

出國報告(出國類別：國際會議)

參加 2009 年永續城市運輸及環境  
國際會議

服務機關：行政院環境保護署綜合計畫處

姓名職稱：賀志殷技士

派赴國家：法國

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## 摘要

永續發展的浪潮已是目前全球發展的共識，近年來國際間更形成進一步的認知，地區或地方實際推動永續發展之策略規劃，才是落實全球永續發展之關鍵層次，因此倡導「全球思考，地區行動」的基本指導方針。為落實此基本指導方針，我國中央政府分階段協助地方推動永續發展策略規劃相關事宜，2004年由行政院經建會輔導十一縣市推動地方永續發展策略規劃，2006年起由行政院環保署持續協助未曾參與地方永續發展之縣市，啟動其地方永續發展推動機制，使地方永續發展不再只是概念化之理念，而能實際落實於地方政府之施政主軸與政策。藉由對我國地方永續發展推動現況之論述、分析及提出相關具體建議，作為未來地方縣市推動地方永續發展的參酌依據。

本次開會除發表我國推動地方永續發展的情形，並與會議參與各國人員交流意見，使各國了解我國地方永續發展的推動情形，並了解各國推動永續發展的工作狀況外，藉由開會討論議題，了解世界各國推動城市永續發展的概況及永續城市運輸、永續城市環境最新的發展議題與趨勢。

具備良好的大眾運輸交通路網及多樣性的運輸工具，土地妥善的規劃，污染性低的能源及腳踏車的推廣已成為邁向永續城市的必要條件之一，本署可與相關部門合作，就主要城市檢討建置大眾運輸交通路網及多樣性的運輸工具，並做好腳踏車所需的基礎建設，以逐漸邁向永續城市發展。另外推動捷運、鐵路及高速鐵路等軌道運輸可以達到節能減碳的目的，先進國家積極推動經驗，值得我國參考。建議永續會秘書處建立我國永續發展指標與臨國、歐盟及主要先進國家永續發展指標之互相比較機制，藉由互相比較及檢討，了解我國有哪些項目是落後他國，並檢討如何改善，以期我國永續發展工作有更大的改善空間。由於巴黎地區有許多非洲、亞洲及中東地區的移民，人種複雜及觀光客多，造成環境髒亂的原因之一，由於近年來我國來自東南亞國家新移民逐漸增多，有鑑於巴黎的情形，建議應加強對新移民族群的環境教育觀念及宣導對愛護環境的認同，使台灣同時能包容多種文化，又能成為乾淨美麗的淨土。

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## 一、目的

### (一)緣起

永續發展的浪潮已是目前全球發展的共識，近年來國際間更形成進一步的認知，地區或地方實際推動永續發展之策略規劃，才是落實全球永續發展之關鍵層次，因此倡導「全球思考，地區行動 (Think globally, Act locally)」的基本指導方針。為落實此基本指導方針，我國中央政府分階段協助地方推動永續發展策略規劃相關事宜，2004年由行政院經建會輔導包括台北市等十一縣市推動地方永續發展策略規劃，2006年起由行政院環保署持續協助未曾參與地方永續發展之縣市如新竹縣、新竹市、澎湖縣、台東縣及苗栗縣等地方政府，啓動其地方永續發展推動機制，使地方永續發展不再只是概念化之理念，而能實際落實於地方政府之施政主軸與政策。此外，桃園縣及台南市有感於地方永續發展之重要性，亦自行推動地方永續發展之相關工作。藉由對我國地方永續發展推動現況之論述、分析及提出相關具體建議，作為未來地方縣市推動地方永續發展的參酌依據。因此藉由本此會議使各國了解我國地方永續發展的推動情形，並了解各國推動永續發展的工作狀況。

### (二)開會目的

本次開會的目的有以下三項：

1. 發表我國推動地方永續發展的情形，並與會議參與各國人員交流意見。
2. 了解世界各國推動城市永續發展的概況及永續城市運輸、永續城市環境最新的發展議題與趨勢。
3. 蒐集探討法國最新永續發展及環境保護政策。

## 二、開會行程

本次開會行程自 98 年 6 月 21 日起至 98 年 6 月 28 日共計 8 日，開會地點為法國巴黎，其詳細行程如表一所列，另外會議議程如附件一。

表一、開會行程表

日期	地點	工作內容
98 年 6 月 21 日（星期日） 至 22 日（星期一）	台北至法國巴黎	啓程
98 年 6 月 23 日（星期二）	法國巴黎	準備會議報告資料
98 年 6 月 24 日（星期三）	法國巴黎	報告「A Review of Local Sustainable Development in Taiwan」
98 年 6 月 25 日（星期四）	法國巴黎	參加會議
98 年 6 月 26 日（星期五）	法國巴黎	參加會議
98 年 6 月 27 日（星期六） 至 28 日（星期日）	法國巴黎至台北	返程

### 三、開會內容

#### (一)發表我國推動地方永續發展的情形

本次會議主要行程之一為發表「A Review of Local Sustainable Development in Taiwan」，其中英文論文資料及簡報資料如附件二，另外會場現場相關照片及論文發表證書如附件三。

#### (二)永續城市運輸、永續城市環境最新的發展議題與趨勢

本次會議主題為永續城市之運輸及環境，來自各國不同領域的專家學者就永續城市之交通、科技、社會、經濟、環境及教育等各種領域研究提出發表，部分論文摘要如下：(相關論文及中文翻譯資料詳如附件四，其它會議重點資料詳如

附件五)

1. 羅馬尼亞為歐盟會員國，歐盟自 1997 年起將永續發展設定為重要的目標，歐盟各國亦簽署有關永續發展之協定及條約，為達到歐盟國家永續發展指標目標值，羅馬尼亞於 2008 年設定 2013、2020 及 2030 年預定達成永續發展的願景及目標，以追趕上歐盟國家設定的永續發展指標目標值，自 2000 年至 2007 年努力之下，羅馬尼亞許多永續指標已超越歐盟國家訂定的指標平均值，從各指標的檢討可得到羅馬尼亞未來努力的方向。
2. 藉由分析包括巴黎、蘇黎士及印度的城市之都市與郊區的生活環境，瞭解巴黎、蘇黎士成為永續性較佳的城市是因為具備良好的大眾運輸交通路網及多樣性的運輸工具，土地及停車空間妥善的規劃，污染性低的能源來源及腳踏車的推廣，這將帶給人們便利及舒適的生活環境，並節省許多交通時間及減少汽車排放廢氣，拉近市區與郊區的生活環境。由於印度許多地方仍然很貧窮，人們許多基本生活需求都無法達到，因此改善貧窮及讓人們守法，對印度政府是最急迫性的，也是永續發展最基本條件。
3. 空間及運輸系統的重新規劃成為許多舊城市朝向城市永續發展的重要關鍵，以波蘭 Polish 市為例，已開發的舊區域及正在開發的新區域，藉由整合移動性管理計畫、土地利用計畫、旅遊管理計畫及歐盟 MAX 計畫，規劃出具良好的運輸路網、旅遊路線以及綠地空間，該計畫除教育民眾逐漸接受一些新措施使其瞭解永續城市的新作為外，法規的修訂亦是一項重要的關鍵。
4. 藉由說服的方法，在超市中以 Eco-effective 的觀念及消費指引，促使人們改變觀念，使人們在日常消費及購物時，思考所消費及購物是否符合永續的概念，逐漸使消費者參與永續發展的相關活動，並將永續發展的觀念逐漸帶進社區，進而成為永續發展的推廣者。
5. 馬來西亞永續都市規劃方案始於 1994 年，其永續都市發展透過整合發展走

廊、永續都市發展及再發展、改善、修復及保育三項計畫進行，整合發展走廊為「第九次馬來西亞計畫」(2006-2010)的最新發展計畫，共有六條發展走廊，其中規劃概念為「都市區域」，在全球皆為永續性規劃最有效的策略。整合發展走廊結合城鄉發展，一方面對城市人口帶來社經利益，另一方面兼顧環境保護及資源永續利用。

6. 為避免許多化學物質之室內氣體對人體健康影響，日本藉由分析多種建築材料可能產生的揮發性有機氣體及分析模式，以了解在居家房屋及學校教室之敏感受體(如孩童)受這些室內揮發性有機氣體對健康的影響，從這些影響了解規範建築材料材質及慎選建材的重要性，以保護未來一代身體的健康。

#### 四、法國最新永續發展及環境保護政策

- (一) 法國於 2009 年 7 月通過新環保法，全面設定更嚴格標準，這項新法將影響從收費亭到通風視窗的所有層面。它為新房子和新裝修的房子、農業和廢物管理設定能源效率目標。它鼓勵建設高速鐵路和水上交通，而不鼓勵陸路建設。它也將制定一套制度，監督工人的健康與污染。根據新法，在氣候領域，法國在 2050 年時的溫室氣體排放量，將在 1990 年的基礎上減少 75%；在能源領域，法國希望在 2020 年時，將可再生能源占能源消耗的比重提高到 23%，並從 2010 年起停止銷售白熾燈泡。在交通領域，法國將大力發展鐵路運輸，在 2020 年之前建造 2000 公里的高速鐵路，連接各主要城市；在農業領域，法國將力爭在 2020 年時，將種植生態農產品的農田比重提高到 20%，並從今年起加倍抵免生態農業的稅收。此外，大量消耗能源的建築業是新法的重點規範物件。法國環境與可持續發展部的統計數字顯示，建築業能源消耗量約占法國能源消耗總量的 40%。新法規定，從 2012 年起，要嚴格根據所建房屋的能源消耗來發放建屋許可。

- (二) 法國政府在 2008 年初推出的「新車置換政策」推動法國環保車迅速發

展。法國環保汽車在 2008 年發展迅速，在政府補貼、徵稅等政策的指導下，眾多汽車商和消費者都將目光投向了更為環保的小排量汽車。據法國環境與能源管理處統計，2008 年法國所售新車的尾氣平均排放量為每公里 140 克，這數字於 2007 年為每公里 149 克，減幅大大超過往年。此外，2008 年每公里二氧化碳排放量小於 140 克的汽車佔法國新車銷售量的 63%。而排量較大的四輪驅動車銷量降到了 2004 年以來的最低點。這些進步主要原因是政府從去年開始推行的「新車置換政策」。根據該政策，車主更換新車時，購買小排量、更環保的新車可享 200 歐元至 1000 歐元的補貼；而購買大排量、污染嚴重的新車必須繳納最高達 2600 歐元的購置稅。根據這項政策，車主在更換新車時，購買小排量、更環保的新車可享受 200 歐元至 1000 歐元的補貼，而購買大排量、污染嚴重的新車則須繳納高至 2600 歐元的購置稅。在這些補貼、徵稅等政策的指導下，眾多汽車商和消費者都將目光投向了更為環保的小排量汽車。2007 年，二氧化碳排量在每公裏 140 克以下的汽車佔了新車銷售市場 63% 的份額。此外，法國總統薩科齊還在去年的巴黎國際車展上宣布，法國政府將投入 4 億歐元，用於研發清潔能源汽車；政府還計劃採取一系列舉措，鼓勵汽車行業逐步向節能環保的方向發展。為了進一步緩解污染的壓力，政府又將目光轉向了“零排放”的自行車。統計數據顯示，巴黎近幾年已累計規劃自行車專用道 400 公里。2000 年至 2007 年間，巴黎騎自行車者數量幾乎翻了一番。2007 年中旬，巴黎率先推出“單車自由騎”活動，有效減少了環境污染。目前，遍布法國首都巴黎街頭的 1451 個租車點已有 2 萬輛自行車供民眾租用。法國其他城市也都在躍躍欲試，希望效倣巴黎推出此項服務。

(三) 法國將在 2010 年推出碳燃料稅，最初將以每公噸二氧化碳徵收 14 歐元的方式執行。依據以往政府的計算公式，14 歐元的碳稅代表著每公升的無鉛



汽油多徵收 0.033 歐元(0.47 美元)。這項新稅是法國環保政策的一部分，意在迫使消費者逐漸停止使用污染性能源，並大幅降低全球溫室氣體排放。

- (四) 法國在未來十年打造一個注入綠色環保元素的全新「大巴黎」，除了發展全自動快速列車服務連接市郊四周交通網絡外，還打算在巴黎市興建環保摩天大樓，實行和英國倫敦、美國紐約及日本東京等大都會一較高下，巴黎及周邊地區將成為創新的模範城市，注入綠色環保、安逸舒適及交通便利等重要元素，讓巴黎發展成為關注氣候變化問題的全球可持續發展大都會。為了改善巴黎周邊地區的交通，薩爾科齊宣布斥資 350 億歐羅，建造一條長達 130 公里的自動地鐵幹線，將市中心和周邊的戴高樂機場、拉德芳斯新區、凡爾賽等經濟或地理區域中心串連起來。此外將大力興建環保有軌電車，並改善現有的輕軌及公共汽車系統。

## 五、心得與建議

1. 為了解國際間永續發展的新興議題，透過此次參與大型國際會議，本署應積極主動參與國際活動與會議，加入國內外相關團體，延伸觸角，擴展視野，以利收集國外相關經驗，藉助技術經驗交流，並建立國際關係，以加速我國及地方縣市永續發展的腳步。
2. 建議加強學校及社會教育對於永續發展觀念的認知，並分析台灣環境現況及宣導國際關心的各項議題，以期民眾能更具有國際觀，也利於政府推動各項永續發展工作。
3. 建議永續會秘書處建立我國永續發展指標與臨國、歐盟及主要先進國家永續發展指標之互相比較機制，藉由互相比較及檢討，了解我國有哪些項目是落後他國，並檢討如何改善，以期我國永續發展工作有更大的改善空間。

4. 具備良好的大眾運輸交通路網及多樣性的運輸工具，土地妥善的規劃，污染性低的能源及腳踏車的推廣已成為邁向永續城市的必要條件之一，本署可與相關部門合作，就主要城市檢討建置大眾運輸交通路網及多樣性的運輸工具，並做好腳踏車所需的基礎建設，以逐漸邁向永續城市發展。另外推動捷運、鐵路及高速鐵路等軌道運輸可以達到節能減碳的目的，先進國家積極推動經驗，值得我國參考。
5. 我國地方永續發展多以各縣市各自角度為規劃，缺乏區域整合的觀念，應多與具相關永續發展區域整合的國家互相溝通，並吸取國外的經驗，建立一套適合我國的機制，逐漸建立北、中、南、東及離島區域永續發展，結合城鄉發展及區域特色，一方面使城鄉之間互相帶來社經利益，另一方面兼顧環境保護及資源永續利用。
6. 法國人們健康快樂的生活及享受人生的方式讓人印象深刻，永續健康及永續幸福也應成為我國學習西方社會推動永續發展的另一種思維。由於巴黎地區有許多非洲、亞洲及中東地區的移民，人種複雜及觀光客多，造成環境髒亂的原因之一，由於近年來我國來自東南亞國家新移民逐漸增多，有鑑於巴黎的情形，建議應加強對新移民族群的環境教育觀念及宣導對愛護環境的認同，使台灣同時能包容多種文化，又能成為乾淨美麗的淨土。
7. 法國最近 2 年推動的新的永續發展作為及相關法令，皆值得我國學習，其中包括為新房子和新裝修的房子、農業和廢物管理設定能源效率目標，鼓勵建設高速鐵路和水上交通，而不鼓勵陸路建設，將可再生能源占能源消耗的比重提高到 23%，停止銷售白熾燈泡，大力發展鐵路運輸，建造高速鐵路，連接各主要城市，將種植生態農產品的農田比重提高到 20%，加倍抵免生態農業的稅收，嚴格根據所建房屋的能源消耗來發放建

屋許可。另推動「新車置換政策」，推動法國環保車迅速發展，使得法國環保汽車在 2008 年發展迅速，並積極推動“零排放”的自行車系統。

## 附件 1 會議議程

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Time	Paper Title	Authors
	<b>Wednesday: June 24, 2009</b>	
<b>08:00 20:00</b>	<b>Welcome &amp; Registration</b>	<b>Opening Remarks</b>
	<b>HALL - A</b>	<b>HALL - A</b>
<b>08:00 11:00</b>	<b>Chair: Alexander Vaninsky</b>	<b>Session – I (Oral Presentation)</b>
	Neural Network Ensemble-based Solar Power Generation Short-Term Forecasting	Aymen Chaouachi Tokyo University of Agriculture and Technology, Japan
	Strategies and Compromises: Towards an Integrated Energy and Climate Policy for Egypt	S.T. El Sheltawy and A.A. Refaat Cairo University, Egypt
	Refuse Derived Fuel (RDF) Utilization in Cement Industry by Using Analytic Network Process (ANP)	Aysun Ozkan, Mufide Banar Anadolu University, Turkey
	Some Aspects of the Sustainable Development in Romania	Camelia Burja, Vasile Burja University "1 Decembrie 1918" of Alba Iulia, Romania
	Economic impact of emissions trading system in Japan: the case of Japanese Emission Credit System	Kumiko Nemoto University of Tokyo, Japan
	Quality of Life in Green Buildings	Fiona Schweitzer FH O? University of Applied Sciences Wels, Austria
	Does the polysemic nature of energy security make it a 'wicked' problem?	Lynne Chester Curtin University of Technology, Australia
	Analysis on Iranian wind catcher and its effect on natural ventilation as a solution towards sustainable architecture	Mahnaz Mahmoudi Zarandi Qazvin Islamic Azad University, Iran
	Indoor and Outdoor Air Quality at High Schools in Eskisehir, Turkey	Ozlem Ozden, Eftade O. Gaga, Tuncay Dogeroglu Anadolu University, Turkey
	Hydrodynamic Characteristics of Weis-Fogh Type Ship's Propulsion Mechanism Having Elastic Wing	K. D. Ro, J. T. Park, and J. H. Kim Gyeongsang National University, Republic of Korea
	Assessing the Impact of Contour Strips of Perennial Grass with Bio-fuel Potentials on Aquatic Environment	Roy Gu Iowa State University, USA
	Estimating the Energy Costs of Mining Equipment Using an Information System	Ahmad Reza Sayadi, Mohammad Ali Rahimi, Masoud Monjezi Tarbiat Modares University, Iran
	The Effect of Sowing Date and Row Spacing on Yield and Yield components on Hashem Chickpea Variety under Rainfed Condition	Keyvan Shamsi Islamic Azad University -Kermanshah Branch, Iran
	Design, Manufacture and Test of a Solar Powered Audible Bird Scarer	Turhan Koyuncu, Fuat Lule Ondokuz Mayıs University, Turkey
	Environmental Performance of the United States Energy Sector: A DEA Model with Non-Discretionary Factors and Perfect Object	Alexander Vaninsky Hostos Community College of The City University of New York, USA
<b>11:00 11:15</b>	<b>Coffee Break</b>	
<b>11:15 13:00</b>	<b>Chair: Laleh Yerushalmi</b>	<b>Session – II (Oral Presentation)</b>

16:15 18:00	Chair: Chandrakant Kokare	Session – XIV (Oral Presentation)
	Effect of extraction conditions on yield and purity of citrus pectin by sulfuric and hydrochloric acids	Amir Hossein Abbaszadeh Höskolan i Borås, Sweden
	Evaluation of phenolic profiles and antioxidant activity of Turkish medicinal plants: <i>Tilia argentea</i> , <i>Crataegi folium</i> leaves and <i>Polygonum bistorta</i> roots	Simge Demiray, Manuela Pintado, Paula Lima Castro Universidade Catolica Portuguesa, Portugal
	HACCP System Establishment in a Cake Producer Company	Hassan Nakhchian Islamic Azad University-Torbate Heydarieh Branch, Iran
	Isolation and identification of an <i>Acetobacter</i> strain from Iranian white-red cherry with high acetic acid productivity as a potential strain for cherry vinegar production in food and agriculture biotechnology	Keivan Beheshti Maal and Rasool Shafiee Islamic Azad University of Falavarjan, Iran
	HACCP System Establishment in a Cake Producer Company	Hassan Nakhchian Islamic Azad University-Torbate Heydarieh Branch, Iran
	Control improvement of a C sugar cane crystallization using an auto-tuning PID controller based on linearization of a neural network	S. Beyou, B. Grondin-Perez, M. Benne, C. Damour and J.-P. Chabriat Universite de La Reunion, La Reunion (FRANCE)
	Model based soft-sensor for industrial crystallization: On-line mass of crystals and solubility measurement	C. Damour, M. Benne, B. Grondin-Perez, J-P. Chabriat University of La Reunion, Reunion (France)
	Comparative analysis of total phenolic content in sea buckthorn wine and other selected fruit wines	Bharti Negi, Gargi Dey Jaypee University of Information Technology, India
	Modeling of Starter Bacteria Growth in Concentrated Yoghurt	Elham Mahdian, Reza Karazhian and Mostafa Mazaheri Tehrani Azad Islamic university, Quchan branch, Iran
	HACCP System Establishment in a Cake Producer Company	Hasan Nakhchian Islamic Azad University of Torbate Heydarieh., Iran
	Production and characterization of calcium independent, thermostable, detergent and oxidant stable $\alpha$ -amylase from marine <i>Streptomyces</i> sp. A3	Samrat Chakraborty, Abhijeet Khopade, Kakasaheb Mahadik, Chandrakant Kokare STES, Sinhgad Institute of Pharmacy, India
18:00 20:00	Chair: Mihaela Marilena Lăzăroaie	Session – XV (Oral Presentation)
	Design and Evaluation of flurbiprofen Particles using Melt Sonocrystallization (MSC)	Ravindra Kamble, Abhijit Ghogare, Lalit Garg, Shivaji Takale, Kakasaheb Mahadik Bharati Vidyapeeth University, Pune., India
	Optimization of methods for development of fermented-distillate of passion fruit beverage	Azevedo Luciana Cavalcanti Federal Institute Of Science, Education And Technology Of Sertao Pernambuco, Brazil
	Flow Properties of Commercial Infant Formula Powders	Maja Benkovic, Ingrid Bauman University of Zagreb, Faculty of Food Technology and Biotechnology, Croatia
	Mechanisms involved in organic solvent resistance in Gram-negative bacteria	Mihaela Marilena Lazaroaie Institute of Biology of the Romanian Academy, Romania
	Modification of palm oil structure to cocoa butter equivalent by carica papaya lipase-catalyzed interesterification	Porn Tippa Pinyaphong, Suree Phutrakul Uttaradit Rajabhat University, Thailand
	Effect of Chemical Pretreatments and Dehydration Methods on Quality	Reihaneh Ahmadzadeh Ghavidel Islamic Azad University of Iran, Quchan Branch, Iran
	Molecular Fingerprinting of turfgrass cultivars and their resistance to <i>Fusarium graminearum</i> using PCR-based markers	A. Al-Humaid, G. H. Ibrahim and M.I. Motawei College of Agric. & Vet. Med., Qassim Univ., Qassim, Saudi Arabia, Saudi Arabia
	Evaluation of phenolic profiles and antioxidant activities of Turkish medicinal plants: <i>Tilia argentea</i> , <i>Crataegi folium</i> leaves and <i>Polygonum bistorta</i> roots	Simge Demiray, Manuela Pintado, Paula Lima Castro Universidade Catolica Portuguesa, Portugal
	Production of recombinant Bacilli Phytase in Fed – Batch Cultivation of <i>E. coli</i> .	T. T. Tran, G. Mamo, B. Mattiasson, R. Hatti-Kaul Lund University, Vietnam
	Dual-scale Pore Network Simulation on Drying of Unconsolidated Porous Media	Jiao Yang China Agricultural University, China
	Hydrolysis of Hull-Less Pumpkin Oil Cake Protein Isolate by Pepsin	Ivan Živanovic, Žužana Vaštag, Senka Popovic, Ljiljana Popovic and Draginja Pericin University of Novi Sad, Serbia
	<b>Wednesday: June 24, 2009</b>	

08:00 20:00	<b>Welcome &amp; Registration</b>	<b>Opening Remarks</b>
	<b>HALL - B</b>	<b>HALL - B</b>
08:00 11:00	<b>Chair: Porfêjo Pena Filipe</b>	<b>Session – XVI (Oral Presentation)</b>
	Travel Time Evaluation of an Innovative U-Turn Facility on Urban Arterial Roadways	Ali Pirdavani, Tom Brijs, Tom Bellemans, Geert Wets and Koen Vanhoof, Hasselt University, Belgium
	Reprising the Eternal Glory of Udaipur: Issues and Strategies for Heritage Conservation	Chidambara Swamy, B. Shankar Adhiyamaan College of Engineering, Hosur, India
	Statistical Assessment for the Urban Socio-Economic Form Characteristics of Districts: Digital Representation for the Benefits of Mixed Use Development	Asmaa Abdel Aty Mohamed Ibrahim Cairo University, faculty of Engineering, Egypt
	The Dynamics of Chinese Urbanization and Urban Housing Growth since the Mid 1990's	Junhua Chen, Ying Wu, Fei Guo Macquarie University, Australia
	The Combination of District Style and Landscape in the Waterfront Landscape Design	Tingting Chen Huazhong University of Science and Technology, China
	A Review of Local Sustainable Development in Taiwan	C.Y. Ho, C. K. Yang, Y. S. Peng Environmental Protection Administration Executive Yuan R.O.C.(Taiwan)
	The sampling effect on the value of travel-time savings: Estimation by discrete choice models (MNL, MNP, MMNL) on Tunisian data.	Dhibi Mohamed, Belkacem Lotfi Instiut Supérieur de gestion de Sousse, Tunisia
	The Research of Upgrading Models of Informal Cities in Developing Countries	Zhu Hai-bo Huazhong University of Science and Technology, P.R.China
	GIS Based Stochastic Modeling of Physical Accessibility	Kivanc Ertugay, Sebnem Duzgun Middle East Technical University, Turkey
	Infrastructure planning in Scania - a discourse analytical approach to the concepts of regional development and sustainability in the planning process	Fredrik Pettersson Lund University, Faculty of engineering, Dep. for Technology and Society, division for Environmental and Energy Systems Studies, Sweden
	Collaborative Car Pooling System	Joao Ferreira; Paulo Trigo; Porfêjo Filipe Instituto Superior de Engenharia de Lisboa, Portugal
11:00 11:15	<b>Coffee Break</b>	
11:15 13:00	<b>Chair: Marichela Sepe</b>	<b>Session – XVII (Oral Presentation)</b>
	The Urban Development Boundary as a Planning Tool for Sustainable Urban Form: The South African Situation	Elizelle Juaneé Cilliers North West University, Potchefstroom, South Africa
	Comparison of Garden city Concept and Green Belt Concept in Major Asian and Oceanic Cities	Kayoko YAMAMOTO National University of Electro-Communications Tokyo, Japan
	Landscape Visual Classification Using Land Use and Contour Data for Tourism and Planning Decision Making in Cameron Highlands District	Nafisa Binti Hosni, Michihiko Shinozaki Shibaura Institute of Technology, Japan and Universiti Teknologi Malaysia, Malaysia, Japan
	Stone Ways Forever	Lineu Castello, Marcos Petrolli Federal University of Rio Grande do Sul (UFRGS)/National Brazilian Research Council (CNPq), Brazil
	Road pricing scheme supported by public transport busway using efficiency and evaluation	Ofyar Z. Tamin, M. Nanang Prayudyanto Institute Technology Bandung, Indonesia
	High-speed train planning in France, lessons from Mediterranean TGV-line	Leheis Universit? Paris-Est, France
	Reform Framework for Urban Land Management in Serbia in the Period of Transition	Slavka Zekovic Serbia
	Mega Projects and Governmentality	Sophie Sturup University of Melbourne, Australia
	Synergies between Physical and Electronic Developments: A Case Study of Taipei City	Wei-Jü Huang Delft University of Technology, Netherlands

	Pacification in urban centers in islamic era-Case study: Yazd	Malihe Ahmadi Islamic Azad university-Shahryar Shahr Ghods branch, Iran
	Places of tourist attraction: planning sustainable fruition by preserving place identity	Marichela Sepe Institute for Service Industry Research, Italy
13:00 14:00	<b>Lunch Break</b>	
14:00 16:00	<b>Chair: Akinori Kanasugi</b>	<b>Session – XVIII (Oral Presentation)</b>
	A ring segmented bus architecture for Globally Asynchronous Locally Synchronous System	Masafumi Kondo, Yoichiro Sato, Kazuyuki Tashiro, Tomoyuki Yokogawa, Michiyoshi Hayase Okayama Prefectural University, Japan
	A PWM Controller with Multiple-Access Table Look-up for DC-DC Buck Conversion	Steve Hung-Lung Tu, Chu-Tse Lee Fu Jen Catholic University, Taiwan
	Photonic Crystals for Novel Applications in Integrated-Optic Communication Systems and Devices	Vijay Janyani, Neetu Joshi, Jigyasa Pagaria, Parul Pathak Malaviya National Institute of Technology Jaipur, India
	Characteristic of discrete Raman amplifier at different pump configurations	Parekhan Muhammed Abdulrahman University of sulaimani , College of science, Iraq
	A SAW-less Dual-Band CDMA Diversity and Simultaneous-GPS Zero-IF Receiver	Bassem FAHS ST-ERICSSON, FR
	Optimal design of flat –gain wide-band discrete Raman amplifiers	Banaz O. Rasheed University Of Sulaimani, Sulaimani, Iraq
	Design of variable fractional-delay FIR differentiators	Jong-Jy Shyu, Soo-Chang Pei and Min-Han Chang National University of Kaohsiung, Taiwan, ROC
	High performance VLSI architecture of 2D discrete wavelet transform with scalable lattice structure	Juyoung Kim, Taegeun Park The Catholic University of Korea, South Korea
	An Optical WDM Network Concept for Tanzania	Shaban Pazi University of Sussex, United Kingdom
	DAMQ-Based Approach for Efficiently Using the Buffer Spaces of a NoC Router	Mohammad Ali Jabraeil Jamali, Ahmad khademzadeh Islamic Azad University, Shabestar Branch, Iran
	A Dynamically Reconfigurable Arithmetic Circuit for Complex Number and Double Precision Number	Haruo Shimada, Akinori Kanasugi Tokyo Denki University, Japan
16:00 16:15	<b>Coffee Break</b>	
16:15 18:00	<b>Chair: Vladimir Bondarenko</b>	<b>Session – XIX (Oral Presentation)</b>
	Multilayer soft tissue continuum model: Towards realistic simulation of facial expressions	A. Hung, K. Mithraratne, M. Sagar and P. Hunter University of Auckland, New Zealand
	A Pairwise-Gaussian-Merging Approach towards Genome Segmentation for Copy Number Analysis	Chih-Hao Chen, Hsing-Chung Lee, Qingdong Ling, Hsiao-Jung Chen, Sun-Chong Wang, Li-Ching National Central University, Taiwan
	Multidimensional Visualization Tools for Analysis of Expression Data	Urška Cvek, Marjan Trutschl, Randolph Stone II, Zanobia Syed, John L. Clifford, Anita L. Sabichi Louisiana State University Shreveport, USA
	Computational analysis the influence of missense mutations upon protein structure and function	I. Nassiri, B. Goliaei, and M. Tavassoli Tehran University, Iran
	Villi Formation and Detachment Visualized by Computer-Assisted	Lise Labejof, Pierre Galle, Maria Isabel Severo, Arno Heeren De Oliveira, Raquel Gomes Bastos Universidade Estadual De Santa Cruz, Brazil
	Interface Terminologies: A Case Study on the International Classification of Primary Care	Laurent Letrillart, Anne-Katty Bacis, Francis Mennerat, and Cyrille Colin Université de Lyon, France
	Correlation analysis of the histograms of RR- and SRR-intervals in heart rate estimation	Qawasma R.A., Kuznetsov A.A., Sushkova L.T. Palestine Polytechnic University, Palestine
	Catheter-tissue interaction to design an optical MEMS force sensor for use in minimally invasive heart surgery	Roobeh Ahmadi, Masoud Kalantari, Javad Dargahi, and Muthukumaran Packirisamy Concordia University, Canada
	Construction of an Anatomically Based Finite Element Model of the Human Head	Sally H .C. Che, Kumar Mithraratne, Mark Sagar and Peter J. Hunter The Auckland Bioengineering Institute, New Zealand



	Action Potential Propagation in Inhomogeneous 2D Mouse Ventricular Tissue Model	Vladimir E. Bondarenko, Randall L. Rasmuson Georgia State University, USA
18:00 20:00	<b>Chair: Simon Lessard</b>	<b>Session – XX (Oral Presentation)</b>
	A Combinatorial Model for ECG Interpretation	Spiros Michalakopoulos King's College London, UK
	Osteogenesis by dextran coating on and among fibers of a polyvinyl formal sponge	M. Yoshikawa, N. Tsuji, T. Yabuuchi, Y Shimomura, H. Kakigi, H. Hayashi, H. Ohgushi Osaka Dental University, Japan
	Early Detection of Conduction Failure of Ulnar Nerve in Patients with Diabetic Type I & Type II	Sajith Vijayaraghavan University of Kerala, Kerala, India, India
	Computer-aided Lenke classification of scoliotic spines	Neila Mezghani, Philippe Phan, Hubert Labelle, Carl Eric Aubin and Jacques de Guise Quebec university, Canada
	Constructing A Continuity of Care Record File Viewer on Android Mobile Platform	Yan-Jhih Huang National Yang-Ming University, Taiwan
	Viscoelastic Modeling of Brain MRE Data Using FE Method	Hamed Ajabi Naeni & Mohammad Haghpanahi Islamic Azad University Khomeinishahr Branch, Iran
	Automatic Sleep Stage Scoring with Wavelet Packets Based on Single EEG Recording	Luay A. Fraiwan, Natheer Y. Khaswaneh, and Khaldon Y. Lweesy Jordan University of Science and Technology, Jordan
	Design, modeling and fabrication of a tactile sensor and display system for application in laparoscopic surgery	M. Ramezanifard, J. Dargahi, S. Najarian, and N. Narayanan Concordia University, Canada
	Towards medical device maintenance workflow monitoring	Beatriz Llorens University of Girona, Spain
	Automatically Driven Vector for Guidewire Segmentation in 2D and Biplane Fluoroscopy	Simon Lessard, Pascal Bigras, Caroline Lau, Daniel Roy, Gilles Soulez, Jacques A. de Guise École de technologie supérieure, Canada
	<b>Thursday: June 25, 2009</b>	
08:00 11:00	<b>Chair: Jaideep Motwani</b>	<b>Session – XXI (Oral Presentation)</b>
	BPR Effect on ERP Implementation:A Comparative Case Study	Turan Erman Erkan Atilim University, Turkey
	Hierarchical Differences in Perception of Work Environment Factors and Fatalistic Attitude of Employees Working in an Iron and Steel Company in India	Neeti, Pooja Purang, Meenakshi Gupta Indian Institute of Technology Bombay, Powai, India
	A Formulation of the latent class vector model for pairwise data	Tomoya Okubo, Kuninori Nakamura, and Shin-ichi Mayekawa The National Center for University Entrance Examinations, Japan
	Goal based episodic processing in implicit learning	Peter Bibby University of Nottingham, United Kingdom
	Paranoid Thoughts and Thought Control Strategies in a Nonclinical Population	Takashi Yamauchi, Anju Sudo, and Yoshihiko Tanno University of Tokyo, Japan
	Applying Gibbs Sampler for Multivariate Hierarchical Linear Model	Satoshi Usami Univeristy of Tokyo, Japan
	Treatment or Re-Victimizing the Victims	Juliana Panova Argosy University - Illinois School of Professional Psychology, USA
	Teacher Stress, Job Performance and Self Efficacy among Women Teachers of Government and Private Schools of Pakistan	Rubina Hanif, Seema Pervez Quaid-I-Azam University Islamabad, Pakistan
	Attachment styles of children raised in nursery Vs. those who are raised in the family in Iran	Narges Razeghi Islamic Azad University, Tafresh Branch, Iran
	Borderline Personality Organization and Perfectionism: A Review of Two Overlapping Personality Pathologies	Heather M. Roxborough, Paul L. Hewitt, Gordon L. Flett, & Jasmin Abizadeh The University of British Columbia, Canada
	Why children with autism have problems with categorization and generalization: Beyond the weak central coherence and the enhanced perceptual processing hypotheses	Liljana Radenovic York University, Canada
	Blending in Brecht's Caucasian Chalk Circle	Peter Yang Case Western Reserve University, Usa

	How can we most efficiently carry out green incentives?	Peter Yang Case Western Reserve University, Usa
		Tatiana Indina Psychological Institute Russian Academy of Education, Russia
	Proteins Length and Their Phenotypic Potential	Tom Snir, Eitan Rubin Ben Gurion University in the Negev, Israel
	On Reversal and Transposition Medians	Martin Bader Ulm University, Germany
	Do Cultural Differences in Successful ERP Implementations Exist?	Jaideep Motwani and Asli Yagmur Akbulut Grand Valley State University, USA
11:00 11:15	<b>Coffee Break</b>	
11:15 13:00	<b>Chair: Sharon Delmege</b>	<b>Session – XXII (Oral Presentation)</b>
	Perceived Efficacy of Downward Communication in relation to Organizational Effectiveness	Reeta Raina, Anita Goyal Management Development Institute, India
	A Genetic-Algorithm-Based Approach for Audio Steganography	Mazdak Zamani, Azizah A. Manaf, Rabiah B. Ahmad, Akram M. Zeki, Shahidan Abdullah University of Technology Malaysia, Malaysia
	Globalisation, ICTs and National Identity: The Consequences of ICT Policy in Malaysia	Abd Rasid Abd Rahman Universiti Teknologi MARA, Malaysia, Malaysia
	Overcoming Barriers: An Evaluation of the Effectiveness of Non-Traditional Communication Methods in Public Health Messaging to Migrant Latino Farmworkers	Valerie Beynon Austin Peay State University, USA
	The Privatization of Copyright Through Digital Rights Management	Saurabh Mehta West Bengal National University of Juridical Sciences, Kolkata, India
	Pattern of the body image in the movie of "La maison en petits cubes" on the base of milieu and individual relationship	Yasemin Kilinçarslan Kyrgyzstan Turkey Manas University Communication Faculty Department of Radio-Television Cinema, Kyrgyzstan
	Digital Hypertexts vs. Traditional Books: An Inquiry Into Non-Linearity	Federica Fornaciari Marshall University, Italy
	Shopping for love in the Twenty-first Century	Sharon Delmege Murdoch University, Australia
13:00 14:00	<b>Lunch Break</b>	
14:00 16:00	<b>Chair: Chihab BenMoussa</b>	<b>Session – XXIII (Oral Presentation)</b>
	Knowledge Management: Towards overcoming dissatisfaction in the field (Note this is a change to the original title)	Griffiths, David A University of Edinburgh, Scotland
	Assessing local knowledge dynamics: Regional Knowledge Economy Indicators	Edgardo Bucciarelli, Gianfranco Giulioni, Mariateresa Ciommi, Francesca Affortunato University "Gabriele d'Annunzio" Chieti - Pescara, Italy
	Roadmapping as a Collaborative Strategic Decision-Making Process: Shaping Social Dialogue Options for the European Banking Sector	Christos A. Ioannou, Panagiotis Panagiotopoulos, Lampros Stergioulas Organisation for Mediation and Arbitration (OMED), Athens, Greece
	KM for Solving Economic Problem and Poverty in Community: A Case from Thailand	Usa Sutthisakorn and Samchai Jirapatarasil University of the Thai Chamber of Commerce, Thailand
	The casual relationship between stock prices and exchange rates - the case of India	M.Venkateshwarlu National Institute of Industrial Engineering (NITIE), India
	The Impact of Trade on Social Development	Umut G d , Mehtap Hisarciklilar, Tolga Kaya Istanbul Technical University, Turkey
	Public private partnership: a solution for financing infrastructures especially in developing countries.	Farshad heybati, Musa ahmadi Azad Islamic University, Iran
	Barriers to Knowledge Management: A theoretical framework and a review of industrial cases	Chihab BenMoussa Åbo Akademi University, Finland
16:00 16:15	<b>Coffee Break</b>	

16:15 18:00	Chair: Tomayess Issa	Session – XXIV (Oral Presentation)
	Novel Approach of Hidden Data in the (Unused Area 1 within EXE File) Using Computation Between Cryptography and Steganography	B.B.Zaidan, A.A.Zaidan, Fazidah.Othman, Ali abd Alrahem Aos.A.Z.Ansaef, Malaysia
	Towards for Admission Control in WIMAX Relay Station Mesh Network For Mobile Stations Out of Coverage Using Ad-Hoc	Anas.Majeed, A.A.Zaidan, B.B.Zaidan, Miss Laiha Mat Kiah. University of Malaya, Malaysia
	Cognitive Dissonance in General Information Processing: The Hypothetical Social Arrays Paradigm	Alvaro Machado Dias, Henrique Teruo Akiba, Eduardo Oda, Leo Arruda and Luiz Felipe B. Gonzales University of São Paulo, Brazil
	Design and Implementation of The Message Digest Procedures MDP-192 & MDP-384	Magdy Saeb Arab Academy for Science, Tech. & Maritime Transport, Egypt
	A Fast and Scalable Network Encryption Scheme, Breaking the Substitution Cipher Chaining mode (SCC-256), Dynamic Injection Model	Mohamed Abo El-Fotouh and Klaus Diepold Technical University of Munich, Germany
	A prototype for enhancing information security awareness in industry	E. Kritzinger, E. Smith University of South Africa, South Africa
	Cognitive, affective, behavioral, and spiritual therapy among females subjects with depression	Ali Naghi Faghihi University of Qom, Iran
	Implementation of Geo-knowledge Based Geographic Information System for Estimating Earthquake Hazard Potential at a Metropolitan Area, Gwangju, in Korea	Chang-Guk Sun, Jin-Soo Shin Korea Institute of Geoscience and Mineral Resources, Republic of Korea
	Study for Development of Web Check System	Sung Hoon Kim, Eung-yong Lee, Hwa-su Shin, Jae-il Lee Korea Information Security Agency, South Korea
	A novel modified Blind Signature based on Elgamal Digital Signature	Amir dameri , Reza Boostani Shiraz University, Iran
	A New Contingent Methodology For Developing Marketing Websites	Tomayess Issa, Andrew Turk Curtin University of Technology, Australia
18:00 20:00	Chair: Jin O Kim	Session – XXV (Oral Presentation)
	Security Risk Analysis Based on the Policy formalization and the Modeling of Big Systems	Adrien DEROCK - Luc CESSIEUX ESIEA, France
	Consistent Modeling of Functional Dependencies along with World Knowledge	Sven Rebhan, Nils Einecke and Julian Eggert Honda Research Institute Europe, Germany
	An Enhanced Distributed System to improve the Time Complexity of Binary Indexed Trees	Ahmed M. Elhabashy, A. Baes Mohamed and Abou El Nasr Mohamad Arab Academy For Science and Technology, Egypt
	Fault classification in a doubly fed induction machine using a neural network	Ourici amel Badji Mokhtar university of annaba, Algeria
	IP Spoofing Problem Description and Evaluation	E. Gaballa and A. Baes Mohamed Arab Academy For Science and Technology, Egypt
	Software to Encrypt Messages Using Public-Key Cryptography	E. Inzunza-Gonzalez, C. Cruz-Hernandez, R. M. L. Gomez-Gutiérrez, E. E. Garcia-Guerrero, L. Cardoza-Avendaño, H. Serrano-Guerrero Baja California Autonomous University, Mexico
	Secret Communications Using Synchronized Sixth-Order Chua's Circuits	L. Gomez-Gutiérrez R.M., Rodriguez-Orozco E., Cruz-Hernandez C., Inzunza-Gonzalez E., Posadas-Castillo C., Garcia-Guerrero E.E. and Cardoza-Avendaño L. Baja California Autonomous University, Mexico
	Compensation method eliminating voltage distortions in PWM inverter	Sediki hamid, Djennoune said Mouloud Mammeri University of Tizi-ouzou, Algeria
	Automatic Vehicle Systems	Sayed AliReza MahdaviFar, gholamreza Soutodeh, Karim Heydar Pasargad university, Iran
	The implementation of IHE ATNA for the EHR system	Sheng-Chi Tseng National Yang-Ming University, Taiwan
	Cost Optimization of Transfer Capability in the Interconnected Power System	Jin O Kim, Hyun-II Son Hanyang University, Korea
<b>Friday: June 26, 2009</b>		

<b>08:00 11:00</b>	<b>Chair: Anatoli Torokhti</b>	<b>Session – XXVI (Oral Presentation)</b>
	Freedom of Expression and its limit-A case study on 'Minerva' phenomenon	Hyunseung, Suh Seoul National University, Korea
	New Fuzzy Preference Relations And Its Application In Group Decision Making	Nur Syibrah Muhamad Naim, Lazim Abdullah, Che Mohd Imran Che Taib University Malaysia Terengganu, Malaysia
	An Extension Of Fisher's Fundamental Theorem Of Natural Selection (Poster)	I. L. 鏗ez, M. G. 鏗ez, T. Cabello, Z. Varga University Of Almer, Spain
	A Numerical Strategy to Design Maneuverable Micro-Biomedical Swimming Robots Based on Biomimetic Flagellar Propulsion	Arash Taheri, Meysam Mohammadi-Amin, Seyed Hossein Moosavy Tarbiat Modares University, Iran
	A Numerical Framework to Investigate Intake Aerodynamics Behavior in Icing Conditions	Ali Mirmohammadi, Arash Taheri, Meysam Mohammadi-Amin Tarbiat Modares University, Iran
	Digitalwatermarking in color images	Rajashree Shettar R.V College of Engineering, India
	Document Classifier Based on Statistical and Unsupervised Machine Learning Techniques	Shobha G R. V. College of Engineering, India
	A Direct Method for Bifurcations of Equilibria in Continuous Dynamical Systems in Biology	Hsiu-Chuan Wei Feng Chia University, Taiwan
	Generic Filtering of Infinite Sets of Stochastic Signals	Anatoli Torokhti, Phil Howlett University of South Australia, Australia
<b>11:00 11:15</b>	<b>Coffee Break</b>	
<b>11:15 13:00</b>	<b>Chair: Rade Ciric</b>	<b>Session – XXVII (Oral Presentation)</b>
	Optimal Compensation of Reactive Power in the Restructured Distribution Network	A.Pourshafie, M.Saniei, S.S.Mortazavi, A.saeedian Shahid Chamran University, IRAN
	Transformer Diagnosis Based on Coupled Circuits Method Modelling	Labar Hocine, Rekik Badri, Bounaya Kamel, Kelaiaia Mounia Samira University Badji Mokhtar, Algeria
	Effect of Compensator on Multi Level Inverter Power Quality	M.S. Kelaiaia ; H. Labar; S. Kelaiaia; T. Mesbah university Badji Mokhtar, Algeria
	Mathematical Modelling of Single Phase Unity Power Factor Boost Converter	Sanjay L. Kurkute Bharati Vidyapeeth University, Pune, India
	Self-Commutated Current Source Converter with Multi-Level Current Reinjection	Lasantha B. Perera Queensland University of Technology, Australia
	Optimal Allocation of FACTS Devices for ATC Enhancement Using Bees Algorithm	R.Mohamad Idris, A.Khairuddin, M.W.Mustafa Universiti Teknologi Malaysia, Malaysia
	A Novel Digital Implementation of AC Voltage Controller for Speed Control of Induction Motor	Ali M. Eltamaly, A. I. Alolah, R. Hamouda, and M. Y. Abdulghany King Saud University, Saudi Arabia
	Assessment transmission network reliability with protection system simulation	Sirus mohammadi, Ali saedeyan Islamic Azad university, Iran
	Economic Analysis of A Pumped Storage Project For Iran Generating System Based on A Dynamic Modeling	Alireza Sohrabi Tehran University , Faculty Of Engineering, Iran
	Ageing & Partial Discharge Patterns in Oil-Impregnated Paper and Pressboard Insulation at High Temperature	R. H. Khawaja, T. R. Blackburn & M. Rehan Arif Rachna College of Engineering & Technology Gujranwala, Pakistan
	On The Reliability of Low Voltage Network with Small Scale Distributed Generators	Rade Ciric, Nikola Rajakovic Secretariat for Science and Technological Development, Serbia
<b>13:00 14:00</b>	<b>Lunch Break</b>	
<b>14:00 16:00</b>	<b>Chair: Joseph Ignagni</b>	<b>Session – XXVIII (Oral Presentation)</b>
	Initializing K-Means using Genetic Algorithms Bashar Al-Shboul, Sung-Hyon Myaeng	Korean Advanced Institute of Science and Technology, Korea
	Towards Self-ware via Swarm-Array Computing	Blesson Varghese, Gerard McKee University of Reading, United Kingdom

	Multivalued Knowledge-Base based on multivalued Datalog	Agnes Achs University of Pecs, Faculty of Engineering, Hungary
	The Evolution of Federalism in Russia: Constitutional Provisions and Recent Trends After Putin's Reforms	Fabiana Sacchetti IMT - Institute for Advanced Studies, Lucca, Italy
	Charting The Conceptual Islam and Democracy Through Theo-Democracy, Popular Vice Regency and Faraaghat	Mohd Izani Mohd Zain National Defence University of Malaysia, Malaysia
	Determinants of a Single African Currency: A formula-based approach to developing social, political, economic and historic indicators of measurement	Lisa Macha Saye The University of LaVerne, US
	A new decision making approach based on possibilistic influence diagrams	Wided Guezguez, Nahla Ben Amor Higher institute of managment, Tunisia
	Partisanship and U.S. Supreme Court Justices: Support for Presidents and their Party	James Meernik, Joseph Ignagni, Rebecca E. Deen University of Texas at Arlington, U.S.A.
<b>16:00</b> <b>16:15</b>	<b>Coffee Break</b>	
<b>16:15</b> <b>18:00</b>	<b>Chair: Shivakant Mishra</b>	<b>Session – XXIX (Oral Presentation)</b>
	A comparative assessment of appearance based feature extraction techniques and their susceptibility to image degradations in face recognition systems	Vitomir Štruc, Nikola Pavešić University of Ljubljana, Slovenia
	Text Retrieval Relevance Feedback Techniques for Bag of Words Model in CBIR	Nhu Van NGUYEN, Jean-Marc OGIER, Salvatore TABBONE and Alain BOUCHER University of La Rochelle, Vietnam
	Comparing Arabic and Latin Handwritten Digits Recognition Problems	Sherif American University in Cairo, Egypt
	Combiner based design of multiple classifiers	Fuad M. Alkoot Telecommunication & Navigation Institute, Kuwait
	Using PFA in Feature Analysis and Selection for H.264 Adaptation	Nora A. Naguib, Ahmed E. Hussein, Hesham A. Keshk, Mohamed I. El-Adawy Helwan University, Egypt
	Robust VQ-based Local Descriptor for SIFT Feature	Qiu Chen, Koji Kotani, Feifei Lee, Tadahiro Ohmi Tohoku University, Japan
	Fast Search for MPEG Video Clips Using Adjacent Pixel Intensity Difference Quantization Histogram Feature	Feifei Lee, Koji Kotani, Qiu Chen, and Tadahiro Ohmi Tohoku University, Japan
	Adaptive Bilateral Filter for Sharpness Enhancement and Noise Removal	M.SriSakthiVidhya Anna University, India
	Shape Based Image Retrieval Process Using High Level Imaged	Bihari Nandan Pandey Atal Bihari Vajpayee Indian Institute of Information Technology And Management, Gwalior, India, India
	Implementation of Real Time Tracking using Unstructured Supplementary Service Data	Chetna Dabas Jaypee Institute Of Information Technology University, India
	EiFa – A System for Flexible Combination of Schema Matching Techniques	Ammarah Maqbool University of Agriculture Faisalabad, Pakistan
	An Implementation of MacMahon's Partition Analysis in Ordering the Lower Bound of Processing Elements for the algorithm of LU-Decomposition	Lavdrim Elmazi, Halil Snopce, Ilir Spahiu SEE-University, Tetovo, R.Macedonia
	Numerical Solution of Nonlinear Volterra-Fredholm Integral Equations of the First Kind Using the Adomian Decomposition Method	Mohammad Ali Fariborzi Araghi, Shadan Sadigh Behzadi Islamic Azad University, Central Tehran Branch, Iran
	Emergency evacuation model for urban places: Accessibility as a model framework	Nabil Mohareb United Arab Emirates University, United Arab Emirates
	On Computing System Crashes	Shivakant Mishra Shivakant, USA
<b>18:00</b> <b>20:00</b>	<b>Chair: Luiz Fernando Goncalves de Figueiredo</b>	<b>Session – XXX (Oral Presentation)</b>
	Partial Connection Architecture for Mobile Computing	Phyoung Jung Kim, Seogyun Kim Chungbuk Provincial College, Korea
	On the Analysis of Bandwidth Management for Hybrid Load Balancing Scheme in WLANs	Chutima Prommak and Airisa Jantaweetip Suranaree University of Technology, Thailand

	Mounting Time Reduction using Content-Based Block Management for NAND Flash File System	Won-Hee Cho, GeunHyung Lee, Deok-Hwan Kim Inha University, Rep. of Korea
	An Ontology Based Question Answering System on Software Test Document Domain	Ferda Nur Alpaslan Middle East Technical University, Turkey
	Time domain simulation of torsional-axial and lateral vibration in drilling operation	B.M.Imani and S.G.Moosavi Ferdowsi University of Mashhad, Iran
	The Role of Behavioral Science in Sustainable Environment	Morteza Monshizadeh, Ar zuhairuse MD Darus, Maria Khosravi UKM(National university of Malaysia), Malaysia
	Designing the sustainable city of tomorrow and urban sustainability	Morteza Monshizadeh, Ar zuhairuse MD Darus, Maria Khosravi UKM(National university of Malaysia), Malaysia
	Jellyfish ( <i>Stomolophus meleagris</i> ) Tentacles Proteins and their Proteolysis Endogenous	García Barrientos, RA., Ramos-Puebla, AA, Hernández-Samano AA, Minor-Perez, HB, and Guerrero-Legarreta, I.A Tecnológico de Estudios Superiores de Ecatepec, Mexico
	Effect of Germination on the Physicochemical Properties of Canavalia ( <i>Canavalia ensiformis</i> )	Cira-Chavez, L. AA., Minor-Pereda, HB., Dublán-García OC. y García Barrientos RD Tecnológico de Estudios Superiores de Ecatepec, Mexico
	Dynamic social network modeling -- a Forum use case	Fernando A.B. Colugnati Research Institute for Technology and Innovation - IPTI, Brazil
	<b>Technical Equipment</b> 1- Laptop Computer 2- LCD Data Projector 3- USB Flash Drive - Memory 4- CD/DVD-ROM Drive	5- PowerPoint Presentation Remote with Laser Pointer 6- PowerPoint Presentation/ Acrobat Reader Software 7- Each Technical Presentation is 20 Minutes including Discussions

附件 2 本次會議報告中文及英文論文資料  
及簡報資料

# 我國地方永續發展推動現況評析

彭衍順\*、張嘉玲\*\*

## 摘要

本研究的目的是對我國地方永續發展推動現況之論述與分析，並藉由分析結果提出相關具體建議，作為未來地方縣市推動地方永續發展的參酌依據。永續發展的浪潮已是目前全球發展的共識，近年來國際間更形成進一步的認知，地區或地方實際推動永續發展之策略規劃，才是落實全球永續發展之關鍵層次，因此倡導「全球思考，地區行動(Think globally, Act locally)」的基本指導方針。為落實此基本指導方針，我國中央政府分階段協助地方推動永續發展策略規劃相關事宜，2004年由行政院經建會輔導包括台北市等十一縣市推動地方永續發展策略規劃，2006年起由行政院環保署持續協助未曾參與地方永續發展之縣市如新竹縣、新竹市、澎湖縣、台東縣及苗栗縣等地方政府，啟動其地方永續發展推動機制，使地方永續發展不再只是概念化之理念，而能實際落實於地方政府之施政主軸與政策。此外，桃園縣及台南市有感於地方永續發展之重要性，亦自行推動地方永續發展之相關工作。

本研究調查之主體為實際參與地方永續發展之縣市，透過資料蒐集彙整及秘書單位主要承辦人員之問卷調查進行此次研究之分析。整體研究結果顯示，現階段多數縣市僅呈現組織架構建制及永續發展策略規劃報告書文件化等靜態成果，惟仍有少數縣市持續運作地方永續發展相關工作，並展現關注地方永續發展議題之熱誠與活力。研究結果亦發現，在欠缺明確法源依據的架構下，致使產生地方首長不重視、跨局室橫向溝通困難、預算編列困境與無法發揮指標管考系統的原有功能等問題。

研究結論建議地方縣市應基於「持續性改善」之永續原則，審視縣市地方永續發展之實際推動瓶頸，研議永續性評估機制與其他相關配套措施，並將縣市永續發展層級提升至區域型永續發展範疇；而中央政府亦應協助地方縣市建立推動永續發展運作機制，並朝向「法制化」、「程序化」與「常態化」之規劃方向，期使我國地方層級能建立落實中央永續發展政策與彰顯地方特色之永續發展運作模式。

關鍵詞：地方永續發展、法制化、跨局室橫向合作、指標評量系統

## 一、前言

永續發展的浪潮已是目前全球發展的共識，在2002年約翰尼斯堡地球高峰會議的「永續發展宣言」後，世界永續發展的潮流，已從抽象與宣示的層次逐漸轉化為具可行性的行動階段。近年來國際間更形成進一步的認知，地區或地方實際推動永續發展之策略規劃，才是落實全球永續發展之關鍵層次，因此倡導「全球思考，地區行動(Think globally, Act locally)」的基本指導方針。就地方永續發展層級而言，地方永續發展策略規劃是促進全球與國家永續發展的最重要動力。地方永續發展層級主要的精神，在於承續全球及國家永續發展之內涵與理念，落實由上而下(top-down)的政策引導與配合，及由下而上(bottom-up)的推動與實施，並依據地方發展特性及需求，規劃全面性、整合性及永續性之地方永續發展願景及相關策略研擬。

鑑於地方永續發展的重要性及急迫性，行政院經濟建設委員會(以下簡稱：經建會)

\*現任嘉南藥理科技大學環境資源管理學系助理教授。

\*\*現任逢甲大學水利工程與資源保育學系助理教授。



自 2003 年底召集國內各領域專家學者並組成輔導團隊，並於 2004 年針對第一階段所遴選之地方縣市，積極推動地方永續發展策略規劃，其主要的工作內容包括：「組織成立與願景設立」、「議題分析」、「策略規劃」、「執行與追蹤」、「考核與修正」等五階段，每一階段環環相扣，在時間上具有持續性與連貫性。希望透過整體性的地方永續發展策略規劃，協助地方政府就其環境、經濟、及社會層面做系統及全面性的整合，並考量現行法令、技術及資源之限制與規範，進行制度面的調整及因應措施的研擬，以落實永續發展的整體願景。有感於地方永續發展的重要性，我國中央政府於 2006 年起，由行政院環境保護署（以下簡稱：環保署）陸續協助輔導其他未曾推動地方永續發展之縣市，使地方永續發展不再只是概念化之理念，而能實際落實於地方政府之施政主軸與政策。

自 2004 年起，我國分階段推動地方永續發展相關規劃，迄今已有數年之久，2004 年第一階段所推動之地方永續發展運作機制，在經過各縣市陸續的執行過程中，其運作機制之適宜性，亦值得進一步的分析與探討。因此，本研究的主要目的，即是藉由各縣市實際推動地方永續發展策略規劃的過程與經驗，分析我國地方永續發展推動的現況，並針對其困難處與瓶頸進行檢討，最後提出相關具體之建議，作為我國後續推動地方永續發展的主要參酌依據。

## 二、地方永續發展緣起

從「我們共同的未來（Our Common Future, 1987）」，到聯合國「二十一世紀議程（Agenda 21, 1992）」，再到 2002 年約翰尼斯堡地球高峰會議的「永續發展宣言」，世界永續發展的潮流，已從抽象與宣示的層次逐漸轉化為具可行性的行動階段。目前國際上對永續發展的定義中，最被廣泛引用及被官方採用的，即是 1987 年世界環境與發展委員會（World Commission on Environment and Development, WCED）在報告中所提出的定義：「發展在追求當代需求和滿足時，不能損及未來世代追求他們需要和滿足的能力」，它是建構在「環境保護、經濟發展及社會公義」三大基礎之上。永續發展範圍廣泛，舉凡土地資源、水資源、能源、農業、海洋資源、環境保護、健康風險、教育、社會福祉、城鄉發展、經濟發展、科技研發及國際合作等，均為其工作範疇。台灣地狹人稠，過去一味追求經濟成長而忽略自然資源的永續經營，進而導致天然災害頻繁，對追求永續發展而言，更顯現其必要性與迫切性。

而我國為因應永續發展，期許行政院為加強保護環境生態、保障社會公平正義、促進經濟發展、建設綠色矽島，亦於民國 86 年 8 月設置國家永續發展委員會（簡稱永續會），聘請政府相關部會首長、專家學者及民間團體代表擔任委員，綜合各家之所長，以協調部會間意見及督導永續發展工作之推動；永續會下置八個工作分組，由相關部會召集。而我國永續發展具體之行動策略則在 89 年 5 月制定，永續會擬定「二十一世紀議程—中華民國永續發展策略綱領」，做為我國推動永續發展之策略依據。91 年 12 月 11 日，總統頒布「環境基本法」，該法第二十九條「行政院應設置國家永續發展委員會，負責國家永續發展相關業務之決策，並交由相關部會執行，委員會由政府部門、學者專家及社會團體各三分之一組成」，至此給予永續會法定位階。

鑒於永續發展貴在實踐，為促成知行合一，永續會自民國 91 年 6 月起，基於我國現況，參考全球趨勢與高峰會永續發展行動計畫，規劃我國推動永續發展計畫架構，包括任務、理念、工作項目、具體工作內容、主協辦機關及執行期限等；並廣泛邀請專家學者研商，及舉辦公開研討會以集思廣益，擬定完成「永續發展行動計畫」，做為二十一世紀初期，我國以行動實踐永續發展之依據。行動計畫之具體工作項目共計 264 項，其中 130 項規劃於 2003 年 12 月完成或進行重點查核，以配合「臺灣永續元年」之推動。永續行動方案的擬定是以「全球考量，地區行動」的國際共識，由生活環境、消費行為、

經營活動，從民間到政府，從每個個人到整體社會，以實際行動，全面落實永續發展。希望打造一個安全、健康、舒適、美麗而永續的生存環境，建構一個多元、和諧、繁榮、充滿生機和活力的社會，並成為地球村的一位良好公民。

我國中央政府所規劃之永續發展架構已漸趨完備，但真正要能落實永續發展之願景，並兼顧環境、經濟、社會三大訴求，則地方政府之參與，扮演著極為重要的角色。在永續發展工作的實踐上，地方政府直接處理地方上住宅、交通、廢棄物處理等各方面事務，其政策措施對地方發展影響非常大；再者，地方政府擁有相當的政策自主性，可直接而有效率地推動與實施各種措施。因此，為因應中央所推動之永續發展工作，並將其落實於地方層面，行政院經建會積極推動地方永續發展策略規劃，以協助地方政府就其環境、經濟、及社會層面進行全面性的整合，進而串連國家由上而下（top-down）的政策引導與配合，及地方由下而上（bottom-up）的推動與實施，真正落實符合全民福祉的永續發展願景。

### 三、我國地方永續發展現況

在我國國家永續發展架構漸趨成熟之際，並呼應「全球思考，地區行動(Think globally, Act locally)」的全球思維，自 2003 年底行政院經建會特別召集國內各領域專家學者並組成中央輔導團隊，積極推動地方永續發展策略規劃。鑑於當時地方政府普遍缺乏永續發展概念，經建會擬就 25 縣市中甄選意願較高之縣市為接受輔導之地方單位，包括台北市、高雄市、宜蘭縣、花蓮縣、台中市、彰化縣、嘉義市、台南縣、高雄縣、屏東縣與金門縣等 11 縣市。計畫推動期間由 2004 年 1 月至 6 月，除了中央輔導團隊積極的協助推動外，各縣市亦依據其實際需求，由相關學術研究單位組成地方輔導團隊，協助推動地方永續發展策略規劃相關事務。

為順利推動地方永續發展策略規劃，中央輔導團隊特別參酌「Local Agenda 21」的基本精神與方向，研擬地方永續發展策略規劃準則，作為地方輔導團隊協助地方推動永續發展相關事務的基本準則。其執行主要內容包括：「組織成立與願景設立」、「議題分析」、「策略規劃」、「執行與追蹤」、「考核與修正」等五階段，並以連續之會議召開作為推動輔導機制。相關會議內容包括：「地方永續發展指導委員會會議」、「推動小組工作會議」、「各局室協商會」、「公開說明會」、「座談會」、以及「內部教育訓練」。希望藉由主要工作內容與相關會議的召開，兩者互相搭配協調以推動地方永續發展之推動事宜。茲將地方永續發展整體計畫推動流程說明如圖 1 所示：

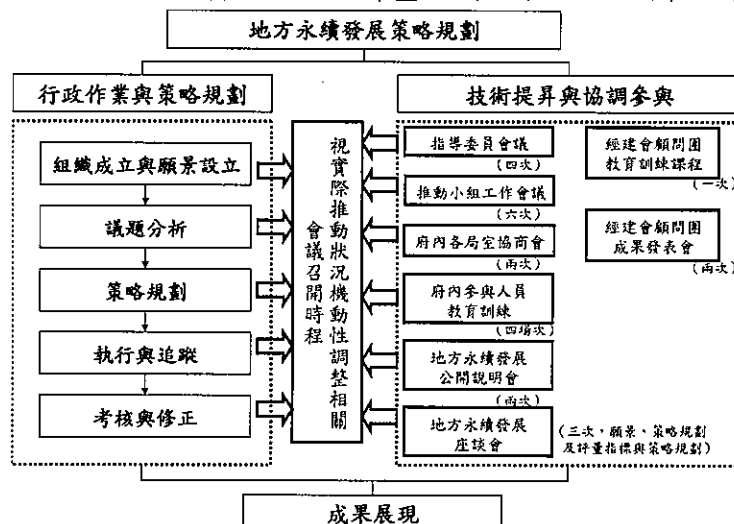


圖 1 地方永續發展整體工作推動流程

除了上述 11 縣市實際參與地方永續發展推動工作外，桃園縣與台南市亦自籌推動地方永續發展相關業務。桃園縣是我國第一個確認與成立永續發展相關組織與架構的縣市，其相關之法制化精神及永續發展組織架構亦對後來經建會所輔導的 11 縣市產生示範性的作用及影響。台南市政府有感於地方永續發展的重要性，亦於 2004 年由市政府責成環境保護局自籌推動地方永續發展業務，其運作機制亦遵循經建會所擬定之相關流程。

行政院國家永續發展委員會第 14 次工作會議決議，建立評鑑縣市地方永續發展推動機制，於 2006 年 5 月間進行 13 縣市 (11 縣市加上自行辦理之桃園縣及台南市) 的實地評鑑工作。為擴展地方永續發展實務工作之推動，我國中央政府於 2006 年起持續協助未曾參與地方永續發展之縣市如新竹縣、新竹市、澎湖縣、台東縣及苗栗縣等地方政府，啟動其地方永續發展推動機制，使地方永續發展不再只是概念化之理念，而能實際落實於地方政府之施政主軸與政策。茲將我國現階段地方永續發展推動現況說明於表 1:

表 1 我國現階段地方永續發展推動現況

	秘書單位	計畫經費	推動 期程	備註
台北市	都發局	中央補助	93 年	第一階段
高雄市	研考會	中央補助	93 年	第一階段；
桃園縣	環保局	自籌辦理	92 年	持續推動中
台中市	環保局	中央補助	93 年	第一階段，96、97 年亦推動
彰化縣	城鄉局	中央補助	93 年	第一階段
台南市	環保局	自籌辦理	92 年	
台南縣	環保局	中央補助	93 年	第一階段
高雄縣	計畫室	中央補助	93 年	第一階段
屏東縣	研考室	中央補助	93 年	第一階段
宜蘭縣	計畫室	中央補助	93 年	第一階段
花蓮縣	城鄉局	中央補助	93 年	第一階段
金門縣	計畫室	中央補助	93 年	第一階段
台北縣	環保局	中央補助	96 年	第二階段
台中縣	環保局	中央補助	96 年	第二階段
嘉義縣	環保局	中央補助	96 年	第二階段
雲林縣	環保局	中央補助	96 年	第二階段
新竹縣	環保局	中央補助	97 年	第三階段

表 1 我國現階段地方永續發展推動現況 (續)

縣市	秘書單位	計畫經費	推動 期程	備註
新竹市	環保局	中央補助	97 年	第三階段
苗栗縣	環保局	中央補助	97 年	第三階段
南投縣	環保局	中央補助	97 年	第三階段
基隆市	環保局	中央補助	97 年	第三階段
台東縣	環保局	中央補助	97 年	第三階段
澎湖縣	環保局	中央補助	97 年	第三階段
連江縣	環保局	中央補助	97 年	尚未執行

#### 四、地方永續發展問卷調查結果與分析

本問卷的主要目的在於針對台灣現階段各縣市執行地方永續發展現況的調查與分析，此次問卷調查總計寄發 24 份，回收份數為 19 份，回收率為 79.2%。惟在部分問題回答上，少數縣市或許認為部分問題太具敏感性，或許因其認知不足而無法回答問題，致使部分問題縣市比例之分母小於 19。就整體回收率而言，此問卷應可具體展現各縣市推動地方永續發展的現況。希冀藉由本問卷分析調查的結果與分析，就地方永續發展的理論架構與實際推動層面，提供未來各縣市在推動地方永續發展策略規劃的重要參酌依據。

##### 1. 縣市承辦地方永續發展秘書幕僚之單位：

表 2 地方永續發展秘書幕僚單位問卷結果

問卷/選項	縣市數	比例
請說明現階段 貴縣市承辦地方永續發展秘書幕僚之單位？		
環保局	14	14/19
計畫處	2	2/19
研考處	3	3/19

此項問卷結果如表 2 顯示，高達 73.7% 的縣市由環保局作為地方永續發展之幕僚單位；僅 2 個縣市由計畫處承接，比例約佔 10.5%；同時有 3 個縣市由研考處作為幕僚單位，比例約佔 15.8%。

就秘書幕僚單位而言，目前以環保局擔任地方永續發展秘書幕僚單位為主要之趨勢；但 93 年經建會所輔導之地方縣市，其秘書單位則呈現較多元化，主要是因為在此階段之秘書單位，多由地方縣市政府依據地方政府組織特性自行認定；惟於後續推動地方永續發展過程中，因中央指導單位由行政院環保署執行，因此多數縣市在承辦地方永續發展業務時，考慮到行政業務一致性，而由環保局擔任秘書幕僚單位。經過多年實際運作後，發現環保局在執行地方永續發展秘書幕僚業務時，缺乏有效之協調與執行能力，此現象主要來自於在地方縣市政府編制中環保局為府外單位，無法順利協調府內各局處室之橫向聯繫工作。

就地方政府實際運作層面而言，計畫處或研考處為縣市首長的幕僚單位，且位階高於環保局。因此，若能以位階較高之計畫處或專職管考業務之研考處作為地方永續發展

秘書幕僚單位，在局處室聯繫及實際運作方面應較具成效。

2. 縣市政府曾經主持或出席永續發展委員會議之最高層級：

表 3 縣市政府出席永續發展委員會最高層級問卷結果

問卷/選項	縣市數	比例
請勾選近兩年來縣市政府曾經主持或出席永續發展委員會議最高層級？		
縣市首長	10	10/19
縣市副首長	1	1/19
參議	1	1/19
局處室首長	2	2/19
其他	5	5/19

此項問卷調查結果如表 3 所示，在全部回收 19 縣市中，共有 10 個縣市由縣市首長親自出席永續發展委員會議，比例約佔 52.6%；在縣市副首長出席者，有 1 個縣市；由參議出席者，有 1 個縣市；由局處室首長出席者，共有 2 個縣市，比例約佔 10.5%；另外有 5 個縣市為剛開始推動永續發展業務，尚未召開委員會議，比例約佔 26.3%。

由地方縣市地方首長親自出席永續發展委員會議者，表該地方首長重視永續發展計畫；縣市地方首長於地方永續發展之工作推動，扮演極為重要的角色，尤其在地方永續發展推動初期，若有地方首長之宣示與決心，則工作推動小組亦將積極參與相關策略規劃之擬定，對於該縣市推動此計畫有加分的效果；反之，若缺乏地方首長之支持，則工作推動小組即無法積極投入相關規劃工作。

因我國地方自治法規中規定，縣市首長乃藉由民選制度之產生。鑒於選舉的壓力，縣市首長政策之推動多著重於立竿見影或人民能直接感受之建設與發展，而忽略將永續發展的理念落實於施政計畫中，致使永續發展的推動很難普及於地方層級。為爭取選舉的勝利或連任的壓力，導致地方縣市首長較不注重永續發展的作為與理念，這亦是現階段我國地方永續發展推動的主要瓶頸之一。

3. 縣市各局處室橫向合作關係：

表 4 縣市政府局處室橫向合作關係問卷結果

問卷/選項	縣市數	比例
請說明縣市各局處室橫向合作關係？		
非常積極	0	0
積極	7	7/17
普通	9	9/17
消極	1	1/17
非常消極	0	0

此項問卷結果如表 4 所示，在 17 縣市填答中，9 個縣市認為局處室橫向合作關係為普通，比例約佔 52.9%；而有 7 個縣市認為積極，比例約佔 41.2%；此外有 1 個縣市認為局處室聯繫合作關係為消極；另外，非常積極與非常消極都無縣市勾選。

永續發展相關工作之推動，往往涉及不同公務部門的共同參與，亟需建立跨局處室之合作機制。地方永續發展業務推動範圍廣泛，現階段公務部門仍保有相當之本位主義，在業務屬性多面向之永續發展之推動，將造成後續跨局室橫向合作之主要瓶頸。

雖然問卷調查結果顯示，41.2%及 52.9%的縣市分別認為跨局室橫向合作關係為積極與普通，但本研究實際訪談專家學者，普遍一般共識皆認為跨局處室橫向合作機制之缺乏，為目前我國推動地方永續發展的主要困難之一。問卷結果與實際現況之差異，或許可用承辦人員在填達此項問題時保守的心態，或許問卷回答選項的設計（非常積極、積

極、普通、消極與非常消極)是屬於主觀的認知，而無法客觀的評量問卷者的想法與心態。惟問卷結果顯示，亦有 1 個縣市認為跨局處室聯繫關係為消極，此可呼應目前各縣市之實際狀況。

#### 4. 縣市推動地方永續發展相關辦法可執行度：

表 5 永續發展相關辦法可執行度問卷結果

問卷/選項	縣市數	比例
請說明縣市推動地方永續發展之相關辦法(管理辦法、檢討修正辦法等)之可執行度？		
非常高	1	1/17
高	4	4/17
普通	10	10/17
低	0	0
非常低	2	2/17

此項問卷結果如表 5 所示，在 17 縣市填答者中，有 10 個縣市認為推動地方永續發展之相關辦法的可執行度為「普通」，比例約佔 58.8%；認為執行度「高」者，有 4 個縣市勾選，比例約佔 23.5%；同時有 2 個縣市認為執行度「非常低」，比例約佔 11.8%；僅 1 個縣市認為可執行度「非常高」，比例約佔 5.9%；此外，認為執行度「低」則無縣市勾選。

經建會於 93 年輔導地方永續發展策略規劃流程中，為強化地方永續發展之運作機制，特別要求縣市擬定相關法規與辦法，如：「地方政府永續發展委員會設置要點」、「永續發展推動管理辦法」、「永續發展策略執行績效評估辦法」、「永續發展推動成果報告管理辦法」與「永續發展策略檢討修正辦法」。

在實際運作層面上，因缺乏主要的法源依據，致使前述相關法規之實際規範程度大打折扣。此可由本問卷 58.8%與 11.8%的縣市分別勾選執行度為「普通」與「非常低」說明，根據本研究訪談專家學者，得知目前在前述辦法中，除了「地方政府永續發展委員會設置要點」可真正落實外，其餘辦法大多為草案或文件，都缺乏真正的執行能力。

#### 5. 縣市地方永續發展指標系統建置：

表 6 永續發展指標系統建置問卷結果

問卷/選項	縣市數	比例
請說明 貴縣市地方永續發展指標系統建置情形		
尚待建置中	9	9/19
指標名稱	5	5/19
指標名稱及分階段量化目標值	5	5/19

此項問卷結果如表 6 所示，在 19 個填答縣市中，有 9 個縣市永續發展指標「尚待建置中」，比例約佔 47.4%；在「指標名稱」方面，則有 5 個縣市建置完成，比例約佔 26.3%；在「分階段量化目標值」方面，有 5 個縣市勾選，比例約佔 26.3%。

永續發展指標之積極功能，即在透過指標的詮釋，使得「永續發展」理念的溝通更為容易，因為指標能將永續發展抽象的概念轉譯為可度量的數值型態、可描述的措施或行動導向的符號與信號。由於我國推動地方永續發展期程較晚，因而各縣市在地方永續發展指標的建置，格外顯得步伐不一致的現象。

由問卷調查的結果顯示，47.7%的受訪縣市勾選其指標系統狀態為尚待建置中，此應為環保署於 96 年與 97 年補助推動地方永續發展之縣市，因現階段前述縣市仍由專業團隊協助其建置地方永續發展組織與系統，故尚未完成其指標系統。26.3%的縣市表示其永

續發展指標系統分別為確認指標名稱及完成分階段目標值。此 10 縣市應為 93 年經建會所輔導之縣市及自籌推動之縣市，以推動期程而言，93 年迄今已有數年，地方永續發展指標系統應更趨完備；然而，仍有半數縣市僅完成確認指標名稱之階段，而無法落實指標之量化功能，地方縣市對永續發展推動之保守態度與後續持續性，由此不難窺知。此外，第一階段其他半數縣市已完成分階段量化目標值之擬定，此階段已完成指標之靜態量化功能；惟僅有執行動態指標之管考評量，才能落實地方永續發展指標之精神與意涵。

#### 6. 推動小組管考評量會議之召開：

表 7 召開實際管考評量之會議問卷結果

問卷/選項	縣市數	比例
請說明縣市是否曾針對推動小組所研擬之量化指標值召開實際管考評量之會議？		
是	4	4/19
否	15	15/19

此項問卷結果如表 7 所示，在全部回收的 19 縣市中，僅有 4 個縣市召開相關管考評量會議，比例約佔 21.1%；而有高達 78.9% 之縣市未曾召開相關管考評量會議，而無法落實動態指標評量系統的管考功能。

為強化地方永續發展工作分組執行業務績效之管考層面，地方縣市推動永續發展相關作業之際，亦擬定相關績效管考辦法，如：「永續發展策略執行績效評估辦法」等。推動小組管考會議召開的主要目的即是依據地方永續發展持續性改善之精神，並落實 PDCA 管考管理之原則，考核現階段各局室推動永續發展之相關成果，作為後續持續推動永續發展之參酌依據。

依據此項問卷結果顯示，僅有 21.1% 的縣市表示曾經召開推動小組管考評量會議，此項數據顯示現階段地方永續發展各項工作之管考作業，仍有非常大的改善空間。導致此項低比率數據的原因可能有二，首先是各縣市尚未完成地方永續發展執行績效評估辦法法制化作業程序，致使召開推動小組管考評量會議缺乏法源依據，而其會議所決議之管考評量結果，對工作小組亦缺乏法規之約束能力；再者由前述分析中，亦說明各縣市永續發展指標系統建置仍未完備，管考評量工作缺乏量化依據，致使在執行評量考核工作有其困難度及缺乏客觀性等因素。

#### 7. 縣市永續發展策略規劃與縣市綜合發展計畫之關連性：

表 8 永續發展策略規劃與綜合發展計畫之關連性問卷結果

問卷/選項	縣市數	比例
請說明縣市永續發展策略規劃與縣市綜合發展計畫之關連性？		
獨立區分	1	1/15
從屬性質	8	8/15
模糊不清	6	6/15

此項問卷結果如表 8 所示，共有 15 個縣市填答，其中有 8 個縣市認為縣市永續發展策略規劃與縣市綜合發展計畫為從屬性質，比例約 53.3%；有 6 個縣市認為其關係為模糊不清，比例約 40%；僅 1 個縣市認為獨立區分，比例約 6.7%。

就我國地方政府施政作為而言，地方綜合發展計畫為多數縣市在推動政策、策略與行動方案之主要依據，而地方永續發展策略規劃因其多元化之特色，內容亦涵蓋地方政府的主要施政範圍。地方綜合發展計畫與地方永續發展策略規劃關連性之運用，將對地方縣市未來發展有一定程度之影響力。若兩者間定位清晰且從屬關係明確，將能協助地區資源進一步之整合與調配；反之，若兩者間之關係無法釐清，將導致地方政府運作機

制重疊並呈現多頭馬車的現象，進而造成地方政府資源重覆與浪費。

因我國地方推動永續發展策略規劃期程較短，在現階段地方政府政策運作的層面上，尚屬於起步階段且其定位亦不明。因此，約 40%的縣市認為其認為兩者之關係為模糊不清，此亦反應目前地方永續發展在政策運作定位的灰色地帶。然而，約 53.3%的縣市表示兩者間具有從屬之性質，此亦為現階段地方政府對地方永續發展策略規劃認知的主流，亦即兩者間具有某種關係，但兩者間的定位關係，未來值得進一步的探討與分析。

#### 8. 現階段永續發展所屬之階段：

表 9 現階段永續發展所屬之階段問卷結果

問卷/選項	縣市數	比例
請勾選 貴縣市現階段永續發展所屬之階段		
起步型：推動組織架構完備、具體之文件化(如策略規劃書)	11	11/18
進階型：指標系統完善(具分階段具體目標值)、執行管考評量作業(如召開推動小組量化指標檢討會議)、跨局處室橫向機制運作成熟。	7	7/18
成熟型：民眾參與機制成熟、落實資訊公開化。	0	0

此項問卷結果如表 9 所示，在 18 個縣市填答中，有 11 個縣市認為其在推動地方永續發展的階段為「起步型」，比例約佔 61.1%；「進階型」有 7 個縣市勾選，比例約佔 38.9%；目前並無任何縣市定位其為「深化型」之階段。

為將現階段我國地方永續發展推動進行系統化之分類，本研究依據地方永續發展之要件與精神，特將地方永續發展縣市分類為：起步型、近階型與成熟型；此三類型分類之基準如下：

(1) 起步型：推動組織架構完備、具體之文件化(如策略規劃書)。

(2) 進階型：指標系統完善(具分階段具體目標值)、執行管考評量作業(如召開推動小組量化指標檢討會議)、跨局處室橫向機制運作成熟。

(3) 成熟型：民眾參與機制成熟、落實資訊公開化。

綜合前述各項之分析，可知我國地方永續發展推動大多處於起步階段，或者因為地方永續發展在我國推動之期程較晚，或者因為運作機制仍待進一步磨合，未來推動地方永續發展仍有相當之改善空間。此可說明 61.1%的縣市認為其階段屬於起步型之結果；而 38.9%的縣市認為其屬於進階型之位階，此應可由進階型所列之要件說明；目前並無任何縣市勾選其為成熟型之階段，此結果亦反應我國目前地方永續發展之現況。

#### 9. 地方永續發展推動過程中所遭遇之困難：

表 10 地方永續發展所遭遇困難之問卷結果

卷/選項	縣市數	比例
請說明地方永續發展推動過程中所遭遇之困難?(可複選)		
經費短缺	7	7/14
民眾參與不足	6	6/14
跨局處室橫向聯繫問題	10	10/14
永續發展理念不足	7	7/14
永續發展規劃定位不明	5	5/14



表 10 地方永續發展所遭遇困難之問卷結果 (續)

卷/選項	縣市數	比例
地方首長不重視	0	0
無法落實管考評量機制	4	4/14
其他	3	3/14
其他包含： 縣市 A：無明確法律規定強制辦理；縣市 B：無明確法源強制化； 縣市 C：無法源(強制化)		

在推動地方永續發展策略規劃中，瞭解地方縣市實際推動永續發展所遇到之困難與瓶頸，為本研究的主要研究目的之一。為瞭解縣市所遭遇困難的多面向，此項問卷採用複選題方式，總計有 14 個縣市填答，其結果如表 10 所示，「跨局處室橫向聯繫問題」獲得最多縣市之認定，總計有 10 縣市勾選，比例約佔 71.4%；在「經費短缺」與「永續發展理念不足」方面，各有 7 個縣市勾選，比例各佔 50%；在「民眾參與不足」方面，有 6 個縣市勾選，比例約佔 42.9%；在「永續發展規劃定位不明」方面，有 5 個縣市勾選，比例約佔 35.7%；在「無法落實管考評量機制」方面，有 4 個縣市勾選，比例約佔 28.6%；選擇「其他」共有 3 個縣市，比例約 21.4%；在「地方首長不重視」方面，則無縣市勾選。

「跨局處室橫向聯繫問題」為本問卷縣市勾選率 (71.4%) 最高之選項，此與本問卷第四題之結果，似乎呈現相互矛盾之現象。本問卷第四題結果顯示，41.2% 及 52.9% 的縣市分別認為跨局室橫向合作關係為積極與普通；但「跨局處室橫向聯繫問題」卻為最多縣市勾選之選項，此前後不一致的結果，可能是因為在填達第四項問題時保守的心態所影響，而在回答此最後一項問題時，因此問題隱性之設計方式且具複選題之性質，致使回答者願意以實際狀況作為答案的傾向明顯。而「跨局處室橫向聯繫問題」主要原因在於現階段行政體系的本位主義及僵硬的制度，造成跨局室聯繫的困難。

「經費短缺」與「永續發展理念不足」則各有 7 個縣市勾選，比例各佔 50%；在經費短缺方面，主要在於地方永續發展策略規劃缺乏法源依據，導致地方縣市在編列預算時並無明確之依據，且以目前地方縣市財政較為拮据的狀況，另行編列地方永續發展行動方案之預算，實為主要之困難。因此，在缺乏法源依據的預算編列支持下，地方永續發展策略規劃最後將流為靜態之文件化成果。在「永續發展理念不足」層面，主要的因素在於我國推動永續發展之作為較晚，且我國民風較為保守，對於新觀念或想法的接受需時較長；惟永續發展已是現今世界發展的主流意識，我國政府、民間與 NGO 應積極透過各項活動，宣導永續發展的理念，使永續的觀念能實際普及於一般民眾。

在「民眾參與不足」方面，依據國際間地方永續發展相關成功範例，永續發展工作推動的執行績效與民眾的參與程度有極大的關聯性。國際間的地方永續發展運作機制，較傾向於由下而上的執行模式，亦即強調鼓勵民眾參與地方永續發展相關事務，再由政府從旁輔導協助；而我國地方永續發展的執行，則是偏向於由上而下的模式，亦即由政府部門制訂相關策略與行動方案，民眾則藉由相關管道參與。目前我國一般民眾對永續發展認知不足與較保守的觀念，因此對地方永續發展之推動仍有努力的空間。

在「永續發展規劃定位不明」方面，雖然我國環境基本法中，明白闡述永續發展的重要性，但在國家整體永續發展的推度制度中，卻仍缺乏明確之法治化作業。因此，在欠缺法源依據的架構下，地方永續發展在定位不清與位階模糊的影響下，導致公部門承辦人員執行層面有相當大的困擾。未來如何定位地方永續發展在地方政府施政作為之層次，有待中央與地方相關政府單位共同解決。

在「無法落實管考評量機制」方面，在本問卷第 8 及第 9 題中，已詳細分析現階段

我國地方縣市在地方永續發展指標管考評量執行上，屬於相較被動與消極的態度，其主要的的原因在於缺乏法制化與不完備的指標系統。唯有完成推動績效與管考辦法之法制化作業，才能確立管考機制之實際落實。

21.4%的縣市選擇「其他」，而此開放式問卷的結果，缺乏法源依據為共同的答案，亦即呼應前述部分的問卷分析結果。在地方永續發展缺乏法源依據的架構下，致使產生地方首長不重視、跨局室橫向溝通困難、無法發揮指標管考系統的原有功能等問題。綜合本問卷調查所有之分析論述可知，缺乏法源依據為目前推動地方永續發展主要的瓶頸之一，亦必導致後續的相關連鎖問題。後續除應儘速完成地方永續發展法制化作業外，為解決目前各縣市推動地方永續發展所遭遇之困難與瓶頸，研擬地方永續發展運作機制之配套措施，亦成為地方政府施政作為之首先要務。

## 五、結論

地方永續發展策略規劃的實際推動至今已有數年之久，但在整體運作的成熟度與執行成效上，仍處處見其生澀與步調不一的現象。其主要原因在於地方永續發展缺乏法源依據。如前所述，雖然我國環境基本法中，明白闡述永續發展的重要性，但在國家及地方整體永續發展的推度制度中，卻仍缺乏明確的法治化作業，進而產生地方首長不重視、跨局室橫向溝通困難、無法發揮指標管考系統的原有功能等問題。

為落實永續發展「持續性改善」的基本精神，中央與地方應共同審視現階段我國地方永續發展推動之運作機制，發揚其優點並改善其缺點。後續除應儘速定位地方永續發展於縣市政府施政之位階外，目前則應重新審視地方永續發展整體之運作機制，並參考國外執行地方永續發展之相關經驗，研擬適合我國地方實際需求之相關配套措施。希望藉由「持續性改善」的精神，將地方永續發展工作導入常態性，逐步落實「全球思考，地區行動」的永續發展行動思維。

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# A Review of Local Sustainable Development in Taiwan

C.Y Ho<sup>1</sup>, C. K. Yang<sup>2</sup>, Y. S. Peng<sup>3</sup>

**Abstract**—After recognizing the growing importance of sustainability, the central government of Taiwan has not only launched its national-wide implementation of sustainable development scheme but also facilitated the various local governments in strategic planning of sustainable development on a local level in response to the adoption of the “Think Globally, Act Locally” principle. So far, 24 out of 25 local governments have completed the implementation of sustainable development. Hence, the aim of this study is to evaluate the current status of local sustainable development in Taiwan. The study was carried out by questionnaire survey to the public officials responsible for implementing sustainable development in local governments. The results show the significant achievements by forming local sustainable development organization and establishing local sustainability strategies. However, the practical implementation of strategies and the sustainable development indicator system were relatively weak. The main difficulty involved here was insufficiency in law enforcement. This further resulted in the indifferent attitude of elected mayors or magistrates, difficulty in cross-departmental co-operation and immaturity of the local sustainable development indicator system. From the government governance point of view, the establishment and enforcement local sustainable development related laws and regulations is the most crucial issue to be dealt with. However, considerations on alternative operating mechanisms such as incorporation of the sustainability assessment into the existing strategic planning procedure in local government level would further enhance the performance of the local sustainable development system.

**Keywords**—Local sustainable development, local sustainable development indicators, government governance

## I. INTRODUCTION

SUSTAINABLE development is mutually recognized throughout the world as the trend in global development and have gradually transformed from declarations into action plans since the “Johannesburg Declaration on Sustainable Development” made in 2002 during the Johannesburg Earth Summit conference. In recent years, international community has further recognizing the implementation of regional or local sustainable development as the key in actualizing the global sustainable development and therefore begin advocating the

principle of “Think globally, Act locally”. As for the local level of sustainable development, the strategic planning in local sustainable development is acting as main driver in promotion of global and national sustainable development. The main spirit of local development is to work in-line with the principle and ideas in the national sustainable development, through top-down policy guidance and assistance and bottom-up promotion and implementation. This is followed by drafting of comprehensive, integrated and sustainable vision for local sustainable development and relevant strategies with respect to the characteristics and requirements in local development.

Considering the importance and urgency of establishing local sustainable development, the Council For Economic Planning And Development (CEPD) called upon the experts in the various fields to form the counseling team in 2003 and selected 10 local governments to promote the strategic planning of local sustainable development. The 5 main duties involved include: “Organizational establishment and vision setting”, “Analysis on key agenda”, “Strategic Planning”, “implementation and tracing”, “management and evaluation”. Each stage is inter-connected with one another and follows a continuous sequence. Through integrated strategic planning in local sustainable development, the government hopes to assist the local authority in systematically integrating its resources, economy and social requirements with consideration on the limitation and constrain by the existing regulations, technologies and resources. The procedure ends with adjustment in the administrative system and drafting of counter measures in pursue of achieving the visions in sustainable development. The Environmental Protection Administration (EPA) took over the role in 2006 local governments which have been left out in the previous stages. The purpose is to actualizing the sustainable concept and put into practice in the policy implementation in local government level.

The central government has been promoting planning local sustainable development since 2004 through stages and so far 24 out of the 25 local governments in Taiwan have completed with the local sustainable development scheme. Through the local governments’ experiences during implementation of local sustainable development scheme, this research aims to analyze the existing status of local sustainable development and looking into the difficulty experienced with practical suggestions for improvement as reference for future implementation of local sustainable development.

C.Y. Ho is with the Department of Planning, Environmental Protection Administration in Taiwan, 7F No.83 Sec.1 Chunghua Rd., Taipei, 10042, Taiwan (e-mail:cyho@sum.epa.gov.tw)

C.K. Yang is with the International Division and Energy & Environmental Research Center, Chung-Hua Institution for Economic Research, 75 Chang-Hsing St., Taipei, Taiwan 10672 (Corresponding author to provide phone; 886-2-27356006 ext 533, Fax: 886-2-27390610, e-mail:ck.yang@cier.edu.tw)

Y. S. Peng is with the Department of Environmental Resources Management, Chia Nan University of Pharmacy and Science, 60 Erh-Jen Road, Sec. 1, Jen-Te, Tainan, Taiwan (E-mail:yspeng@mail.chna.edu.tw)

## II. BACKGROUND IN SUSTAINABLE DEVELOPMENT

From "Our Common Future, 1987", to the United Nations "Agenda 21, 1992", then the Johannesburg Earth summit conference "Johannesburg Declaration on Sustainable Development" in 2002, the world sustainable development current which developed, from has abstracted the level which and declared to transform gradually to have the feasible motion stage. Now internationally sustainable development in the definition which develops, most widely is quoted and official is used, was in 1987 World Commission on Environment and Development, WCED the definition which proposed in the report: "The development and satisfies when the pursue present age demand, can damage and the future generation pursues them to need with the satisfied ability", it is the construction in "the environmental protection, the economical development and the social justice" above three big foundations. The scope of sustainable development is widespread, all the land resource, the water resources, the energy, agricultural, the marine resource, the environmental protection, the health risk, the education, the social blessing, the city and countryside development, the economic development, the technical research and development and the international cooperation and so on, are its work categories. The land of Taiwan is slender and crowded, in the past pursued the economic growth to neglect the natural resource sustainable development management constantly, and then caused the natural disaster to be frequent, as for persuading sustainable development, appeared its necessity and the urgency.

Our Central government plan sustainable development the construction already tends to be complete, but must be able truly to carry out the prospect of sustainable development, and gives dual attention to the environment, the economy, the social three demands, then participation of the Local governments, is playing the great importance the role. In the work practice of sustainable development, in the Local governments' direct process the housing, the transportation, reject processing and so on various aspects business and its special operational policy measures are big to the place development influence. Furthermore, the local government has the suitable policy independency, so that it can direct and the effective impetus and implements each measure. Therefore, for sustainable development in accordance to the central impetus to develop the work, and its realization in the place stratification plane, the Executive Yuan can impel positively to develop the strategy plan of the local sustainable development, and assists the local government on its environment, the economy, and the social stratification plane carries on the integrity conformity, then establishes contacts the national top-down policy guidance and the coordination, and the local bottom-up impetus and the implementation, the true realization conforms to all the people blessing the sustainable development prospect.

## III. CURRENT STATUS OF SUSTAINABLE DEVELOPMENT IN TAIWAN

Sustainable development in our country when the

architecture matures, and echoes the "Think globally, Act locally" global thinking, since the end of 2003 the Executive Yuan Council for Economic Planning and Development convened in particular domestic experts and scholars in various fields and the composition of the central counseling team, to actively promote local sustainable development strategic planning. Given the general lack of local government at that time the concept of sustainable development, the CEPD to be on the 25 cities and counties in the selection of cities and counties will to a higher place for the acceptance of counseling, including Taipei City, Kaohsiung City, Ilan County, Hualien County, Taichung City, Changhua County, Chiayi City, Tainan County, Kaohsiung County, Pingtung County and Kinmen County, 11 cities and counties. Plans to promote the period from January 2004 to June, except the central counseling team to help promote the positive things, cities and counties are also in accordance with their actual demand, by the relevant academic research units place counseling team, assist in the promotion of local sustainable development strategic planning related services.

For the promotion of local sustainable development strategic planning, in particular the light of the central counseling team "Local Agenda 21" the basic spirit and direction of development of local sustainable development strategy planning guidelines, as a local counseling team to help promote the sustainable development of local matters relating to the basic criteria. The implementation of the main contents include: "organization set up with the vision to set up", "topic analysis", "strategic planning", "the implementation of and follow-up", "evaluation and correction" and so on five stages, and a row of the counseling session as a mechanism to promote. Related meetings include: "Local Sustainable Development Steering Committee Meeting", "to promote the work of the Group meeting", "the Consultative Board Room", "open notes", and a "forum" and "internal education and training." I hope by the main job content and related meetings will be held, whichever is coordinated with each other to facilitate the promotion of local sustainable development issues. I will place an overall plan to promote sustainable development flow as shown in Figure 1 indicate:

## IV. ANALYSIS

The purpose of this questionnaire is to investigate and analyze the current status of sustainable development being implemented in all counties/cities throughout Taiwan. A total of 24 questionnaires were distributed with 19 responses received which make the recovery rate 79.2%. Some of the questions were considered over sensitive or difficult to answer and therefore being left unattended. However the answers from the questionnaires have revealed the state of sustainable development has been implemented. The answers were further analyzed with respect to theoretical structure and actual implementation of sustainable development as to provide the counties/cities participated as a reference in future planning of sustainable development strategy.

*A. The department responsible for local sustainable development*

TABLE II  
THE DEPARTMENT RESPONSIBLE FOR LOCAL SUSTAINABLE DEVELOPMENT

question/options	No. of Counties/cities	ratio
Which local department is acting as secretariat for the implementation of local sustainable development in your city/county		
Environmental Protection Bureau	14	14/19
Department of Planning	2	2/19
Department of Research and Evaluation	3	3/19

The result shown in table 2 reveals 73.7% of the counties/cities assigned the local Environmental Protection Bureau with the task to be the acting secretariat for implementation of local sustainable development. Only 2 counties/cities assigned the department of planning to be responsible for the task, which is approximately 10.5%, and 3 counties/ cities appointed the department of Research and Evaluation with the responsibility, which is approximately 15.8%.

The table shows the trend of which in majority of the counties/cities the Environmental Protection Bureau has been as the secretariat for implementation of local sustainable development. However in 2004 when the Council for Economic Planning and Development was responsible for overseeing and commissioning local sustainable development projects, the departments responsible for local sustainable were more diversified. The reason behind was because back in 2004 the local department was selected as secretariat according to the local government organizational characteristic. In 2005, the task for overseeing and commissioning of local sustainable development was reassigned to the Environmental Protection Administration whom for the administrative convenience appointed the local Environmental Protection Bureau to act as the secretariat for implementation of local development. After years of practices it is clear that the local Environmental Protection Bureau has failed to fulfill their role as secretariat due to the lack of capability in effective project coordination and implementation. One of factor is that Environmental Protection Bureau is an external unit of the local government and therefore shows inadequacy in coordinating the communication between the various internal government departments.

By examining the functions of the departments within the local government, the Department of Planning and Department of Research and Evaluation are of higher government ranking comparing to the Environmental Protection Bureau and providing the local mayor with direct assistance. Therefore, the inter-department communication will be better coordinated if the Department of Planning or the Department of Research and Evaluation is appointed to be the secretariat for implementation of local sustainable development.

*B. The highest ranking officer from the local government ever attended/hosted the local sustainable development council meeting*

TABLE III  
THE HIGHEST RANKING GOVERNMENT OFFICER EVER ATTENDED/HOSTED THE LOCAL SUSTAINABLE DEVELOPMENT COUNCIL MEETING

Question/Option	No. of counties/cities	Ratio
Who is the highest ranking government officer ever attended/hosted the local sustainable council meeting in the past 2 years?		
Mayor/ Magistrate	10	10/19
Deputy Mayor/Magistrate	1	1/19
Senior Executive officer	1	1/19
Head of Department	2	2/19
Others	5	5/19

The result shows 10 out of 19 (approximately 52.6%) mayors/magistrates participated in the questionnaire attended/hosted the local sustainable development council meeting. 1 deputy mayor/magistrate and 1 senior executive officer attended/hosted the sustainable development council meeting. In 2 cities/counties the sustainable development council meetings were held by head of department. As for the remaining 5 cities/counties (approximately 26.3%), as they are still at the beginning stage of sustainable development implementation, therefore have yet held any council meeting.

The presence of the local major/magistrate can be seen as a directly indication of how serious local sustainable development has been taken into account. It has been known that the local mayor/magistrate plays an important role in the promotion of local sustainable development especially in the beginning stage. The declaration by the local chief has proven to act as a driving force to induce more enthusiastic participation of the local departments and promotion team.

According to the local autonomous law, the local mayor or magistrate is elected by the public. The pressure of winning election has inevitably led to the tendency of over emphasis by the local mayor or magistrate on policies with immediate effect or high impression to the public and overlooking the importance of integrating the concept of sustainable development into the policy planning causing slow dissemination of sustainable development in the local level. From the current status of sustainable development in Taiwan, there is clear evidence that the local mayor or magistrate is more enthusiastic in winning election instead of implementation of sustainable development in the government policy and this is one of the major obstacle faced in the establishment of local sustainable development.

*C. Cross-departmental co-operation between departments in local government*

TABLE IV  
CROSS-DEPARTMENTAL CO-OPERATION BETWEEN DEPARTMENTS IN LOCAL GOVERNMENT

question/option	No. of countirs/cities	ratio
Please describe the cross-departmental co-operation between departments in local government		

Very active	0	0
active	7	7/17
average	9	9/17
inactive	1	1/17
Very inactive	0	0

The result is as shown in table 4, out of the 17 counties or cities responding to the questionnaire, 9 (approximately 52.9%) consider the cross-departmental co-operation relationship within the local government as average. 7 (approximately 41.2%) of the respondents considers the cross-departmental co-operation relationship to be active and only 1 considers the cross-departmental co-operation relationship to be inactive.

The successful establishment of the cross-departmental co-operation within departments in local government is crucial to the implementation of local sustainable development as the diversified duty areas require joint involvement by the various local departments. However, the presence of departmentalism hinders the formation of the co-operation mechanism between departments.

Although the result of the questionnaire shows over 90 % of local governments consider the cross-departmental co-operation to be either active or normal, interview with experts in the area reveals the lack of cross-departmental co-operation is one of the difficulty faced in the promotion of local sustainable development. The discrepancy in the answers might due to the conservative attitude taken when answering the question or because the determination of the cross-departmental co-operation relationship is rather subjective and therefore unable to reveal the actual situation.

#### D. How applicable are the regulations concerning promote local sustainable development

TABLE V HOW APPLICABLE ARE THE REGULATIONS CONCERNING THE PROMOTION OF SUSTAINABLE DEVELOPMENT

Question/option	No. of counties/cities	ratio
Please describe the level of applicability of which the regulations (such as the management, evaluations and revision regulations) helps to enhance the promotion of local sustainable development.		
Very high	1	1/17
High	4	4/17
Average	10	10/17
Low	0	0
Very Low	2	2/17

The result is as shown in table 5, 10 of the 17 (approximately 58.8%) rates the level of applicability as normal. 4 of them (approximately 23.5%) considers the level of applicability to be high and 2 thinks the level of applicability to be very low.

In the procedure established by the Council for Economic

Planning and Development (CEPD) back in 2003 aiming to assist in strengthening local sustainable development operation mechanism, local governments were required to draft the relevant regulations such as the "Regulation for establishment of the sustainable development council for local government", "Regulation for management of promotion in sustainable development", "Regulation on evaluation of the implementation of sustainable development strategies", "Regulation on the management of reporting in promotion of sustainable development", "Regulation on the review and revision of the sustainable development strategies".

The feedback from the officers provided a clear picture on how functional is the above mentioned regulations in actual practice, over 70% responded as "normal" and "very low". Interview with the officers reveal that they experienced difficulty in execution of the above mentioned regulations due to the lack of regulatory basis. Interview with the experts further shows most of the regulations mentioned above remain in draft or reference document, only the "Regulation for establishment of the sustainable development council for local government" can be put into practice.

#### E. Establishment of the local sustainable development indicator system

TABLE VI

THE ESTABLISHMENT OF THE LOCAL SUSTAINABLE DEVELOPMENT INDICATOR SYSTEM

question/option	No. of counties/cities	Ratio
Please describe the status on the establishment of the local sustainable development sustainable indicator system		
Under construction	9	9/19
Indicators identified	5	5/19
Indicators identified with targets set for different stages	5	5/19

The result of is as shown in table 6, out of the 19 responses received, 9 cities/counties (approximate half) have yet established the local sustainable development indicator system. Approximately one quarter of the cities/counties have finished the selection of local sustainable development indicators and the remaining one quarter of the cities/counties have completed both the selection of the indicators and set the targets to be achieved for further development stages.

The purpose of the sustainable development indicator system is to assist in the communication on the concept of sustainable development through interpretation of the indicators by expressing the idea or present status in terms of numbers. As Taiwan's nationwide promotion on local sustainable development scheme is divided into different stages according to geographical location, therefore resulted in the variation in indicator system establishment.

The counties/cities of which the sustainable indicator systems are still under establishment, belongs to the latter stage of the

promotion scheme headed by the Taiwan Environmental Protection Administration (TEPA) in 2007 and 2008. These areas are still under assistance by professional groups. The remaining 10 counties/cities were under the promotion scheme headed by the CEPD which began in 2004. Even though these counties/cities have began the establishment of the sustainable development indicator system for quite some years, only half of them managed to finish the selection of suitable indicators with target set for further development stages, the remaining half have only completed the selection of suitable indicators. This shows the conservative attitude in establishment of sustainable development by local governments. Only by management and evaluation of the quantified indicators can the local government understand the true meaning and spirit of sustainable development.

*F. Holding of management evaluation meeting by the local promotion team*

TABLE VII  
PERFORMANCE EVALUATION

question/option	No. of counties/cities	Ratio
Please describe if the local promotion team has even held meeting regarding the quantified indicators		
Yes	4	4/19
No	15	15/19

The result is as shown in table VII, only 4 out of the 19 cities/counties (approximately 21.1%) which responded to the questionnaire have held meetings on evaluation of the indicators and this means almost 80% of the cities/counties have yet been evaluating their performance by means of local sustainable development indicator.

Regulations such as the "Regulation on the evaluation of the implementation of local sustainable development" have been drafted in order to assist the various local sustainable development working groups in strengthening the management and evaluation of implementation results. The aim to hold the evaluation meeting is to evaluate the performance of local sustainable development implementation following the spirit of constant improvement in implementation of sustainable development and PDCA management principle which will later be used as reference for further improvement.

The questionnaire result shows only approximately one fifth or the counties/cities have ever held the evaluation meeting, which clearly reflects the fact that the currently practices of evaluation in sustainable development in the local level still have a large room for improvement. There are two possible reasons which led to the low percentages, firstly most of the counties/cities have yet finish with the legislative process to promulgate the regulation on evaluation of the performance in implementation of local sustainable development and therefore lack of regulatory basis to hold the meeting. Secondly, the previous question shows most of the counties/cities have yet

established their local sustainable development indicator system and thus enable to evaluation the performance for the insufficiency in quantifying the results.

*G. 7. Connection between the local sustainable development strategy plan and the local development plan*

TABLE VIII  
CONNECTION BETWEEN THE LOCAL SUSTAINABLE DEVELOPMENT STRATEGY PLAN AND THE LOCAL DEVELOPMENT PLAN

question/option	No. of counties/cities	Ratio
Please describe the connection between the local sustainable development plan and the local development plan.		
Independent	1	1/15
Dominant-subordinate relationship	8	8/15
Indistinct	6	6/15

The result is show in table VIII with a total of 15 cities/counties responded to the question, of which 8 of them (53.3%) think the connection between the local sustainable development plan and the local development plan is of dominant-subordinate relationship. 6 of them (approximately 40%) think the relationship is indistinct and only one county/city considers the relationship to be independent.

In Taiwan, the local development plan is of diversified characteristic and covers the main areas in policy implementation at local level, therefore has been referred to as the basis for policy, strategy and working plan implementation. It would certainly make a difference to the local government in future development by collaboration of both the local development plan and the local sustainable development strategy plan. In the case when the two plans are of dominant-subordinate relationship, it would enhance the integration and distribution of the local resources. However, it will cause repetition and wasting of local resources with overlapping or dispersion in the operation of local government if the relationship between the two is not clearly identified.

The local governments are still in the beginning stage to implement the local sustainable development strategy plan and therefore around 40% of the counties/cities have yet determined its position in policy implementation. On the other hand, around 53.3% of the counties/cities consider the two plans are of dominant-subordinate relationship which shows a certain relationship exists between the two policy plans although a clear positioning of each plan has yet to be identified.

*H. Current status of sustainable development*

TABLE IX  
CURRENT STATUS OF SUSTAINABLE DEVELOPMENT

question/options	No. of counties/cities	Ratio
Please describe the current status of sustainable development		
Beginning Stage : establishing of organizational structure with concrete documentation (such as the strategic plan)	11	11/18



Advance Stage : Mature indicator system (with targets set for the various stages), accomplished evaluation process(such as holding the indicator evaluation meeting), effective cross-departmental communication	7	7/18
Mature Stage : Well established public participation mechanism, implementing information disclosure	0	0

Failure in establishment of the evaluation mechanism	4	4/14
Others: Lack of legal basis	3	3/14

The result is as shown in Table IX: Of the 18 counties/cities responded to the question, 11 of them (approximately 61.1%) considers themselves to be in the "Beginning Stage". 7 counties/cities (approximately 38.9%) selected "Advance Stage" and non considers themselves to be in the "Mature Stage".

In the attempt to systematically classify the progress of development in local sustainable development in Taiwan, the research team classified local sustainable development into 3 stages namely the "Beginning Stage", "Advance Stage" and "Mature Stage" according to the spirit and guideline in establishment of local sustainable development. The criterion for the classification is as follows:

- 1) Beginning Stage: establishing of organizational structure with concrete documentation (such as the strategic plan)
- 2) Advance Stage: Mature indicator system (with targets set for the various stages), accomplished evaluation process(such as holding the indicator evaluation meeting), effective cross-departmental communication
- 3) Mature Stage: Well established public participation mechanism, implementing information disclosure

The previous analysis illustrated that the establishment of sustainable development in most counties/cities are still at the begging stage mostly due to the short implementation duration or still undergoing the running-in period which led to rooms for further improvement. This explains the high percentage of counties/cities struggling in the begging stage and only around 40% of the counties/cities are considered to be in the "Advance Stage". Unfortunately none of the counties/cities has yet established a complete local sustainable development scheme.

### 1. Difficulty experienced during implementation of local sustainable development

TABLE 10  
DIFFICULTY EXPERIENCED DURING IMPLEMENTATION OF LOCAL SUSTAINABLE DEVELOPMENT

question/option	No. of counties/cities	Ratio
Please describe the difficulty experienced during implementation of local sustainable development.		
Shortage in funding	7	7/14
Lack of public participation	6	6/14
Difficulty in cross-departmental co-operation	10	10/14
Insufficiency in the concept of sustainable Development	7	7/14
Uncertain positioning of sustainable development plan	5	5/14
Disregard by the local mayor/magistrate	0	0

One of the key purposes of this survey is to understanding the difficulties experienced by the local governments during establishment of sustainable development. A total of 14 responses received for this question, the results are as shown in Table 10. 71.4% of the local governments consider "Difficulty in cross-departmental co-operation" as the greatest difficulty. Both "shortage in funding" and "Insufficiency in the concept of sustainable Development" rank the second biggest problem with 50% of the local governments struggling with the issue. "lack of public participation" ranked 3rd with approximately 42.9% of the local governments find it difficult to overcome. "Uncertain positioning of sustainable development plan" is taking the 4th place with approximately 35.7%, "Failure in establishment of the evaluation mechanism" and "Lack of legal basis" raked 5th and 6th with 35.7% and 28.6% respectively. None of the local government chose "Disregard by the local mayor/magistrate" as an issue.

Even though most of the local governments chose "Difficulty in cross-departmental co-operation" as the problem experienced during implementation of local sustainable development, cross examination with the previous question shows inconsistency in the reply as question 4 of the questionnaire shows almost 95% of the local governments consider the cross-departmental co-operation to be either active or normal. The occurrence of such discrepancy is due to the way which the question is designed. The last question allows the local officers to provide multiple answers which in a way encouraged them to respond in a truthful manner. However in question 4 only one answer is allowed and therefore officers tend to reply in a conservative manner to conceal the problem. The problem behind the cross-departmental co-operation lied with departmentalism and the inflexible administrative structure.

Both "shortage in funding" and "Insufficiency in the concept of sustainable Development" are selected by 50% of the local governments. As for the shortage in funding, the main problem is due to the lack of legal basis in the strategic planning of local sustainable development, therefore unable to incorporate the funding into the local government budget. The tightening financial situation at local government level makes it even worse. Therefore, as a cause of insufficiency in legal basis and financial support, the establishment of local sustainable development scheme often ends with documentation. On the other hand, the "insufficiency in the concept of sustainable development" is mainly caused by the late development of sustainable development in Taiwan and the conservative behavior of the local citizen which hinders the acceptance of new concept. However, as sustaining development is becoming main stream throughout the world, the governments and NGOs should actively assist in the dissemination of the concept through various activities which will help in spreading of the idea among the public.

Regarding the "Lack of public participation", it can be seen from the successful stories in local sustainable development throughout the world that the success of a local sustainable development scheme is closely linked with the degree of public participation. Most example use the bottom-up model of which emphasize on public participation with government providing assistance. However the sustainable development scheme established in Taiwan is of the top-down model of which the local governments are responsible for established of the various strategies and working plans.

With respect to the "uncertain positioning of sustainable development plan", although the importance of sustainable development is clearly illustrated in the environmental basic law, there is currently no proper legal procedure in the establishment of national sustainable development. The local government departments are not certain with the positioning of the sustainable development plan and therefore causing confusion during implementation. The positioning of the sustainable development plan at local government level remains an issue to be consolidated by both the central and local governments.

The problem with the "Failure in establishment of the evaluation mechanism" can be seen from the answers in questions 8 and 9. The local governments are taking a passive and inactive attitude in evaluation of local sustainable development indicators with the main reasons being the lack of legal basis and improper indicator system. Only by means of legalizing the relevant regulations can the evaluation scheme be successfully carried out.

21.4% of the local governments consider lack of legal basis as the problem faced which echoes with the analytical result of the previous questions. Establishment of local sustainable development scheme without proper legal basis will cause problems such as the disregard by the local mayor/magistrate, difficulty in cross-departmental co-operation and failure in implementing the evaluation scheme. The above analysis shows lack of legal basis as the most crucial issue faced in the promotion of local sustainable development and the cause of some other issues. Therefore, consolidation of legal basis is the key solution in solving the difficulties faced in establishment of local sustainable development.

## V. CONCLUSION

Although the strategic planning for local sustainable development has established for several years, it has been noted that the overall maturity and the implementation result of the scheme in the various local governments show inconsistency and rooms for further improvement which is mainly due to the lack of legal basis. As mentioned above, even though the significant importance of sustainable development has been elaborated in the environmental basic law, there is still uncertainty in the legalizing procedure in the national and local sustainable development scheme which derived issues such as the disregard by the local mayor/magistrate, difficulty in cross-departmental co-operation and failure in establishment of

performance evaluation.

The current operating mechanism of sustainable development at both the central and local government level should be reviewed with reference to the successful international experience for constant improvement. By means of incorporating the principle of constant improvement into the existing government administrative scheme, the local governments should exercise sustainable development in the daily practice and achieving the sustainable development concept of "Think Globally, Act Locally"

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**Environmental Protection Administration, Taiwan**

# **A Review of Local Sustainable Development in Taiwan**

**Chi Ying Ho**

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# CONTENT

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in Taiwan
2. Status of Sustainable  
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3. Analysis and Findings



# **1. Sustainable Development in Taiwan**

# **Taiwan's Special Conditions**

- **High population density**
- **High environmental loads**
- **Limited land and natural resources**
- **High frequency of natural disasters**
- **Unique international political status**

# Impact in Taiwan

Current Status

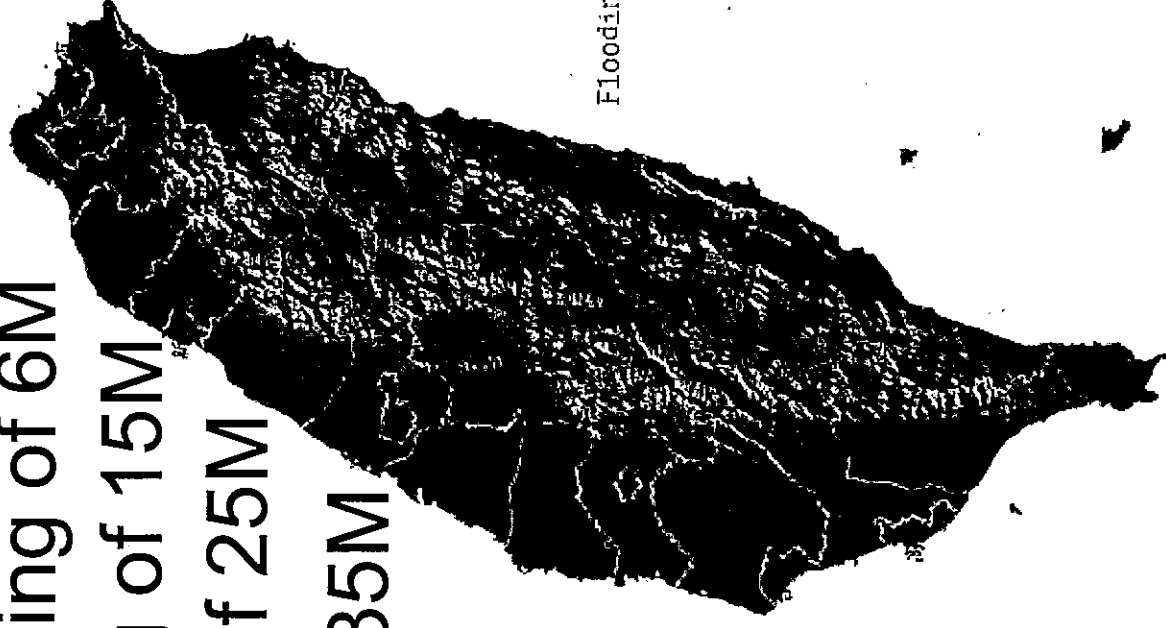
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Flooding of 15M

Flooding of 25M

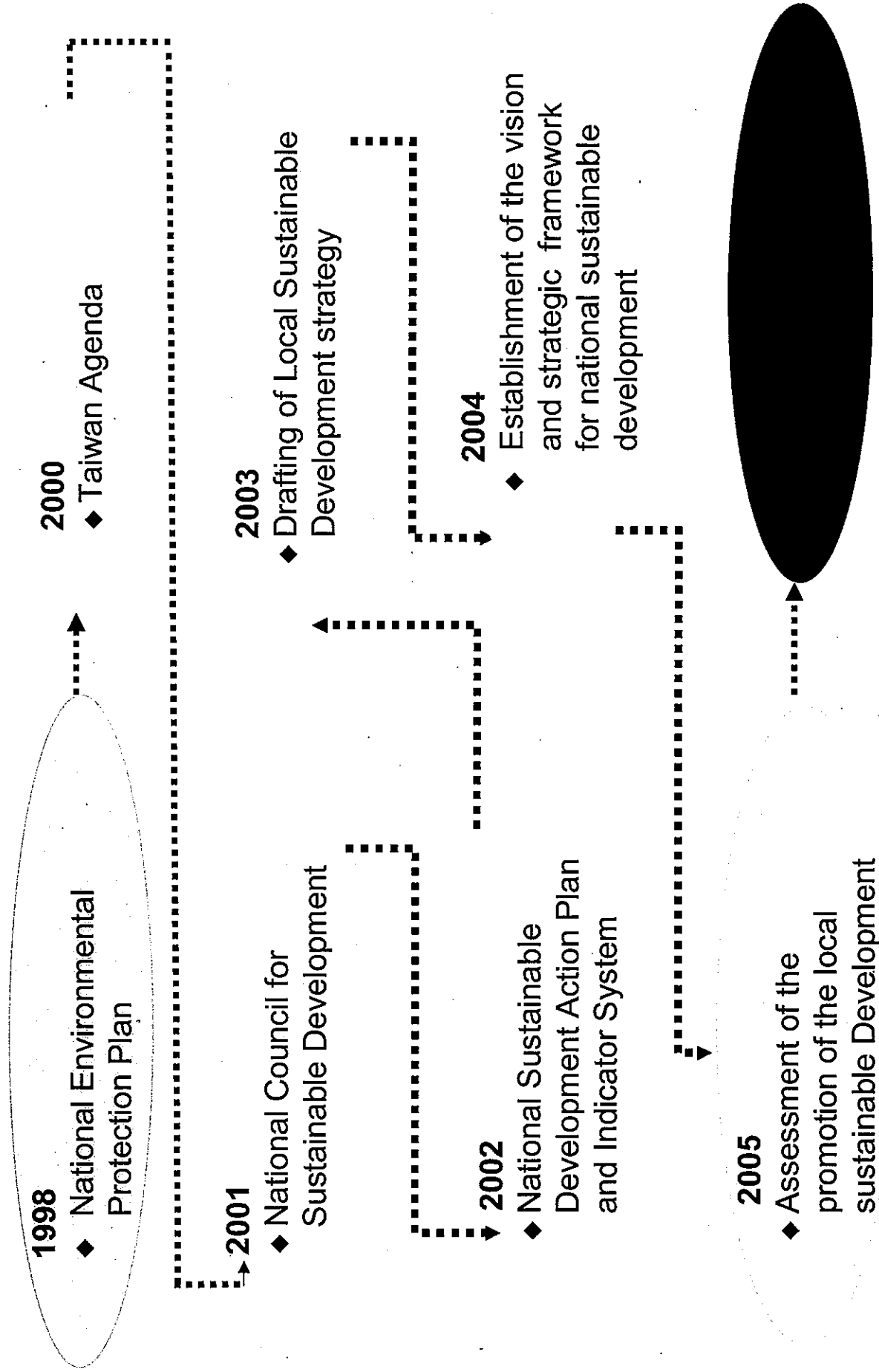
Flooding of 35M

## Sea level rise



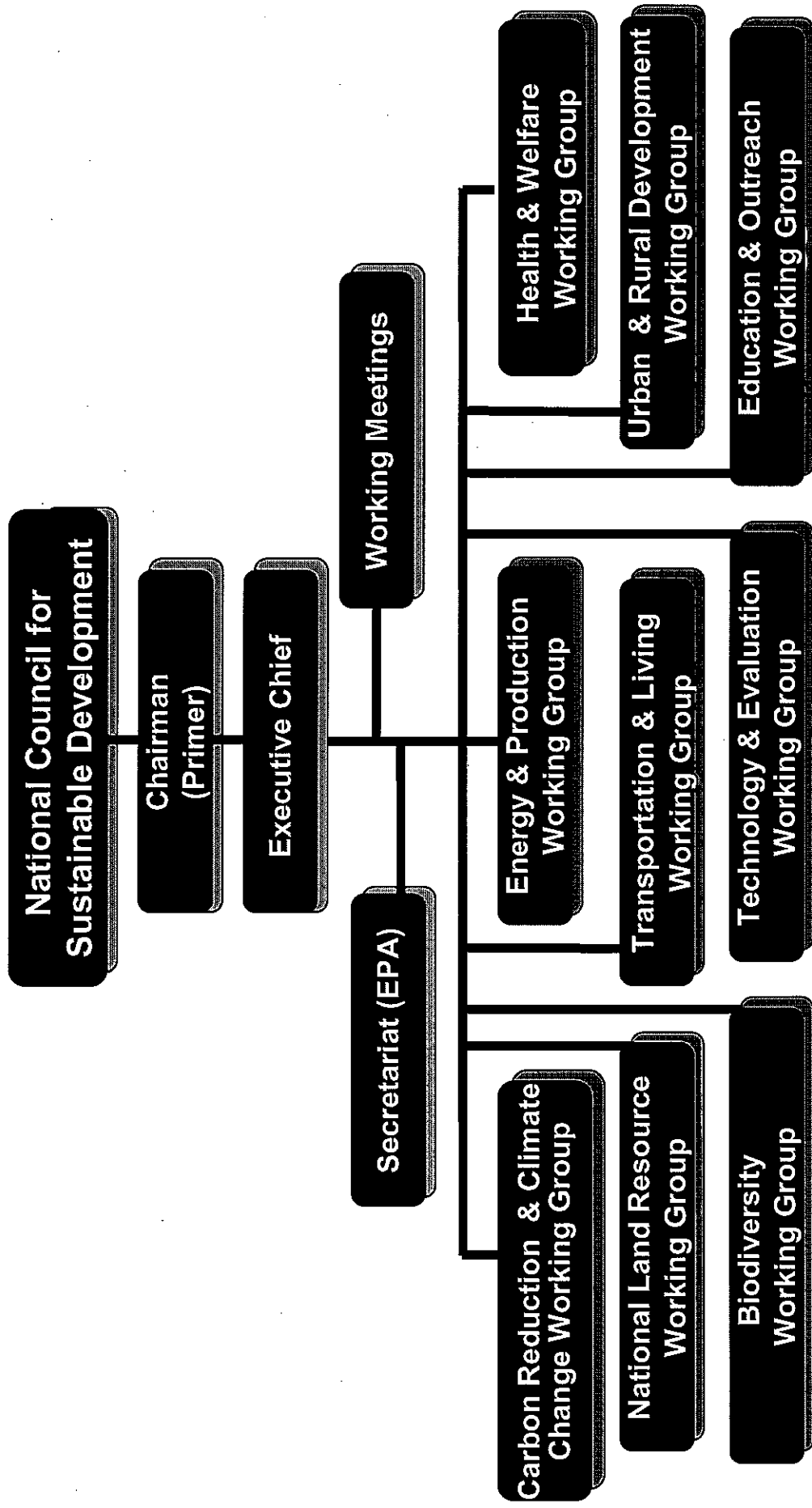
Flooding of 35 M

# Promotion of Sustainable Development in Taiwan

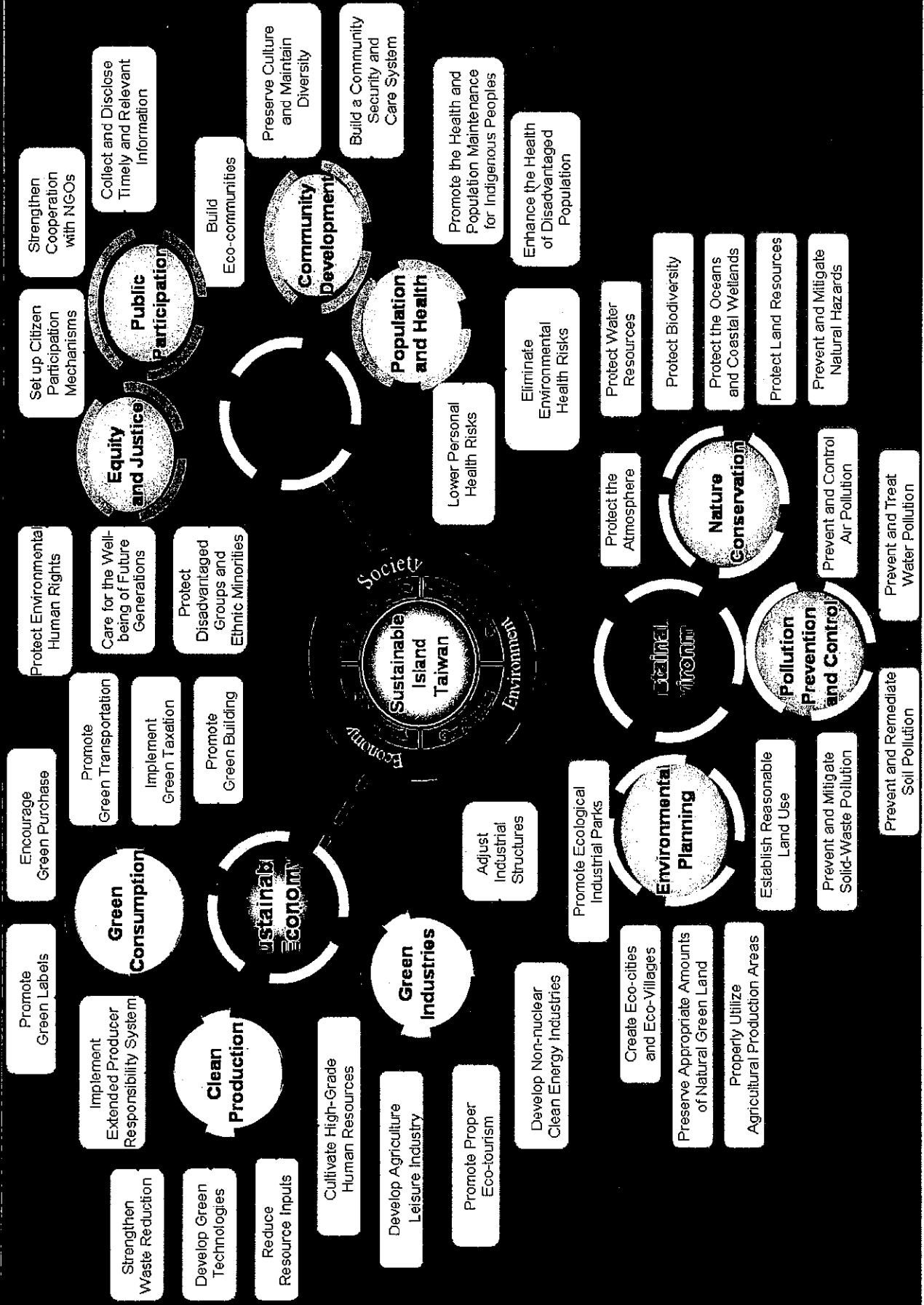




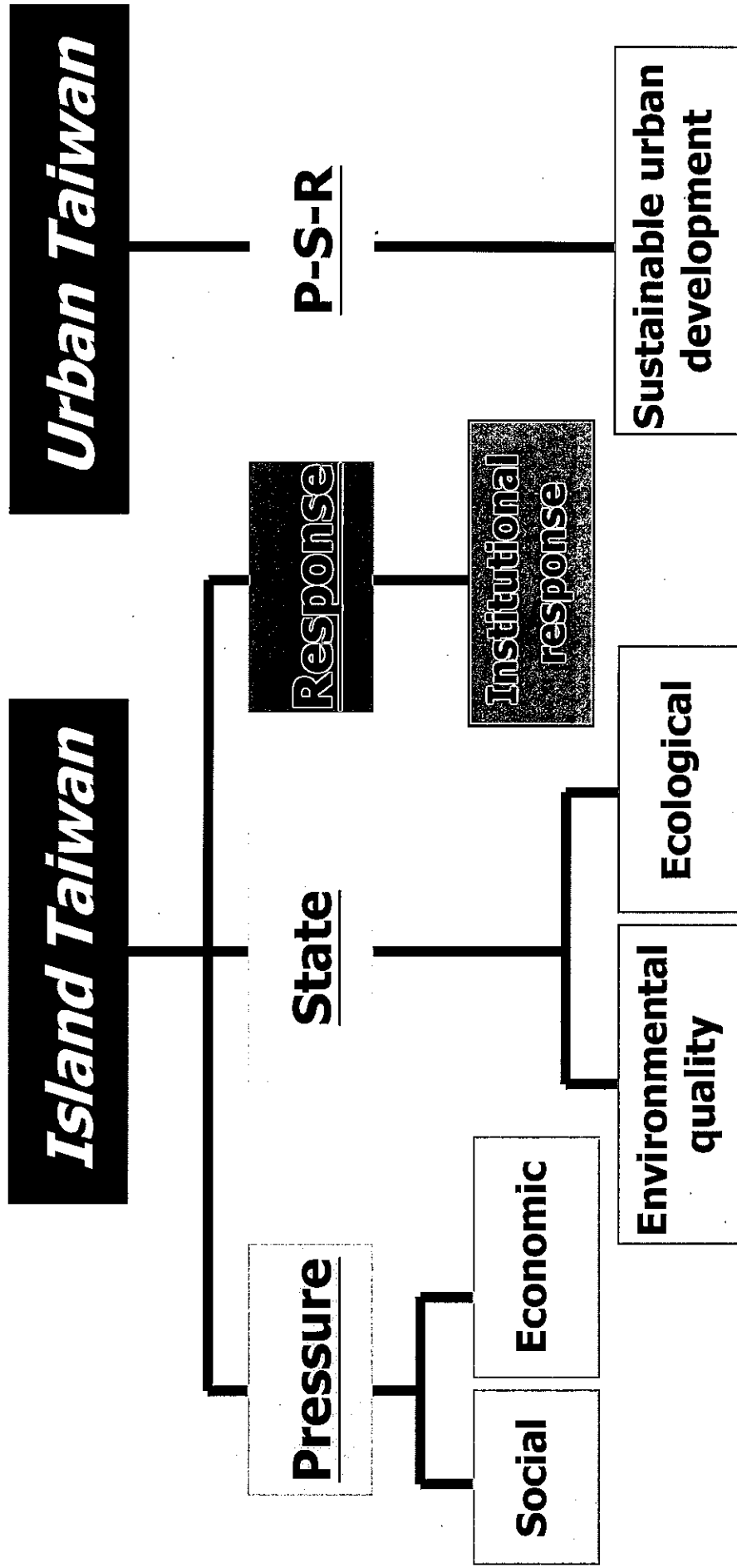
# Organization of the NCSD, ROC



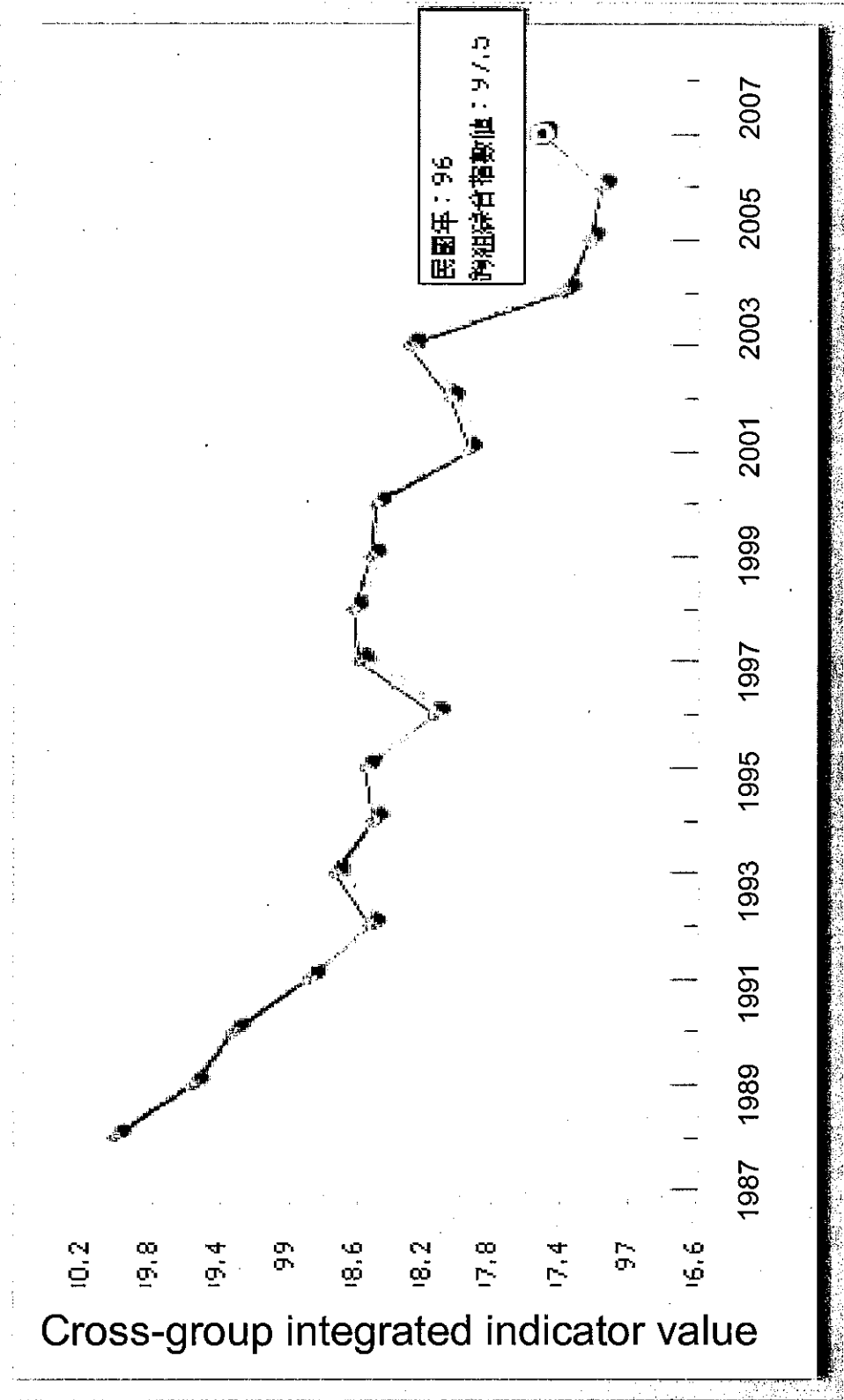
# Taiwan Agenda 21: A Conceptual Framework for National Sustainable Development



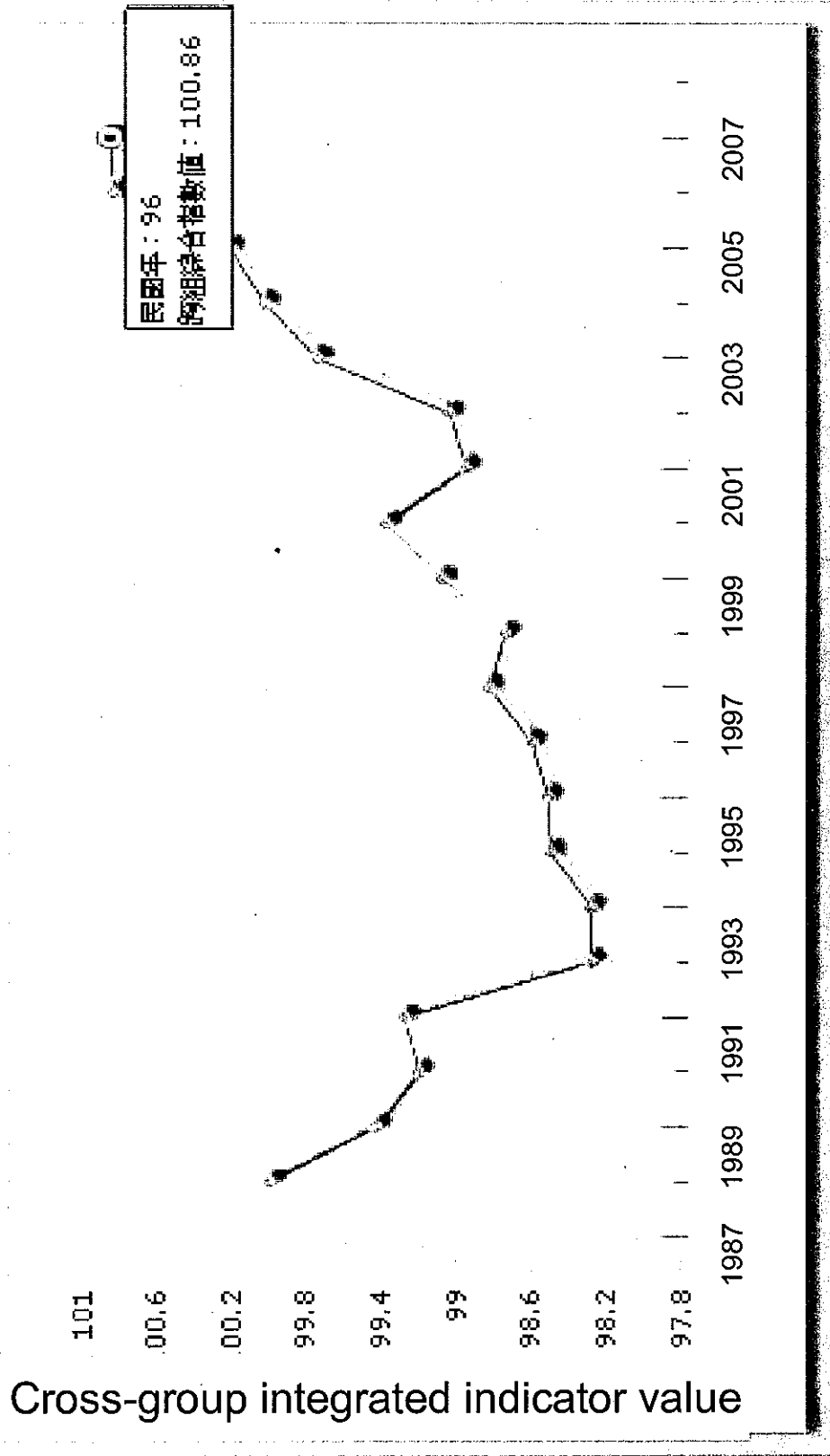
# National Sustainable Development Indicators (2003-2008)



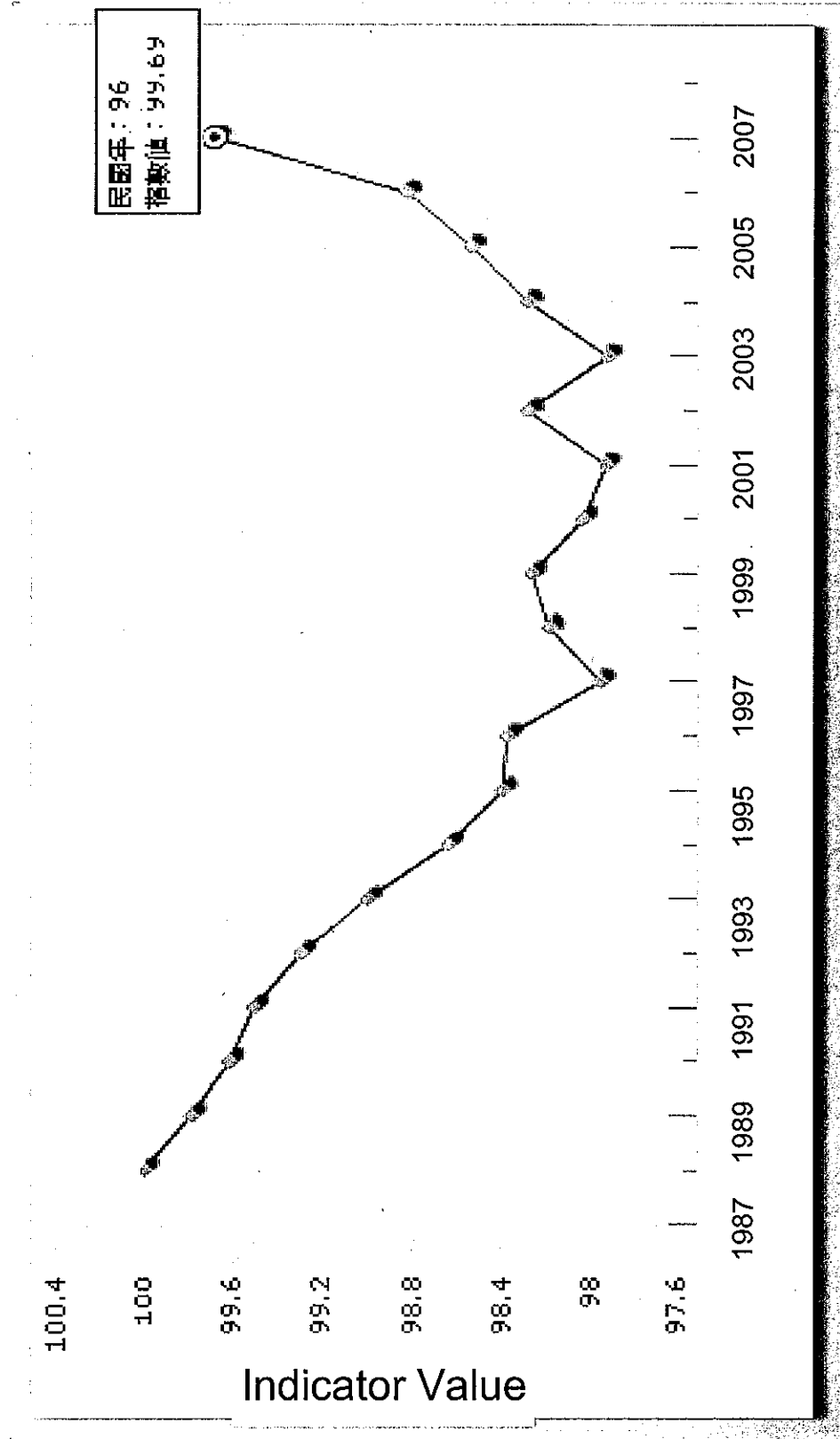
# Trend of Ecological and Environmental Quality State Group Index (1988~2007)



# Trend of Social and Economic Pressure Group Index (1988~2007)



# Trends of Urban Development Group Index (1988~2007)



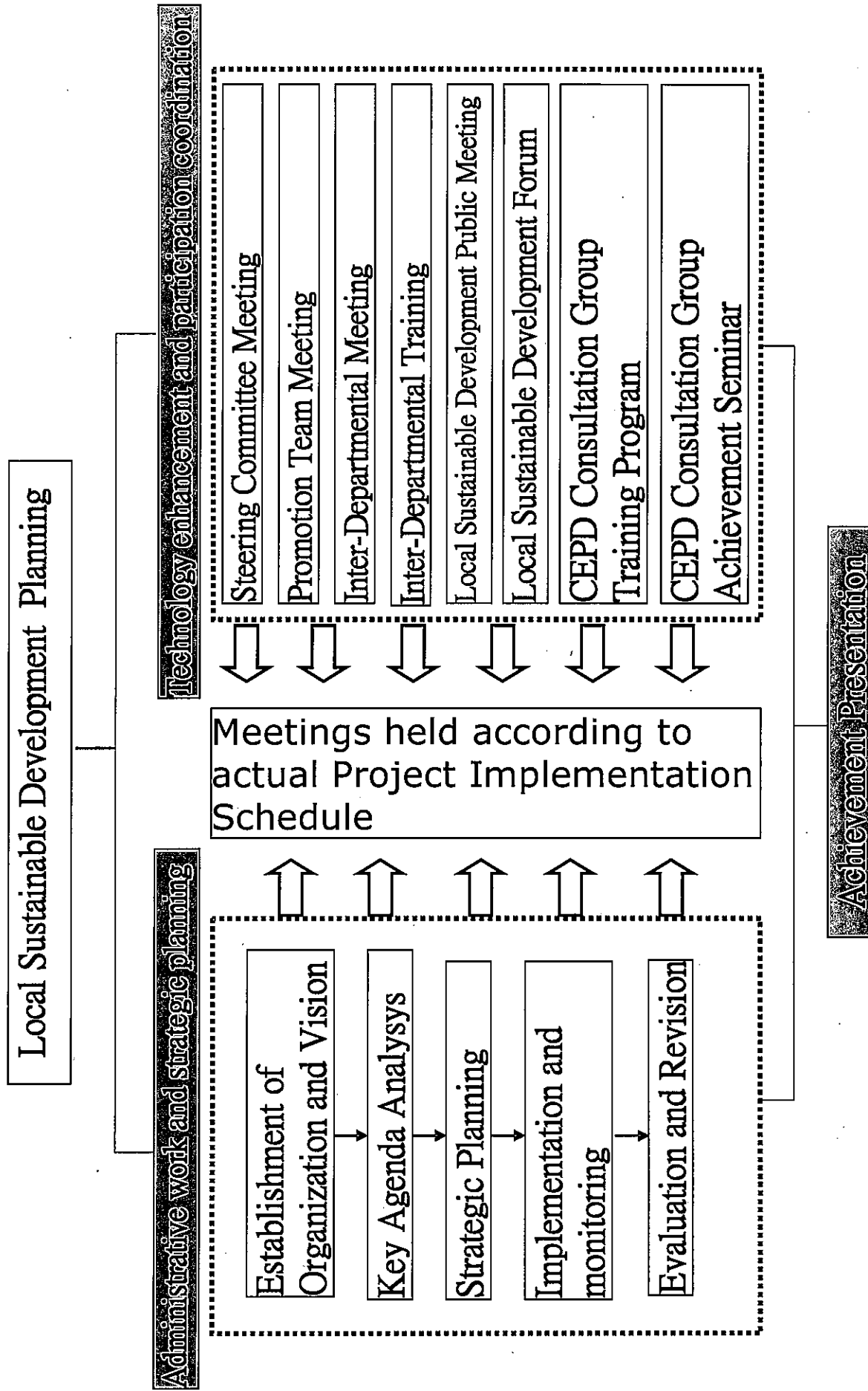
# ***On-going* Task Forces for NCSD**

- **Drafting Sustainable Development Policy Guideline**
- **Revising National Sustainable Development Indicator System based on third edition of UN sustainable development indicator system**
- **Formulating Sustainable Development Basic Law**

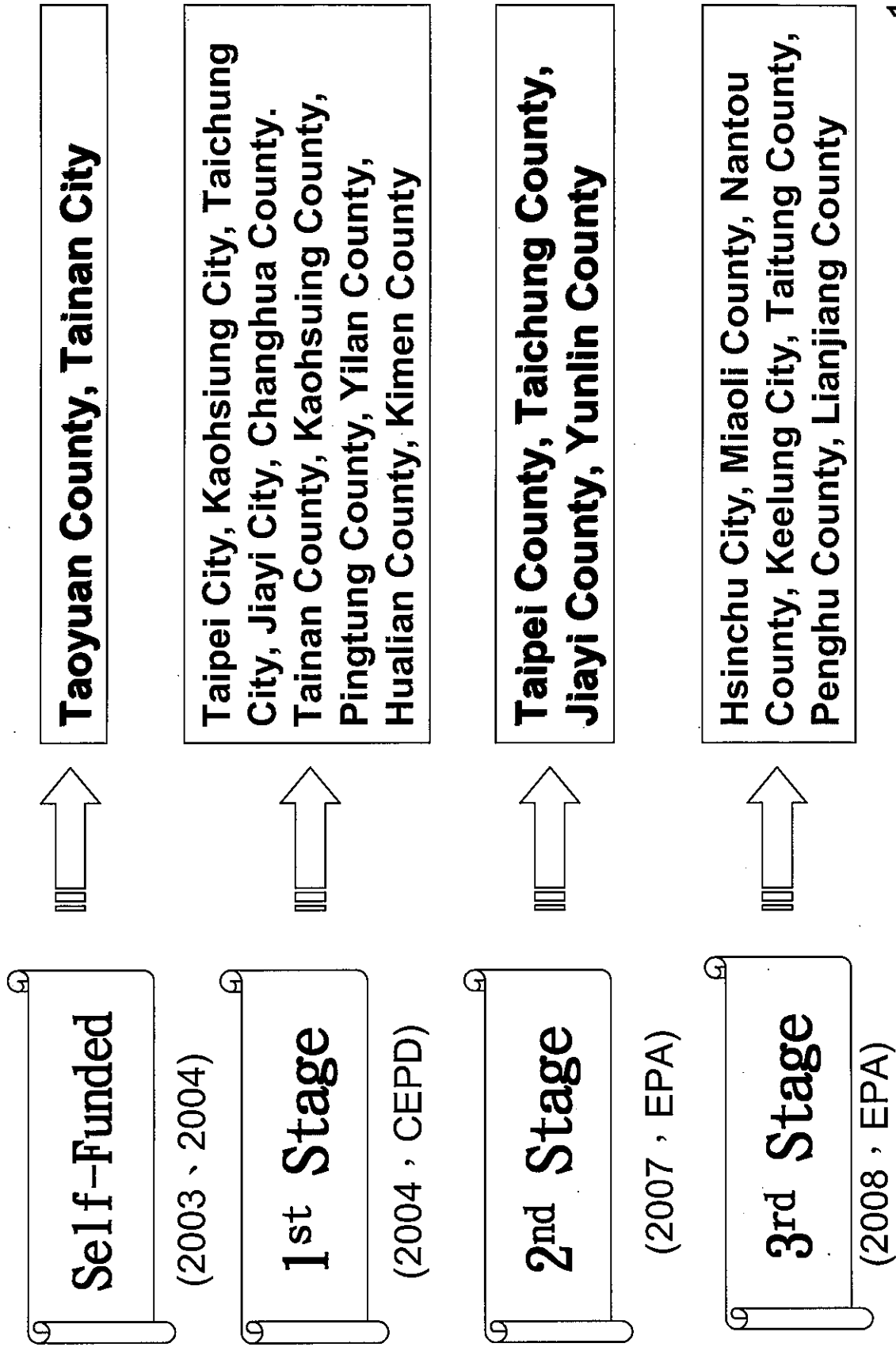
# **3. Current Status of Local Sustainable Development in Taiwan**



# Local sustainable development promotion flow chart



# *Development of Local Sustainable Development in Taiwan*

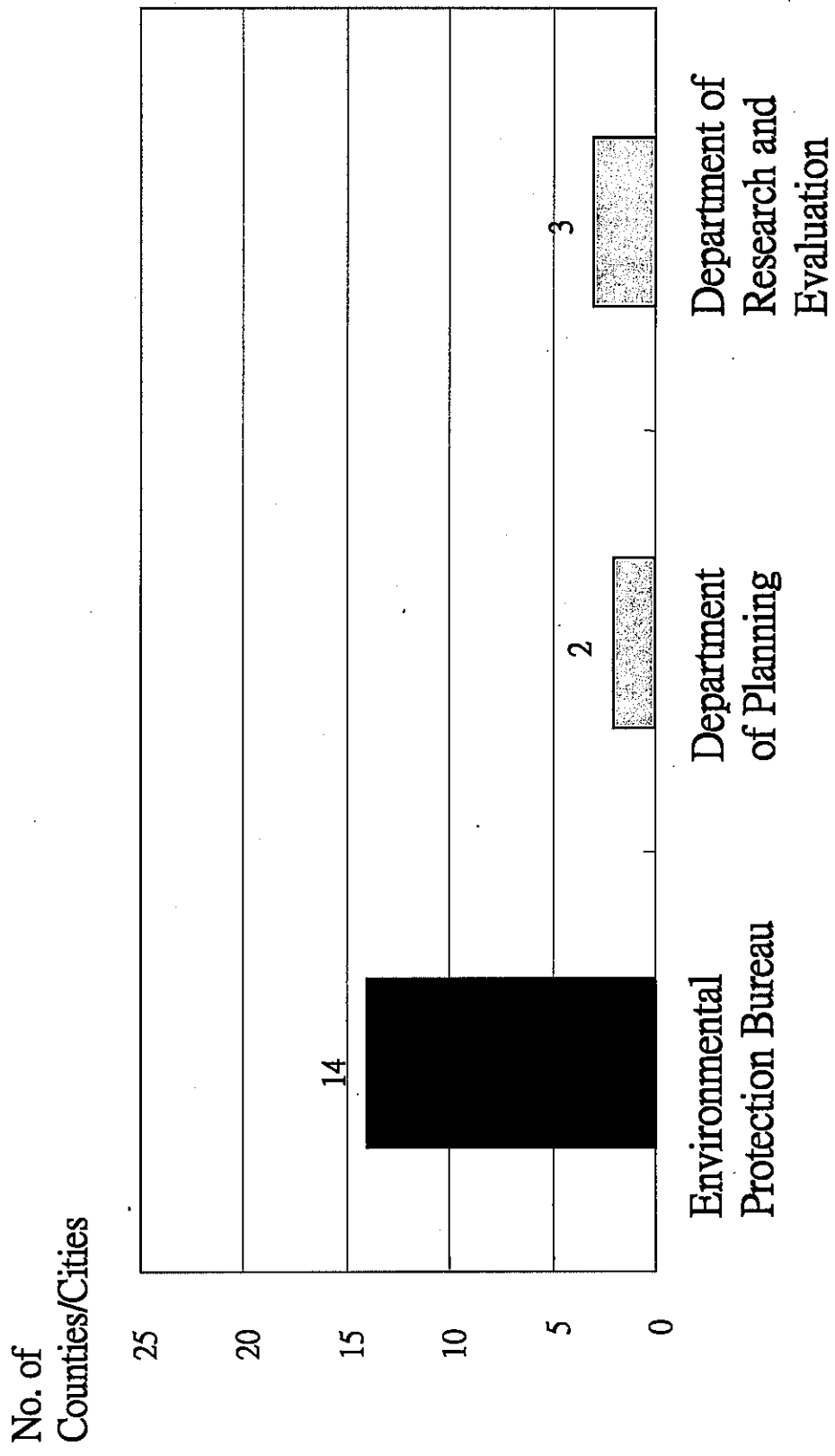


## **4. Analysis and Findings**

## Purpose of this Research

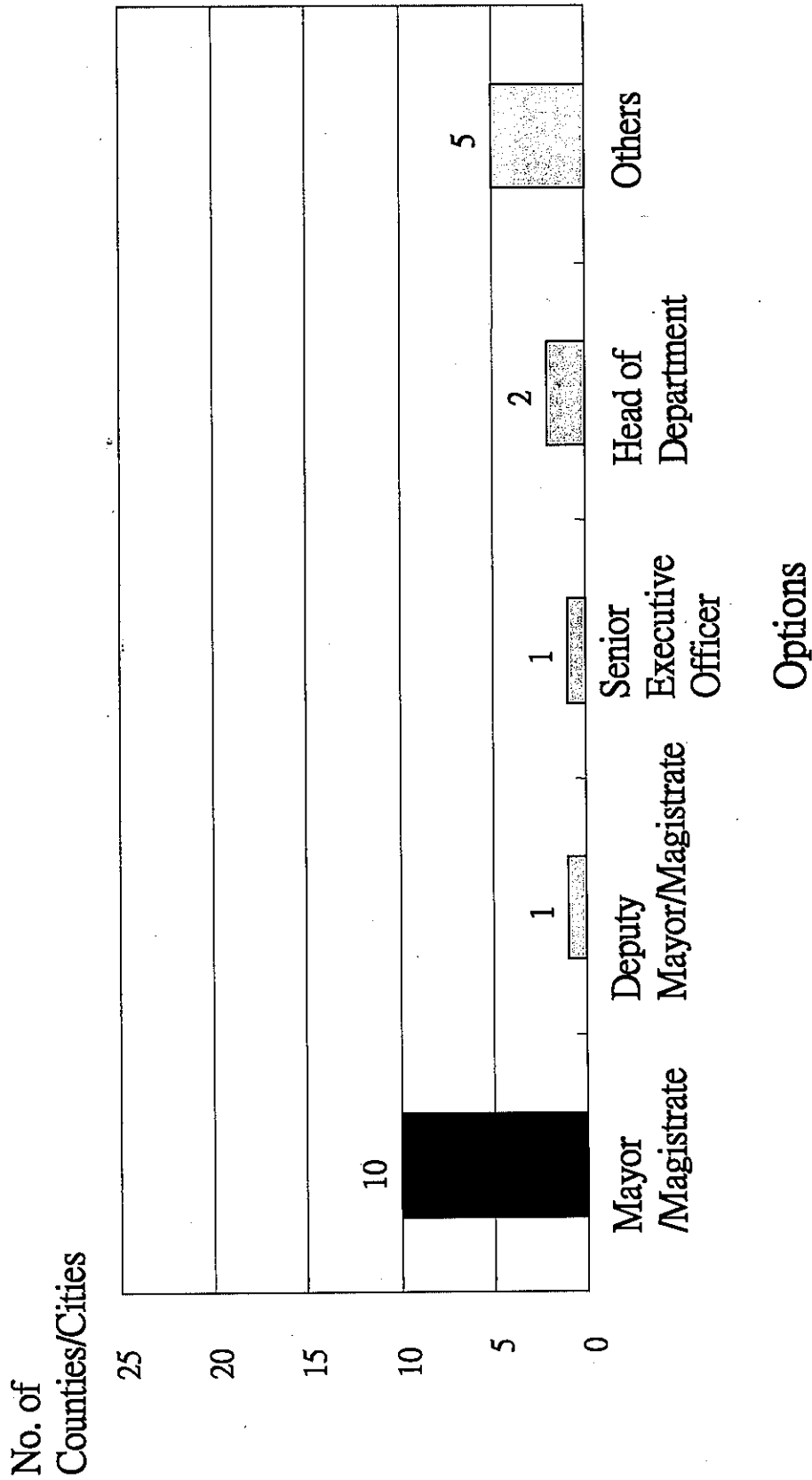
- The purpose of this questionnaire is to investigate and analyze the current status of sustainable development being implemented in all counties/cities throughout Taiwan .
- A total of 24 questionnaires were distributed with 19 responses received which make the recovery rate 79.2%.

# A. The department responsible for local sustainable development

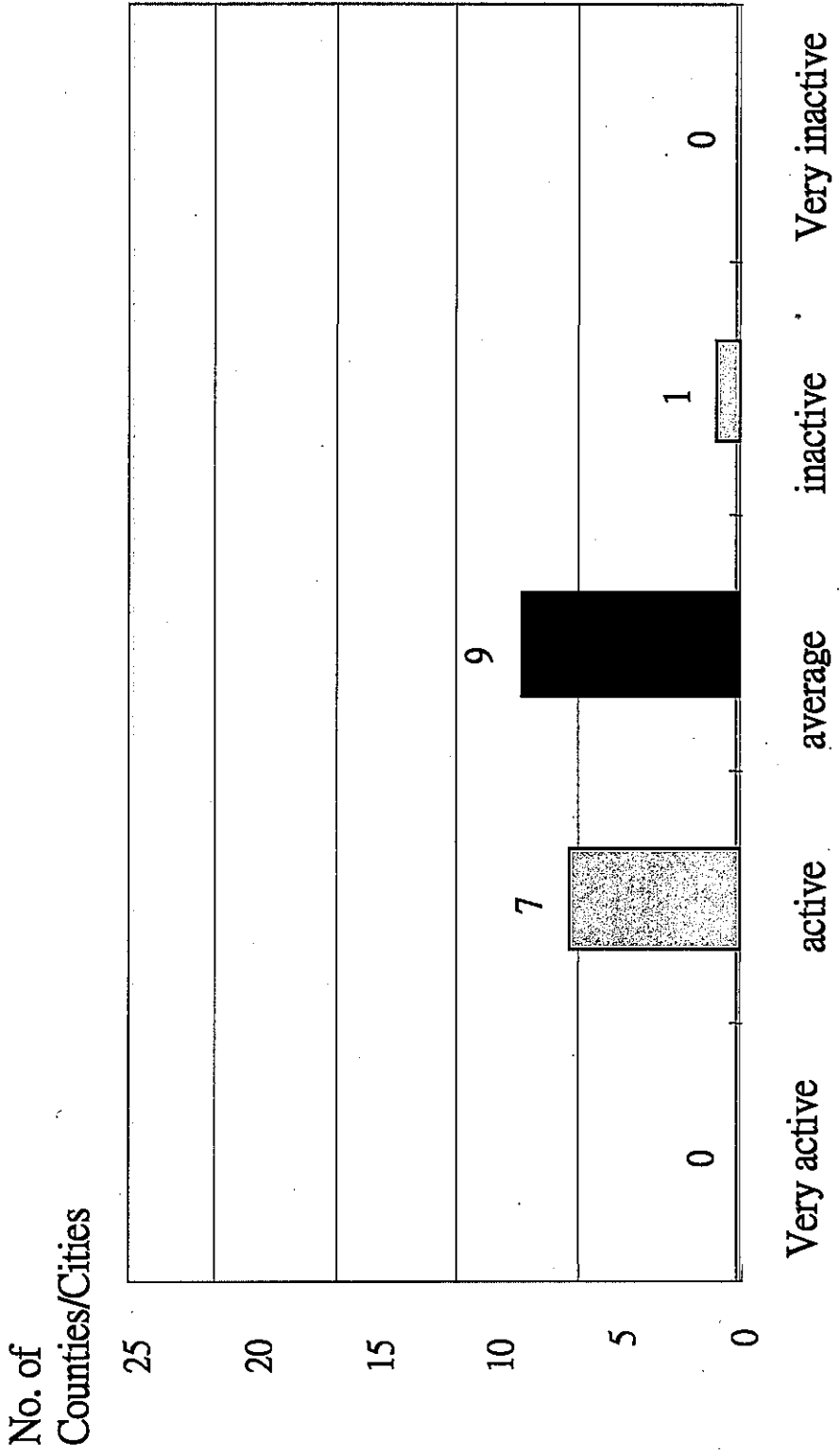


Options

# B. The highest ranking officer from the local government ever attended/hosted the local sustainable development council meeting

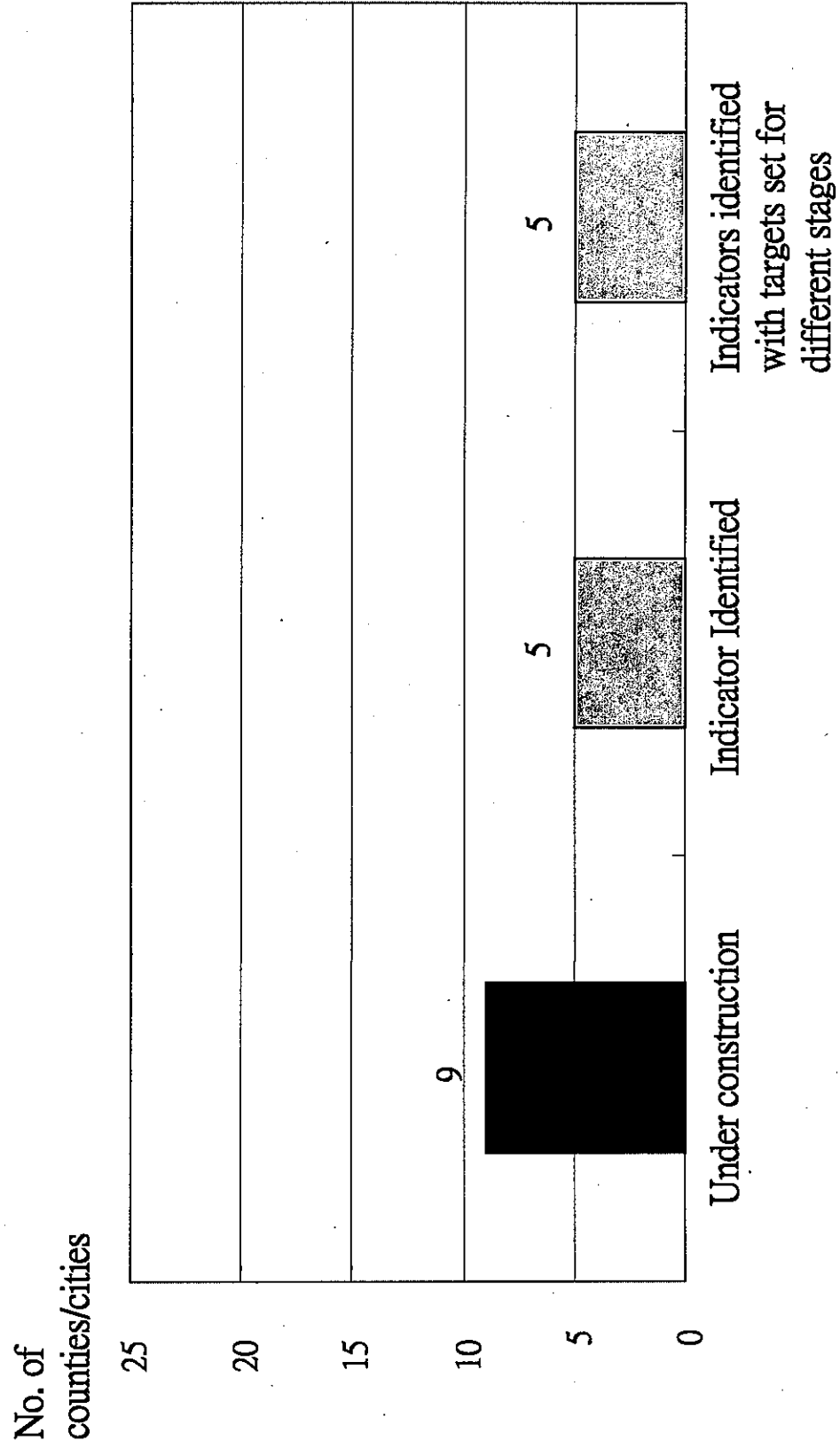


# C. Cross-departmental co-operation between departments in local government



Options

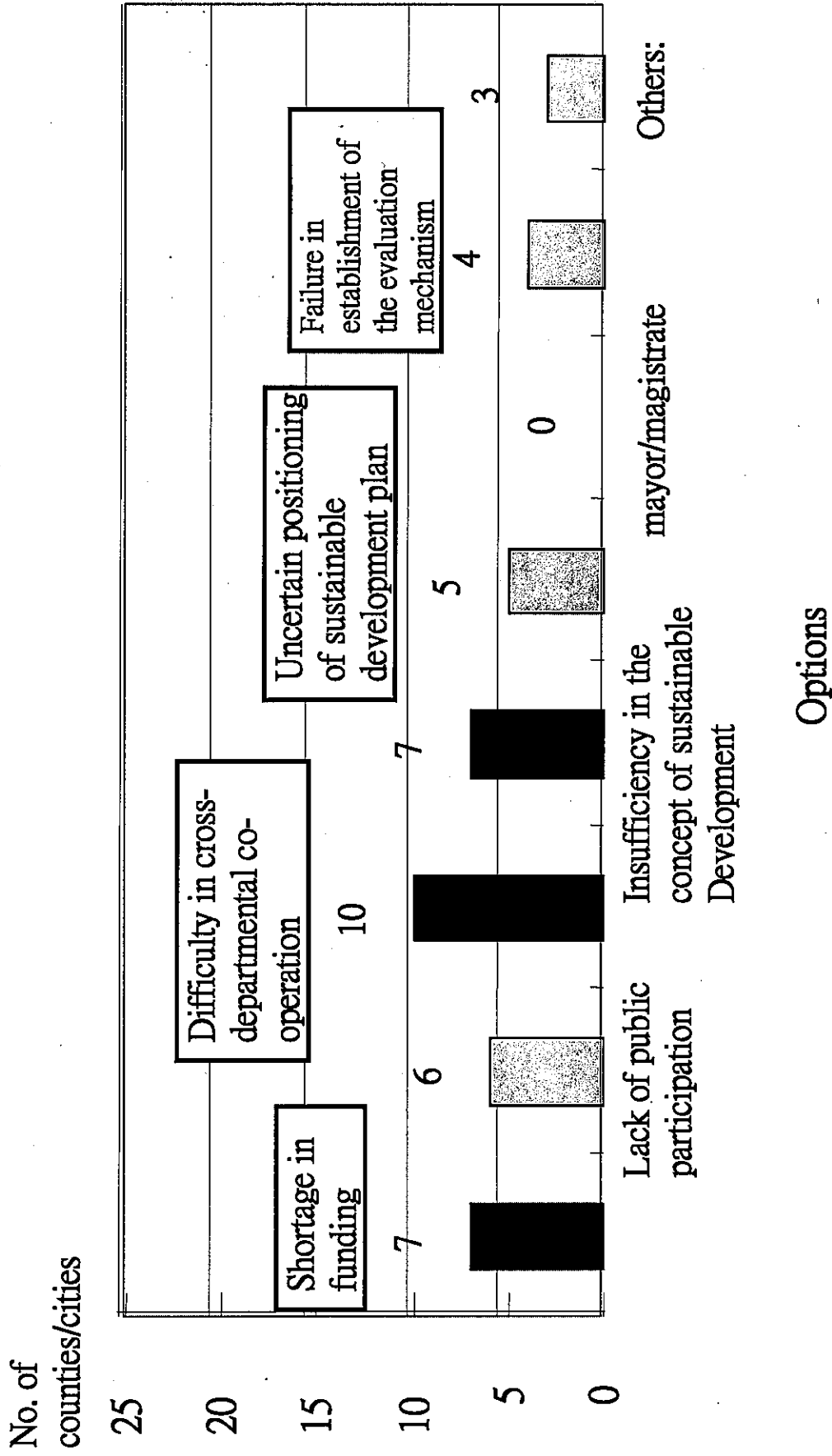
# D. Establishment of the local sustainable development indicator system



Options



# E. Difficulty experienced during implementation of local sustainable development



# Recommendations to the key issues in promotion of local Sustainable Development in Taiwan

Key Issues	Recommendation
<ul style="list-style-type: none"> <li>➤ Lack of legal basis for local sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>➤ Establishment of the National Sustainable Development law to provide legal basis for sustainable development.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Degree of involvement by local mayor/magistrate</li> </ul>	<ul style="list-style-type: none"> <li>➤ Announce the index of Sustainable Development frequently to push the heads of local governments accomplish the goals.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Difficulty in cross-departmental co-operation</li> </ul>	<ul style="list-style-type: none"> <li>➤ Emphasis on the importance of partnership</li> <li>➤ Assigning Specialized personnel for sustainable development to coordinate cross-departmental activities .</li> <li>➤ Strengthening the management and evaluation of the various departments.</li> </ul>

# Recommendations to the key issues in promotion of Sustainable Development in Taiwan

Key Issues	Recommendations
<ul style="list-style-type: none"> <li>➤ Insufficiency in the sustainable Indicator System</li> </ul>	<ul style="list-style-type: none"> <li>➤ Establishment of quantifying indicator system and targets for different stages.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Discrepancy and overlapping between Local Development Project and Local Sustainable development Project</li> </ul>	<ul style="list-style-type: none"> <li>➤ Integration of Local Development Plan and Local Sustainable Development Plan to avoid overlapping and wasting resources.</li> <li>➤ Establishment of the Sustainability Evaluation Mechanism to assess on the Sustainability of project.</li> </ul>
<ul style="list-style-type: none"> <li>➤ Public participation</li> </ul>	<ul style="list-style-type: none"> <li>➤ Increase of the NGO ration within the Sustainable Development Council.</li> <li>➤ Promotion of Sustainable Development concept through various media.</li> </ul>

# Contacts

Chi-Ying Ho,  
Assistant Technical  
Specialist Department of  
Planning of EPA, R.O.C

(Taiwan)

phone : 886-2-23117722  
Ext.2715

FAX : 886-2-2375-4262

E-mail :

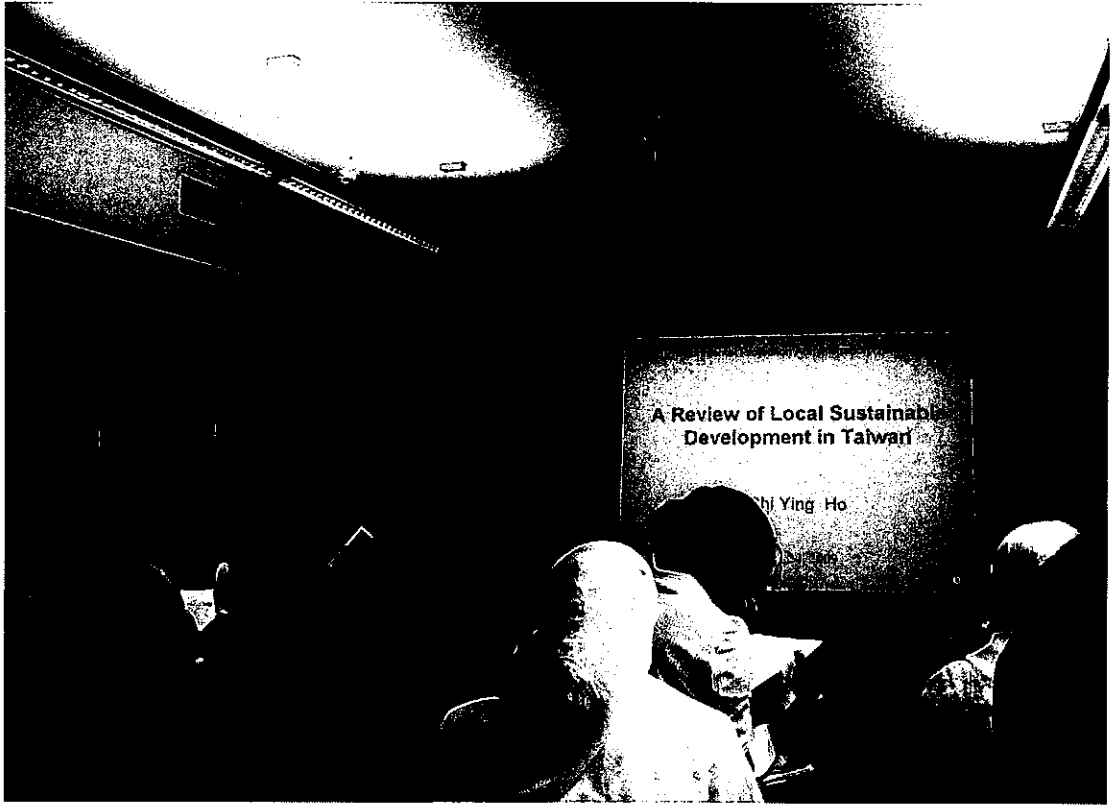
[cyho@sun.epa.gov.tw](mailto:cyho@sun.epa.gov.tw)

Web : [www.epa.gov.tw](http://www.epa.gov.tw)

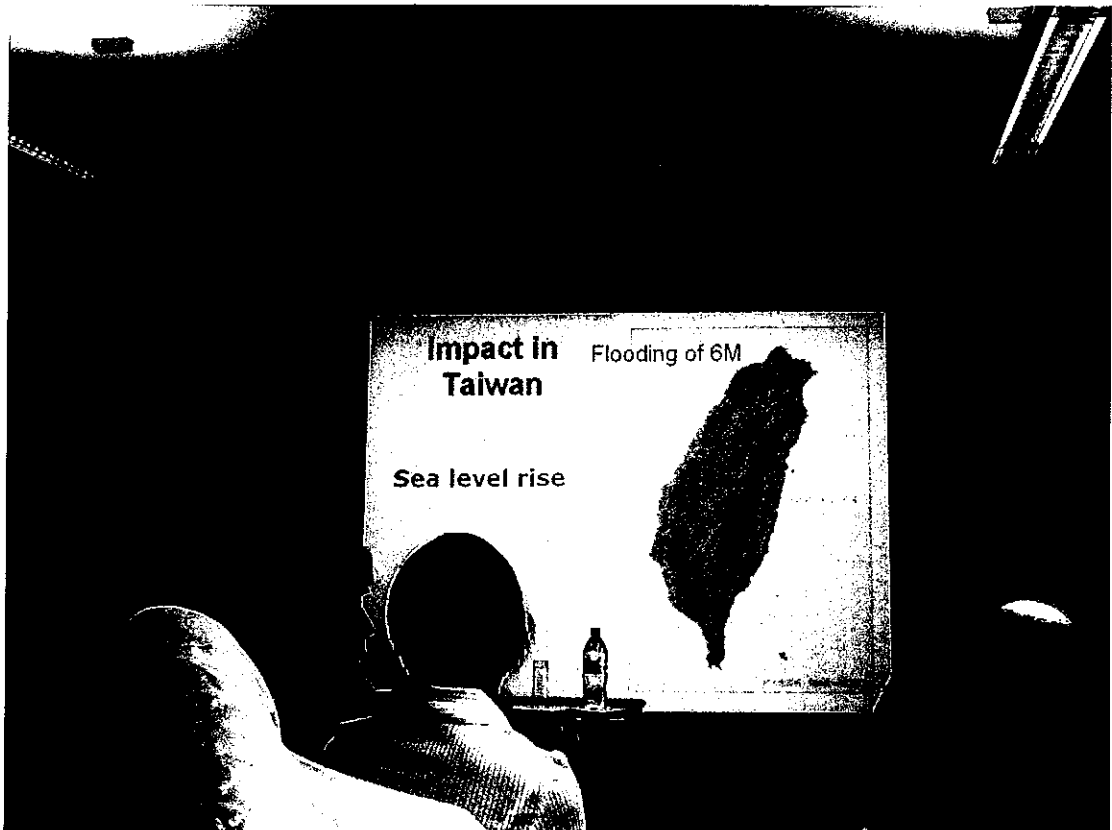


Thanks for your  
attention

## 附件 3 會場現場相關照片



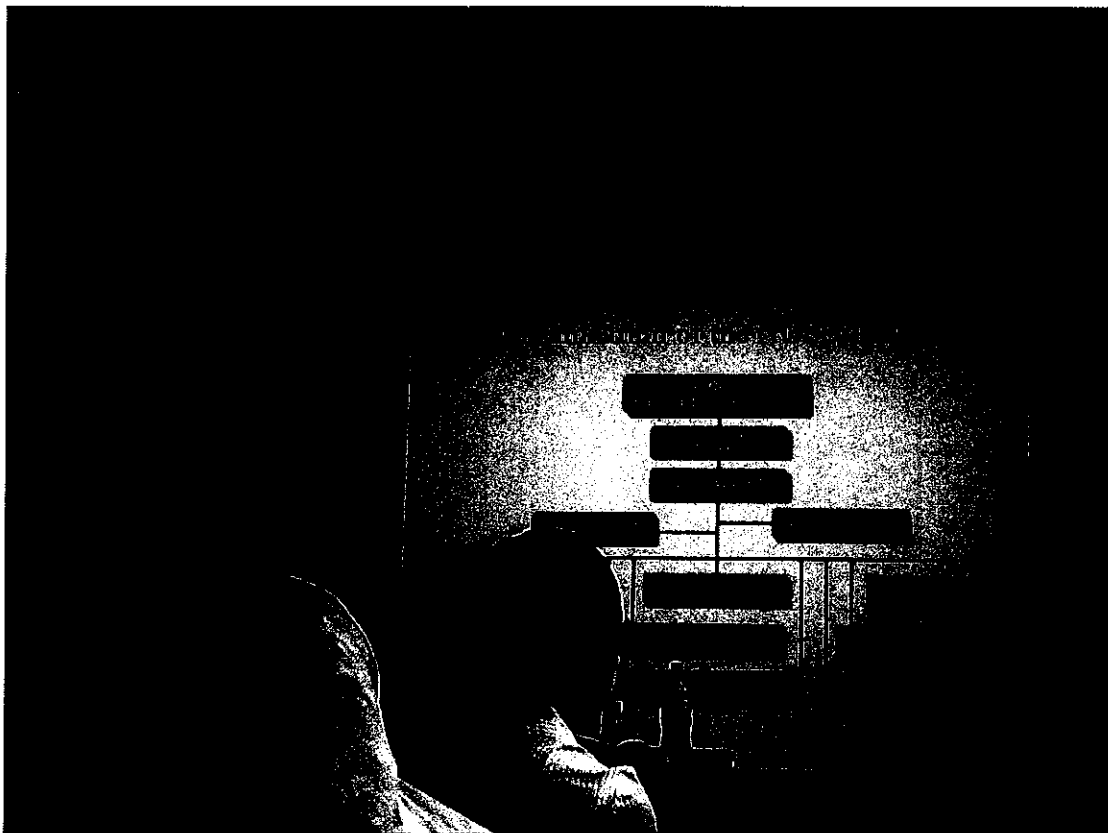
大會現場報告照片一



大會現場報告照片二



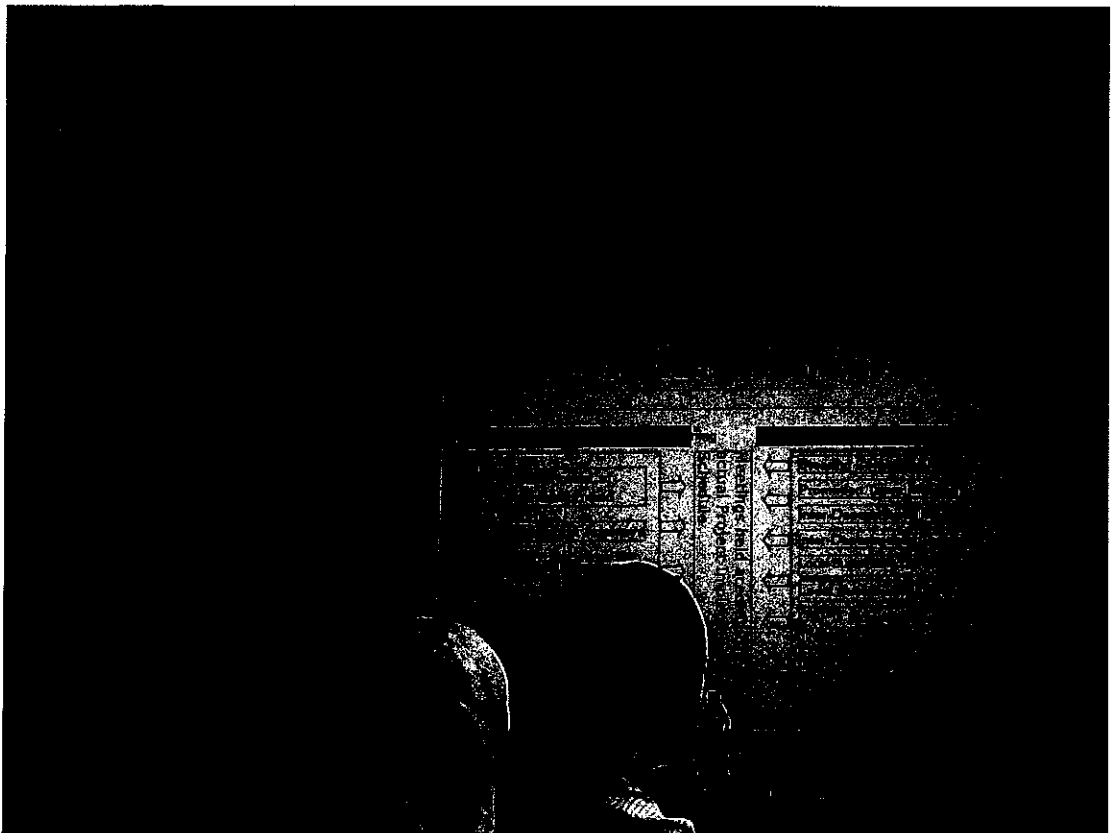
大會現場報告照片三



大會現場報告照片四

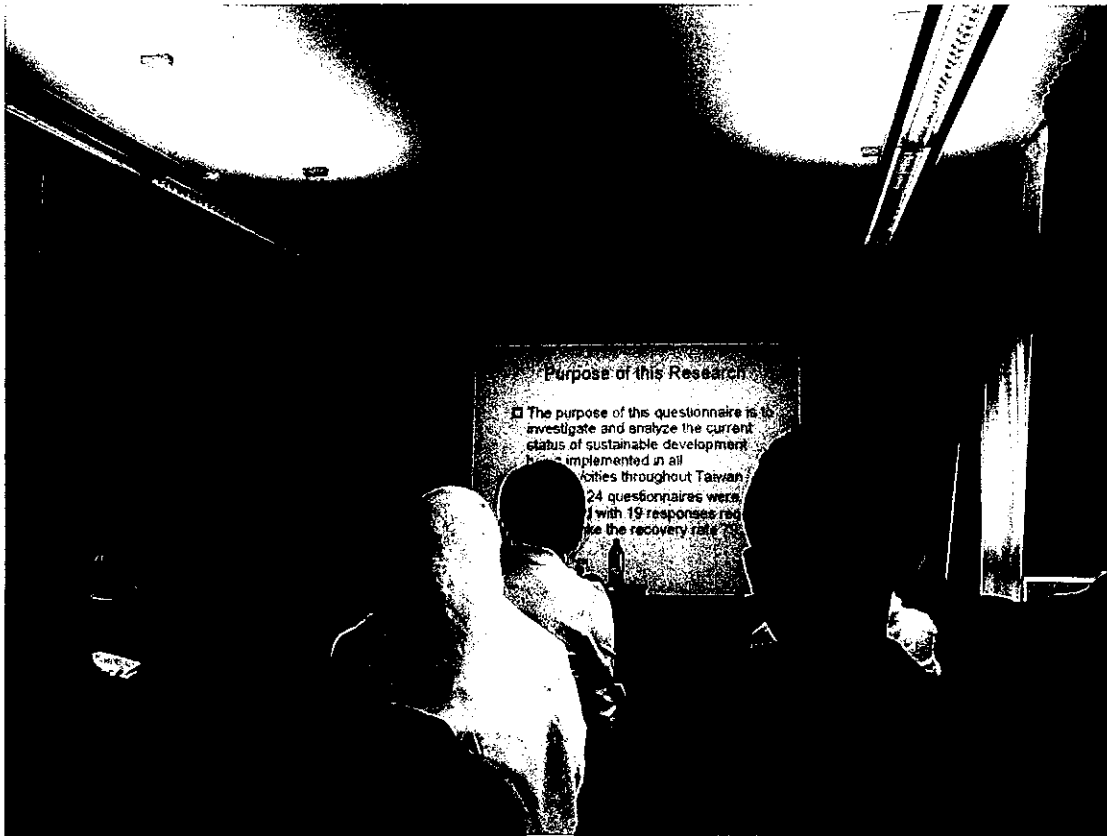


大會現場報告照片五



大會現場報告照片六





大會現場報告照片七



大會現場報告照片八



台灣出席本次會議之教授及機關代表一



台灣出席本次會議之教授及機關代表二



與大會主持人合照照片



相關議題討論情形



## **CERTIFICATE OF PRESENTATION**


**WCSET 2009**

**WORLD CONGRESS ON SCIENCE, ENGINEERING AND TECHNOLOGY**

This certificate is awarded to

**Chi-Ying Ho**

In technical presentation, recognition and appreciation of research contributions to the ICSUTE 2009 : International Conference on Sustainable Urban Transport and Environment



Ardil C. Chair  
WCSET 2009

Paris, France  
June 24-26, 2009