出國報告(出國類別:開會)

## 出席國際影響評估協會 2008 年年會 出國報告

服務機關:行政院環保署 姓名職稱:黃光輝 處長 派赴國家:澳洲伯斯 出國期間:97/5/5—5/11 報告日期:97/6/12

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#### 摘要

第二十八屆舉辦此國際大型研討會,規劃細密,流程順暢,議程包括訓練課程、專業拜訪、展覽、開會致詞(keynote speakers)、主題論壇、同時分組討論、晚宴、總結閉會、臨時討論會及協會會員大會等。

未來可以建立更有效率的影響評估系統最關鍵之三個主軸:

1.法制架構:更清楚定義之法令工具、法規及政策規劃指引。

2.相關主體(stakeholder)更提早、有彈性、更公開參與全程對話之機制建立。

3. 開發者或政策提議者有足夠知能進行影響評估,全程掌握並重視跨隙合作。

SEA 為大家認為未來需加強發展之領域,可加入「範疇界定」(scoping)程序,使相關主題可同時進行評估,在尋求共同建議供決策參採。實施 SEA 指定,可協助包括:

1.與永續性評估接軌。

2.在形成方案、計畫之前即被評定其目的及必要性。

3.容許民眾參與政策之擬定(橋樑)。

4.提供困難決策之隱密及合理性基礎。

5.提供與公眾及團體日後溝通之背景初期資訊。

6.將氣候變遷、社經、生態等不確定性高或複雜議題經由不同情境之模擬,提供新的思考方向及決策不同選項。大陸近五年來在亞銀、世銀等 SEA 導引下,地方政府層級完成超過 500 件 SEA 報告。

壹、目的

- (一)本屆研討會主題爲影響評估的角色,重點包括:能源、土地利用、生物多樣性、 公眾參與、政策及永續性評估等。藉由本次參與,瞭解國際環境影響評估發展趨勢,並與其他國家經驗交流。
- (二)於本次研討會與其他國家互動,瞭解其環境影響評估進程、法制、審查及爭議處 理等情形,以作為我國相關作業檢討改進之重要參考。

#### 貳、過程

日期	地點	工作內容
5/4	臺北至澳大利亞(起程)	起程
5/5	澳大利亞(柏斯)	研討會
5/6	澳大利亞(柏斯)	研討會
5/7	澳大利亞(柏斯)	研討會
5/8	澳大利亞(柏斯)	研討會
5/9	澳大利亞(柏斯)	研討會
5/10	澳大利亞(柏斯)至臺北	返程

研討會之分組及研討主題、重點等分述如下:

TF1.1 生物多樣性的補償:救助或舒緩

支流議題:生物多樣性

#### 會議召集人:SUSIE BROWNLIE, KERRY TEN KATE

發展通常會迫使附上對生物多樣性及生態系統服務有剩餘負面影響(指與人類福祉 與社會生態系統回復力有關的影響)的代價,這些剩餘影響構成一種在決策過程中必須 列入考慮的交易補償。在計畫和影響評估考量下,生物多樣性的補償是一個機制去補償 這些影響,能對於永續發展有正面的貢獻。本研討會的專業價值在於生物多樣性的保 護、影響評估、計畫、永續發展議題和商業上。這些議題被分成兩部分。第一部分是介 紹生物多樣性的補償、說明用在決定與測量生物多樣性補償的工具,以及各種不同在政 策及實務上建立生物多樣性補償的方法。第二部分則是透過大眾的公開討論,對於生物 多樣性的補償提出一些不同的觀點和經驗、關注的機會以及限制和挑戰。本研討會將會 對來年有關為永續發展所採取之生物多樣性補償的影響評估與決策,列出優先順序的總結。

#### TF1.2 解決氣候變遷的水資源管理影響評估

#### 支流議題:氣候變遷

#### 會議召集人:ALESSANDRO PALMIERI, STEPHEN

#### LINTNER, JOHN BOYLE

此研討會的主題主要是探討解決有關氣候變遷影響水資源管理,和水資源開發影響 評估所面對的挑戰的實際方法。近來文獻多重視在「應該做什麼」,而不是「如何做」。 而沒有依照水資源管理目的所設計可行性的模式,造成分析的結果和決策差距很大。本 研討會關注所有有關於水資源管理的計畫使用風險適應管理(ARM)的可能性,並且開發 使用手冊和工具以供執行者使用。

#### TF1.3 氣候變遷:健康衝擊和適應

#### 支流議題:氣候變遷/社會與健康影響

#### 會議召集人:DIANNE KATSCHERIAAN, JEFFERY SPICKETT

爲了考慮對未知卻可能對未來造成影響的事件如氣候變遷提出合理的解釋,影響評 估架構可被視為一個有效的預測工具。氣候變遷對於健康和社會福址的影響相當大,因 此,開啓一個積極主動的社會適應氣候變遷方法是相當重要的。本研討會主要探討健康 影響評估(HIA)的應用和其他評估的模式,以評估對氣候變遷的健康意涵與適應性反應( 藉由辨別潛在可能對健康有影響的衝擊,而發展適當的適應性的反應;政府、工業界以 及社會所考慮的適應性反應;檢驗可能被提出的健康所蘊涵的潛在適應性策略的評估方 式)。

#### TF2.3 國家發展計畫中的環境主流意識

#### 支流議題:國際發展

#### 會議召集人:DAVID ANNANDALE

許多新興工業化國家的快速經濟發展,對於環境造成了強大壓力。一些國家環境破壞的威脅,甚至比經濟發展和貧窮還要嚴重。具有國家發展計畫的國家是相當有優勢的,他們可以將環境的議題正式地導入計畫進程中。這使環境的議題可以與傳統上經濟和

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社會目標之間達成某種的平衡。許多發展中的國家面臨到環境議題與開發計畫整合的挑戰。本研討會的主題將會檢視環境主流意識所帶來的正面影響。著手環境主流意識可用 什麼工具?有什麼例子可以明確指出環境主流意識對於發展計畫有正面的影響?我們要 怎麼知道環境主流意識的推動是否有成功?國家發展計畫的環境主流意識中,EIA 和 SEI 的思維/技術所扮演的角色是什麼?這些主題在研討會有 4-5 個簡短報告,之後再由聽眾 間互相討論。

#### TF3.1 使政策環評(SEA)成爲制定政策的有效工具

#### 支流議題:政策環評

#### 會議召集人:FERNANDO LOAYZA, ROB VERHEEM, MARIA PARTIDARIO

因為政策環評(SEA)的利用實行是多元化的,這個研討會檢視一些特別的案例,像 是政策環評(SEA)常會告知和支持策略性的決策過程,以及從關鍵問題中學到的教訓 ,包含什麼是使政策環評(SEA)成為一個決策的工具?在決策影響的過程中,什麼是 政策環評(SEA)成功的關鍵因子?更具體的說,什麼是政策環評(SEA)小組所必須具 有的技巧和能力?同時什麼制度和組織的能力是機構所需要去執行政策環評(SEA)的能 力?以及政策環評(SEA)過程怎麼能長期影響政策決策?這討論會將會由三個部分所組 成。第一部分是呈現具體案例,第二部分,針對上述四個關鍵問題,將分組討論這些案 例以及其他相關經驗。最後,分組討論的結果和全體人員分享和討論。這個研討會將會 汲取多種機構的經驗,像是世界銀行、國家機構,如荷蘭的國際合作環境評估委員會、 以及採用 SEA 的發展中國家等等。本研討會透過出席者的討論,出現很多挑戰的觀念, 以及對政策制定者、計畫者和政策環評(SEA)參與者實際有用的建議。

#### TF3.2 21 世紀科技評估藝術的說明

#### 支流議題:管理

#### 會議召集人:FRANK VANCLAY

自 1995 年美國技術評估辦公處關閉後,技術評估(TA)除了在歐洲被廣泛的運用外, 在其他地區則比較少。隨著新的技術發展,例如生物技術、奈米技術、機能食品等等 ,與技術評估的關連也較以往密切。技術評估過去遭受一些批判,近來則對技術評估的 新理論和實作的發展比較有興趣。最新的公民參與方法,有共識會議和公民裁判的出現 和利用。這個主題研討會邀請此領域頂尖者出席會議,說明近來在評估藝術說明上的進

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步。FRANK VANCLAY 是一個大型研究計畫的召集人,這研究計畫主要是調查世界各地 技術評估的實行情況,試圖去設計一個可以適合澳大利亞的情況的方式。這個計畫也試 圖在技術評估中增加對科技發展的社會面向考量,也因此稱做社會面向的技術評估( TASC)。這個計畫已經集合世界各地出席本次會議的領域頂尖者參與。

#### TF3.3 西澳環境影響評估的公共參與和實行

#### 支流議題:社會與各界代表

#### 會議召集人:JOHN DEVLIN

西澳擁有廣大的資源、工業和資產,也是澳洲實行環境影響評估主要地區。在 PERTH 召開的 IAIA08 會議提供一個絕好的機會去針對評估所做的貢獻,而這貢獻便是澳洲透 過公眾參與促成環境評估。在這個由公眾參與部門主辦的主題研討會,提供 IAIA 成員 聆聽西澳非政府組織(NGOS)和社會組織參與環境評估的過程,以及討論他們的經驗 。受邀的參與者介紹一些案例和給予建議,來改善 EIA 的進程。這研討會提供一個機會 去廣泛檢視西澳公眾參與的情形。

#### TF4.1 海洋及海岸影響評估的完美海洋海岸影響評估

#### 支流議題:業者的眼光

#### 會議召集人:ADAM SMITH

環境評估預測的監控,澳洲海洋環境的狀況都是相當受到限制的。儘管如此,澳洲 還是被視爲這方面的領導者。海洋環境依然持續遭受很多活動的衝擊,包含水栽業、農 業、漁夫、都市化、工業發展、船業、旅遊以及工業計畫的規模等等,這些都是史無先 例的。全球氣候變遷的影響,包含海水層的波動和海洋表面的溫度。這對於海岸社會和 生態系可能是全世界性的影響。這些累積和複雜的議題,需要特別的專家去維持生物多 樣性和支持海岸海洋環境的復原。海洋影響評估,通常與特定的地區活動相關,例如: 海港、船塢、船難、以及其他海洋工作。這個主題研討會討論議題,包含有與物件底限 或地點所連結環境影響評估(EIA)存在條件所組成的要素、計畫的了解、風險評估、 預測/模式過程和限制、自信和敏感度,影響敘述、監測和審核以及回饋過程、適應管理 經營,新工具、預防方法、累積影響評估以及計畫和發展議題等等。

#### TF4.2 巨大的影響評估災害:一個集體治療主題研討會

#### 支流議題:學習與專業發展

#### 會議召集人:ANGUS MORRISON-SAUNDERS

「大家好,我的名字是 ALEX,我在一個影響評估災害中活下來!」。秉持著 PETER HALL 的名著「偉大計畫的災難」的精神,本研討會可使實踐者分享個人一些從成功的 環境影響評估(EIA)案例中獲得的經驗,特別是錯誤的部份。我們都知道我們在錯誤 中學得最多,但通常我們都只聽到成功的案例。這個主題研討會是一個你已經等待很久 的「集體治療」的講習會。你可以分享寶貴的智慧和一些記憶中從影響評估經驗得到的 體悟。一些影響評估災害的存活者,也樂意分享他們的故事:

BILL(ROSS,加拿大卡爾加里大學)

IAN(LEPROVOST,澳洲昆士蘭大學)

JOHN(FRY,愛爾蘭都柏林大學)

ROSS(MARSHALL,英國環保署)

在他們結束分享,在這安全和受到支持的環境中,麥克風傳到任何樂意剖析的聽眾成員。什麼故事是你希望可以在你的職業生涯前聽到?讓你的影響評估災害對經驗較少的IA家族成員有助益。有興趣的部份,請聯絡推動者 ANGUS MORRISON-SAUDERS。

#### TF4.3 爲環境和社會評估目的而利用國家系統

#### **支流議題:國際發展**

#### 會議召集人:HARVEY HIMBERG, STEPHEN LINTNER, JOHN BOYLE

「國家系統」是指借款國因應借貸國的要求(包括環境及社會影響評估)欲達成目 標與操作程序而制定的政策、法律、法規和執行作法。世界銀行董事會董事(包含借款 國和捐獻國)在2005年3月批准一個兩年試辦計畫,以銀行財政計畫支持在環境影響 評估中使用國家系統的可行性。這個會議提供一個全面性的檢視有關守護環境和社會中 利用國家系統的銀行經驗。首篇論文描述有關試辦計畫的目標、銀行準備的操作政策、 試辦計畫的執行、借款國分析與評估銀行「對等」與「接受」授信條件的發展與運用之 方法,以及試辦計畫的選擇。兩篇由捐獻國實踐者及借款國的參與者所補充的論文,描 述在不同國家採用試辦計畫的案例研究,最後一篇論文報告試辦計畫的銀行獨立評估作 業。

#### CS3.2 影響評估如何增加地方社區的利益?

#### 支流議題:社會與各界代表

# 會議召集人: PETER LEONARD, NAVIN K. RAI, STEPHEN LINTNER, ROY KWIATKOWSKI

以發展的觀點來看,針對能源、基礎建設和工業等大型計畫最主要受到的批評便是 ,許多地方和區域社區常常受到開發案最大的影響,卻是得到最少的利益。在許多的例 子上指出,可預見的最大效益,未必會慢慢流向地方社區的層次,受到最大衝擊的族群 是,偏遠地區的貧窮人口與住在擁有豐富資源地區的族群(包含原住民)。這導致在過 去十年間,用盡各種包含以設計方法與執行機制為共同目標的開發案,乃樂觀地運用計 畫的影響與促進社區健康的機會,以誘使在地方和區域社區層次上,公平地分享計畫的 好處。實際上,社區利益分享的觀念,可被視為特別是為了計畫的需求、國家內涵、法 律法規框架和其他的需要考慮因素,所快速發展出的一種廣泛拼湊的實用方法。

#### CS3.12 新新世界秩序對影響評估的影響

#### 支流議題:管理

#### 會議召集人:JIM SINGLETON, HELEN SINGLETON

影響評估面臨一個挑戰:全球化和資訊圈的革命。除非對此挑戰有所反應,否則影響評估將不會處理此項挑戰。科學普遍被用在 EIA,但是 EIA 本身卻不是科學,它是一個政治過程。最好的情況是,影響評估是一種社會系統化的過程,從人類的行為所引起的改變中,協調出可接受的程度。最壞的情況是,它真的是一個本質上企圖透過達成商業交易的談判過程。在一個新世界秩序中,面對 EIA 的議題,包含個人和組織間倫理的違背、偏向擁有世界權限特權之有力組織所喜好的議題、在制度規範邏輯下未說明的假設、挑戰正統的多樣性意識決等。可能的理由有很多,主要包含複雜的全球權力變化、資訊圈資源開放的興起和變化的速度。數位通信革命是史無前例的,它對於人類的活動有很大強力的影響。「藝術」和質化後「人」的議題,在未來的影響評估將會是非常重要的。這項通信革命將會掃除所有機構及其影響所及的地方所喜好的邏輯,而傳統的技術和確實的科學可能會行不通。

#### CS4.6 影響評估外:在組織決策中整合社會和永續觀念

#### 支流議題:企業意見/社會與健康影響

#### 會議召集人:SHERIDAN COAKES

對於我們這些長期從事影響評估者來說,不管是公領域或私領域,在社會制度和追求永續都不斷面臨著挑戰。舉例來說,在許多組織中,底線的說明、企業社會責任和社區參與是根深蒂固的。然而,儘管頻繁的使用這些名詞,對於社會永續進程與規劃之運用、整合與價值依然是零碎且不易與企業/機構的文化整合。更何況,社會和永續評估計畫的成功,大多仰賴政府/工業中負責或指導計畫的關鍵人員的價值。不幸的是,當換了負責人之後,企業/機構經驗和知識也會隨此流失,造成缺乏後續動力和承諾無法實現。 本次會議探討社會永續的經營者如何策略性引導組織這些制度性和概略性的觀念。不同觀點的代表在此交換彼此的經驗,討論案例和提出一些方法策略,以推動在影響評估之外,真正地在組織決策與文化中整合社會永續的實踐。

#### CS6.2 環境評估的生物多樣性主流:我們學到了什麼?

#### 支流議題:生物多樣性

#### 會議召集人:VINOD MATHUR, ASHA RAJVANSHI

1992 年里約地球高峰會議後,大部分的國家面對環境評估的生物多樣性主流,採取 了一連串的法律、法規和組織措施,並且得到了不同的結果。面對快速經濟發展和許多 無效體制框架的問題,大多數開發中國家對於環境和永續發展的承諾也不同。為了推動 生物多樣性主流的環境決策過程,並伴隨著好的管理實踐,在各個經濟體中進一步宣揚 永續發展的觀念是必要的。對這些努力的人而言,創造有利的環境和建構包含有生物多 樣性的影響評估的空間,也是一個重要的要素。透過有效的聯繫工具讓政治領導者參與 這主流進程也是相當重要的。本討論會選擇一些實行者在 IAIA08 與專家們分享他們的 觀點經驗。

#### 其他議題

#### 一、 礦業開發之社會影響評估(SIAS)的新方法

#### 支流議題:企業意見/社會與健康影響

#### 會議召集人:DAVID BRERETON

傳統上,礦業開發的社會影響評估(SIAS)最主要被應用在開發案件申請許可。而上 述法規需求,也留下了一個很重要的動力,讓礦業開發公司可以爲了其他目的而利用

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SIAS,例如:指引監測計畫分析可能面臨的衝擊,以及提供有關礦場關閉經營的決策。 本討論會將會藉由澳大利亞和一些國際工業上的案例重新討論這些走向,以及探討改變 工業界了解、監測和經營社會影響的可能性。這個研討會跟歷年一樣注意新技術、新方 法和工具發展的可能和需要性,來支持如此的轉變。同時此專題討論會也邀請本地一些 資深礦業代表出席,分享「新」SIAS的例子。

#### 二、 貧窮和影響評估:管理社會和政治過程的藝術

#### 支流議題:國際發展

#### 會議召集人: Maria Partidario, Linda Ghonime, Arne Dafelt

在過去的兩年,IAIA 會議中有關推測影響評估是消除貧窮主要力量的討論,已暗示 著影響評估扮演著開發政策的制定和學習的重要功能。IAIA08 會議探討推動社會永續發 展中影響評估所扮演的角色時面臨到很大的挑戰。特別是在生物物理學與社會科學如何 有意義地連結到政策制定的藝術,以達到改變的目的。這提供一個契機去說明社會政治 的改變,而這改變是需要不同且主動地將影響評估運用在整合貧窮上。當要消除貧窮時 ,在現今的影響評估運用上,什麼是有效的?什麼是無效的?影響評估在貧窮議題上是 如何地被實際運用?截至目前為止,有多少進步?我們如何成功地連結生物物理資源的 永續管理方式達到改善生活和活化貧窮社會的目的?這些主題在此研討會邀請重要的 演講者參與討論。

#### 三、 影響評估過程中與原住民接觸的新機會和挑戰

#### 支流議題:文化與原住民議題/社會與各界代表

#### 會議召集人:Gerald Aubrey, Yves Leboef

加拿大環境評估署提案帶領一個由加拿大和其他2國(哪2國仍待確認?)所組成 的專門小組,討論有效整合接觸原住民活動與環境影響評估(也包含政策環評)所面臨到 的新挑戰和機會。加拿大近幾年來,在法庭裡面臨許多與原住民磋商的挑戰,而這些結 果也將會影響到環境評估如何推行。同樣的,環境評估包含政策環評可被視為一個有用 工具,可將原住民融入開發決策中。加拿大最高法院認為權利者一聯邦和省一虧欠原住 民族群一個磋商的義務和調解的可能,而使原住民權利、原住民的頭銜以及原住民的條 約權利可能會受到的傷害。所以加拿大幾乎所有推動聯邦環境評估的計畫都包含了推動 與原住民協商的法律需求。因此,加拿大正在探索將原住民磋商的法律義務整合到聯邦 環境評估的方法。

#### 四、 景觀、生活方式和生計:一個整合的 HIA 的方法

#### 支流議題:社會與健康影響

#### 會議召集人: Robert Bos, Ben Cave, Peter Furu

這個會議最終的期望是希望能獲得一連串為 HIAs 領航計畫所擬訂的基因議定書有 廣泛的同意。所謂的 HIAs 領航計畫係指整合了環境變遷與健康的社會決定因素的評估 ,此評估更引導出一個建立在環境與社會因素交叉影響的公共健康管理計畫。為了達成 此期望,這個研討會有三個主要的目標:

- 檢視有關環境、社會與健康影響評估的藝術性陳明,而本項評估連結到本研討會的 主題-什麼是邁向"與大自然和諧共處之以人為中心的發展(21世紀議程)"的機 會與困難?
- 由仲裁協調人員主導,並舉行有關加納境內具爭議性大霸計畫內容關鍵問題的圓桌 會議。
- 以專題討論的模式,草擬以 HIAs 領航計畫所擬訂能在 IAIA/WHO 的合作架構下被執 行的基因議定書。這提案的論壇建立在整合 IAIA06/07 項下的 HIA 與 SIA 的會議上
   事前的準備,還包含過去五年在影響評估出版過有關健康定位的一套系統性鑑定 成果。

#### 五、 有效的環境評估工具:經驗基礎和理論

#### 支流議題:效益

#### 會議召集人:Lars Emmelin, Tuija Hilding-Rydevik, Aleh Cherp

這個研討會的目的是提供一個場所,討論和報告有關實行環境評估,什麼是有意義 的「**效益**」組成元素。為了對宣傳對規範的建設性批判,以及在很差的基礎上關於在 EIA、SEA 和政策(Plan)層級影響評估中環境評估(EA)的目標與功能的實際地說明 ,我們鼓勵從實際基礎上對達成這項議題的所有貢獻。然而,觀念、理論發展和審議觀 念的貢獻也是同樣重要的。因此,我們歡迎在實際上、觀念上和理論上,檢視利用 EA 的有效性的貢獻。有興趣的問題包含:到目前為止,在不同的情況下,採用 EA 有什麼 成就?在採用 EA 時,會遭遇到什麼樣的計畫性問題?什麼方法、工具和程序能可以提供 一個方法去解決或是至少有一個貢獻去找到一個辦法去解決低效益的問題? 在不同的 情況和相關的研究下,對於低效益的 EA 功能可以有什麼合理可期待的結果?在 EA 的有 效性中,「情況」扮演什麼角色?

#### 六、 環境影響評估保護環境嗎?

#### 支流議題:效益

#### 會議召集人: Bruce Hegge

西澳環境諮詢協會(ECA)將舉辦一個探討有關 EIA 的角色,及其保護環境有效性的 研討會。這研討會以互動式分組討論的形式辦理,將有 EIA 各界主要人員代表與會,, 包含各國的 EIA 關鍵人物代表,提議者、法規人員、諮詢者、媒體、政策決策者、社會 團體以及工業團體等等。討論的重點將會在 EIA 的價值和未來,和可能的選項。

#### 七、 中心階段:SEIA 過程和赤道條款和 IFC 表現標準

#### 支流議題:管理

#### 會議召集人:Sally Pickard, Alexandra Blood, Marshall Lee

金融機構簽署赤道條款是最新的需求。為了獲得計畫的經濟資助,領導者須遵守赤 道條款和 IFC 環境社會永續表現標準。由於國際銀行紛紛採用這些標準,致本項標準被 採用的腳步比許多銀行預期的還要快。除此之外,近來的轉變驅使赤道條款計畫資助的 閥値減低至1千萬美金,還包含計畫的擴展和升級。一些非 OECE <del>的</del>國家的公司,當重 新開始或擴大經營時,都想配合赤道條款和 IFC 表現標準,當作一個的風險的工具。這 個研討會將會針對計畫採用赤道條款和 IFC 表現標準的主要需求提供一個綜覽,以及對 計畫發展者與借貸的金融機構在計畫的不同階段中,可以運用這些標準的地方。這研討 會將聚焦在可以作為 SEIAs 指導方針的議題。這研討會以互動方式,汲取一些從事者運 用條款需求的挑戰經驗,以及提供一些有關採礦業社會和環境影響評估過程的實際例子 。

#### 八、 從政策環境情報到政策環境影響評估

支流議題:管理

會議召集人: Michel A.Bouchard, Annica Walejc, charles Kelly, Grant Wroe-Street, Birgitta Lilledahl (災難與衝突的單元)

大多數的環境管理工具,包含環境評估,已經發展到在相對穩定和正常情況下可以 運作良好。然而,災難和衝突確實會造成環境管理新工具的發展或採用暨有存在工具的 利用上,產生管理瓦解、緊急情況或是以人道關懷爲優先等狀況發生。透過一些方法, 像是風險管理和環境風險辨別,環境問題可以在災難容易發生的範圍內,被預先處理。 這些結合人道主義和環境干預的策略要素,可被認爲是策略性的環境智慧。經過這事件 後,快速環境評估的某種形式,便成為社會上環境評估的主流。策略環評(SEA),可在 恢復和重建災害和衝突後,採用不同的計畫和短暫管理。隨著與氣候極端變化有關的事 件增加, IAIA 社會有必要對其最佳運用指導方針,貢獻其最新發展的工具或已採用的 暨有工具。本主題研討會對於在處理災害和衝突以及環境議題和影響中,增加對環境評 估的專業角色有所貢獻。

#### 參、心得及建議

- 1、報名參加人數達722人,參加國超過40國,日本、韓國、大陸這次均有多人參與。
- 2、第二十八屆舉辦此國際大型研討會,規劃細密,流程順暢,場地在伯斯國際會議中 心亦寬敞舒適。議程包括訓練課程、專業拜訪、展覽、開會致詞(keynote speakers)、主 題論壇、同時分組討論、晚宴、總結閉會、臨時討論會及協會會員大會等。
- 3、(2008/5/16)經過 600 位學者、專家在內之參與者分組討論,未來可以建立更有效率的 影響評估系統最關鍵之三個主軸分別為:
- (1)法制架構:更清楚定義之法令工具、法規及政策規劃指引。
- (2)相關主體(stakeholder)更提早、有彈性、更公開參與全程對話之機制建立。
- (3) 開發者或政策提議者有足夠知能進行影響評估,全程掌握並重視跨隙合作。
- (4) 其他尙包括:
  - (1) 有足夠之背景資訊及數據可進行對比分析。
  - (2) 全程公開透明,無所謂預設立場,決策過程亦是。
  - (3) 主管部門需建立良好之機制與知能。
  - (4)發展個案設計前之願景分享及目標公開之機制。
  - (5) 更精緻地監視影響評估。
- 4、國內顧問公司及學界應參與發表及討論。或在國內動員組織及進行類似之活動可提 升環評視野、學識及知能。
- 5、SEA 為大家認為未來需加強發展之領域,可加入「範疇界定」(scoping)程序,使相關 主題可同時進行評估,在尋求共同建議供決策參採。
- 6、規定專案顧問公司之人員講習應包括參與國際 EIA 會議。
- 7、(2008/5/7)歐盟及英國等國實施 SEA 指定,可協助包括:
  - (1)與永續性評估接軌。
  - (2) 在形成方案、計畫之前即被評定其目的及必要性。

- (3) 容許民眾參與政策之擬定(橋樑)。
- (4)提供困難決策之隱密及合理性基礎。
- (5)提供與公眾及團體日後溝通之背景初期資訊。
- (6)將氣候變遷、社經、生態等不確定性高或複雜議題經由不同情境之模擬,提供 新的思考方向及決策不同選項。
- 8、(2008/5/8)依據 UNSW(澳洲新南威爾大學)提供之健康風險評估實用指南,HIA 之主要 步驟亦包括: 1.篩選 2.範疇界定 3.指標化 4.評估 5.決策與建議 6.評價與追蹤等六大 程序。
- 9、大陸近五年來在亞銀、世銀等 SEA 導引下,地方政府層級之重大開發政策及方案, 以完成超過 500 件 SEA 報告。由湖北省開發路網計劃之 SEA 案例報告顯示,其方法 架構與計畫之關連性、替代方案或預設情境之探討案,在形成上已比台灣熟悉,至 於其可發揮之政策指導功能、諮詢及參與機制等,則有待解析。
- 10、另由香港環評學者主席林錦慰,以及香港特區環境諮詢委員會主席林健枝交換意見, 並聽取香港較成功之開發案例 EIA 報告顯示,香港地區的經驗與台灣類似,法制亦 較先進,值得進一步定期交流。
- 11、準備40份我國十年來之環評法制經驗回顧(如附件),在一日內已被與會者索取一空。
  另外對於重要之海報資料,並攝錄帶回國內參考。

# 肆、附件4.1 會議議程及議題

### **Program Overview**



IAIA08 Final Program 9

### **Technical Program Overview**

	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	Meeting Room 6	Meeting Room 7	Meeting Room 8
uesday 8:30-10:30								2 a
uesday 1:00-13:00			di.		1			
uesday 4:00-15:30	TF1.1 Biodiversity Of	fsets: Savior or Salve?		TF1.2 Adaptive Risk Management for Improving Water Resource Planning Resilience to Climate Change	TELEClimate Change: Health Impacts and Adaptations			1
uesday 6:00-17:30	Asian SEA, EIA and Sustainability Assessment: IA and New Movements	CS1.2 Guidance on Assessing "Significance" in SIA	CS1.3 Dealing with Uncertainties In Impact Assessment and Policy Design	CS1.4 Corporate Stewardship and Risk Management: International Best Practice	CS1.5 Mobilization of the Public for Participation in Environmental Impact Assessment	CS1.6 Maintaining the Identity of Indigenous People and the Area They Represent	CS1.7 Excellence in Marine and Coastal Impact Assessment: Planning Focus	C51.8 Impact Assessment in the Tourism Sector
Vednesday 8:30-10:00	TF2.1 The WA EIA Pro Environment as It is I Other Jurisdictions?	Locess: Is It as Good at P Made Out to Be? What	rotecting the Can We Learn from	F22How Can Impact Assessment Enhance Benefit Sharing with Local Communities?	F2.3 Environmental Mainstreaming in National Development Plans			
Vednesday 0:30-12:00	E3.1Making SEA an Making X	Effective Tool for Strat	egic Decision-	KF3.2 Technology Assessment in the 21st Century: The State of the Art and Science of TA	V/F3.3 Public Participation and the Practice of EIA in Western Australia	TF3.4 Oil and Gas Exploration and Development: The Role of IA		
Vednesday 4:00-15:30	CS2.1 Asian SEA, EIA and Sustainability Assessment: EIA and Practices	CS22 EIA Requirements in Relation to the Development Process	CS2.3 Participation, Contention and the Practice of Impact Assessment	CS2.4 Corporate Stewardship and Risk Management: Impact Assessment Follow-up Using EMS	CS2.5 Institutional Capacity Building: How to Deal Effectively with People in the Community on Contentious Projects	CS2.6 Improving Professional Practice: The Role of Accreditation/ Certification	CS2.7 Excellence in Marine and Coastal Impact Assessment: Dredging Focus	CS239Application of SEA and the EU SEA Directive (1)
Vednesday 6:00-17:30	CS3.1 Asian SEA, EIA and Sustainability Assessment: SEA System and Practices	CS3.2 How Can Impact Assessment Enhance Benefit Sharing with Local Communities?	CS3.3 Climate Change Responses	CS34 lanovations m Csie for immage/sic or include at 18 Vo	Participation Wolfa smitht Effectiveness	CS3.6 Environmental Careers Seminar	3.7 Excellence in Marine and Coastal Impact Assessment: Industry Focus	CS3.8 Application of SEA and the EU SEA Directive (2)
Thursday 18:30-10:30	C54.1 Oil for Development Workshop: Building a Global Network	CS4.2 EIA/SEA Teaching and Education	CS4.3 Dimensions of IA Effectiveness	CS4 elmintations pr care o Saake for Imag Fille openets		CS4.6 Beyond Impact Assessment: The Integration of Social Concepts In Organizational Decision-Making and Culture	CS4.7 Impact Assessment Feedback Mechanisms	CS4.8 Strong EIA Lessons for Agriculture, Forestry and Fisheries
Thursday 11:00-12:00	CS5.1 Alternatives, Decision-Making and Impact Assessment	CS5.2 Participatory Approaches to SIA	CS5.3 Dimensions of IA Effectiveness Workshop	CS5.4 The Art and Science of Public Participation in Impact Assessment	CS5.5 HIA Guidance and Standards (2)	C55.6 Learning Through Environmental Assessment	CS5.7 Scenarios, Time Horizons and Climate Change in Impact Assessment	C55.8 Strong EIA Lessons for Agriculture, Forestry and Fisheries Workshop
Thursday 4:00-15:30	VIF4.1 Excellence in N	Aarine and Coastal Imp	act Assessment	TH4.2 Great Impact Assessment Disasters: A Group Therapy Theme Forum	7P4.3 Use of Country Systems for Environmental and Social Safeguards			
nursday 16:00-17:30	CS6.1 Impact Assessment Governance (1)	C56.2 Mainstreaming Biodiversity in Environmental Assessment: What Have We Learned?	CS6.3 Overcoming Barriers to Best Practice Impact Assessment	CS6.4 Working with Communities: Finding Common Ground	CS6.5 OECD DAC Task Team on SEA: Progress and Planning Seminar	CS6.6 Teaching Impact Assessment: Educating Future Professionals	CS6.7 The Practice of SEA	CS6.8 Australian Public Policy and Environmental Law
riday 18:30-10:00	CS7.1 Impact Assessment Governance (2)	CS7.2 Input to the Third High Level Forum on Development Effectiveness	CS7.3 Incorporating Communities in Environment Assessment Session	CS7.4 HIA Roundtable	CS7.5 Oil and Gas Development: The Need for Impact Assessment, Capacity Building and Monitoring	CS7.6 Community Participation and Sustainability Assessment	CS7.7 SIA as a Planning Tool	CS7.8 Applications of Impact Assessment Involving Indigenous Peoples
riday								

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Meeting Room 9	Meeting Room 10	Meeting Room 11	Meeting Room 12	Executive Boardroom	Media Room	Riverside	Pavilion 1
						Theatre	
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519Environmental and Social Considerations In International Cooperation: The apanese Way	CS1.10 Future Directions in HIA	C51.11 The Significance of Natural Resources Inventory	CS1.12 Enhancing Impact Assessment in the South Pacific	CS1.13 Tools and Techniques for SEA and Planning	CS1.14 Welcome to IAIA!		
52.9 Cultural feritage and Impact issessment (1)	VCS2.10 Planning for Sustainability	C52.11 Retooling EIA for Optimizing Biodiversity Conservation in Development Decisions	CS2.12 Environmental Governance and the Politics of Environmental Assessment (1)	CS2.13 Health Impact Assessment of Dams: An Update of the Situation	CS2.14 Integrating Risk and EIA		
53.9 Cultural feritage and mpact Assessment Vorkshop (2)	C53.10 Environmental Assessment and International Development: Learning About How to Make EA Work in Differing Development Contexts	953.11 Biodiversity in Impact Assessment: Tools and Techniques	C53.12 Environmental Governance and the Politics of Environmental Assessment (2)	(\$3.13 HIA Guidance Vand Standards (1)	C53.14 Impact Assessment in The Energy Sector		
S4.9 Impact ssessment in the Aining Sector	CS4.10 Key Issues Facing HIA Practice	CS4.11 The Effectiveness of Impact Assessment in Addressing "Big Picture" Environmental Issues	CS4.12 Innovative Methodological Approaches to SIA	CS4.13 Making SEA an Effective Tool for Strategic Decision- Making	CS4.14 Environmental Assessments in the Greater Mekong Subregion		
55.9 Early Market wolvement and IA: Experience and ractices	CS5.10 Challenges and Solutions in Linear Project Development	CS5.11 Impact Assessment in the Transport Sector	CS5.12 SEA Practice in Vietnam: Experiences and Lessons				
56.9 Environmental telligence nd Disaster/ risis Related vironmental ssessment: An merging Concept	CS6.10 Impact Assessment in Spanish-Speaking Countries: Using IAIA to Improve It	CS6.11 Impact Assessment in The Energy Sector: The Case for Biofuels	CS6.12 Minimizing Impacts and Impact Assessment in the Water Sector				
57.9 IA Legislation: abling or Disabling est Practice	CS7.10 SEA Effectiveness	CS7.11 Valuation of Ecosystem Services	CS7.12 Assimilating Social and Political Processes in Impact Assessment: An African Perspective	CS7.13 Meet the Editors		1 	ž

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### 4.2 出席人員名冊

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### Participants List

This document contains contact information for participants whose registrations were received by 16 April 2008.



# The Art and Science of Impact Assessment

28th Annual Conference International Association for Impact Assessment

4-10 May 2008 Perth Convention Exhibition Centre Perth, Western Australia



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### A decade of EIA regulations in Taiwan

#### Kuang-Huei Huang

#### **Abstract**

Following the establishment of the United States of America's 'National Environmental Policy Act' (NEPA) in 1969, more than 100 other countries have set up their Environmental Impact Assessment systems, but less than half are predicated on clear and specific legal provisions like Taiwan's Environmental Impact Assessment Act (EIAA) which was promulgated in 1994.

In this paper, the author examines the efforts of Taiwan to influence the World, to promote the concepts of the Environmental Impact Assessment system (EIA) through dialogue between Western and Eastern science (geomancy) forums.

This paper promotes the theories of the systemic structure of three concentric circles of influence; these being the Environmental Element Circle, the Integrated Circle, and the Scholarly Tool Circle that underpin the EIA Act. A review of the regulations of this Act and how these elements influence Development Projects, from inception to implementation, will be undertaken.

The author, in conclusion, will examine areas of weakness and offer suggestions on systemic interventions which will improve environmental control

Keywords: Environmental Impact Assessment; development activities; alternatives; Screening; Scoping; Reviewing; Consultation; Public-participation; Mitigation; monitoring; Follow-up; Strategic Environmental Assessment; Ken Yui; Feng Shui; CA; SA; REIA; TA; LCA; TIA; SIA; CBA; CEA; ERA; HIA; Environmental Management Plan

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#### Introduction

The EIA system is essentially a strategic tool that delivers and controls sustainable development and is applicable to all countries in the World in the twenty-first Century. It is acknowledged that the USA was the first country to establish a legal framework for an EIA system, and although many have followed, each country has had to construct and promote its own peculiar system.

There are many ways in which these EIA system issues have been implemented. Some have developed sophisticated legislative controls, others have utilised 'umbrella' management, or administrative orders, while others have depended upon planning agreements and committees to administer these controls.

Often we see environmental impact controls being incorporated into a design phase, they are subjective, and often disregarded, or ignored when it adversely affects the outcomes of the project.

The final control mechanism may depend on people who are impacted upon by 'built' environmental hazards, but they can protest; unlike animals, and the natural environment that are the silent victims.

Environmental and economic sustainability must be considered conjointly with regard to long-term national development; the strategic policies and implementation actions controlling development should be major considerations in drafting, establishing and implementing any such system. It should be remembered that these systems, although scientific, must be promul-gated, and supported by government.

The processes of implementation of any devel-opment must meet, or exceed, the standards set out in the 'Environmental Impact Assessment' and be supported by comprehensive surveys and audits, impact predictions, analyses and evaluations of the proposal in advance of any work, to determine the degree and range of environmental influence (including living, natural, and social environments, as well as economic, cultural, and ecological aspects) resulting from policy or development activities. Part of this control mechanism should be carried out by seeking public comment, and debate, through the publishing of comprehensive Environmental Management Plans (EMP) and reviewing, and responding to the feedback, before making final decisions to sanction any development.

## 1. Logical concepts linking to EIA system

As time passes our understanding of the meaning and scope of the term 'environment' is expanding. The attributable 'Science' is the understanding of nature, and the ability to predict, as a result of experience and practice, what will and does happen within this 'environment'. The 'Systematisation' is the scientific approach that is currently applied, that differentiates this approach from other disciplines.

The 'Environmental Impact Assessment' is an application of this science in that it systematically associates the various fields of influence. The reason for developing such a systematic science is to accommodate the rapid development of human civilisation. To provide a model that allows for the variety of standards in energy, technology and culture that exists and to provide a model that will enable the study of the relationship between various life forms and non- life forms. It provides the means to examine and measure, to consider the impact, in scientific manner, of people-to-people, a people-to-objects to people-to-matter, and facilitate environmental modelling which in turn will mitigate the environmental damage that currently occurs.

In the last Century, there were rapid advancements in scientific fields. Much of the work in the areas of physics can be attributed to Einstein, whose work has had profound impact on the technological advancement of civilisation. His work, it may be argued, was predicated, and relied heavily, on the work of his peers such as what we understand as the fundamentals of physics espoused by Newton.

In contrast with this **consensus science**, the environmental science that we are examining is a **frontier science**; a science that does not have an established precedent, one which is under dispute as it has not been widely tested and accepted. Acceptance may be slow because of the traditional western methodology of controlling science, rather than understanding it, and working in collaboration with nature. The theories associated with EIA are not new theories, it was proposed by Aldo Leopold (1887 - 1948) when he stated the viewpoint that we must 'respect nature, co-operate with it'. There is a considerable body of evidence, from both the past and present, that indicates that science and civilisation are inextricably intertwined, that they a form of symbiotic relationship that acts and re-acts with each other. Similarities can be seen in the ancient Chinese beliefs of Ken Yui, who developed the understanding of the relationship between geography and physics, the balance between various components of the universe, that are equally applicable today as they were then. In recent times, over the last five decades, there have been many efforts to develop suitable models to manage the environmental impact of change through technological means. Given the limited progress that has been made, it is probably timely for us to get rid of our arrogance and distrust of frontier science, accept it for what it is and embrace this knowledge, the blending of the new technology and ancient Ken Yui information to benefit from these emerging sciences and their applications. It would seem to be inevitable that any environmental science that combines these *new* ethics of the environment, ecological preservation and pollution control cannot be over emphasised, or ignored.

The current geography sciences study natural and humanistic geography. Within these studies there are three major categories; these being astronomy, physical geography and biology.

The Ken Yui science is an ancient Chinese application of the study of physical geography. There has been much debate about its applications, and where it sits within the sciences, but it is sufficient to say that Ken Yui, although abstract, is based on the observations of contemporary physics, and utilises the interactive relationships between position, orientation, distance and time. Additionally, it studies the effects of various physical phenomena relating to the properties and effects of sound, light, magnetism, electrical current on human beings. When using the Ken Yui as a principle, it has relationships such as positive-and-negative, sky-and-ground, sun-and-moon etc. In the Chou Dynasty, it was regarded in this manner, and can be identified within the Yi Change Bible as saying 'look up on astronomy, and look down on geography', which can be explained as *sky-and-ground*. Some people define the Ken Yui as a verb, and use Feng Shui (Landscape, or geomancy) as a noun thereby confusing the two principles, which are similar in that they both address the physical environment. The Feng Shui specifically examines geographic configurations, geologies, hydro graphics, ecologies, and visual aesthetics.

The Ken Yui and Feng Shui categorise the relationship between human beings and nature, within a *consensus* scientific framework. In a similar manner the 'Environmental Impact Assessment' system categorises the relationship between human beings and nature, within a *frontier* scientific framework.

Now that we have examined these concepts, we can understand, more clearly, the principles of the Environmental Impact Assessment Act (EIAA) article 4, Item 2: (which states that) 'the Environmental Impact Assessment will deliver the Environmental Management Plan, through public consultation and review undertaken using scientific, objective and comprehensive surveys, predictions, analyses and evaluations which are conducted in advance of project implementation to identify the potential impact that these government policies and development activities may have on the environment'. It is this planning, and consulting phase (EIA) which provides the conduit to achieve the target. The process is a continuum which closely connects the components of the project and provides the framework to examine the plan.

This Environmental Impact Assessment system, as a frontier science, brings many countries to the grass roots threshold, where they must adopt these principles, or ignore them. It places them in a position where they need to commit to this visionary process of assessment and approval, thereby ensuring that the ever continuing development and growth of mankind is in a balanced and sustainable environment.

To further examine these principles the author draws your attention to Fig 1 (The EIA System Structure) on which the principles are predicated. It is similar to the 'Wave Image of Neutron' (Asitachi), in that it is divided into three concentric circles; these being:

- The Interior Circle known as the 'Environmental Circle';
- The Middle Circle known as the 'Integrated Circle; and

 The External Circle known as the 'Scholarly Tool Circle'.

#### The Interior Circle

This circle is known as the 'environmental circle' and is the core of the Environmental impact assessment model which examines the physical elements of the system and the associated impact from any policy, or development. Without this component, any examination, or assessment, will not be validated.

#### **The Exterior Circle**

Is also known as the 'scholarly tool circle' and carries out the function of assessing the orientation of the theoretical principles (or scholarly issues) as they are applied to sensitivity, accumulation, value, time-space allocation, composition etc. by using the time proven values that are derived from the *consensus sciences* and applied to the *frontier science* of EIA.

#### The Middle Circle

This circle acts as an integrating linkage between the other two circles. As part of the interaction between it and the other circles there is tendency for it to modify, or influence the process of examining the information. It operates as a methodology of associating, and comparing the upper-tier strategy to the lower tier behaviour, or it may be said to compare the displayed external persona for congruence with the inner mind, with regard to the overall target of the Environmental Impact Assessment task being undertaken.

### 2. Legislative tiers and systems

The EIA system is a proactive tool that is designed to meet the current and future needs of environmental control. Since its inception in 1970 by the USA it has been adopted and developed by Taiwan, which has a rapidly growing population and economy driven by commercial and industrial endeavour. This rapid growth has negatively impacted on the environment, and in some areas the damage is irreversible. Recognising this degradation was occurring both in Taiwan and internationally, a proactive approach to addressing this problem was adopted and the Environmental Impact Assessment Act (EIAA) 1994 was promulgated. The major goals were to prevent and reduce any irreversible impact on the environment that may attributed to government policy be or development activities.



#### LEGEND

Scholarly Tool Circle (Exterior Circle): TA/LCA/TIA/SIA/CBA/CEA/ERA/HIA...

#### Fig. 1 EIA System Structure

#### **Description of Fig. 1**

Environmental Element Circle (Interior Circle: comparison of eight environmental fields to eight Feng Shui fields):

$\triangle 1$	Water env	ironment	Water (坎)				
$\triangle 2$	Landscape	Mountain (艮)					
$\triangle 3$	Noise and	Thunder (震)					
$\triangle 4$	Atmosphe	Wind (巽)					
$\triangle 5$	5 Humanistic, social and economic environment Fire (离						
$\triangle 6$	Land envi	ronment	Land (坤)				
$\triangle 7$	A7 Biologic environment Marsh (兌)						
$\triangle 8$	Energy res	Sky (乾)					
Inte	egrated Circ	le (Middle Circle):					
Ι	Comprehen	sive Assessment and Sustainability Assessment					
	(CA&SA) Astronomy (天文						
Π	Regional En	vironmental Impact Assessment and Strategic Environmental Assessm	nent				
	(REIA&SEA) Calendar(歷譜)						
Sch	olarly Tool	Circle (Exterior Circle):					
sim	ilar to the M	iddle Circle, comparison of four fields to the four elements of Feng Sh	nui technology				
0	1&2	Technical Assessment and Life-Circle Analysis					
$\sim$	2.0.4	$(\mathbf{IA} \& \mathbf{LC} \mathbf{A})$	Old turtle (耆龜)				
0	3&4	(TIA 8-SIA)	Five Floments(五行)				
$\circ$	586	(TRASTA) Cost-Benefit Assessment and Collective Effect Analysis	Five Elements( $\underline{11}$ )				
0	5000	(CBA&CEA)	Misc.Soothsaving (雜占)				
0	7&8	Environmental Risk Assessment and Health Impact Assessment					
		(ERA&HIA)	Shape Measure (形法)				

#### Legislative technology backup system:

Regulations and Evaluation Standard ( allocation of this paper ) 1.

Indicator and Follow-up system

2. 3. Assessment technology and methodology

4. Procedure of Consultation and Public-participation Following the establishment of the EIA legislation in Taiwan a further piece of legislation was enacted; this being the 'Fundamental Act of Environment' 2002, which specifies in Article 24 'The central Government should establish an environmental impact assessment system to prevent and reduce the bad influence to the environment made by government policies or development activities'.

After the EIA came into effect in 1994, work continued on developing a set of regulations (sub-rules) which are hierarchically arranged in tiers, and are set out in Table 1 entitled 'Tiers of EIA Regulations in Taiwan'.

These EIA regulations ensure that any development activities that are undertaken utilise, and adhere to the impact assessment study model. There are a series of planning, consultation and approval phases that must be undertaken to achieve a permit to carry out the development works. The development proponent uses the planning stage to propose the undertaking through the phase 1 Environmental Impact Statement (EIS) before applying for permits. The Final Review Committee of the Responsible Agency for this Act (RAA) then deliberate and determine the outcome. If they deem the development activities are likely to have significant adverse impacts on the environment, the Project Proponent (PP) must undergo further assessment. All undertakings are available for public scrutiny and made consultation, with the outcomes reported to the RAA as a preliminary Phase II Environmental Impact Report (preliminary EIR).

survey, consult and seek further information until satisfied that the EIS/EIR requirements are fulfilled. Throughout this process each of these bodies have significant powers, in that, they can seek further information, or stop the process, which is in keeping with Taiwan's objectives to protect the environment. This process is depicted in Fig.2 'EIA Legal Process in Taiwan'. The relevant sub-rules are tabulated in Table 1 and can be examined at the website of Taiwan EPA. (http://www.epa.gov.tw/english/LAWS/).

(1) Regarding the rules and regulations of application of altering the land category, regional or urban plan and architecture, information can be found at the website of Construction and Planning Administra-tion, M.O.I., Executive Yuan, ROC.,

(<u>www.cpami.gov.tw/law/law/law.htm</u>).

- (2) Regarding the rules and regulations of reservation of sloping land, management of agriculture, forest, fishing and stock raising, information can be found at the website of the Council of Agriculture, Executive Yuan, ROC., (www.coa.gov.tw/law/lawsystem).
- (3) Regarding the rules and regulations of water resource and mine, information can be found at the website of Water Resource Agency, MOEA, (<u>www.wra.gov.tw</u>), Bureau of Mine, MOEA, (<u>www.mine.gov.tw</u>).

Various government bodies then deliberate,

Environmental Impact Assessment Act ( EIAA, T1 ), 1994,1999,2002,2003 Implementation Rules for the EIAA ( IR, T2 ), 1995,1998,1999,2001,2002,2003,2005 EIA Items and Screening Criteria for Development Activities ( ISC, T3-1 ), 1995,1997,1998,2000,2001,2002,2004,2006,2007 EIA Review Committee Regulation of ROC-EPA ( RCR, T3-2 ), 1995,1995,1999,2002,2007 EIA Regulation for Collecting Review Fees ( RCRF, T3-3 ), 1995,2000,2008 Working Guidelines for the EIAA ( WG, T3-4 ), 1997,2001, 2002,2004,2006 EIA Regulation for Government Policy ( RGP, T3-5 ), 2000,2006 EIA Regulation for Military Secrets or Emergency ( RMSE, T3-6 ), 2002 Format for EIA Environmental Monitoring Report ( FEMR, T4-1 ), 1997 Technical Guide for Air Quality Models ( TGAQM, T4-2 ), 1998 Review Guide for Development Activities ( RGDA, T4-3 ), 1999-2001 Technical Guide for Traffic and Construction Noise Models and Biological-Flora Assessment ( TGN&F, T4-4 ), 2002

 Table 1.
 Tiers of EIA regulations in Taiwan



Note : ( ) means Article of EIAA

Fig. 2 EIA Legal Process in Taiwan

- (4) Regarding the rules and regulations of traffic and tourist, information can be found at the website of Ministry of Transportation and Communication, MOTC, (www.motc.gov.tw) and Tourism Bureau, MOTC, ROC, (www.tbroc.gov.tw).
- (5) Regarding the rules and regulations of industrial development, information can be found at the website of Industrial Development Bureau MOEA,

(<u>www.moeaidb.gov.tw</u>) and National Science Council, (<u>www.nsc.gov.tw</u>).

(6) Regarding the rules and regulations of nuclear power and energies, information can be found at the website of Atomic Energy Council, Executive Yuan, ROC, (www.aec.gov.tw) and Energy Commission, MOEA, (www.moeaec.gov.tw).

The instructive laws and policies include:

(1) "Fundamental Act of Environment"

(2002/12/11)

(2) "Agenda 21 " –Strategic Outline of the Sustainable Development of Taiwan, ROC., (2000/05/18)

## **3.** Analysis of the legislative elements

Since the inception of the EIA by USA (NEPA -1969), many countries have followed in adopting EIA systems to suit their regional needs. There are similarities between the legislative elements these various countries used and was examined by Christopher Wood (Longman, 1995) and defined as being:

- Consideration of Alternatives and Action design (D&A);
- (2) Screening;
- (3) Scoping;
- (4) Preparation of the EIA documents;
- (5) Reviewing the EIA documents;
- (6) Consultation and decision making;
- (7) Public-participation;
- (8) Set forth mitigation measures;
- (9) Monitoring action impacts;
- (10) Follow-up; and
- (11) SEA system.

The items (1) - (8) form the main system. It is interesting to note that the USA, in their first attempt at this legislation, did not have item (3) and (10) included. In understanding this legislation, it should be remembered that it has been evolutionary, and that each country has developed a system that is peculiar to their own environmental needs. Regardless of the final form that the legislation takes, it can be asserted that it is beneficial, in that there are suitable controls in place, they remove uncertainty, and provide a legal platform for Public-participation and consultation.

#### 3.1. D & A: Consideration of Alternatives and Action Design

The EIAA (Article 14) of Taiwan may have the most stringent legislation in the World, in that until the EIA review is completed it will not grant a permit for development activities, and specifically prohibits any work, although it does not preclude the Project Proponent from further modifications to the proposal. The four categories pertaining to Alternatives are contained within the 'Working Guidelines of the EIAA, 2002' and are (1) Zero activity, (2) Site or Route, (3) Development Type, strength, scope, scale, or technology, and (4) Environmental protection measures.

### 3.2. Screening: The rationalisation of 'EIA Items & Screening Criteria for Development Activities

The 'EIA Items and Screening Criteria for Development Activities' came into being in 1995, and has been revised four times up until 2001. Although there are ongoing differences of opinion between authorities and the public regarding the structure, the incremental process has provided succinct and robust regulations that have replaced the old codes of practice that regulated development. It should be noted that the process, although well advanced, is periodically reviewed to ensure that it addresses the issues of control, and that it genuinely delivers quality improvements to the environment in a timely and cost effective It is important that this system is manner. flexible enough to address the ever increasing demands for environmental protection. It must be capable of evaluating major developments

that may be undertaken in urban areas that are densely populated (and have comprehensive environmental information), but sensitive enough to be applied to a rural environment where little data, or information, is available.

## 3.3. Scoping: The Dilemma of the Two-Phase EIA Scope

The current 'EIAA' specifies that all development activities must undertake an environmental impact assessment study (EIAA Article 5, Item 2 & EIA Items & Screening Criteria for Development Activities) which includes the EIA Phase 1 Study (Article 6). Once this phase has been completed, and evaluated, the Project Proponent then submits EIA Phase 2 documentation. which is remarkably similar to Phase 1, except for several additional information requirements.

This is similar to the situation in USA, some EAs ( Phase I ) are undoubted EISs ( Phase II ) in disguise, perhaps to try to avoid the public scrutiny and possible delay involved in EISs ( Phase II ) preparation (Bear, 1989; [25] pages 118-119). In other words, this has proven to be a point of contention for Project Proponents who assert that this repetition is costly in time and resources.

An examination of EIAA (Article 6 and 11) reveal that, except for the depth of the environmental study and subsequent reporting, and some additional information requirements, they are similar. Modifications to the Phase 1 schedules (which currently can take up to 6 months to complete) may pave the way to a simplification, or removal of Phase 2, in this process.

#### 3.4. Documentation: Integration of EIS/

#### EIR

According to the EIAA, in Taiwan, all developments, except military construction, adhere to, and utilise the following documentation, which are provided below:

- (1) Environmental Impact Statement (EIS, compliant with "EIAA", Article 6).
- (2) Environmental Impact Report (EIR), preliminary edition (compliant with "EIAA", Article 11, 13);
- (3) EIS/EIR Assessment Report, review conclusion (compliant with "EIAA", Article 13);
- (4) Environmental Impact Survey Report, Responding Strategy (compliant with "EIAA", Article 18, "Implementation Rules of EIA", Article 40);
- (5) Survey, Analysis and Responding Strategy Regarding the Environmental Impact (compliant with "EIAA", Article 28, "Implementation Rules of EIA", Article 45);
- (6) The Report Analysing the Differences between the Pre- and Post-development Activity Environment (compliant with "EIAA", Article 16-1; "Implementation Rules of EIA", Article 37);
- (7) The Report Examining the Environmental Damage Mitigation Measures (compliant with "EIAA", Article 16-1);
- (8) Environmental Monitoring Report (not clearly specified in "EIAA" and relevant rules, the TEPA has already made proclamation on the standard format, and is always attached to the environmental protection strategy, Comprehensive Environment Management Plan or review conclusion as part of them);

- (9) Reasons for the Non-completion, Improvement Report, The Results of the Required Improvements (compliant with "Implementation Rules of EIA", Article 44, 45 and 47);
- (10) Supplementary Information or Report from Reviewing Notice (compliant with "EIAA", Article 13-1, "Implementation Rules of EIA", Article 28, 29);
- (11) The record, press publication and proclamation of public meeting (compliant with "EIAA", Article 7, 8, "Implementation Rules of EIA", Article 22);
- (12) Survey Record (compliant with "EIAA", Article 12, 13, "Implementation Rules of EIA", Article 24);
- (13) Notification and Record of Public Meeting(compliant with "EIAA", Article 12, 13,"Implementation Rules of EIA", Article 26);
- (14) Approval on the original content of application for altered assessment document (compliant with "EIAA", Article 16, "Implementation Rules of EIA", Article 37, 38); and
- (15) Follow-up items (compliant with "EIAA", Article 18, "Implementation Rules of EIA", Article 39).

The documentation provided does not include the approving documentation. Essentially, the primary documents are (1) - (3), and the rest of the material could be re-categorised as 'supplementary documentation', thereby removing some of the confusion and streamlining the process, from a users perspective. As part of the process of ongoing development, an online facility exists, providing

for e-documents submissions.

## 3.5. Reviewing: The Significance of Impact

The EIAA (Article 8) of Taiwan establishes the Review process of Phase 1 of the Environmental Impact Statement which is undertaken by the Final Review Committee of the Responsible Agency for this Act (RAA) that may deem that the development activities are likely to have significant adverse impacts on the environment, and as a consequence enforce the need for a Phase II EIA study. This may be imposed through various criteria; which include:

- activities that are obviously incompatible with, and/or disadvantageous to related projects in the vicinity of the development activities;
- (2) activities that have clearly adverse impacts upon environmental resources or characteristics;
- (3) activities that have obviously adverse impacts upon the habitats of endangered, rare and valuable species;
- (4) activities that will fall far below environmental quality standards or exceed the assimilative capacity of the local environment;
- (5) activities that will have adverse impacts upon the free movement of local residents, or the rights and the traditional way of living of minority peoples;
- (6) activities that will have clear adverse impacts upon the health or security of citizens;
- (7) activities that will have obviously adverse impacts upon the environment of other nations; and
- (8) other activities or circumstances determined

by the Responsible Agency for the Act.

Although these criteria are in place it is still very difficult to conclude whether the proposed project is likely to have significant adverse impact on the environment.

From 1994 to 2003, the Taiwan EPA has received 706 cases for EIS review of which 43 cases resulted in no development allowed, and 113 cases (16%) requiring further EIR (report). There have been 170 cases of EIR received, of which 7 cases were rejected. In total, there have been 876 application documents reviewed, of which 5.7% were rejected. Received cases are all requested to meet the principles of sustainable development.

## 3.6. Decision Making: Reviewing and Follow-up

The decision making process is critical to the EIA system integrity. The EIA 'Implementation Rules' (Article 43) provide for five outcome categories, each tier of Responsible Agency for EIAA must bear the responsibility of supervising and tracing each case (project).

In the formative stages of this process difficulties were experienced. The criteria for acceptance was not rigorous enough, and resulted in confusion, and ran the risk of damaging the developers rights to proceed, and/or difficulty in convincing the public that due diligence had been applied to the process.

#### 3.7. Consultation: Public -participation

As a part of the government's best practice attempts at working with its citizens the EIAA (Article 7) of Taiwan provides for the participation of the community in the assessment of environmental impact. In some jurisdictions 'public review' is virtually synonymous with public participation ( Christopher Wood, 1995, [25] page 161 ). The principles under which this process operates are:

- The meeting agendas clearly published explaining purpose and process;
- (2) The scope of the projects clearly shown;
- (3) samples of written opinions issued by members of the public;
- (4) Location and method of exhibiting assessment documents and review outcomes;
- (5) Project plans and indicators to validate compliance with EIA operation;
- (6) Notice for civilians attending the Reviewing meetings;
- (7) Establishment of a counselling service for public advice;
- (8) The public surveys and comprehensive evaluation measures of EIA;
- (9) Reports of Public-participation in combined investigation, assessment and follow-up;
- (10) Process transparency on EIA information; and
- (11) Advertising and education for Public-participation relevant regulations.

## 3.8. Mitigation: The Integration of Assessment and Planning

The EIAA (Article 11) requires the Project Proponent to submit a 'comprehensive environment management plan'. Unfortunately, there is no further explanation, or definition available as to what constitutes a comprehensive plan except to say that a checklist is used to ensure that each of the components are addressed and included in the document. It is sufficient to say that contained within the EIAA it clearly states that its purpose is 'to prevent and mitigate adverse impacts of development activities so as to attain the goal of environmental protection' and that this is partly achieved through the compilation of this 'comprehensive environment management plan.

#### 3.9. Monitoring: Environmental Monitoring Plans

The 'Environmental Monitoring Plan' is complex document that is difficult to define, in terms of content, and placement within the environmental management plan submission. The monitoring plan can cover a wide variety of items that can range from physical, chemical and biological aspects and the frequency and range of the monitoring can vary greatly, according to the needs of the development. This places all parties in a difficult position, in that, the bureaucrats are inundated with raw data (as the developer attempts to cover all aspects), and 'expert' commentators have opportunity to carefully examine and identify non-conformity of the submission with the intent of the project assessment. As a result of this conundrum the developers are driven to higher costs and inconvenience provide to un-necessary information.

## 3.10 Verification: Establishing the Follow-Up System

The Follow-up system used in Taiwan is shown in Fig 3.

The US NEPA produced a number of potential litigation areas that may result from non-compliance with the EIA system; these are:

- (1) The environmental assessment document hasn't been prepared;
- (2) Violates the EIA procedure;

(3) Insufficient environmental assessment documentation; and

(4) Inappropriate strategy, which Taiwan has referenced to develop a compliance model. Importantly, the criteria that have been applied are predicated on the EIAA and assumes that each Responsible Agency is competent to evaluate each component of the Project, and that in the event of any contest, or litigation, that the legal system is capable of dealing with such matters.

### 3.11 Strategic Environmental Assessment: The Need for Consistency between Strategy and Process

The current EIAA system strongly supports development activities. Although, under Article 26 the responsibility for ensuring the EAS is robust, there are no restrictions on the manner in which the government develops, or applies its development strategy.

It is recognised that various Responsible Agencies may have their own agenda (or second tier strategies) but these should remain subservient to the principle strategies which often results in confusion, at the assessment and planning levels. Underlying this are the principles for which this whole process operates, within which all parties should operate, and that is to provide suitable environmental controls, feedback and influence the revisions of the strategies by the Government.



Fig 3. Follow-up Process as used in Taiwan

## 4. Conclusions, observations and suggestions

Using the examples above, and comparing them with existing international EIA systems it is apparent that the EIA system which has evolved in Taiwan has its own focus and individual characteristics. Yet, given its charter which is to protect the welfare of the citizens of Taiwan, promote government efficiency and aid developers this process has flaws, and requires modification. Some areas that need addressing include, and are addressed by below:

- (a) The requirement for a two-phase review, and whether it is a fair procedure for involved;
- (b) Ensuring that the Phase 2 EIA Review is transparent and capable of being negotiated;
- (c) Ensuring community confidence in the probity of the process by elimination of external influence;
- (d) Preservation of the role of the regulators;
- (e) Ensuring projects are suitably monitored;
- (f) Enforcement of compliance with EIA submission requirements;
- (g) Ensuring alignment with the primary and complementary legislation;
- (h) Removing the potential for litigation resulting from disputed findings; and
- (i) Ensuring future procedural development occurs.
  - In the current climate, the consultant (1)companies, that are assisting the developers, in preparing the EIA reports have a tendency to be rigid in their appreciation of the issues that arise from the proposed developments. Because of this behaviour much of the consultative work with communities, government etc 'breakdown' thereby enforcing the second phase review to be applied. There is a need for a more open 'consultative' approach to the initial phase of the EIA.
  - (2) There is a rigid methodology used to establish the scoping parameters, based on the existing rule and regulations, or from past experience with similar work. Improvements can be made if this process included examination of the requirements

and then build criteria for assessment on a case model.

- Every project presents with (3)а different set of criteria and environmental impacts. These are supported with volumes of data and material that attests to the validity of the project and must be examined completely before a suitable assessment can be made. Each project goes through a series of checks (audits) to ensure compliance with the proposal and legal requirements, as agreed in Phase 1 & 2. Of course, as Taiwan continues to grow, there are more applications and emerging proposals to meet the commercial needs of industry and the community. This in itself increases the work-load of administering authorities. A review should be undertaken to identify the opportunities to accelerate/streamline processing of applications. This could be done by providing a single point of contact for the processing of applications, 'bundling' similar projects to facilitate the review process. An area that urgently requires review.
- In order to simplify and accelerate (4)projects development and submission, technology should be utilised. It would not be difficult to provide information in an electronic format, this could be placed on website/s both for down-loading, and/or interactive on-line submission, additionally, e-document (email) should Most assessment criteria. be utilised. and legislation could also be made available through these media. Once data is being submitted through an electronic format, there a significant opportunities to improve processes associated with the applications.
- (5) Reviews are regularly undertaken to improve processes. A code, or standard framework (operational manual) for review needs to be established to provide guidance during this review process. This will eliminate much of the personal, subjective judgement and provide a modus operandi for deliberation and decision making on issues.
- (6) Public consultation is a contentious matter and often ends up with some form of litigation. To eliminate this, a process needs to be developed that enables the

developer and Responsible Authority to provide information, seek opinion and arrive at an agreed position. It may mean that 'expert' facilitators need to be trained, who can guide all parties through the process., in a similar manner to a 'master of ceremonies' or game show host in a ΤV show. Thereby circumventing the potential of litigation, consultation. compromise. through arbitration, debate and education.

- (7) order to properly evaluate In environmental factors it is necessary to continue to develop the comprehensive assessment technology and EMP tools. The work that I have undertaken in this area over the past 10 years needs further work both within Taiwan and overseas. The existing tools provide a methodology of indexing 'environmental quality' and promotes the assumptions that wherever this work has not been completed that scholars. and experts should be developing functional descriptions to further the understanding of the field of work.
- (8) The author reiterates his belief that environmental investigation, and monitoring activities are the core principles of environmental assessment and if properly conducted will act as a for resource valuable future developments. These materials may contribute to the development of a marketable resource.
- (9) In the future it is hoped that Government strategies will provide for all areas of development and assessment, thereby ensuring that regional assessments are integrated across the country providing for consistent protection of the environment.

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### 4.4 相關近期會議資訊



HEALTH HP 4487 October 2007

### Cefic/IAIA Special topic meeting Health Impact assessment: a tool for policy in complex environments

### First announcement 28-29 October 2008, Brussels

In our society, there is a growing awareness of the multiple relationships between environmental factors and health, and of the myriad effects this relationship has on populations and on individuals.

In 2003 the European Commission adopted an EU Strategy on Environment and Health. One of their aims is to improve the scientific basis for policy in the area of environment, society and health, by analysing the interactions between environment and health using *Health Impact Assessment* (HIA).

An Action Plan (2004-2010) has been put in place which is intended to equip the European Commission and its member states with

- improved methods and tools for health impact assessment and cost/benefit analysis and
- recommendations on how and where these tools can be used for better policy making.

This Action Plan is programmed to deliver its results in 2010.

Cefic and IAIA are holding a joint conference to examine progress to date and to contribute to the Action Plan.

#### Why?

This conference is of interest to EU research framework programme coordinators, impact assessment specialists and industry experts.

We will define the best policy relevant tools to be used for health impact assessment, cost/benefit analysis and integrated assessment

The conference will make a meaningful contribution to the European debate in time for policy discussions in 2010.

#### Call for papers / posters / presenters



#### Delegates can expect:

- Excellent networking
- Information on state-of-the-art theory, research, practice and policy
- To learn and share knowledge about case studies, successes and failures and emerging lessons
- To identify effective methods for the practice of HIA, cost-benefits analysis and integrated assessments
- Engaging, interactive and challenging conference format

Abstract submission will open soon... start thinking now about ways to share your ideas, experience, or promising approaches from any of the relevant fields of practice. Case studies and practical examples will be given in the program.

#### Interested?

Join the IAIA/Cefic mailing list! Contact in Schemerski now to be notified of abstract submission information and program updates as they become available.

#### www.iaia.org

www.cefic.org



Asia and Pacific Regional Health Impact Assessment Conference

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