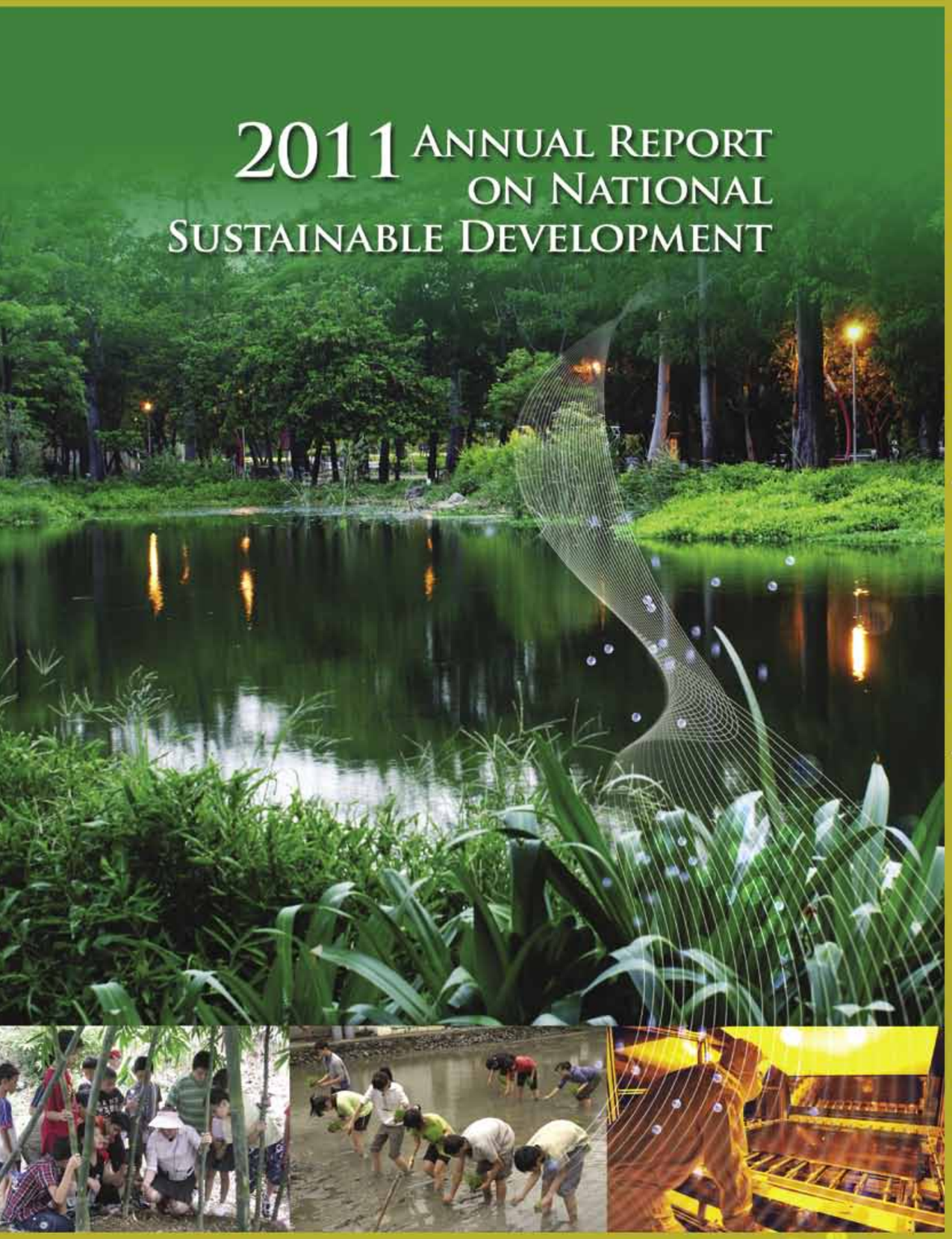
2011 Annual Report on National Sustainable Development



行政院國家永續發展委員會　編印
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100年國家永續發展年報

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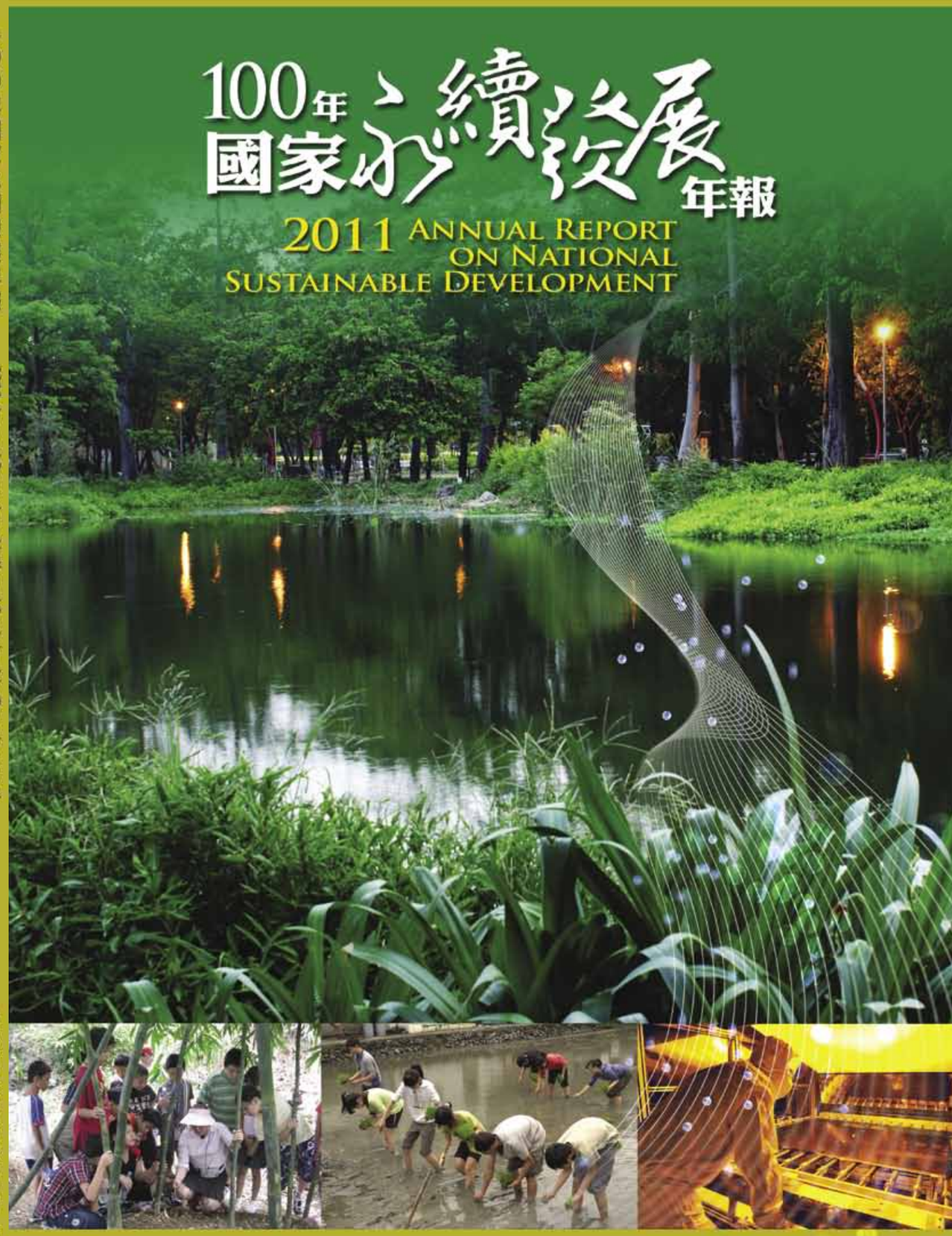

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目錄

前言

行政院為將永續發展理念納入施政，於民國86年8月23日成立「行政院國家永續發展委員會」（簡稱永續會），專責永續發展政策諮詢與跨部會工作協調。永續會除先後完成「台灣永續發展宣言」、「永續發展政策綱領」及「永續發展行動計畫」等重要文件及推動各項工作外，並於99年修正「永續發展指標」，100年配合「永續發展政策綱領」之修訂，修正「永續發展行動計畫」。

本年報彙整100年國家永續會及民間推動永續發展的重要成果，包括永續會工作概況（第一章）、各工作分組年度工作概況（第二章）、2010年永續發展指標評量結果（第三章）、100年國家永續發展獎（第四章）、2011永續發展國際論壇（第五章）及永續會民間委員專訪（第六章）等。永續會組織架構與委員名單，詳列於年報附錄。

透過「國家永續發展年報」之發行，期望國人及國際人士能更了解我國推動永續發展的過程及成果，並希望能藉此提升全民對永續發展的認知，進而共同參與國家的永續發展工作。

第一章

國家永續發展委員會年度工作概況

行政院院長兼永續會主任委員吳敦義（左三）主持第24次委員會議。

1.1 召開委員會議及工作會議

一、委員會議：

100年9月9日於行政院召開行政院國家永續發展委員會第24次委員會議，由行政院院長兼永續會主任委員吳敦義主持，與會人員包括永續會政府部門委員及民間委員、各相關部會出席代表，討論議題為參與「2012聯合國永續發展大會（Rio＋20）」之籌劃、「永續發展行動計畫」修正及有關本會運作建議事宜3案。吳敦義院長裁示：（一）明（101）年於巴西里約召開之「2012年聯合國永續發展大會」係10年一次的聯合國重要高峰會，身為地球村一分子，我國不應缺席，並應編列出席預算及補助民間團體共同參與；（二）針對「永續發展行動計畫」之具體工作及預期成果，後續請各工作分組召開「分組會議」確認；（三）為落實國家永續發展，未來國家重大經建計畫，可視需要，請相關部會將計畫草案，提至永續會報告（分組會議或工作會議），經討論及意見整理後，提出永續會之「諮詢意見」，供行政院參考。

二、工作會議：

（一）行政院國家永續發展委員會第31次工作會議於100年4月8日由劉執行長憶如主持召開，討論議案包括：「本會『永續發展行動計畫』修正及99年執行情形」、「永續會工作分組業務推動情形」等2案。

（二）行政院國家永續發展委員會第32次工作會議於100年5月10日由劉執行長憶如主持召開，討論議案包括：「永續會工作分組業務推動情形」、「余範英委員連署提案」及「永續會第24次委員會議討論議案」等3案。

1.2 修正「永續發展行動計畫」

有鑑於我國「永續發展政策綱領」、「永續

永續會余範英委員於「永續發展獎」頒獎典禮中致詞。

發展指標」及「永續發展行動計畫」之制訂時間各異，造成缺乏連貫性及邏輯性，為提升永續發展執行成效，有必要針對其面向、議題、指標進行整合及修正。爰此，永續會秘書處提案至100年4月之第31次工作會議，進行「永續發展行動計畫」修正之討論，會議並決議針對「永續發展行動計畫」召開專案檢討會議。

（一）100年6月召開第一次檢討會議，決議『連結』本會98年10月定案之「永續發展政策綱領」及98年12月通過之「第二版永續發展指標系統」，進行修正。

（二）100年8月10日召開第二次檢討會議，確定以「永續發展政策綱領」為主軸之格式，後續並請九個工作分組進行修正。

（三）100年8月29日召開第三次檢討會議，討論前項修正彙總之「永續發展行動計畫」草案。本次「永續發展行動計畫」修正『連結』上位指導之「政策綱領」及成效檢視用之「指標系統」，對我國今後永續發展推動之連貫性，將有所助益。

1.3 發表2010年永續發展指標計算結果

為檢視我國推動永續發展之成效，永續會每年均評定前一年度永續發展指標系統結果，以檢視國家永續發展推動成效。「2010永續發展指標」評量係以98年12月31日永續會第29次工作會議討論通過之永續會「第二版永續發展指標」內容進行計算。永續會秘書處於本（100）年8月20日函請「永續發展指標」各指標主政機關提供永續發展指標各項數據後，再進行指標之計算、統計及分析，並於11月28日召開「年度指標檢討會議」討論確認。「2010永續發展指標」評量結果請至永續會網站（http://sta.epa.gov.tw/nsdn/CH/DEVELOPMENT/INDEX.HTM）參考下載。

1.4 籌辦我國參加「2012年聯合國永續發展大會」

（一）有關我國參加「2012年聯合國永續發展大會」籌辦工作，永續會劉憶如執行長於99年10月25日主持之第30次工作會議決議：「請本會邱文彥副執行長擔任本會參與『2012年聯合國永續發展大會（Rio＋20）』推動小組副召集人，並邀請相關部會及團體共商參與規劃事宜。」

（二）永續會秘書處分別於99年12月20日、100年2月15日及5月2日邀請相關部會、產業界代表、民間團體、外交部NGO委員會等召開3次諮詢會議，共同商討未來參與「2012年聯合國永續發展大會」模式。

（三）行政院院長兼永續會主任委員吳敦義於100年9月9日主持永續會第24次委員會議決議：「由國家永續發展委員會負責本院之籌備參加及分工事宜，並請本院相關部會編列預算出席2012年聯合國永續發展大會，另亦請相關部會補助國內民間團體共同參與。」

（四）永續會秘書處於100年10月11日、11月14日再邀請相關部會召開協商會議，討論：1. 政府、民間組織及綠色經濟相關企業間之合作。2. 如何於會場展示我國永續發展及綠色經濟之推動成效。

（五）100年12月26日召開部會分工協商會議，討論：1. 組團參與「2012年聯合國永續發展大會（RIO+20）」事宜。2. 相關部會補助民間團體參與方式。3. 我國永續發展成果資料之撰寫彙編。

1.5 辦理「2011永續發展國際論壇」

100年9月6日及9月7日辦理「2011永續發展國際論壇」，邀請美國、加拿大、德國、韓國等國永續發展專家、我國縣市政府代表及國內專家參與討論。議程包括開幕專題演講、8個主題報告、綜合討論及專家對談：

（一）開幕專題演講：邀請「地球工作坊」創辦人Mr. George J. Gendelman就「全球永續發展之回顧與展望」發表演說。（二）8個主題包括：1. 加拿大永續發展推動情形、2. 中華民國永續發展推動情形、3. 國際永續城市之推動情形、4. 我國永續都市之推動—台北市、5. 我國永續都市之推動—高雄市、6. 我國永續都市之推動-台中市、7. 韓國「永續發展綱要（基本）法」推動情形、8. 「2012聯合國永續發展大會（Rio+20）」及青年參與。（三）專家對談的議題包括：「2012聯合國永續發展大會」之二大議題— 1. 綠色經濟與 2. 永續發展體制架構。相關資料請至永續會網站參考下載。

1.6 辦理「100年國家永續發展獎」評選及表揚

永續會秘書處依據「100年國家永續發展獎選拔表揚要點」，辦理「100年國家永續發展獎」評選表揚工作。永續獎之評選分初評、實地複評及決選三階段，評選獎項包括教育類、企業類、社團類及永續發展行動計畫執行績優等4大類，本（100）年度共選出10名獲獎單位，得獎名單如附表所示。頒獎典禮於12月1日在行政院大禮堂舉行，由行政院長兼永續會主委吳敦義頒發各類獎項表揚受獎單位。

表：100年國家永續發展獎得獎單位名單

獎項類別	得獎單位
教育 永續發展獎	新北市八里區米倉國民小學 台中市私立曉明女子高級中學 宜蘭縣立慈心華德福教育實驗國民中小學
企業 永續發展獎	興采實業股份有限公司 聯華電子股份有限公司 台灣凸版國際彩光股份有限公司
社團 永續發展獎	財團法人喜憨兒社會福利基金會
永續發展 行動計畫 執行績優獎	南部科學工業園區管理局：永續環境綠色園區推動計畫 經濟部標準檢驗局：建置危害化學物質測試平台，守護國人優質生活計畫 交通部鐵路改建工程局：花東線鐵路整體服務效能提升計畫

「2011永續發展國際論壇」邀請多國代表與會討論永續發展相關議題。

吳敦義院長頒發社團永續發展獎予喜憨兒基金會。

第二章

永續會各工作分組年度工

能源與生產組推動澎湖西風力發電站。

2.1 節能減碳與氣候變遷組

一、建構溫室氣體減量法制基礎（環保署）

持續推動「溫室氣體減量法（草案）」立法，並就草案內容廣泛與各界交換意見。

二、推動產業自願減量行動，建置市場機制（環保署）

（一）發布「行政院環境保護署溫室氣體減量額度帳戶管理要點」，並公告「行政院環境保護署溫室氣體減量額度編碼格式」。

（二）落實溫室氣體認查驗管理制度，累計認可1家認證機構、9家查驗機構，並完成「產品與服務碳足跡查證技術指引」。

（三）完成「碳中和實施與宣告指引」並建置「碳中和登錄管理平台」。並訂定「行政院環境保護署溫室氣體先期專案暨抵換專案審議會設置要點」。

（四）公告鋼鐵、水泥、光電、半導體及電力業等5個行業公告排放強度。持續推動產業自願盤查，累計401家廠商自願提報盤查資料，掌握國內工業及能源部門約八成以上燃料燃燒排放量。

（五）已啟動「國家溫室氣體減量額度交易平台」，著手推動相關先期管理機制及配套措施之建置，以透過階段性推動方式，逐步建構與國際接軌之交易平台與管理機制。

（六）公告「能源類別溫室氣體抵換專案計畫書審議作業要點」。

三、建構低碳家園綠能產業及綠色生活

環保署完成編撰「國民低碳飲食選擇參考手冊」；辦理「立足縣市碳盤查，放眼城市低碳外交」，並公布「縣市層級溫室氣體盤查計算

作概況

指引」，奠定我國城市盤查之基礎能力；建立環保低碳活動網路平台，累計已有1,535件活動進行登錄；為推動我國低碳城市建設，評選出新北市、台中市、台南市及宜蘭縣等4個城市，優先全面推動各項低碳措施。

內政部建築研究所推動節能減碳綠建築，100年度截至10月底共計通過372案綠建築標章及候選綠建築證書。教育部補助22所國中小，推動低碳校園計畫，並補助23所高級中等學校建置建築能源管理系統（初級）專案計畫；國科會持續推動能源國家型科技計畫，另預計本年度將完成全台LED交通號誌燈汰換工程。

四、其他推動溫室氣體部門減量及調適相關工作

環保署3月成立「碳捕集及封存技術（CCS）策略聯盟」，目標於109年商業運轉；經建會於7月完成研擬「國家氣候變遷調適政策綱領（草案）」；農委會本年度規劃平地及山坡地新植造林6,440公頃，撫育面積54,704公頃。

五、推動參與聯合國環保公約（環保署）

（一）參酌UNFCCC國家通訊編撰指南，於今年完成並發佈我國第二版國家通訊中英文版內容；彙編「啟動我國溫室氣體適當減緩行動（NAMAs）」，除已完成之中英文版說帖文宣，並於本年度新增撰擬日語、法語及西語等譯本。

（二）赴南非德班參加聯合國氣候變化綱要公約第17次締約國大會暨京都議定書第7次締約國會議（UNFCCC COP17／CMP7）」，積極參與國際交流活動，拓展國際合作契機。

六、促進氣候變遷國際合作（環保署）

（一）氣候政策經驗交流：於本年度辦理「邁向碳中和」國際論壇、「城市與全球氣候治理：ICLEI因應氣候變遷策略研討會」、「德國再生能源發展與饋網電價機制趨勢研討會」及「2011臺美潔淨能源論壇（2011 U.S—Taiwan Clean Energy Forum）」等國際活動。

（二）能源產業技術分享：分別於5月及8月辦理「低碳家園冷熱電供應系統國際論壇」及「溫室氣體減量技術國際研討會」等活動。

（三）碳經濟市場發展探討：5月辦理「歐盟氣候政策暨排放交易制度」專家座談會並於10月組團赴英國及比利，進行台歐盟環境合作交流之會議參訪。

（四）氣候觀測科學研究：10月及11月分別舉辦「2011空氣污染與氣候—亞洲科學與政策之對話」國際研討會及「2011年第四屆太平洋溫室效應氣體觀測國際研討會」。

七、強化教育宣導（環保署）

（一）辦理節能減碳創意活動：

1.舉辦「低碳飲食迎新年，歡喜健康慶團圓」蔬食廚藝比賽，食譜並上網提供各界參考。

2.配合辦理「樂活台灣減碳100」節能減碳創意系列活動。

3.舉辦「節能減碳行動標章」頒獎及講座活動，頒發99年評選出的44個企業、社區、民間團體節能減碳行動標章。

4.辦理8場清淨家園Ecolife暨節能減碳種子教師訓練班，培訓人數約1,000人。

5.辦理「世界公民咖啡館」四場分區會議，廣為蒐集各界人士寶貴意見。

（二）建置網路平台，進行「節能減碳」宣導：

1.強化提升「清淨家園顧厝邊綠色生活網。

2.每月發行「酷樂電子報」。

3.協助地方政府進行執行評比及補助作業。

4.完成建置線上互動式宣導教學動畫（Flash）及「文宣分享平台」。

（三）編撰節能減碳文宣：

1.編製「低碳生活教戰手冊」。

2.編製「氣候變遷圖解小百科」。

2.2 國土資源組

一、水資源開發、利用、管理及保育（經濟部水利署）

（一）推廣旱作灌溉及現代化管理設施：積極輔導農民施設旱作管路灌溉設施，並輔導農田水利會建立現代化管理設施，加強施設水文自動測報系統。

（二）協調農田水利會提供灌溉節水量轉供民生及工業使用：因今降雨量不如往年，各農田水利會採取因應措施，移用水量約1.7億噸立方公尺，降低乾旱之衝擊。

二、海洋資源之永續經營

（一）經濟部研提「加速辦理地層下陷區排水環境改善示範計畫」，以綜合性對策改善，由淹水嚴重之地區列為示範區先行辦理。

（二）農委會漁業署辦理「產業調整」部分，目標完成養殖魚塭排水路整建30,000公尺、養殖區專用海水引水設施2套，以達減抽地下水之目標。

三、水源水質保護（環保署）

完成本島及離島之水體環境水質監測規劃，包括監測地點與執行方式。100年並完成10萬筆監測數據，資料並上網供各界查詢（網址http://wq.epa.gov.tw）。此外，6月對東沙、南沙2地區之海域水質監測，建立水體環境之基本資料。

四、完成符合永續的國土整體規劃（內政部營建署）

（一）推動「國土計畫法」草案立法作業：「國土計畫法」草案經立法院內政委員會於100年6月審查。

所有環境水質監測數據皆可於網頁查詢。（網址http://wq.epa.gov.tw）

（二）落實國土保育，檢討非都市土地使用管制：依99年實施之變更台灣各區域計畫（第1次通盤檢討），持續協助各縣市辦理非都市土地資源型使用分區檢討事項。

（三）推動「海岸復育及景觀改善示範計畫」共補助9縣（市）13項計畫。

（四）辦理海岸規劃及生態景觀復育教育講習訓練。

五、結合地方政府、與國際接軌，推動濕地生態復育（內政部城鄉發展分署）

（一）推動國家重要濕地評選及保育工作：辦理第二次國家重要濕地評選作業，於100年1月18日公告共82處國家重要濕地，包含國際級2處、國家級40處及地方級40處，總面積達56,865公頃。

100年保育行動計畫編列4,100萬元，補助16縣市政府執行29個補助計畫，進行濕地調查監測、復育、社區參與及教育推廣等工作。

（二）研擬「濕地保育法」草案及相關配套辦法：98年度研擬完成「濕地法」草案初稿，本年度更持續辦理巡迴說明會及公聽會，俾使濕地法制更臻完善。

（三）執行濕地相關科學研究調查計畫：辦理「國家重要濕地碳匯功能調查計畫」，建立標準作業程序，針對三種型態濕地進行監測。

（四）辦理濕地補助作業：「100年度國家重要濕地保育行動計畫」，補助29個有關濕地調查監測、復育、社區參與及教育推廣等計畫。

（五）辦理國際交流及教育宣導課程：參與2011年國際濕地科學家學會（SWS）聯合年會，10月並邀請SWS會長Dr. Ben Lepage辦理三場濕地保育國際交流工作坊及一場專題演講。另辦理5場「濕地生態環境調查監測標準作業程序教育訓練」之相關訓練。

82處國家重要濕地地圖。

2.3 生物多樣性組

自然保護區系統識別標章。

生態復育之水梯田。

黃腹細螋停在友善耕作的稻穗上。

凌波仙子—水雉。

一、與民間合作，於貢寮山區推動水梯田生態復育，重現人與自然的和諧共生、青鱗魚與黃腹細螋也重現蹤跡；在「2011地景保育國際學術研討會」簽署「地景保育台北宣言」；為保護曾銳減到不滿50隻的水雉，推展「官田水雉綠色保育」農產品。

二、為增加海洋保育面積，推展潛在型國家公園，辦理相關研究計畫；辦理「澎湖南方四島海洋國家公園」民眾說明會；辦理海洋生物多樣性校園巡迴列車；「澎湃列島—海洋型國家公園特展」，增進民眾了解；世界海洋日辦理東沙島淨灘；「造舟活動」、「大船下水儀式」、及「橫渡黑潮・拜訪台灣」、「海洋文化展演」等活動；4周年慶系列活動保育成果發表會、與國立海洋生物博物館簽署合作協議。

三、整合台灣生物多樣性相關資料，國際交流：中研院生物多樣性中心建置「台灣生物多樣性資訊網（TaiBIF）」、「台灣物種名錄（TaiBNET）」及「台灣生命大百科（TaiEOL）」，以推動跨部會生物多樣性資料的蒐集與整合為目標。完成台灣甲殼類誌之編撰：完成臺灣甲殼類誌系列（含台灣寄居蟹類誌、臺灣鎧甲蝦類誌、臺灣蟹形異尾類誌），

共有307種，佔全世界1／8，研究結果並獲New York Times報導。

四、國家公園推動情形：

（一）墾丁國家公園：銀合歡整治及棲地復舊；生物多樣性相關之委託研究辦理計畫共15件；建立墾丁昆蟲相標本資料庫；利用自動照相設備調查陸域野生哺乳類動物；3,600米玉山群峰珍貴山椒魚大現蹤、玉山巨熊出沒。持續落實與社頂部落之資源管理夥伴關係。

（二）太魯閣國家公園：外來入侵植物清除工作；促進物種多樣性的保育、持續辦理東沙環礁國家公園研究計畫、作物種原之保存與因應氣候變遷之備份。

（三）玉山國家公園：高山賞蝶，高山猛禽過境及賞鷹、東埔生態旅遊等活動；委託研究調查與生物多樣性永續成果發表會；辦理原住民地區生態農法研習。

（四）雪霸國家公園辦理七家灣溪一號防砂壩壩體改善工程；台江國家公園生態養殖計畫，創造黑面琵鷺覓食棲地；河川結構物設置對河川特性棲地影響之調查與研究；持續推動農地污染改善；國內濕地之環境污染物調查與綜合評估；訂定河川污染改善計畫與時程，逐年使河川與河口水質之營養鹽與重金屬含量低於國際標準；全國環境水質監測及資訊公開。

五、召開跨部會「研商國內海洋保護區劃設」會議；維持我國為外來重要動物傳染病及植物檢疫有害生物之非疫國、外來種（林木病蟲害類）之風險評估及標準化監測方法研究；防治外來入侵種及植物病蟲害輔導團計畫；配合國家紅火蟻防治中心辦理督（宣）導紅火蟻防治及環境用藥登記許可；台灣外來入侵種資料庫的更新與擴充；台灣入侵種水生植物名錄之建立及入侵等級評估；推動「溼地生態園區經營管理示範計畫」

六、林務局辦理「2011台灣野望國際自然影展」系列活動、補助張博鈞先生拍攝「戀戀火金姑」生態紀錄片，獲得「第三屆國家出版獎—優選獎」；「九九蜂鷹」影片於「第10屆日本野生生物電影節」獲頒最佳動物行為獎。辦理「滋養地球的創新方法」巡迴座談，邀美國看守世界研究中心的資深研究員Danielle Nierenberg來台。

七、維護原住民與地方社區的社會文化多樣性；原住民族傳統生物多樣性知識調查整理；捐贈國際龜類存續聯盟復育緬甸星龜；辦理522國際生物多樣性日：辦理「生物多樣性未來10年展望」國際論壇。

❶ 出現於玉山群峰的阿里山山椒魚。

❷ 斯式紫斑蝶。

2.4 能源與生產組

一、推動工業區能資源整合（經濟部工業局）

推動工業區能資源整合，本年度選定新竹、台中及大甲幼獅等3座工業區及產業聚落為能資源整合重點推動區域。促成20項實質鏈結，達成41.01萬公噸鏈結量，及溫室氣體排放減量達11.0萬公噸，相關整合鏈結工作持續推動中。

二、推動再生能源發展（經濟部能源局）

推動再生能源發展，截至100年10月止，再

生能源發電裝置容量約339.9萬瓩，估計年發電量約90億度，約可提供168萬戶家庭1年的用電量，約可減少CO_2排放量556萬噸／年，各項再生能源推動成效如下：

（一）風力發電：

截至100年10月，已完工風力發電機組達288座，總容量約56.38萬瓩。

（二）太陽光電：

1.截至100年10月，統計國內完工設置累計容量為58.6MWp，相當於每年可發電 7,325萬度。

2.國內太陽光電產業99年產值新台幣2,000億元，居全球第3。

3.規劃推動陽光屋頂百萬座，採「先緩後快、先屋頂後地面」之策略進行。

（三）累計已完成設置之生質能發電裝置容量總計約79.85萬瓩。

三、推動節約能源（經濟部能源局）

（一）推廣節能標章產品：

1.已完成修訂及提升5項節能標章產品之能源效率基準，新修訂基準較既有基準提升約10～25%。

2.完成7項產品節能標章基準草案訂定，並完成其中3項公告。

3.辦理12場次節能標章及能源效率標示宣導活動，並維運節能標章網站。

4.節能標章產品累計節能92千公秉油當量，累計使用枚數已超過1億枚。

（二）執行用電器具能源效率管理：

1.完成提升3項用電器具容許耗能效率基準。

2.完成研擬9項產品之容許耗能基準草案。

（三）提供節能技術服務：

截至100年10月底，共輔導833家能源用戶、170座鍋爐，發掘節能潛力128.6千公秉油當量，落實節能65.52千公秉油當量。

四、能源穩定供應（經濟部能源局）

（一）公布「確保核安、穩健減核、打造綠能低碳環境、逐步邁向非核家園」之能源發展願景，並在不限電、維持合理電價、達成國際減碳承諾等3大原則下，實踐各項節能減碳與穩定電力供應措施。

（二）油氣市場供應穩定：依規定完成油氣之相關需要量之儲存。

（三）電力穩定供應：SAIDI（系統平均停電時間）累積實績為15.027分／戶／一年。

（四）推動高壓用戶設置智慧型電表基礎建設AMI：依「智慧型電表基礎建設（AMI）推動方案」期程，累計完成1,200具高壓AMI電表裝設。

五、推動節能減碳

（一）推動環保科技園區：環保署依「環保科技園區推動計畫」，累計核准104家廠商入區，撤案廠商數為39家，簽約進駐廠商數為63家。

（二）推動商圈節能減碳輔導：完成5個商圈的節能減碳輔導，累計完成15個商圈之輔導工作。針對連鎖企業商業司提供整體節能診斷服務，100年度共完成3個連鎖企業的整體節能評估。

（三）提供潔淨能源、推動溫室氣體減量：中油公司於本年全面供售B2生質柴油；並配合經濟部能源局計畫，於14個加油站供售E3生質酒精汽油，每年約可減少20萬噸以上之CO_2排放。

（四）輔導中小企業推動節能減碳：中小企業處本年度共協助20家中小企業因應溫室氣體減量，進行生產製程管理改善、溫室氣體／產品碳足跡盤查與低碳化產品設計等節能減碳相關工作。

（五）推動「建置永續能源標準、檢測及驗證平台」計畫：經濟部標準檢驗局於本年度已受理24廠次溫室氣體查證申請案，其中23廠次已完成第二階段查證。查證後經複審完成並已核發溫室氣體查證證明計23廠次。另因太陽光電及LED照明已漸具經濟規模，故亦建置相關

檢測實驗項目共10項。

六、推動農漁業生產（農委會）

（一）推動農業經營專區，促進農地有效利用：目前全省共建置13處農業經營專區，引導專區農民自主維護農業生產環境，簽訂「專區土地利用公約」。

（二）推動農業經營企業化建構高價持產銷體系：推動整合型計畫「建立農業中心衛星體系」，輔導農民團體以地方特色產業為核心，建立產業加值平台結合農民建立穩定的供需關係。

（三）輔導產銷班及產業團體採用異地、分齡、批次之生產模式及自動化餵飼系統以提高生產效率。

嘉義縣番路鄉農會創意研發「柿果子冰淇淋」。

（四）維持家禽產業產銷平衡：透過資料蒐集及輔導組織，落實產銷預警機制，強化產業自主調節功能。白肉雞契養比例達9成，土雞及鴨契養比例達8成，鵝達5成。

（五）推動優良農產品標章：累計共346家生產廠商之6,526項產品通過CAS驗證，產值超過新台幣450億元。

（六）改善休閒農業區內生產與經營環境，並加強環境綠美化整理工作：截至100年10月底，累計公告劃定71處休閒農業區，另開發「二食一泊」、「紓壓療癒」、「新社花海」等農業主題套裝遊程，創造年產值65億元。

（七）建置農田水利會灌溉管理地理資料庫：整合GIS基礎資料與灌溉暨排水受益地籍管理系統，擴大其應用。

開發農田水利會網際網路灌溉管理地理資訊系統。

（八）加強灌溉用水水質監測與管理—建構完整灌溉水質監測網，提昇灌溉水質監測合格率：建構完整灌溉水質監測網，提昇灌溉水質監測合格率；持續輔導農田水利會加強灌溉用水水質監測與管理工作。

（九）觀賞魚產業推動：100年9月至10月於台北世貿三館舉辦「2011台灣國際觀賞魚博覽會」。

（十）養殖漁業生產區專用海水供水及進排水路設施：累計核定海水專用供水工程及進排水路整建工程等計畫共37處，目前已完成2處。

（十一）推動沿近海漁業監控、管制及調查：持續推動沿近海漁業監控，本年度於海上登臨檢查漁船計104艘次。

（十二）落實漁船安裝船位回報器及參與區域性漁業管理組織相關科學會議；維持我國為外來重要動物傳染病之非疫國；運用檢疫犬加強入境旅客行李及郵遞包裹之偵測，防杜境外重大疫病蟲害隨違規攜帶之動植物及其產品入境。

2.5 交通與生活組

一、推動公路公共運輸發展計畫（交通部）

（一）共計針對基隆市等14縣市客運及公路總局轄管之公路客運路線進行營運虧損補貼，達成「偏遠服務性路線一條不減」之目標。

（二）補助部分縣市之客運業汰舊換新，總共計490輛大客車，另補助139輛之低地板公車

加入營運。

（三）為整合公路公共運輸電子票證跨區使用，便利民眾多卡通用，除持續針搭乘者票價優惠外，也補助客運業者建置多卡通驗票機及配套硬體設備，業者裝機率接近5成（47.27%）。

（四）補助臺中市及台南市辦理轄區公車評鑑作業及公路總局轄管之公路客運評鑑作業。

二、持續推動軌道運輸建設及提升服務效能（交通部）

（一）持續推動都會鐵路立體化及捷運化之工程。

（二）改善花東線鐵路，本年5月完成山里隧道北段關鍵性工程之貫通。

（三）推動花東線鐵路整體服務效能提升計畫，建構一鄉一特色車站，其中平和站及關山站已完成決標，預訂103年完工啟用。

（四）辦理桃園國際機場聯外捷運系統建設計畫及機場捷運延伸至中壢火車站計畫。

（五）加速推動高鐵在苗栗、彰化及雲林設站。

（六）持續推動臺北都會區捷運建設，至100年10月底已通車路線計10條，建設公里數為106.4公里。

三、辦理東部自行車路網示範計畫（交通部）

自98年至101年推動「配合節能減碳東部自行車路網示範計畫」，至本年底止設置路線長度可達約469公里，加上其他單位或地方補助路線可達1,136公里。

四、建構全臺智慧型運輸系統（交通部）

（一）辦理交通服務e網通計畫：將「全國路況資訊中心」及「陸海空客運資訊中心」兩網站整合為單一入口網。

（二）完成高快速公路整體路網交通管理系統建置：建立台灣地區高、快速公路網交通管理系統，本年使用人次與99年同期相較增加35.9%。

五、推廣生態旅遊（交通部）

為推廣生態旅遊，交通部觀光局各風景區管理處除辦理淨灘、植栽綠化等活動，以及建置自行車道提倡健康、樂活的綠色生活運動外，亦積極辦理推廣生態旅遊等活動。

六、提升氣象預報及地震測報能力（交通部）

（一）執行「海象資訊e化服務系統之整合與應用」第4年計畫。

（二）執行「災害性天氣監測與預報作業建置計畫」。

（三）建置台灣新一代地震觀測網，除持續提升測站及觀測井外，並完成全臺首座光纖式海纜觀測系統建置，並提升台灣東部海域之地震海嘯預警能力。

舊草嶺環狀線自行車道照。

七、強化公路、橋梁防災系統（交通部）

（一）執行公路防災預警機制：已律定山區公路汛期重點監控路段63處，重點監控橋梁45座，本年共預警性封路達79處，其中封路後發生大規模災情計有27處，所幸道路業已先行封閉無人員傷亡。

（二）河系管理預警之概念，建置大甲溪跨河橋梁安全預警系統。

（三）提升高速公路橋梁耐震補強標準。

八、推動航空業暨民用航空站溫室氣體減量計畫（交通部）

（一）建立我國籍主要航空業溫室氣體排放盤查機制及資料庫。

（二）建立我國主要航空站溫室氣體排放盤查機制及資料庫。

（三）完成低碳航空站指引手冊，並首由臺北、及馬公航空站分別簽署「溫室氣體減量承諾聲明」。

（四）完成國內第1件民航服務碳足跡計算。

九、推動全民綠色消費（環保署）

（一）強化環保標章制度及建立碳標籤制度

1.累計制訂113項環保標章規格標準。

2.建置便捷快速的環保標章網路申請平台，至本年度10月底止，已核發環保標章使用證書1,250件產品及環境保護產品第二類產品證明書10件產品。

3.至本年10月，已有33家廠商93件產品之「產品碳足跡標籤證書」申請案經審查通過；並已公告22項碳足跡產品類別規則。

4.10月25日舉行2011年環保標章國際研討會，共24國49位外賓代表與及國內100餘人加。

（二）健全環保產品行銷通路：並累計輔導10,615家轉型為綠色商店販售環保產品。

（三）強化公私部門及民眾綠色採購：統計

綠色生活博覽會。

日月潭國家風景區管理處推動特色遊學中心。

99年計有685家業者向環保署申報綠色採購成果，綠色採購金額共34億元。

（四）綠色消費教育宣導：本年度辦理種子人員培訓作業10場次計627人參與，另亦辦理「2011綠色生活博覽會」等多項宣導活動，讓民眾將綠色創意和綠色生活落實於日常生活中。

（五）經濟部中部辦公室針對傳統市集，甄選綠色市集進行綠色經營深化輔導、綠色能源建立之觀念宣導。

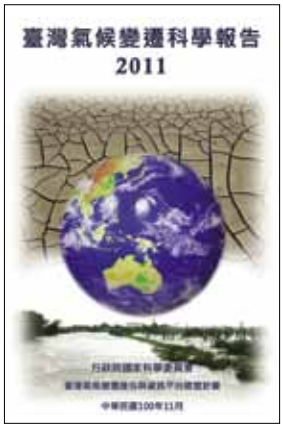
2.6 科技與評估組

一、台灣氣候變遷推估與資訊平台建置計畫（國科會）

「台灣氣候變遷推估與資訊平台建置計畫」（Taiwan Climate Change Projection and Information Platform,以下簡稱TCCIP） 於98年底由行政院國家科學委員會推動，為期三年。該計畫由國家災害防救科技中心負責統籌執行，針對氣候科學研究與下游衝擊所需之整合應用，強化氣候變遷科學研究與推估能力，並落實氣候變遷資訊的應用研究與服務。其三年計畫一方面建構氣候變遷之分析與推能力、建構降尺度之關鍵技術，另一方面以災害衝擊為主軸，做為銜接氣候資訊與下游端應用端之能力建構基礎，作為國科會氣候變遷長期跨領域研究與應用服務之示範性研究。

（一）100年度重要成果包含：長期氣候研究資料之數位化、均一化以及網格化，IPCC AR4 24個全球氣候模式之台灣地區25km及5km降尺度推估，日本高解析度模式之台灣地區極端颱風個案（5km）模擬與分析，以及氣候變遷不確定分析方法建立與氣候變遷資訊服務平台建置等。

（二）計畫參與研究人員費時一年共同撰寫約16萬字內容之



「台灣氣候變遷科學報告 2011」封面。

科學報告記者會照片。

「台灣氣候變遷科學報告2011」，針對全球及台灣過去以及現有最新的氣候變遷研究成果進行彙整，提供現階段最新研究成果與科學進展，並於100年11月9日於國科會召開記者會並正式對外發布，本報告電子檔可由國科會首頁或http://satis.ncdr.nat.gov.tw/ccsr/中下載。

二、推動永續環境綠色園區計畫（國科會）

國科會南部科學工業園區（以下簡稱南科）積極建構園區完善基礎設施及訂定永續管理策略，以「產業聚落」、「永續環境綠色園區」及「文化藝術」三大發展方向，成為高科技產業綠色園區典範。

（一）永續經濟

1.推動綠建築認證：截至100年10月園區內取得EEWH「鑽石級」綠建築標章共6件。

2.推動綠色運輸：開辦園區巡迴接駁巴士，結合台鐵南科站完成鐵公路無縫接軌。至100年10月底，累計搭乘人數已突破27萬人次，預估減碳量為740公噸，相當於1.9座大安森林公園吸碳量。

3.永續環境

4.C2C廢棄物資源循環綠色園區：100年（至10月底止）廢棄物再利用率達81.9%；另污水廠已於99年成功將污泥燒結粒料製成磚品鋪設於廠內示範區步道，本年度已使用於園區公共工程，朝向「零廢棄」目標邁進。

5.環境品質管理：實施污染總量管制，並遵照環評承諾辦理開發行為，自90年起均無環評違規紀錄；園區環保設施100%符合法令規範，自94年起均無環保違規紀錄。

（二）永續社會

1.環境教育：推動環境教育工作，含括中小學、大學及一般民眾，至100年10月超過1,600人次參與。

2.民眾參與：100年辦理「2011暮春藝文季」，包括2場考古季及6場音樂會活動，參與人數達5,000人。

三、生態元數據編輯軟體Morpho及生態研究資料倉儲系統之推廣及教育訓練（國科會）

生物多樣性資料之整合是行政院生物多樣性推動方案之基礎工作，由國科會負責主辦，農委會等9個部會協辦。其中，該方案工作項目指定主辦單位需研究建立一套以生物多樣性監測資料為主之資訊管理系統，進行維護更新，推廣至全國使用。今年度已委託農委會林業試驗所執行「生態分布資料倉儲與管理系統建置維護」計畫；主要目的在於提供國內研究者與國際生態研究同步且功能完整的生態元數據編輯及研究資料管理工具Morpho，進行教育訓練研習，並更新、維護Metacat生態研究資料倉儲系統。相關成果如下：

（一）完成元數據編輯軟體Morpho更新版本的使用介面、手冊中文化，及生態研究資料倉儲系統MetaCat的系統更新等升級、維護工作，並於6－9月份，在台北、台中各舉辦兩梯次各兩場的生態研究資料倉儲教學研習會。

（二）Morpho元數據編輯軟體與Metacat生態研究資料倉儲系統已獲林業試驗所、林務局、農業試驗所、內政部營建署城鄉發展分署，及太魯閣國家公園等單位採用，以長期保存、共享各單位研究計畫所收集的生態研究與生物多樣性資料。

（三）協助支援內政部營建署城鄉發展分署舉辦全國重要濕地調查資料彙整及林務局委託研究案資料倉儲之教育訓練。

2.7 城鄉與發展組

一、推動生態城市綠建築（內政部建築研究所）

（一）通過372案綠建築標章及候選綠建築證書，預估每年約可省電8,088萬度、省水432萬噸及減碳5.5萬噸。

（二）為提升節能效益，完成22案「建築能源效率提升計畫」改善工程。

（三）在降低都市熱島效應方面，完成15案「綠建築更新診斷與改造計畫」改善工程。

（四）綠建築推廣方面，本年度辦理75場「綠建築環境教育示範基地現場導覽活動」，累計參與人數1,787人次。

（五）於北、中、南辦理「綠建築評定審查精進講習會」及「綠建築評估系統家族宣導講習會」。

二、推動綠建材標章評定（內政部建築研究所）

（一）通過綠建材標章181件（143件健康、9件再生、28件高性能與1件生態綠建材），產品種類涵蓋1,053餘種。

（二）為維護消費者及守法廠商之權益，綠建材標章核發後，每年均進行後市場產品之查核，查核比例為前一年度核發件數八分之一，截至10月共計完成12件產品後市場查核。

（三）為推廣綠建材，辦理2場次「2011綠建材標章制度講習會」、1場次「再生綠建材示範推廣說明會」、1場次「2011綠建材評定審查精進講習會」，並配合「2011台灣國際綠色產業展」展出綠建材標章制度。

三、推動住宅性能評估制度（內政部建築研究所）

辦理住宅性能評估制度推動計畫之試辦工作，期使社會大眾對住宅性能評估有較深之認識，並已完成「遠雄新莊海德公園」、「遠雄新莊中央公園」及「輔仁大學宿舍」等新建建案試辦、試評推廣，共計500戶；另有關既有住宅性能評估項目及內容探討，計完成25件試評工作。

四、推動無障礙住宅評選（內政部建築研究所）

為推動無障礙住宅，於本年度擴大辦理無障礙（友善）住宅評選，其成果包括：

（一）以志願性評鑑方式，鼓勵民間業界共同追求優質無障礙之友善住宅環境。

（二）協助民眾清楚辨識哪些建築物較為安全便利，適合身體機能較為退化的高齡長者或行動不便者使用。

（三）評選計6件獲得「特優友善住宅」，19件獲得「友善住宅」。

五、推動建築耐震標章評定（內政部建築研究所）

耐震標章之認證強調結構設計系統合理性與施工可行性，同時要求申請案落實特別監督制度，以提昇建築物結構耐震安全與施工品質，讓施工能符合設計之要求，100年度成果包括：

（一）總計諮詢案23件，8件為新申請個案，其中7件已通過耐震設計標章，取得耐震標章候選資格。截至目前共有8件歷經施工查證與審核，通過耐震標章之評定。

（二）完成13場設計會議、10次施工會議與42餘次工地現場查證。

（三）在重點推動上：完成「耐震標章成果認證手冊」宣導、「經濟日報、財訊雙週刊及台北捷運報UPAPER系列報導」、「行政院都市更新產業行動計畫老舊建築物標章認證容積獎勵宣導」、「耐震設計標章授證典禮頒證與推廣」等活動。

六、推動城鄉永續發展（內政部營建署）

（一）建置完備之都市更新法令：為使都市更新條例更趨於嚴謹，以解決實務執行上之問題，簡化都市更新辦理程序，業配合檢討修正

都市更新條例部分條文完竣，並於100年8月15日及17日召開委員會審查。同時於100年8月10日發布施行「中央都市更新基金補助辦理自行實施更新辦法」並受理申請。

（二）民間都市更新案：自87年都市更新條例發布實施以來，民間申辦更新案件計904案，其中334案已核定公布實施。至100年10月底止，已輔導36案都市更新事業計畫（含權利變換計畫）核定實施，其中22案為維護整建計畫。

（三）政府為主都市更新案：自民國94年起已勘選180處都市更新示範地區，補助辦理先期規劃作業，計有130處都市更新示範計畫地區完成都市更新前置作業，其中由政府機關（構）實施或委託相關機關（構）刻正整合實施或招商投資者計有35處，其餘89處刻正辦理先期規劃、都市計畫變更、都市更新計畫擬訂等整合策劃作業。至100年下半年度止已有18處提報成果至內政部都市更新推動小組辦理成果審查作業。

（四）於北、中、南三區各辦理一場自主更新講習及社區工作坊會議，提昇民眾辦理自主更新的實務技巧。

（五）辦理都市更新講座、都市更新投資說明會、都市更新經驗交流研討會及都市更新推動及招商手冊講習會各1場。

（六）提高污水下水道普及率，以提昇國人公共衛生安全及生活品質，截至100年9月底止，污水下水道用戶接管普及率為28.51%，累計完成全國逾165萬戶之污水下水道用戶接管。

2.8 健康與福祉組

一、有效執行環境品質管理及監督（環保署）

為提升民眾生活環境品質，針對環境中之空氣、水、幅射等進行環境管理及監督，具體之成果如下：

（一）針對空氣中之戴奧辛監測發現，100年戴奧辛環境監測（統計至100年8月），平均濃度為0.044 pg I-TEQ / m^3，相較於99年平均濃度為0.051 pg I-TEQ / m^3，明顯降低，且所有監

「第一屆高齡友善城市國際研討會」，衛生署國民健康局邱局長、嘉義市黃市長與都柏林市長及各國際城市市長（或代表）合影。

測值皆遠低於日本環境戴奧辛空氣品質基準值0.6 pg I-TEQ／m^3。此外，99年全國戴奧辛排放量（排放至大氣）為58g I-TEQ，較基準年91年排放量327g I-TEQ大幅減量82%，顯示國內近年來戴奧辛管制具有相當之成效。

（二）在水管理稽查部分，督導地方環保機關執行100年度飲用水管理重點稽查管理計畫：總計抽驗自來水水源513場次、簡易自來水水源443場次、自來水水質8,979件、簡易自來水質222件；稽查公共場所飲用水設備維護管理5,491件、抽驗設備出水水質4,871件、抽驗自來水場207場次飲用水水質處理藥劑之不純物含量。

（三）為使民眾瞭解到環境中電磁波的來源，加強對日常生活所接觸的各類電磁波發射源有正確的認知，進而適度提高警覺，遠離風險及不必要的恐慌，環保署完成230處電磁波抽測工作（包含極低頻之變電所、高壓電塔及射頻之廣播電台、基地台等發射源），結果皆符合環境建議值，並配合各部會辦理相關宣導活動，持續加強非游離輻射風險溝通宣導。

（四）完成「敏感地區新設非游離輻射設施長期暴露預防措施作業規範」草案研擬及依據民眾參與專家代理機制成立「檢討非游離輻射環境建議值適切性」專家會議。

二、持續推動優良農產品（農委會）

農委會為持續推廣台灣農產品，除推動標章制度外，並針對相關產業進行輔導：

（一）推廣台灣名茶，鼓勵民眾多飲用台灣好茶，輔導台灣茶協會於4月7日起至6月底止舉辦2011「世界健康日．全民喝茶日」系列活動，並訂定4月7日「世界健康日．全民喝茶日」，宣導多多喝茶．健康多多。另為因應日本311震災，進口梨穗減少，擴大輔導國產供穗園70公頃，穩定供應量。

（二）截至100年11月17日止，農委會已輔導建置42處稻米產銷專業區；輔導專業區辦理栽培管理、安全用藥、合理化施肥及產銷履歷等講習訓練會共計156場次，農藥殘留抽檢219件（均合格）。輔導專業區、農會、產銷班等61個稻米生產單位（含7家有機米）之農民遵循稻米或有機米之「良好農業規範（TGAP）」並導入第三者驗證制度，通過產銷履歷驗證面積3,873公頃（含有機米307公頃）。

（三）在標章制度推動部分，持續推動 CAS 台灣優良農產品標章及吉園圃標章制度，至100年10月止，計有346家廠商之6,526項產品通過CAS 驗證，另公告制訂11項畜禽產品「臺灣良好農業規範（TGAP）」，輔導家畜業者依據TGAP規範改善生產作業，並落實家畜產銷履歷制度。

三、完善醫療品質及制度，建立健康活力社會（衛生署）

建立一個建康活力的社會必須有好的醫療品質及制度做為根本。為此，衛生署公告或修正多項醫療制度、辦理研討會及參與國際活動，包括：

（一）公告修正「醫事服務機構辦理預防保健服務注意事項」，補助經濟弱勢（低收入戶、中低收入、設籍山地離島偏遠地區）婦女1次乙型鏈球菌篩檢費用、辦理與生育保健相關之遺傳服務措施費用減免或補助、有關新生兒先天性代謝異常疾病篩檢均給予轉介診治及提供遺傳諮詢與照護等。

（二）推動「幼稚園／托兒所入學幼童預防接種紀錄檢查及追蹤補種作業計畫」，提早掌握其預防接種實際狀況，並及時追蹤未完成接種幼童完成接種，提升幼童群體免疫力。

（三）舉行「癌症篩檢（診療）標竿學習研討會」、「癌症照護品質與評鑑國際研討會」、「癌症防治績優醫院頒獎典禮暨經驗交流研討會」等。

（四）配合重陽節及國際老人節，辦理『健康100全國阿公阿嬤動起來—全國總決賽』活動，展現青春活力與快樂健康。

（五）率領嘉義市、桃園縣與專家學者等，參加WHO高齡友善城市全球網絡、國際長青聯盟及愛爾蘭高齡友善城市計畫在愛爾蘭都柏林舉辦之「第一屆高齡友善城市國際研討會」，交流如何建構高齡友善城市及研議全球網絡未來的運作，並與42個國際城市共同簽署承諾支持高齡友善城市之都柏林宣言，意義重大。

四、保障扶助弱勢，落實全民照顧（內政部）

（一）制定「幼兒教育及照顧法」，經總統於100年6月29日公布全文60條，並自101年1月1日施行，本法整合相關教保權益事項，落實幼托整合政策。

（二）修正「馬上關懷急難救助作業要點」第五點附表二，包括：1. 將救助對象之負擔家庭主要生計者之認定條件，由收入負擔家庭生活二分之一以上，放寬為三分之一以上，並增列家戶之經濟戶長及雖無收入但實際操持家計者（每一家戶以一人為限）等為負擔家庭主要生計者。2. 將負擔家庭主要生計者之戶內人口每人加計五千元救助金之範圍，增列懷胎期間經醫師診斷不宜工作婦女。

（三）為提升對於弱勢民眾之保障，修正

「健康100全國阿公阿嬤動起來」全國總決賽，參與隊伍表演。

「國民年金法」部分條文，修正重點包括新增生育給付、放寬納保範圍、放寬老年基本保證年金領取條件及原住民給付領取條件、修正保費之計收及年資計算方式，以及有條件排除配偶連帶罰鍰裁處規定，讓全民均能享有老年基本經濟安全保障。

（四）落實全民照顧之理念，修訂「社會救助法」，放寬貧窮線及資格審核的標準，並提供「中低收入戶」健保保費補助1／2，以及子女就讀高中（職）以上學校的學雜費減免等福利，新制之推動，可照顧更多弱勢民眾。

2.9 教育與宣導組

一、增進全民永續發展知識與認知、提升公民環境素養

（一）為使學生認識及學習永續發展相關議題，依據不同教育階段發展相關課程或計畫，如：1. 教育部補助大專校院開設29堂永續發展通識課程；2. 教育部高中課程21個學科中心蒐整研發環境教育及永續發展等教學資源；3. 教育部推動「環境學習中心校外教學推廣計畫」，鼓勵國中小學生至各中心進行校外教學；4. 教育部推廣「環境變遷與永續發展」網站及教材，提供教學經驗分享與成果交流機會；5. 內政部補助民間團體辦理長青學苑，傳達永續發展知識與環保意識，提昇老人環境素養，100年度補助長青學苑400所，計有5萬人次受益。

（二）為增進民眾了解生態環境、水資源及節能減碳的重要性，由環保署舉辦「森森不息 水水台灣」環境日活動及「低碳調適綠生活 牽手減災迎未來」國際減災日嘉年華活動、國科會舉辦「低碳台灣．高瞻未來－你能．我也能」特展活動。此外，國科會《科學發展》月刊第460期【專題報導】，介紹與「綠建築」相關資訊，讓讀者了解其特色和重要性，激發社會大眾對永續議題的關注。

（三）為鼓勵企業發行企業社會責任（CSR）報告書及秉持誠信經營理念，經濟

部工業局發行「CSR報告書撰寫指引」及「台灣企業報告書發行現況與優質案例介紹」700本；彙編「台灣企業誠信經營故事專輯」1,000本。

二、整合政府、民間、企業及學校資源，推動永續發展

（一）環保署辦理「清淨家園全民運動計畫」及「營造永續優質環境衛生計畫」，結合綠網、鄉鎮市區長及環保署（局）等單位，約輔導建置3萬個政府類型部落格；推動「學生參與居家至學校環境巡檢照顧計畫」，引導學生關懷學校及居家周遭生活環境，進行環境巡檢、通報及清理。

（二）內政部推動「社區規劃師駐地輔導計畫」，核定補助17縣市政府計畫組成顧問團，藉由近生態手法自力改善社區生活環境，以營造人與環境共生之優質生活環境。

（三）教育部辦理「100年度全國環境教育政策執行方針研討會」及補助22縣市政府辦理「環境教育輔導小組」計畫，透過專題講座及資源整合，規劃兼具國際性及在地性之環境教育執行計畫與策略。

三、強化社教館所與大眾媒體，宣導永續發展與環保議題

（一）新聞局與國家地理頻道合作攝製「偉大工程巡禮：台灣環生方舟」紀錄片，介紹台灣環保建築科技，並協助環保署等機關運用4家無線電視台、原住民台及客家電視台公益時段播出「活化淡水河」等19支宣導短片，另於正聲廣播公司等14家電台製作「節能減碳」、「節約用水」單元，宣導節能減碳觀念。

（二）為使台灣國家公園資源永續留存，內政部完成「100年國家公園數位典藏計畫」數位化檔案數量1,379,890MB、52位專家影音訪談、100分鐘珍貴影音及新聞資料。

（三）經濟部水利署製作節約用水12分鐘宣導影片、「氣候變遷明天過後」及「2884毫米」等2片8分鐘宣導影片、30秒宣導短片、廣播及平面廣告、各式文宣品，透過相關媒體通路或舉辦活動宣導水資源永續發展理念。

四、推動永續發展教育相關研究與國際合作

（一）國科會補助永續發展教育相關研究，包括：「永續校園計畫提升國小師生永續素養之研究」、「支持社區永續發展之自然及環境教育資源設施的發展研究整合型計畫」、「全球暖化的經濟價值設定與經濟學概念融入環境教育之研究」、「師資培育環境教育課程設計與評量」、「建構新世紀幼稚園教師永續環境教育專業能力指標之研究」等。

（二）教育部為鼓勵政府機關、大專校院、民間團體或基金會辦理環境教育相關活動，共補助荒野保護協會等單位辦理2場次研討會及4場次國際性研討會。

馬總統與國科會李主委一同與啟聰學生參與特展活動。

由教育部吳次長頒發能源科技創意競賽大專組金牌獎。

第三章

2010年永續發展指標評量結果

永續發展為國人關注的議題，為使各界能有一客觀檢視我國永續發展推動成效的依據，永續會於民國91年參照聯合國1996年公布之第一版永續指標系統，進行我國永續發展指標之研擬，並於92年5月完成我國永續指標系統之建置。此外，並每年公布指標評量結果於永續會網站（詳圖3-1），供各界參考利用。（網址：http://sta.epa.gov.tw/nsdn/CH/DEVELOPMENT/INDEX.HTM）

聯合國於2007年10月公布「第三版永續發展指標系統」，為與國際趨勢接軌，永續會於97年12月決議修正我國「永續發展指標」。經多次研討與座談，於98年12月31日永續會第29次工作會議中，討論通過我國第二版「永續發展指標」。

第二版「永續發展指標」包含12個面向、41個議題（詳表3-1）及86項指標，較第一版永續發展指標內容更為廣泛。99年永續發展指標評量結果，請至永續會網站參考下載。

表 3-1 第二版永續發展指標之面向與議題

面 向	議 題
環境	空氣、水質、廢棄物、環境管理
節能減碳	溫室氣體、能源使用、節約能源
國土資源	土地、森林、海岸、水資源、天然災害
生物多樣性	遺傳、物種、陸域生態、海域生態
生產	物料使用、清潔生產、農業、漁業、勞動、總體經濟績效、公共財政
生活	用水、交通、綠色消費
科技	研發、資通訊
城鄉文化	文化傳承、社區、城市
健康	醫療照顧、營養、健康風險
福祉	貧困、收入均衡性、社會福利
治理	犯罪、教育
參與	國際參與、公民參與

圖3-1
永續發展指標資訊管理系統網頁。

第四章

100年國家永續發展獎

教育永續發展獎

新北市八里區米倉國小

位於新北市八里區的米倉國小於民國11年成立，座落於大坌坑及十三行文化等文化資產及觀音山自然生態區域，依山傍水，如此得天獨厚的教學條件，90年來一直以培育「健康、感恩、樂群、上進」的學生為教育願景及教育八里學子。近年來，秉持讓學校成為「孩子快樂成長的樂園，教師專業發展的園地，社區總體營造的中心」目標，利用學校空間、社區資源，並結合家鄉特色發展各項學習活動，讓學校成為社區重要的學習中心及傳承文化的樞紐。

為了讓學校教育走向永續發展，透過空間管理、永續發展教學、生活環保實物、人文關懷及社區參與等各個層面，將學校的教育內容、學生學習與空間資源等融合社區文化資產，發展具備多元化、在地化、延展化、永續化之教育目的和價值。

空間活化再利用

建立校園環境管理制度並檢視校園地理環境，結合觀音山自然生態，規劃、設計環保校園及環境綠化、美化。另分析空間使用頻率與

米倉國小開心農場。

❶ 結合社區資源，讓學生體驗家鄉產業－竹筍採摘過程。

❷ 水生植物池呈現的校園內溼地生 態，提供學生自然探索的學習場域。

❸ 就地取材，以永續經營的環保工法回歸自然。

最大效益，建置各館舍，並結合八里打石業與生態資源，建置石雕區、植栽區、觀察區、體驗區、探索區及益智區等教學活動場域，提供永續自力學習空間。

米倉國小為推動永續教學，以本土探索為起點，關懷生態環境為依歸，致力發展本位課程，並鼓勵教師編訂永續家園專書，利用環保輔助教材或學習單融入教學，例如利用風力發電機說明再生能源、建構植物學習步道、水生植物池、米倉樹屋區、教學農園，並辦理與環境教育相關之戶外教學、參觀講習、研討會、環保競賽等活動，以達到發展永續教學之目的。

生活做環保

落實環保應從生活做起的觀念，推行垃圾源頭減量、資源回收再利用（包括參考書、制服、回收櫥櫃、一般用品、落葉及廚餘、漂流木、廢棄木頭電線桿等）、辦公室節能E化作業等。同時推動綠色消費、綠色交通並開發再生能源、雨水回收再利用及使用省水省電器材。

結合人文及社區參與

為了建立校園環境教育圖書、刊物及資訊系統，編印米倉環教圖書及建置「永續校園網」，運用學校資源並結合當地資源，不定期進行社區淨灘活動、執行人文生態紀錄踏查及捐贈二手圖書及玩具等。此外亦結合教學創意與社區資源，如利用社區場館與生態園、獨木舟及風帆之海洋教育、淡水河潮間帶之溼地教育、觀音山走讀、八里鄉土教育等，營造出學校的多元特色教學。

「玩中學、學中做」的環保教學

藉由拓展體驗學習之教育價值，讓每位學生在快樂沒有壓力的環境中適性成長，建立學生學習的自信心。藉由從環境營造發揮潛移默化的力量，透過校園中建置的各種自然遊戲空間，使校園裡的孩子隨時可以親山近水，鍛鍊體魄，頤養性情，體會人與自然共存的道理，繼而尊重生命，珍愛地球。

米倉國小在長期努力經營下，結合了八里地區產業文化及人文遺產，逐步規劃為八里左岸人文、自然、環境及教育的學習點，提供學習、參觀與體驗場所；並且推動學校本位特色課程與校際交流活動，形塑出多元課程風貌與教學型態，增益學生學習機會與管道；利用學校閒置空間活化，及提供學校資源與社區民眾分享平台，促使學校轉型為社區學習中心；活絡運用教育方法及過程，以培育學生了解人與環境之共存關係，增進改善或應對環境所需之知識、態度、技能及價值觀。

台中市私立曉明女子高級中學

曉明女中於民國52年由聖母聖心修女會所創辦，當時因女子受教育的機會不多，為培育人才及提升女性地位，克服萬難，以僅有資金購置位於台中市郊大雅路旁的一塊稻田，籌建女子中學之用。早在民國74年國內環保意識才剛萌芽之際，曉明女中即在「垃圾先生」成道學老師的引領下，積極教導學生垃圾分類、資源回收，全面展開環境教育。近年來，更著力於教導孩子們關懷生態、力行節能減碳，進一步倡導簡樸生活，內化「知福」、「惜福」的生命態度，使生活環保與心靈環保的教育工作更臻完善。

校園生態解說：教的用心，學的認真。

綠色生態校園

兼具宗教氛圍與環境關懷的校園景觀設計，常使初次步入曉園的人留下深刻印象。一樓一園的規畫，栽種多樣性的花木，呈現校園四季之美。生態池、蜜源區等生態教學專區的規畫，幫助師生觀察、認識校園常見的鳥類、昆蟲及植物。翩翩起舞的蝶影、葉片上爬行的蟲兒、餵食寶寶的白頭翁、成群嬉戲的麻雀、聲聲入耳的蟲鳴鳥叫，這些曉園的嬌客，讓孩子們得到另一種心靈的滋潤。曉明女中為營造在地多樣性校園生態空間，採行與環境共生共利的綠建築觀念，建構及修繕校園場所與設施以建立節約資源與能源、健康、安全、零污染的校園環境。除此之外，校內還設置空中花園、生態水池、蝴蝶生態園區、蘭嶼植物區、多層次植栽等符合生態環保的設施。

多元化環境教育

以結合地方文化與生態特色，發展學校永續發展教育本位課程，進行生活具體經驗的教學活動，同時與學術及民間團體合作辦理校長、行政及教師多元化永續教育專業成長活動，成立永續教育專業成長團體。為落實多元的環境教育，將台灣環境議題、全球環境變遷與永續

兼具宗教氛圍與環境關懷的校園景觀設計。

發展議題，如生物多樣性、生態保育、環境污染與環境承載、氣候變遷、京都議定書、再生能源、非核家園、全球化、產業文化、綠色消費、基因改造、綠色生產、環境正義、價值教育…等融入教學活動。透過多元的教學活動，培養師生具備永續發展之觀念。

節能減碳的環保生活

節能減碳為學校推動環保工作的重要一環，為此曉明女中進行全校整體用電、用水評估，改用省能照明燈具及可充式電池等，以實踐各場所節約用電、用水之具體成效，同時成立「綠色生活研習社」，讓社員透過學習、服務與研究，實踐並推廣低碳節能的綠色生活。

此外配合宣導珍惜水資源的觀念，落實雨水、中水之回收及廢水淨化再利用，並加裝省水器材以節約用水、推動教科書、制服及學用品回收再利用，並落實校園垃圾減量、資源回收。另在五年前，配合校園禁用免洗餐具的政策，開辦午餐團膳、停辦福利社、撤除自動販賣機，每年減少紙餐具的用量約6,000公斤，再配合週五蔬食日的新作法，讓孩子吃得健康又環保。

關心全球及社區議題—「環保不是口號」

每年舉辦「為世界祈福禮」，針對國際事件及全球環境議題，結合相關學科老師現場教學，並透過省思、祈禱等禮儀，提醒孩子們重視全球環境生態的相互依存關係，此外，曉明女中持續參與解決環境問題，加強社區環保意識，發展社區共同願景，同時讓環保概念內化到生活當中，也一直是其推動環境教育的重要課題。在這樣的理念前提之下，學校不但健全了與家庭及社區的互助系統，培養學生健康快樂、感恩惜福、尊重包容、正向積極的生活價值觀。同時關懷社區弱勢族群，協助社會弱勢團體，如獨居老人居家清潔服務、物品募集捐贈等，並結合週邊社區資源、發展地方特色，成為社區推動永續發展之教育基地，促進地方產業文化永續發展。

❶ 歲末為獨居老人打掃：環保教育融入人文關懷。

❷ 污水處理廠：學習水資源再利用的重點站。

宜蘭縣立慈心華德福教育實驗國民中小學

慈心華德福學校以健康、平衡的方式，追求孩子在意志、情感及思考等三個層面能力的全方位成長。富創造性的藝術、手工、肢體律動及音樂等課程，平衡厚實而整體的語文、數學、自然與社會課程，相互間密切結合，以滋養整個孩子——頭腦、心性與四肢的均衡發展。期許孩子充份了解自己的潛能、孕育自由的精神，並在將來以正向的生命態度，進入世界，貢獻自己的才能。

理念永續及價值永續

華德福教育理念是追求人與自己、人與社群、人與土地、以及人與天地的健康平衡發展，引領孩子進入健康循環的永續發展道路。為此常態辦理華德福教育推廣課程、師資養成課程、家長成長課程、家長讀書會、家長工作

以教育為主體的有機體綠建築。

推動在地食材與友善耕作的大宅院友善市集。

坊等，以正視教育本質，從反思生命成長歷程，重新認識世界。

教學永續及校園永續

教學不用制式課本，而是根植於生命的韻律節奏的吸吸特質，以故事及圖像為主軸，經由教師內化及創意產出，讓孩子經歷感受吸收、睡眠消化、反芻與表現等健康學習及樂於學習的永續循環。從十一年前開始，華德福即持續參與教育部永續校園計畫，推動（1）室內聲光熱與節能環境改善；（2）多層次生態綠化的親和性校園；（3）自然淨化水循環人工濕地；（4）營造本土多樣性校園生態及透水性的校園空間。十餘年來，整合宜蘭縣內十餘所中小學，推廣永續校園理念與計畫。

建築永續及在地永續

以自然為師，讓建築具有生命感、具有超越空間的力量等理念，經師生參與規劃設計，完成興建增班教室及學生活動中心等兩棟教育性有機體綠建築，為台灣校園建築注入新的永續發展樣貌。同時基於在地、本土、自然、環保等理念，以家庭、校園及社群結合在地小農，實踐友善耕作與綠色消費等理念，形成「大宅院友善市集」，讓在地農村永續發展。學有專精的教師及家長投入社區總體營造工作，編輯人文資源地圖，並推行在地文化、環境課程及學生社區公共服務等，活化社區發展。

社群永續及幸福永續

由家長會組成十二個家長工作小組，參與學校教育事務，並營造超越空間與親屬關係的家校社群新文化，跨越現代社會的藩籬，重建人與人的信任與合作關係。眾多家長參與本校後，經歷生命成長的喜悅，養兒育女成為家庭幸福泉源，而不是沉重負擔，儘管相隔多年，而生育第二胎、第三胎。甚至有多戶家庭養育第四胎，逆轉全國少子化趨勢。

衣食永續及城鄉永續

長期推廣天然材質的樸素衣著，與自然健康的飲食。午餐連續多年採用有機、自然的食材與簡單料理方式，提供學童潔淨的活力午餐，節能減碳並支持友善耕作的永續發展。以學校做為公民社會的學習場域，注入領銜生活的藝術，包括在地食材友善市集、生機互動農業、有機生態社區等，吸引大量教育移民及外縣市民眾參觀，形成一波創造城鄉翻轉的教育產業。

打造環教新思維

華德福長期以來，以學校做為健康社群的種籽，藉由親師生與社區共同參與教育事務，重建社會意識的學校圖像，讓學校成為培養公民意識的學習場域。教師團隊重視教育主體性，藉由學校教育重新凝聚人與人日漸疏離的互動關係，跨越現代社會的藩籬，再造社群互動的新文化。未來華德福期許教育成為領銜生活的藝術，搭起教育改革與社會進步的橋樑，成為社會正向發展的力量與希望，學校教育為社會注入新思維、扮演城鄉再造的角色，並透過教育的實踐耕耘，根植在地自然生態與社會人文風土，造就城鄉翻轉的地方教育產業。

學童自製竹筏，體驗溼地。

企業永續發展獎

興采實業股份有限公司

興采實業自西元1989年成立以來，過去以機能性紡織品為行銷主軸，近年因體認地球環境氣候急劇變遷對於人類生存環境之影響，意識地球只有一個，須共同努力維護，遂斥資數億元創立專業前瞻的研發中心及高精密環保染整研發中心，將產品主軸轉為推行環保機能性紡織品為主，成為台灣環保機能性紡織品極具代表性的供應廠商，並以成為國際服飾品牌的環保機能紡織品的永久供應商而努力。近年來不斷獲得國家肯定，除連續兩年獲得台灣精品獎，今年也獲得建國百年台灣百大品牌大獎之殊榮，為此更加深興采實業對於永續環保經營之信念。

環保理念

興采實業一直以來所追求的目標不僅力求滿足人們對於身上衣物的功能需求，更專注環境保育的使命，與創造地球共存生態。本著以創新因應時代改變、以新技術支援創新的理念，建立機能性紡織品品牌及環保形象；以企業形象建立優質產品品牌，致力發展高機能、高值化且環保的機能性布料，響應EHS（Environment、Health、Safety）理念，並向國際社會介紹台灣機能性紡織發展優勢，提升品牌知名度。

持續創新研發永續環保

興采實采耗費四年研發出S.Café®環保科技咖啡紗，結合廢棄咖啡渣與回收寶特瓶所開發的產品— S.Café®環保科技咖啡紗以及ICE—CAFÉ節能環保冰咖啡紗，除使用環保材料製作外，因增添除臭效果，可降低使用洗衣機之水洗次數，減少能源損耗。同時也通過系列再生材質驗證—全球再生材質標準（Global Recycle Standard, GRS）以及德國萊因（TUV）再生材質驗證。此創新產品於2011年一舉獲得美國匹茲堡國際發明展與德國紐倫堡國際發明金獎的雙重肯定。公司每年投入超過營業額的3.5%於機能紡織品的研究，盼藉由積極創新與研發不斷提昇台灣紡織產業創新能量，提升競爭力，同時維持與國際客戶間的長久合作關係。

全環保製程開發備受肯定

2007年投入2.5億元資金，建構高精密環保

獲台北市政府表揚一日蔬食。

興采福田插秧樂。

IFFIT實習生結業。

獲頒遠見雜誌環境英雄獎。

染整研發中心，於設廠之初即導入環保工程建設，從能源的選擇到染料選擇皆符合環保設計之要求並取得國際瑞士bluesign®環保認證。

1.利用天然氣做為廠內熱源，降低傳統染整產業所使用的重油所產生的溫室氣體排放。

2.於加熱裝置加設熱回收系統，可有效回收40%以上能源，減少能源散失。

3.染料的選擇：採用對人體及環境無害的染料，選用通過bluesign®環保認證染料。

除不斷進行製程環保改善外，更以開發降低能源耗費及減少碳足跡排放之產品為研發宗旨，以保護全球環境為企業使命

積極培育人才放眼國際

2003年成立興采學院，是興采實業內化的教育訓練機制，課程內容包羅萬象，並由公司各部門主管及外部專家擔任講師，依不同職級直接透過網路學習不同課程，通過檢定後取得學分，作為往後升職之依據，以鼓勵員工不斷進步學習。除此外更注重員工身心靈發展，成立健身中心及鼓勵舉辦各類社團活動。

近年來與國內各大專院校有建教合作計畫，每年也提供約4～6名暑期工讀機會，讓紡織相關科系學生至興采實業實習。自2011年起與IFFTI（國際流行設計與科技聯盟）合作，提供該會員之國際學生來台實習機會，從學校培育創新人才，有益青年學子生涯之發展。

節能減碳 從心出發

除了利用研發設計能力改善產品及製程節能減碳又環保外，更推動公司同仁參與寶特瓶與咖啡渣回收，大力宣導使用環保杯筷與食蔬，並作好垃圾分類降低垃圾產出，以增加資源回收，推動環保從心出發的理念。為支持台灣在地稻農，於2011年在宜蘭冬山鄉認養0.5公頃稻田，以具體行動表達對這片土地的關懷。

展望未來興采實業將持續對環境友善的堅持，開發多樣 節能環保機能性紡織品提供消費者最舒適、最有價值的穿著藝術及生活哲學，將環保紡織品推廣至全球，並以熱情、誠信、創新、服務、品質和回饋的核心價值及信念，來實踐成為全球環保機能性紡織品的領導品牌商，同時以追求股東滿意、員工滿足，企業核心價值與信念來達成公司持續成長永續經營之目標。

聯華電子股份有限公司

聯華電子（聯電）成立於1980年，為世界晶圓專工技術領導者，擁有10 座晶圓廠及遍佈全球的營運據點。30年來聯電以其靈活的經營策略、尖端的製程技術、創新的研發動能，以及客戶導向與綠色產品服務能力，為公司奠定世界晶圓專工領導者地位，更為台灣在半導體產業建立領先全球的競爭優勢。聯電擁有半導體業界為數最多的專利，持續推出的先進製程技術，涵蓋電子工業的每一應用領域。聯電是第一家導入銅製程產出晶圓、生產12吋晶圓、產出業界第一個65奈米製程晶片予客戶的公司，同時也是第一家採用28奈米製程技術產出晶片的公司。

永續發展與社會責任的實踐是聯電朝向永續經營的核心精神。而做為全球半導體製造業領先者，不僅用心實踐自身的企業責任，亦致力於傳播永續力量，由企業本身、公司員工、員工家庭、到社會每一角落，促進永續社會的成形。2008 年起連續四年列名於道瓊永續性指數（DJSI） 之「世界指數」及「亞太指數」成分股，則是聯電永續競爭力，領先全球的最佳佐證。

聯華電子在永續發展的十大特色包括：

半導體業界首推企業社會責任委員會與CSR

聯電2008年成立企業社會責任委員會，由執行長擔任主任委員，定期檢討與持續改善以確保績效。並由執行長公告CSR願景：「創造以人為本、與環境共生、與社會共榮的全球性友善生態新價值」，設定公司在永續發展上之方向目標，以追求經濟、環境與社會的三贏。

穩健的財務結構・健全的公司治理

聯電財務體質健全，擁有高現金流量，低負債比，及良好成本控制計畫，在金融海嘯中得以領先業界復甦。2010年營運成果豐碩，全年出貨量及營收雙雙創下歷史新高，獲利率及股東權益報酬率亦為近年最佳水準。董事會中獨立及個人董事超過半數，並設有「審計委員會」、「 薪酬委員會」及 「資訊揭露委員

響應節能，裝設太陽能電板。

愛的故事行動劇團。

說故事志工團。

會」配合沙氏法案內部控制制度的推行，降低經理人道德風險，保障股東權益。

投入綠能產業・預約低碳永續未來

成立新事業發展中心，研發投資再生能源、太陽能及新世代LED節能照明等綠能產業。截至2010年投資事業資本額約新台幣128億。聯電以卓越的製造研發能力為後盾，對綠能技術的突破與應用帶來革命性的躍進。並間接促進低碳經濟之形成。

領先業界頒布氣候變遷政策

2010年領先業界頒布『氣候變遷政策』及『減碳333』計畫，不僅要成為低碳創新的倡議者、低碳解決方案的提供者，更要是低碳行動的實踐者，以實際減量計畫與行動宣告聯電對全球性碳風險作出回應，並積極承擔減碳責任，因此獲得遠見雜誌「環境英雄獎」的殊榮。

業界唯一碳/水足跡雙查證・邁入全面綠色產品時代

聯電的綠色產品造始於2003年起成為SONY Green Partner。此後於2006年領先業界完成有害物質管理系統，目前全公司禁用物質達40餘項，已可符合甚至超越歐盟RoHS指令。2009年、2010年更完成業界唯一產品碳/水足跡雙查證，並且通過第三類產品環境宣告，為客戶產出環保、無毒、低碳IC產品。

低碳夥伴結盟・邀集供應鏈共同擔負減碳責任

2008年起與供應商簽署企業社會責任宣言，承諾共同秉持『關心員工・重視環保・力行公益』的理念，承擔社會責任。現階段聚焦於「碳夥伴供應鏈」為主，以自身的溫室氣體管理與碳足跡盤查之基礎，帶領供應商完成碳足跡盤查，共同建構低碳供應鏈。

唯一歐盟綠色技術合作・消弭綠色貿易障礙

聯電參與歐盟第七期科研架構計畫（FP7），為國內第一家以正式成員身份參與EU—FP7之台灣電子業廠商。此計劃係與其他國家之產/學/研各界共同發展簡易碳足跡計算工具，促進碳足跡於中小企業應用之普及化，並將執行經驗導入歐盟，降低台灣廠商銷歐之綠色貿易障礙。

業界獨有・高科技專職消防隊

聯電於1999年成立聯電消防隊，擔負緊急應變的重責大任，消防隊配有精良的高科技救災裝備，如高效能化學消防車、紅外線熱顯像頭盔、化學堵漏模組及人員救命器…等，可以在第一時間迅速及安全的處理災害，將風險降至最低。除執行廠區救災外，亦參與政府機關各類大型演練及訓練，協助救災及應變技能推廣及許多園區及周邊社區的災害搶救，如：台電龍松變電站、同亨電子、力晶、建興、福國化工…等對外救災行動。

頒布氣候變遷政策。

為員工打造幸福健康職場

聯電視員工為重要夥伴，因此從建立適才適性的人才培育與職涯發展計畫、打造黃金健康職場、提供多元且具競爭力之薪酬，協助同仁創造兼顧工作與休閒的平衡生活。尤其在友善健康職場的打造，著重在安全、貼心、健康、凝聚、活力、文化等六面向，獲得2011年遠見雜誌企業社會責任獎健康職場類楷模獎的肯定。

播灑希望種子・深耕基礎教育

聯電以樂活理念來推動社會參與相關活動，2005年啟動「播灑希望種子計劃」迄今已投入1億2千萬，協助超過5,000名弱勢學童之課業輔導。2010年起擴大教育種子之面向，分別為希望種子、生命教育志工種子、閱讀種子、環保綠能種子及半導體種子，以企　業力量，為台灣基礎教育作出貢獻。

2011年再次獲得國家永續發展獎，且為第一個二度獲獎的企業，肯定了聯電於永續道路上的努力不懈與持續進步。聯電不僅是『晶圓專工的巨人』，更要成為『永續社會的推手』，除積極參與各項永續性倡議，更不吝惜將永續成果分享給其他企業、供應鏈夥伴、員工家庭及社會大眾，期望透過企業力量，讓永續思維深入社會每個角落。

台灣凸版國際彩光股份有限公司

台灣凸版國際彩光股份有限公司成立於2001年，為日本凸版印刷（TOPPAN PRINTING）於日本境外設立的第一座彩色濾光片製造工廠。2006年友達光電投資入股台灣凸版國際彩光，兩大世界級企業藉此成為最佳夥伴，雙方以緊密合作的經營態度與優越的技術服務持續展現亮麗和穩定的成長，讓台灣凸版國際彩光成為台灣首屈一指的彩色濾光片專業製造公司。

近年積極投入前瞻技術研發，同時與凸版印刷、友達集團進行技術參訪、交流等活動，研發成果包括多種面板塗布、真空濺鍍、膜厚控制、光罩設計與製作、色彩光阻調整與大面積圖案掌控等技術，是結合製造與技術研究能量所呈現出來的成果。同時藉由產學合作開發軟性鍍膜、PLED元件技術以及高階阻水氣膜製程技術研究等，希望藉由產學研究教學相長，深耕台灣技術、產業永續發展，期許公司除了能在彩色濾光片領域持續精進，並能開拓新市場強化永續經營的競爭力。

為公司的持續營運與環境的永續發展，將推動重點聚焦在技術研發、員工關係、環保節能與社會公益等面向，並展開各項的專案計畫。希望藉由規劃、執行與改善的過程，凝聚公司管理階層與所有員工的向心力與行動力，也反應在本業的經營績效上。其推動永續的實績包括：

從環境友善做起 減碳成效卓著

從2009年起推動溫室氣體盤查，以了解各階段流程產生的溫室氣體排放量，並以此為減量依據。2010年總經理親自召集綠色績效專案，以「環境友善」為起點，展開綠色創新、綠色採購、綠色運籌、綠色製造及綠色意識等構面檢視各項營運活動。具體數據為2010年溫室氣體之單位面積排放量較2009年減少30%、2010年用水量之單位面積耗用量較2009年減少42%，且於2010年底，成為全台首家同步進行

碳足跡、水足跡查證的企業，成為推動綠色相關專案之重要里程碑。

員工在地化、推動文化教育公益活動

2010年業績較2009年成長超過40%，中國客戶拓展得宜，外銷營業額更大幅成長。員工關係方面，在地員工比例佔總人數之83%，且落實人才培訓，規劃專業職能、軟性技能與階層別之教育訓練，訓練經費逐年提昇。設有實體信箱與電子化意見信箱，同時定期舉辦溝通季會與年度員工滿意度調查，以暢通勞資溝通管道。公司內亦不定期舉辦健康講座、體健活動，以促進員工之健康。

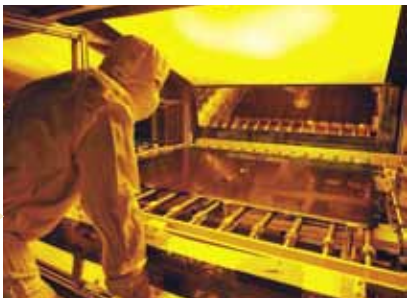
凸版國小畢業典禮。

該公司台南廠所在之台南科工區緊鄰於台江國家公園旁，公司以此特殊之天然環境資源推動永續發展，定期舉辦淨灘與黑面琵鷺清淨家園活動，還有國小生態、環保之營隊，以在地化及互動性之理念，與廠區附近之政府單位、學校及社團共同協力與合作，推動文化與教育之公益活動，而當中更以虛擬之「凸版國小」教育公益活動為主要特色。

邁向全球頂尖綠色創新技術企業

台灣凸版以成為彩色濾光片產業全球頂尖之綠色創新技術企業自許，提供給客戶多樣化的產品應用與技術。配合TFT—LCD高色彩飽和對比、高解析度等創新技術需求開發利基產品，同時透過高開口率與玻璃薄化技術之成功開發，除減少玻璃原料使用量、降低廢料處理成本，亦可減少面板在終端產品使用時之能源耗

新企業識別系統揭示活動。



彩色濾光片生產線。

用，達到省電目的。此外，新產品的研發以軟性功能膜為方向，開發出可應用在不只適用於面板產業之相關產品，還可應用在一般生活上之膜材，達到科技為人所用之境界。為提昇生產效率，整合工廠自動化系統，提供生產線即時且正確之資訊、減少人工表單作業，亦藉由即時資訊的回饋，立即處理生產異常之情形。

以關懷社會為核心價值 持續推動永續發展

秉持以「關懷社會」作為其經營的核心價值之一，持續投入永續發展的推動，同時亦本善盡社會責任的初衷，在這個充滿挑戰的環境中繼續努力，加強與各利害關係人的對話與合作，持續追求成長與改善、促進企業與環境的永續發展，為生活增添色彩。

社團永續發展獎

財團法人喜憨兒社會福利基金會

世界人口有2%的折翼天使，生下來就失去尊嚴和喜悅，以往被隱藏在社會幽暗角落、暗自悲泣，世人對這群社會邊緣人給予同情、憐憫，但不知如何幫助他們走出人生陰霾，世間的美好，也因這群心智障礙者的生命尊嚴與喜悅的斷層而無法永續。1995年一群家長在高雄為了憨兒們的終生教育與終生照顧，成立喜憨兒基金會，使命即是為憨兒創造生命的尊嚴與喜悅，使憨兒由工作中創造價值，回歸社會主流，彌補了生命的斷層，並得到永續的照顧。

生命價值的永續

喜憨兒基金會設置有27處烘焙屋、餐廳和中央工場，訓練與扶持憨兒就業，憨兒從工作中開創出社會價值與經濟價值，使他們從資源的消耗者變成資源的創造者；從被服務者變成服務者，消失的生命價值獲得重生復活，使美好圓滿的人生得以永續而不缺角。憨兒也從工作中得到生命的尊嚴與喜悅。

生命教育的永續

喜憨兒自力更生，成功典範被教育部採用納

小學課本—喜憨兒的春天。

入國小五、六年級的國語教材，計有南一出版社的「阿國表哥」及康軒書局的「喜憨兒的春天」，教導下一代能自立自強，連喜憨兒都做得到！生命不會因殘缺而失去永續，逆勢成長的花朵反而更燦爛。

助人為樂的永續

體會到當初成立時資源欠缺的困難，如今得以成長茁壯，更應努力反哺社會，樂於助人，了解偏遠山區部落學校「15公里內沒有一家麵包店」，許多孩子三餐不繼，2008年底發起「送愛到部落」活動，一份愛心，兩份感動，捐出由喜憨兒製作的餐盒給部落兒童，更同時幫助了喜憨兒與偏鄉學童。這項活動延續至今，都是由台灣唯一由身障兒組成的喜憨兒童軍團，擔綱此一任務。

喜憨兒從事烘焙工作。

環境學習的永續

喜憨兒基金會為了憨兒的終生照顧開設了憨喜農場與綠野香蹤咖啡屋，農場在旗山地區以「感覺統合」為主題種植有關視、聽、嗅、味、觸覺之植栽或造景，以刺激增進憨兒的感覺功能，並以香草為主要重點作物，供給基金會各烘焙與餐廳所需的香料。綠野香蹤原為高市府的土地，提供基金會承租使用，有廣大綠地可辦中、大型活動。2009年憨喜農場與綠野香蹤雙雙獲教育部選為「環境學習中心」，成為校外活動推廣場地之一。

當家作主的永續

喜憨兒可以當家作主？這是多麼不可思議的一件事，先天功能不足的喜憨兒經過訓練，也可以從羞怯膽小到自信滿滿，從什麼都不會到事事搶著做；從馬斯洛層級的最底層到自我實現；從跟班、助手到當家作主。這些現象在喜憨兒基金會一一展現，新竹的「建中模式」開啟了喜憨兒自我實現的首頁，也因此2011年獲得勞委會頒發「職務再設計」首獎；高雄創意料理店，五位憨兒分別負責蒸、煮、炸、烤、壽司的主廚，認真的態度令人動容，如今整個基金會已經訓練憨兒們取得23張餐飲、烘焙及服務的執照，化不可能為可能，使得當家作主能持久永續。

美夢成真的永續

喜憨兒基金會改造了憨兒生命，從人生四部曲生、老、病、苦做全方位的照顧，「生」：從烘焙屋、社區家園、喜憨兒學院等，至今共有44處據點照顧並安置500餘位憨兒；「老」：當老憨兒雙重老化的核心問題浮現，照顧百名憨兒的天鵝園老憨兒照顧系統也正開啟；「病」、「苦」：也是基金會亟需面對的問題，2011年完成的高雄健康中心，包括體能、知覺、多感官設施都用來增進憨兒的健康，憨兒醫療系統正在建構中，期許讓憨兒全方位照顧的美夢終得成真，也點燃照亮憨兒照顧的一盞明燈，恰如《維摩詰經》菩薩品第四所提到：「一燈點亮百千燈，使冥者皆明，明終不盡。」

送愛到部落活動。

擔任愛心童子軍。

永續發展行動計畫執行績優獎

南部科學工業園區管理局：永續環境綠色園區推動計畫

距今約4,800年前，從大坌坑文化開始，在台南園區這片蘊藏巨大力量的富饒土地，滋養了辛勤的歷代先民們；4,800年後的今日，南部科學工業園區正開創嶄新的高科技文化，科學園區的推動同時也肩負著歷史傳承的使命，南科反思園區經營與環境的關係，因此孕育而生「永續環境綠色園區推動計畫」。

園區開發融入在地文化。

低碳綠色科學園區—建構綠能科技產業聚落

其成果包括：

（一）99年度園區綠能產業營業額達482億，佔全國綠能產業總產值20%。

（二）開辦綠能產業課程，全面推動專業人才培訓，總授課時數已達442小時，完成培訓1,341人次。

（三）推動節水輔導，總節水量為2,524萬噸/年，相當南化水庫有效蓄水容量之1/4。

（四）透過園區自主節能減碳作為，預估減碳量為11,066公噸/年，相當於28.5座大安森林公園吸碳量。

（五）開辦園區巡迴接駁巴士，結合台鐵南科站完成鐵公路無縫接軌。至100年5月底，累計搭乘人數已突破18萬人次，預估減碳量為449公噸，相當於1.2座大安森林公園吸碳量。

（六）園區內取得EEWH「鑽石級」綠建築標章共5件，佔全國約30%，鑽石級綠建築認證密度居全國之冠。

（七）園區內取得國際規範綠色認證數共計32件。

永續健康科學園區—合理使用土地，打造永續科技產業園區

其成果包括：

（一）園區綠化面積比率達42.4%，遠高於一般工業區。

（二）建構完善蓄洪排水系統克服水患，通過八八風災考驗，減少園區內及區外鄰近地區損失約21億元。

（三）實施污染總量管制，並遵照環評承諾辦理開發行為，自90年起均無環評違規紀錄；園區環保設施100%符合法令規範，自94年起均無環保違規紀錄。。

（四）100年（至4月底止）廢棄物再利用率達82.5%，較96年成長13.5%；建置完善環境品質監控系統，確保環境品質維護良好。

（五）環境資訊揭露－完成全國第一本科學園區環境報告書，並榮獲「2010年台灣企業永續報告獎」。

（六）強化災害應變能力，建置「整合式災害風險應變機制」，榮獲行政院「第二屆政府服務品質獎」。

（七）執行流行病學調查及健康風險評估工作，確保園區開發不致影響周邊居民健康。

在地共生科學園區—推動在地文化與環境教育工作

其成果包括：

（一）保存在地文化，辦理完成老樹移植、創建地方信仰中心及保存現地遺址與文物。

（二）創造在地就業機會，園區就業人口數已達60,625人，在地從業人員約佔8成。

（三）有效降低職場災害，連續四年榮獲行政院勞委會勞動檢查機構績效考評甲等。

（四）建置網路資訊平台，包括「永續

LOHAS。綠色園區」、「南科植栽導覽系統」、「環境監測資料」及「公共藝術設置」等網頁資訊，方便民眾資訊取得，100年1月至6月超過51萬人次瀏覽。

（五）提供民眾充足園區資訊，製作「投資引進」、「經營成果」、「公共藝術」、「考古文物」、「地方文化」及「環境保護」等六大類文宣刊物。

（六）廣邀民眾參與園區活動，99年參與人數超過80,000人次。

（七）推動環境教育工作，含括中小學、大學及社會階層，99年超過2,000人次參與，樹立環境教育園區典範。

（八）善盡社會關懷與責任，99年度投入超過2.8億元辦理相關環境保護工作，並編列1087.5萬元補助地方機關及民間團體辦理各項工程、設施改善及敦親睦鄰等活動。自94年起至100年5月底止，敦親睦鄰回饋金共計約2,200萬元，協助地方發展；96年起成立台南園區河川巡守隊，發揮地方守望功能。

南科在各界的協助與支持下，憑藉著不斷的努力與創新，為台灣科學園區的永續經營寫下一篇豐碩的成果。展望未來，已訂下「產業聚落」、「永續環境綠色園區」及「文化藝術」三大發展方向，持續為園區發展而努力。期盼經由其所建立的綠色園區經營模式，能成為國內工業區開發的典範，工業區的經營能夠兼顧「經濟面」、「環境面」及「社會面」，讓「永續發展」不單單只是一句口號，而是能夠真正落實的行動。

推動環境教育。

經濟部標準檢驗局：建置危害化學物質測試平台，守護國人優質生活計畫

經濟部標準檢驗局為防止國內民生消費產品，被不當添加危害化學物質（如環境荷爾蒙物質等），影響消費者之安全及健康，更甚者使國家蒙受重大損失；另外為配合相關政策推行，積極建構商品安全防護網，以改善環境提升國民生活品質，確實達到環境永續發展之目標；為此提出「建置危害化學物質測試平台，守護國人優質生活」計畫，推行5項具體工作項目，展現杜絕不安全商品之上市販售，保護民眾生命財產安全，其計畫分項執行成果簡述如下：

制訂民生消費產品相關標準 維護使用商品安全

本計畫共完成109種國家標準：包含制修訂玩具、日常及嬰幼兒用品及紡織製品等相關國家標準，規範危害化學物質相關限量值之規定及產品品質要求。另外亦積極擴增民生消費相關商品為正字標記品目，其中「正字標記」係國內最早實施之產品驗證制度，用以落實保障消費者權益及生命安全。

強化消費性商品檢測 防制不安全商品

強化商品檢驗及驗證工作，防制不安全消費商品進入國內市場。另在消費商品市場監管成效上，每年規劃辦理市場購樣檢測專案計畫（99年共執行54項次），如羽絨製品、塑膠鞋、嬰兒用紗布巾、香品等項目，並執行市場檢查5萬3,068件，購樣檢驗6,536件，取樣檢驗1,638件；定期公布上述檢測結果提供消費者選

購商品資訊，亦赴學校、展覽場、大賣場辦理宣導（99年共計663場次），教導消費者如何選購檢驗合格商品，避免購買不合格之劣質商品，以保障民眾生命安全及消費權益。

義務監視員及商品安全資訊網監管消費商品市場

（一）義務監視員：

為擴大民眾參與協助發現商品是否含危害化學物質，責成「義務監視員」於第一線市場商品檢查時，反映市售標示不全或品質不良商品。

（二）進口異常商品聯合稽核大隊：

成立跨部會「進口異常商品聯合稽核大隊」，查緝進口異常商品，設立臺北、臺中及高雄等七個分隊，會同各協辦機關執行聯合稽核；未來將持續蒐集情資，加強查核商品標示異常情形，以阻絕產地標示不實之商品進入市場販賣，並杜絕進口異常商品，防範其打擊國內產業，保障國內消費者及合法經營業者權益。

（三）商品安全資訊網：

率先推動全國首創之消費商品安全預警機制，並建置「商品安全資訊網」，有效地整合市場監督資源，主動創新出擊，直接與廠商、消費者做三方交流。該平台累計瀏覽人次更高達84萬7,973人次，並連續3年獲消基會頒發「金GOOD獎」之殊榮。

精進化學物質危害測試技術，建立檢測能量

本計畫透過大量蒐集歐盟及先進國家認可化學品檢測研究報告、歐盟及先進國家消費商品危害物質限量值規定等相關做法著手，規劃化學物質危害測試實驗室，進而精進化學物質危害測試技術，以配合建立化學品安全管理基礎建設，達到符合社會需求的檢測驗證環境；並積極為消費安全把關，杜絕不安全商品上市，符合各界的期許。

提升分析量測準確度，以化學量測守護生活

本計畫舉辦多項宣傳活動，包含「化學與計量－化學量測守護未來生活」系列活動、學

商品安全資訊網。

術研討會及說明會、國際論壇、開放實驗室參觀、園遊會及登山/健行等多項活動，總計每年約2百萬餘人參與，其推廣層面遍及全民，反應熱烈充分達成宣導目標，並藉由上述活動教導民眾參與發現商品是否含危害化學物質，以期共同為杜絕不安全消費商品政策及永續發展的理念推動。

另為落實民眾「買的安心、用的放心、感受貼心」之服務宗旨，對於民眾日常生活所接觸之度量衡器，均積極執行檢定與規範，以有效保護國民的基本權益。

未來標準檢驗局將持續完善國家標準及精進危害物質檢測技術能量，確保商品安全，保障消費者權益；並透過商品安全防護網，加強市場監督與管理，消弭市售瑕疵商品；積極促進國內綠色產業及技術之發展，提升國人安全、健康與生態環境，並戮力促使環境保護、經濟發展、社會公義三者兼顧，達到臺灣永續發展。

商品義務監視員作業說明會。

度量衡親子園遊會。

交通部鐵路改建工業局：花東線鐵路整體服務效能提升計畫

交通部為推動永續運輸發展，責成鐵路改建工程局辦理「花東線鐵路整體服務效能提升計畫」，內容以花東車站為生活驛站，主要為改善花東線新城站至臺東站間29 個車站及週邊附屬設施，期能帶動花東地區觀光發展示範性的宣示效果。計畫期程5年（98年底至103年底），總經費60.81億元。本計畫執行後，車站將可提供一適切的、功能良好，且符合經濟原則的車站設施以服務旅客，同時維持不同屬性的空間區域，如行政辦公、旅運服務及商業空間完全地整合且不相互干擾。使旅客在安全、方便、舒適、美觀之車站環境搭車，並新增「自行車服務」、「旅遊服務」、「農產品服務」、「網路e化服務」及「餐旅服務」，期望藉由鐵路運輸服務之提昇，帶動東部地區觀光發展，達成跨業加值之目標。

新車站運動

綜觀國內外很難得有一系列的車站改建案，尤其是座落在花東天然風景如此美麗的地方，因此交通部鐵路改建工程局以建構一個永續發展兼具多元文化內涵的「新車站運動」來執行本計畫。

為有效達成計畫效益，遂於99年6月17日舉辦「車站改建效能提升、花東風貌再創新局」論壇，邀集地方民代及專家、學者參與，並依論壇綜合意見訂定執行本計畫之宣言及設計目標。隨後更發起「花東新車站運動」傾聽地方民眾對車站更新改善工程之建議與期許，並開闢「花東新車站運動」官網對話窗口，廣收各方建議，納入研討。

此外，更成立由地方文史工作者、建築相

花蓮站

花蓮站、新城站、玉里站模擬圖。

關學者專家與地方政府代表組成之「設計元素提供及諮詢委員會」，協助設計者將地方文史特色、地區需求及農特產種類等，納入車站整體設計構思之中。另為求設計成果的追蹤與落實，並由評選委員如：漢寶德、董萍、鄭晃二、喻肇青、蔡仁惠、徐秀菊及陳錦忠等權威學者專家共同組成「設計成果審議委員會」，將花東新車站運動及一鄉一特色之精神落實於車站的實質設計中。

上述歷程與招標方式的突破，諸如：評選前公開評選委員名單、採複數決標模式、頒發獎牌及獎勵金給評選優勝並於建築師雜誌刊登招標公告等，皆為鐵路改建工程局辦理之創舉，其目的除宣示政府「要辦好」花東車站改建的決心，更希望透過與地方充分互動及參與的過程，完成一個大家都滿意的成果。故本計畫並非將西部車站設計移置東部，而是期許每個車站設計都應融入當地城鄉風貌，將花東地區老舊車站妝點嶄新的容顏，創造出為後山觀光加分的車站建築，用好的設計手法創造空間效果，達到具有高水準的設計案。

為此鐵路改建工程局擬訂本計畫之宣言及目標：

八大宣言：

改建車站提升效能　強化鐵路服務設施
結合地方文史特色　導入綠色建築內涵
優質樂活鐵馬故鄉　形塑國際觀光門戶
節能減碳永續發展　花東風貌再創新局

七大設計目標：

1.汲取花東地方文史特色，融入車站建築設計。
2.融合東部好山好水，建造永續經營綠建築。
3.推展東部休閒觀光旅遊，建構兩鐵共乘環境。
4.提昇鐵路服務品質，完成通用化、國際化、標準化的旅運設施。
5.建置資訊及運輸無縫接駁服務，創造時間空間優勢。
6.完備站區各項生活機能，打造社區民眾樂活休閒環境。
7.營造車站成為旅遊入口門戶，提供多元服務，提昇休閒生活品質。

「花東新車站運動」在設計上需能反映時代精神，在車站設計上需充分反映在地自然與文化的特色，並展現綠能環保或節能車站的企圖，如此才能設計出具深層文化內涵的車站建築，使新的車站成為都市再生及文化觀光發展的發電機。綜觀台灣目前只有台東、花蓮沒有被污染，所以花東的車站設計不要大而不當、要符合交通動線、要美觀整潔，本計畫不僅是車站的單體建築，而要有延伸性及擴散性，不要成為西岸制式火車站的翻版，所以車站設計需與周圍環境互動，並多加考慮各個面向與關係，並為後續計畫預留空間和彈性。


新城站


玉里站

（一）車站功能提升概述

1.自行車補給站：提供自行車租賃、休憩補給服務，便利民眾藉由鐵路運輸抵達東部旅遊，享受騎乘的樂趣及甲租乙還的服務。

2.餐旅及農特產品展示服務：在不影響旅客進出動線及車站營運下，適當規畫展售空間，帶動地方農業及經濟發展。

3.遊客中心設置：為整合花東地區當地旅遊資源推廣觀光及服務旅客，於具觀光景點之車站內由觀光局配合設置遊客中心，提供相關服務項目，進而提升沿線旅遊品質。

4.友善的車站環境：將車站動線作整體規劃並改善各項軟、硬體設施達成真正的「無障礙環境」，並納入車站性別平等空間設計。

5.一鄉一特色：車站改建融合地方自然景色與人文風情，形塑車站成為當地的門戶建築，並以休閒、簡約與純樸為設計風格。

6.綠建築車站：將車站設計導入綠建築概念，依循綠建築九大指標進行設計，並訂立各車站綠建築等級目標，爭取高等級之綠建築標章。

（二）計畫正面效益

1.旅行時間與事故成本節省效益：縮短交通耗時，降低旅客於站場受傷及穿越鐵路之列車事故。

2.永續發展建設效益：本計畫以國家建設永續發展為思維，發揮計畫最大效益，呈現綠能環保與節能及深層文化內涵的花東線第三代車站。

3.落實節能減碳政策：行車成本節省效益、空氣及噪音污染成本節省，使臺灣邁向地球村「節能減碳」先進國家的領域，更落實打造自行車王國的美譽，藉此提升國際能見度。

4.車站及周邊土地增值效益：以車站為中心之商圈逐一發展，對地方發展與沿線土地開發產生莫大助益。

5.觀光社會效益：擴展花東線觀光旅次，配合旅遊服務產品規劃、兩鐵環保專車、郵輪式列車及自行車遊憩路網等，行銷臺灣環島觀光特色行程。

（三）現階段設計成果

鐵路改建工程局為儘早呈現計畫成效，並達成每年皆有車站完成之目標，故已完成細部設計之車站，將陸續辦理工程發包及施工事宜，預訂103年底，全部完工啟用。未來將秉持一貫的精神，如期、如質、如度完成「花東線鐵路整體服務效能提升計畫」，並以「花東新車站運動」自許，達到「車站改建效能提升、花東風貌再創新局」之願景。

「車站改建效能提升、花東風貌再創新局」論壇。

第五章

2011永續發展國際論壇

行政院國家永續發展委員會於本(100)年9月6日至7日假國家圖書館主辦「2011永續發展國際論壇」；論壇議題包括：1. 全球各國推動永續發展策略與實務檢討、2. 國際永續都市推動策略與檢討、3. 國內推動永續都市發展現況報告等主題、4. 美國青年參與籌辦2012聯合國永續發展大會（RIO＋20）經驗分享。

本次論壇邀集多位國內外專家學者、政府機關以及本會委員等蒞臨擔任主講引言，國外學者專家包括：「地球工作坊」創辦人Mr. George J. Gendelman、加拿大聯邦審計部（OAG）永續發展審計業務處處長Mr. David Willey、「國際地方永續發展行動國際委員會」（ICLEI）歐洲區域督導兼副祕書長Mr. Gino van Begin及南亞區執行督導Mr. Emani Kumar、全球綠色成長策略研究中心韓國環境政策部資深研究員李潤博士及「永續美國組織」聯合主席Ms. Rachel Briggs等國際友人出席。

應邀參與本次論壇的國內來賓包括：環保署環境檢驗所阮國棟所長、「永續城市發展教育基金會」周錫瑋董事長、「台灣永續能源基金會」簡又新董事長，台北市、新北市、台中市、台南市、高雄市等環保機關主管以及永續會邱文彥副執行長、李玲玲委員、張四立委員、廖惠珠委員以及蕭代基教授等。

行政院院長兼永續會主任委員吳敦義於開幕致詞表示，馬英九總統就任之初，即針對濱南工業區籌設新型大煉鋼廠進行專案評估，後經馬總統裁示停辦，「國光石化案」也因永續發展考量而喊停，說明政府確保生態環境永續經營的政策理念始終如一。

吳院長指出，國家發展不只關注科技研發與經濟上的成就，還要照顧到生態環境保育、促進文化保存、增進就業機會，乃至其他有利人民在精神與物質生活的豐富多彩，為此馬總統就任後，責付行政院制定國家六大新興產業計

永續會主委吳敦義院長於2011永續發展國際論壇發表開幕致詞。

❶ 來自學界、民間及關心永續發展的國際人士踴躍與會。

❷ 國內與國際人士於台上直接對話與意見交流。

畫，包括：綠能科技、生物科技、醫療照護、精緻農業、觀光旅遊和文化創意，以落實國家的永續發展。

Mr. George J. Gendelman以「永續發展的歷史與展望」為題，介紹全球永續發展的歷史進程，預告聯合國主辦「永續發展大會『RIO+20』」將以「綠色經濟」及「永續發展體制」為討論的二大重要議題，並舉例說明建立全球永續發展體制的重要。同時列舉「清潔發展機制」、「低碳城市」、「再生能源及能源效率夥伴」、「地球村能源夥伴」等跨國合作案例所獲得之成效，並提及台灣自2007年於亞太經合會上宣布推動綠色產業以來參與國際合作的努力。

Mr. David Willey介紹加拿大自1990年代以來陸續推動的永續發展業務，包括落實「加拿大環境評估法」、修正「審計總法」納入永續發展策略、設立「環境永續發展委員會」、2008年通過「聯邦永續發展法」等，並籲請政府動用政府核心計畫預算系統，詳列環評目標及執行策略，另自2012至2013年度起，將逐年向國會報告永續發展施行進度與成效。

Mr. Gino van Begin以「都市是全球永續發展的行動者」為題發表專論，他指出：2030年超過三分之二的全球人口將集中在都市，全球一百大都市的經濟產出即占全球總生產毛額的30%；2050年，全球都市人口將超過卅億，各國地方政府均扮演國家永續發展的重要推手，他呼籲各國地方政府建立跨國都市網絡，積極參與全球永續發展計畫，並向聯合國建言簽署多邊平行協議。

李潤博士以「第二永續發展基本方案」為題，解說各國自2011年推動的「第二國家永續發展策略」，建議各國政府針對十大永續發展策略制訂強化成效方案，包括：都市土地整合及營造、永續森林管理、永續海岸環境管理、土地汙染管理、永續濕地管理、生物多樣性安全、永續水資源管理、永續天然災害預防對策、永續發展教育宣導與加強永續發展的國際合作。

Ms. Rachel Briggs以自身籌組美國青年參與「2012年里約世界高峰會」的經驗，強調青年在國家推動永續發展的重要貢獻，透過教育研究推廣，讓廣大青年參與政策制定以及地方草根組織，有助於促進社會、經濟以及環境的永續發展，達成平等、相互依存的和諧之道。

本次論壇吸引各界人士共襄盛舉，有來自政府機關、各縣市政府代表及民間團體等400人與會，就各國、都市及國際組織之推動永續發展進行經驗交流，提供政府及國人參考。相關會議資料及論壇現場實錄置於行政院國家永續發展委員會全球資訊網（網址：http://sta.epa.gov.tw/NSDN/），歡迎各界上網參閱。

第六章

永續會民間委員專訪

為了下一代，生態保育刻不容緩

邵廣昭委員（中央研究院生物多樣性研究中心研究員）

根據2010年聯合國出版《全球生物多樣性展望第三版》（註）顯示，各國政府自1992年地球高峰會簽署《里約公約》並通過《生物多樣性公約》（CBD），首度承諾保護地球生物多樣性以來，歷經2002年在約翰尼斯堡的第二次地球高峰會，及《2010年生物多樣性目標》，再度重申致力減緩地球物種滅絕的速度。經20多年的努力，迄今根據CBD各締約國所呈繳的報告已證實，人類過度開發濫用生物資源，導致氣候變遷以及物種滅絕的壓力，非但沒有減緩，特別是海洋反有加劇消失現象。為此，聯合國秘書長潘基文特別選在「2010國際生物多樣性年」鄭重宣告2010之目標失敗。只好在2010年9月底在名古屋召開的第十次締約方大會中，再次研擬《2020愛知目標》作為未來十年的努力方向。

反觀國內自1997年成立國家永續發展委員會，至今已屆十餘年，期間曾面臨政府改組頻繁、政策走向在經濟與環保間擺盪不明、權責模糊、急功近利、經費短絀…等困境。然而，值得肯定的是，我們已看到政府、學界、產業界以及民間非政府組織社團，在永續發展上的共同努力已有些許成就，例如：氣候變遷以及生態保育，現已獲得廣泛認同。尤其台灣地處颱風氣候區、地震火環帶，經年累月飽受天然災害頻繁，重創國土的慘痛經驗，讓大家體認到維護生態系的重要，生態系所蘊藏的天然資源正是幫助人類適應氣候變遷的最大資本，對於人類福祉的重要貢獻無與倫比。舉凡空氣、淡水、能源、以至上百萬種生物所交織構成的地球生態系等，均為人類科技無法複製模擬的寶藏，至高無價，一旦遭人類濫捕及破壞至超過臨界點時，將導致生態系全面崩盤，邁向無可逆轉的「相變」，讓地球墮入「第六次物種大滅絕」的浩劫而難以復返，人類勢將頓失賴以維生的生態系所庇佑。為了下一代子孫，生態保育刻不容緩！

在我擔任永續會委員迄今的三年中，體認

到在國內推動生態保育，除了要「從下而上」讓全民均體認到保育的重要，將生物多樣性變成主流民意，才能督促政府制訂或改變其政策外；亦須「從上而下」，即由政府制訂明確的國家生態保育政的永續政策，並責成相關部會努力推動保育相關的執行計畫，並予考核，才能確認保育工作得到具體成效。試以我在學界推動的生物多樣性資料庫整合工作為例說明：

十年前，我發現國內亟需建立國家級的生物多樣性資料庫，讓公務預算支助計劃所蒐集到的生態調查原始資料得以數位化建檔繳交，以充實國內的「保育公共財」，但由於機構本位主義、個人私心，及智財權問題而難以突破。兩年前，我透過永續會正式提案，經負責永續會科技評估組的國科會行文要求各部會，在未來由公務預算所支助的委託計畫，其原始資料均應建檔繳交。並在中研院成立一含跨部會代表之「全球生物多樣性資訊機構中華民國委員會」來協調推動。於是在國科會及農委會等相關部會的支助及合作下，現已陸續建置了「台灣GBIF國家節點」、「台灣物種名錄」、「台灣野生動物冷凍遺傳物質保存資料庫」、及「台灣生命大百科」等整合性資料庫，並能與國際之GBIF, COL （Species 2000）, BOL, EOL等資料庫合作接軌。換言之，透過永續會可以發揮一些關鍵性的作用。

在海洋保育及永續漁業方面，由於台灣已是全球漁業捕魚量的第20大國，食魚量的第12名，除以人口數更是全球排名第4。故政府施政常會以照顧漁民生計優於資源保育之考量，更何況還有選票壓力及民代施壓，使得海洋保育及漁業永續政策常難順利推動。如海岸法遲遲未通過、海洋保護區不易劃設及落實管理、民眾之保育及守法觀念不足等等。乃致迄今，社會上仍在大啖黑鮪、魚翅及珊瑚礁魚類，或以舉辦各種魚季來作為觀光的訴求。我個人這兩年來雖推動由消費者自我覺醒作起的「海鮮指南」，或引進「魚線的盡頭」影片到各地放映及演講，但成效仍屬有限。

其實，生物多樣性的保育可與利用兼顧，野生動物也應包含海洋魚類在內，海洋生物不是僅捕來食用，尚可作為生態旅遊、生技產業、仿生材料、觀賞水族、養殖科技等各方面的利用，也更有經濟價值。未來十年內， 如不趕緊保育及復育，錯過此黃金救援時刻，則很可能如科學家所預測的，到2048年海裡將無魚可吃、無魚可賞，讓我們這一代無顏面對下一代，身兼永續委員，更感難辭其咎。

註：第三版《全球生物多樣性展望》
http://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf

建構以人為本的永續交通網

劉麗珠委員（自行車新文化基金會執行長）

自美返國多年，致力推動「騎車生活化」、「騎車環島綠色生態旅遊」，應聘為永續會民間委員已屆第二年，每逢參與永續會工作會議，與各部會官員及各工作小組委員進行溝通交流之議題，均屬攸關國家運輸體系重整、節能減碳運輸科技研發、道路安全立

法、汽機車管制、市區行車道重劃、交通規則修正、社區行路交通安全保障、單車健身養生、自然生態保育等，廣泛涵蓋行、育、樂等綠色新生活觀。

據近年帶領交通官員多次赴荷蘭、西班牙、法國等推廣綠色運輸的先進國考察心得，期待台灣儘速建構「以人為本」的綠色城鄉交通路網，有助落實國家永續發展政策綱領，例如：維護道路安全舉世第一的荷蘭交通公共工程及水利管理部，基於奉行「永續安全」的政策指導，嚴格執行道路安全措施，規範市區慢車道速限卅公里，藉以保障行人、自行車騎士享有優先路權，尤其老人與小孩的行路安全特別受到先進國家立法保護。有鑑於此，國內若要建立友善環境的永續交通網，亟需強有力的中央領導，全力帶領永續會全體委員，加強跨部會整合，讓每位委員均能善加發揮其專職角色與專責功能。

提起「永續安全」，個人主張政府首應限制汽機車的脫序成長：自用汽機車的載客運量偏低，卻耗損大量石化能源引發生態危機，占用行車道及路邊停車位，威脅行人及單車騎士的安全，尤其排放廢氣製造空氣污染、酸雨，外加喧囂車陣噪音刺耳，危害國民健康。因此，我積極主張市區應採短程單車通勤的新文化運動，力促立法保障「易受傷的道路使用者—行人及單車騎士」的路權，籲請政府輔導業界轉型為減碳綠經濟（如：開發電動汽機車），把行的主權還給行人及單車騎士，好讓每一個人包括老人與小孩都能安全上路。

回憶當年興沖沖推著娃娃車出門散步，一出門看到社區巷弄停滿機車，汽車為了避開主要幹道的尖峰車流，頻頻擠進狹隘的巷弄，又有機車呼嘯而過，讓人寸步難行，尤其廢氣噪音衝著娃娃車裡的嬰幼兒、乘坐輪椅的身障者及老人家而來，令人頗為擔憂。我建議相關部會應盡速重劃交通路網、嚴格執行市區及社區的慢車道速限、加重汽機車交通事故罰則，還居民一清靜、乾淨、有效率的友善交通環境。

制訂慢車道速限卅公里刻不容緩的原因，在於有助於降低交通事故肇事率並減輕車禍危害：我曾在荷蘭帶團考察之際，在慢車道上遭到一機車意外擦撞，幸因當地有速限而無大礙，荷蘭交通部官員即藉此機會闡述慢車道限速對行人安全的重要性，令人印象深刻。

此外，根據荷蘭交通部調查顯示，在荷蘭每人平均擁有1.13輛自行車，而每天通勤達七公里的單車騎士不僅延長3年的健康年限，平均壽命也得以延長十年之久，意謂以自行車為短程通勤的代步工具，讓人健康長壽，降低健保支出，生活品質提升，也大幅減輕對自然生態的衝擊。

今年正值建國百年，我們向文建會、體委會承辦「One Bike One轉動台灣向前行」的自行車環島金氏紀錄活動深切期待以自行車綠能生活化運動，為建國的第二個百年，揭開國家長治久安、永續發展的序幕。

生態債與經濟成長

張四立委員（國立台北大學自然資源與環境管理系教授）

由未來的角度回顧2011年，必定會是值得特別註記的一年，因為這一年，很可能就是1972年羅馬俱樂部（the Club of Rome）在『成長的極限』（the Limits to Growth）中所做的歷史大預言，其得到驗證的啟始年，全球經濟規模，自此達到飽和點，並開始反轉向下，

而新古典經濟學以投資和創新為主軸的成長理論，在資源有限的限制條件下，終須面對最後的真理。

2008年中所爆發的全球金融風暴，對經濟體系的擾動，至今未歇，經濟合作發展組織（OECD）預見整體歐元區GDP的萎縮，已警示德國第四季的經濟負成長趨勢，勢不可免。若證諸日本經濟歷經的長期衰退，至今已超過十年，仍無法自谷底攀升，加以此波經濟危機，已蔓延深化至衝擊已開發國家的長期財政表現，因此形成的鉅額赤字，亦非短期可以彌平。綜合以上，這是本人認為，全球經濟的走勢，在現行的技術與資源條件限制下，成長動能已達上限的理由。

由環境永續的觀點，看待隱然成形中的全球經濟危機，我們毋寧可將之視為人類盤點得失，權衡利害，進而擘劃未來，調整發展路徑的機會。這樣的觀點，絕非出自幸災樂禍的心態，而是寄望於喚醒人類趨吉避凶的自衛本能與智慧。事實上，客觀的數據顯示，全球經濟財富的創造與累積，乃是以生態環境品質的劣化，以及自然資源的耗竭為代價所換取的，換言之，當全球矚目於高度開發國家的國債問題時，其背後所隱藏未計的生態債務危機，規模更是驚人。

根據加州大學柏克萊分校學者利用聯合國以及國際貨幣基金資料庫自1961年至2000年的統計資料，估算全球包括氣候變遷、臭氧層破壞、土地使用變遷、毀林、過漁等活動所衍生的環境成本，淨現值已達47兆美元（以2005年幣值計）。此一數值，超過世界銀行所公佈的2005年全球GDP總金額（44兆美元），同時等同於2010年美國（14.58兆美元）、日本（5.5兆美元）及中國（5.88兆美元）之GDP總和的兩倍。

該研究同時指出，高所得及中所得國家的生態足跡，踐踏烙印在低所得國家的金額，各達2.5兆美元，而中所得國家遭到高所得國家的生態足跡踐踏烙印的金額，則高達4.9兆美元，在全球化的經貿緊密互動關係中，總計高所得國家積欠中所得及低所得國家的生態債，各為2.2兆及1.82兆美元，但是因為這些實質已發生的環境質損，並未進入市場交易體系中，因此全部由受害的一方自行承擔，無論在國際收支帳或國內生產毛額的統計中，均無法顯示受損的金額，當然也不曾啟動任何緊急救援方案，施以援手。可是生態環境與資源基礎所遭到的戕害，已使地球萬物的生機，一點一滴的流失。

事實上，『成長的極限』一書的真正意義，並非在描述經濟系統（包括人口、工業化、污染、糧食生產、能源消耗）的過度成長（overshoot）與崩壞（collapse）的悲觀命定情境，其所欲傳達之積極、正向，且具建設性意義的訊息，在於預警世人，在任何不可回復性的環境損害發生以前，及早調整成長路徑，導正人類對自然資源的開採利用行為，使之植基於滿足人類基本需求之必需性，並做公平分配，以尋求經濟發展與自然生態系統共同達到穩態（steady state）的發展形態，進而確保環境、經濟、社會的永續。

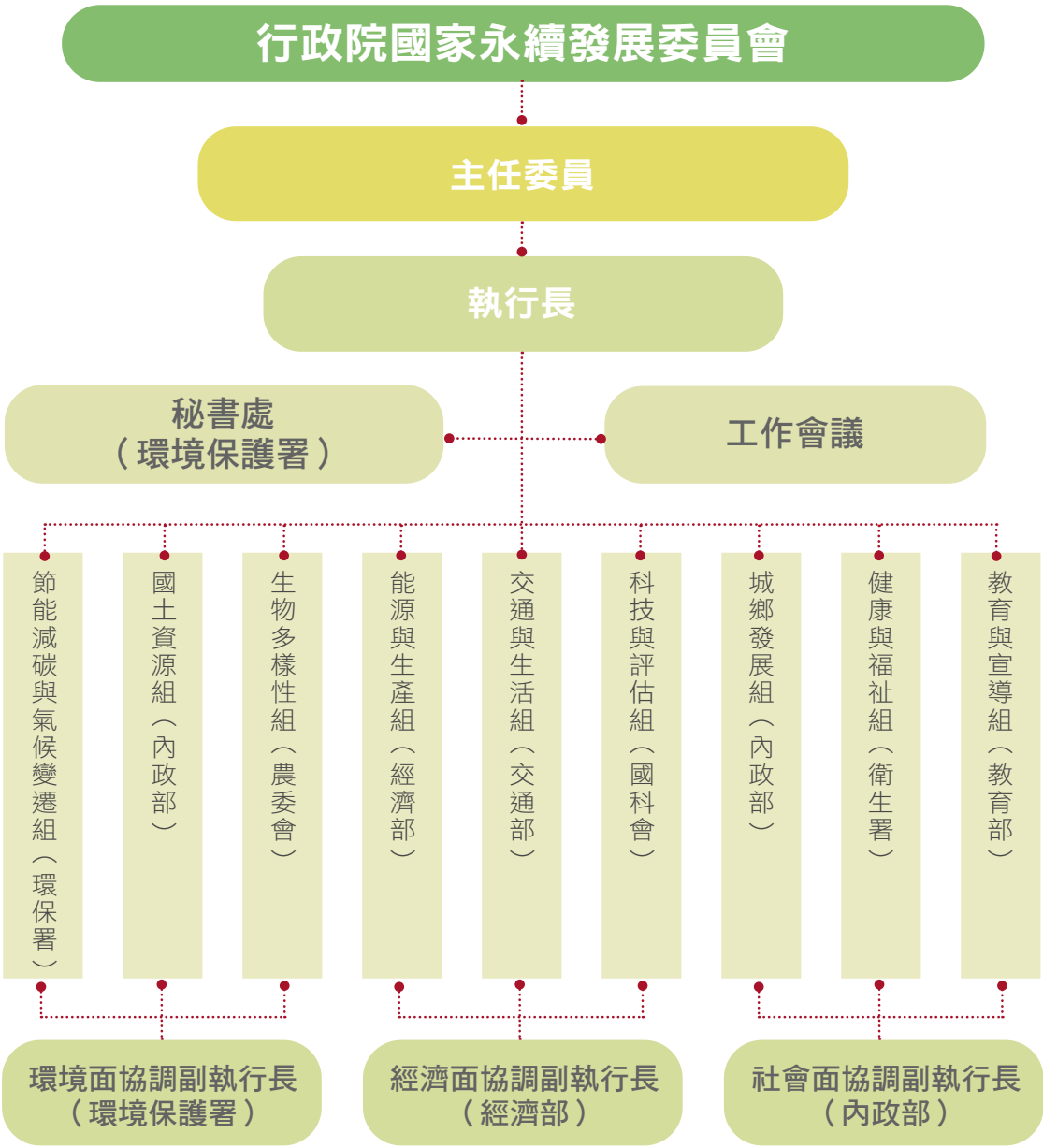
文明的發展，並不必然需要伴隨著經濟規模的擴張或所得（財富）的增加。成長或不成長，經濟系統都需要摸索出一條持續發展的路徑，以調整結構、轉換速度、重建價值。最近出版的『沒有成長的富裕』（Prosperity without Growth）一書，即可視為知識界對於『經濟成長典範』的反思。

此際面對成長典範下千瘡百孔的環境，以及貧富差距的擴大、社會階級對立的尖銳化，我們不妨將現階段經濟成長動能的減緩所可能形成的『成長的極限』，視為解決問題的契機與手段，利用快速攀升中的全球財政赤字，警醒我們背後隱匿不見的、更龐大的生態債。深自企望：能藉由趨緩的成長，進而啟動智慧的行動，以早日達到社會、經濟與環境的穩態均衡狀況。

附錄

附錄一

行政院國家永續發展委員會組織圖



附錄二 行政院國家永續發展委員會第15屆委員名單

政府官員

姓名	職稱	姓名	職稱
吳主任委員 敦義	行政院　院長	毛委員 治國	交通部　部長
劉委員兼執行長 憶如	經濟建設委員會 主任委員	陳委員 武雄	農委會　主任委員
		李委員 羅權	國科會　主任委員
江委員 宜樺	內政部　部長	邱委員 文達	衛生署　署長
吳委員 清基	教育部　部長	沈委員 世宏	環保署　署長
施委員 顏祥	經濟部　部長		

非政府機關委員

專家學者	
姓名	職稱
李玲玲	台灣大學生命科學院生態學與 演化生物學研究所　教授
邵廣昭	中央研究院生物多樣性研究中心 研究員
吳再益	台灣綜合研究院 院長
陳郁蕙	台灣大學農業經濟學系 教授
張四立	國立台北大學自然資源與 環境管理研究所　教授
陳宏宇	台灣大學地質科學系　教授
葉毓蘭	中央警察大學外事警察學系　副教授
廖惠珠	淡江大學經濟系教授
蔣本基	國立台灣大學環境工程學研究所 教授
馮正民	交通大學交通運輸研究所 教授

社會團體代表	
姓名	職稱
余範英	余紀忠文教基金會　董事長
林俊興	祐生研究基金會　董事長
賴榮孝	中華民國荒野保護協會 理事長
林益厚	都市更新研究發展基金會　董事
周春娣	環保媽媽環境保護基金會 董事長
宮榮敏	中華民國化學工業 責任照顧協會　理事長
陳士章	台灣原住民族人文關懷協會 理事長
劉麗珠	自行車新文化基金會　執行長
駱尚廉	台灣環境管理協會　理事長
謝長富	台灣生物多樣性保育學會 理事長

2011 Annual Report on National Sustainable Development

Published by National Council for Sustainable Development, Taiwan, R. O. C.

Contents

Preface

On 23 August 1997, the National Council for Sustainable Development (NCSD) was established by the Executive Yuan to construct healthy sustainable homeland and pursue national sustainable development. Besides evaluating issues related to sustainable development, the NCSD completed important documents such as the "Taiwan Sustainable Development Declaration," "Taiwan Agenda 21," and the "Sustainable Development Action Plan". At the 31st working meeting of NCSD in April 2011, revisions pertaining to the Sustainable Development Action plan were made, and relevant evaluation meetings were subsequently conducted.

In the 24th NCSD Meeting, Premier Wu Deny-yih stated that: Taiwan, as part of the global family, should ensure participation in next year's United Nations Conference on Sustainable Development, scheduled to be held in Rio, Brazil; proper budget should be allocated to ensure participation and to provide subsidies to civic groups.

This year's annual report compiles the significant achievements made by the public, private and civil sectors toward sustainable development in 2011. Topics covered in this edition include Current Status and Achievements of the NCSD (Chapter 1); Summary of Working Group Achievements (Chapter 2); Evaluation of Taiwan's Sustainability Indicators in 2010 (Chapter 3); 2011 National Sustainable Development Award Recipients (Chapter 4); 2011 International Forum on Sustainable Development (Chapter 5) and Words from Our Members (Chapter 6). The appendix provides a chronicle of important events related to sustainable development, the organizational framework of the NCSD and the names of council members.

The Annual Report on National Sustainable Development is published each year for the purpose of providing the international community with a better understanding of our nation's efforts and achievements toward sustainable development. Another objective of the report is to raise public awareness of sustainable development and encourage more people to work together in attaining the vision of sustainable development.

Chapter 1

Current Status and Achievements of NCSD in Taiwan

Premier and NCSD Chairman, Wu Den-yih presides over the 24th NCSD Meeting

1.1 Meetings Convened

I. Committee Meetings:

The 24th NCSD Meeting was convened on 9 September 2011 and presided over by Premier Wu Den-yih. Participants of the meeting included government and civil committee members of the NCSD and representatives from various agencies. Three themes were discussed at the meeting: planning for the upcoming 2012 United Nations Conference on Sustainable Development (Rio+20), revisions to the Sustainable Development Action Plan, and operations of the NCSD. Premier Wu Deny-yih stated that: Taiwan, as part of the global family, should ensure participation in next year's United Nations Conference on Sustainable Development, scheduled to be held in Rio, Brazil; proper budget should be allocated to ensure participation and to provide subsidies to civic groups; in addition, the specific tasks and expected results of the Sustainable Development Action Plan should be confirmed through subsequent meetings of respective working groups; simultaneously, relevant agencies could draft proposals and report to the NCSD (respective working meetings or working meetings) with regard to future important national economic development plans. After discussions and integration of opinions, the NCSD can submit consultation results to the Executive Yuan as reference to ensure ample time for NCSD members to contribute their professional knowledge and opinions.

2. Working Meetings:

1. NCSD was convened on 8 April 2011 and presided over by CEO Christina Liu. Two themes were discussed: revisions to the NCSD Sustainable Development Action Plan and implementation results in 2010, and implementation status of respective NCSD Working Groups.
2. Meeting of the NCSD was convened on 10 May 2011 and presided over by by CEO Christina Liu. Three themes were discussed: implementation status of respective NCSD Working Groups, a proposed bill by NCSD member Alice Yu, and proposal of the 24th NCSD Meeting.

1.2 Sustainable Development Action Plan Revisions

In light of the fact that time differences exist in the drafting of Taiwan's Sustainable Development Policy guidelines, Sustainable Development indicator system and

Council member, Alice Yu, speaks at the commendation ceremony.

Sustainable Development Action Plan, which resulted in incoherence and lack of congruency, appropriate integration and revisions are needed pertaining to certain aspects, themes or indicators to ensure more efficient sustainable development work. At the 31st working meeting in April 2011, revisions pertaining to the sustainable development action plan were made, and relevant evaluation meetings were subsequently conducted.

1. The first evaluation meeting was convened in June 2011. The resolution decided to "link" the Sustainable Development Policy Guidelines endorsed in October 2009 with the 2nd version of the Sustainable Development Indicator System endorsed in December 2009.
2. The second evaluation meeting was convened on 10 August 2011 to ensure future nine working group discussions based on the format of the Sustainable Development Policy Guidelines.
3. The third evaluation meeting was convened on 29 August 2011 to discuss the draft action plan formulated by the aforementioned nine working groups. This revision to the Sustainable Development Action plan, linked with the aforementioned Policy Guidelines and evaluation-based Indicator System will surely be beneficial to the congruency of Taiwan's future sustainable development plans.

1.3 Evaluation results of the 2011 Sustainable Development Indicators

As objective criteria to evaluate implementation results of the country's sustainable development efforts, the Sustainable Development Indicators (SDI) evaluation results for the previous year are announced annually. The 2010 SDI evaluations were calculated based on the second version of the SDI System as ratified at the 29th Working Meeting of the NCSD, held on 31 December 2009. The Secretariat of the NCSD requested relevant data from various agencies, and the collected information was then computed and analyzed. An Annual Indicator Meeting was held on 28 November to discuss related issues before the results were announced. For more information, please visit the NCSD website at http://sta.epa.gov.tw/nsdn/CH/DEVELOPMENT/INDEX.HTM

1.4 Matters pertaining to Taiwan's participation in the 2012 United Nations Conference on Sustainable Development

1. Regarding Taiwan's participation in the 2012 United Nations Conference on Sustainable Development, CEO Christina Liu declared at the 30th NCSD Working Meeting on 25 October 2010: Vice CEO of the NCSD will represent the NCSD and act as vice convener of the 2012 United Nations Conference on Sustainable Development (Rio+20) Task Force, and is also responsible for inviting related agencies and organizations in discussing and planning related matters.
2. The Secretariat of the NCSD invited related agencies, industry representatives, civic organizations and MOFA NGO Committee in holding three consultative meetings on 20 December 2010, 15 February and 2 May 2011. The meetings discussed the model in which Taiwan will participate in the 2012 United Nations Conference on Sustainable Development.
3. Premier of the Executive Yuan and acting Chairperson of the NCSD, Mr. Wu Den-yih, presided over the 24th NCSD Meeting and declared the NCSD will be responsible for all preparatory and delegation tasks of the Executive Yuan; a budget will be allocated for related agencies to participate in the 2012 United Nations Conference on Sustainable Development, and subsidies for participation by domestic civic organizations will be provided as well.
4. Two more consultative meetings with related agencies were convened by the Secretariat of the NCSD on 11 October and 14 November. Two themes were discussed: (1) cooperation between the government, civic organization and green corporations; (2) how to demonstrate Taiwan's efforts in promoting sustainable development and green economy at the UN Meeting.
5. Convened inter-working group meetings on 26 December 2011, and discussed: (1) matters related to the formation of a delegation that will participate in the

2012 United Nations Conference on Sustainable Development; (2) how civic organizations can receive subsidies; (3) compilation of Taiwan's sustainable development efforts.

1.5 The 2011 International Forum on Sustainable Development

The 2011 International Forum on Sustainable Development was held on 6 and 7 September 2011, with participation by sustainable development experts from the United States, Canada, Germany and Korea, and city/county representatives and domestic experts. The event included an opening ceremony speech, eight thematic discussions, dialogues with experts, etc. The founder of Earth Workshop gave a speech titled "Review and Future Prospects of World Sustainable Development" during the opening ceremony, and the themes were as follows: sustainable development tasks in Canada, sustainable development tasks in the Republic of China, current status regarding the promotion of international sustainable cities, promotion of international sustainable city – Taipei City, promotion of international sustainable city – Kaohsiung City, promotion of international sustainable city – Taichung City, promotion of sustainable development act (basic) in Korea, current status pertaining to the promotion of the 2012 United Nations Conference on Sustainable Development. Themes of the experts' dialogues included: Two main themes of Rio+20 - green economy in the context of sustainable development and poverty eradication, and the institutional framework for sustainable development.

"2011 International Forum on Sustainable Development" invites many foreign experts to discuss sustainable development issues

1.6 Evaluation and Commendation of the 2011 National Sustainable Development Award

To commend units with exceptional achievements with respect to sustainable development, encourage public participate in sustainable development tasks, accomplish the objectives of implementing sustainable development in a localized and livelihood fashion, and accomplish the national sustainable development vision, the 2011 National Sustainable Development Award was convened. Categories of the Award included four areas: education, corporation, civic and sustainable development action plan implementation. Altogether 10 units won prizes, with the list of winners found in the table. The commendation ceremony was held at the main auditorium of the Executive Yuan on 1 December 2011, and was presided over by Premier of the Executive Yuan and NCSD Chairman Wu Den-yih, who also awarded the winners.

Table: List of Winners of the 2011 National Sustainable Development Award

Category	Winner
Education	Michang Elementary School of Bali District, New Taipei City Xiaoming Girls' Senior High School of Taichung City Ci-xing Waldorf School of Yilan County
Corporation	Singtex Industrial Co., Ltd. United Microelectronics Corporation (UMC) TOPPFAN CFI (TAIWAN) CO., LTD.
Civic	Children Are Us Foundation
Sustainable development action plan implementation	Southern Taiwan Science Park Administration: Sustainable environment green park promotion plan Bureau of Standards, Metrology and Inspection, MOTC: establish hazardous chemical substance testing platform to ensure excellent lifestyle for the people plan Railway Reconstruction Bureau, MOTC: Hualien-Taitung railroad overall service enhancement plan

Chapter 2

Summary of Working Group Achievements

Huxi Wind Power Station of Penghu

2.1 Energy Conservation, Carbon Reduction and Climate Change Working Group

1. Building the legal system of Greenhouse Gas Reduction Act

Continue to promote the legislation of the Greenhouse Gas Reduction Act (draft), and seek ideas from all circles pertaining to the contents of the draft.

2. Encouraging voluntary reduction from industries and establishing market mechanisms

(1) Proclaimed the Guidelines for EPA Greenhouse Gas Reduction Account, and announced the Code Format Governing the EPA Greenhouse Gas Reduction Amount.

(2) Implemented certification system of greenhouse gas and in total, one accreditation institution and nine certification agencies had been approved, and announced the Technical Directions for Carbon Footprint Inspection of Products and Services.

(3) Completed the Implementation and Announcement Directions for Carbon Neutrality, and established the Carbon Neutrality Management Platform; further, the Establishment Guidelines for EPA Greenhouse Gas Pilot Plans and Trade-off Plan Evaluations were formulated.

(4) Announced emissions factors by the following five industries: steel, cement, optics, semiconductors and power. Continue to promote industrial voluntary report and in total, 401 companies had reported. So far, approximately 80% of emissions by domestic industrial and power entities were reported.

(5) Already activated the National Greenhouse Gas Reduction Trading Platform and established preliminary management mechanism and accompanying measures; through phased developments, gradually develop a platform that is in sync with international trading platforms.

(6) Announced the Guidelines Governing the Evaluation of Greenhouse Gas Trade-off for Industries based on Energy Classification Plan

3. Constructing Low-carbon Homeland, Green Industry and a Green Lifestyle

The following were in place to enhance our country's

basic inventory capabilities: completed compilation of the Reference Manual for National Low-carbon Food Choices, organized the Regional Carbon Inspection, Low-carbon Diplomacy event and announced the Computation Directions for County/City-level Greenhouse Gas Inventory. A low-carbon platform was established and 1,535 activities were registered thus far. To further the country's low-carbon city infrastructure, New Taipei City, Taichung City, Tainan City and Yilan County were selected as pilots for low-carbon measures.

The Architecture and Building Research Institute (ABRI) of the Ministry of the Interior promoted green buildings that conserve energy and reduce carbon. As of October 2011, 372 cases of green building logos and candidate green building certificates were awarded. The Ministry of Education subsidized 22 elementary and junior high schools to promote low-carbon campus plans, and assisted 23 senior high schools to establish building energy management system (basic level) plans. The National Science Council (NSC) continue to advance national energy science projects and by the end of this year, nation-wide LED replacement of all traffic lights is expected to be completed.

4. Other Greenhouse Gas Reductions and Adjustment Tasks

The Carbon Capture and Storage Strategic Alliance was established in March and was expected to be operational in 2020; the CEPD completed drafting the National Climate Change Adaptation Policy Guidelines in July; the COA planned to create 6,440 hectares of new forest in plains and hills, and nurture 54,704 hectares of land.

5. Promoting Participation in the UN Environmental Conventions

The EPA followed the UNFCCC National Communications Guide and completed the second bilingual version of National Communications Guide this year; compiled the National Appropriate Mitigation Actions (NAMAs) bilingual promotional items, and further added Japanese, French and Spanish translations this year; the EPA attended the UNFCCC COP17/CMP7 at Durban, South Africa as demonstration of active participation in international affairs and exploring opportunities for international cooperation.

6. Promoting International Cooperation on Climate Change

(1) Exchange of Climate Change Policies: Organized the International Forum on Toward Carbon Neutrality, 2010 Forum on Low Carbon Development Path in Taiwan, International Symposium on Germany's Renewable Energy Development and Power-purchasing Policy Trends, and the 2011 U.S.-Taiwan Clean Energy Forum.

(2) Technology exchanges of energy industry: Organized the International Forum on Low Carbon Power Supply System and International Symposium on Greenhouse Gas Reduction Technologies in May and August respectively.

(3) Discussion on Economic Evaluation of Carbon Market: Organized the EU Climate Policy and ETS expert symposium in May and sent a delegation to the UK and Belgium in October to conduct environmental cooperation between the EU and Taiwan.

(4) Climate Observation Science Research: Organized the 2011 Air Pollution and Climate – A Dialogue between Science and Policy in Asia conference and the 2011 4th International Workshop on Pacific Greenhouse Gases Measurement in October and November, respectively.

7. Strengthening Education

I Organized energy conservation and carbon reduction creative events:

(1) Organized the Low Carbon Food for the New Year and Healthy Reunion cooking contest, and recipes for the contest were available online.

(2) Co-organized the LOHAS Taiwan Carbon Reduction 100 series of events.

(3) Organized the award ceremony and lectures on the Energy Conservation and Carbon Reduction Action Logo event. Forty-four entities from corporations, the community and NGOs were awarded.

(4) Organized eight rounds of training for the Ecolife Clean Home and Energy Conservation, Carbon Reduction seed teachers. Approximately 1,000 people underwent training.

(5) Organized four regional meetings of World Citizen's

Coffee Shop, and garnered valuable ideas from all circles.

II Established internet platform to popularize energy conservation and carbon reduction:

(1) Enhanced the EPA's Ecolife website

(2) Monthly publication of the Kuso Newsletter

(3) Assisted local inspection and subsidy application tasks.

(4) Completed online flash interactive teaching program and article sharing platform.

III Wrote energy conservation and carbon reduction literature:

(1) Compiled the Low Carbon Lifestyle Manual.

(2) Compiled the Mini Encyclopedia of Climate Change.

2.2 National Land and Resources Working Group

1. Water Resource Development, Utilization, Management and Conservation

(1) Promoting drought irrigation and modernized management facilities: Actively assisted farmers in establishing drought irrigation facilities and aided the Taiwan Joint Irrigation Association (TJIA) in constructing modernized management facilities and strengthened the hydrologic automatic reporting system.

(2) Coordinating the TJIA in providing irrigated water to support livelihood and industrial usages: Due to insufficient rainfall this year, various associations of the TJIA took appropriate measures to counter the situation. Approximately 170 million tonnes of water were transported.

2. Sustainable Operation of Maritime Resources

(1) The MOEA drafted the Demonstration Plan to Accelerate Improvement of Drainage Environment of Areas of Land Subsidence that prioritized areas suffering from flood.

(2)The Fisheries Agency was responsible for the industry adjustment portion of the aforementioned plan. The objective was to minimize groundwater usage through the completion of 30,000 meters of fish raising pond drainage lines and two sets of sea water induction facility.

3. Protection of Water Quality

Completed the planning of on-island and off-shore water body quality management, including inspection locations and methods. Some 100,000 inspection records were to be completed by 2011 and provided online for public viewing (http://wq.epa.gov.tw). In addition, basic information of water body environment of Tungsha and Nansha areas were established in June.

All water quality monitoring data can be searched online

4. Completed Sustainable National Land Planning

(1) Promoted legislation of National Land Planning Act: The National Land Planning Act (draft) completed first reading by the Internal Administration Committee of the Legislative Yuan. After negotiations by various parties, the draft will undergo a second reading.

(2) Implemented national land conservation and reviewing of urban land management: In accordance with Taiwan's regional plan (first overall inspection) in 2010, the CPAMI will continue to assist various counties/cities in the demarcation of various urban land resources.

(3) Promoted the Demonstration Plan of Coastal Line Remediation and Landscape Improvement: 13 projects from 9 counties/cities were subsidized.

(4) Organized training workshops for coastal planning and ecological landscape nurturing.

5. Integrating Regional Areas to be in Line with the International Community, and Promoting Wetland Ecological Remediation

(1) Promoted national wetland evaluation and conservation tasks: Organized the second national important wetland evaluation tasks, which as of 18

January 2011 announced 82 key national wetlands, including 2 international sites, 40 national sites and 40 regional sites, with a total area of 56,865 hectares.

The budget for the year 2011 amounted to NT$41 million. Twenty-nine projects from 16 counties/cities were implemented, including wetland inspection, mitigation, community participation and education.

(2) Formulated the Wetland Conservation Act draft and accompanying measures: The Wetland Conservation Act draft was first formulated in 2009, and subsequently conducted explanatory tour meetings and public hearings in order to perfect the Act.

(3) Executed scientific research related to wetlands: Organized the National Investigation Plan on Key Wetland Carbon Sink Functionality, and established the standard operating procedures targeted specifically to the three types of wetlands.

(4) Assisted wetland subsidy tasks: The 2011 National Key Wetland Conservation Action Plan subsidized 29 key wetlands with tasks regarding surveillance, conservation, community participation and education.

(5) Organized international exchanges and education programs: Participated in the 2011 Annual Meeting of the Society of Wetland Scientists (SWS), and invited Dr. Ben Lepage, president of the SWS, to conduct three international wetland conservation exchange workshops and one key presentation lecture in October. In addition, five more related Training Programs of Wetland Ecology Environment Inspection Procedure were held.

82 key national wetland sites

2.3 Biodiversity Working Group

Nature conservatory system logo

Ecological restoration displayed through terraces

Ceriagrion melanurum resting on crops from environmental friendly farming

Ripple fairy - hydrophasianus chirurgus

Cooperating with the general public in restoring terrace ecology in Gongliao mountain areas to rehabilitate the harmony between man and nature – the results were the re-emergence of oryzias latipes and ceriagrion melanurum. At the 2011 International Conference on Landscape Conservation, the Taipei Declaration on Landscape Conservation was signed to protect the near-extinct hydrophasianus chirurgus (down to almost 50 in number), and promote agricultural products of the Kuantien Jacana Green Conservation Plan.

Enhanced marine conservation area to promote potential national parks and organized related research plans; organized public meeting regarding Penghu

Southern Islands – marine national park; organized marine biodiversity campus tour; organized the marine national park exhibition to enhance the public's understanding; organized Tungsha Island clean beach on World Ocean Day, and events such as the building ark, water initiation ceremony, across the Kuroshio Current – visiting Taiwan, and marine culture exhibition; presented results of conservation efforts, and signed an MOU with the National Museum of Marine Biology and Aquarium (NMMBA).

Integrated Taiwan's biodiversity information, international exchanges: established the TaiBIF, TaiBNET and TaiEOL at the Biodiversity Research Center of Academia Sinica, with the goal of establishing an integrated cross-ministerial biodiversity database. Completed the compilation of the Taiwan Crustacean Catalog: completed the Taiwan Crustacean Catalog series (including the Catalogue of Hermit Crabs of Taiwan, Crab-like Anomurans and the Crustacean Fauna of Taiwan) – a total of 307 species, which is 1/8 of the entire world's species; the research results were reported in the New York Times.

Kenting National Park: restoring leucaena and its habitat; commissioned 15 biodiversity research plans; established Kenting insect specimen database; utilized automatic photographic equipment to investigate land-based wild mammals; appearance of Yushan bear and hynobius formosanus at the 3,600 meter Yushan mountains. Continue to maintain resource management partnership with Sheding Tribe.

Taroko National Park: completed eradication of foreign flora species; promoted conservation of biodiversity, continue to organize Dongsha Marine National Park research and support of endemic species in response to climate change.

Yushan National Park: Organized events to appreciate mountain butterflies, animals, eagles, and Dongpu ecological tour; presentated results of commissioned biodiversity research and sustainability measures; organized workshop on agricultural ecology for indigenous people.

Hosted the cross-ministerial meeting on the Consultation on Domestic Marine Conservation Demarcation; maintaining Taiwan's status as a non-infected country and researching risk evaluation and standardized tests for foreign species; advisory programs on the prevention of foreign species invasion and plant pest infections; organized fire ant prevention and pesticide registration promotion events in collaboration with the National Fire Ant Prevention Center; update and expansion of the Taiwan's Foreign Species Database; establishing a catalogue for Taiwan's foreign plants and assessment of risks; promoted Demonstration Plan for Wetland Ecology Park Operation and Management.

The Shei-pa National Park organized a renovation project on the No. 1 Check Dam of Qijia River; created habitat grounds for platalea minor (black-faced spoonbill) at Taijiang National Park; did investigation and research on river structures' impact on river habitats; continued to remediate agricultural pollution; investigation and integrated assessment of national wetland pollutants; formulated river pollution improvement plans and schedules, gradually enhanced Taiwan's river and estuary water quality to be in line with international standards in terms of nutrient salt and heavy metal contents; monitoring of national water quality and public information.

Forestry Bureau: Organized the 2011 WildViewTaiwan Film Festival in association with Wildscreen series of events, assisted Mr. Zhang Bo-jun in filming his Loving Fireflies documentary, which won the Excellence award at the third National Publication Award; the Jiujiu Bee Hawk film won the best animal behavior award at the 10th Japanese Wildlife Film Festival. Danielle Nierenberg, a senior researcher from Worldwatch Institute, spoke at the Nurturing Our Earth tour.

Maintained cultural diversity for the indigenous people and local communities; compilation of traditional biodiversity knowledge of the indigenous people; donated to the Wildlife Conservation Society to preserve the Burmese Star Tortoise; organized the International Day for Biological Diversity on 22 May; organized the International Forum on Next Decade of Biodiversity.

❶ Ali Mountain Hynobius formosanus that appeared in the Yushan Peaks

❷ Euploea sylvester swinhoei

2.4 Energy and Production Working Group

1. Promoting energy integration of industrial parks

The MOEAIDB selected three industrial parks in Hsinchu, Taichung and Youshi (Dajia) as pilot targets for energy and resource integration promotion. Twenty integrated chains were established, with 410,010 tonnes of products and 110,000 tonnes of greenhouse gas reduction. Related integration tasks are still in progress.

2. Promoting development of renewable energy

As of October 2011, the capacity of renewable power installations amounted to 3.339 million kilowatts, with an estimated annual power generation of 9 billion kwh. Approximately 1.68 million households could be powered, with an annual CO2 reduction of 5.56 million tonnes. Respective results of renewable energy promotion efforts are listed as follows:

I Wind power: As of October 2011, 288 wind-powered stations were set up, with a capacity of 563,800 kw.

II Solar power:

(1) As of October 2011, total national facilities have a capacity of 58.6MWp, equivalent to annual generation of 73.25 million kwh.

(2) Net worth of domestic solar power industry in 2010 amounted to NT$200 billion, ranking 3rd in the world.

(3) Planning to promote the construction of a million solar-powered roofs, following a policy of "slow first, then fast; roofs first, then floors".

III Bio-energy power installations have a total capacity of 798,500 kw.

3. Promoting energy conservation

I Promoting energy saving labels:

(1) Completed formulating and improving five product criteria of energy saving labels; the newly revised standards require 10~25% improvement in efficiency compared to previous standards.

(2) Completed formulating seven criteria for energy saving products; three of which were announced.

(3) Organized 12 energy saving label and energy efficiency label promotion events; a related website was made operational.

(4) Energy saving label products saved an equivalent of 92,000 kiloliters of fuel, with an estimated 100 million label usages.

II Executing energy efficiency management of electronic appliances:

(1) Completed improvement of three permissible consumption standards of electrical appliances.

(2) Completed formulation of nine permissible consumption standards of products.

III Provided energy conservation technical services:

As of October 2011, 833 big energy consumers and 170 incinerators were given advice, which resulted in findings of potential power savings of 128.6 kiloliters of fuel equivalent, and actual savings of 65.52 kiloliters of fuel equivalent.

4. Constant supply of power

(1) Announced the energy development vision of "ensure nuclear safety, gradual decrease of nuclear generated electricity, establishment of low-carbon green energy and working toward a nuclear-free homeland", and under the three main principles of no restriction of power, maintaining reasonable electricity pricing and fulfilling the international promise of carbon reduction, all measures work toward energy conservation, carbon reduction and steady provision of electricity supply.

(2) Steady supply of oil and gas: complete storage of required volume of oil and gas in accordance with regulations.

(3) Steady power supply: Actual result of SAIDI is 15.027 minutes per household per year.

(4) Promoted establishment of advanced metering infrastructure (AMI) for high power usage clients: completed setting up of 1,200 sets of AMI meters in accordance with AMI Promotion Plan.

5. Promoted environmentally friendly science parks

(1) 104 companies in total were approved, and 63 moved into the science parks, in accordance with the Environmental Science Parks Promotion Plan.

(2) Promoted energy conservation and carbon reduction counseling for business districts: completed counseling for five commercial districts, achieving a total of 15 thus far. Provided comprehensive diagnosis services for chain businesses, and completed three such diagnoses in the year 2011.

(3) Provided clean energy and promoted reduction of greenhouse gases: CPC Corporation provided B2 biodiesel throughout all chains; in accordance with the

MOEABOE's plan, 14 petroleum stations provided E3 gasohol. An estimated 200,000 tonnes of CO_2 reduction can be achieved annually.

(4) Assisted SMEs in achieving energy conservation and carbon reduction: the SME Administration of the MOEA assisted 20 SMEs in their energy conservation and carbon reduction efforts: improvements in the production and manufacturing process, inspection of greenhouse gas/ product carbon footprint and design of low-carbon products. Promoted the Establish Sustainable Energy Standards, Tests and Inspection Platform Plan;

(5) the BSMI of the MOEA completed 24 cases of greenhouse gas inspections, of which 23 cases had completed their second phase of inspection. Twenty-three greenhouse gas inspection certificates were awarded thus far. Further, since solar power and LED lighting have achieved an industrial scale, a total of 10 experimental inspection items were established.

6. Encouraged agricultural sector to promote effective use of agricultural lands

(1) Thirteen areas of agriculture dedicated zones were established so that farmers were guided to voluntarily maintain farming environments and sign the Dedicated Land Usage Covenant.

(2) Promoted the commoditization of high-end agricultural products: promoted the integrated Establishment of Agricultural Center and Satellite System Plan, and assisted farming groups to produce unique localized fruits and establish value-added that integrates their needs and provides a steady supply-demand relationship.

(3) Counseled marketing classes and industrial group purchases in adopting land separation, age category and batch production model, as well as automatic feeding systems to increase production efficiency.

Persimmon ice-cream invented by Fanlu Farmers' Association

(4) Maintained production and consumption balance for poultry: through gathering of information and counseling of organizations, cautionary mechanisms were established to strengthen self adjustment of the industry. The contract ratios were 90% for raised chicken, 80% for wild chicken and duck, and 50% for goose.

(5) Promoted agricultural excellence product labels: 6,526 products from 346 companies passed the CAS certification, worth NT$45 billion in total.

(6) Improved leisure farm production and management environments, and strengthened environmental beautification works. As of October 2011, 71 sites of leisure farms had been announced. Further, new theme tours for farms such as "2 meals and 1 night", "stress release and healing" , and "flower sea", with an estimated annual worth of NT$6.5 billion.

(7) Built irrigation management geological database for the TJIA: integrated GIS infrastructure and the irrigation/ drainage land management system.

Developing the TJIA's website of irrigation management of geological database system

(8) Strengthened water quality monitoring and management of irrigation water usage: established comprehensive irrigation water inspection network to enhance passing rate of water quality: completed comprehensive irrigation water inspection network to enhance passing rate and assisted the TJIA in enforcing their water quality monitoring and management.

(9) Promoted tour of the fishing industry: Organized the 2011 Taiwan International Aquarium Expo at Taipei City's WTC Hall 3 from September to October.

(10) Dedicated sea water and drainage route facilities for the fish farming industry: 37 engineering projects and drainage construction projects were approved, with 2 projects completed thus far.

(11) Promoted monitoring, management and inspection of coastal fisheries: continued to promote coastal line fishery monitoring. As of this year, there were 104 random maritime inspections.

Implemented GPS system for fishing boats and participated in regional fishery related science meetings; maintained our nation as a non-infected country for key animals; utilized guard dogs to strengthen customs baggage checks to prevent the onset of infectious pests found on illegally transported animals or plants.

2.5 Transportation and Livelihood Working Group

1. Promoting public road and transport development plans

(1) Subsidies were provided to public transport of 14 counties and cities (such as Keelung City) and public routes operated by the Directorate General of Highways, MOTC, thereby achieving the goal of keeping buses in operation even in remote areas.

(2) Assisted replacement of old public transport, totaling 490 buses, and added 139 low-platform buses to the current fleet.

(3) Assisted installations of multi-card readers and ancillary facilities so as to facilitate electronic ticket integration of all kinds of public transport, and to provide convenience to the general public. 47.27% of all buses have installed the devices.

(4) Assisted Taichung City and Tainan City in organizing bus evaluation tasks, and assisted in the evaluation tasks by the Directorate General of Highways, MOTC.

2. Continue to promote railway transport construction and upgrading services

(1) Continue to promote railroad and metro construction projects.

(2) Improved Hualien-Taitung line and completed the linking of the northern section of Shanli Tunnel in May.

(3) Promoted integrated service enhancement of Hualien-Taitung line: to construct one unique station per township. In particular, Pinghe station and Guanshan station completed the bidding process and are expected to be operational in 2014.

(4) Organized the design plan of the MRT outside Taoyuan International Airport, as well as the plan for the extension of the metro line to Zhongli train station.

(5) Accelerated establishing HSR stations in Miaoli, Changhua and Yunlin Counties.

(6) Continued to expand Taipei MRT: as of October 2010, 10 lines were operational, with a total mileage of 106.4 km.

3. Organizing demonstration plan for Eastern bicycle path networks

The Eastern Bicycle Path Networks Demonstration Plan in Response to Energy Conservation and Carbon Reduction was in force from 2009 to 2012. As of the end of 2011, 469 km of path had been constructed, and reached a total of 1,136km of path with the inclusion of other subsidized agencies.

4. Engineering Taiwan's intelligent transport system

(1) Organized the transport service e-system: integrated the e-traffic Center and Transportation Information Center into one single website.

(2) Completed establishment of the transport management system of national highways and freeways: Established internet management system for highways and freeways, with a 35.9% increase in usage compared to 2010.

5.Promoting ecotourism

To promote ecotourism, the Tourism Bureau organized activities such as beach cleaning and tree planting across

The Old Caoling Circle Bicycle Path

various tourist attractions; further, bicycle path networks were set up to encourage healthy, green lifestyles, with additional focus on ecotourism.

6.Enhancing weather reporting and seismic activity forecasts

(1) Implemented the fourth year of the Sea Weather E-Service System Integration and Application Plan.

(2) Implemented the Establishment Plan for the Monitoring and Reporting of Severe Weather.

(3) Established a new generation seismic observation network. In addition to enhancing observation stations and observation wells, work towards completing Taiwan's first optic-fiber oceanic cable observation network was done. This should improve Taiwan's earthquake/tsunami warning capabilities on the eastern sea border.

7. Strengthening the disaster prevention system for public roads and bridges

(1) Implemented public road disaster prevention mechanisms: Mandated 63 key monitoring sites for mountainous public roads during flood seasons and 45 monitoring sites for bridges. This year there were 79 precautionary road blocks, out of which 27 sites actually suffered huge-scale disasters afterward. It was fortunate that no lives were lost as a result of the precautionary measures.

(2) The concept of river system management warning: established a bridge safety warning system for Dajia Bridge.

(3) Improved standards for shock reinforcement for highway bridges

8. Promoting greenhouse gas reduction plan for the aviation industry and private airports

(1) Established greenhouse gas inspection mechanisms and database for Taiwan's major aviation companies.

(2) Established greenhouse gas inspection mechanisms and database for Taiwan's majoy airports.

(3) Completed low-carbon airport instruction manual, and Taipei and Makong airports were the first to sign the Greenhouse Gas Reduction Declaration.

(4) Completed the first domestic carbon footprint calculation for civil aviation services.

9. Promoting green consumption

I Strengthened the Green Mark system and established a carbon labeling system

(1) In total, formulated 113 product standards related to the Green Mark.

(2) Established a quick and fast Green Mark application platform; as of October 2011, 1,250 products were issued with the Green Mark and 10 products were awarded with a Class 2 environmental friendly product certificate.

(3) As of October 2011, 93 products from 33 companies were approved with the Product Carbon Footprint Label; 22 product category rules pertaining to carbon footprint labels were announced.

(4) Hosted the 2011 International Ecolabeling Conference on 25 October. Forty-nine dignitaries from 24 countries and more than 100 domestic

Tourism and Education Center of the Sun Moon Lake National Scenic Area Administration

representatives participated in this event.

II Established marketing channels for environmentally friendly products: in total, assisted 10,615 stores to become green stores that sell environmentally friendly products.

III Strengthened green procurement by the public and private sector: 685 companies submitted their green procurement results to the EPA in 2010, with a total green procurement budget of NT$3.4 billion.

IV Education for green consumption: 10 seed training workshops were held, with participation from 627 people. In addition, the 2011 Green Living Expo was held (as shown in diagram 14) to allow the general public to experience green creativity and green living in their daily lives.

V The Central Office of the MOEA selected green markets to conduct in-depth counseling for green marketing, as well as promotion of green energy establishment.

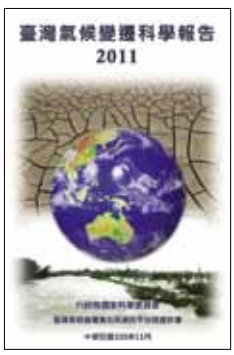
Green Living Expo held in 2011

2.6 Technology and Evaluation Working Group

1. Taiwan Climate Change Projection and Information Platform

The Taiwan Climate Change Projection and Information Platform (TCCIP) was initiated by the National Science Council (NSC) in 2009, expected to be completed within three years. The National Science and Technology Center for Disaster Reduction (NCDR) was responsible for overseeing and implementation of the plan. The plan focused on integration of applications for climate science research and downstream impacts, strengthened climate change science research and forecast capabilities and implemented application research and services of climate change information. The three year plan not only built analysis, forecast capabilities and downscaling technologies, but also took disaster impact as a central focus and established infrastructure in the integration of climate information and downstream application. This plan will serve as a demonstration research project of the NSC in terms of implementing long-term research and implementation services for climate change.

(1) Important achievements for 2011: digitization, normalization and internet-formatting of long-term climate research information; 25km and 5km downscaling estimates of Taiwan's region using 24 world climate models (IPCC AR4); extreme typhoon modeling (5km) and analysis of Taiwan's region using Japan's high resolution model; uncertainty analysis and establishment of climate change information service platform, etc.



The 2011 Science Report on Taiwan's Climate Change

The press conference of T2011 Science Report on Taiwan's Climate Change

(2) The 2011 Science Report on Taiwan's Climate Change was penned by participants and researchers of the plan. The report was more than 160,000 words in length and supplied the latest scientific research and progress pertaining to climate change of the world and Taiwan. A press conference was held on 9 November 2011 at the NSC, during which the report was made public. The report can be downloaded at http://satis.ncdr.nat.gov.tw/ccsr/.

2. Promoting sustainable environment green park plan

The Southern Taiwan Science Park (STSP) of the NSC actively constructed comprehensive infrastructure and formulated sustainable management policies geared in

three main directions: grouping of industries, sustainable environment green parks and culture & arts. The STSP hopes to create a model high-tech science park.

I Sustainable economy

(1) Promoted green building certification: 6 green building EEWH Diamond level certificates were awarded to the park as of October 2011.

(2) Promoted green transport: initiated shuttle bus services within in the park, which completed the seamless integration with the HSR. As of late October 2011, more than 270,000 trips were made, resulting in carbon reduction of 740 tonnes, equivalent to the carbon absorption volume 1.9 times that of Daan Park.

(3) Sustainable environment

(4) C2C waste recycling green park: as of late October 2011, the waste recycling rate was 81.9%; further, the waste water plant has successfully made bricks out of incinerator sludge particles, and the bricks were displayed in the park. The bricks were further used in the engineering projects in the park, hence taking another step toward zero waste.

(5) Environment quality management: implemented waste volume control, and there were no records of environmental violations pertaining to the EIA Act since 2001; all facilities within the park are 100% regulation compliant, and there were no records of environmental violations since 2005.

II Sustainable community

(1) Environmental education: promoted environmental education that encompassed elementary, junior and senior high schools and the general public. As of October 2011, more than 1,600 people participated in the events.

(2) Public participation: organized the 2011 Late Spring Art Festival which include 2 archaeology shows and 6 musical festivals. More than 5,000 people participated.

III Biodiversity metadata software Morpho and promotion and educational training for biodiversity research data storage system

Integration of biodiversity information is the fundamental work of the Executive Yuan's biodiversity promotion plan, which is overseen by the NSC and co-hosted by nine departments, including the COA. In particular, the D1202 item indicated that the organizing committee must build, maintain, update and popularize a biodiversity monitoring database system. The Biodiversity Distribution Information Storage and Management System plan was implemented by the Taiwan Forestry Research Institute; the main objective is to provide domestic researchers the platform to be in sync with international biodiversity research, through the tool Morpho that provides biodiversity metadata compilation and research management tools; educational training workshops, as well as update and maintenance of a Metacat biodiversity research information storage system. Results were as follows:

(1) Completed localization of the user interface and manual for the updated Morpho software; completed upgrade and maintenance of MetaCat; organized two tiers of biodiversity research information storage workshops in Taipei City and Taichung City from June to September.

(2) Morpho and Metacat were utilized by the Taiwan Forestry Research Institute, Forestry Bureau, Agricultural Research Institute, Urban and Rural Development Branch of CAPMI, Taroko National Park, etc. for the purposes of long-term storage and sharing of ecology research and biodiversity information.

(3) Assisted the Urban and Rural Development Branch of CAPMI in collecting information on national key wetlands, as well as educational training for information storage for the Forestry Bureau.

Green buildings of Southern Taiwan Science Park are awarded top-level EEWH Diamond certificates in Taiwan

2.7 Urban and Rural Development Working Group

1. Promoting green building for Eco-cities

(1) The ABRI of the MOI had long devoted itself to the research of green building, and its completion of the Eco-city Green Building Promotion Plan yielded the following results:

(2) 372 cases of green building marks and candidate green building certificates were passed. 80.88 million kw of power, 4.32 million tonnes of water and 55,000 tonnes of carbon emission were reduced annually.

(3) Completed 22 projects under the Building Energy Efficiency Enhancement Plan to improve energy efficiency.

(4) In terms of lowering urban heat island effects, completed 15 cases of Renewal and Upgrade for Green Buildings Plan.

(5) In terms of green building promotion, completed 75 rounds of Green Building Environment Education Demonstration and On-site Guide Activity, with participation from 1,787 people.

(6) Organized Green Building Evaluation Seminar and Green Building Evaluation System Seminar in the northern, central and southern regions

2. Promoting green building materials evaluation

(1) Passed 181 cases of green building materials (143 healthy, 9 renewable, 28 high-functionality and 1 eco-green material), covering more than 1,053 products.

(2) To safeguard customers' interests and rights of law-abiding companies, market investigations will be conducted annually after the issuance of Green Building Material Mark. Nearly 1/8 of all certified cases underwent inspection last year. As of October, 12 products underwent post-marketing surveillance.

(3) To encourage green building materials, two 2011 Green Building Material Mark Seminars were held, the Renewable Green Building Material Demonstration Seminar was held once, and the Green Building Material Mark was displayed at the Taiwan International Green Industry Show (TiGiS).

3. Promoting the household performance evaluation system

Organized pilot tests on the household performance evaluation system, so that the general public can have a better understanding regarding household performance evaluation. Completed pilot tests and evaluation promotion on Farglory Hyde Park, Farglory Xinzhuang Central Park and FJU Hostel, numbering 500 households in total; 25 pilot tests on household performance items and contents were conducted.

4. Promoting barrier-free household evaluation

To encourage barrier-free households, the barrier-free (friendly) household evaluation contest was widened and achieved the following results:

(1) Voluntary assessment to encourage the private sector to strive for friendly, barrier-free living environments for the general public.

(2) Assisted the general public in recognizing which buildings were safe and convenient, and which ones were suitable for the elderly or those with movement limitations.

(3) six cases of outstanding friendly households and 19 cases of friendly households were determined.

5. Promoting earthquake-resistant building mark evaluation

Earthquake-resistant mark certification demands feasibility of structural design and construction for buildings, as well as monitoring mechanisms during project construction. These measures enhance the earthquake-resistance and quality of buildings. Results in 2011 included:

(1) 23 cases in total were advised, out of which 8 were new and 7 cases had passed the earthquake-resistant design mark. To date, 8 cases had received their earthquake-resistant mark after confirmation and evaluation of their construction conditions.

(2) Completed 13 rounds of design meetings, 10 construction meetings and 42 rounds of on-site inspections.

(3) On promotion: completed the Earthquake-resistant Mark Certification Manual, reports in the Economic Daily News, bi-weekly Wealth Magazine and Taipei Metro UPAPER, Old Building Certified Volume Commendation through the Urban Renewal Action Plan of the Executive Yuan and Earthquake-resistant Mark Certification Ceremony events.

6. Sustainable Urban and Rural Development

The CAPMI actively promoted sustainable urban and rural development with the following results:

(1)Completed urban renewal regulations: to ensure that the urban renewal act addresses practical issues, the procedures were simplified. After discussion and amendments to the Urban Renewal Act, an evaluation meeting was held on 15 and 17 August 2011. Simultaneously, the Measures Governing Self Renewal Utilizing the Central Urban Renewal Fund was announced on 10 August 2011, and applications were open until the end of October.

(2) Civic Urban Renewal case: since the announcement of the Urban Renewal Act in 1998, there were 904 cases of civic applications, of which 334 were approved. As of October 2011, 36 urban renewal projects (including rights change plans) were evaluated and implemented, out of which 22 were maintenance plans.

(3)Government-centered urban renewal plans: Since 2005, there were 180 urban renewal demonstration sites; 130 demonstration sites completed preliminary urban renewal works, out of which 35 were commissioned by the central government (Agency) or related entities (institutions) or investors; the remaining 89 sites were still in the integrated planning phase, including preliminary planning, urban plan renewal and formulating urban renewal plans. As of the latter half of 2011, 18 sites had reported to the Urban Renewal Task Force of the MOI for further inspection and evaluations.

(4) Autonomous renewal lectures and community workshops were held in the north, central and south regions to enhance the public's practical skills in organizing autonomous renewals.

(5) Organized urban renewal lectures, investment explanatory meetings, experience exchange symposiums and urban renewal promotion and business attraction manual.

(6) Expanded underground waste sewage projects to improve the public's hygiene and standard of living. As of end September 2011, the proliferation rate for underground waste sewage was 28.51%, from an estimated national total of 1.65 million households.

2.8 Health and Welfare Working Group

1. Effective implementation of environmental quality management and monitoring

The EPA managed and monitored the air, water and radiation in the environment to enhance the public's living environment, with the following achievements:

(1) In terms of atmospheric dioxin monitoring, the average concentration was 0.044 pg I-TEQ/ m3 (as of August 2011), which was significantly lower than the 2010 standard of 0.051 pg I-TEQ/m3. All measurements were also significantly lower than that of Japan's level, which was 0.6pg I-TEQ/m3. In addition, the national dioxin emission volume for 2010 was 58 g I-TEQ, a massive 82% reduction compared to 2002's level of 327 g I-TEQ. This indicated that dioxin control in the nation has had measurable effects.

(2) In terms of water management and inspection, local

The 1st International Symposium on Elderly Friendly City

environmental agencies were supervised to implement the 2011 Drinking Water Management and Inspection Plan. Random tests were conducted at 513 tap water sources, 443 small water treatment facility sources, and 8,979 cases of tap water quality and 222 cases of small water treatment facility were randomly selected; 5,491 random cases of public drinking water facility management inspections were conducted, covering 4,871 cases of water quality inspections and 207 cases of impure chemical contents in drinking water treatment.

(3) To facilitate the public's understanding of electromagnetic waves (EMW) in the atmosphere and to enhance their understanding of EMW sources encountered in daily living in order to heighten their alertness and prevent any unnecessary panic, the EPA randomly conducted EMW tests at 230 sites (including extremely low voltage transformers, high voltage towers, broadcast stations and transmission bases). The test results all fell within acceptable standards. Collaboration with related promotional events continues to occur to educate the risks of non-ionizing radiation.

(4) Completed formulating the draft of Preventive Guidelines for the Establishment of Non-ionizing Radiation Facilities in Sensitive New Regions, and established the experts' panel on Discussion on Appropriateness of Non-ionizing Radiation Standards based on public participation and an expert representatives mechanism.

2. Continue promoting outstanding agricultural products

The COA continues to promote Taiwan's agricultural products. In addition to promoting the mark mechanism, it also conducted the following counseling:

(1) Promoted Taiwan's famous tea and encourage the public to consume more of Taiwan's excellent quality tea. Assisted the Association of Taiwan Tea (ATT) in organizing the World Health Day: Tea for Everybody series of events from 7 April to end of June. 7 April was also laid down as the World Health Day: Tea for Everybody to encourage more consumption of tea. Also, in response to the 311 Earthquake of Japan, farm land dedicated to pear production was increased by 70 hectares to meet the demand for pear.

(2) As of 17 November 2011, the COA had helped to establish 42 rice marketing zones; assisted with 156 rounds of planting management, safe usage of pesticides, reasonable usage of fertilizers and sales records; 219 inspections of farming pesticide residues all passed. Further assisted 61 rice-producing entities (including 7 organic ones) in following the Taiwan Good Agricultural Practice (TGAP), as well as introduced a third party certification system. 3,873 hectares (including 307 hectares for organic rice) of land passed the production and marketing resume certification process.

(3) In terms of mark promotion, the CAS label and GAP label continue to bear significance. As of October 2011, 6,526 products from 346 companies passed the CAS certification; another 11 items for animal products concerning the TGAP were announced. Animal raising companies were further counseled in accordance with the TGAP to improve their production activities and implement the production and sales record system.

3. Comprehensive medical services and system to build a healthy and vibrant society

An excellent medical system serves as the basis for a healthy and vibrant society, therefore, the Department of Health (DOH) announced or amended several medical systems, organized seminars and participated in international events, including:

(1) Amended the Cautionary Items for Medical Service Institutes Handling Prevention Health-care Services: assisted the economically poor group (low-income, middle-low income, households in remote areas) with one time examination of Group B Streptococcus, free or subsidized genetic service for birth related items; genetic counseling and assistance provided for newborns with genetic abnormalities, and transference of treatment is also available.

(2) Promoted Inoculation and Follow-up for Students Entering Kindergarten/Daycare Center Plan: provide early prevention and follow-up for young infants to complete their inoculations and to enhance their overall immunity.

(3) Organized Cancer Screening (Treatment) Standard Seminar, International Seminar on Cancer Passport Quality and Evaluation, Cancer Treatment Excellence Award for Hospitals and Experience Exchange Seminars, etc.

(4) Organized the Health 2011: Come on All Grandfathers and Grandmothers – National Finals in conjunction with the Double Ninth Festival and the International Day of Older Persons.

(5) Led scholars and experts from Chiayi City and Taoyuan County in attending the WHO Elderly-Friendly Cities Network, International Elderly League, and attended

the 1st International Symposium on Elderly Friendly City held in Dublin, Ireland. The symposium discussed how to construct elderly friendly cities and operations of the network in the future. The Taiwanese delegation signed the historic Dublin Declaration, which focused on continued support for the elderly, with 42 international cities.

4. Welfare for the disadvantaged

(1) The Ministry of the Interior formulated the Infant Education and Care Act, and all 60 articles were announced by the President on 29 June 2011, and will enter into effect on 1 January 2012. The aforementioned act integrated all education and welfare matters pertaining to child care, and the integration of child care services.

(2) Amended table 2 of article 5: Guidelines for Immediate Care and Emergency Aid, including: (a) Conditions for determining primary caregiver is changed from the original greater than 1/2 of total family income to greater than 1/3 of total family income. In addition, the clause for primary caregiver is expanded to include those who are main financial providers and those with no economic income but actually handle the livelihood of the household (one person per household maximum). (b) Expanded subsidy for economically disadvantaged households will include pregnant women who are unfit to work as diagnosed by doctors.

Health 2011 : Come on All Grandfathers and Grandmothers - National Finals

(3) To widen protection for the disadvantaged, articles of the National Pension Act were amended, including: increasing birth subsidy, loosening pension criteria, loosening conditions for withdrawal of guaranteed elderly funds and for indigenous people, amended charges of payment and calculations of years of service, as well as conditional removal of penalties of spouses. These measures are in place to ensure every citizen can enjoy basic security in their pension.

(4) Implemented welfare and amended the Public Assistance Act to loosen the standard for the poverty line and evaluation qualifications. Provide 1/2 health insurance subsidy for lower middle income families, as well as waiver for school fees for their children who attend senior high (vocational) schools. The implementation of the new system could help more disadvantaged people.

2.9 Education and Promotion Working Group

1. Improving knowledge and understanding of sustainable development and environmental consciousness of the general public

To facilitate students' understanding and learning of topics relating to sustainable development, different courses/projects based on education levels were developed, such as: (1) assisted universities in opening 29 courses on sustainable development knowledge; (2) 21 science centers of senior high schools researched on environmental education and provide educational resources concerning sustainable development; (3) promoted Situational Learning Center: Outdoor Learning Promotion Plan to encourage elementary and junior high school students to learn beyond the classroom; (4) promoted website and materials for the Climate Change and Sustainable Development, to provide teaching experiences and exchange of ideas; (5) subsidized civic organizations in hosting learning schools for the elderly to further sustainable development and environmental consciousness. 400 elderly schools were subsidized in 2011, which benefited more than 50,000 people.

To enhance the public's understanding of ecology, the importance of water resources and energy conservation and carbon reduction, the EPA organized the Protect the Forest and Water of Taiwan environmental event, and the carnival Low-carbon Green Life: Let's Do Our Part for a Better Future. The NSC hosted the Low-carbon Taiwan for a Better Future – You Can, I Can special event. In addition, the key theme of the 460th Science Development of the NSC introduced related concepts of green building to educate the readers concerning its importance and characteristics, as well as to inspire the general public's interest in sustainable development.

The MOEAIDB published 700 copies of the Corporate

Social Responsibility (CSR) Report Guidance and Introduction to Taiwan's Outstanding Examples of CSR Reporting, to encourage corporations to continue their CSR reporting and adherence to integrity in business operations; compiled 1,000 copies of the Stories of Integrity among Taiwan's Corporations.

2. Integrating resources from the government, the general public, corporations and schools to further sustainable development

The EPA organized the Clean Homeland for All Plan and Creating a Sustainable Environment Plan that integrated the green network, township and city mayors, and the EPA (local EPBs) to establish 30,000 government style blogs; promoted the Student Care from Home to School Patrol Plan to encourage students to pay more attention to their surrounding vicinities at school and home, and to patrol the environment, report in and clean when necessary.

The Ministry of the Interior promoted the Community Planning Localization Counseling Plan and ratified formation of counseling groups in 17 counties and cities. Through close proximity, improvements to the environment were carried out, to create an excellent living environment in a balanced harmony. The Ministry of Education organized the 2011 National Environment Education Policy Direction Seminar and assisted 22 county/city governments in implementing the Environment Education Counseling Group Plan. Through hosting of lectures and integration of resources, environmental education plans and strategies were formulated.

3. Strengthening community education centers and public media to promote topics of sustainable development and environmental protection

The Government Information Office and the National Geographic Channel co-filmed the Great Project Tour: Taiwan's EcoARK documentary – which introduced Taiwan's environmentally friendly building technologies, and assisted the EPA in utilizing four wireless TV stations, the Taiwan Indigenous Television and Hakka Television Station in showing 19 short promo files titled Reinvigorating Tamsui River. Meanwhile, Energy Conservation and Carbon Reduction, Use Water Carefully programs were produced at 14 television stations, including Chengsheng Broadcasting Corp., to promote the concepts of energy conservation and carbon reduction.

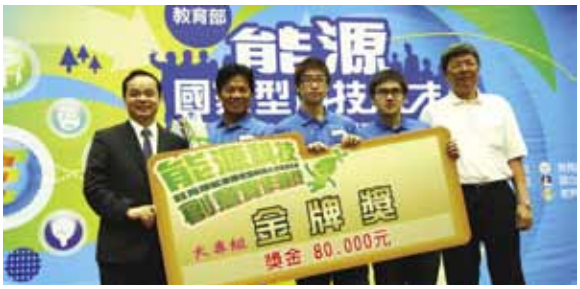
To preserve information on Taiwan's national park resources, the MOI completed the 2011 National Park Digital Archives Program, which encompassed 1,380GB of digital information, videos of interviews with 52 experts, 100 minutes of previous videos and newspaper information.

The Water Resources Agency utilized related media or promotional events to help spread the idea of sustainable water usage, for instance through a 12 minute promotional film, 2 eight minutes promotional films: The Day After Climate Change and 2884mm, 30 second promotional short films, media broadcasts and advertisements, and various brochures.

4. Promoting sustainable development education and international cooperation

Sustainable development education research subsidized by the NSC includes: Sustainable Campus Program: Research on Raising Teachers and Students' Quality, Integrated Research Plan on Supporting Community Sustainable Development of Natural and Environmental Education Resources, Research on the Economic Impact of Global Warming and Integration of Economics in Environmental Education, Design and Evaluation of Environmental Courses, Research on Professionalism of Kindergarten Teachers in Areas of Sustainable Environment Education in the New Century, etc. The Ministry of Education subsidized the hosting of 4 seminars and 4 international seminars by the Society of Wilderness to encourage government agencies, educational institutes, civic association and foundations in organizing more environment education related events.

President Ma Ying-jeou in attending exhibition with students of the hearing impaired



Deputy Minister Wu of the Ministry of Education awarding gold medal of the energy technology innovation contest for university-level students

Chapter 3

Evaluation of Taiwan's Sustainability Indicators in 2010

Sustainable development has always been a key theme for discussion. To ensure a subjective reference for all circles concerning the evaluation of the nation's sustainable development, in 2002, the NCSD referred to the 1996 sustainable development indicator system of the United Nations (UN) as a measure to develop the country's own sustainability indicators. The sustainable development indicator system was established in May 2003. In addition, computation results of the indicators will be published on the NCSD's website annually as valuable reference to all parties. (Website: http://sta.epa.gov.tw/nsdn/CH/DEVELOPMENT/INDEX.HTM)

The UN announced the third version of the sustainable development indicator system in October 2007. In order to stay on track with international trends, the NCSD resolved to amend Taiwan's sustainable development indicator system on December 2008. After more than one year of deliberation and symposiums, at the 29th working meeting of the NCSD on 31 December 2009, the second version of Taiwan's sustainable development indicator system was passed.

The second version of the sustainable development indicator system in 2010 included 12 themes, 41 sub-themes (see table 3-1) and 87 indicators, which is considerably more encompassing than the first version. Evaluation data for the 2010 sustainable indicators can be downloaded from the aforementioned website.

Table 3-1 Themes and sub-themes of the second version of Taiwan's sustainable development indicator system

Theme	Sub-theme
Environment	Air quality, water quality, waste, environmental management
Energy Conservation and Carbon Reduction	Greenhouse gas, energy usage, energy conservation and carbon reduction
National Land resources	Land, forest, coast, water resource, natural disaster
Biodiversity	Heredity, species, terrestrial ecosystem, marine system
Production	Material usage, hygiene production, agriculture, fishery, labor, overall economic effectiveness, public finance
Livelihood	Water usage, transportation, green consumption
Technology	R&D, telecommuncations
Rural culture	Heritage, community, city
Health	Medical care, nutrition, health risk
Welfare	Poverty, average income, social benefits
Administration	Crime, education
Participation	International participation, public participation

Diagram 3-1 Website of the sustainable development indicator system

Chapter 4

2011 National Sustainable Development Award Recipients

Sustainable School Award

Micang Elementary School of Bali District, New Taipei City

Micang Elementary School of Bali District of New Taipei City, was established in 1922, located near the Dabenkeng, Shishanhang cultural remnants and Guanyinshan National Scenic Area. This wonderful setting granted this school an excellent educational environment. For more than 90 years, the students here were taught the values of health, gratitude, friendship and excellence. In recent years, the school aimed to create a haven for students to mature happily, for teachers to develop professionally, and to become the center for nurturing a community. The school's environment and community resources, coupled with unique local characteristics, are utilized to develop various learning activities and nurture the school as a key learning center and cultural hub for the entire community.

To ensure that the school is in sync with sustainable development, aspects such as space management, sustainable development education, practical items in environmental protection, human welfare and community participation were incorporated in the school's curriculum, students' learning and physical resources. The ultimate objective is to develop diversified, localized, expanding and sustainable education and value.

Revitalization and Reuse of Space

Established a campus environment management system and inspected campus geological environment; integrated with Guanyinshan National Scenic Area, an environmentally friendly campus was planned and beautified. Further, analysis of space utilization frequency and efficiency were used to construct accommodations, and the Bali stone industry and ecological resources were

Micang Elementary School Happy Farm

❶ Integrate community resources to let students experience their hometown industry—the process of gathering bamboo shoots

❷ Water plant pool displays campus wetland ecology and provides students with the natural learning environment needed to explore nature

❸ Using local materials and preserving nature through a sustainable and environmental friendly method of building

integrated to establish teaching zones of carving, plating, observation, experience, exploration and amusement and to provide a sustainable learning environment.

Micang Elementary School explored locally as it began the journey of promoting sustainable learning. Caring for the environment was a key foundation as it sought to develop its own courses and encouraged teachers to compile their own sustainable gardening book that can utilize environment based materials or incorporate lessons in teaching, such as using wind powered generators to explain renewable energy, building trails that teach about plants, water plants, Micang tree house, learning farms, etc. In addition, environment related outdoor teaching, attending lectures, seminars and environmental-related contents also serve to contribute to the purpose of developing sustainable teaching.

A Life of Environmental Protection

Environmental protection should be part of daily lives, done through measures such as waste reduction, resource recycling (including recycling textbooks, uniforms, cupboards, ordinary items, fallen leaves, waste food, floating logs and electric cables, etc.), paperless office, etc. Also, promotion of green consumption, green transport and development of renewable energy, collection and reuse of rain water and utilization of water and energy-saving appliances are encouraged.

Integrate Humanities and Community Participation

Impromptu community beach cleanings, on-site investigations of humanities records, and donation of second-hand books and toys, etc. are just some of the ways to utilize school resources combined with local resources. These measures help establish a library for environmental education, magazines and information system, compilation of Micang Environmental Education Library and Sustainable Campus Network. In addition, creative teaching and community resources, such as community facilities and ecological park, maritime education using canoes and sails, wetland education of Tamsui River's intertidal zones, trail of Guanyinshan, Bali local education, etc., were integrated to create the unique teaching flair of the school.

Play while Learning, Learn while Playing

Through exploration of experiential learning, every student can adjust and adapt in a stress-free happy learning environment, which aids in building their confidence. Through a subtle transformation caused by the shift in environment, and the natural learning spaces within the campus, all students get in touch with the land, develop their physique, look after their character, experience the harmony between man and nature, and in turn learn to respect life and love Mother Earth.

Through long-term efforts and dedication, coupled with integration of Bali District's local industries and humanities, the area is gradually developing into a learning zone of humanities, nature, environment and education that provides learning, observing and experiencing avenues; localized own courses are promoted at inter-school events which foster the diversified facets and teaching styles that further enhanced students' learning opportunities; through efficient utilization of campus space and provision of sharing platform through integrating the school's and community's resources, the school is transformed into a community learning center; flexible use of education methods foster the students' appreciation of the relationship between man and environment, which further the knowledge, attitude, skills and values needed to make changes and respond to our environment.

Stella Matutina Girls' High School of Taichung City

Stella Matutina Girls' High School (SMGSH) was founded by the Sisters of the Sacred Heart of Mary in 1963; during that period, it was difficult for females to receive education. Therefore to nurture talents and raise the status of females, the Sisters of the Sacred Heart of Mary overcame all obstacles and utilized their resources to buy a piece of land at Daya Rd. of Taichung City as the building ground for the upcoming school. Early in 1985, when environmental consciousness was growing, the SMGSH was led by Mr. Chen Dao-xue (Gentlemen of Waste). Under his guidance, the students experienced full-scale environmental education through learning how to classify garbage and recycle resources. In recent years, steps were taken to educate students about ecology, implementing ways to conserve energy and reduce carbon, and to further exemplify a simplified lifestyle, so students can internalize gratitude and appreciate life. This dual-method of cleanliness for the environment and heart made education at the school even more desirable.

Green Campus

People were astounded by the first impressions of the school: campus landscape design inspired by religion and love for the environment. A garden for every building demonstrated a plethora of flora, bringing out the beauty of the campus four seasons throughout the year. The ecological pool and honey source ecological teaching zones help teachers and students observe and learn about common birds, insects and plants on the campus. The delicate guests of the campus, such as flapping butterflies, crawling caterpillars, tendering pycnonotus sinensis, playful sparrows, serene sounds of insects and birds, all allow the children to experience a different kind of soul nourishment. The SMGSH adopted green building concepts to create a bio-diversified campus environment that conserves energy, resources, and is healthy and safe with zero pollution. In addition, hanging gardens, ecological pools, butterfly ecology, Lanyu plants zone and multi-level planting facilities were established on the campus.

Campus ecology tour: Teaching from the heart, learning from the heart

Multi-faceted Environmental Education

Develop education-centered sustainable development courses by integrating local culture and ecology; conduct learning activities based on practical experiences; simultaneously organize varied sustainable professional development activities for the principal, administrators and teachers; establish sustainable education professional development association. To implement diversified environmental education, sustainable development topics related to Taiwan's environment and global climate change are integrated into teaching and learning activities such as bio-diversity, ecological conservation, environmental pollution and load, climate change, Kyoto Protocol, renewable energy, non-nuclear home, globalization, industrial culture, green consumption, genetic engineering, environmental justice, value education, etc.;

Campus landscape design that integrates religion and care for the environment

Through diversified activities, the concept of sustainable development can be nurtured in the teachers and students.

An Environmentally Friendly Life of Energy Conservation and Carbon Reduction

Energy conservation and carbon reduction are a key part of the promotion for environment protection. To achieve this end, the SMGSH conducted full-scale evaluation of power and water usage and used light-saving bulbs and rechargeable batteries, to truly achieve energy and water conservation goals. The Green Living Club was formed to allow members to learn, service, research, implement and promote low-carbon energy-saving green lifestyle.

In addition, to promote the treasuring of water resources, rain water and recycled water were collected and reused, and water-conservation equipment were used. Textbooks, uniforms, and school items were collected and recycled, and waste reduction and recycling on campus were implemented. In addition, starting five years ago, disposable utensils were banned on campus and lunch meals were provided, co-ops were closed and vending machines removed, resulting in an annual reduction of 6,000 kg of disposable utensils. Coupled with Veggie Fridays, the children were more healthy and the environment protected.

Environmental Protection Slogan No More – Care for the Planet and Community

The annual Prayer for the World event targets international incidents and environmental issues. With aid from related science teachers, live introspection and prayer rituals were conducted to remind the children about the inter-connectedness of all life forms and the environment. In addition, the SMGSH continues to participate and solve environmental problems, strengthen community environmental consciousness, develop community vision and integrate environmental protection concepts into daily lives. Under the pretext of this ideal, the school not only helps nurture a robust mutual-help system between the families and the community, but further develop happy, grateful, respectful and positive life values in the students. Furthermore, care for the disadvantaged, assistance to the disadvantaged groups such as providing care for lone elders, collection of donations, and integration of borderline community resources to develop local character all serve to develop the SMGSH as an education base for sustainable development of the local community and local industry.

❶ Year-end cleaning for lone elders— environmental education integrated with human concerns

❷ Waste water treatment plant: Learning the importance of water resource reuse

Ci-Xin Waldorf School of Yilan County

Ci-Xin Waldorf School embodies a healthy and balanced way to pursue the three-faceted growth of will, emotions and thoughts in children. The school integrates mind-engaging arts, handiworks, body movements and music courses side-by-side with sturdy language, arithmetic, science and sociology courses; this combination nurtures and encourages balanced development of the mind, heart and body of the children. It is hoped that as the children understand their own potential and are equipped with free will, they will step into the future with confidence and contribute their talents for a better world.

Sustainable Ideas and Values

Waldorf's education ideal is to pursue a healthy and balanced development between man and self, man and community, man and land, and man and heaven and earth, as well as to lead children into a positive cycle of sustainable development. To this end, education promotional courses, teachers' development courses, parents' growth courses, parents' study group, parents' workshop, are all geared toward emphasis on the nature

Organic green buildings that focus on education

Promoting local foods and friendly farming: Big House Friendly Market

of education and introspection on life's growth so as to better know the world.

Sustainable Teaching and Campus

Teaching shouldn't involve formulated texts, but rather should be based upon the natural rhythmic characteristics of life. Stories and pictures play the central role as teachers employ them in generating creativity, and students respond in a positive sustainable learning cycle of absorbing, digesting, pondering and performing. As far ago as eleven years, Waldorf participated in the Taiwan Sustainable Campus Project of the Ministry of Education, and began: (1) sound, light, heating and energy conservation improvements; (2) multi-layered greenification of campus; (3) circulation of natural pure water in artificial wetlands; (4) creating local diversified campus ecology and water-permeable campus space. For more than a decade, Waldorf had pioneered sustainable campus ideals and plans and aided over ten schools in Yilan County.

Sustainable Building and Localization

Nature is our teacher. New classrooms and students' activity centers were constructed using the green building concepts – a joint effort by teachers and students as they seek to bring life to buildings and power that transcends space. Their efforts brought a new outlook to the sustainable development of buildings in Taiwan's campuses. At the same time, based on the ideals of localization, nature and environmental protection, families, schools and communities are integrated with local farms to realize friendly farming and green consumption. The Big House Friendly Market was formed that allows sustainable development of local farms. The professional teachers and parents dedicated themselves to community works, edited human resource maps and promoted local culture, environmental courses and student community public services. All these measures helped invigorate the community.

Sustainable Community and Happiness

The Parents' Association (PA) is made up of 12 working groups. The PA participated in school affairs, moulds a community culture that transcends space and blood, crosses the border of modern society and rebuilds the cooperative trust between people. Most parents, after participating in the PA, experienced life-changing joy and growth. Raising their children became a source of joy, not a burden, for the families, even after many years and the birth of their second or third child. Many families even had their fourth babies, a monumental achievement in the face of the country's low birth rate.

Sustainable Food, Clothing, City and Countryside

The school dedicated itself to promoting simple clothing made from natural materials, and encouraging a natural diet. For many years, catered lunches have provided the simple diets made from organic and natural foods, giving the children a source of vibrant energy. The diet also supports energy conservation, carbon reduction and environmentally friendly agriculture. The school has become a learning ground on how to be a public citizen, injected with arts on living, including local food friendly markets, organic interactive farm, and organic ecological community. These attract large numbers of people from other counties who seek education, and caused a wave of urban/rural transformation due to the education industry.

Creating a New Mind for the Environment

Waldorf had always been a seed for building a healthy community through joint participation from teachers, parents, students and the community pertaining to educational affairs, as well as fostering a new image for schools so that schools can become a learning ground that develops citizen consciousness. The teaching team emphasizes the subjectivity of education and hopes to forge the connectedness between people through school education, overcome barriers of modern society and

Bamboo raft built by students as they experience the wetlands

build a new culture based on community interaction. In the future, Waldorf hopes to become a leader in the art of living, building a bridge between educational reform and social progress and acting as the strength and hope as society evolves in a positive way. The school's education also injects new ideals into the society and helps in the remodeling of urban and rural areas. Further, through implementation of education, the ideals embedded into local natural ecology and humanities, serve as factors that shape the new local education industry.

Sustainable Enterprise Award

Singtex Industrial Co., Ltd.

Since the establishment of Singtex Industrial Co., Ltd in 1989, ideology of the company had shifted from selling functional textiles to realizing the impact of steep climate change on the world's environment and man's need for survival. The realization that there is only one Earth that requires the joint efforts of everyone propelled Singtex to spend billions of dollars to create a cutting-edge R&D Center and high precision environmental protection dyeing R&D Center. These measures shifted Singtex's focus and made it a champion supplier as Singtex aimed to become the international leader in providing environmentally friendly functional textiles. In recent years, Singtex won acclamations from the country; in addition to winning Taiwan Excellence awards two years in a row, this year Singtex also won the honor of being among Taiwan's top one hundred brands for the Centennial. These acclaims all deepen Singtex's resolve on the road to sustainable environmental management.

Environmental Protection

The ideal that Singtex has always been striving for is not just to satisfy people's needs for the functionality of their clothes, but also to conserve our environment and co-exist with nature's ecology. Singtex uses innovation as a means to response to changing times, new technologies to support our innovative ideas and establishing the environmental friendly image and branding of functional textiles. Singtex's corporate image is one of excellence, dedicated to creating high-functional, high-value and environmentally friendly functional textiles. Equipped with the EHS (Environment, Health, Safety) ideal, Singtex strides into the international arena and introduced Taiwan's functional textiles to the international arena, building a strong brand image.

Continue Innovation

Singtex spent four years developing the S.Café® environmentally friendly coffee muslin. The muslin integrates waste coffee grounds with recycled PET bottles. The S.Café® environmental friendly coffee muslin and ICE-CAFÉ energy conservation environmentally friendly ice coffee muslin are made of environmentally friendly materials. In addition to odor removing functions, they reduce the number of rinses in washing machines, hence reducing energy consumption. At the same time, the series also passed the GRS (Global Recycle Standard) and German's TUV recycled material certification. These innovative products won acclamations from Pittsburgh Innovation and Nuremburg's IENA, International "Ideas – Inventions – New products" Trade Fair. The company

Received acclamation from the Taipei City Government in promoting Veggie Day

Singtex rice field

Received the Environmental Hero Award given by Commonwealth Magazine

invests more than 3.5% of revenue in the R&D of functional textiles annually. Singtex hopes that through active innovation and incessant improvement of Taiwan's textile industry, competitiveness can be maintained and long-term relationships with international clients can be nurtured.

Comprehensive Environmentally Friendly Manufacturing Procedures

$NT250 million was invested in 2007 to establish the high precision environmentally friendly Dyeing R&D Center. Environmentally friendly concepts were introduced into the center design at the initial phase, from selection of energy source to dye selection, all are compliant with environmental protection standards, and received the bluesign® certification as well.

1. Utilized natural gas as the heat source for the plant, so as to reduce reliance on heavy oil which produces greenhouse gas.
2. Install heat recycling systems at heating devices with an effective recycling rate of 40% and helped reduce heat loss.
3. Selection of dye: selected dyes that are harmless to the human body and the environment; selected dyes that passed the bluesign® standards.

Besides constantly improving the manufacturing process, Singtex also devotes itself to reducing energy consumption and carbon footprints for its products, guided by the corporate mission of protecting the Earth's environment.

Actively Develop Talents

The Singtex Academy was established in 2003 and acted as an internal training organization for the company. Courses are varied, with company managers and outside experts acting as speakers for the courses. Employees learn different courses based on their work designation and receive credits when they pass. These credits serve as reference for future promotions and motivate employees to keep learning. In addition to learning, attention on body-mind-soul development is also emphasized through a health center and different kinds of clubs and activities.

In recent years, Singtex has cooperative plans with various educational institutes across the country. Annually, 4 to 6 internships are available to students of textile related departments. Since 2011, Singtex has allied with the International Foundation of Fashion Technology Institutes (IFFTI) and provide internships for international students to study in Taiwan. This development of young talents helps pave the career path for aspiring students.

Implementing Energy Conservation and Carbon Reduction from the Heart

Besides using R&D capabilities in improving manufacturing processes and products, the employees of Singtex are encouraged to carry out environmental protection in their daily lives, through participating in plastic bottle and coffee grounds recycling; using environmentally friendly utensils and vegetables; encouraging resource recycling through waste reduction and classification. Singtex adopted 0.5 hectares of rice fields in Dongshan Township of Yilan County in 2011 as a token of genuine concern for our land.

Looking into the future, Singtex will continue in its endeavors to be friendly to the environment, developing various environmentally friendly functional textiles to provide comfort and value to consumers; employing passion, integrity, innovation, service, quality and giving back as our core values and ideals; becoming the top leader in providing environmentally friendly functional textiles; satisfying the needs of stakeholders and employees; and achieving sustainable operations and growth in accordance with the company's core values and ideals.

United Microelectronics Corporation

The United Microelectronics Corporation (UMC) was established in 1980 and is the world leader in semiconductor related technology with 10 foundries and operation sites across the globe. For more than 30 years, UMC had utilized flexible operational strategies, cutting-edge manufacturing technologies, innovative capabilities, customer-centeredness and green product service abilities to propel the company as the world's leader in semiconductors. It furthered Taiwan's lead in the semiconductor industry across the globe. UMC is the leading company in terms of patent numbers and continues to advance state-of-the-art manufacturing processes that encompasses every sector of the semiconductor industry. UMC was the first foundry to ship wafers using copper materials, to produce chips on 300mm wafers, to deliver functional 65-nanometer ICs to its customers, and the first to produce chips using 28-nanometer process technology.

The realization of sustainable development and social responsibility is the underlying core principle of UMC. As a global leader in the semiconductor business, not only is CSR implemented in the business, but UMC further strives to spread the idea of sustainable development, beginning from the company, employees, family members, to every corner of society. Since 2008, UMC was listed for both the DJSI-World and DJSI-Asia Pacific indexes, a testament to UMC's sustainable global competitiveness.

Ten unique features of sustainable development in UMC include:

1. First in the semiconductor industry to promote CSR and Establishing a CSR Committee

UMC Corporate Social Responsibility (CSR) Committee was formed in 2008 and presided over by the chief executive officer, who regularly inspects and acts to improve CSR performance. The CEO proclaims the CSR vision, which is to "Establish a new vision of a people-centered, environmentally friendly and prosperous society". The vision guides UMC in achieving a triple win for the economy, environment and society.

2. Healthy financial structure and company management

The financial structure of the UMC is balanced and has high cash-flow, low debt and a comprehensive cost control plan. UMC was the first to recover from the financial crisis of 2008. The year 2010 had been especially promising, with record highs in both export volume and revenue; profit margin and stakeholders' returns had reached excellent levels as well. More than half of the board consisted of independent persons. Further, the presence of Auditing Committee, Salary Committee and Information Disclosure Committee, coupled with the promotion of the Sarbanes-Oxley Act all helped improve ethical standards and protect stakeholders' interests.

Installing solar power panels

Love story action theater

Story-telling volunteers

3. Invest in green industry for a low-carbon and sustainable future

The New Career Development Center was established to invest in green industries such as renewable energies, solar power and new-generation LED lighting. As of 2010, more than NT$12.8 billion was invested. The strong dedication to R&D formed the unwavering backbone of UMC in applying breakthrough green technologies in ushering forth revolutionary leaps, which indirectly propelled the economic restructuring toward a low-carbon economy.

4. The leader in announcing climate change policies

UMC led its industry by announcing Climate Change Policies and Carbon Reduction 333 Plans. These plans advocate innovative low-carbon measures, provide low-carbon solutions, and serve as evidence of UMC's commitment to implementing measures to lower carbon emissions and respond to the world's climate crisis. The daring moves and responsible actions therefore won the acclamation of Commonwealth Magazine's Environmental Hero Award.

5. The industry's first in carbon and water footprint certification – ushering a new era of green products

UMC has been SONY's Green Partner since 2003. A hazardous substance management system was established in 2006, which controls over 40 listed substances, and surpassed even the RoHS directive of the European Union. In 2009 and 2010, the UMC became the first company in the industry to receive dual certification of carbon and water footprints, as well as receiving the Type Three Certification of Environmental Product Declaration (EDP). These ensure that UMC's IC customer products are environmental friendly, toxic-free and low-carbon.

6. Low-carbon Alliances: Inviting supply chains in bearing carbon reduction responsibilities

The CSR Declaration was signed with UMC's suppliers in 2008 as a gesture of acknowledgement of the ideal of "care for employees, care for the environment and realize public welfare". Presently, the focus is on supply chain carbon partners. UMC's own greenhouse gas management and carbon footprint evaluation foundation helped lead the way for suppliers to conduct their own carbon footprint inspections, and together build a low-carbon supply chain.

7. The only company to have a technological cooperation agreement with the EU, thereby removing barriers to green trade

UMC participated in the FP7 of the EU and became the first official participant of the EU-FP7 in the industry. This plan involves collaboration with other nations' industries and academia in researching a simple tool to calculate carbon footprints. This tool will help popularize the carbon footprint concepts among SMEs and introduce Taiwan's experiences to the EU, hence lowering potential barriers for green trade for Taiwan companies.

8. High-tech fire rescue team

The UMC fire brigade was formed in 1999 and was responsible for major emergencies. The fire brigade was equipped with state-of-the-art equipment such as high-performance chemical fire trucks, IR thermal-image helmets, chemical blockage modules, and personnel life-saving equipment. This equipment allows the brigade to response immediately and minimize risk. Besides off-foundry rescues, the team also participates in government-based large-scale drills and exercises, assists disaster relief and other emergency response.

Announcing climate change policies

9. Creating a healthy working environment for employees

UMC treats its employees as valuable business partners, and therefore dedicates efforts in nurturing talents and offering career development plans. Through creating a golden healthy workplace, provision of varied and competitive compensations, measures were in place to assist partners in creating a balanced life of work and leisure. In particular, the creation of friendly workplace focuses on six aspects: safety, warmth, health, synergy, vitality and culture. In 2011, UMC won the CSR: Healthy Workplace Model Award of Commonwealth Magazine.

10. Seeds of hope through education

UMC employs the LOHAS concept to promote social participation; by 2005, the Spreading the Seeds of Hope Plan had thus far invested NT$120 million in helping 5,000 disadvantaged students in their schooling. From 2010 onward, educational focus has been divided into five aspects: hope seed, life education volunteer seed, reading seed, environmental friendly green energy seed and semiconductor seed. These efforts demonstrate the dedication of Taiwan's corporations in helping education.

In 2011, UMC once again received the National Sustainable Development Award, and is the first company to receive the award twice. This recognition will be UMC's support on the road to constant improvement and progress. UMC is not just a semiconductor giant, but also a helper in promoting a sustainable society. UMC will continue to be actively engaged in various sustainable issues, and generously share its experiences with other corporations, supply chain partners, employees and society at large. It is hoped that through corporate power, the idea of sustainability is spread to every corner of society.

TOPPAN CFI (TAIWAN) CO., LTD.

Taiwan's Toppan CFI was established in 2001, as Japanese Toppan Printing's first overseas color filter manufacturing company. AUO invested in Toppan CFI in 2006 and the two companies became business partners. The solid relationship, business management, and outstanding technological service give promising signs and steady growth to the company, allowing Toppan CFI to become Taiwan's first and best color filter manufacturing company.

In recent years, much has been invested in state-of-the-art R&D; coupled with technology visits and exchanges with Toppan Printing and AUO, much had been accomplished in terms of numerous panel coating, vacuum sputtering, film thickness control, photomasking design and manufacturing, color light adjustment and large area picture control technologies. Simultaneously, through industry/academia cooperation, soft coating and film, Polymer Light Emitting Device (PLED) technology and high-level water moisture resistant membrane manufacturing technology were advanced. Through mutual learning of the industry and academia, it is hoped that Taiwan's technology and industries could be sustainably developed, and help advance the field of colored filters, explore new markets, and strengthen competitiveness through sustainable management.

Special projects dedicated to all aspects of sustainable development will be in place, with focus on technology R&D, employee relationships, environmental protection, energy conservation, and social welfare. It is hoped through the process of planning, executing and improving, the hearts and actions of all company management and employees will be united as one; hopefully this will reflect on the business as well. Other achievements in terms of promoting sustainability include:

Excellent results in carbon reduction

Greenhouse gas inspection was in place from 2009 onward, in an effort to understand greenhouse gas emission volumes at all stages of the manufacturing process. Standards were then used as references for future deductions. The president of the company convened a green performance meeting in 2010 and commenced green innovation, green procurement, green transport, green manufacturing and green consciousness as items of inspection during business operations. Actual figures in 2010 stated that greenhouse gas emission volume decreased by 30% compared to 2009, and water volume consumption decreased by 42%. As of the end of 2010,

the company became the first corporation in the nation to receive carbon and water footprint certifications, a significant landmark achievement indeed.

Promoting culture and public welfare events

Revenue grew by 40% in 2010. The largest growth was among the Chinese clientele. In terms of employee relationships, local employees consist of 83% of the workforce. More and more budget resources were dedicated to professional, soft skills and educational training for employees , with an annually growing budget. Mail and emails were used to gather feedback from employees; regular communication meetings and satisfaction surveys were conducted to ensure smooth communication channels. Health seminars and sports activities were occasionally held to promote employee health.

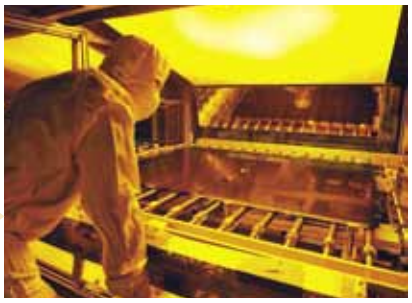
Virtual Toppan CFI Elementary School graduation ceremony

The company is located near Taijiang National Park in the Southern Taiwan Science Park (STSP). The company utilized this unique natural environment to promote sustainable development, through regular hosting of beach cleaning and homeland cleaning event for the Black-faced Spoonbill (platalea minor). In addition, the elementary school ecology and environment team provide interaction with the local environment. Through cooperation with the surrounding government agencies, schools and communities, efforts are dedicated to public welfare activities. In particular, the virtual Toppan CFI Elementary School education event is of significance.

Toward an innovative green company

Toppan CFI aims to be the leading provider of innovative green technology in the field of color filters, providing customers with varied application products and technologies. Utilizing the latest technology of TFT-LCD, its high saturation, contrast and resolution provide research foundation for creating niche products. Simultaneously, the successful development of the super high aperture ratio and glass thinning technology, glass raw material usage is reduced and waste treatment cost saved; it also reduced energy consumption for end products. In addition, the state of technology for all is accomplished through the development of a soft functional membrane that not only can be utilized in the panel industry, but also

Revealing of new corporation identification system



Production line of color filters

as membranes in daily lives. To improve work efficiency, the company employs an automatic system to provide accurate information at the production line, lower manual operation, and through instant feedback any immediate abnormalities can be treated instantly.

Care for the society as our core value in the promotion of sustainable development

Care for the society is part of the core foundation of the company's business operation. TOPPAN CFI will continue to support sustainable development and fulfill its social responsibilities. In this challenging environment, the company will continue dialogues with stakeholders and pursue growth and improvement, to achieve the ultimate purpose of sustainable development for both the corporation and environment. A touch of color for life.

Sustainable NGO Award

Children Are Us Foundation

Two percent of the world population are fallen angels, born without dignity and joy, often hidden at dark corners of the society, sobbing, crying by themselves. The world lends her compassion and grief to these borderline people, but does not know how to help them out of their misery. Due to their disabilities, the dignity and joy of life are just beyond their reach. In 1995, a group of parents in Kaohsiung formed the Children Are Us Foundation, as an avenue to provide life-long education for these disabled children. The mission is to provide them with the dignity and joy that life has to offer, and to allow them to find value in work, give back to the society, fill in life's void and obtain sustainable care.

Sustainable value of life

The Foundation has 27 baking houses, restaurants and a central workplace that trains and nurtures disabled children. The children create their social and economic value from the work they do, transforming them from resource consumers to resource creators; from the served to the server. They regain their life value and live a happy, fulfilling life with no regrets. From their work, the children also learned dignity and joy.

Sustainable life education

The success story of the disabled children has been incorporated in the Chinese textbooks of the fifth and sixth grade of elementary schools. The Aguo cousin lesson from Nani Publishing and The Spring of Disabled Children from Kang Hsuan Publishing teach our children how to be

Elementary textbook— The Spring of the Disabled Children

strong, for even the disabled children can do it! Life will not be handicapped because of our physical limitations, for out of adversities comes life's most beautiful blossoms.

Sustainable help for others

With full appreciation of the Foundation's humble beginning and current strength, it is necessary to help others to do the same. Upon learning that there's no bakery within a 15km radius in remote area schools, with kids having no ample meals, the Love to the Tribe activity was launched at the end of 2008. One love, two touching moments. All meal boxes were made manually by the disabled children and given to the tribal children. This activity continues to this day and is handed by the one and only disabled scout group, which consists solely of the disabled children.

Sustainable learning environment

The Foundation established the Happy Farm and Wizard of Oz Coffee House for the long-term care of the children. The farm is located at Qishan District, centered around the

Baking by disabled children

Integration of Senses theme. All plants or landscapes are related to sight, hearing, scent, taste and touch, mainly to stimulate the five senses of the children. Herbs are the principal crops, for they provide the necessary spices for the bakery and meals of the Foundation. The Wizard of Oz Coffee House is located on land owned by Kaohsiung City Government. It is leased to the Foundation to host mid- and large-scale events. The Farm and Coffee House both won the Learning Environment Center Award given by the Ministry of Education in 2009, making them ideal for promoting off-campus events.

Sustainable responsible host

Even disabled children can become hosts? This is unbelievable, but it is true that after sufficient training, these wonderful children are transformed from being shy and timid, to daring to take up any tasks required in the house; from the lowest level in Maslow's hierarchy of needs, to self-actualization; from followers or assistants to hosts. These phenomena keep showing up at the Foundation. The Jianzhong model of Hsinchu inspires a new page in history for the children, and therefore won us the Job Re-design gold award by the Council of Labor Affairs; the Kaohsiung creative cuisine shop is currently handled by five disabled children, each responsible for steaming, cooking, frying, roasting and sushi-making; their serious attitude touches the heart of every person. To date, 23 cuisine, bakery or service certificates had been secured by the disabled children of the Foundation, thereby realizing our goal that even these children can make a place for themselves in the society.

Sustainable dream come true

The Foundation changed the lives of the disabled children, providing comprehensive care through the four stages of their lives; Birth: from the baking house, community homeland to the learning academies, there are now 44 sites across the country, taking care of over 500 disabled children; Old age: when the disabled children are of ripe age, the swan care home will be officially initiated; Sickness and pain: these are serious issues that needed to be addressed by the Foundation as well. The Kaohsiung Health Center, completed in 2011, provides numerous facilities that involve the physical, perceptual and sensory aspects are used to enhance the health of these children. The medical system for the disabled are currently work in progress and we hope that soon a comprehensive care system for these children will be in place, thereby providing a light to their lives. As the Buddhist writing Vimalakiirti-nirdeza-suutra says: "A single lamp lights up hundreds and thousands of other lamps; light prevails, and is never-ending."

Love to the Tribe activity

Taking up the role of a love scout

Execution of Sustinable Development Action Plan Award

Southern Taiwan Science Park: Sustainable Environment Green Park Promotion Plan

Around 4,800 years ago, starting from Dabenkeng Culture, in this incredible land that possesses enormous potential, our forefathers were born and raised. Today, the Southern Taiwan Science Park (STSP) is the ground for cutting-edge technology and bearer of the historical burden of popularizing the land. The STSP ponders over the relationship between park management and the environment, and thus the Sustainable Environment Green Park Promotion Plan was born.

Park development integrated with local culture

Low-carbon green science park – creating a hub for green energy technologies

Achievements include:

1. Revenue for green industries in the year 2010 amounts to NT$48.2 billion, nearly 20% of the national green industry value.
2. Organized green industry courses and conducted full-scale talent development; 442 hours of courses were taught with 1,341 attendances in the trainings.
3. Promoted water saving counseling, with an annual savings of 25.24 million tonnes, which is nearly one-quarters of the volume of Nanhua Reservoir.
4. Through autonomous energy savings and carbon reductions, an estimated 11,066 tonnes of carbon emissions were reduced annually.
5. Organized park shuttle services and provided seamless integration with the HSR. As of the end of May 2011, more than 180,000 trips were shuttled, generating an estimated 449 tonnes of carbon reduction.
6. Five green building EEWH Diamond level certificates were awarded to the park, nearly 30% of national total, making STSP the most concentrated park with the EEWH Diamond level certifications in Taiwan.
7. Thirty-two cases of international green standards certifications within the park.

Sustainable and healthy science park – reasonable use of land to create a sustainable tech park

Achievements include:

1. Greenification area is nearly 42.4% of the total land area, which is significantly higher than any industrial park.
2. Completed comprehensive drainage system that can counter major floods; survived the challenge of Typhoon Moracot and reduced damage to properties by about NT$2.1 billion.
3. Implemented pollution volume control and developed in accordance with EIA standards. There were no records of environmental violation pertaining to the EIA Act since 2001; all facilities within the park are 100% regulation-compliant, and there were no records of environmental violations since 2005.
4. As of end of April 2011: 82.5% recycle rate of waste, a 13.5% growth compared to 2007; completed construction of an environmental quality monitoring system to ensure excellent maintenance of the environmental quality.
5. Environmental information disclosure – completed the first national science park environmental report and won the 2010 Taiwan CSR Awards.
6. Strengthened disaster response capabilities and established the Integrated Disaster Risk Response Mechanism, which won the Executive Yuan's 2nd Government Service Award.
7. Implemented epidemiology research and health risk evaluation work, to ensure that park development does not affect the health of surrounding citizens.

Localized harmonic science park – promoting local culture and environmental education

Achievements include:

1. Preserved the local culture and completed transplant of old trees, built local religious centers and preserved current remnants and relics.
2. Created local employment opportunities, with the park

employing more than 60,625 people. Local population accounts for nearly 80% of the working population.

3. Effectively reduce work hazards and won Class A evaluation results by labor inspection agencies of the Council of Labor Affairs four years in a row.
4. Established an information platform which includes Sustainable LOHAS: Green Park, STSP Plant Tour System, Environmental Inspection Information and Public Arts Establishment websites. The information platform had more than 510,000 visits from January to June 2011.
5. Provided sufficient park information to the general public, through the production of six major categories of information: investment opportunities, business accomplishments, public art, ancient relics, local culture and environmental protection.
6. Actively invited citizens to participate in park activities; more than 80,000 people participated in the year 2010.
7. Promoted environmental education work, including elementary, junior high and senior high schools, and the working class. More than 2,000 people participated in the events in 2010.
8. Fulfilled social care and responsibilities. Devoted more than NT$280 million in environmental protection related work, and budgeted more than NT$10 million to assist local agencies and civic associations in organizing all types of projects, facility improvements and community-related events. From 2005 to May 2011, the amount given back to the community to assist local development amounted to approximately NT$22 million; in 2007, the STSP river patrol team was formed to support community watch.

Under the assistance and support of all circles, the STSP strives for continual improvement and innovation, and to leave a legacy for the science parks in Taiwan in terms of sustainable management. Looking at the future, the three main developmental directions of "Industry Grouping", "Sustainable Environment Green Park" and "Culture and Arts" were formulated as guiding principles for future efforts. It is hoped that the green park operation model can become a learning example for all domestic parks, so that industrial parks can cater to the economic, environmental and social aspects. Sustainable development should be more than just a slogan, but actual implementable steps that we can all take.

Promoting environmental education

Bureau of Standards, Metrology and Inspection, MOEA: Establishing Hazardous Chemical Substance Testing Platform to Safeguard Excellent Quality of Living for the People Plan

The Bureau of Standards, Metrology and Inspection's (BSMI of the MOEA) function is to prevent domestic consumer products being contaminated with hazardous chemical substances (such as environmental hormones, etc.) that will affect consumer safety and health, and even worse, create damage to the country. In order to establish a product safety net, the Establishing Hazardous Chemical Substance Testing Platform to Safeguard Excellent Quality of Living for the People Plan was formulated by the BSMI, which encompassed five specific working items. The plan is to ensure that no unsafe products ever makes it to the market and that people's life and property are safeguarded. Accomplishments of related tasks are as follows:

Formulate consumer product standards to ensure safe use of products

The plan formulated 109 national product standards, including formulating standards for toys, daily and baby care products, and textile products; regulating content limits of hazardous chemical substances in products; actively expand the number of CNS Mark items, which is the earliest product certification system in the country.

Strengthen inspection of consumer products and prevent unsafe products

Strengthen product inspection and certification work and to prevent inflow of unsafe products into the domestic

market. In areas of consumer product monitoring, every year there are random market sample inspections (54 times in 2010), such as down products, plastic shoes, baby-purpose muslin and incense, etc. In total, 53,068 inspections, 6,536 purchase samples and 1,638 random samples were collected. Regular posting of aforementioned inspection results provide customers with product information. In addition, promotions were done at schools, exhibition halls and shopping malls (663 rounds in 2010) to teach consumers how to select qualified products and to prevent poor quality products, so that their safety and rights can be ensured.

Volunteer supervisor and product safety information web – monitoring the consumer market

1. Volunteer inspectors:

Volunteer inspectors are formed to involve public participation and assist the discovery of hazardous chemical substances in products; their first line inspection of products help reflect incomplete-labeled or poor quality product

2. United inspection team for abnormal import products

A cross-ministerial united inspection team for abnormal import products was formed to check for abnormal import products. Seven divisions were formed. The divisions assisted in conducting related checks; in the future, the divisions will continue to collect related information and strengthen inspection procedures to prevent import of incorrectly labeled products into the market. This helps protect the domestic market, ensure consumer rights and protect legal businesses.

3. Product safety information web:

Pioneered the first national consumer product safety precautions mechanism, and established the Product Safety Information Web. The Web effectively integrated market monitoring resources and actively makes contact with the suppliers and consumers. The platform has had more than 847,973 hits and won the Gold GOOD Award from the Consumers' Foundation for three years in a row.

Improved tests for hazardous chemical substances

This plan involves massive collection of chemical substance test reports of the European Union and other advanced countries, and related measures taken by the EU pertaining to regulating hazardous substance content in products. It further planned the establishment of a chemical testing laboratory to improve hazardous substance testing technology that is compliant with safety regulations and can satisfy the needs of the general public. The lab will safeguard people's interests and prevent unsafe products from infiltrating the market.

Improve accuracy of analytical measurements and safeguard lives by chemical measurements

This plan organized several promotional events such as the Chemistry and Measurement – Chemical Measurements to Safeguard Our Future series of events, academic seminars, meetings, international forums, laboratory open house, park tour and mountain-climbing/ fitness events. An annual participation of around two million people ensures all levels of the society are reached,

The Product Safety Information Web

and their enthusiastic response signifies accomplishment of the goal. Through the aforementioned events, the public learn to discover whether products contain hazardous chemical substances and help to promote policies related to preventing unsafe consumer products and promotion of sustainable development. Further to implement our service ideal of "buy correctly, use safely and feel warmly", all measurement devices employed by the general population are regularly inspected and regulated, so that the public's interests are genuinely protected.

In the future, the BSMI will continue to perfect national standards and improve the technology to measure hazardous substances, to ensure product safety and protect the rights of consumers; through the use of the Product Safety Web, market monitoring and management is strengthened and deficit products are identified; actively promote development of domestic green industry and technology to improve safety, health and living environment for the general public; actively ensure that environmental protection, economic development and social justice are all cared for, to the true fulfillment of sustainable development for Taiwan.

Explanatory meeting for product volunteer inspectors

Carnival for the families

Railway Reconstruction Bureau, MOTC: Hualien-Taitung Railroad Overall Service Enhancement Plan

The Ministry of Transportation and Communications (MOTC) commissioned the Railway Reconstruction Bureau (RRB) in carrying out the Hualien-Taitung Railroad Overall Service Enhancement Plan. The plan will transform Hualien-Taitung stations into livelihood stations by improving all 29 stations and ancillary facilities of the Hualien-Taitung line, with the hope that tourism for the area could be a pilot development model. The five-year plan (from 2009 to 2014) has a total budget of NT$6.081 billion. After the implementation of the Plan, the train stations can provide comfortable and functional services to passengers, while maintaining different areas for administration, passenger service or commercial zones and ensuring they are independent of one another. To provide a safe, convenient, comfortable and aesthetic environment for passengers, and added the automatic train service, tour service, agricultural product service, internet e-service and catering service as value-added services, it is hoped that by raising the service standards of the railroad administration, tourism on Eastern Taiwan can be invigorated, with value-added benefits for the industries.

New Station Movement

Across the nation, it is difficult to locate a series of train station renovation project, especially in beautiful scenic areas like Hualien-Taitung. Therefore the RRB of the MOTC formulated the New Station Movement to effectively accomplish the end. The plan is culturally diversified and caters to sustainable development. To achieve the intended goals, the Station Renovation Efficiency Improvement: New Face for Hualien-Taitung forum was held on 17 June 2010, where local representatives, scholars and experts participated; opinions gathered from the forum were used as reference in the formulation of declarations and design goals of the New Station Movement. Subsequently, the movement listened to the opinions of the people with regards to train station renovations and improvement projects, and opened an official internet channel to gather opinions across all stakeholders.

In addition, local historians, architecture scholars and

Hualien station, Xinchen station, Yuli station simulations

experts and government representatives formed the Design Factor Provision and Counseling Committee, to provide local historical flair, regional needs and specific agricultural products to designers for them to incorporate in their overall train station design. Further, an evaluation committee was set up to follow-up on the design results. The Design Result Evaluation Committee was established to ensure that the one-township-one-uniqueness spirit is followed in the actual design of stations.

The aforementioned process and the following ground-breaking bidding methods of the RRB such as declaring committee members names, multiple voting bidding model, awarding of medals and prizes to winning designs, and open tender for bids on the Taiwan Architect Magazine, etc., all demonstrated the government's determination to successfully "make things happen" in the Hualien-Taitung stations. It is further hoped that through complete local interaction and participation, a result that can satisfy everyone is accomplished. Therefore, this plan does not involve transferring stations from the west to the east, but to uniquely design every station so that it integrates with the local features. The newly furbished faces of Hualien-Taitung train stations will provide added benefits for tourism; and their innovative design effects will pave the way for future designs.

Hence the following declaration and goals of the RRB:

Declaration:

Improve train stations' efficiency

Strengthen railroad service facilities

Integrate local historical features

Introduce green building concepts

Excellent home for LOHAS and cycling

Becoming the doorway for international tourism

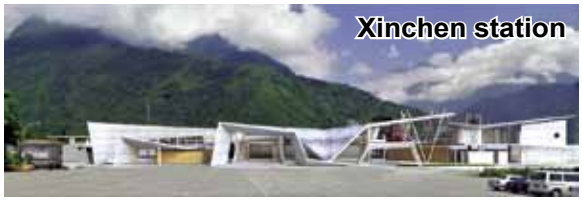
Energy conservation, carbon reduction and sustainable development

A new face for Hualien-Taitung

Seven Design Goals:

1. Adopting local historical features of Hualien-Taitung in the design of train stations
2. Integrating the landscape in the design of sustainable green buildings
3. Promoting tourism for the east coast and creating a seamless environment for the TRA and cycling
4. Improving railroad service quality and complete common, internationalized and standardized transport facilities
5. Establishing seamless information and transportation service, giving us a time and space advantage
6. Completing all utilitarian functionalities of all stations, and creating a LOHAS leisure environment for the people
7. Nurturing the stations as a doorway for tourism and providing varied services to enhance the quality of leisure life

The design aspects of the Hualien-Taitung New Station Movement can reflect the spirit of the times. In terms of design, it accurately reflects the local natural and cultural characteristics, and amply displays the environmental protection or energy saving features of the stations. Only through such designs can the true nature of the stations be brought out, and that new stations could be the new power stations of urban renewal and tourism development. A comprehensive view of Taiwan shows that only Hualien-Taitung remains uncontaminated. Therefore, the train station designs of the area should not be grand in scale and superfluous; instead, the design should be in line with transportation needs and simple on the exterior. The plan not only focuses on the individual stations, but also on expansion and proliferation. The stations are not carbon copies of stations of the west, thus environmental interactions and numerous other aspects



are considered, with reservations for future space and flexibility.

1. Introduction to station function improvement

(1) Bicycle replenishment stations: provide rental of bicycles, rest spots so that the public can travel to the east by train and enjoy the fun of riding bicycles with spot A rental and spot B return services.

(2) Catering and agricultural product demonstration services: under the pretext of not affecting the operation of the station and movement of passengers, ample spaces will be allocated to invigorate local farming products.

(3) Tourist Centers: centers are set up in stations with tourism resources to help promote local tourism and provide related services to enhance the quality of travel.

(4) Friendly station environment: movement spaces/ lines within the stations are comprehensively planned, so that it truly becomes barrier-free environment; also incorporated into the design is gender equality space designs.

(5) One town one unique flavor: train station renovations incorporate local landscape and humanities, so that the stations become local model buildings, incorporated with leisure, simple design style.

(6) Green train station: the concept of green building is introduced in the designs, following the nine major indicators of green building. All stations have their own targeted green building standards and efforts to achieve Green Building Mark are dedicated.

2. Positive impacts

(1) Time savings and cost reductions: reduce traffic hours and lower accidents due to passengers and crossing of railroads.

(2) Sustainable development effects: the plan is grounded on the foundation of sustainable development for the nation, and environmental friendliness, energy conservation, carbon reduction and depth of cultural characteristics are displayed in the third generation stations.

(3) Implementing energy conservation and carbon reduction policies: savings for train operations reduce costs of air and noise pollution, making Taiwan a pioneer in the road toward global village, living up to the reputation of the bicycle kingdom and increasing Taiwan's international visibility.

(4) Increased value for train station and surrounding land: with the train station as the center of business district development, it is of tremendous aid to local development and land development along the train lines.

(5) Tourism effects: expand Hualien-Taitung tourism lines, collaborate with tourism service products planning, environmentally friendly trains, cruise liner trains and bicycle leisure networks all aid to promote Taiwan's tourism.

3. Current situation

The RRB had completed intricate design details of the upcoming stations, on schedule with its yearly plans. Subsequently, all tenders and operation of projects will be expected to be completed by the end of 2014. The spirit of completing projects on time and with high quality will ensure that the Hualien-Taitung Railroad Overall Service Enhancement Plan was successful. Motivated by the Hualien-Taitung New Station Movement ideals, the vision of improving efficiency of the stations and creating a new face for Hualien-Taitung can surely be accomplished.

Forum on train station improvement

Chapter 5

2011 International Forum on Sustainable Development

The 2011 International Forum on Sustainable Development was held in Taipei from 6-7 September 2011. The main topics discussed included analyses of sustainable development policies and their implementation in nations around the world, American youth participation in the 2012 UN Conference on Sustainable Development (Rio+20), as well as sustainable city policies in Taiwan and internationally.

Invited to this year's forum were a number of foreign and local experts and academics, senior officials from government agencies, and NCSD members. Speakers included George J. Gendelman, co-founder of Planetworkshops; David Willey, Audit Practices' Director in the Office of the Auditor General of Canada; Gino van Begin, International Council for Local Environmental Initiatives (ICLEI) Regional Director for Europe/Deputy Secretary-General; Emani Kumar, Executive Director of ICLEI's South Asia Regional Team; Dr. Yoon Lee, senior researcher at the Global Growth Strategy Research Center and the Korea Environment Institute; and Rachel Briggs, coordinator of Sustain US.

Premier Wu Reaffirms Government Policy on Sustainable Development

Premier Wu Den-yih, who also serves as Chairman of the NCSD, pointed out in his opening remarks of the forum that shortly after taking office, President Ma Ying-jeou ordered an assessment of the planned steel foundry in the Bin-nan Industrial Zone. After reviewing the assessment, President Ma put off the proposed project. Another project that was halted due to sustainable development considerations was the construction of the Kuokuang Petrochemical Plant. Both cases, said the Premier, are clear proof of consistency in the current government's sustainable development policy.

Premier Wu was keen to point out that national development is not defined solely by the state of technological R&D or economic growth; environmental protection, preservation of cultural heritage, creation of employment opportunities, and anything else that enriches the spiritual and material lives of Taiwan's citizens are also essential. Since President Ma assumed office, the Executive Yuan has formulated the Six Key Emerging

Premier and NCSD Chairman, Wu Den-yih, giving the opening remarks at the 2011 International Forum on Sustainable Development

1 Enthusiastic attendance by local and foreign delegates from the government, academia, and private-sector organizations at the forum

2 Local, foreign experts discuss and share experiences

Industries Plan. The six industries regarded key to national sustainable development are green energy, biotechnology, medical services and healthcare, quality agriculture, travel and tourism; and the cultural and creative industry.

Taiwan Recognized for International Efforts in Promoting Green Industries Since Its 2007 APEC Announcement

Mr. George J. Gendelman presented a speech, in which he talked about the recent history of sustainable development worldwide. He also predicted that next year's UN Rio+20 conference would focus on eradicating poverty and promoting sustainable development as a part of the green economy. He also gave some examples of international cooperation that have successfully demonstrated the importance of establishing sustainable development mechanisms, such as the Clean Development Mechanism, Zero Carbon Cities, the Renewable Energy and Energy Efficiency Partnership, and the Global Village Energy Partnership. Mr. Gendelman also praised Taiwan for actively seeking international cooperation since announcing that it would be promoting green industries at the 2007 APEC conference.

Mr. David Willey described how the Canadian government has been promoting sustainable development since the 1990s, for example by implementing the Canadian Environmental Assessment Act; revising the Auditor General Act to include sustainable development policies and establishing the Environmental Sustainable Development Committee; and passing the Federal Sustainable Development Act in 2008. Canada also plans to use government core planning and budgeting systems to detail environmental assessment targets and implementation strategies. In addition, starting from 2012 or 2013, annual reports on the progress and efficiency of sustainable development policies will be reviewed by the legislature.

Mr. Gino van Begin pointed out that by 2030, over two-thirds of the world's people will live in cities and the economic output of the world's 100 largest cities will be the equivalent of 30% of gross world product. By 2050, the total global urban population is projected to exceed 3 billion, hence municipal governments in countries around the world will be key players in realizing sustainable development. Mr. van Begin called upon municipal governments to set up an international network to promote cooperation on and participation in global sustainable development plans and to push the UN to promote the signing of multilateral parallel agreements.

Dr. Yoon Lee gave a speech entitled "The Second Sustainable Development Basic Plan" in which he explained how nations have been promoting the Second National Sustainable Development Strategies in 2011. Mr. Lee suggested that national governments should formulate measures to increase the effectiveness of the ten main sustainable development strategies.

Dr. Rachel Briggs related her experiences of personally organizing the participation of a delegation of American youth for the 2012 Rio world summit and emphasized the importance of young people's contribution to the promotion of sustainable development at the national level. Ms. Briggs pointed out that broadening the reach of education and research will facilitate greater participation of youth in policy making and local grass-roots organizations, which will stimulate the adoption of sustainable development ideas in social, economic, and environmental areas. Greater youth participation will also help bring about a more harmonious society built upon equality and the meeting of needs.

Chapter 6

Words from Our Members

Ecological Conservation is of Utmost Importance for the Sake of Our Future Generation

By council member Dr. Kwang-Tsao Shao, Research Fellow and Executive Officer of Biodiversity Research Center, Academia Sinica

Based on statistics revealed by the 2010 UN-published Global Biodiversity Outlook (note), efforts pertaining to the conservation of biological diversity were initiated by world governments at the 1992 Earth Summit through the signing of the Rio Conventions and passing of the Convention on Biological Diversity (CBD). The second Earth Summit in 2002 and the pronouncement of the 2010 Biodiversity Target further demonstrated the clear intent of world governments in minimizing the rate of extinction of species. After more than two decades of efforts, based on the current statistics provided by the signatories of the CBD, humans continued in their path of over-development and over-utilization of biological resources, which has led to the increased probability of climate change and extinction of species, as seen in numerous regions, especially in the ocean, rather than slowing down or reverse the trend. In light of this, UN Secretary-General Ban Ki-moon had to pronounce the failure of the Biodiversity Target in 2010, was named the International Year of Biodiversity. As new directions in guiding the efforts of the next decade, the dignitaries included the Aichi Biodiversity Targets during the X/2, the tenth meeting of the Conference of the Parties in September 2010.

In retrospect, the National Council for Sustainable Development (NCSD) of Taiwan has faced tremendous challenges since its inception in 1997, such as: frequent change of political parties, vacillation between economy-driven or environment-focused policies, unclear division of responsibilities, desire for quick success, shortage of funds, etc. Nevertheless, there are still encouraging results through the joint efforts of the government, academia, industry and civic non-government organizations, such as the proliferation and acknowledgement of the understanding of the concepts of climate change and ecological conservation. Since Taiwan is uniquely located in a typhoon-prone region and within the earthquake belt, she has suffered frequent natural calamities to instill a sense of understanding of the importance of preserving ecological stability. The natural resources within the ecological system are the greatest asset to help human beings combat climate change. Things such as air, freshwater , energy and millions of species within earth's ecological system are human technology. In fact, once humans have over utilized and damages reach the threshold limit, the collapse of the entire ecological system will result in an irreversible phase change. This will lead to the unspeakable catastrophe of the Sixth Extinction of Species in that humans will lose all protection and livelihood of the natural ecological system. So, for the sake of our future generation, we must do something immediately to conserve our ecological system!

In my three years experience as member of the NCSD, I realize that in order to promote conservation of ecological system in Taiwan, a top-down approach is needed besides the bottom-up approach, which focuses on popularizing the importance of ecological conservation to the general public, who in turn monitors and promotes government policy changes. The top-down approach entails the clear formulation of national ecological conservation policies by the government through allocation of budgets, and discussion with scholars and experts in detailing implementable sustainable policies; in addition, related government agencies are given the responsibilities of promoting ecological conservation pertinent plans and monitor the progress to ensure results. I will try to explain this process through the integration of biodiversity database that I initiated in the academia:

Ten years ago, I discovered that the nation was in dire need of a national biological diversity database and therefore urged the digitization of original data collected through ecological investigation that are supported by public funding, in the hope that our domestic conservation commons can be enriched. However, due to agency parochialism, selfish personal agendas and intellectual rights problems, progress has been limited. Two years ago, I proposed similar project through the NCSD that

encompassed submission of digitized raw data for all publicly funded projects, governed by the National Science Council (NSC). In addition, a cross-ministerial agency, the ROC National Committee for GBIF, was established in Academia Sinica to coordinate communications and promotional efforts. Thus, with the aid from the NSC and the Council of Agriculture, numerous integrative databases that are compliant with international GBIF, COL (Species 2000), BOL and EOL are formed, such as: Taiwan Biodiversity Information Facility (TaiBIF), Catalogue of Life in Taiwan (TaiBNET = TaiCOL), Taiwan Cyrobanking Program for Wildlife Genetic Material in Taiwan (TaiBOL) and Taiwan Encyclopedia of Life (TaiEOL). In other words, NCSD still has its functions in promoting these conservation efforts.

In the area of marine conservation and sustainable fishing, Taiwan is currently the 20th largest nation in terms of fishing harvest, 12th in terms of fish consumption, and 4th in terms of consumption to population ratio. Therefore, the government usually places the livelihood of the fishing population ahead of ecological conservation. In addition, voting pressure from elections and peoples' representatives render efforts in marine conservation and sustainable fishing difficult to accomplish, which can be seen in results such as: delaying of the legalization of the Coastal Act, difficulty of allocating and implementing marine conservation zones, and lacking of conservation and law-abiding ideals among citizens. Hitherto, the general public still enjoys consuming bluefin tuna, shark's fin and coral reef fishes, or hold festivals or tourist attractions based on fish. Personally, these two years mark tremendous efforts on my part in increasing consumer awareness through "Seafood Guide", and public viewing and lectures on the film "The End of the Line"; nevertheless, the effects have been limited.

Actually, the conservation of biological diversity can be coupled with economic profits. Wildlife should include marine lives as well. Marine lives can not only be consumed as food, but also can be utilized in areas such as ecological tours, bio-tech development, biomimetic materials, pleasure viewing and breeding technology. In the coming decade, if we do not hasten our efforts in ecological conservation and restoration, we might miss the golden period and the result may be what scientists predict will happen in 2048: no fish in the seas for us to consume and view. What can we say to our posterity then? As a member of the NCSD, I feel the weight of my responsibility is even heavier.

Note: The third version of the Convention on Biological Diversity (CBD) can be downloaded at http://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf

Constructing a People-centered Sustainable Transportation Network

By council member Vicky Liu, Director of Cycling Life-style Foundation

Since returning from the United States, I have been actively engaged in promoting the "cycling lifestyle" and the "round-island cycling green ecological tour". As a civilian member on the National Council for Sustainable Development (NCSD) for the second year, I have provided input on NCSD workgroup meetings involving communication with officials of various departments and different task forces with regards to restructuring the national transport system, R&D of energy conservation and carbon reduction of transport technology, legislation of road safety, restrictions on automobiles, realigning of city traffic lanes, traffic safety measures in communities, living through cycling and environmental conservation, etc. All these issues involve a brand new perspective that encompasses every aspect of our lives, imbued with a sense of environmental consciousness.

In recent years, I have accompanied several officials of the Ministry of Transportation and Communications (MOTC) to visit developed countries such as the Netherlands, Spain, and France, countries adamant in promoting green transport. It is my hope that Taiwan can learn from these countries and develop a people-based

green transport network that will eventually aid in the realization of the National Sustainable Development Policy Plan. For example, the world's leader in advocating traffic safety – the Ministry of Transport, Public Works and Water Management of the Netherlands – is strictly enforcing road safety based on the principles of sustainable safety; slow city traffic lanes are restricted to a speed limit of 30 km/h. This ensures that pedestrians and cyclists have the right of way. Traffic safety for the elderly and children are noticeably protected by the legislations of these developed countries. In view of this, if Taiwan is to implement a friendly environment of sustainable transport network, strong central leadership that can guide the entire NCSD that facilitates cross-ministerial cooperation and allows every member to perform to the best of everyone's ability, is essentially needed.

In the area of sustainable safety, it is my personal opinion that the government should prioritize the uncontrolled growth of automobiles: the seating capacity of automobiles is low, yet they consume large proportion of our fossil fuels. Furthermore, automobiles occupy traffic lanes and road-side parking spaces that endanger the safety of pedestrians and cyclists. In addition, the exhaust they produce contributes to air pollution and acid rain, and the sounds of their horns are detrimental for the well-being of the general public. Therefore, I urge the city districts to adopt a new culture that encourages commuting by cycling. I also work with the government to pass the regulations to protect the right of way for "vulnerable road users – Pedestrians and cyclists" and aid the automobile industry in becoming more environmentally friendly (for instance: developing electric vehicles), so that the right of way of the roads can be returned to pedestrians and cyclists, allowing every elderly and child to safely use the roads.

I recall during my earlier years that often I would be happily pushing along my baby carriage for walks, but very often the community alleys would be jam-packed with motorcycles and automobiles. These vehicles would frequently make their way through the narrow alleys to avoid peak-hour traffic in the main boulevards. The speeding motorcycles, the exhaust fumes, and the noise generated are highly troubling for young infants and elders in wheelchairs. I recommend that relevant authorities should restructure the transportation network, impose stricter enforcement of slow lanes in cities, and impose heavier penalties on traffic accidents as soon as possible, so that the general public can have a quieter, cleaner and friendly transportation environment.

The impetus for immediate enforcement of 30km/h speed limit is the fact that it helps reduce accident rates and alleviate traffic accident repercussions. During one of my visits in the Netherlands, I was slightly bumped by a motorcycle on the slow lane. It was fortunate that damages were minimal, and the Dutch transportation officials left an indelible impression through this incident as they explained the need to limit vehicle speeds and how that protects pedestrian safety.

In addition, research by the Ministry of Transport, Public Works and Water Management of the Netherlands indicate that on average, every Dutch person owns 1.13 bicycles. Moreover, cyclists that commute more than 7km daily have 3 more healthy years and 10 extra years of life on average versus non-cyclists. What this means is that by using bicycles as alternative vehicle for our short distance commute, we can lengthen our lives, lower medical insurance costs, raise our standards of living and minimize our impact on the natural environment.

At the centennial celebration of Taiwan, we organized the One Bike One event, an event that we aimmed to be recognized by the Guiness Book of World Records to be the largest organized ride, in conjunction with the Council for Cultural Affairs and the Sports Affairs Council. It is our hope that this record-breaking event will usher in a new fervor for embracing cycling in our daily lives, and guide the nation to a new era of peace, prosperity and sustainable development.

Ecological Debts and Economic Growth

By council member Ssu-Li Chang,
Professor of Institute of Natural Resources Management, National Taipei University

Looking back at 2011 from the future, it will surely be remembered as one remarkable year in history. It is this year that the predictions made in the book *The Limits to Growth* proposed by the Club of Rome in 1972 come to pass. This year marks the watershed where the economy of the world plummets into gradual decline as classic investment-based and innovation-based growth theories have to come face-to-face with the inevitable restraints

under the prevalent conditions of limited resources.

The economic crisis of 2008 has left scars in the economy that have yet to be reconciled. Recent global economic outlook revealed by OECD predicts downside risk of GDP growth in the overall Euro area and Germany as well in the coming year. If we take the case of Japan for its shrinking economy persisted for more than a decade with the current situation of heightened perceptions of economic risk and financial market turbulence, which are expected to weigh on the outlook for the advanced economies, this is what cast out my doubt that the world might confront its ultimate limit of growth. The trend demonstrated by the world's economy, under the restrictions of current technology and access to resources, are at best already capped in growth.

However, from a sustainable environment perspective, the subtle yet accelerating world economic downturn might be a beneficial turning point for mankind. It provides an avenue for us to re-consider priorities, make plans for the future and adjust development strategies. This perspective is not to mock what has happened, but rather as a means to awaken the self-defense mechanism and wisdom of the homo sapiens that has preserved us by avoiding harm and embracing luck. Statistics showed that the ever-increasing world's wealth is closely linked to the ever-deterioration of the natural ecology and depletion of natural resources. In other words, when the world's attention is fixated on the financial debt problems of advanced countries, the scope of inherit ecological debts that are uncalculated are beyond the boundaries of our imagination.

Based on statistical data compiled and estimated by UC Berkley scholars using information from the United Nations and the IMF from the period of 1961 to 2000, environmental damages include climate change, depletion of the ozone layer, land use change, deforestation and over-fishing can be added up to about 47 trillion US dollars (based on 2005 monetary values). This figure is greater than the World Bank's estimation of global total GDP in 2005 ($44 trillion), and is twice as many as the sum of the GDP of the US (US$14.58 trillion), Japan (US$5.5 trillion) and China (US$5.88 trillion) in the same year. This research also indicates that the ecological footprints of middle-income and high-income nations imposed on nations with low-income are estimated to be US$2.5 trillion respectively. The ecological footprints of high-income nations on middle-income nations amount to US$4.9 trillion. In a world of complex economic activities among nations, the total ecological debt of high-income nations to middle-income and low-income nations is US$2.2 trillion and US$1.82 trillion respectively. Nonetheless, these actual environmental damages are not accounted in the market system and as such, losses are borne solely by the injured party. In the computation of Gross Domestic Product (GDP) or International Balance of Payment (IBOP), these factors are not reflected in the calculations, and hence their effects attract no attention and relevant mitigation plans. The consequences are the deterioration of the natural habitat, the depletion of resources and the gradual loss of vibrancy and energy of the planet.

In fact, the inherent meaning of the book *The Limits to Growth* is not to expound on the negative sentiments of the overshoot and collapse of the economic system (including population, industrialization, pollution, production of food and energy consumption), but rather it wants to convey a proactive, positive and constructive message. The message is to warn the human race to repent of its ways and adjust accordingly before the irreparable happens. The message is to encourage proper harvesting and utilization of the world's natural resources that caters to the fundamental needs of the people and which adheres to the principle of fairness. Further, it advocates steady state development model that strikes a balance between economic and ecological needs, thereby creating a sustainable environment, economy and society.

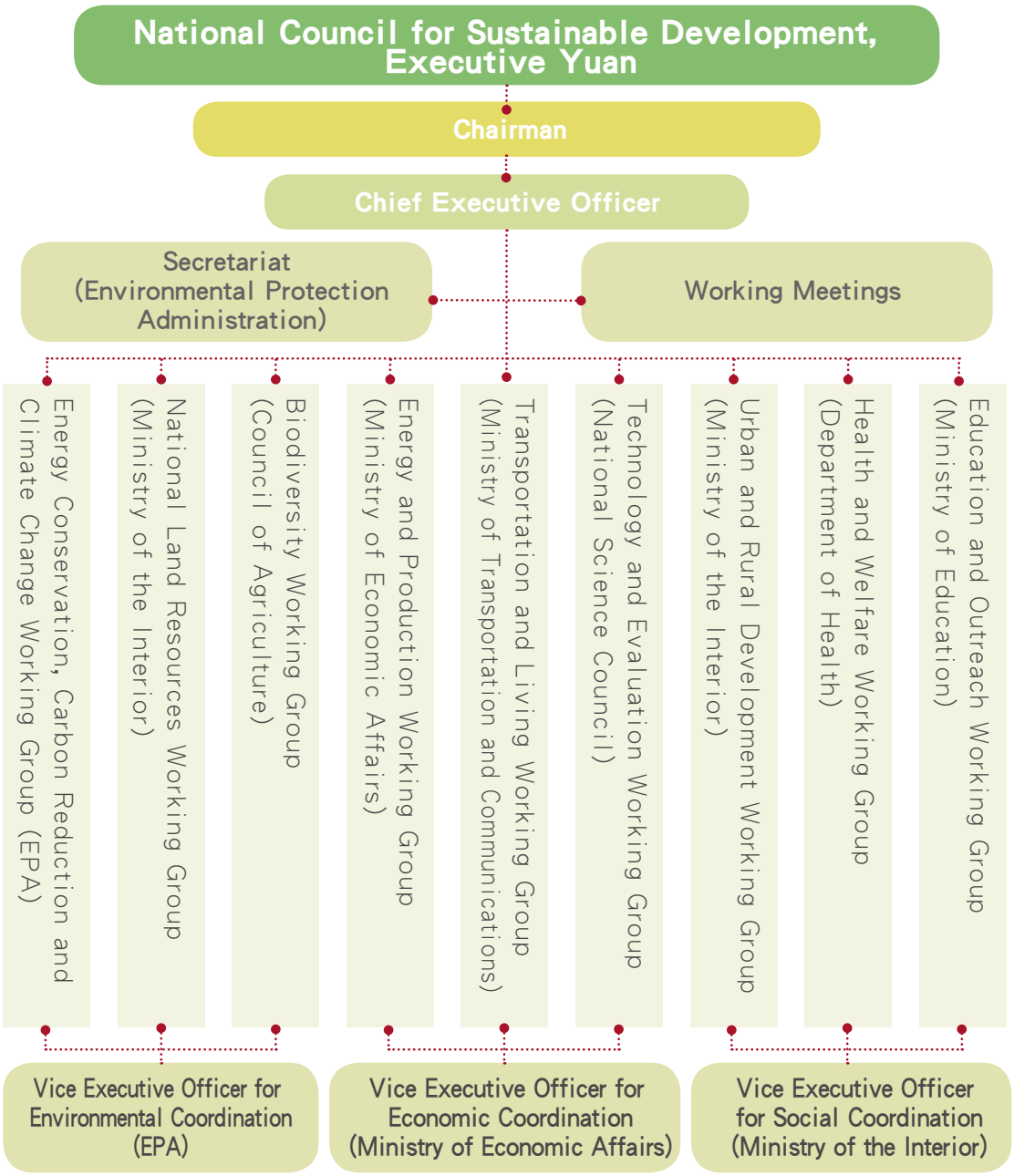
The advancement of civilization does not necessary require the accompaniment of economic expansion of wealth accumulation. To grow or not to grow, the economic system needs to find out a sustainable development path that can self-adjust and re-build its values. The recent publishing of the book *Prosperity without Growth* can be seen as the turning of tides of the academia in response to the "Economic Growth Model".

Faced with the weary and torn environment, widening of gap between the rich and the poor, and rising conflict among the different social problems brought about by this "Economic Growth Model" status, perhaps it would be good for us to view the conditions surrounding the sluggishness of our economic growth as opportunities and means to solve the current environmental problem. The accelerating pace of national debts across the globe warns us of the invisible ecological debts that encompass the current situation. It is my sincere hope that through the slowing of growth, it will inspire our wisdom and prudent actions so that the society, economy and environment can at last find their balance.

Appendix

Appendix I

Organizational Structure of NCSD



Appendix II

The Members of NCSD

Government official members

Name	Position Organization
Wu Den-yih	Premier, Executive Yuan
Christina Y. Liu	Minister of Council for Economic Planning and Development, Executive Yuan
Jiang Yi-huah	Minister, Ministry of the Interior
Wu Ching-ji	Minister, Ministry of Education
Shih Yen-Shiang	Minister, Ministry of Economic Affairs
Mao Chi-Kuo	Minister, Ministry of Transportation and Communications
Chen Wu-hsiung	Minister, Council of Agriculture
Lee Lou-chuang	Minister, National Science Council
Chiu Wen-ta	Minister, Department of Health
Stephen Shu-hung Shen	Minister, Environmental Protection Administration

Expert and academic members

Name	Position Organization
Lee Ling-Ling	Professor, Graduate Institute of Ecology and Evolutionary Biology, College of Life Science, National Taiwan University
Shao Kwang-Tsao	Researcher, Research Center for Biodiversity, Academia Sinica
Wu Tsai-yi	Chairman of Taiwan Research Institute

Name	Position Organization
Chen Yu-Hui	Professor, Department of Agricultural and Applied Economics, National Taiwan University
Chang Ssu-Li	Professor, Institute of Planning, National Taipei University
Chen Hongey	Professor, Department of Geosciences, National Taiwan University
Yeh Sandy Yu-lan	Associate Professor, Central Police University
Liao Huei-chu	Professor, Department of Economics, Tamkang University
Chiang Pen-Chi	Professor, Graduate Institute of Environmental Engineering, National Taiwan University
Feng Cheng-Min	Professor, Institute of Traffic and Transportation, National Chiao Tung University

NGO representative members

Name	Position Organization
Alice Yu	President, Yu Chi-Chung Cultural and Educational Foundation
Lin Chun-Shin	Chairman, Archilife Research Foundation
Lai Jung-hsiao	President, Society of Wilderness
Lin Yi-Hou	Director, Urban Regeneration R&D Foundation
Julia Chou	President, Conservation Mothers Foundation
Romy Kung	Director, Taiwan Responsible Care Association
Chen Shih-chang	Chairman, Formosan Society for Indigenous Sustainability
Vicky Liu	Director, Cycling Life-Style Foundation
Lo Shang-Lien	Director, Taiwan Environmental Management Association
Hsieh Chang-fu	Director, Biodiversity Association of Taiwan