of spent nuclear fuel to dry storage facilities for storage
- Dismantling of large-scale systems and related equipment (including steam turbine plant, reactor pressure tank, spent nuclear fuel pool, and containment bodies)
- Decontamination of buildings.

### 3. Investigation phase for final state of subject site (approximately 3 years)

- Joint dismantling of plant structure and steam turbine plant
- Soil remediation and investigation of the final state of the subject site.

### 4. Recovery phase for subject site (approximately 2 years)

- After reinforced concrete (RC) surfaces of buildings have been decontaminated, these are to be inspected and confirmed as being contamination-free, prior to demolition
- Demolished RC blocks are to be sent to separation plants for recycling
- RC blocks are to be crushed into batching materials for backfill at spaces 1 m and deeper below ground surface of the joint plant structure and steam turbine plant. Batching materials are not to be transported to external sites
- Overburden operations are to be carried out on subject site
- After decommissioning is complete, the simulation operation center is to be converted to a small memorial park. With the exception of the reserved area (which will hold the storage facility for radioactive waste), the rest of the subject site is to be planned for use by the electric power industry.

## Main EIA Items for Subject Case of Nuclear Power Plant Decommissioning

- To clarify and plan the work items and schedules for demolition, reconstruction, and new construction of facilities related to the decommissioning, as well as to assess the effects of the projects on the environment when these overlap, and to propose counter measures for environmental protection.
- To provide details on measures in the plan related to the storage, treatment, disposal, and management of radioactive waste (including the conditions of the requisite facilities to be set up, possible set-up locations, facility sizes and types, and safety concerns). An evaluation of the effect of the development activities is to be carried out in accordance with Article 45 of the EIA Guidelines, and the relevant emergency and contingency measures are to be stipulated.
- To assess the various types of wastewater generated during the decommissioning period, the maximum output of liquid wastes, and related treatment plans, as well as to evaluate the amount of wastewater discharge related to the runoff from precipitation during the various phases of the project and the corresponding measures.
- To supplement the survey of the ecology of supplementary water territories and propose conservation plans for protected species or countermeasures for ecological and environmental protection.
- To evaluate the effect of contaminants generated by the decommissioning activities on the activities of fisheries in the adjacent areas.