2006 Annual Report on National Sustainable Development

九十五年國家永續發展年報 2006 Annual Report on National Sustainable Development

行政院國家永續發展委員會 編印

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95年國家永續發展年報

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目錄

前言

1992年聯合國邀集171個國家代表於巴西里約熱內盧舉行「地球高峰會」，通過「21世紀議程」作為全球推動永續發展的藍圖，並呼籲各國共同行動，追求人類永續發展。10年後各國代表於2002年在南非約翰尼斯堡召開「永續發展世界高峰會」，通過「約翰尼斯堡永續發展高峰會行動計畫」，訂定推動永續發展的具體行動及目標期程。

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及跨部會工作協調。永續會除先後完成「台灣永續發展宣言」、「台灣21世紀議程」及「永續發展行動計畫」等重要文件及推動工作規劃，95年度並召開首次的「國家永續發展會議」，匯集各界共識，作為未來施政參考。

本年報彙集整理95年度我國政府及民間推動永續發展重要成果，包括永續會會務及成果（第一章）、辦理國家永續發展會議（第二章）、表揚民間永續發展績優單位（第三章）、發布94年度永續指標計算結果（第四章）、協助地方推動永續發展（第五章）以及國際永續發展動態（第六章）。永續會組織架構、委員名單及大事紀，則詳列於年報附錄。

透過「國家永續發展年報」之發行，希望國人及國際人士能更了解我國推動永續發展的努力及成果，並希望能藉此提升全民對永續發展的認知，進而為邁向永續發展願景共同努力。

第一章 永續會會務及成果

■永續會第18次工作會議。

1.1 會務動態

一、組織變革及委員改選

爲擴大行政院國家永續發展委員會(以下簡稱永續會)參與層面，並全面提升永續會功能，永續會第10屆委員人數由35位增加至37位，其中政府機關委員及非機關委員各增加1位，分別由交通部長及1位社會團體代表出任。同時爲回應國際社會對氣候變遷及溫室氣體減量的重視，除原有8個工作分組之外，並增設「氣候變遷暨京都議定書因應小組」，以全面因應及推動溫室氣體減量工作。另爲有效因應交通建設對國土規劃及發展之影響，將國土資源工作分組改組爲國土與交通工作分組。

二、舉辦國家永續發展會議

各界引頸企盼的「國家永續發展會議」，於95年4月21～22日隆重召開，陳總統並親臨致詞。本次會議爲我國首次召開國家級永續發展會議，除邀請中央研究院李遠哲院長針對氣候變遷做專題演講外，並有各級機關、產業界、學術界、民間團體及各界菁英代表500餘人出席。大會共識結論，將透過永續會各分組納入永續發展行動計畫，交由相關部會共同推動，以追求台灣永續發展(詳細內容請參閱第二章)。

三、召開委員會議 期許留下淨土創造福地

永續會於95年5月26日開第21次委員會議，由蘇主任委員貞昌主持，針對「國家永續發展會議」辦理情形及「經濟永續發展會議」籌備情形，聽取報

■行政院長蘇貞昌主持永續會第21次委員會議。

告。蘇主任委員對「國家永續發展會議」順利落幕表示肯定，強調這是台灣第一次透過公民會議方式，針對環保議題由政府與民間相互激盪、共同思考，一起為台灣的永續發展，找方案定方向，該次會議達成的267項共識結論，務期確實落實執行，未達共識的項目，也應儘速協商、溝通，以化解歧見，達成共識。

蘇主任委員同時指出，環保與經濟並不衝突，如何集思廣益使國家永續發展、人民安居樂業，是政府一貫的目標與使命。台灣地狹人稠、自然資源不足，惟有從永續發展角度著眼，才能為下一代留下淨土，為子孫造福地，讓台灣能代代相傳，越來越好、越發展、越美麗，這是應共同努力的方向。

永續會另於95年3月6日、7月24日及11月20日召開第18、19及20次工作會議。會中針對「2006環境績效指數」全球評比結果、94年度台灣永續發展指標計算結果、「溫室氣體減量暨因應氣候變遷推動方案」、「推動全民二氧化碳減量暨節約能源運動專案」、「節約能源具體做法」、「永續發展行動計畫修正」、「電磁波健康風險」、「近海過漁」等議題進行討論。林錫耀執行長並指示，請各分組召集委員督促工作分組，針對過去執行之行動計畫工作項目整理出具體績效，並針對未來3至5年內工作項目，挑選出3至5項重點工作，由各部會首長親自督導推動，並列為未來考核之重點。

四、頒發95年度國家永續發展獎

95年度國家永續發展獎於95年6月5日舉行頒獎典禮，共有3個社區、3所學校、3家企業、3個社會團體，以及3個「永續發展行動計畫」執行單位獲獎。各類獎項得獎單位如下表：

表一：95年度國家永續發展獎得獎單位

獎項	得獎單位
永續社區獎	嘉義縣竹崎鄉紫雲社區發展協會 花蓮縣光復鄉大馬太鞍社區 嘉義市東區王田里社區
永續教育獎	台東縣新興國民小學 臺北縣立五股國民中學 宜蘭縣育才國民小學
永續企業獎	金居開發銅箔股份有限公司 艮澔科技企業股份有限公司三峽廠 台灣積體電路製造股份有限公司
永續社團獎	台灣田野學習協會 高雄縣大樹鄉舊鐵橋協會 台中縣安全暨健康促進協會
永續發展行動計畫執行績優獎	落實垃圾分類，資源垃圾回收率提高至25% （行政院環境保護署廢棄物管理處） 調查現有自然海岸總長度研訂保育指標計畫（內政部營建署） 推動全國綠資源調查計畫（農業委員會林務局）

■永續會第21次委員會議討論情形。

五、發表94年度台灣永續指標計算結果

永續會於95年6月5日世界環境日公布「94年度台灣永續發展指標」計算結果。台灣永續發展指標自民國92年起每年定期發布，迄今已4年，除檢視施政成效，做爲決策警示與決策導引外，旨在評估我國推動永續發展的進程，並回應聯合國對各國建立指標評估永續發展推動進展的呼籲，以及展現我國對國際接軌的自我要求，使各界了解台灣永續發展趨勢與變化（詳細內容請參閱第四章）。

■李遠哲院長於國家永續發展會議中發表演講。

1.2 工作分組成果介紹

1.2.1 》永續願景工作分組

持續推動地方永續發展計畫 落實在地化目標

為積極協助縣市推動地方21世紀議程，落實永續發展在地化目標，持續辦理「推動地方永續發展計畫」，協助縣市研訂永續發展規劃工作。另為協助縣市檢視規劃之適切性，並以聯合國「國際地方環境委員會（International Council for Local Environmental Initiatives, ICLEI）」之評鑑架構，「組織設置」、「議題分析」、「策略規劃」、「執行與監測」、「評量與修正」、「綜合評析」等6大面向建置「評鑑地方永續發展推動機制」，舉辦宣導會及「永續城市研習營」，推廣地方永續發展行動。評鑑結果顯示，台灣永續發展推動成果相當豐碩，未來將積極與其他國家接軌，使我國推動經驗與成果能與其他國家分享。

■地方永續發展推動機制評鑑宣導會。

■永續城市研習營。

強化檢視機制 持續推動永續願景

為評量我國推動永續發展進程，並呼應聯合國要求各國建立指標評估推動成效，永續願景組於95年6月5日發佈94年「台灣永續發展指標」計算結果，供施政之參考。此外，為使「95年度綠色國民所得帳」帳表體系更完整呈現環境永續發展現況，完成「綠色國民所得帳環境價值矩陣及指標系統建置研究」，將研究結果納入帳表，研編混合投入產出表。

1.2.2 》國土與交通工作分組

研擬完成海岸法草案 強化國土保安

為達成國土保安目標，內政部邀集專家學者、中央相關機關及地方政府召開6次研商會議討論後，於95年12月28日研擬完成「海岸法」草案。此外，並於95年5月3日訂頒「國土利用監測計畫實施作業要點」，同時於95年5月24日依據「國土計畫法（草案）」之精神，完成國土保育地區劃設。另為有效管理天然海岸線，進行「調查現有自然海岸線總長度，研訂保育指標，檢討現有計畫，研擬具體保育利用及經營管理策略」專案計畫，該計畫並獲頒「95年度國家永續發展行動計畫執行獎」。

進行公路維護管理制度研究 延長道路壽命

爲探討國內外公路設施之維護管理制度，國土與交通工作分組透過先進國家運輸資產管理之研究發展經驗檢視國內制度，提出國內未來維護管理制度之調整建議。計畫共分三期（93年至95年）執行，包括：道路工程維護管理相關資訊之建置及保存、提升道路維護管理工程技術、探討道路工程修復效益及經濟可行性、編訂道路維護管理事例輯、建置道路工程生命週期維護管理系統及未來道路工程維護管理預算與工作之規劃，透過有效維護，延長道路生命期。

1.2.3》資源與產業工作分組

補助安裝太陽能熱水系統 密度全球第三

經濟部能源局自89年3月迄今持續辦理太陽能熱水系統安裝補助作業，補助建置之集熱面積爲557,600平方公尺。估算一年可節省約45,000公秉油當量，並可減少123,000公噸二氧化碳排放，同時爲國內相關產業創造約60億元之產值。此外，我國太陽能熱水器安裝面積達150萬平方公尺，居全球第十名，安裝密度則爲全球第三，是當前我國推展最具成效之再生能源。

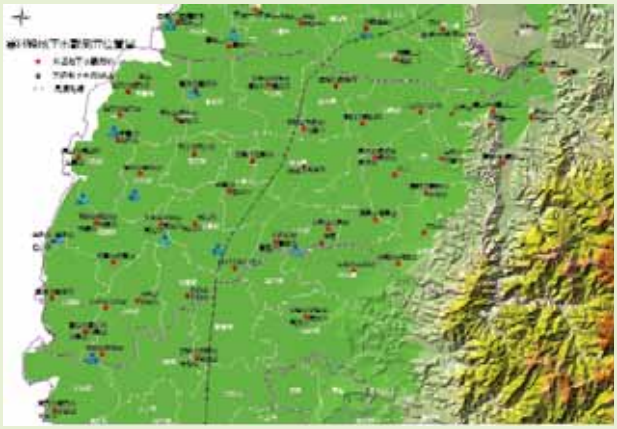
輔導發展廢棄物資源化產業 工業減廢成效卓著

經濟部工業局積極輔導發展廢棄物資源化產業，使我國工業廢棄物資源化比例於過去9年大幅提升75%。如印刷電路板等行業，每年產生含銅污泥約6萬公噸，以往以固化方式處理耗費鉅資及土地。工業局積極推動國內資源化工廠，於含銅污泥提煉高純度金屬銅，不僅節省廢棄物處理成本及避免廢棄物掩埋造成之土地破壞，並創造高額產值。提煉之金屬原料，除售予國內產業，降低向國外購買之成本，並銷售國外，創造25億元之產值。

監測地下水位 防止超量抽用

爲解決過去地下水超量抽用衍生國土資源損害問題，於較嚴重之彰化、雲林及屏東地區進行地下水觀測計畫，包括：（1）建置分層地下水位觀測井；（2）完成水文地質調查站之地質柱狀圖及井測；（3）調查研析該地區地下水文水量及相關基本資料蒐集、建立地下水補注估算方法、地下水文模式架構、地下水資源保育利用原則；（4）建立三地區地下水資源管理決策支援系統、完成資料蒐集及資料庫建置等。

■大漢技術學院裝置之太陽能集熱板（安裝面積356m²）。



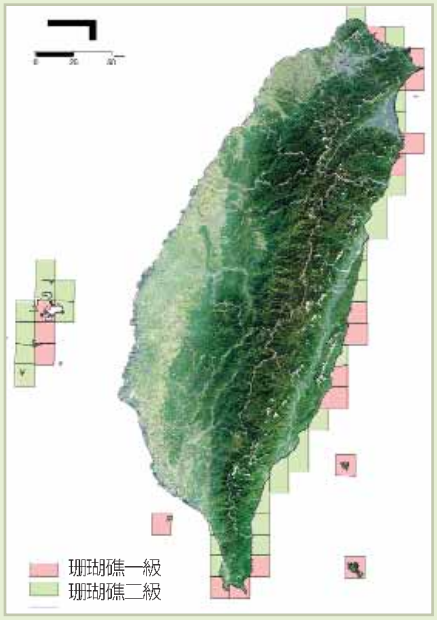
■雲林縣地下水觀測站分布圖。

1.2.4》生物多樣性工作分組

完成重要溼地及珊瑚礁分布圖

生物多樣性工作分組95年度完成重要海岸濕地與珊瑚礁區域分佈圖。海岸溼地部分，於95年4月完成「海岸地區重要濕地調查」，共劃設23處重要溼地，面積約35,000公頃。內陸溼地部分，另研擬溼地提報格式及範例，請各直轄市、縣（市）政府提報所轄境內之溼地，由永續會委員、學者專家、民間團體代表及相關單位組成之「重要濕地評選小組」，擬定「重要溼地推薦須知及評選方法」，針對相關部會、縣市政府、民間團體及學術機構推薦之溼地，評選出世界級、國家級及一般級濕地，評選結果於96年2月2日世界濕地日公布。

珊瑚礁分佈部分，已於95年6月將中華民國珊瑚礁學會提供之書面資料數位化完成。其中珊瑚礁覆蓋率大於25%區域，劃爲珊瑚礁一級地區，其餘劃爲珊瑚礁二級地區。



■台灣地區珊瑚礁位置示意圖。

1.2.5》生活與生產工作分組

輔導中小企業因應歐盟環保指令成功減廢省資源

95年度經濟部工業局推動「因應國際環保標準與清潔生產輔導計畫」，提供廠商清潔生產、歐盟WEEE/RoHS/EuP等指令因應輔導，共輔導74家廠商，其中51%爲中小企業。截至95年11月底，各廠合計投入七千萬元推動相關改善，已獲得之經濟效益逾2.46億元，投資報酬率約爲1：3.5。此外尚包括每年省電1,848萬度、節水210,757噸、節省物料2,986噸、有害事業廢棄物減量1,800噸、鉛鎘汞等重金屬減量35.5噸、破壞臭氧層物質減量112噸，及CO_2減量13,653噸等績效。

環保科技園區推動計畫

爲因應國際環保潮流與趨勢，環保署積極設置「環保科技園區」，積極尋求世界各地先進環保科技共同合作，營造低污染、高附加價值並兼顧生產、生活、生態之環保示範園區。爲鼓勵廠商進駐園區，於95年度甄選出13項補助計畫，核定補助總金額2,051萬元。至95年11月底止，已有36家廠商進駐園區，預計年產值可達129億元，每年可循環之資源及再利用水量達124萬公噸。以持續於高雄臨海工業區辦理之「資源循環及產業鍊結專案工作計畫」爲例，經建構產業間資源共享與資源循環利用網絡推動生態化鏈結，未來預估可使區內產業每年產生的蒸汽、氮氣、純水及廢棄物等約370萬公噸進行循環再利用，相當於每年減少140萬公噸二氧化碳排放量。

1.2.6》國際環保工作分組

召開與中美洲環境部長會議 強化區域環境合作機制

環保署於95年10月18～19日主辦「2006台灣與中美洲友邦環境部長會議」，計有貝里斯、多明尼加、哥斯大黎加、薩爾瓦多、瓜地馬拉、宏都拉斯、尼加拉瓜等七個友邦環境部會首長與會，並與我國簽署共同宣言。未來我國將與中美洲友邦加強多邊區域合作深化雙邊交流，並建立多邊環境保護合作機制。會議同時邀請兩位長期從事氣候變遷政策分析的國際知名專家，國際能源總署能源政策部門主管Dr. Robert Dixon及聯合國氣候變化政府間專家委員會副主席Dr. Mohan Munasinghe專程來台共襄盛舉，針對氣候變遷提供國際最新政策方向及技術發展趨勢，供與會之國內外專家及企業人士參考。

■「2006台灣與中美洲友邦環境部長會議」各國出席代表合影。

1.2.7》國際環保工作分組

鎘污染稻穀監測管控 確保民眾健康

為防範重金屬污染農作物流入市面，農委會針對土壤鎘、汞、鉛含量接近管制值，或曾發生公害污染或灌溉水質較差之農田，輔導縣市政府辦理作物重金屬含量監測，凡檢測結果超過食品衛生標準者，即剷除銷燬，防止外流，以確保民健康。此外，並擴大監測對象，規劃灌溉及排放用水渠道分離，加強灌溉渠道底泥清除、灌溉水質監控，並加強查處違章工廠，以逐步改善農田生產環境。

農地重金屬污染風險處理 降低危害

因應台灣地區近六成遭重金屬污染之農地位於彰化縣，由環保署積極推動輔導電鍍業及金屬表面處理業遷入工業區，95年度計28家廠商申請進駐工業區。此外，並訂定「彰化縣東西二圳電鍍業及金屬表面處理業重金屬污染聯合管制計畫」及「工業廢水搭排灌渠改善計畫」（96～98三年計畫），將彰化縣東西二圳列為重點管理流域，輔以加快稽查、加重處分及建立聯合管制機制，以

■衛生署疾管局建疫情地理管理資訊系統。

解決該地區農地污染問題，降低危害。

建立傳染病預警制度 防止疫情發生

衛生署疾病管制局為防範疫情發生，完成「疫情地理管理資訊系統」功能擴充，以及「病媒蚊調查」、「基因資料庫」、「防疫多元資料庫」、「病毒合約實驗室」等資料庫之系統整合，並建立各傳染病之閥值、預警值、流行值與流行趨勢等資訊。目前已能成功監測登革熱及腹瀉群聚事件等驟增事件，並進行早期預警。未來將持續辦理防疫人員傳染病數學模式建立與分析教育、地理資訊訓練，以提升傳染病分析與預測能力。

1.2.8》永續教育分組

推動「環境教育法」立法 提升永續發展意識

為促進國民瞭解環境問題、體認環境倫理與責任，維護環境資源及自然生態平衡，確保環境永續發展，研擬完成「環境教育法」草案。該草案經教育部召開多次會議，邀集中央部會、地方環保機關、專家學者及民團體研商後，於95年3月2日獲行政院同意，將俟立法院推動進度，提送併案審查。

推廣永續校園 建構具社區特色之教育空間

為改造校園環境成為具社區特質的公共活動空間，結合校園綠色技術實際應用，促成教育改革目的，教育部持續積極推動「永續校園推廣計畫」相關評審及補助工作。並配合辦理「大專學生協力地方推動永續校園計畫」，提供8位建築及設計相關科系學生，返鄉施作永續校園之實作機會，同時補助大專院校規劃永續建築與生態景觀相關課程。

建立模組 將永續發展納入教材

為鼓勵進行永續發展教育相關研究，教育部公開徵求大專校院發展「永續發展教育相關研究」，並補助6件「九年一貫課程永續發展教學模組之研究」，配合九年一貫課程學習領域觀念，以較適合融入永續發展教學的自然與生活科技、社會、健康與體育、綜合活動等4個學習領域為對象，發展相關較學模組，將永續發展納入教材，提升中小學生永續發展意識。

1.2.9》氣候變遷暨京都議定書因應小組

為減緩人類活動所排放之溫室氣體造成全球氣候變遷，聯合國於1992年通過「聯合國氣候變化綱要公約」，對「人為溫室氣體」(anthropogenic greenhouse gases)排放做出全球性防制協議，為因應國際趨勢，我國本年度在推動溫室氣體減量法工作上有相當大進展（詳情見1.3）。

本組其他重要工作包括：環保署於5月15～26日派員參與德國波昂所召開之聯合國氣候變化綱要公約第24次附屬機構會議，並與相關重要機構、組織及國家代表進行會談；11月6～17日，環保署邀集政府機關、學術界及產業界等代表共同組團赴肯亞奈洛比參加聯合國氣候變化綱要公約第12次締約國會議及京都議定書第2次締約國會議。

1.3 重要成果—溫室氣體減量制度化

京都議定書於2005年2月正式生效，明確規範38個工業化國家在2012年前溫室氣體排放減量責任。雖議定書目前對2012年後的規範對象及減量目標尚無進一步結論，台灣也非京都議定書簽署國，但身為國際社會一員，仍須妥善因應並確立我國溫室氣體減量相關規範。

制訂法規　彰顯積極減量意願

京都議定書生效後，環保署即多次召開「溫室氣體減量法」研商會議、公聽會及座談會，並於94年10、11月間舉辦環保共識會議，邀集全國各界公民表達意見供立法參考。95年2月16日溫室氣體減量法草案研擬完成，行政院於95年9月20日通過該草案，並送立法院審議。

目前我國溫室氣體排放量逐年成長，約佔全球總排放量1%，應予特別關注。制定「溫室氣體減量法」，除宣示我國善盡地球村成員的責任，彰顯我國願積極參與國際減緩氣候變遷相關活動，也回應2005年全國能源會議的要求，提供推動溫室氣體減量法源依據，為台灣溫室氣體減量行動寫下嶄新一頁。

溫室氣體減量法（草案）具有「協助引導（facilitative）」、「強制管制（enforcement）」與「彈性啓動」三大特色。鑒於溫室氣體減量仍屬國際間高度不確定性議題，該法參考國際發展經驗及國內現況，逐期啓動可採用的行政管制措施，再依實施情況動態調整。

CO_2排放交易制度 97年將完備

溫室氣體減量法實施後，未來各縣市政府均須配合推動CO_2減量，企業CO_2排放量則採配額限制，並實施總量管制，從產業到交通部門均將受其規範。

草案共6章28條，除確立CO_2減量政策，並賦予環保署訂定溫室氣體減量推動方案之責。該署目前已著手訂定推動方案，但因減量目標尚未達成共識，故擬從自願減量著手，同時將另成立一跨部會委員會，制訂排放權交易規則、盤查登錄制度等。

草案並規定，須定期統計全國排放量，建立「國家溫室氣體排放清冊」。該法若經立法院通過，企業在不同時期將獲核配一定額度CO_2排放量，新投資案也須遵循相關規定。未來溫室氣體排放總量由環保署核定，各產業或部門核配數量則授權各目的事業主管機關訂定。排放超過額度及登錄或盤查不實者，將處20萬元以上、200萬元以下罰鍰。

■未來事業的CO_2排放量將受法律管制。

草案另明定，經核配排放量之事業應採行減量措施或至中央主管機關指定之交易平台進行排放權交易。凡能達成減量目標者，剩餘的配額可至排放交易中心進行企業間排放交易。依該法「自公布後一年實施」之但書，《溫室氣體排放量盤查登錄管理辦法》若於96年完成，最快於97年展開盤查登錄。屆時，

CO_2排放交易制度將可全面建置完成。

跨部會推動減量　調和三Ｅ並進

此外，經濟部亦成立溫室氣體減量推動小組，希望於追求經濟發展時能反應溫室氣體減量趨勢及尋求解決方案。目前正推動當前最佳技術策略，要求投資設廠時應用最佳能源與環境科技；未來將針對氣候變遷、溫室氣體等議題，與各界領袖加強交流，將相關議題的永續管理整合在企業經營管理策略中，以提升綠色競爭力，將溫室氣體管制趨勢的衝擊，轉化成提高競爭力的契機。

「溫室氣體減量法」後續推動，將透過跨部會整合及結合民間力量共同推動。在減量共識下，藉由規劃及建置溫室氣體管制機制，促進節能及替代能源發展，並使產業結構朝低耗能高附加價值方向發展，調和三E（經濟、能源、環保）發展。

1.4 廢棄物減量　邁向零廢棄永續社會

早期垃圾處理 焚化為主、掩埋為輔

臺灣早期垃圾處理大多爲任意棄置，垃圾處理設施亦相當簡陋，不符合衛生條件。爲有效處理垃圾，政府於民國73年訂定「都市垃圾處理方案」，以掩埋爲主，協助地方政府興設符合衛生條件的垃圾掩埋場，妥善處理垃圾。

隨著民眾對環境品質要求日益提升，垃圾掩埋場用地取得日趨困難，加上先進國家焚化技術愈見成熟，行政院環境保護署於民國80年訂定「垃圾處理方案」，改以「焚化爲主、掩埋爲輔」的垃圾處理思維。經過多年業務推動，該署體認廢棄物若擺對位置，即爲可利用的資源，應全面規劃予以充分再利用，遂於87年開始推動資源回收。

零廢棄趨勢下　改採源頭減量

87年推動「資源回收四合一計畫」後，資源回收量大幅提升。之後鑑於先進國家紛紛提出「零廢棄」觀念，於92年檢討我國垃圾處理方式，在配合資源永續及零廢棄趨勢下，由過去「末端處理」方式改採「源頭減量」與資源回收並行，全面推動「垃圾零廢棄」總體垃圾減量及資源回收政策。

該署依據行政院92年12月核定之「垃圾處理方案之檢討與展望」，將93年訂定爲「垃圾全分類、零廢棄行動年」，規劃從源頭家戶垃圾減量、分類回收開始，進入資源永續管理體系，並擬定「垃圾全分類零廢棄群組三年行動計畫」，配合分階段「垃圾強制分類計畫」執行。

垃圾強制分類政策自94年起分2階段推動，要求民眾於丟棄廢棄物前，分爲資源、廚餘及垃圾3大類。第一階段自94年1月起於10個縣市實施，第二階段自95年1月起全面實施。

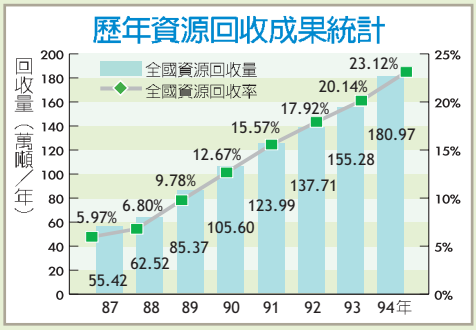
在環保署強力宣導下，大部分民眾皆全力配合。4次民意調查結果顯示，民眾對垃圾強制分類多抱持正面態度，高達九成民眾表示支持，認爲垃圾強制分類於源頭有效減少垃圾量，降低資源浪費及垃圾處理成本，可提升整體生活環境和品質。

垃圾減量　提前達成設定目標

自87年推動「資源回收四合一計畫」後，資源回收量由民國87年的55.4萬公噸提升至92年的137.9萬公噸，回收率亦由5.87%提升至17.89%。在廚餘回收再利用部分，自90年推動「廚餘清運與

回收再利用計畫」以來，每日回收量自80公噸增加至92年的600公噸。

93年之後因推動「垃圾全分類零廢棄群組行動計畫」及「垃圾強制分類計畫」，回收成效再提高。95年6月全國整體資源回收量提高至101.79萬公噸，資源回收率達26.35%，較92年之17.89%增加8.46個百分點。廚餘回收再利用量則達27.64萬公噸，再利用率7.15%，較92年之2.19%增加4.96個百分點，均已提前達成行政院92年12月核定「垃圾處理方案之檢討與展望」時設定之96年垃圾總減量目標值。



此外，除資源回收、資源再利用執行成效顯著外，全國平均每人每日垃圾清運量亦由86年度的1.143公斤降至95年6月的0.62公斤，為歷年新低。垃圾妥善處理率亦由86年76.97%，提昇至95年6月的99.69%，為歷年最高。各項數據顯示，我國推動「垃圾全分類零廢棄」已見成效。

持續推動相關措施 朝零廢棄目標邁進

我國垃圾處理政策自民國73年實施「都市垃圾處理方案」迄今已近20年。環保署針對下一個20年的廢棄物管理政策很早即著手規劃，於92年全面檢討過去垃圾處理政策，完成「垃圾處理方案之檢討與展望」報告，提出多項具體措施，包括：加強執行資源回收再利用法、推動垃圾強制分類及垃圾費隨袋徵收、針對廚餘、巨大垃圾及不可燃垃圾予以有效處理及再利用、推動跨縣市合作處理垃圾、檢討垃圾處理設施興建等，期望逐步達成零廢棄目標。

■利用巨大廢棄物破碎設施增加再利用機會。

■廚餘正朝向全面回收邁進。

環保署於訂定下階段「垃圾零廢棄」總減量目標時，以90年垃圾產生量831萬噸為基準，期望於96年減量達25%、垃圾清運量降低至623萬噸；100年達50%、垃圾清運量降低至415萬噸；109年達75%、垃圾清運量降低至207萬噸，期與先進國家同步建立「零廢棄社會」。

為達成目標，除持續推動垃圾強制

表1.4-1、廢棄物減量政策推行成效

項目	政策推行成效	政策推行前比較
整體資源回收量	101.79萬公噸（95年6月）	資源回收率：92年17.89%→95年6月26.13%
廚餘回收再利用量	27.64萬公噸（95年6月）	廚餘回收再利用率：92年2.19%→95年6月7.15%
全國平均每人每日垃圾清運量	0.620公斤（95年6月）	1.143公斤（86年）
垃圾妥善處理率	99.69%（95年6月）	76.97%（86年）

■限制產品過度包裝，創造消費者、環境與廠商三贏。

■政府機關及學校餐廳停用免洗餐具。

分類、加強廚餘及巨大垃圾多元化再利用外，同時推動2階段限制產品過度包裝、政府機關及學校餐廳禁用免洗餐具等垃圾減量措施，全力朝零廢棄努力。

減量政策推動 貢獻永續發展效益

在廢棄物減量政策推動下，垃圾處理支出亦大幅降低。以94年爲例，平均每月垃圾清運量降爲47萬公噸，相較於93年的49萬公噸，每月減少2萬公噸垃圾，不僅省下1座日處理量900公噸焚化爐的建設費用36億元，亦省下5億元垃圾處理費。此外，94年資源回收量高達181萬噸，回收物品變賣後所得約6億元，合計94年度廢棄物減量實質經濟效益達47億元。廢棄物減量不僅節省環保支出經費，配合資源回收再利用，進一步降低製程產生之環境污染及能源損耗，對永續發展推動有不可忽視的貢獻。

「垃圾減量、資源回收」一直是環保署重點工作之一，此次獲得95年國家永續發展行動計畫執行績優獎對業務推動是一大肯定。該署廢棄物管理處表示，廢棄物源頭減量及垃圾強制分類政策能成功推動，主要仰賴民眾的支持與配合，得獎的榮耀應由全民共同分享。該處亦表示，現階段廢棄物減量推動雖已看到顯著成果，但不會以此滿足，未來將持續推動垃圾減量與資源回收各項工作，使我國邁向永續發展的資源循環型社會，爲台灣的永續發展貢獻心力。

1.5 推動海岸保育計畫　維持自然海岸比例

海岸保育　納入永續行動計畫

隨著經濟快速發展，台灣可供使用的陸地逐漸減少，使土地開發擴展至海岸地區，導致日後突堤效應或海岸淤積侵蝕等後果。海岸不當開發，主要原因在於海岸基礎研究資料不足，以及缺乏海岸專責法令。台灣四面臨海，海岸線長約1,600公里，濱海陸地及近岸海域等具高度發展潛力之海岸國土資源豐富，如何在永續發展前提下合理運用海岸資源，是相當重要的保育課題。

行政院永續會有鑑於此，於永續發展行動計畫國土與交通組工作項目，將加強海岸及海域保育與管理納入，期望透過有效保護沿海地區珍貴資源，及自然海岸線不再減少之目標，達成沿海資源永續發展。具體工作內容則包括：調查現有自然海岸線總長度、研訂保育指標、檢討相關計畫擬訂具體保育利用及經營策略等。

海岸保育 內政部營建署長期投注

我國海岸保護工作，始自73年內政部「台灣沿海地區自然環境保護計畫」，針對沿海地區進行紅樹林、野生動物等自然資源基礎現況調查，作爲海岸保育工作基礎資料。此外，相關部會

亦陸續公告劃設「自然保留區」、「野生動物保護區」、「國有林自然保護區」及「漁業資源保育區」，並成立國家公園、國家風景區，共同積極推動海岸保育。

爲因應海岸保育工作推動所需之法理依據，內政部營建署於民國80年開始海岸法草案研擬工作，並於82年委託調查台灣地區海岸管理所需背景資料，隨後於86年訂定「台灣地區海岸管理計畫」陸續執行相關工作，海岸法草案亦於此時開始立法程序，並引起廣泛討論，海岸管理相關部會，如海巡署、經濟部水利署、農委會漁業署等亦對該法提出意見。未來將整合相關部會意見並配合國土計畫法內容，繼續推動海岸法立法。

海岸保育在92年期間，因應「挑戰2008－國家發展重點計畫」，將海岸保育納入國土復育重點工作，於全台海岸地區進行安全導向的去水泥工程任務。同時期永續會亦要求內政部協同農委會、環保署及經濟部，進行現有自然海岸線總長度調查，並研訂保育指標，同時檢討現有計畫擬訂具體海岸保育利用及經營策略。

海岸保育推動已有初步具體成果

海岸保育除上述各項計畫外，營建署提出「海岸生態復育及景觀改善示範計畫」，針對保護區以外需進行海岸保育地區，於海岸法立法前進行保育，已有具體成效之示範區，包括基隆和平島、新竹南港、高雄西子灣、彰化伸港等。基隆和平島推動的工作，包括人工設施拆除、地貌復原、混凝土護岸拆除及改善工程等。新竹南港則進行潮間帶生態淨化渠道等水資源改善工程、植栽工程，以及設立戶外解說牌等。高雄西子灣推動人工岬灣及人工養灘工程，期望恢復西子灣原有之沙灘。彰化伸港示範區則針對海岸棲地，進行潮溝改善及鳥類棲地整理，對招潮蟹及水鳥復育已有顯著成果。

另爲落實行政院永續會天然海岸比例不再減少之政策目標，營建署運用SPOT-5高解析度衛星影像辦理國土利用監測計畫，並利用GIS建立海岸線數位化系統，目前已在台灣全島及澎湖完成海岸線數位化。分析顯示，台灣本島自然海岸線佔總海岸線長度49%，澎湖自然海岸線則佔其海岸線總長度73%。該署每年定期公布各縣市自然海岸線變化情形，如海岸線出現變異，將函請各縣市政府盡速進行變異點現場查報與回報工作。

未來經營朝向永續海岸整體發展

未來海岸保育經營，除持續監測海岸線外，將以研擬中之「永續海岸整體發展方案（草案）」，作爲海岸保育及自然海岸線保全策略。方案目標除維持現有自然海岸線比例49%不再下降外，並規劃每年回復10公里自然海岸。海岸法立法前，將以兩大方向推動海岸保育永續發展：

一、自然海岸線保全：

(一)、宣告海岸保育基本政策：除行政院專案核准之重大計畫外，不再受理設施型海埔地及海域開發申請計畫。

(二)、調查劃定自然海岸區位：依據遙測資料並經現地複查後，確定周邊海岸尚存之自然海岸線分佈區位，作爲禁止破壞之依據。

(三)、嚴格審議海岸重大計畫：在國土計畫法及海岸法草案，建立涉及海岸開發行爲之「預審」機制。該二法未完成立法前，將另檢討

修訂區域計畫法、都市計畫法、國家公園法及環境影響評估法等相關法令有關土地利用、開發行爲審議基準事宜，建立嚴格審查機制，供區域計畫委員會、都市計畫委員會、國家公園計畫委員會及環評委員會審查作業之依循。

(四)、建立地方巡守查報機制：參考「河川巡守隊」概念，結合當地海巡單位、漁村社區、民間團體或在地學校等就近巡邏海岸，負起「舉報」之責，再由地方警力或主管機關依法處理，建立「夥伴關係」，促成海岸「協力管理」目標。

二、永續海岸行動計畫：

內容包括保護重要海岸資源、合理利用海岸資源、復育劣化生態、整建改善海岸景觀、加強海岸災害防護、合理發展海洋產業、建構海岸資訊系統、完備海岸管理體制、加強海洋教育訓練、強化公私夥伴關係等10項指導原則，各原則另有對應之理念及具體策略。

學習尊重自然 海岸保育方能永續發展

海岸利用應兼顧保育與開發之和諧，始能確保自然環境資源永續利用。營建署調查自然海岸總長度研訂保育指標計畫，以GIS遙測衛星影像系統監測自然海岸線變化情形，期使台灣海岸不受破壞，並逐漸回復海岸自然風貌。目前雖已完成「事後監控」階段性任務，惟「事前預防」機制仍需強化。此外，減少非必要性海岸重大公共工程建設、研發適用於海岸地區之生態工法等，亦是海岸永續發展不可或缺的一環。

營建署本年度獲得永續發展行動計畫執行績優獎，除感謝永續會評審委員對「調查現有自然海岸總長度研訂保育指標計畫」工作項目初步成果之肯定，同時感謝中央大學太空及遙測研究中心以及「永續海岸推動實施服務團」的學者專家，持續提供專業技術與意見，協助完成任務。該署表示，學習尊重大自然、維持環境平衡、堅持永續發展，將是未來推動國土規劃及海岸管理業務時，永不放棄的理念。

1.6 推動綠資源調查　研訂綠資源保育指標

綠資源係指：「廣義存在實質環境中之各式綠色空間，依其自然條件保持著植物穩定生長之土域與水域」。

建立綠色資源消長基礎資料

農委會林務局投入森林資源調查與保護工作已行之有年，曾於民國44年、67年與84年進行3次全島森林及土地利用調查。84年調查發布之台灣全島森林資源及土地利用調查報告指出，台灣地區森林覆蓋率達58.5%，但森林綠色資源分布嚴重不均，其中林地森林覆蓋率高達93%，平地森林覆蓋率卻僅31%。林務局有感於平原地區仍需積極強化造林及綠美化，於是推動綠資源調查相關工作，包括加強造林、綠美化及其檢測與查驗等。此外，爲監測綠色資源消長情形，以及計算綠色資源及森林資源變化

■森林碳匯能力有助於溫室氣體減量。

情形，並規劃辦理常態性國有林事業區檢訂調查及森林永久樣區調查及複查業務，建立國有林森林資源基礎資料。

為明確訂定綠資源範疇，林務局邀集學者專家，釐清綠資源之定義為「廣義存自實質環境中之各式綠色空間，依其自然條件保持著植物穩定生長之土域與水域」，並依此定義進行各項相關調查。綠資源計畫調查工作包含以衛星影像技術進行全島常態化植生指數(Normalized Differential Vegetation Index, NDVI)分析，作為綠色植物覆蓋範圍基礎資料，並配合國有林事業區檢訂調查資料，了解森林資源蓄積及分布情形。另為因應「聯合國氣候變化綱要公約」、「京都議定書」溫室氣體排放相關規範，及了解森林溫室氣體減量功能，該局整合國有林永久樣區調（複）查資料，計算林木生長量及森林固碳功能及效益，為台灣永續發展評估提供量化計算基礎。

受限於氣候及地形條件 資料蒐集困難

綠資源調查工作包含衛星影像資料分析、國有林事業區檢訂調查、國有林永久樣區調（複）查3項工作。衛星影像資料分析，主要以SPOT-2、SPOT-4、SPOT-5三種衛星影像鑲嵌完成之無雲衛星影像作為分析基礎資料。無雲衛星影像因台灣為海島型氣候，上空常為雲層遮罩，必須以多次衛星影像資料互補後，才能獲得全島無雲影像，且衛星影像資料亦須於晴朗無雲之天候，方能取得高品質影像資料。從全島無雲遮蔽率統計表，可窺知資料蒐集與取得確實不易。此外，受台灣多山之地形影響，衛星影像常造成陰影，亦增加影像判釋與分析困難度。

於國有林事業區辦理之檢訂調查與

表1.6-1、台灣無雲遮蔽率統計

	全島	山坡地	平地
91年1期（冬）	83.7%	93.28%	56.25%
91年1期（1-3月max）	89.60%	98.30%	60.30%
92年1期（春）	82.92%	93.67%	51.95%
93年1期（春）	83.03%	94.27%	49.14%
93年2期（秋）	88.08%	96.58%	65.12%
94年1期（春）	83.23%	95.23%	48.26%
94年2期（秋）	89.02%	96.57%	70.94%

■調查人員翻山越嶺完成森林資源調查。

永久樣區調（複）查工作，因位處高山地區，山勢陡峻人跡難至，調查人員須徒步翻山越嶺、夜宿林地方能完成森林資源調查工作。近年因颱風、豪雨造成環境之破碎化，山區道路坍方中斷，更增加調查工作難度。調查人員除須具備優於常人之體力與耐力，更須具備克服山區惡劣環境與危險地形之勇氣與責任心，才能圓滿達成任務。

綠資源覆蓋率 有逐年增加之勢

依據94年「綠資源NDVI調查計畫報告」，94年第2期（6～10月）全島、山坡地、平地之綠覆率分別為89.02%、96.57%、70.94%。與84年全島森林覆蓋率58.5%比較，綠資源覆蓋率有逐年增加趨勢，顯示綠資源保育有顯著成效。在國有林事業區森林資源調查方面，94年度完成大安溪、玉山、大埔、屏東、台東及立霧溪等6個事業區517個森林永久樣區調（複）查工作，另完成南澳、大溪、潮州及大武等4個事業區共162,171公頃檢訂調查工作，繪製航空照片基本圖439幅。其中森林蓄積量與

■94年綠資源紅外光衛星影像。

■94年綠資源自然色衛星影像。

上一期檢訂資料比較，平均每公頃增加62.5立方公尺。

研訂保育指標 積極建立現況資料

推動綠資源調查最終目標在研訂「綠資源保育指標」。林務局期望在健立全國綠資源調查工作機制，提供各項調查成果後，能藉由多期監測結果比對，量測各項綠資源消長情形，透過「綠資源保育指標」評定綠資源保育成果，以確保綠資源不致衰減。

■航空照片繪製需精細比對方能完成。

爲提供研訂「綠資源保育指標」所需之基礎資料，「綠資源調查計畫」規劃細分現有調查工作及調查項目，建立更詳盡之綠資源現況資料。以整體綠覆率爲例，將區分爲天然林、人工林、紅樹林、草生地等，藉由逐年衛星影像分析及地理資訊統計比較，建立綠資源項目變化監測機制，掌控全國綠資源現況及消長情形。國有林檢訂調查及永久樣區調（複）工作部份，亦將檢討現行作業流程，並修訂調查項目，配合國際趨勢擬訂森林健康、森林碳匯等調查項目並評估可行性。

此外，林務局規劃於95至98年針對國有林事業區外之公、私有林進行調查，結合國有林事業區調查資料，建立全島森林資源基礎資料，包括林地地籍資料、林木蓄積量、樹種分布、土地利用情形等。另著手規劃第4次森林資源及土地利用調查，針對台灣地區森林進行全面性詳盡普查，以了解近十年台灣地區森林變化情形。與綠資源NDVI調查、國有林事業區檢訂調查及森林永久樣區調（複）查資料整合後，呈現台灣地區森林資源完整現況及變化趨勢，提供森林經營決策參考。

持續全島調查 掌握綠覆率達成永續發展

台灣的森林資源豐富，早期爲輔助工業成長加速經濟發展，曾計畫性伐採林木。近年來則大力提倡自然資源保育、生態系維護，及森林碳匯功能應用。農委會林務局長期持續進行不同面向之綠資源調查工作，積極建置「綠資源保育指標」研訂所需之基礎資料，並落實綠資源各項保（復）育計畫，確保綠資源使用能符合永續發展精神。該局在人力逐漸精簡下仍全力以赴，以積極行動展現具體成果。林務局表示，獲得95年度永續發展行動計畫執行績優獎實感榮幸，未來將秉持一貫的精神繼續努力，積極規劃第4次台灣全島森林資源調查工作，爲台灣綠資源保育貢獻心力。

■綠資源保育與永續發展密不可分。

第二章 辦理國家永續發展會議

■國家永續發展會議。

2.1 落實公民參與永續發展

1992年「聯合國環境與發展會議」在里約熱內盧召開，通過「21世紀議程」及「里約宣言」等，作爲各國推動永續發展之依據。其中有關公民參與部分，宣言指出：解決環境問題的最佳途徑，來自於相關各階層公民的參與。

擴大公民參與，永續會於組織方面，做了制度性調整。除將委員人數提高至30～36人，並明訂由政府部門、學者專家及社會團體代表各1/3組成，故委員會中民間委員比例高達2/3。

爲落實永續台灣理念，陳水扁總統於94年7月5日與民間環保團體座談時，允諾將召開國家永續發展會議。同月8日永續會第20次委員會議決議，積極籌辦國家永續發展會議。由於本次會議爲我國首次針對永續發展議題辦理之國家級會議，因此於議程規劃上，特別強調由下而上之共識基礎，同時希望藉由多元及全面性之參與，提升公民參與永續發展機制。

2.2 由下而上形成共識

爲提升會議成效，國家永續發展會議籌備工作分爲議題蒐集、議題設定、分區及預備會議，以及召開大會4階段，相關會議包括25場次縣市座談、6

■陳總統於國家永續發展會議開幕式致詞。

次區域論壇、4次分區會議、1次預備會議等議題收集及討論程序。

為擴大民眾參與，議題蒐集首先由各縣市政府分別邀請地方相關人士，召開縣市議題蒐集會議。其次自非政府組織及區域發展角度，由民間團體辦理北、中、南、東等4場區域論壇。另為鼓勵更多的民眾參與，永續會並設置會議專屬網站。民眾除可透過網站獲得相關訊息及會議舉辦動態，並可透過留言版提供建議，提供民眾參與會議的另一管道。

蒐集彙整之1,267項議題，經分析討論後分為8大議題，每議題下設2～3項子議題。各議題再經北、中、南、東4次分區座談會，及1次預備會議討論後，擬定具體議程，做為大會討論依據。八大議題包括：

一、永續台灣，世代傳承。
二、建立國際環境形象，善盡地球村責任。
三、妥善規劃國土使用，確保環境生生不息。
四、調整產業結構，邁向永續經濟。
五、建立友善環境社會，營造生態城鄉。
六、保育生物多樣性，維持生態平衡。
七、降低環境危害風險，建構健康安全環境。
八、擴大全民參與，提昇公民環境素養。

2.3 發表宣言協力推動永續發展

國家永續發展會議於95年4月21日、22日在台北正式召開，會議廣受各界關注，總計871人次出席大會。出席人員包括民間團體、產業代表、學者專家、政府官員等，成爲全民參與永續發展的最佳縮影。

陳水扁總統親臨大會開幕式致詞時表示，因台灣天然資源不豐，地理環境脆弱，因此對永續發展需求比其他國家更殷切。陳總統強調國家在追求經濟發展時，絕不能忘記永續發展的重要，同時也應顧及社會公義。稍後，中央研究院李遠哲院長於「台灣永續發展何去何從」專題演講時指出，二氧化碳排放及污水處理爲當前台灣最重要的環境課題；建議應訂定二氧化碳排放減量目標，並加速廢污水處理，以提升生活環境品質。

大會經與會各界2天的熱烈討論，針對8大議題達成248項共識結論，另有72項非共識建議。大會同時提出「國家永續發展宣言」，宣示「國家的永續發展是奠基在由下而上的民主程序，是維繫在人民對土地與後代子孫的永久承諾，以及政府與民間的協力合作，期盼全國各界在此共識的基礎上，朝國家永續發展的目標大步邁進」。

■林執行長錫耀於國家永續發展會議會前記者會。

■政府、學界及民間團體踴躍參與會議。

2.4 269項會議結論納入施政

行政院蘇貞昌院長在閉幕致詞時，特別感謝各界的熱烈參與及建議。蘇院長表示，會議討論了300多項議題，達成248項共識結論，以及72項非共識建議，成果極爲豐富。蘇院長並指示，共識意見將納入永續發展行動計畫，由永續會協調各部會積極推動；未達共識之意見，以適當方式進一步討論溝通，取得共識後再推動執行。

72項非共識建議經環保署及永續會各工作分組，分別邀集相關部會研商後，其中21項修正爲共識結論，使共識結論增加至269項。共識結論之推動，已由永續會相關工作分組納入「永續發展行動計畫」，作爲未來施政依據，希望藉此落實行政部門永續發展工作，進而帶動地方、民間及產業共同推動永續發展，創造環境保護、經濟發展及社會正義三贏局面，促成永續台灣的實現，並善盡地球村成員之責。

本次國家永續發展會議，估計前後共4,000人次以上民眾參與相關會議或座談。其決議不僅作爲政府推動永續發展策略規劃之參考依據，亦成功提升民眾永續發展意識，建立國內公民參與永續發展新里程碑。

■行政院長蘇貞昌(左三)主持閉幕式。

第三章 表揚民間永續發展績優單位

■日照活動。

3.1 嘉義縣紫雲社區～攜手營造人文、美化、福利願景

嘉義縣竹崎鄉紫雲村爲一傳統的農業村落，開發甚早，人文特色多樣化，在地方熱心人士和文史工作者努力下，居民透過在地故事和精神，營造美化、福利的紫雲社區。

保存農業文化 擁有豐富歷史文物

紫雲社區早年因地形呈盆地狀，原名「田洋」，意味似海洋般一望無際的廣闊稻田，居民生計以農耕爲主，因此保存了豐富的農業文化資源。社區中具歷史意義的文物、遺址極多，如早期的農村建築、穀倉（古亭畚）、三合院、土角厝、菸樓、農耕用具、農家日常生活用品等。

社區於民國39年改稱紫雲村，67年與鹿滿村共同成立「鹿紫社區」。爾後鹿滿村獨立移出，成爲「紫雲社區」，並於84年成立「紫雲社區發展協會」，爲這充滿古文化的純樸社區，燃起營造發展的開發與延續。92年在社區許多熱心居民的推動下，一群熱愛家鄉的「庄腳人」組成工作團隊，正式展開社區營造工作。

要在紫雲養老 齊心典藏、美化、關懷

社區營造團隊成立之初，即設定「我們要在紫雲養老」的明確願景。投

入社區總體營造三年多來，團隊秉持著這個簡單平實的理念，與社區居民攜手共築「典藏紫雲」、「美化紫雲」、「關懷紫雲」的目標，腳踏實地穩健地成長，實踐永續發展的理想。

一、典藏紫雲

社區居民致力留住有流失之虞的社區記憶，並加以活化光大，期望使紫雲成爲一個人文化社區。

(一)透過耆老訪談、資料搜尋、影像記錄、田野調查，完成「紫雲社區資源資料庫」及社區人文地產景圖，囊括紫雲社區人力資源、文化生活、環境生態、交通、產業、水利、建築、景觀等9大領域。

(二)透過志工的協助，收集社區早期文物；申請政府資源，勘查修護社區現有傳統建築。

(三)蒐集社區傳統文物，並分類存放各聚落文化建築陳列室。透過文建會指導之縣市層級營造輔導計畫，以童玩館產業營造方式，逐步改進營運，配合2006年社區環境藝術行動，推動藝術家住村輔導計畫。

■曲橋蓮花池。

■本土手工藝活動。

(四)培育社區專業導覽員。

(五)編輯社區導覽摺頁和社區報。

二、美化紫雲

社區透過向政府申請資源，於盡量不破壞原地貌原則下，，以「生態工法」、「環保建材」、「在地花木」等施工原則，進行環境景觀改造，並重視「環境與景觀的結合」，將文化融入環境中。除創造各聚落居民休閒空間外，也大幅提升社區觀光潛力。此外，並設計「聚落區塊認養制」，以利永續經營，使紫雲逐漸成爲公園化社區。

(一)推動社區志工與居民共同自立營造角落花園、台三路口至橄欖腳的「綠色隧道」步道、水缸「生物盆栽」、日照老人自力營造的大竹圍長青園等行動來美化家園。

(二)以計畫案向政府申請營造坑口小公園、橄欖腳穀亭巷、瓦窯公園、過溪觀溪花廊、綠美化社區的髒亂點。

(三)95年度接受水土保持局補助，營造社區生態景觀池，並與學者及藝術家合作，進行社區生態記錄。

(四)規劃中的方案包括登山步道、環區自行車步道、休閒公園、童玩體驗公園等。

■橄欖腳文化園區。

■95年國家永續發展獎頒獎典禮。

三、關懷紫雲

社區辦理的老人日間照顧中心、社區關懷據點，普受社區銀髮族的歡迎，成效顯著。社區也爲婦女、兒童等各層面的居民，提供豐富多樣的健康生活研習、系列講座和休閒活動，希望提升居民的知識、增進健康，逐漸達成福利化社區目標。

■文建會主委邱坤艮（中）至紫雲社區訪視。

永續社區營造　邁向終極目標

紫雲社區以「在紫雲養老」的單純想法，凝聚社區居民的共識，同時以「典藏紫雲」、「美化紫雲」、「關懷紫雲」3個願景，帶領社區走向人文化、公園化、福利化的終極目標。在全體居民協力合作下，近程目標已獲初步成果。今後除補強不足之外，正積極籌劃向中程目標邁進。

在「典藏紫雲」方面，規劃中之工作，包括設置先民生活空間再呈現區、煙樓文化復活、聚落社區文物展示點設置等。

在「美化紫雲」方面，包括自然綠隧道的整修美化、碧山岩到過溪間的步道開發、垃圾不落地推動、家戶美化等。在「關懷紫雲」方面，包括組織社區巡守隊、加強防護防災教育、社區產業研發提升、新住民照護等。社區營造工作雖然充滿挑戰，社區居民依然充滿熱情與衝勁，相信一定能達到願景。

■前行政院長謝長廷訪視關懷老人日間照顧中心。

3.2 台灣田野學習協會～用教育關照好山好水

台灣田野學習協會成立於民國92年3月，以推廣田野學習爲出發點，透過推展鄉土保育、進行自然與人文資源調查，以及國際田野學習交流等工作，傳遞環境教育與生態保育理念。

協會成員由陽明山、玉山、雪霸國家公園、林務局，及荒野保護協會解說員，及國立台灣師範大學環境教育研究所、國立台灣大學森林師生共同組成。協會成立以來，一直秉持著引導社會大眾及學校師生對自然鄉野的關懷，積極推展鄉土保育及環境教育不遺餘力。

二格自然中心 環境學習理想場域

協會甫成立時，即以環境信託方式提供位於台北縣石碇鄉127公頃私有土地，設置二格山自然中心（K2 Nature Center）。

當地由於20多年未進行人爲開發，保留相當豐富的自然資源與人文遺跡。目前記錄到的物種，包括鳥類21科63種、昆蟲300多種、兩棲爬蟲類29種、哺乳類16種、維管束植物323種、蕨類73種，並有白鼻心、穿山甲、台灣獼猴、山羌等保育類動物。

■在自然中愉快學習的師生。

■充滿原野氣息的路標。

人文采風方面，中心園區野生大菁遍生、樟樹繁茂、茶香漫溢，娓娓訴說早期先民在藍染、樟腦、茶業產業上的風華。屹立三百年的茄苳老樹，以及斑駁的古道、土地公廟、水圳、梯田，則見證了百年來先民與這片土地互動的歷史軌跡。

台灣田野學習協會利用二格自然中心提供社區及學校師生戶外學習機會，以自有台灣中低海拔生態及原始林地爲環境學習場域，設立2.5公里長的森林解說觀察步道。成立以來，已有逾三千名學童在此快樂地學習，五百多名中小學教師至此研習世界野生動植物保護基金會（WWF）規劃的生物多樣性課程。

利用中心資源 提供豐富環教課程

台灣田野學習協會與二格山自然中心合作，在師大環教所師生參與及指導下，完成四個主要環境教育課程，並在當地社區辦理自然農耕工作場，提供社區居民親身學習機會。四個環境教育課程簡介如下：

一、繽紛的世界

活動包括生物多樣性教師研習，以及低海拔森林環境解說。其中生物多樣性教師研習，由協會派解說員到學校，

以WWF「野生新視界－生物多樣性」教學模組教學方法，提供教師對生物多樣性知識的基礎了解。低海拔森林環境解說則針對國小高年級學童，於二格山森林步道進行，包括物種尋找、議題探討、文化多樣性等課程。

二、黃金傳奇－森林寶藏

針對國小中、高年級學童，以黃金傳奇大地遊戲方式，達到認識低海拔森林物種、了解互動合作的重要性、培養團體溝通技巧，以及尋找解決問題的最佳策略等目標。

三、藍魔法草藥學－藍染

藍染是中心的歷史人文課程，藉由課程操作追尋自己的過去，了解先民的生活智慧，從採山藍、製藍靛、藍染製作等活動，展開對先民拓墾尋根之旅。

四、木工坊－鳥屋製作

以二格山疏伐取得的柳杉材料，由學生自己動手打造鳥屋，藉製作過程認識台灣低海拔森林活動的鳥類，以及牠們的棲息環境及困境。「以今日鳥類，明日人類」，激勵學生爲環保努力。

五、探索教育

自然中心於94年在台灣師範大學師生的指導協助下，完成一處探索教育場域，於今年正式啓用。場域佔地約1500坪，以環境教育理念融入探索活動，包括諾亞方舟、信任步道、天龍八部、隔島作戰、黑白二羊等十站，提供高年級學生，以及社團、公司等，做爲教育訓練之用。

六、社區環境學習的實踐－自然農耕工作坊

自然中心所在之石碇鄉村落，全村21.63平方公里的土地，一半以上在翡翠水庫北勢溪水源特定區內，村民則大多種茶爲生。因此村民的耕植方式、生活習慣及態度，皆會影響水庫水質。自然中心成立以來，每年不定期辦理自然農法工作坊，利用自然中心內自耕茶園，指導村民以順應自然的方法栽植茶樹，減少使用農藥、化學肥料、除草劑，減少水庫水體污染。過程雖辛苦，但成效斐然，深得村民喜愛。

■自然中心內，美景隨處可見。

累積經驗能量 持續發展自然中心

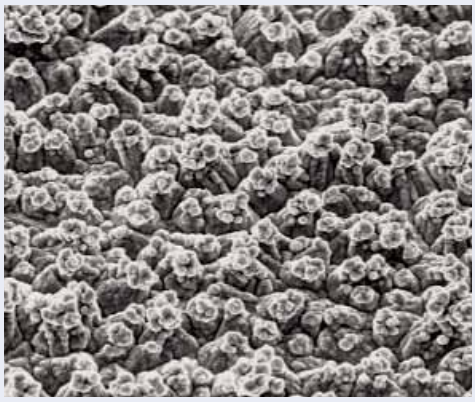
台灣田野學習協會二格山自然中心，提供廣闊的土地，投入龐大的人力資源，引領孩童在森林、小溪、沼澤、山嶺間享受開闊的田野，體驗與野生動物相遇的驚喜，體會野域之美，尋求人與自然間的和諧。

四年來辛苦耕耘，期待能開創更遠的視野、累積更多量能與經驗，使中心的發展更能掌握社會、文化、自然環境變遷的趨勢，提供更合乎地方需求的環境教育服務。

■藍染作品。

3.3 金居開發銅箔～友善環境　積極研發綠色生產

金居開發銅箔股份有限公司創立於民國87年，89年一廠建廠完成開始量產，主要的產品爲電解銅箔，是國內外銅箔基板與印刷電路板的關鍵材料之一。爲響應政府「根留台灣」政策，90年續在台擴建製二廠，產量在全球舉足輕重。



■顯微鏡下的銅箔。

面臨經營困境 思考紮根永續經營

電解銅箔爲電子產業重要原料之一，銅箔市場則長久以來被日本領導之廠商掌握。金居公司雖產量甚鉅，但因全球電子產業萎縮、電解銅箔產業過度擴產，產能過剩引發惡性競爭。金居面臨營運艱難之際，深知只有朝永續經營紮根，才有繼續發展的機會。本著「創新與敬業，宏觀與合作，服務與福氣」的經營理念，積極服務顧客，協助顧客解決銅箔使用相關問題，並聘請技術顧問協助改善品質，開發新產品，另與美日先進國家印刷電路板業者合作，成功開發完成微波高頻通信基板用銅箔、反面處理銅箔等產品，也協助客戶開發高附加價值產品，提升金居在銅箔產業的地位。在景氣逐漸回升之後，終能逐漸擺脫困境，市場佔有率又逐漸提高。

展現方案成果 落實綠色設計與清潔生產

爲符合綠色設計、清潔生產及減少環境負擔，金居公司從工廠設計建造階段，即將綠色生產概念納入生產規劃，推行節能、減廢、資源回收再生不無餘力，改變一般視金屬表面處理相關產業爲高污染行業之誤解。該公司製造銅箔

■金居銅箔斗六廠。

■檢查與裁切。

之主要原料，即回收之廢電纜；銅箔裁切後之餘料，亦立即回收溶解後再利用。銅箔電解時產生的熱量，則直接用於銅箔乾燥及銅線溶解，以節省能源消耗，達到綠色生產目標。公司並於製程區設置空氣清潔系統，提高人員及工廠週遭安全性。

廢水回收部分也成效卓著。由於銅箔製作需用純水清洗表面，以保持銅箔的清潔度與品質，是相當耗水的產業。金居投入大量資金建置相關污染防治及用水回收再利用設備，將水洗產生的汙水分類收集，設置不同的逆滲透設備回收純水及原物料，使整個製程循環水量總回收率達到92%，大量減低廢水處理對環境之衝擊。此外，金居公司並建置金屬回收設備，將無法直接回收之含銅濃縮液分流收集，化腐朽爲神奇，將害廢棄物轉變爲可用的金屬化合物。在減廢思考下，另設置乾燥爐，將廢水場污泥含水率減半，降低污泥處理費用，一點一滴降低成本。

■廠房一角。

環安衛相關工作，金居公司更做到「環保優於法規要求」之實踐。該公司雖不屬於環保署公告指定「應置廢棄物專業技術人員之事業」及「第一批至第三批應設置空氣污染防制專責單位或人員之公私場所」，但爲落實污染防治，主動設置廢棄物專業技術專責人員及空氣污染防制專責人員，並取得證照。金居同時通過環境品質管理系統ISO-14001:2004改版驗證，期望藉認證系統之督促，讓環保工作更加落實。經歷年積極持續運作並輔以對應研究開發計畫，金居公司已建立一系列資源回收及減廢設備，開廠迄今減廢率已近85%，成效卓著。減廢促成支出降低，亦提高公司成本效益。

因應國際規定 符合WEEE/RoHS法規

金居公司以「友善環境」之責任自許，爲因應歐盟環保指令對電子產業的衝擊，除銅箔製造處理所用之原物料均符合WEEE及RoHS等貿易管制法規，爲配

合下游客戶的需求，亦積極研發，協助提供下游客戶環保製程適用之銅箔，已開發完成適用於無鹵素基板及無鉛製程基板專用的電解銅箔，頗受美、日、韓業者的肯定。另為提昇產業整體競爭力，目前正與國內研究機構合作，開發雙光澤等特殊用途產品，未來將以合理價格優先供應國內下游客戶，以協助客戶降低用料成本、穩定料源，自供應層面提升經營競爭力，並促進整體產業加速成長。

有效科技運用 產業與環境永續共榮

金居以快速熱忱的服務與堅強的技術支援，提供電子相關產業所需的銅箔材料，創造利潤、分享顧客、回饋股東與照顧員工，成為技術服務與客戶導向的世界級解決銅箔專業方案的提供者。金居的經驗證明，經過有效的科技運用，清潔生產不再是生產事業的負擔，還可以創造利潤；不只降低環保費用支出，同時減低對環境之衝擊，是產業與環境共榮的雙贏策略。

3.4 台東縣新興國小～融入社區傳統文化　塑造永續校園

新興國小前身為日據時期「近黃教育所」，光復後改設近黃國民學校，並於49年8月10日奉准定名為台東縣金峰鄉新興國民學校。民國57年8月九年國教育義務教育全面實施時，再奉令改稱為「新興國民小學」。

結合部落與社區 校園就是我家

新興國小位於台東縣太麻里，緊鄰北里溪畔，位處於金針山下。學校周圍的土地都已開墾成釋迦園，因此充滿綠意的校園像是沙漠中的綠洲，有著各種不同的校園植物，不但提供野生動物棲

■入口印象：排灣族柴堆、報到台。

■具原住民族文化特色升旗台。

地，也是北里社區和新興社區居民的主要休閒場所。「校園就是我家」的理念，在新興國小實現了。

新興國小座落於排灣族部落內，全校師生不到百人，但校內校外處處充滿濃濃的排灣族文化。不論學校圍牆、地板或廁所，都是部落族人和學生共同創作的藝術品。「校園我的家」、「我的家是校園」，是校長想實現的理念，帶領全校教職員與孩子，從校園綠化、關懷生態做起，進而帶動家長及社區投入。透過「一家一樹」、「一人一石」、「一生（學生）一袋（背袋）」，讓學校與社區產生密切結合，讓孩子無時無刻既在家，也在校園。

校園生態系統　從自然中學習

在校長的帶領下，新興國小一步步將校園轉變爲綠色校園，也將綠色種子深植在學生心中，營造出一個兼具意識環境與文化環境的校園，期望讓學校自成一個內循環的生態系統。

一、水噹噹的具體行動

學校蒐集社區家庭廢水，在師生與社區居民共同努力下，將污水引到校園，做成300多公尺的生態溝和5個生態池。經過生態池內沙石及水生植物過濾功能，不但將水質淨化，生態池也吸引許多水生生物到此繁衍。師生並與社區居民合力改建校內的老舊廁所，將排出的廢水接到樹下，不僅使廁所換上嶄新風貌，大樹也更欣欣向榮。此外，學校還將洗手台的排水口，開挖成半公尺見方的蓄水池，舖滿石頭讓水滲流到土裡，並將教室四週的排水溝水泥撲面拆除成爲草皮，延長每一滴水留在土裡的時間。

■廢水再利用－生態池。

二、綠油油的具體行動

本著植樹人「前人種樹、後人乘涼」的精神，校長帶領師生在校園努力植樹，並於每年植樹節定期舉辦「一家一樹、百人百齡種百樹」活動。師生並充分利用自然資源，撿拾海邊的漂流木，加工成爲升旗台及各式桌椅。樹幹曬乾後，還可做成置物架，讓樹木在生命結

■廢材創意聖誕樹。


■廢棄空間再運用－新教育平台。

束後，仍能發揮最大的價值。

三、再生能源閃閃動人的風光

靠著教室屋頂2組太陽能電板、3座風車和蓄電池組，即使在太陽不露臉、風力也不強的日子，還是能提供足夠電力，讓教室的電燈、電扇運作正常。全校原本2個月4,000多度的用電，要花1萬多元電費，在再生能源使用下降到100度，不到原來的四十分之一。

風力發電：

起動風速3.1m/s終止風速60m/s功率1kw的風力發電就在二樓的屋頂。起動風速2.5m/s，終止風速55m/s，功率1/4kw的風力發電另外安裝跑道的末端。

太陽能發電：

向有「日昇之鄉」之稱的太麻里，平均日照長達13小時。師生一起計算太陽方位、緯度變化，透過太陽能取代學校的電力需求。目前10kw的發電量提供校內100人使用的電力，而節約用電也成爲新興國小的重要計畫。學校在寒暑假時，甚至將潔淨的再生能源輸出，和社區共享。

四、生生不息的校園

新興國小最終願景，是「無資源進入、無廢棄運出」的生活哲學。以簡單樸實的哲學朝此方向努力，把廢水和廢棄物再轉化成有用的資源，重新再利用。

實踐永續校園 達到永續學習願景

永續校園環境教育的精髓不在言教，在透過日常生活塑造生活的、生命的、生態的空間，並結合具地方特性的空間及地景，以及橫向的現實社會條件，使之成爲具地方特色的實質環境。新興國小以自身經驗證明，每一個人每一個社會都應向大地學習，善用每一份資源，使資源和文化能生生不息，社會能永續發展。

（本章圖片由各得獎績優單位提供）

第四章 發布94年度永續指標計算結果

■永續發展指標發布記者會。

為提升國人永續發展認知，並了解我國推動永續發展推動現況，行政院永續會於6月5日世界環境日公布「2005年台灣永續發展指標」計算結果。記者會由永續會執行長林錫耀政務委員主持，環保署張國龍署長、永續會前執行長葉俊榮教授及多位學者專家與會發表評論。林執行長表示，行政院選在世界環境日公布「台灣永續發展指標」，除宣示將永續發展理念轉化為在地實踐的決心，也提供永續指標的「台灣視窗」，作為衡量台灣永續發展現況的依據。

4.1 訂定指標 掌握永續發展現況

負責指標計算的行政院研究發展與考核委員會指出，台灣永續發展指標自民國92年起每年定期發布，迄今已4年。除檢視施政成效，做為決策警示與決策導引外，旨在評估我國推動永續發展的進程，並回應聯合國對各國建立指標評估永續發展推動進展的呼籲，以及展現我國對國際接軌的自我要求，使各界了解台灣永續發展趨勢與變化。

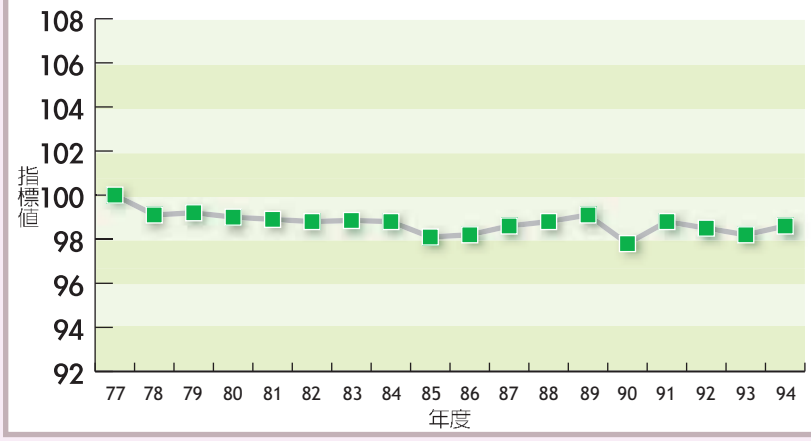
台灣永續發展指標系統建置，係參考聯合國永續發展指標「壓力-現況-回應（Pressure-State-Response）」架構，並將我國發展現況納入考量。指標系統分為「生態資源」、「環境污染」、「經濟壓力」、「社會壓力」、「制度回應」及「都市發展」6大領域，包含40項指標。指標架構及各項指標趨勢，另詳行政院國家永續發展委員會全球資訊網站http://ivy2.epa.gov.tw/NSDN/。

4.2 六大領域評量永續發展趨勢

一、環境污染領域

民國77年至94年之間，環境污染領域指標值呈現小於100微幅上下震盪趨勢。民國94年指標值雖較93年微幅改善，但長期而言整體環境品質並未見明顯改善。個別指標中，廢棄物資源回收率改善趨勢明顯，但PSI平均值、水庫品質指標等則變化有限，二氧化碳排放量指標值則一路下降，顯示排放未獲得有效控制。歷年環境污染趨勢，詳如圖4.2-1。

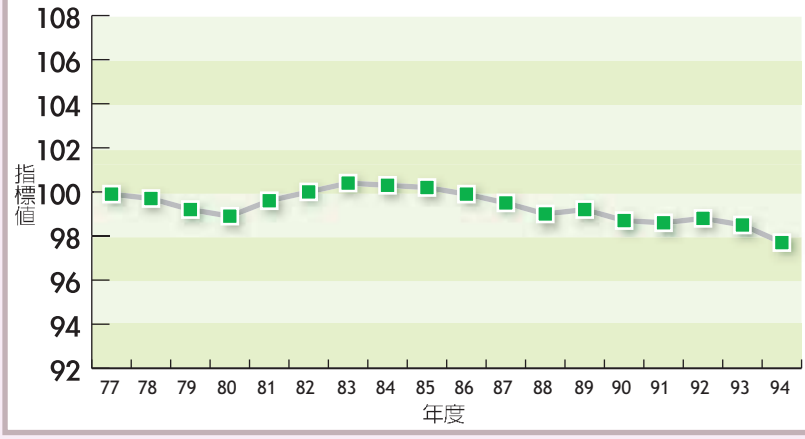
圖4.2-1：環境品質綜合指數趨勢圖



二、生態資源領域

生態資源綜合指數自民國85年起，即呈現逐年下降趨勢。單位努力漁獲量顯著增加，生態敏感地指標值則因保護區成立獲得改善。整體而言，生態資源綜合指標於90年至93年間維持穩定，94年則明顯下降，呈現背離永續趨勢，詳圖4.2-2。

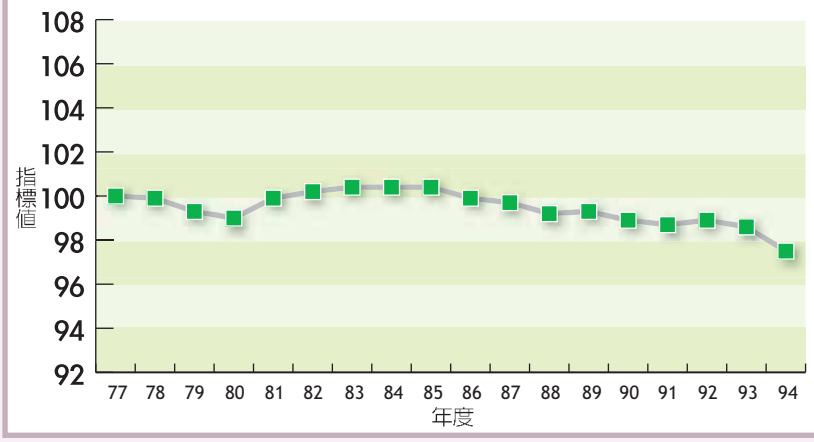
圖4.2-2：生態現況綜合指數趨勢圖



三、社會壓力領域

社會永續綜合指數值於民國77年至91年均呈現下降、背離永續現象， 92年起則逐漸改善。比較94年與93年計算結果，每人每日垃圾量因資源回收率提高顯著下降，失業率改善也相當顯著，公害陳情案件則有攀升趨勢。社會壓力綜合指數由93年93.12提高至94年93.42(圖4.2-3)，趨向永續。

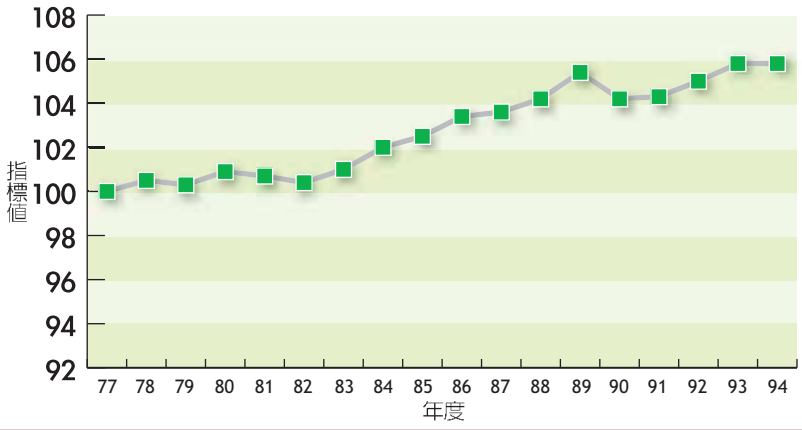
圖4.2-3：社會壓力綜合指數趨勢圖



四、經濟壓力領域

經濟面向綜合指數長期朝永續方向發展(圖4.2-4)，94年度指數值與與93年度比較，維持平穩。

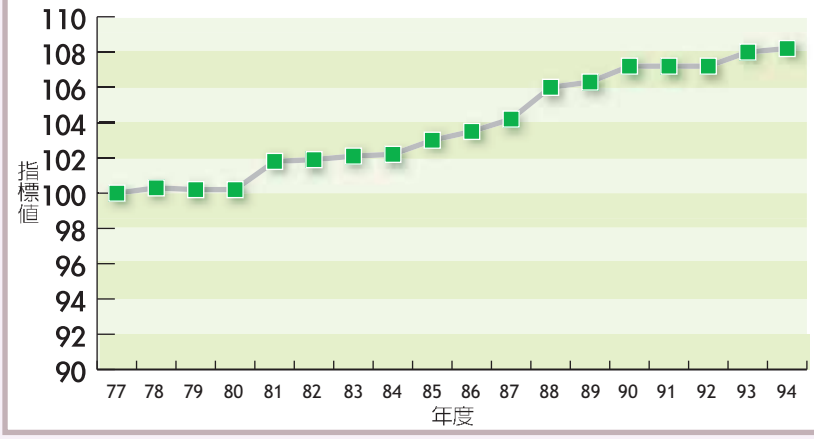
圖4.2-4、經濟壓力綜合指數趨勢圖



五、制度回應領域

自民國80年起整體制度量能逐步提升，呈現邁向永續，顯示政府對環境議題的重視持續提升，不斷自法規及制度面著手，引導政府、企業與民間正視環境問題，相關政策之設計與執行，亦對永續發展有正面幫助。制度回應領域長期持續呈現永續趨勢，反映施政單位的持續作為，也看出政府於政策面落實永續發展之決心及努力，詳圖見4.2-5。

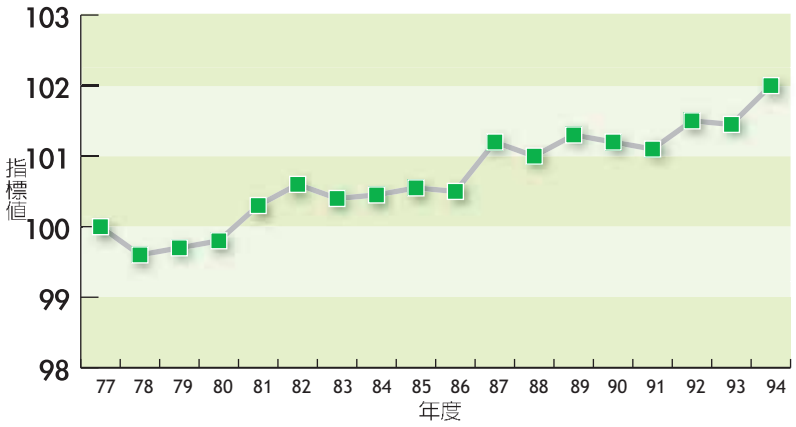
圖4.2-5、制度回應綜合指數趨勢圖



六、都市永續發展領域

就整體趨勢而言，都市發展長期趨勢呈現永續(圖4.2-6)。其中都市平均每人所得、大眾運輸乘客人次及都市化面積擴張率等指標之長期趨勢，均有利都市之永續發展；但都市小客車持有率、都會區每年空氣嚴重污染比率等指標值，則呈現不利永續發展之趨勢。

圖4.2-6、都市發展綜合指數趨勢圖



4.3 指標逐步內化納入施政

永續會公布2005年指標計算結果，出席記者會之學者專家均予肯定，但對整體環境及生態有逐漸背離永續之勢，則多表示關切。學者呼籲，對二氧化碳排放量、耕地總面積比、癌症死亡分率、資源耗用型產業產值佔製造業產值比率、都會區小客車持有率惡化現象，應儘速採取改善措施。

■永續指標發布記者會，媒體雲集。

針對部分指標未能朝向永續方向發展，林錫耀執行長責成永續會各工作分組進行檢討，訂定逐年改善目標予以改善。林執行長同時強調，指標的作用有如在黑暗中以手電筒照明，希望能以最少資源看到最多面向，做爲下一步的指引。台灣永續發展指標系統建置完成至今已4年，永續會將進行總檢討，使指標更符合現況需求，有效引導台灣未來發展方向。林執行長同時表示，永續發展是動態的過程，也是永不止息的檢討與體質強化；政府公布永續發展指標計算結果，顯示指標系統及其背後的政策意義已逐漸內化爲政府施政，希望透過指標公布，能提升民眾認知，共同關心並參與永續發展工作，同時期待全民共同努力，攜手邁向永續發展的國家。

第五章 協助地方推動永續發展

■台中公園。(沈奕助攝)

5.1「全球思考、在地行動」

「全球思考、在地行動」係1992年地球高峰會於「21世紀議程」中提出之概念，2002年世界高峰會各國更達成共識，唯有從在地觀點深入思考如何強化地方政府推動永續發展的能力，方能落實在地永續藍圖。

我國中央層級追求永續發展已達初步成果，但要具體完成永續發展目標，則尚須地方政府之參與。永續會遂於民國91年將協助地方政府推動地方21世紀議程列爲優先執行工作，並於民國92年起開始推動縣市政府制定「地方永續發展策略規劃」，期望凝聚地方力量，經由民眾討論決定地方未來發展方向，希冀就地方面臨的問題作全面思考，並在現行法令、技術及資源條件下，進行制度調整及因應策略研擬，以落實永續發展理念，達成地方永續發展願景。

民國93年永續會永續願景組召集機關行政院經濟建設委員會，遴選11個縣市政府補助其辦理「地方永續發展策略規劃」，另桃園縣及台南市亦自籌經費完成「策略規劃報告」，總計13個縣市完成永續發展策略規劃，並訂定縣市「地方21世紀議程」。

5.2 地方永續發展推動機制評鑑

為促使地方政府依據研擬之規劃推動永續發展工作，永續會委由行政院研究與發展考核委員會（簡稱研考會）辦理評鑑地方永續發展推動機制評鑑工作，藉以評估地方是否具備結合政府、民間團體、社區及學校等多元活力，達成永續發展目標。

地方永續發展推動機制評鑑，由專家學者會議建立評鑑項目及評鑑重點，並成立評鑑委員團從環境、社會、經濟、制度四大層面，以現場訪視、書面審查、縣市評鑑等三階段進行量化與質化之評鑑。此外，並舉辦分區說明會，於評鑑前向縣市明確敘述評鑑項目及重點，以更有效推動地方永續發展工作。評鑑結果，除針對績效良好縣市分析其成功因素，並對各縣市提出合乎其需求及特色的未來發展建議。

5.3 藉評鑑落實地方永續發展

研考會於民國95年5月完成13縣市之評鑑工作，初步結果以都會型的台北市及台南市、農工業型的彰化縣、離島型的金門縣，及區域型的高高屏三縣市獲評為地方永續發展優良縣市。獲評優良之縣市，其首長均對永續發展高度重視，並將永續發展理念納入施政，依在地環境特色、急需改善之處及環境惡化情形規劃永續發展計畫，並訂定願景、策略、行動方案及量化評量目標，且均能積極做好規劃、協調、執行及評量等各階段工作。

在都會型城市部分，台北市以參與決策之民間團體眾多、推動垃圾減量達60％、建立「永續發展重大政策決策評估」系統等值得學習。台南市優良之處包括其120項行動方案具初步成效、完成「台南市健康城市白皮書」、召開「民間座談會」及「府城憲章座談會」積極鼓勵民眾參與、出版「台南市永續發展白皮書」等。彰化縣傑出之處在於指出以水為主軸，搭配策略及行動方案做出實質成效、初擬之指標已具檢視功能、將縣市綜合發展計畫與地方永續發展各階段內容比對並進行修正等。金門縣值得嘉許之處包括：配合離島永續發展方針凸顯離島發展特性、研擬具體可行之「策略執行績效評估辦法」、藉媒體及論壇傳播了解民眾對各項策略執行情形之反應與參與、永續社區與各級學校參與綠色學校之比例極高且成效顯著等。

在區域型的高高屏方面，高雄市優點包括訂定中長程目標、建立高高屏區域性重要議題，且依據議題分析規劃目標建立行動方案，並扮演領導地位。高雄縣設立南區環保科技園區，發展資源回收再製售產業，建立跨區域廢棄物處理支援網路，積極推動生態工法等，皆是具體作為。屏東縣則提出「屏東縣永續宣言」，並針對永續水環境、永續有機農業、河岸防治、綠色能源、農業產業發展、健康風險、社區治安、福利化社區、水資源保護、生物科技園區之「永續經濟」與「永續環境」，提出相關策略與行動方案。三縣市共同制定高高屏地方永續發展策略規劃書，且常藉三縣市首長會報或聯繫機制提昇地方永續發展推動成效，是值得學習之推動模式。

5.4 建立地方永續指標 檢視推動成效

除針對推動機制進行評鑑外，研考會另協助各縣市建立「地方永續指標資料庫架構」及建置「地方永續發展行動網站」。地方永續指標資料庫建置，包括規劃地方永續指標資料庫架構，及輔導訂定地方永續指標二項工作。透過蒐集在地化永續發展指標相關資料，以及與國家級永續發展指標之比對整合，建立完整的地方永續指標資料庫。有別於國家級之「台灣永續發展指標」，地方永續發展指標分爲二層級，一爲整體性之系統指標，須與國家級指標結合，另一則屬於地方內部操作指標，依各縣市之現況訂定及願景訂定。

5.5 建置網站 交流地方永續發展成果

地方永續發展行動網站建置，有利於各縣市推動成果交流。網站內容包括縣市永續發展策略規劃報告、指導原則與行動要點、評鑑資料成果展示、指標資料庫、六星計畫及綠色學校、國外地方永續發展個案追蹤報導、地方永續發展行動地圖及相關網站連結等。研考會表示，透過評鑑機制之推動，可找出值得各縣市相互學習的重點；讓各地的評鑑資料與評鑑結果，透過網站與所有縣市政府及民間團體分享，則有助於提升地方永續發展推動品質。

地方永續發展行動網站。

5.6 持續補助 擴大地方實施永續策略範圍

地方政府是永續發展理念能否具體落實的重要關鍵。過去兩年，台灣地區已有13個縣市完成地方永續發展策略規劃，但仍有部分縣市尚未開始推動。有鑑於此，永續會下階段除繼續推動評鑑外，並由行政院環境保護署持續補助其他未完成策略規劃之縣市，協助其完成工作規劃。95年度擇定台北縣、台中縣、雲林縣及嘉義縣等4縣，繼續辦理「推動地方永續發展計畫」，並於96年度編列預算，持續補助尚未辦理之縣市。鑑於以往推動經驗，環保署強調社區是邁向地方永續發展的基礎，因此建議後續辦理地方永續發展規劃縣市，應積極結合社區力量，展現社區特色。

永續會期望經由整合中央及地方的努力，在社區及民間團體的參與下，完成地方永續發展規劃，致力推動各項工作，讓民眾了解政府推動地方永續發展的決心，積極建立在地永續發展環境，共同朝永續台灣之路前進。

第六章 國際永續發展動態

6.1 聯合國永續發展委員會年會

討論重要議題推動進程

聯合國永續發展委員會（UNCSD）第14屆會議（CSD-14）於2006年5月1日至12日於美國紐約聯合國總部舉行，會議主題爲「永續能源」、「工業發展」、「空氣污染／大氣層」及「氣候變遷」等議題的推動進度。

在綜合性討論中，許多與會者強調「里約宣言」的重要性，同時認爲CSD-14應釐清所有國家，特別是開發中國家，在執行上述領域的目標及指標時遭遇的障礙。與會者強調：「消除貧窮」不僅是全球優先項目，更是永續發展重要目標。

部長會議中各國部長指出未來一年需面對的挑戰，以加強執行「21世紀議程」、「約翰尼斯堡行動計畫」及「毛里西斯策略」，並促進實現仟禧年發展目標。部長會議指出之挑戰包括：

(a) 調整國際、區域、國家、地方、公私部門之資金，以及官方發展援助；
(b) 將國家永續發展策略、消除貧窮策略及國家發展計畫中之永續發展、工業發展、空氣污染／大氣層和氣候變遷等問題結合；
(c) 加強國際和區域合作，包括南北合作及南半球間的合作，使各國政府、國際組織和利益攸關者能共同參與；
(d) 加強夥伴關係，使各種主要群體均能參與；
(e) 依靠已開發國家和國際組織的財政及技術援助，在開發中國家進行能力建置、增加技術轉移，以及強化教育和培訓；
(f) 解決非洲、低度開發國家、小島開發中國家和內陸開發中國家的特殊需要；
(g) 加強婦女作為變革的參與者和促進者的功能和地位；
(h) 讓所有人有機會獲得可負擔的可靠能源；
(i) 促進提高能源效率，擴大再生能源使用比例；
(j) 加強清潔能源技術的開發、利用和轉移；
(k) 緊急展開氣候變遷相關國際合作；
(l) 減少空氣污染，特別注意傳統生物燃料造成的室內污染及對婦女和兒童的影響；
(M) 改變不永續的生產和消費方式，已開發國家並應率先進行。

本屆年會特別聚焦討論推動能源等議題遭遇的限制及障礙，2007年召開的15屆會議，將針對實際推動措施採取政策性決定。

6.2 重要國際環保公約發展現況

氣候變化綱要公約與京都議定書

聯合國氣候變化綱要公約第12次締約方大會（COP12）與京都議定書第2次締約方大會，於2006年11月6日至17日在肯亞奈洛比舉行，共有189個國家部長級官員參與會議，目前全球共168個國家簽署京都議定書。

本次會議主要討論後京都（2012年後）減量行動，其他議題包括公約執行情形、氣候變遷政策執行經驗、相關科學研究新發現、2012年後京都議定書時期的全球氣候政策架構、較嚴格的排放管制，及對開發中國家之技術轉移等。會中並通過5年的適化計畫及基金支應，爲會議最重要的兩項成果。各國代表將於2008年的大會重新審議新京都議定書協議內容，此外，各國也達成援助非洲及提倡如封能及水力發電等清潔能源，以及籌設相關基金的共識，2012年前該基金方案可望提供開發中國家1.1兆美元的資金援助。

維也納公約與蒙特婁議定書

維也納公約第7次締約方大會暨蒙特婁議定書第17次締約方會議於2005年12月12日至16日在塞內加爾首都達卡舉行，共有來自締約方、聯合國官員、國際組織、非政府組織、學術界、工業界及農業部門等，總計超過400人參加。該次會議討論重點包括蒙特婁議定書各項修正案批准與遵約情形、技術暨經濟評估小組報告（TEAP）、多邊基金、溴化甲烷相關議題、必要用途豁免、破壞臭氧層物質（ODS）之非法貿易與銷毀、製程助劑等，最後共通過超過50項決議案。

蒙特婁議定書第18次締約國大會（COP-18）於2006年10月30日至11月3日在印度新德里召開，共計550位各國代表與團體出席。大會共採納37項決議，包括：提列屬基本用途之ODS、提列屬必須使用之ODS、溴化甲烷豁免，及檢討檢疫裝運前處理之應用等事項。

巴塞爾公約

巴塞爾公約第5次開放式工作組會議（OEWG5）於2006年4月3日至7日於瑞士日內瓦舉行，會議旨在追蹤第7次締約方大會（COP7）決議執行成果，並爲第8次締約方大會預做準備。本次會議決議重點包括巴塞爾公約策略計畫、手機伙伴計畫，及持久性有機污染物技術準則。

巴塞爾公約第8次締約方大會（COP8）則於2006年11月26日至12月1日於肯亞奈洛比召開，共計120國1,000餘位代表參加，會議爲期一週，會中並舉行廢電子產品世界論壇。依據統計，全球每年約產生2,000～5,000萬噸廢電子產品，相當於所有固體廢棄物總量的5%。聯合國環境規劃署（UNEP）表示，公約除管制有害廢棄物跨國運送外，亦可促進永續發展及聯合國千禧年發展目標的達成。

斯德哥爾摩公約

持久性有機污染物斯德哥爾摩公約第2次締約方大會，於2006年5月1日至5日在瑞士日內瓦舉行。斯德哥爾摩公約目前有122個締約方，包括121個國家及歐盟。

本次大會的主要目的包括：確認DDT繼續作爲病媒控制的評估及取代DDT

的替代性策略、審查特別豁免過程的標準、決定最佳可行技術（BAT）指南及最佳環境作業（BEP）暫行指南、確定與定量戴奧辛（Dioxin）與呋喃（Furan）排放情況，及全氟辛烷磺酸基化合物（Perfluorooctane sulfonate）及五溴二苯醚（Pentabromodipheny1 ether）審議等。

會議中針對於五溴二苯醚（Pentabromodipheny1 ether）、克敵康（Chlordecone）、靈丹（Lindane）、全氟辛烷磺酸鹽（Perfluorooctane sulfonate，PFOS）以及六溴聯苯（Hexabromobipheny1）等5種化學物質之第一階段特性審查，業提大會報告通過，後續將進行相關風險及社會與經濟影響等審查，將暫不納入POPs管制名單。

鹿特丹公約

聯合國於2006年10月9日至13日在瑞士日內瓦召開鹿特丹公約第3次締約方大會，共有140個國家500餘位代表與會。會中大會主席要求考量是否增加已列管的農藥成份，歐盟則關切會員國表示無法有效執行附件中產品輸入的回應。

會議共達成16項決議，包括2007～08年計畫與預算、公約執行、財務機制、未遵法機制、與巴塞爾公約秘書處間的合作與協調等。有關具致癌性溫石綿之管制部份，在加拿大等溫石綿輸出國的阻礙下，未能列入管制清單，將留待2008年10月召開之第4次締約國大會再討論。

因溫石棉佔全球石綿消耗量94%，已鮮見於西方國家，但在開發中國家仍經常使用，主要添加於水泥。聯合國環境規劃署（UNEP）官員表示，本次會議未能將溫石綿列入管制，引起開發中國家關注。WHO官員亦表示，全球每年至少有9萬人因石棉相關疾病致死。

生物多樣性公約與生物安全議定書

生物多樣性公約第8屆締約方大會，於2006年3月20～31日在巴西Parana州首府庫裡提巴（Curitiba）舉行，計93國部長3,900人與會。主要議題包括：

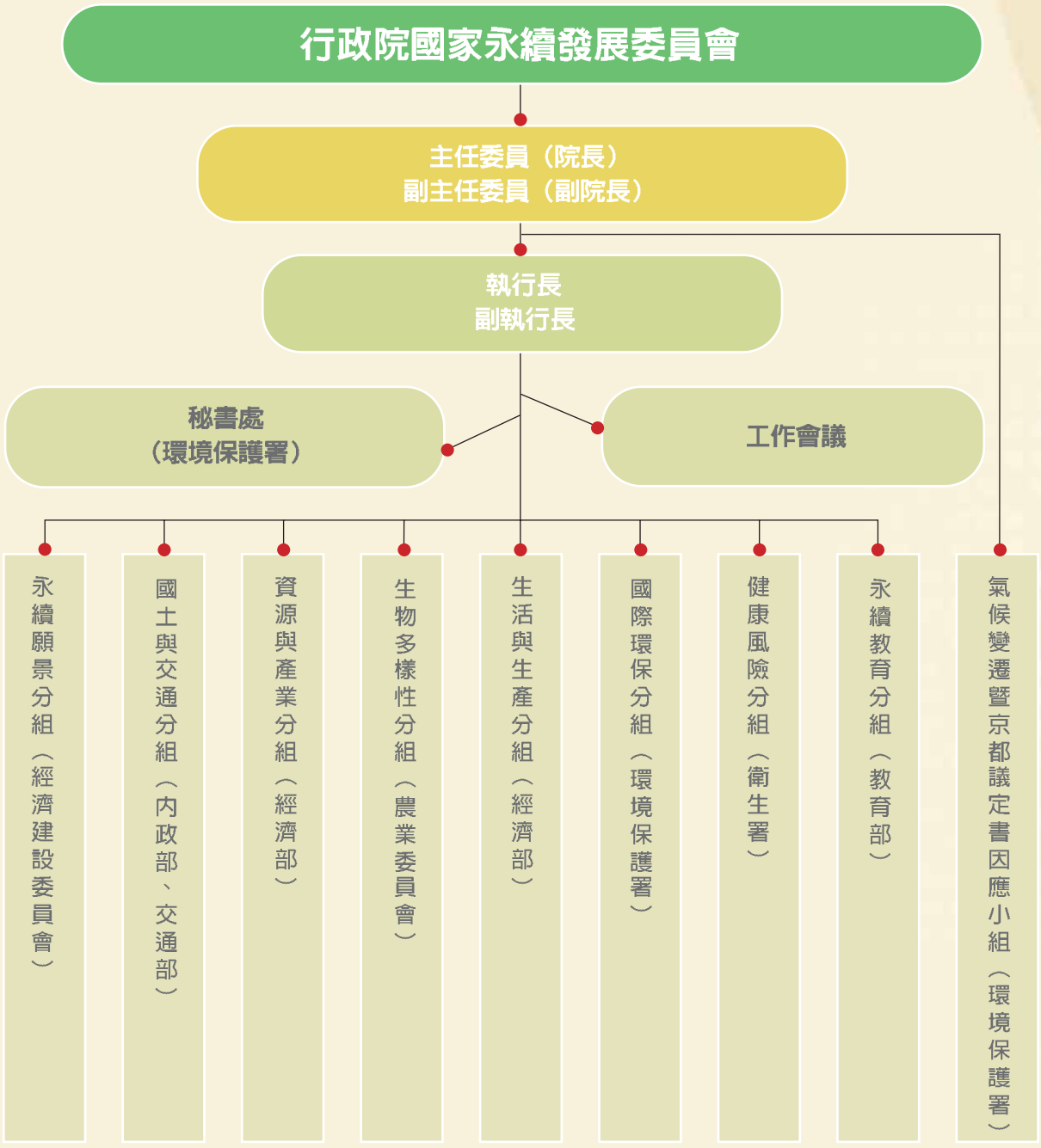
（1）島嶼生物多樣性、
（2）缺水及半濕潤地區生物多樣性、
（3）全球生物分類倡議、
（4）獲取和惠益分享、
（5）生物多樣性公約第8(j)及相關條款；
（6）傳播、教育及公衆意識等。

大會共達成34項決議，包括通過包含生物多樣性之環境影響評估及政策環境影響評估2項自願性指導原則；刪除備受矚目之基因使用限制技術（GURTs），基改產物以個案方式進行風險評估之建議，重申第5次締約方大會禁止進行該基改產物田間試驗之決議；以及通過新版島嶼生物多樣性工作計畫等。

生物安全議定書第3次締約方大會則於2006年3月13～17日於庫裡提巴召開。會議除聽取議定書推動評析報告，另針對風險評估及管理等18項議題進行討論並達成決議。

會議重要決議，包括確認作爲食物、飼料及處理用途之基因改性活生物體之文件內容項目等。惟其他重要議題，如轉運國之權利義務、大會決議係採共識決或多數決、風險評估及管理等，則因各國立場分歧，留待下次締約方會議繼續討論。

附錄一 行政院國家永續發展委員會組織圖



附錄二 行政院永續發展委員會名單

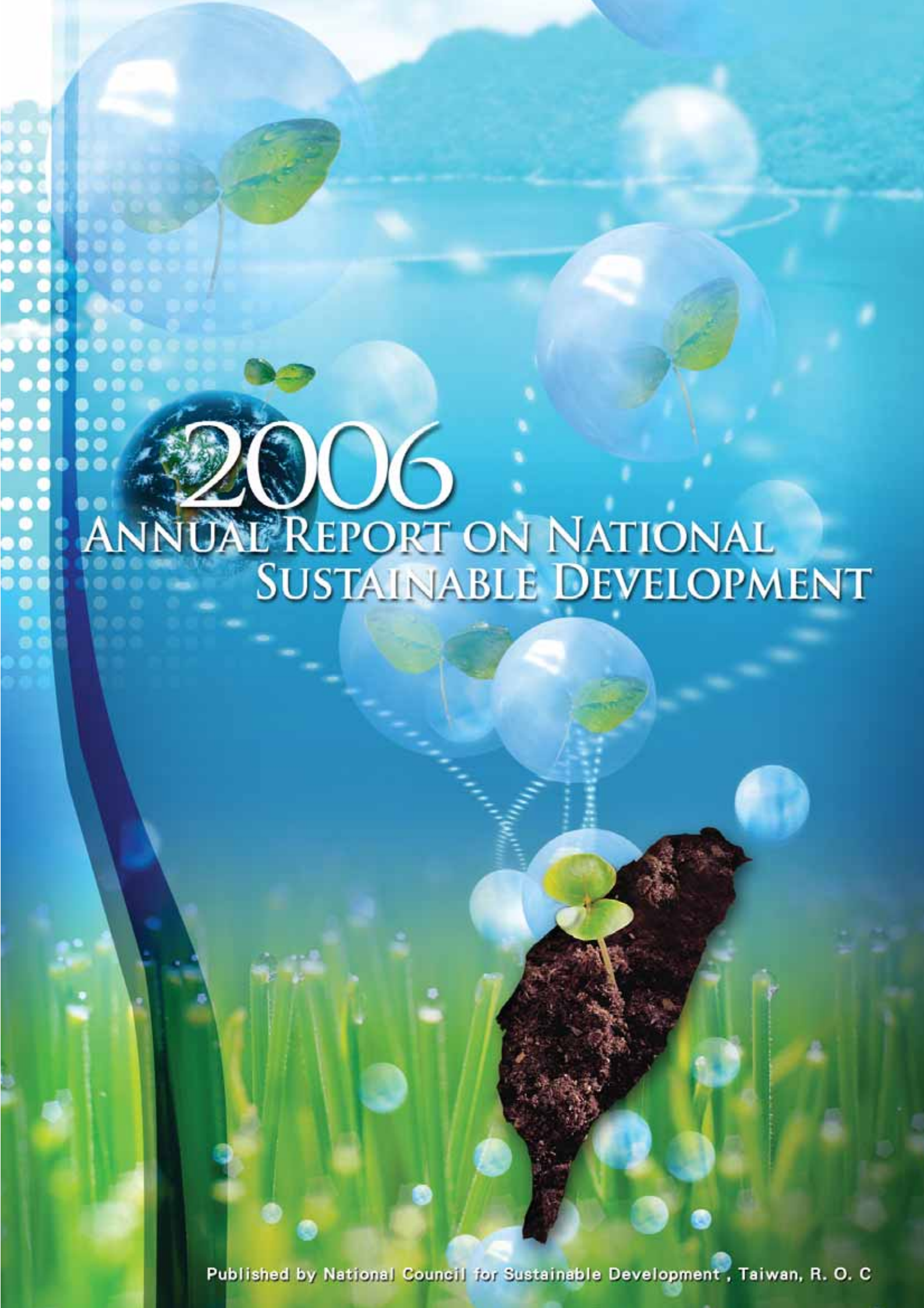
第十屆

中　文	職　稱	機　構
蘇主任委員貞昌	院長	行政院
蔡副主任委員英文	副院長	行政院
林執行長錫耀	政務委員	行政院
李委員逸洋	部長	內政部
杜委員正勝	部長	教育部
陳委員瑞隆	部長	經濟部
蔡堆委員	部長	交通部
胡委員勝正	主任委員	行政院經濟建設委員會
蘇委員嘉全	主任委員	行政院農業委員會
施委員能傑	主任委員	行政院研究發展考核委員會
候委員勝茂	署長	行政院衛生署
張委員國龍	署長	行政院環境保護署
李委員玲玲	教授	台灣大學生命科學院生態學與演化生物學研究所
胡委員念祖	教授	中山大學海洋政策研究中心
張委員長義	教授	台灣大學地理學系暨研究所
洪委員德生	院長	台灣經濟研究院
黃委員宗煌	教授	清華大學經濟系
許委員添本	教授	台灣大學土木工程學系暨研究所
歐陽委員嶠暉	理事長	台灣水環境再生協會
蕭委員新煌	教授	中央研究院社會所
蘇委員慧貞	教授	成功大學工業衛生學系暨環境醫學研究所
尤哈尼．伊斯卡卡夫特	理事長	台灣原住民族部落永續發展協會
曲委員新生	理事長	台灣風能協會
余委員範英	董事長	時報文教基金會
李委員偉文	理事長	荒野保護協會
林委員俊興	董事長	祐生研究基金會
吳委員玉琴	秘書長	中華民國老人福利推動聯盟
陳委員曼麗	理事長	台灣婦女團體全國聯合會
陳委員椒華	理事長	台灣環境保護聯盟
賀陳旦委員	董事長	中華電信公司
黃委員茂雄	理事長	中華民國企業永續發展協會
鄭委員明修	理事長	中華民國珊瑚礁學會
顏委員美娟	董事長	主婦聯盟環境保護基金會

附錄三 大事紀

日 期	單 位	事 件
01月01日	資源與產業組	修正公布「新興重要策略性產業屬於製造業及技術服務業部分獎勵辦法」。
01月	健康風險組	檢討動物用藥品使用準則，刪減林可黴素等3項含藥物飼料添加物品目。
01月	資源與產業組	出版「水資源政策白皮書」。
02月07-08日	國際環保組	辦理第4屆台日能源合作研討會。
02月21日	健康風險組	完成台中市農地土壤重金屬控制場址15筆約4.77公頃農地污染改善工作。
02月27日	永續願景組	完成「綠色國民所得帳環境價值矩陣及指標系統建置研究」，其成果納入帳表研編，並研編混合投入產出表。
03月02日	健康風險組	補助連江、金門、澎湖及臺東等縣衛生局，辦理遠距醫療會診計畫。
03月03日	生活與生產組	鼓勵廠商進駐環保育成中心，甄選出13項補助計畫，核定補助總金額2千餘萬元。
03月06日	永續會	召開行政院國家永續發展委員會第18次工作會議。
03月23日	健康風險組	完成台中縣16筆約2.35公頃農地土壤重金屬控制場址污染改善工作。
03月27日	資源與產業組	修正發布「公司購置節約能源或利用新及淨潔能源設備或技術適用投資抵減辦法」。
03月31日	永續會	發行「94年國家永續發展年報」及光碟。
04月10日	健康風險組	衛生署公告新修正精神科醫院設置標準。
04月18日	永續願景組	補助台北縣、台中縣、雲林縣及嘉義縣辦理「推動地方永續發展計畫」，研訂永續發展規劃工作。
04月21-22日	永續會	舉辦「國家永續發展會議」，共4千人次以上參與相關會議，決議將作施政參考。
04月26-28日	國際環保組	出席APEC海洋資源保育工作小組(MRCWG)第19次會議，提報我國2007年計畫提案Satellite Application in Knowledge-Based Economies (SAKE 2007)。
04月30日	永續願景組	針對已完成地方永續發展策略規劃書之13縣(市)，辦理「地方永續發展推動機制評鑑」。
04月	生物多樣性分組	完成海岸地區重要濕地劃設23處，面積約35,000公頃，並完成圖書撰寫。
05月03日	國土與交通分組	訂頒國土利用監測計畫實施作業要點。
05月15-19日	國際環保組	參加APEC能源工作組第31屆會議，成功爭取加入新成立之「生質燃料專案小組」，並獲各會員體支持我國提出之「液化天然氣資訊分享與公衆教育倡議」行動規劃。
05月23日	資源與產業組	發布「陽光電城第2期評選及補助作業實施計畫」
05月24日	國土與交通分組	依據國土計畫法（草案）之精神，完成國土保育地區之劃設。
05月24日	生物多樣性分組	「動物傳染病防治條例」修正公告，對擅自輸入禁止輸入之動物及其產品者訂定判刑及併科罰金之罰則。
05月26日	永續會	召開行政院國家永續發展委員會第21次委員會議。
05月	資源與產業組	「再生能源發展條例（草案）」送立法院審議。
06月05日	永續會	頒發95年國家永續發展獎。
06月05日	永續願景組	公布2005年台灣永續發展指標計算結果。
06月12日	國土與交通分組	舉辦「國家公園季保護區生態旅遊講座」，約150人次參加。

日　期	單　位	事　件
06月24-25日	永續教育組	舉辦「2006青年國際事務研習營」，召募並遴選青年參加國際青年活動。
06月29-30日	生物多樣性分組	舉辦「台灣原住民族生物學誌研討會」及部落體驗活動。
07月11-12日	國際環保組	在薩爾瓦多召開2006環境部長會議會前會，推動我國與中美洲友邦環境議題合作。
07月19日	健康風險組	公告修正「中華民國輸入植物或植物產品檢疫規定」部分規定。
07月21日	健康風險組	臺北縣八里及林口鄉戴奧辛羊污染事件，相關單位進行必要之調查及管制工作
07月24日	永續會	召開行政院國家永續發展委員會第19次工作會議。
07月28日	生物多樣性分組	辦理「台灣地區入侵水產生物現況及防治策略研討會」。
07月28日-9月24日	生物多樣性分組	舉辦2006科學季「多樣性台灣」特展，讓國人瞭解台灣之豐富多樣的地質、生物與人文等資源。
08月01日	永續願景組	完成「95年度綠色國民所得帳」帳表研編，摘要併同中央政府總預算送立法院備查。
09月7-8日	生物多樣性分組	舉辦「第四屆台灣植群多樣性研討會」，發表「國家植群多樣性調查及製圖計畫」第三年調查成果。
09月20日	氣候變遷組	「溫室氣體減量法」草案送立法院審查。
09月24日	氣候變遷組	環保署舉辦「全民二氧化碳減量嘉年華」。
09月21、29日	健康風險組	辦理「加強環境保護與食品安全協調機制研習會」。
09月29日	生活與生產組	舉辦秋節禮盒包裝減量成果發表會，共有9家業者參加，平均包裝體積減量率36%。
09月	資源與產業組	完成修訂「產業政策永續性檢視報告」，提供綠色供應鏈推動策略與措施。
09月	資源與產業組	完成建置「再利用文件收受資料庫」及「公告再利用追蹤輔導資料庫」。
09月	健康風險組	建置完成「傳染病通報系統與新感染症症候群通報系統整併案」。
09月	資源與產業組	台灣電力公司5電廠及英華威公司1風場完成商轉風力發電。
09月	永續教育組	完成建置數位學習示範課程--『環境變遷與永續發展』大專通識課程教材網站。
10月15日	永續教育組	辦理「環保共識會議」，以民眾參與模式凝聚未來環境政策之共識。
10月18-19日	國際環保組	辦理「2006台灣與中美洲友邦環境部長會議」，計7友邦環境部會首長及資深官員參與，並簽訂共同宣言致力雙邊永續發展。
10月26日	國際環保組	募集各界捐贈的二手電腦組裝成250台再生電腦，捐贈給尼加拉瓜及蒙古。
11月08日	生活與生產組	舉行「優質企業首要課題企業社會責任-國際企業永續評比工具推廣說明會」。
11月17日	生物多樣性分組	出版「基因生萬物-台灣野生生物基因多樣性保育專文彙編」。
11月20日	永續會	召開行政院國家永續發展委員會第20次工作會議。
11月30日	生活與生產組	彙整完成行政院各機關、地方政府（含各鄉鎮）及總統府暨四院之95年度上半年機關綠色採購成果，採購比率為81.7%。
11月30日	健康風險組	針對各縣市社區心理衛生中心進行實地輔導訪查、召開檢討會議。
11月	生活與生產組	對過去3年Forbes雜誌「全球2000大企業排名」之個案彙整，完成國際間產業永續發展相關議題資訊蒐集及發展趨勢報告
11月	生活與生產組	推動廚餘回收再利用獎勵示範社區，計57個社區與2,265家戶參與。
11月	健康風險組	完成訂定「預防多重抗藥性微生物傳播措施指引（草案）」及「抗生素使用及細菌抗藥性管制計畫（草案）」。
12月04-05日	永續願景組	辦理「永續城市研習營」，推廣地方永續發展行動。
12月22日	生物多樣性分組	辦理「四草野生動物重要棲息環境」公告，核定四草野生動物保護區保育計畫書 。
12月31日	國土與交通分組	辦理生態旅遊輔導團作業，於95年度共計完成11處之輔導工作。



2006 Annual Report on National Sustainable Development

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2006 Annual Report on National Sustainable Development

Preface

In 1992, the leaders and representatives of 171 nations convened in Rio de Janeiro, Brazil, to hold the Earth Summit. Participants agreed to implement Agenda 21, an action plan for promoting the sustainable development of our planet, as well as the Rio Declaration, which calls on all nations to join together in pursuing sustainable development of humanity. Representatives of the world's nations met again one decade later in 2002 in Johannesburg, South Africa, for the World Summit on Sustainable Development. This meeting produced the Sustainable Development Action Plan, providing an agenda for concrete measures and goals in promoting sustainable development.

The Executive Yuan established the National Council for Sustainable Development (NCSD) on 23 August 1997 to incorporate sustainable development concepts into government administration. The focus of the NCSD is to advise on sustainable development policy and coordinate work toward sustainable development. Important documents and plans drafted and implemented in 2006 include the Taiwan Sustainable Development Declaration, Taiwan Agenda 21, and the Sustainable Development Action Plan. In addition, the NCSD held the first National Sustainable Development Conference, which consolidated consensus among all circles on many items to serve as reference for future policy making.

This year's annual report compiles the significant achievements made by public, private and civil sectors toward sustainable development in 2006. Topics covered in this edition include an outline of NCSD Affairs and Achievements (Chapter 1); National Sustainable Development Conference (Chapter 2); Shining Models of Grassroots Sustainable Development (Chapter 3); Announcing 2005 Sustainable Development Index (Chapter 4); Promoting Local Sustainable Development (Chapter 5); and Global Sustainable Development Trends (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 NCSD Affairs and Achievements

NCSD held the 18th Working Meeting in March, 2006

1.1 NCSD Affairs and Developments

1.Structural Reform and Election of New Members

In order to broaden the levels of participation and increase the overall capacity of the National Council for Sustainable Development, Executive Yuan (hereafter referred to as NCSD), the tenth NCSD body was increased from 35 to 37 members. The two new positions were filled by a government agency representative and a representative of a non-government organization. The new members elected for these positions this year were the director of the Ministry of Transportation and Communications and a civil organization representative. In addition the eight existing NCSD Working Groups, the Climate Change and Kyoto Protocol Taskforce was organized in response to international trends to provide a comprehensive response to climate change and promote greenhouse gas reductions. Also, to effectively address the impacts of road construction on national land planning and development, the NCSD has reorganized the National Land and Resource Working Group as the National Land and Transportation Working Group.

2.National Sustainable Development Forum

The National Sustainable Development Forum was convened on 21~22 April 2006. Long anticipated by all circles, the conference was the first of its kind in Taiwan to address sustainable development on the national level. The event was attended by President Chen Shui-bian, who delivered a speech, and Academia Sinica President Lee Yuan-tseh, who was invited to give a keynote speech on climate change. More than 500 people participated, representing all levels of government agencies, industry, academia, NGOs, and the nation's elite. By way of consensus it was concluded that NCSD Working Groups shall take part in the Sustainable Development Action Plan, which shall be jointly promoted by

Premier Su Tseng-chang presiding over the 21st Assembly of the National Council for Sustainable Development

related departments in pursuit of national sustainable development (for further information, please refer to Chapter 2).

3.21st NCSD Assembly Builds Consensus for a Better Taiwan

The 21st NCSD Assembly was held on 26 May 2006 and presided over by Premier and NCSD Chair Su Tseng-chang to whom reports were directed concerning results of the National Sustainable Development Forum and the state of preparations for the Economic Sustainable Development Conference. Su affirmed the successful holding of the National Sustainable Development Forum and emphasized that this was Taiwan's first experience in holding a public conference in which environmental issues were collectively addressed and deliberated by government and civil representatives working together to set the direction for plans for Taiwan's sustainable development. Consensus was reached on a total of 267 topics, which may now be put into practice. It was also agreed that negotiation and communication should promptly ensue on those topics for which consensus was not reached in order to resolve discrepancies and find common ground.

Director Su asserted that environmental protection and the economy are not in conflict, indicating that the government's main mission is to draw on collective wisdom to ensure the nation develops in a sustainable direction and the public enjoys peaceful and satisfactory living conditions. Su emphasized that given Taiwan has insufficient natural resources to support its high population density, only by keeping sustainable development in mind will we be able to hand down a better world for the next generation and ensure that Taiwan continually improves in terms of livability, attractiveness, and development direction. These are common goals that everyone should strive for together.

The NCSD held the 18th, 19th and 20th Working Meeting this year (2006) on March 6, July 24, and November 20, respectively. Topics discussed during these meetings included results of the global 2006 Environmental Sustainability Index, results of the 2005 Taiwan Sustainable Development Index,the "Plan to Promote Greenhouse Gas Reductions and Respond to Climate Change," the "Plan to Promote Citizen Carbon Dioxide Reductions and Energy Conservation," concrete ways to conserve energy, Sustainable Development Action Plan revisions, electromagnetic radiation health risks, and over-fishing in coastal waters. NCSD Chief Executive Officer Lin Hsi-yau asked each working group to convene a supervisory working

group to make a list of concrete achievements on action plans implemented in the past, and choose three to five focal tasks for the upcoming three to five years. These tasks should be led and promoted by each minister and should become the focus of performance evaluations in the future.

2006 National Sustainable Development Award recipients:

Award category	Recipient
Sustainable Community	Ziyun Community Development Association, Jhuchi Township,Chiayi County Damataian Community, Guangfu Township, Hualien County Wangtianli Community, East District, Chiayi City
Sustainable Education	Sinsing Elementary School, Taitung County Wugu Elementary School, Taipei County Yucai Elementary School, Yilan County
Sustainable Enterprise	Co-Tech Copper Foil Corporation LIANG HAW TECHNOLOGY CO., LTD, Sansia Factory Taiwan Semiconductor Manufacturing Co., Ltd.
Sustainable NGO	K2 Nature Center Old Bridge Society, Dashu Township, Kaohsiung County Taichung Safety and Health Promotion Association
Sustainable Development Action Plan Implementing Agency	Plan to increase garbage sorting and recycling rates by 25% (Department of Waste Management, EPA, Executive Yuan) Plan to survey total length of existing natural coastline and set conservation indicators (Council for Economic Planning and Development) Plan to promote surveys of Taiwan's green resources (Forestry Bureau, Council of Agriculture)

Discussion during the 21st Assembly of the NCSD

President Lee Yuan-tseh gave a keynote speech in the National Sustainable Development Forum

4.2006 National Sustainable Development Awards

The award ceremony for the National Sustainable Development Awards was held on 5 June 2006. Award recipients included three communities, three schools, three companies, three civil groups, and three Sustainable Development Action Plan implementing agencies, as listed below:

5.2005 Taiwan Sustainability Index

The NCSD released the results of the 2005 Taiwan Sustainable Development Index on World Environment Day, 5 June 2006. This index has been regularly published for the past four years since 2003, providing a review of administrative performance, and serving as a warning and guide for policy-making. The index evaluates Taiwan's progress in promoting sustainable development and responds to the United Nation's appeal for each nation to establish such an evaluation system. The index also demonstrates Taiwan's determination to keep up with international trends and provides a window for the world to better understand the trends and changes in Taiwan's sustainable development initiatives (for more on this topic, please see Chapter 4).

1.2 Working Group Achievements in 2006

1.2.1 》 Sustainable Vision Working Group

"Local Sustainable Development Action Plans" Put Localization Goals into Practice

The Sustainable Vision Working Group actively assists counties and municipalities implement Agenda 21 goals to localize sustainable development efforts. This has been done through promotion of Local Sustainable Development Plans and assistance in carrying out sustainable development planning work. Assistance is also given toward reviewing the appropriateness of local plans. The Working Group has developed the "Mechanism for Assessing Local Promotion of Sustainable Development," which is based on the framework put forth by the UN International Council for Local Environmental Initiatives (ICLEI), and emphasizes the six perspectives of organizational structure, issue analysis, strategic planning, execution and monitoring, evaluation and revision, and comprehensive analysis. In addition to numerous public briefings, the Sustainable Cities Seminar has been held to encourage widespread actions in sustainable development at the local level. Evaluation results showed that the results of promoting sustainable development have been quite fruitful. Future efforts will focus on staying abreast of international trends and sharing Taiwan's experience and achievements with other countries.

Public briefing on the "Mechanism for Assessing Local Promotion of Sustainable Development"

Sustainable Cities Seminar

Evaluation Mechanisms Uphold Vision for Sustainability

Responding to the UN's request for all nations to establish indicators for evaluating the effectiveness of efforts to promote sustainable development, on 5 June 2006 the Sustainable Vision Working Group announced the results of the 2005 Taiwan Sustainable Development Index. This measures Taiwan's progress toward sustainable development and serves as a useful reference for policy administration. Additionally, to ensure that the 2006 Green GDP accounting system accurately portrays the state of environmental sustainable development, the Working Group completed the "Study on Establishing the Green GDP Environmental Value Matrix and Indicator System." The results of this study have been applied to the Green GDP account as a compilation of investments and generated outputs.

1.2.2 》 National Land and Transportation Working Group

Coastal Zone Management Act to Strengthen National Land Security

To achieve national land security goals, the Ministry of the Interior has convened experts and scholars, central government agencies and local governments to six discussions, resulting in the drafting of the Coastal Zone Management Act (draft) on 28 December 2006. The Working Guidelines on Implementing National Land Use Monitoring Plans were completed on 3 May 2006. National Land Conservation Areas were then delineated in accordance to the National Land

Planning Act (draft) on 24 May 2006.
In an effort to effectively manage natural coastlines, the Working Group conducted a special plan to survey the total length of existing natural coastline, compile conservation indicators, review existing plans, and draw up concrete strategies for conserving, using, and managing coastal areas. This plan earned the 2006 National Sustainable Development Action Plan Implementation Award.

Road Maintenance and Management Researched to Extend Life of Roads

The National Land and Transportation Working Group has researched the management of transportation properties in advanced countries to probe the maintenance and management systems of roadways here and abroad and gain experience in surveying Taiwan's roadway system. This study proposed adjustments to future domestic maintenance and management systems. The plan was divided into three periods implemented from 2004 to 2006. Emphasis was placed on establishing and storing information on roadway engineering, maintenance and management; advancing engineering technology for roadway maintenance and management; probing efficiency and economic feasibility of roadway engineering and repair; compiling a manual of roadway maintenance and management examples; establishing a roadway engineering lifecycle maintenance and management system; and compiling budgets and plans for future roadway engineering maintenance and management. This three-year plan is expected to enhance roadway maintenance and extend the lifetime of domestic roadways.

Before　　After

1.2.2 》 Resources and Industry Working Group

Taiwan Ranks Third in Solar Water Heater Density

Since March 2000, the Bureau of Energy, Ministry of Economic Affairs has subsidized the installation of solar water heating systems for a total solar collection area of 557,600 square meters. This is estimated to save approximately 45,000 kiloliters oil equivalent (KLOE) and prevents the emission of 123,000 tonnes of CO_2 per year. The domestic industry also generates around NT$6 billion in production value. With already 1.5 million square meters of solar water heater collectors, Taiwan ranks tenth in the world in terms of area. In terms of installation density, Taiwan ranks third place, making solar thermal the renewable energy with the greatest development potential in Taiwan.

Solar thermal collectors installed on a roof at Dahan Institute of Technology (total area of 356m^2)

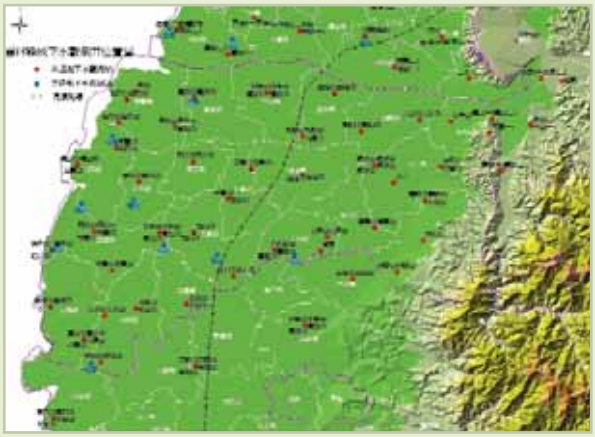
Outstanding Performance in Industrial Waste Reduction

The Industrial Development Bureau, Ministry of Economic Affairs has actively assisted the development of the waste resource recycling industry, reflected by a 75% increase over the past nine years in the proportion of domestic industrial waste that is recycled. Industries such as printed circuit board manufacturers produce about 60,000 tonnes of copper sludge every year, which was formerly treated through solidification, wasting a

large amount of money and land. Through the IDB's promotion of recycling factories, copper sludge was refined into a copper metal of high purity. This not only saves on waste treatment costs and prevents this waste from polluting landfills, but also creates high output value. Refined metal raw materials not only can be sold to domestic industries but also decrease the costs of purchasing this material from overseas. The product is exported for a total output value of NT$2.5 billion.

Groundwater Levels Monitored to Prevent Overextraction

To solve problems associated with groundwater overextraction including exploitation of national land resources and other social problems, groundwater monitoring plans were implemented in areas with serious overdraw of groundwater, including Changhua, Yunlin, and Pingtung. These plans entailed: 1) establishing varying depths of groundwater monitoring wells; 2) completing geologic columnar sections and well monitoring at hydrogeologic survey stations; 3) surveying and analyzing groundwater hydrology water meters and gathering other basic data, establishing methods for estimating groundwater recharge, establishing framework for groundwater hydrology methodology, establishing groundwater resource conservation and use principles; 4) establishing three regional groundwater resource management decision-making support system, and complete basic data collection and database establishment.



Distribution of groundwater monitoring stations in Yunlin County

1.2.4 》 Biodiversity Working Group

Wetland and Coral Reef Distribution Maps Completed

The Biodiversity Working Group completed distribution maps of important wetlands and coral reefs in 2006. The Survey of Important Coastal Wetlands was completed in April 2006, delineating 23 important wetlands covering a total area of 35,000 hectares. County and municipal governments were given the responsibility of reporting inland wetlands within their jurisdiction according to a given format. NCSD council members, scholars, experts, NGO representatives and other related organizations formed the "Important Wetland Selection Committee" and drafted the "Important Wetland Nomination and Selection Methods." This document was provided to related agencies, county and municipal governments, NGOs and academic organizations responsible for nominating wetlands to facilitate the selection of world class, national class and standard class wetlands. Results of this selection event were announced on World Wetlands Day, 2 February 2007.

Distribution of coral reef zones in Taiwan

Coral reef distribution maps were completed in June 2006 after the Taiwanese Coral Reef Society provided original hardcopy data in digitalized form. Areas where coral reefs covered over 25% of the local area were delineated as First Class Coral Reef Zones. Smaller areas were delineated as Second Class Coral Reef Zones.

1.2.5 》 Livelihood and Production Working Group

Mid- and Small-Scale Enterprises Act on EU Environmental Directives to Reduce Waste and Save Resources

The Industrial Development Bureau, Ministry of Economic Affairs began promoting the "Plan to Guide Enterprises in Responding to International Environmental Standards and Clean Production" in 2006. This plan assisted 74 factories-51% of which were mid- to small-scale enterprises-in responding to international clean production standards and WEEE/RoHS/EuP directives. By the end of November 2006, these factories had invested around NT$70 million toward related improvements, which resulted in economic benefits of over NT$246 million, signifying a 1:3.5 return on investment. Related measures also saved 18.48 million kilowatt hours of electricity, 210,757 tonnes of water, 2,986 tonnes of materials, 1,800 tonnes of hazardous waste, 35.5 tonnes of heavy metals containing lead, cadmium, and mercury, 112 tonnes of ozone depleting substances (ODS), and 13,653 tonnes of CO_2.

Environmental Science and Technology Parks

In response to international environmental trends, the Environmental Protection Administration has aggressively promoted the establishment of Environmental Science and Technology Parks (ESTP). This involves actively searching worldwide for partnerships with progressive environmental technology ventures that are low-polluting, have high added-value, and fulfill the ESTP principles of production, livelihood and ecology. To encourage more firms to set up operations in Taiwan's ESTPs, the government selected 13 assistance plans in 2006, approving of over NT$20.5 million in subsidies. By the end of November 2006, already 36 firms had entered the parks, with an estimated NT$12.9 billion in annual production value. These enterprises will recycle a combined total of 1.24 million tonnes of resources and water annually. For example, the Special Plan for Resource Cycling and Production Chain developed by Kaohsiung Linhai Industrial Park encourages enterprises to share resources and link together in an ecological production chain through a resource cycling and reuse network. This initiative is estimated to cycle and reuse approximately 3.7 million tonnes of steam, nitrogen gas, pure water, and waste materials within the park each year, equivalent to reducing 1.4 million tonnes of CO2 emissions per year.

1.2.6 》 International Environmental Protection Working Group

Environment Minister Meeting to Strengthen Environmental Cooperation with Central America

The Environmental Protection Administration hosted the "2006 Taiwan-Central American Allies Environment Minister Meeting" on 18~19 October 2006. This meeting was attended by seven environment ministers from Belize, Dominican Republic, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua, culminating in the signing of a joint declaration with Taiwan. This declaration will strengthen multilateral regional cooperation between Taiwan and its allies in Central America, as well as deepen bilateral exchanges and establish a multilateral environmental protection cooperation mechanism. Also invited to participate in the meeting were two internationally renowned experts in the field of climate change research and policy analysis: International Energy Agency Energy Technology Policy Division head Dr.Robert Dixon, and UN Intergovernmental Panel on Climate Change Vice-Chair Dr.Mohan Munasinghe. These two experts provided the latest climate change policy direction and technology development trends for the reference of foreign and domestic experts and enterprises.

Representatives of each nation in attendance at the 2006 Taiwan-Central American Ally Environment Ministers Meeting

1.2.7 》 Health Risks Working Group

Infectious Disease Warning System to Prevent Epidemics

In the area of epidemic prevention, the Taiwan Center for Disease Control, Department of Health, has completed the multifunctional "Epidemic Geographic Information Management System," in addition to systematic integration of databases on disease vector mosquitoes, genetics, epidemic control diversification, and laboratories contracted for virus isolation. The CDC has also established thresholds, warning values, prevalence values and prevalence trends for infectious diseases. The CDC has successfully monitored sudden increases in dengue fever and diarrhea clustering as well as issued early warning notices. In the future the CDC will continue to hold training for epidemic prevention personnel on establishing and analyzing mathematical models for infectious diseases as well as GIS applications to build Taiwan's capacity to analyze and predict outbreaks.

Center for Disease Control, Department of Health "Epidemic Geographical Information Management System"

Cadmium Contaminated Rice Monitoring and Control

To prevent heavy metal contaminated crops from reaching the market, the Council of Agriculture has assisted county and municipal governments in monitoring heavy metal content of farmland where cadmium, mercury or lead concentrations have been found to be near control values, where pollution incidents have occurred or areas with poor irrigation water quality. In cases where examination results show pollutants to exceed food and sanitation standards, crops are destroyed and prevented from reaching the market to safeguard public health. In addition, monitoring targets have been expanded and irrigation ditches have been separated from wastewater discharge ditches. Efforts have also been stepped up to clear out sludge from irrigation ditches and monitor water quality of irrigation water. The government has strengthened inspection of factories in violation of regulations as a measure to gradually improve environmental quality for agricultural production.

Farmland Heavy Metal Contamination Risk Management

As nearly 60% of heavy metal contaminated farmland is located in Changhua County, the Environmental Protection Administration is actively assisting electroplating and metal surface treatment industries to relocate operations into industrial parks. Already 28 enterprise have applied to enter industrial parks in 2006. In addition, the EPA has drawn up the "Heavy Metal Pollution Joint Control Plan for Electroplating and Metal Surface Treatment Industries on the #2 East-West Canal in Changhua County" and the "Industrial Wastewater - Irrigation Canal Improvement Plan" (three-year plan from 2007 to 2009). The #2 East-West Canal in Changhua County is listed as a focal point for waterway management. Inspection work will be expedited in this area and penalties will be increased. The establishment of a joint control mechanism is expected to solve the problem of farmland contamination and reduce the chances for harm.

1.2.8 》 Sustainable Education Working Group

Environmental Education Act to Raise Awareness of Sustainable Development

The Sustainable Development Working Group has promoted the drafting of the Environmental Education Act in order to increase citizen awareness of environmental problems, embody environmental ethics and obligations, protect environmental resources, uphold ecological equilibrium, and ensure the sustainable development of the environment. The Ministry of Education has convened numerous meetings inviting central government agencies, local environmental agencies, experts, scholars, and civil organizations to discuss the drafting of this Act. The Executive Yuan approved of the Act on 2 March 2006, which now awaits approval of the Legislative Yuan.

Sustainable Campus Movement Promotes Education with Community Flavor

To build a school environment become a public activity space possessing unique attributes of the local community, integrate actual applications of green technology on campus, and further education reform objectives, the Ministry of Education is actively implementing campus evaluations and providing subsidies as part of the Sustainable Campus Promotion Plan. Another part of this plan involves junior college students in local Sustainable Campus Promotion Plans by providing students in building and design related departments with an opportunity to create sustainable campuses in their hometowns. Subsidies are also provided to junior colleges for planning courses in designing sustainable buildings and ecological landscapes.

Establishing Sustainable Development Teaching Materials

The Ministry of Education has publicly opened the bidding for junior colleges to develop research in sustainable development education. Six studies will be awarded subsidies for research in sustainable development teaching modules for the national Grade 1~9 Curriculum. The research is to focus on complementing the Grade 1~9 Curriculum concepts and integrate sustainable development related topics into the four teaching areas of nature and life technology; sociology; health and physical education; and integrated activities. The purpose of these modules is to raise elementary and junior high school students' awareness of sustainable development by incorporating related concepts into current teaching materials.

1.2.9 》 Climate Change and Kyoto Protocol Response Working Group

In an effort to mitigate climate change from anthropogenic greenhouse gas emissions, in 1992 the UN passed the United Nations Framework Convention on Climate Change, which facilitates agreement on global emission controls. Responding to these international trends, Taiwan has made significant progress toward promoting its own Greenhouse Gas Reduction Act (please see Chapter 1.3).

Other important tasks performed by this working group include sending delegates to engage in discussion with other important organizations and national representatives in the twenty-fourth session of the Subsidiary Body for Implementation (SBI) of the United Nations Framework Convention on Climate Change from 18-26 May 2006 in Bonn, Germany. The working group also formed part of a delegation convened by the EPA comprising government agencies, scholars, experts, and industry representatives to participate in the second meeting of the Parties to the Kyoto Protocol (CMP 2) and the twelfth session of the Conference of the Parties to the Climate Change Convention (COP 12) held in Nairobi, Kenya, from 6-17 November 2006.

1.3 Important Achievements: Greenhouse Gas Reduction System

The Kyoto Protocol took effect in February 2005 with clear expectations for 38 industrialized nations to bear responsibility for reducing greenhouse gas emissions before 2012. The Protocol has not yet reached a conclusion regarding target nations and reduction goals beyond 2012. Despite the fact that Taiwan is not a signatory nation to the Protocol, Taiwan is still a member of the international community and thereby obligated to respond and firmly establish its own greenhouse gas reduction standards.

New Legislation Shows Willingness to Make Reductions

With the Kyoto Protocol now in effect, the Environmental Protection Administration has held numerous discussions, public hearings and forums regarding the drafting of the Greenhouse Gas Reduction Act (draft). A series of environmental consensus meetings were held from October to November 2005, inviting people from all circles to express their views. These views were compiled and provided for reference in drafting this new legislation. The initial draft of the Greenhouse Gas Reduction Act was completed on 16 February 2006, and approved by the Executive Yuan on 20 September 2006. The draft Act now awaits review by the Legislative Yuan.

Taiwan's greenhouse gas emissions are steadily rising each year, now comprising 1% of the world's total emissions, signifying the imperative need to focus on this issue. The drafting of the Greenhouse Gas Reduction Act demonstrates Taiwan's willingness to take responsibility as a member of the global village. It also shows that Taiwan is able to play an active role in international initiatives to mitigate climate change. Moreover, the Act addresses demands made during the 2005 National Energy Conference to provide legislative backing for making greenhouse gas reductions. The Act thus opens up new opportunities toward reducing greenhouse gases in Taiwan.

The Greenhouse Gas Reduction Act (draft) features facilitative measures, enforcement of controls and flexibility in making initial reductions. Given the high degree of uncertainty regarding greenhouse gas reduction issues in the international arena, this Act draws on international experience and the current domestic situation. Feasible administrative control measures will be gradually initiated and later adjusted depending on implementation status and new developments.

CO_2 Emissions Trading System Ready by 2008

After the Greenhouse Gas Reduction Act takes effect, county and municipal governments will be responsible for promoting local CO_2 reductions. Quota restrictions and total quantity controls will be adopted for private sector CO_2 emissions. Regulations will be drawn up for all sectors ranging from industry to transportation.

The draft Act contains six chapters and twenty-eight articles. Apart from establishing CO_2 reduction policy, the Act confers authority to the EPA to draw up greenhouse gas reduction promotion plans. The EPA has already begun implementing related plans. However, as consensus has not yet been reached on reduction goals, the first step will be to encourage voluntary reductions. A cross-ministerial committee will also be established to draw up rules for trading emission rights and to develop an inventory and registration system.

The draft Act stipulates that the nation's emissions should be calculated on a regular basis through the establishment of a National Greenhouse Gas Emissions Inventory. Once the draft Act is passed by the Legislative Yuan, businesses will be allocated a certain quota of CO_2 emissions according to different schedules. All new investment plans will need to adhere to related regulations. Total reductions of greenhouse gas emissions will be stipulated by the EPA, while emission allocations for each industry or sec-

Industrial CO_2 emissions will be subject to legal controls in the future

tor will be stipulated by the relevant industry competent authority. Those charged with exceeding their allocated emission quota or reporting fraudulent information on emissions registration or inventories will be fined from NT$200,000 to NT$2,000,000.

The draft Act clearly stipulates that industries for which emission quotas have been allocated should either adopt reduction measures or engage in emissions trading through a central government-appointed exchange platform. Those able to achieve reduction goals may trade leftover emission credits with other companies through emissions trading centers. According to the "Effective one year from promulgation" proviso stated in this Act, if the "Regulations Governing Inventory and Registration of Greenhouse Gas Emissions" is completed within the year 2007, Taiwan will begin its inventory and registration system in 2008 at the soonest. It is expected that a CO_2 emissions trading system will be completely established and underway by this time.

Cross-Ministerial Cooperation to Harmonize Economic, Energy and Environmental Goals

Another related development is the Ministry of Economic Affairs' establishment of a working group to promote greenhouse gas reductions. The goal of this group is to reflect greenhouse gas reduction trends and find solutions while also pursuing economic development. The group is currently promoting a strategy that requires new factories to employ best available technologies in terms of energy consumption and environmental protection. The group will work to strengthen exchange with leaders of all different fields to address the issues of climate change and greenhouse gases. Sustainable management methods addressing these issues will then be integrated into business management strategies to increase environmental competitiveness. The challenge of greenhouse gas control trends can thus be turned into an opportunity for greater competition.

Effective implementation of the Greenhouse Gas Reduction Act relies on integration of cross-ministerial and civil resources. Based on the consensus that reductions are indeed necessary, the next steps involve planning and establishment of greenhouse gas control mechanisms, promotion of energy conservation, and development of alternative energy sources. It is also essential that the industry sector develops in the direction of low energy consumption and high added-value to find a balance in the development of the 3Es (economy, energy and the environment).

1.4 Waste Reduction Toward a Zero Waste Society

Early Stage of Waste Management: Incineration Prioritized over Landfilling

The early stages of waste management in Taiwan merely consisted of dumping wherever convenient; garbage treatment facilities were rudimentary and did not conform to sanitation standards. To effectively treat general waste the government drafted the Urban Waste Management Plan in 1984, which primarily relied on landfills. Local governments received assistance to build landfills that fulfilled sanitary requirements and treated waste appropriately.

As the public gradually began demand-

ing increasingly higher quality living environment, it became increasingly difficult to find sites for landfills. With the gradual maturation of domestic incineration technology, the Environmental Protection Administration, Executive Yuan (hereafter referred to as the EPA) drafted the Garbage Management Plan in 1991, which primarily relied on incineration to treat garbage, resorting to landfills only as a backup option. After several years of implementation, the EPA recognized that waste can be used as a resource if put in the proper place and that comprehensive plans should be drawn up to fully recycle waste. Implementation of resource recycling thus began on a large scale in 1998.

Zero Waste Starts with Source Reduction

The Executive Yuan ratified the "Garbage Treatment Plan Evaluation and Vision" in December 2003. Tying in with this the EPA announced 2004 as the "Year of Action toward Complete Sorting of Garbage for Zero Waste" and planned to reduce household garbage at the source through sorting and recycling to create a sustainable resource management system. This gave way to the drafting of the Complete Sorting of Garbage for Zero Waste Three-Year Action Plan and the Mandatory Garbage Sorting Plan.

The Mandatory Garbage Sorting Policy was implemented in two stages starting in 2005. Citizens were requested to sort their garbage into the three categories of "resources, food waste and garbage." This was implemented in ten counties and cities in the first stage starting from January 2005. The second stage took effect nationwide starting from January 2006.

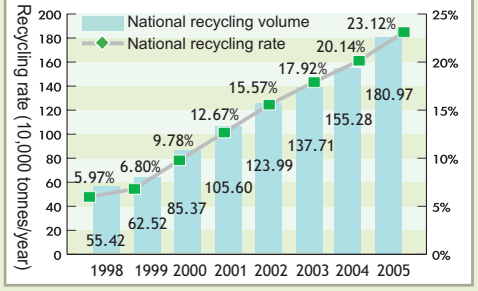
Under the EPA's strong advocacy most citizens have fully complied with this plan. Four separate public opinion surveys showed that the public holds the Mandatory Complete Sorting policy in positive regard. Over 90% of respondents supported the policy and felt that it effectively reduces garbage volume at the source, cuts waste and garbage disposal costs, and promotes a higher quality living environment.

Garbage Reduction Goals Met Ahead of Schedule

Since implementation of the Four-in-One Recycling Plan in 1998, the volume of recycled resources nationwide increased from 554,000 tonnes to 1,379,000 tonnes by 2003. The recycling rate increased from 5.87% to 17.89% in the same period. Food waste recycling increased dramatically ever since implementation of the Food Waste Clearance and Recycling Plan in 2001, with daily volume of recycled food waste soaring from 80 tonnes to 600 tonnes by 2003.

The results of recycling efforts increased greatly after implementation of the Complete Sorting of Garbage for Zero Waste Action Plan and the Mandatory Garbage Sorting Plan in 2004. The total volume of resources recycled nationwide increased to 10,179,000 tonnes by June 2006 for a recycling rate of 26.35%. This marked an increase of 8.46 percentage points over the 2003 rate of 17.89%. The cumulative volume of recycled food waste reached 2,764,000 tonnes for a recycling rate of 7.15%, an increase of 4.96 percentage points over the 2003 rate of 2.19%. These figures surpass total volume targets set for the year 2007 as approved by the Executive Yuan in the 2003 Garbage Treatment Plan Evaluation and Vision.

Recycling results over the years



In addition to these marked administrative achievements in resource recycling, from 1997 to June 2006 the national daily per capita garbage clearance volume dropped from 1.143 kg to a record low of 0.62 kg. In the same period of time, the rate of appropriate treatment of garbage increased from 76.97% to a record high of 99.69%. These figures

Table 1.3-1 Waste Reduction Policy Implementation Results

Policy area	Policy implementation results	Comparison with prior years
Overall resource recycling volume	1,017,900 tonnes (June 2006)	Resource recycling rate: 2003: 17.89%--->June 2006: 26.13%
Food waste recycling volume	276,400 tonnes (June 2006)	Food waste recycling rate: 2003: 2.19%--->June 2006: 7.15%
National daily per capita garbage clearance volume	0.620 kg (June 2006)	1.143 kg (1997)
Rate of appropriate treatment of garbage	99.69 %(June 2006)	76.97%(1997)

demonstrate the Complete Sorting of Garbage for Zero Waste policy has already led to exceptional results.

Making Strides Toward Zero Waste

Taiwan's waste management policy has evolved over the past twenty years since the implementation of the Urban Waste Management Plan in 1984. Planning for the next twenty years of waste management policy has long been underway. A comprehensive review of past waste management policies was carried out in 2003 through the Garbage Management Plan Evaluation and Vision. With sights set on gradually attaining the goal of Zero Waste, this report proposed numerous concrete measures including: strengthening implementation of the Resource Recycling Act; promoting mandatory sorting of garbage and "Per-bag" garbage collection fees; effective treatment and recycling of food waste, bulk waste and non-combustible waste; promoting interregional cooperation on waste management; and evaluating the construction of waste treatment facilities.

Bulk waste shredding equipment increases opportunities for reuse

The next stage of the Zero Waste plan aims for a 25% reduction of the 2001 baseline waste generation volume of 8.31 million tonnes. At this rate waste clearance volume will drop to 6.23 million tonnes by the year 2007. A 50% reduction is targeted for 2011 with a projected waste clearance volume of 4.15 million tonnes; and a 75% reduction is targeted for 2020 with a projected waste clearance volume of 2.07 million tonnes. These goals tie in with those of other progressive nations working toward a Zero Waste society. Fulfillment of these goals will require continued implementation of mandatory waste sorting, increased diversification of food waste and bulk waste recycling, as well as promotion of waste reduction measures such as the restriction on excessive packaging of products, and the ban on disposable tableware in government and school cafeterias. The ideal of Zero Waste can thus be reached through a combination of such concerted efforts.

Government and school cafeterias have stopped using disposable tableware

Restrictions on excessive packaging benefit the environment, consumers and manufacturers

Waste Reduction Policy Augments Sustainable Development

Garbage management expenses have been greatly reduced under the waste reduction policy. In 2005 for instance, the average monthly garbage clearance volume dropped to 470,000 tonnes. Compared to 490,000 tonnes in 2004, this marked a reduction of 20,000 tonnes of garbage, saving not only NT$3.6 billion-equivalent to the construction cost of one incinerator capable of treating 900 tonnes of garbage daily-but also an additional NT$500 million in waste management costs. In 2005, the resource recycling volume reached 1.81 million

tonnes and the sale of recycled products reached approximately NT$600 million. Altogether, waste reduction measures resulted in economic benefits of NT$4.7 billion in 2005. Waste reduction not only conserves expenditures on environmental protection, but also complements resource recycling to further reduce environmental pollution and energy consumption during manufacture. This alone is a contribution to sustainable development that cannot be overlooked.

Garbage reduction and resource recycling have always been the EPA's focal tasks, and its work in this area were affirmed after earning the 2006 National Sustainable Development Action Plan award for outstanding implementation. The EPA Department of Waste Management indicates that its success in implementing source reduction of waste and mandatory sorting of garbage lies with citizen support and compliance with these policies; thus the honor of earning this award is shared with all citizens. The Department of Waste also indicates that while the current stage of waste reduction has brought obvious results, this is no reason for complacency and the department will continue to implement waste reduction and resource recycling plans to ensure that Taiwan recycles all its resources and moves in the direction of sustainable development.

1.5 Coastal Conservation Plan to Maintain Natural Coastline

Coastal Conservation Enters Sustainable Development Action Plan

Rapid economic development has greatly reduced the area of land available for use in Taiwan. This has pushed land development closer to coastal areas resulting in land changes such as the jetty effect or coastal deposition/erosion. A primary reason for inappropriate development of coastal areas is due to inadequate groundwork research and data on coastal environments and insufficient ordinances regulating coastal areas. Entirely surrounded by ocean, Taiwan's coastline has an extensive coastline of approximately 1,600 km. Taiwan is endowed with rich national coastal land resources, increasing the potential for development of land near the sea and waters near the shore. Therefore the problem of how to rationally use coastal resources under the tenets of sustainable development is an important conservation issue.

In light of this issue the National Land and Transportation Working Group will strengthen coastal and marine conservation and management. Only through effective protection of Taiwan's precious coastal resources can we ensure that the natural coastline does not shrink and Taiwan's coastline is developed in a sustainable manner. Concrete actions include surveying the total length of existing natural coastline, setting conservation indicators, reviewing related plans to draft a tangible conservation use and management strategy.

Long-term Investment in Coastal Conservation

Coastal conservation efforts began in 1984 with the Ministry of the Interior's "Taiwan Coastal Area Natural Environment Protection Plan." This plan initiated a survey on the current status of basic natural resources such as mangroves and wildlife in coastal areas to serve as baseline data for coastal conservation work. In addition, related agencies began actively working together to protect the coasts through the successive demarcation of Nature Reserves, Wildlife Protection Areas, National Forest Nature Protection Areas, and Fisheries Resource Conservation Areas, as well as the establishment of National Parks and National Scenic Areas.

Responding to the need for legal backing to carry out coastal conservation work, the Construction and Planning Agency, Ministry of the Interior, began drafting the Coastal Zone Management

Act in 1991. The CPA commissioned a survey in 1993 to gather background data required for management of Taiwan's coastal areas. The Taiwan Area Coastal Management Plan was then drafted in 1997 and successively carried out. It was then that the draft Coastal Zone Management Act began to enter the legislation process. This has generated extensive discussion and suggestions have been proposed by government agencies related to coastal management including the Coast Guard Administration, the Water Resources Agency, and the Fisheries Agency. In the future, the CPA will integrate related agencies' recommendations and complement the National Land Planning Act while continuing to push the legislation of the Coastal Zone Management Act.

With the announcement of the "Challenge 2008 - National Development Focus Plan" in 2003, coastal conservation efforts became a focal part of national land restoration work. This entailed providing guidance on safely removing concrete engineering works from Taiwan's coastal areas. Meanwhile, the National Council for Sustainable Development also requested the Ministry of the Interior to coordinate the Council of Agriculture, the Environmental Protection Administration and the Ministry of Economic Affairs to begin a survey of the total length of existing natural coastline. Conservation indicators were drafted and existing plans were reviewed to draft concrete strategies for conserving, using, and managing coastal areas.

Coastal Conservation Reaps Concrete Outcomes

In addition to the abovementioned plans, the Construction and Planning Agency has put forth the "Coastal Ecology Restoration and Scenery Improvement Demonstration Plan." Conservation work carried out on formerly unprotected areas before implementation of the Coastal Zone Management Act has already resulted in demonstration areas with concrete outcomes. Examples include Peace Island off the coast of Keelung, Southern Harbour in Hsinchu, Western Harbour in Kaohsiung, and Shengang Harbour in Changhua. Work carried out in Peace Island included removal of artificial structures, landscape restoration, removal of concrete embankments, and other improvement works. In Southern Harbour, Hsinchu, ecological purification channels were built along pond embankments to improve water resources and re-vegetate the area. Interpretive signs were also made to explain the restorative works. In Western Harbour, Kaohsiung, artificial promontory and beach nourishment engineering works were carried out to restore the original beach. The demonstration site in Shengang Harbour, Changhua, focused on coastal habitat through improvement of tidal pools, and cleanup of bird habitat. Efforts toward restoration of tidal crabs and aquatic birds have seen noticeable results.

Seeing to the NCSD policy goal to ensure the percentage of natural coastline does not diminish any further, the CPA has conducted national land use monitoring plans using SPOT-5 high resolution satellite imagery. GIS is also used to construct a digitized coastline system which already covers the entire island of Taiwan and the Penghu Islands. Analysis shows that 49% of the coastline along the island of Taiwan is natural coastline, and 73% of the Penghu Islands' coastlines are natural coastlines. The CPA regularly announces changes in the natural coastline every year and if the coastline undergoes any change each county and municipal government is notified and requested to promptly conduct an onsite survey of the changes and write up a report.

Integrated Development Toward a Sustainable Coast

Future coastal conservation efforts will continue monitoring of the coastline and employ the "Sustainable Coast Integrated Development Plan (draft)" as the coastal conservation and natural coastline protection strategy. The goals of this plan are to maintain the length of natural coastline at 49% and recover ten kilometers of natural coastline every year. Before promulgation of the Coastal Zone

Management Act, coastal conservation and sustainable development will take the following two directions:

1.Maintain the natural coastline

(a)Announce the fundamental policy of coastal conservation: Apart from major plans approved by the Executive Yuan, applications will no longer be accepted to develop structures on coastal land and waters.

(b)Survey and demarcate natural coastline zones: Distribution and location of natural coastline should be confirmed using remote monitoring data checked against onsite survey data. This will serve as a reference for banning further destruction of natural coastline.

(c)Stringently review major plans involving coastal areas: A "Preview" mechanism should be established within the National Land Planning Act and the Coastal Zone Management Act (draft) for development activities involving coastal land. Before the two Acts are legislated, the Regional Planning Act, the Urban Planning Act, the National Park Act and the Environmental Impact Assessment Act should first be reviewed and revised concerning the standards against which land use and development activities are deliberated. Strict review mechanisms should be established and provided as a reference for the review work of regional planning committees, urban planning committees, national park planning committees and environmental impact assessment committees.

(d)Establish local patrol and report mechanisms: The concept of Taiwan's river patrol teams should be drawn upon to encourage local coastal patrol units, fishing villages, NGOs or local schools to take up the responsibility for patrolling nearby coastal areas. Unsustainable affairs reported by these local groups should be handled according to law by local forces or competent authorities. The establishment of such local partnerships can help achieve joint management goals.

2. Sustainable coast action plans:

Contents of these plans are based on ten guiding principles: protect important coastal resources, use coastal resources rationally, restore degraded ecologies, establish and improve coastal scenery, strengthen coastal disaster prevention, develop maritime industry rationally, build a coastal information system, perfect the coastal management system, strengthen training in maritime education, and strengthen public-private partnerships. Response concepts and concrete strategies have been drawn up under each guideline.

Learning to Respect Nature Sustainable Development Depends Upon Coastal Conservation

Use of coastal areas must find a balance point between conservation and development to ensure the sustainable use of natural environmental resources. The Construction and Planning Agency's Plan to Survey the Total Length of Existing Natural Coastline and Set Conservation Indicators uses GIS remote satellite imaging to monitor changes to natural coastline. The goals of this plan are to ensure Taiwan's coastal resources are not damaged and to gradually restore the natural appearance of the coastline. Although post-incident monitoring capabilities are in place, there is still room for improvement of pre-incident prevention mechanisms. Other inseparable facets of coastal sustainable development include minimizing unnecessary major public infrastructure along the coasts, and researching and developing engineering methods appropriate to coastal ecology.

The Construction and Planning Agency this year's received the Sustainable Development Action Plan Outstanding Implementation Award. This is in part due to the NCSD review committee's approval of the initial results of the Plan to Survey the Total Length of Existing Natural Coastline and Set Conservation Indicators. The Center for Space and Remote Sensing Research, National Central University, and experts and scholars of the Sustainable Coast Promotion

Service Team also helped fulfill this mission by providing professional technology and advice. The CPA indicates that the most important concepts to retain during future national land planning and coastal management are to respect nature, maintain ecological balance, and hold fast to the ideals of sustainable development.

1.6 Green Resources Survey to Set Conservation Indicators

Green resources can be defined as "Green spaces in the environment in the broad sense, whereby soil and water are maintained through natural conditions for the stable growth of vegetation."

Establish Baseline Data for the Growth and Decline of Green Resources

The Forestry Bureau, Council of Agriculture, has been involved in forest resource surveys and protection work for many years, conducting three islandwide surveys of forest and land use in the years 1955, 1978, and 1995. The 1995 forest and land use survey report indicates 58.5% of Taiwan's land area is forested. However, the distribution of forest green resources is acutely disproportionate, with 93% of slopelands forested, and only 31% of plains forested. There is thus a need to actively strengthen afforestation and greening measures in the lowland plains. Green resource survey work includes strengthening afforestation, greening and beautification, and monitoring and testing. The Forestry Bureau has established groundwork data on national forest resources to monitor the growth and decline of green resources, calculate changes in green resources and forest resources, as well as conduct a [normalized] national forestry zone review survey and permanent forest plot survey and review.

Working to set green resources as a clear and definite indicator category, the Forestry Bureau invited scholars and experts to clarify the definition of green resources. They defined green resources as "green spaces in the environment in the broad sense, whereby soil and water are maintained through natural conditions for the stable growth of vegetation." Various surveys have since been conducted in relation to this definition. One part of surveying green resources relies on satellite technology to carry out an islandwide Normalized Differential Vegetation Index (NDVI) analysis. This provides baseline data for green vegetation cover and complements national forestry zone review survey data to facilitate understanding of cumulative forest resources and their distribution. In response to greenhouse gas emission reduction standards set by the UN Framework Convention on Climate Change and the Kyoto Protocol, and to understand forest's role in reducing greenhouse gases, the Forestry Bureau has integrated national forest permanent plot survey (review) data, calculated tree growth rates and the capacity of forests to sequester carbon, in order to provide a quantifiable base for evaluating sustainable development in Taiwan.

Gathering Data under Difficult Climate and Terrain

Green resource survey work includes the three tasks of satellite image data analysis, national forestry zone review surveys, and national forest permanent plot surveys. Satellite image data analysis mainly uses cloud-free satellite images from SPOT-2, SPOT-4, and SPOT-5 inlays as groundwork data for analysis. Due to Taiwan's maritime island climate, the land

Cloud-free periods in Taiwan

	Entire island	slopeland	flatlands
2002 Winter	83.7%	93.28%	56.25%
2002 Jan-Mar	89.60%	98.30%	60.30%
2003 Spring	82.92%	93.67%	51.95%
2004 Spring	83.03%	94.27%	49.14%
2004 Autumn	88.08%	96.58%	65.12%
2005 Spring	83.23%	95.23%	48.26%
2005 Autumn	89.02%	96.57%	70.94%

is often frequently covered by a layer of clouds, requiring a combination of satellite data from different sources to piece together a completely cloud-free image of the entire island. Satellite image data must be taken during clear weather to obtain high quality image data. The accompanying chart on cloud-free periods in Taiwan illustrates the difficulty of gathering and obtaining accurate data. Furthermore, due to Taiwan's mountainous topography, satellite images are often heavily shadowed making it all the more difficult to read and analyze images.

As for review survey and permanent forest plot survey work conducted in National forestry zones, as it is more difficult to access high mountain areas and slopelands on foot, surveyors must hike difficult terrain and camp overnight to carry out forest resource survey work. Typhoons and torrential rains in recent years have caused environmental damage and have washed out mountain roads increasing the difficulty of survey work. Surveyors must have above average strength and stamina, and must have the courage and reliability to overcome rough mountain environment and dangerous terrain in order to carry out this task.

Infrared satellite image of green resources in 2005

Natural color satellite image of green resources in 2005

Surveyors must traverse forests and mountains to survey forest resources

Annual Increase in Vegetation Cover

According to the 2005 Green Resource NDVI Survey Plan Report, in the second survey period (from June to October) of 2005, vegetation cover was recorded at 89.02% for the entire island, 96.57% for slopelands, and 70.94% for flatlands. Compared to the 1995 percentage of vegetation cover for the entire island (58.5%), the trend has been a yearly increase in vegetation cover, showing that conservation of green resources has had a marked effect. As for forest resource surveys carried out on forestry zones within national forests in 2005, surveys of 517 permanent forest plots have been completed for six forestry zones in Daan River, Yushan, Dapu, Pingtung, Taidong and Liwu River. Surveys have also been conducted on another four national forestry zones in Nanao, Dasi, Chaojhou and Dawu, covering a total area of 161,171 hectares and including a compilation of 439 aerial photos. Comparing forest carbon storage with data for the first survey period (from February to April) the average rate of carbon storage had increased by 62.5 cubic meters per hectare.

Establishing Data to Set Conservation Indicators

The ultimate goal of conducting a survey of green resources is to assist the drafting of "Green Resource Conservation Indicators." The Forestry Bureau aims to first establish a nationwide green resource survey mechanism, and using the outcomes of various surveys in a comparison across results of different periods of monitoring to measure the

growth or decline of each green resource. A Green Resource Conservation Indicator can then be created to evaluate green resource conservation results and ensure green resources do not diminish.

The Green Resource Survey Plan called for subdividing existing survey work and survey topics to establish a more detailed database of the current status of green resources and provide the groundwork data required for setting the Green Resource Conservation Indicator. For example, the integrated vegetation cover rate is subdivided into natural forest, human-made forest, mangrove, and herbaceous plant cover. By comparing analyses of satellite images and geographic information systems over the years, a mechanism can be established to monitor and gain command over fluctuations of the nation's green resources. As for national forest review surveys and permanent plot survey work, the Forestry Bureau has reviewed current work procedures and survey topics, added the topics of forest health and forest carbon sequestration to complement international trends, and conducted a feasibility assessment.

Aerial photo mapping requires meticulous skills of comparison

Moreover, the Forestry Bureau has planned a survey of national forestry zones and private and public forests to be conducted from 2006 to 2009. The result is national forestry zone survey data establish island-wide groundwork data on forests, including forest area, forest carbon storage, species distribution, and land use. The Forestry Bureau has also designed and conducted four forest resource and land use surveys targeting Taiwan's forest in a comprehensive detailed general survey to understand the changes in Taiwan's forests over the last decade. Compilation of the green resource NDVI survey, national forestry zone review survey and permanent plot surveys will give a comprehensive picture of the current status and changing trends of Taiwan's forest resources. This will be a useful reference in policy making on forestry management.

Ongoing Island-wide Survey of Vegetation Cover to Achieve Sustainable Development

Taiwan is endowed with abundant forest resources. In former years, the government made plans to cut down the trees to boost industrial growth and accelerate economic development. In recent years however great effort has been channeled into promoting conservation of natural resources, protecting ecosystems and increasing forest carbon sequestration. For many years, the Forestry Bureau, Council of Agriculture, has proceeded with several different aspects of green resource survey work, actively working to establish the necessary groundwork data for setting the Green Resource Conservation Indicator. The Forestry Bureau also put into practice various green resource conservation plans to ensure that the use of green resources complies with the spirit of sustainable development.

Conservation of green resources is an integral part of sustainable development

Chapter 2 National Sustainable Development Conference

National Sustainable Development Forum

2.1 Citizen Participation in Sustainable Development

Agenda 21 and the Rio Declaration were signed during the United Nations Environment and Development Committee meeting in Rio de Janeiro in 1992, serving as the basis for all nations to begin promoting sustainable development. The Declaration asserts that the best way to solve environmental problems is through full citizen participation at all levels of society.

Aiming to broaden citizen participation, the NCSD systematically reorganized its structure. The number of members was increased from 30 to 36, with equal representation by government agencies, scholars and experts, and civil organization representatives, one third each, so that two thirds of the council is composed of the civil sector.

Taking steps to ensure the concept of sustainability takes root in Taiwan, during a forum with civil environmental organizations on 5 July 2005, President Chen Shui-bian vowed to convene a national sustainable development meeting. Three days later during the NCSD's 20th assembly, it was decided to actively begin preparations for the National Sustainable Development Conference. This was the first time to convene a national level meeting to address the issue of sustainable development; therefore in planning the agenda a strong emphasis was placed on laying the groundwork for bottom-up consensus. It was hoped that mechanisms for civil participation in sustainable development affairs would be enhanced through diverse and widespread participation.

2.2 Bottom-Up Consensus

To enhance the effectiveness of the forum, preparation work was divided into the four stages of 1) gathering and setting topics for discussion, 2) dividing the topics by region, 3) holding preparatory meetings, and 4) convening the forum. Among the numerous meetings convened to gather topics and discuss procedures included twenty-five local forums in various counties and municipalities, six regional planning meetings, four regional forums, and one preparatory meeting. The National Sustainable Development Forum was held on 21~22 April 2006.

To broaden civil participation, gathering of discussion topics was first done at the local level by having county and municipal governments invite relevant local persons to local topic gathering meetings. The next stage of meetings focused on NGO and regional development perspectives. Four regional forums were held by NGOs in northern, central, southern and eastern Taiwan. To encourage more civil participation, the NCSD set up a website exclusively for this forum. This website provides another channel for civil participation, as it not only allows access to related information and developments during the meetings, but also provides a message board for citizens to propose suggestions.

After analysis and discussion, the 1,267 topics gathered were narrowed down into eight broad themes, each with two to three sub-themes. These themes were then discussed in the four regional forums in northern, central, southern and eastern Taiwan, as well as the preparatory meeting. The following eight concrete themes were then drawn up to serve as the basis for discussion during the final forum:

1. ***"Handing over a sustainable Taiwan to future generations,"***
2. ***"Establishing Taiwan's international environmental image and living up to global responsibility,"***
3. ***"Sound national land use planning to safeguard the environment,"***

President Chen delivered a speech at the opening ceremony

4. *"Industry structural adjustment for a sustainable economy,"*
5. *"Establishing an environmentally friendly society in urban and rural Taiwan,"*
6. *"Conserving biodiversity to maintain ecological balance,"*
7. *"Reducing risk of environmental damage to build a healthy and safe environment,"*
8. *"Expanding civil participation to increase environmental capacity of the people."*

2.3 Declaration Consolidates Efforts Toward Sustainable Development

The National Sustainable Development Forum was held in Taipei City on 21~22 April 2006, and was followed with widespread interest, attracting a total of 871 participants. Attendees included NGOs, industry representatives, scholars and experts, and government officials, marking an exemplary model of civil participation in sustainable development.

President Chen Shui-bian delivered a speech in person at the opening ceremony, stating that Taiwan's lack of natural resources and fragile environment makes the demand for sustainable development even more urgent than other countries. President Chen stressed that in pursuing economic development, the nation cannot forget the importance of developing in a sustainable manner and taking social justice into account. This was followed by words from Academia Sinica President Lee Yuan-tseh on what course Taiwan should take toward sustainable development. Lee pointed out that carbon dioxide emissions and wastewater management are among Taiwan's most pressing environmental issues at present. Lee recommended that carbon dioxide emission reduction goals should be set and wastewater treatment plans should be expedited for a higher quality living environment.

During the two full days of enthusiastic discussion, the forum reached consensus on 248 topics under the eight general themes. Consensus was not reached on another 72 topics. The forum also issued the Declaration of National Sustainable Development, which affirms, "The foundation for sustainable development of the nation is based on bottom-up democratic process and is upheld through its peoples' lasting promise to their land and their descendants, and through joint cooperation between the government and the people. Based on this consensus, it is anticipated that the whole nation shall forge ahead toward the common goal of sustainable development."

CEO Lin Si-yao spoke over the pre-forum release conference

Premier Su Tseng-chang (left 3) presided at closing ceremony.

2.4 269 Recommendations to Be Included in Future Policy

Executive Yuan Premier Su Tseng-chang spoke at the closing ceremony to show special appreciation to all attendees for their enthusiastic participation and recommendations. Premier Su said that over 300 recommendations were discussed and consensus was found on 248 issues but lacking on 72 issues, making for an extremely fruitful outcome. Su indicated that the recommendations will be included into future sustainable development action plans and the NCSD would coordinate each working group to ensure that these plans are implemented. As for issues for which consensus was not reached, appropriate means would be adopted to take dialogue a step further and take action on future items of consensus.

The 72 recommended issues for which consensus was not reached were immediately addressed in discussions between the Environmental Protection Administration, the various NCSD working groups and other relevant government agencies. These discussions successfully led to consensus on another 21 items, increasing the total number of items of consensus to 269. Items of consensus have already been included in each NCSD working group's Sustainable Development Action Plans to serve as a reference for future policy. The resulting initiatives toward sustainable development are then implemented through administrative agencies and further promoted in concert by the three sectors-local government, civil groups and industry-to equally benefit the three goals of environmental protection, economic development and social justice. This teamwork will ultimately help Taiwan attain sustainability and live up to its responsibility as a member of the global village.

It is estimated that public participation reached over 4,000 people-times throughout the four stages of this forum. The resolutions made here not only serve as a basis of reference for the government in carrying out strategic planning for sustainable development, but also successfully raise public awareness of sustainable development. The forum has thus established an important milestone for public participation in sustainable development.

Chapter 3 Shining Models of Grassroots Sustainable Development

Sunshine Activity

3.1 Purple Cloud Community
Creating a Sustainable Vision of Culture, Beauty, and Social Welfare

Ziyun ("Purple Cloud") Village in Jhuci Township, Chiayi County, was established as a traditional agricultural village long ago, evolving through diverse cultural influences over the past few centuries. The enthusiastic and dedicated efforts of public figures and historians in recent times have opened up the door for residents to embrace the stories and spirit of their past, while also creating a beautiful living environment and a stable foundation for social welfare.

Preserving Farming Culture and Historical Artifacts

Located in a geological basin, Purple Cloud Community was originally named "Tianyang" ("Field sea"), leading one to imagine a scene of expansive rice paddies as far as the eye can see. For centuries, farming was the predominant means of subsistence here, making the area a storehouse for farming culture resources. The community has a wealth of historically significant cultural artifacts and ruins, such as early agricultural village architecture, granaries, three-section compounds, mud and straw buildings, tobacco sheds, agricultural tools, and daily articles used by farming families.

In 1950, the community changed its name to Ziyun Village, and in 1978, Ziyun Village was agglomerated with Luman Village to become "Luzi Community." Afterwards, Luman Village was separated as an independent entity, resulting in the name "Purple Cloud Community" that is used

today. In 1995, the Purple Cloud Community Development Association was established to promote development and construction in this simple, little community blessed with such a great wealth of historical culture. In 2003, devoted residents formed a work crew, better known as "The Peasants," and officially began community construction work.

An activity held for children in the community.

Preserving, Beautifying, and Cherishing Purple Cloud

When the community work crew was founded, community members shared a common desire to spend their retirement years in Purple Cloud. After three years of construction work had been completed throughout the entire community, the crew still upheld this simple and sincere premise. They joined with community residents in working towards achieving the common goals of preserving, beautifying, and cherishing the community of Purple Cloud. With feet firmly planted and ready for growth, the community began putting sustainable development concepts into practice.

1. Preserving Purple Cloud

Community residents are devoted to preserving and revitalizing collective memories of the community, and hope to steer the evolution of Purple Cloud into a culturally conscious community. Efforts toward preservation include:

a. Interviews with local senior citizens, data research, photographic records, and land surveys were conducted to complete the "purple Cloud Community Resource Database" and community cultural landscape map highlighting all nine of Purple Cloud's major initiatives: human resources, cultural livelihood, environmental ecology, transportation, industry, water conservation, architecture, and landscape.
b. Ambitious volunteers collected historical artifacts and applied for government resources to survey and restore existing traditional architectural remains.
c. Community historical artifacts were collected, sorted, and put on display in the historically relevant architectural exhibits. A "children's toy museum" style of operation was designed through the Council of Cultural Affairs local construction assistance plan. This plan proved successful and also coordinated with the 2006 community environmental arts plan, which provided subsidies for artists living in the community.
d. Professional training for community tour guides.
e. Designing and printing community tour brochures and community newsletters.

2. Beautifying Purple Cloud

The community regularly applies for government resources in the interest of preserving the authenticity and integrity of the community's original appearance. "Environmental engineering," "environmental building materials" and "indigenous flora" form the basis of construction practices throughout the renovation of the environment and landscape. Integration of the environment and the human landscape is empha-

A crooked bridge passing over a lotus pond in the community

Traditional grainaries along a pathway in Purple Cloud

sized to ensure culture is an inseparable part of the environment. Aside from creating recreational space for community residents, this kind of integrated environment greatly increases the potential for sightseeing. A land adoption system has been established to facilitate sustainable management and allow Purple Cloud to gradually transform itself into a park community. Efforts toward beautification include:

a. Volunteers and residents have collectively worked to create self-managing gardens extending throughout every nook of the community; a "green corridor" was made from the intersection of Taisan Road to Ganlanjiao; gardens were made in a series of ceramic pots; and a garden was created by the senior citizens of the community.
b. Government funding was applied for and granted to clean up and revamp run-down areas of the community by building Kangkou Park, Ganlanjiao Granary, Wajao (Kiln) Park, and Guohsi (Stream Crossing) Floral Veranda among other beautification projects.
c. At the end of the 2006 fiscal year, the Soil and Water Conservation Bureau granted the community funding to build a community eco-pond, as well as bring scholars and artists together to record ecological observations.
d. Hiking trails, a bicycle loop path around the community, recreational parks, and children's parks are included in the plans.

3. Cherishing Purple Cloud

The community established a senior citizen daycare center and community care services, which received popular support from the senior citizens of the community. The community has also provided a variety of health activities and a series of lectures and recreational activities for women and children. The goal of these efforts is to provide residents with a broader knowledge base and improve health, eventually approaching the ultimate objective of evolving into a social welfare community.

Sustainable Community Development

The simple ideal "to retire in Purple Cloud" is the common thread that

Former Executive Yuan Premier Frank Hsieh visits the senior citizen daycare center of Purple Cloud

unites all of the residents. The visions of preserving, beautifying and cherishing Purple Cloud provide the impetus to actualize the ultimate goals of developing historical culture, creating a park-like environment and fostering a social welfare community. With the support of the entire community, short-term goals have already been achieved, and work is currently underway to actualize mid-term goals. "Preserving Purple Cloud" entails renovating the living spaces established by the original settlers, revitalizing the former tobacco shed culture, and setting up community artifact exhibits. "Beautifying Purple Cloud" entails the restoration and beautification of natural green corridors, development of a walking trail, promotion of anti-littering campaigns, and beautification of residents' homes. "Cherishing Purple Cloud" entails organizing community patrols, strengthening disaster response education, stimulating promotion of community business research and development, and embracing new residents. In spite of the challenges faced during this construction phase, residents remain motivated and confident that one day their ultimate goals will be reached.

2006 National Sustainable Development Awards Ceremony

Chiu Kun-liang, the Minister of Council for Cultural Affairs, visits Purple Cloud

3.2 Taiwan Field Studies Council
Educating to Protect Nature

The Taiwan Field Studies Council was established in March 2003 as an initial step to begin promoting field studies. Its function is to form a mechanism that can effectively communicate environmental education and ecological conservation concepts through the advancement of local land conservation, conducting natural and cultural resources surveys, and international field studies exchanges.

Rustic signs at the K-2 Nature Center

Association members are made up of nature interpreters from Yangming Mountain, Yushan (Jade Mountain), Shei-Pa National Park, the Forestry Bureau, and the Society of Wilderness, as well as students and faculty from the Graduate Institute of Environmental Education of National Taiwan Normal University and the Forestry Department of National Taiwan University. Since its founding, the Taiwan Field Studies Council has consistently held the goal of increasing the public's, school teachers' and students' concern for natural areas. The group has been extremely active in developing land conservation and environmental education.

K2 Nature Center Ideal Location for Environmental Studies

Shortly after the council's establishment an environmental trust was placed upon 127 hectares of private land in Taipei County's Shiding Township set aside to build the K2 Nature Center. The last development of land at K2 occurred over twenty years ago, and thus a wealth of natural resources and cultural remains have been preserved. Among the fauna and flora recently recorded include 21 families and 63 species of birds, over 300 species of insects, 29 species of amphibious reptiles, 16 species of mammals, 323 species of vascular plants, and 73 species of ferns. It also is home to protected animals, such as the Formosan gem-faced civet, pangolin, Formosan rock monkey, and Formosan barking deer.

Traces of human activity and culture can be found all around the center, which is surrounded by lush vegetation including assam indigo, lush camphor trees, and fragrant tea. This vegetation indicates that the early settlers' livelihoods revolved around the flourishing indigo dye, camphor, and tea industries. A towering 300 year old Bishop Wood tree, and a mottled ancient trail, a land deity shrine, irrigation canals, and terraced fields offer interactive historical footprints left behind by settlers over the last century.

The Taiwan Field Studies Council has been using the Erge Mountain K2 Nature Center to provide outdoor/on-site field studies' opportunities for both the members of the community and students and faculty from outside the community. A 2.5km woodland nature

observation trail with interpretive signs was established on this environmental studies site, creating an ideal setting for learning about Taiwan's low- to mid-altitude ecosystems and virgin forests. Since its establishment, over 3,000 school children have enjoyed this exciting learning experience, and over 500 elementary and middle school teachers have attended workshops on a biodiversity curriculum designed by the World Wildlife Fund.

Utilizing the Center's Resources to Provide Enriching Environmental Education Programs

Backed by support and guidance from NTNU Graduate Institute of Environmental Education students and faculty, four core environmental education programs were established through the cooperative efforts of the Taiwan Field Studies Council and the K2 Nature Center. In addition, a natural farming workshop was organized within the local community to provide learning opportunities to local residents. The four core environmental education programs are briefly described below:

1. A World of Diversity

This program includes the two facets of biodiversity teacher training and nature interpretation of low altitude forests. As part of the biodiversity teachers training, the council sends nature interpreters to schools where they use teaching methods from the WWF's "Windows on the Wild-Biodiversity" teaching module to provide teachers with a basic foundation for understanding biodiversity. Instruction on low altitude woodlands environmental interpretation focuses on upper-grade elementary school children, guiding them along the K2 mountain woodland trails where the kids learn firsthand about searching for plant and animal species, and are

Teachers and students enjoy learning in nature

The nature center is surrounded by beautiful scenery

guided in exploring environmental issues and cultural diversity.

2. Gold Rush – Woodland Treasures

A Gold Rush adventure game is used with mid- to upper-grade elementary school students to familiarize them with low altitude woodland fauna and flora, get them to understand the importance of interaction and cooperation, and to cultivate group communication skills, as well as develop problem-solving skills.

3. Magical Blue Herb – Indigo Dye

Indigo is the focus of the center's historical culture program, providing a means of pursuing one's own past and understanding the wisdom of the original settlers' lifestyles. The lives of the earlier settlers are explored through hands-on activities, such as picking assam indigo, processing its dye, and dying materials.

Natural indigo dyeing workshop

4. Carpentry Workshop-Birdhouse Making

Cedar wood from K2 Mountain is collected and used by students to make birdhouses. Through this process, the students learn about the bird species of Taiwan's low altitude woodlands, their nesting habitats, and the adversities they face. The concept of "Today's Birds and Tomorrow's People" is used to instill the importance of environmental protection within the minds of the younger generation.

5. Exploratory Learning

In 2005, students and faculty from NTNU Graduate Institute of Environmental Education assisted K2 Nature Center in developing an exploratory education site that officially opened in 2006 and covers roughly 5,000 square meters of space. Environmental education concepts are integrated into exploration activities with ten stations, including Noah's Ark, a Trust Trail, and "Stranded island battle" among other activities, providing opportunities for educational training to older-aged students, organizations, and companies.

6. Community Environmental Studies – Natural Farming Workshop

K2 Nature Center is located in Shiding Township, which covers a total area of 21.63 square kilometers. Over half of this area is designated as the Feitsui Reservoir Beishih River Watershed. Most of the residents grow tea for a living, and their farming methods, lifestyles, and behavior all have a direct impact on reservoir water quality. Since the establishment of the nature center, natural farming workshops have been held each year, using the nature center's natural tea gardens to teach villagers the importance of employing environmentally friendly methods of tea plant cultivation and reducing the use of pesticides, chemical fertilizers and herbicides in efforts to minimize pollution of reservoir water. While these methods may be arduous, the results are rewarding and many villagers have welcomed such non-conventional ideas.

Accumulating Experience in Sustainable Development

The Taiwan Field Studies Council's K2 Nature Center offers a vast stretch of land and a wealth of human resources. Located amidst verdant woodlands, flowing streams, teeming wetlands, and majestic mountain ridges, this natural environment enables children to experience the thrill of interacting with wildlife, appreciate the beauty of nature, and seek a harmonious balance between humans and our natural environment. Four years of hard work have been devoted to the development of this program with hopes to continually expand the vision. In the future, the accumulation of experiences and greater capacities will enable the center to better grasp evolving trends within society, culture, and the natural environment, and provide an environmental education service that fully meets community needs.

3.3 Co-Tech Copper Foil
Active R&D in Green Production

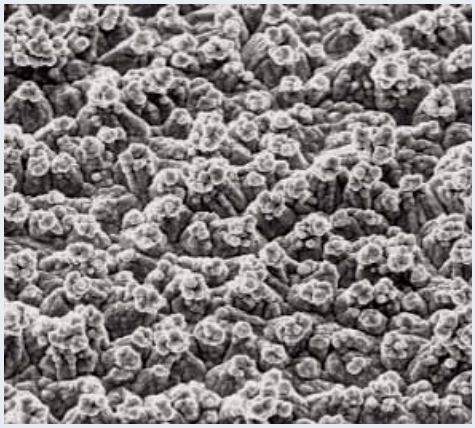
Co-Tech Copper Foil Corporation was established in 1998, and following completion of construction on their first factory production began in 2000. Its primary product is electrolytic copper foil, which is a key material in the domestic and international manufacture of copper clad laminate and printed circuit boards. In response to the government's "stay in Taiwan" policy, the company built its second plant in Taiwan in 2001, with production occupying a vital share of the international market.

Exploring Sustainable Management Methods

Electrolytic copper foil is one of the most important materials in the electronics industry. For many years Japan has been the leading manufacturer in the copper foil market. Co-Tech has a massive production output, but due to a decline in the manufacture of electronics worldwide and overproduction of electrolytic copper foil, the surplus of production capacity has created a fiercely competitive market. In the face of these challenging times, Co-Tech understands that embracing sustainable development provides the best opportunity for future growth. In accordance with the "innovation and integrity, open-mindedness and cooperation, service and prosperity" management concepts, Co-Tech provides comprehensive customer service by helping customers resolve problems concerning the application of copper foil, and employing technical advisors to assist in improving product quality and new product development. The company cooperates with printed circuit board manufacturers from developed nations, such as U.S. and Japan,

Co-Tech Copper Foil Corporation factory in Douliu

to successfully develop microwave printed circuit boards using copper and reverse treated copper foil products. Co-Tech also assists customers develop high value-added products to increase Co-Tech's positioning in the copper foil industry. As the economy has gradually regained vibrancy, the difficult times are now over and Co-Tech's market share is increasing once again.



Copper foil under a microscope

Success in Green Design and Clean Production

Working to implement green design, clean production, and reduced environmental loading, Co-Tech has utilized green manufacturing concepts throughout the factory design and construction phases. The company is gearing up to apply green production concepts into the manufacture phase, carrying out extensive conservation, waste reduction, and resource recycling and reuse practices. These measures are changing the common misconception that metal finishing is a heavy polluting industry. This company's main raw material used in the manufacture of copper foil is derived from recycled electric cables. Leftover materials resulting from the copper foil production process are also promptly recycled and melted down for reuse. The heat produced during the manufacture of copper foil electrolysis is directly utilized in drying copper foil and melting down copper filaments, thus conserving resources and actualizing green production goals. At the manufacturing site, the company has also installed an air cleansing system to increase environmental safety of employees and the surrounding environment.

Wastewater recycling has also achieved great success. This industry consumes large quantities of water since pure water is needed to clean the surface of copper foil during production to ensure the quality of copper foil. Co-Tech has made large capital investments to set up pollution prevention and water recycling and reuse equipment, which sorts and collects this polluted cleaning water. Reverse osmosis equipment has been installed to recycle water and raw materials, enabling the entire process to operate on 92% recycled water. This greatly reduces the environmental impact of wastewater treatment. In addition, Co-Tech has installed metal recycling equipment that separately collects liquid containing concentrated copper, which normally cannot be directly recycled, and remarkably transforms this hazardous waste into usable metallic compounds. Striving to reduce waste, the company has installed a drying furnace to reduce the water content of wastewater sludge by half and lower sludge processing costs. Little by little, drop by drop, costs are being reduced.

Co-Tech carries environmental safety efforts a step further by striving to stay ahead of environmental protection regulation requirements. Though the company is not among the list of industries required by the EPA to install waste management technical specialists or

air pollution control units or specialists, Co-Tech has taken the initiative to employ certified waste management technicians and air pollution control specialists. Co-Tech has also obtained ISO-14000:2004 certification for its environmental quality control system, with the hope that participation in this verification system will help strengthen environmental protection practices. Co-Tech has worked very hard over the years to sustain operations and implement various research and development plans. The company has already established a comprehensive resource recycling and waste reduction system, which has effectively reduced waste by 85% since the company's outset. Waste reduction has spurred cost reductions and increased the company's cost efficiency.

Complying with International WEEE/RoHS Requirements

Co-Tech has pledged to be an environmentally friendly company in response to EU environmental directives concerning the impact of the electronics industry. All raw materials used in the copper foil production process comply with WEEE and RoHS trade control regulations. Moreover, Co-Tech actively engages in research and development to help provide downstream customers with copper foil environmental protection manufacturing process applications. The company has already completed development of applying electrolytic copper foil for use in halogen-free boards and lead-free production boards, which have received unanimous support from U.S., Japan, and South Korea manufacturers. Co-Tech is currently cooperating with local research institutions to develop specialized dual surface sheen products to increase competitiveness. In the future, the company will provide affordable prices to local downstream customers, assisting customers to lower material costs and secure a stable materials source. This will increase operational competitiveness from the supply side and quicken the pace of overall industrial growth.

Copper foil inspection and cutting stations

Efficient Technology Applications Ensure Industrial and Environmental Sustainability

Co-Tech provides fast, friendly services and comprehensive technical support. It supplies electronics manufacturers with their copper foil material demands, creating profits, sharing with customers, giving back returns to investors, and taking care of employees. Co-Tech has become a world-class technical service and customer advisor in the supply of copper foil needs. Co-Tech's experience proves that through efficient application of technologies, clean manufacturing will never again be an industrial liability and that profits can still be made. Efficient application of technology also reduces environmental protection expenditures, minimizes environmental impacts and guarantees success for both industry and the environment.

3.4 Hsinhsing Elementary School
Integrating Traditional Culture and Community to Create a Sustainable Schoolyard

Hsinhsing Elementary School was formerly called the "Jin Huang Educational Center" during the Japanese occupation, and after Restoration it became known as Jin Huang National School. On 10 August 1960, its name was changed to the "Taitung County Jinfeng Township Hsinhsing National School." With the implementation of national compulsory education in August 1968, the name was once again changed to the current name - "Hsinhsing Elementary School."


Entrance of Hsinhsing Elementary School featuring Paiwan aboriginal style firewood stack and registration desk

Integrating Tribe and Community- The Schoolyard Is My Home

Hsinhsing Elementary School is located in Taimali, Taitung County, along the banks of the Beili River lying below Jinjhen Mountain. Custard apple orchards surround the school on all sides, making the school appear as a verdant oasis amidst a monocrop desert. Many different kinds of plants grow in the schoolyard providing habitat for wildlife and recreational space for the residents of Beili and Hsinhsing communities. "The schoolyard is my home" concept is being realized at Hsinhsing Elementary School.

Hsinhsing Elementary School is located within the Paiwan tribal territory. The total number of students and faculty is under one hundred, but Paiwan tribal culture flourishes both inside and outside the school. The walls, floors, and restrooms throughout the school are all artistic creations of the tribespeople, students, and faculty. The school principle has devoted all efforts toward realizing the concepts that "the schoolyard is my home" and "My home is the schoolyard." The principal led all of the staff and children in greening schoolyard and caring for the local ecology. These initiatives soon attracted parents and community residents to get involved. They developed the concept of "One tree per family, one stone per person, one bookbag per student," to foster a close relationship between the school and community, and enable the children to consider the schoolyard their home at all times.

Schoolyard Ecosystem- Learning from Nature

With the principal leading the way, Hsinhsing Elementary School gradually transformed into a green schoolyard, and also planted green seeds deep within the students' hearts. These seeds

Aboriginal culture is prominently displayed on Hsinhsing Elementary School's flag-raising stage

established an environmental consciousness and a cultural environment throughout the schoolyard that will hopefully allow the school to transform itself into an ecosystem that demonstrates the local cycling of water, matter and energy.

1. Water Recycling

Students and faculty worked together with community residents to channel household wastewater from the nearby community through a 300m long eco-drainage system that distributes water among five eco-ponds built within the schoolyard. The water is naturally filtered as it flows through the stones and aquatic vegetation in the eco-ponds, both purifying water quality and attracting a wide diversity of aquatic life to spawn here. Students and faculty and community residents also cooperated to renovate the school's old, rundown restrooms. They incorporated a drainage system that channels wastewater under a large tree. Now the restroom is spick-and-span, and the tree enjoys nutrient-rich irrigation. In addition, the school designed a drainage system for the sinks by digging a 1/2 square meter retaining pond and filling it up with rocks to allow the water to gradually seep into the soil. The school also took out the cement lining in the drainage ditches surrounding the school building and filled it with sod so that every drop of water can be used to provide nourishment for the soil.

2. Tree Planting

Taking to heart the maxim that "the trees planted by one generation allow the next generation to relax in the shade," the principal led students and faculty on a mission to plant trees in the schoolyard. Each year on Tree Planting Day the school holds a "One Family One Tree, One Hundred People One Hundred Trees" activity. Students and faculty fully utilize their natural resources as they collected driftwood along the seacoast that was used to make a flag raising platform and tables and chairs. Tree trunks were sun-dried and used to make shelves, thus garnering the greatest amount of utility and value from trees after they die.

3. Reusable Energy Brightens the View

Two solar power panels on the school's roof, three wind turbines, and a battery system provide enough power to operate the electrical lights and fans throughout the school, maintaining normal capacity even when the sun

Wastewater is recycled in this ecological pond in the schoolyard

A Christmas tree made out of reused wood

A vacant area of the schoolyard was put to use with the installation of an outdoor classroom

isn't shining and the wind slows down. Originally, the school used over 4,000 kilowatt-hours of electricity costing over NT$10,000 every two months. After incorporating renewable energy sources, electricity consumption has been reduced to 100 kilowatt-hours, less than one fortieth the original amount.

Wind Power Generation: A 1 kilowatt wind power generator is installed on the roof of the second floor with a start-up wind velocity speed of 3.1m/s and a maximum wind velocity of 60m/s. Another smaller turbine (0.25 kilowatt) has been installed near the track field, with a start-up wind velocity speed of 2.5m/s and a maximum wind velocity of 55m/s.

Solar Electricity: Taimali is known as "Sunny Town" because the sun shines as much as 13 hours a day in the summer. Students and faculty work together to calculate the sun's position and latitude changes and are able to harness the sun's energy as an alternative energy source for supplying the school's electricity needs. Currently, 10kw of electricity is provided for the school's 100 users, and conserving electricity has become one of Hsinhsing Elementary School's major concerns. During summer and winter vacations, the school's clean, renewable energy source is distributed throughout the community.

4. Creating a Self - Sustaining Schoolyard

Hsinhsing Elementary School's ultimate goal is to minimize the amount of outside resources and allow no waste to leave the schoolyard. The school maintains a simple, down-to-earth philosophy in its efforts to transform wastewater and wastes into functional, reusable resources.

Toward a Sustainable Schoolyard - a Vision of Sustainable Education

The core of a sustainable schoolyard education is not teaching by words. Rather, it entails the application of these concepts into daily activities, lifestyles, and the environment. It also requires the utilization of the unique qualities of the local surroundings and natural environment, as well as meeting the practical demands of society. Only by these means can the distinct qualities of an environment be actualized. Hsinhsing Elementary School's first-hand experience is testimony to the fact that every person in every society should learn from the land they live upon, cherishing every last resource. Only in this way can we preserve our resources and societies, and enable society to actualize the vision of sustainable development.

Note: Pictures in Chapter 3 are provided by 2006 National Sustainable Development Award recipients

Chapter 4 Announcing 2005 Sustainable Development Index

2005 Taiwan Sustainable Development Index Press Conference

The National Council for Sustainable Development (NCSD) announced the results of the 2005 Taiwan Sustainable Development Index on June 5 (Environment Day) to heighten people's awareness of sustainable development and to better understand the outcomes of initiatives toward sustainable development. NCSD Chairman Lin Si-yao presided over this press conference. Comments were issued by EPA Minister Chang Kow-lung, former NCSD Chairman Dr. Yeh Jiunn-rong, as well as several scholars and experts. Lin expressed that the Executive Yuan chose Environment Day to announce the Taiwan Sustainable Development Index as a sign of its determination to transform sustainable development concepts into local action. The index provides a window on Taiwan as a means of weighing Taiwan's progress toward sustainable development.

4.1 Indicators Define Progress Toward Sustainable Development

Responsible for calculating index scores, the Research, Development, and Evaluation Commission, Executive Yuan, points out that Taiwan's sustainable development index has been compiled and announced every year since 2003, making this the fourth consecutive year. In addition to serving as a means of observing administrative outcomes, and providing cautionary advice and direction for policy-making, the index addresses the United Nations' request for each nation to establish indicators that help assess progress toward sustainable development. Taiwan thus demonstrates its determination to stay abreast of international trends and make known to all circles the trends and changes of Taiwan's sustainable development.

Taiwan's SDI system was developed with reference to the UN's Pressure-State-Response (PSR) framework as well as Taiwan's current status of development. A total of 40 core indicators are categorized under the following six

dimensions: environmental pollution, ecological resources, social pressure, economic pressure, institutional response, and urban development. The indicator framework and the trends of each indicator are explained in detail on the NCSD website at http://ivy2.epa.gov.tw/NSDN/.

4.2 Sustainable Development Trends in Six Dimensions

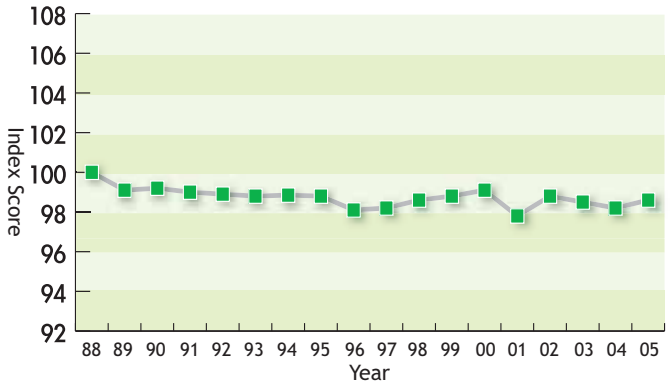
1.Environmental Pollution

Index scores for environmental pollution have shown slight fluctuation below the 100 mark from 1988 to 2005. A slight improvement can be seen from the years 2004 to 2005, however over the long-term, overall environmental quality has not noticeably improved. As for individual indicators, waste resource recycling rates are following a marked trend of improvement. However, only limited improvements have been observed in indicators for PSI average and reservoir water quality. The indicator for carbon dioxide emissions is on a downward trend showing emissions are not yet effectively under control. Environmental pollution trends over the years are shown in Figure 4.2-1.

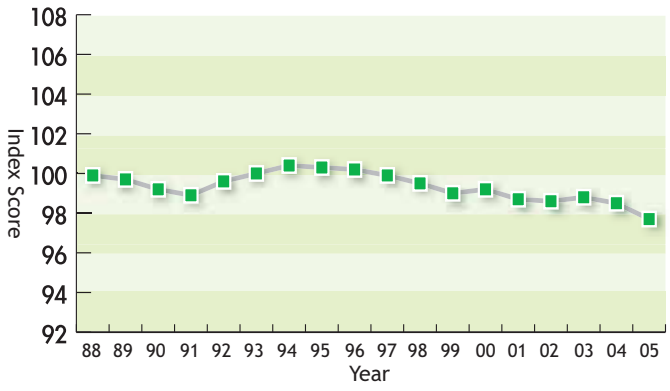
2. Ecological resources

Composite index scores for ecological resources have been on a continual downward slide since 1996. Although "Unit pressure fish catch" has increased and environmental sensitivity index scores have improved due to establishment of protected areas.+ Composite index scores for ecological resources remained steady on the whole from 2001 to 2004, followed by a marked decline in 2005, representing a deviation from sustainable trends. Please see Figure 4.2-2.

4.2-1 Environmental quality composite index trend



4.2-2 Ecological resources composite index trend



3. Social pressure

Social sustainability composite index scores continually dropped from 1988 to 2002, representing a divergence from sustainable trends. A gradual comeback has been underway since 2003. Comparing calculations for 2005 and 2004, daily per capita garbage

volume noticeably dropped due to increased recycling rates. Unemployment rates have also markedly improved. The number of public nuisance complaints, however, is climbing higher. The social pressure composite index score increased from 93.12 in 2004 to 93.42 in 2005, showing a trend toward sustainability.

4.Economic pressure

Economic pressure composite index scores have been heading toward sustainable development (Figure 4.2-4). The composite score has remained the same throughout the years 2004 and 2005.

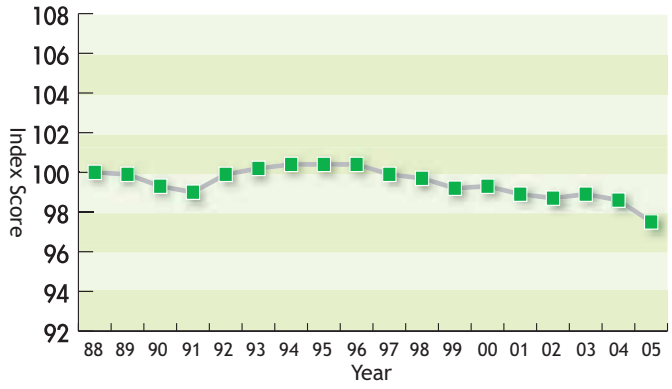
5.Institutional response

From 1991, overall institutional response has shown gradual improvement in the direction of sustainability. The government is clearly placing increasingly more emphasis on environmental issues by implementing regulations and systems that lead government, corporate and civil sectors to squarely face environmental issues. Planning and execution of related policies is having a positive effect on sustainable development. Institutional response is exhibiting a consistent trend toward sustainability over the long term, reflecting the sustained actions of administrative agencies and showing their determination and effort toward implementing policies that favor sustainable development. Please see Figure 4.2-5.

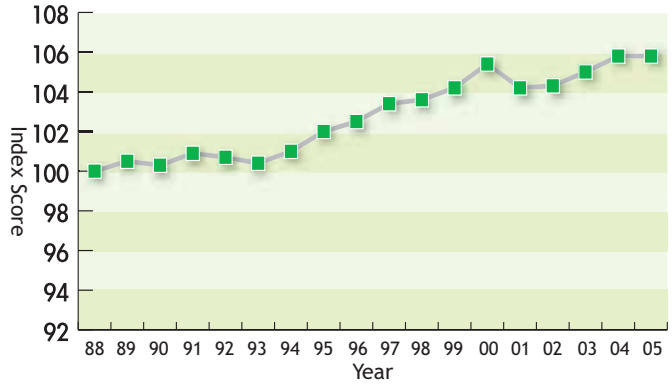
6. Urban sustainable development

Looking at overall trends, urban areas are heading toward sustainable development over the long-

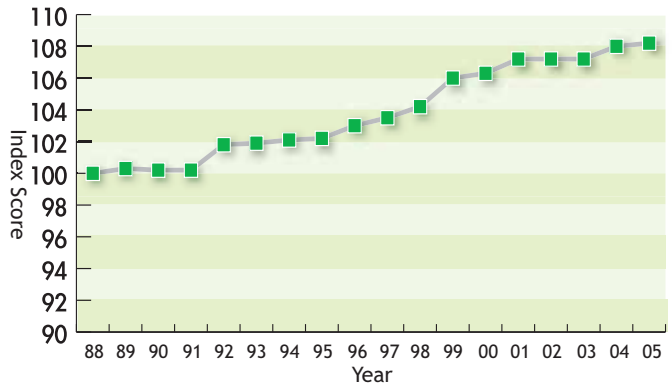
4.2-3 Social pressure composite index trend



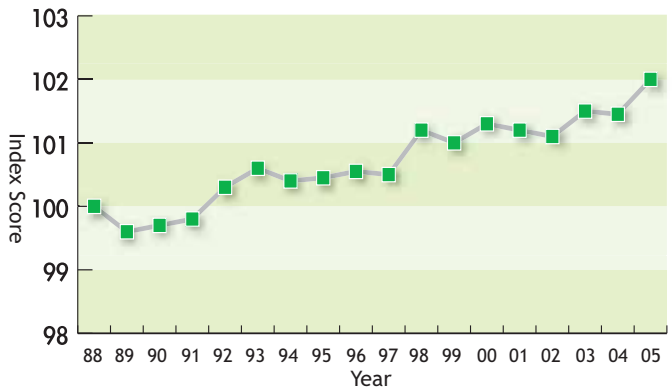
4.2-4 Economic pressure composite index trend



4.2-5 Institutional response composite index trend



4.2-6 Urban development composite index trend



term (Figure 4.2-6). Among the indicators demonstrating long-term trends toward sustainable development include urban average per capita income, number of passengers using mass transportation, rate of urban expansion. However, index scores for urban small car ownership rates and annual rate of serious air pollution in urban areas are hindering efforts toward sustainable development.

4.3 Indicators Gradually Incorporated into Policy

The NCSD announced the results of Taiwan's Sustainable Development Index in 2005 on Environment Day, drawing widespread media coverage

The NCSD announced that the 2005 indicator results were well received by scholars and experts in attendance at the press conference, however many showed strong concern about the gradual departure from sustainability in terms of the environment and ecology. Scholars appealed that improvement measures should be promptly adopted to address the worsening trends in indicators for carbon dioxide emissions, total area of cultivated land, cancer death rate, ratio of total production output value by resource-intensive industries, and rate of small car ownership in urban areas.

Working to redirect certain indicators in the direction of sustainable development, NCSD Chairman Lin instructed all NCSD working groups to evaluate Taiwan's current status and set annual goals to improve the situation. Lin compares the role of indicators to that of a flashlight using minimal resources to illuminate the greatest area in front of us and serve as a guide for taking the next step. Taiwan's Sustainable Development Indicator system was established four years ago. The NCSD will conduct an overall evaluation to ensure indicators comply with current requirements and effectively guide Taiwan's future direction of development. Lin indicates that sustainable development is a process and requires continual reflection and fortification. The results of last year's SDI show that the importance of the system and its backing policies are gradually becoming internalized in government administration. It is hoped that annual announcement of the SDI ratings increases the public's awareness, collective concern, and participation in sustainable development affairs. It is also anticipated that the public works collectively toward becoming a model nation of sustainable development.

Chapter 5 Promoting Local Sustainable Development

Taichung Park (photo:Shen Yi-juh)

5.1 "Think Global, Act Local"

The slogan "think global, act local" captured one of the underlying concepts of Agenda 21, which was set forth during the 1992 Earth Summit. The various countries attending the 2002 Earth Summit reached a consensus that blueprints for local sustainability can be implemented only through in-depth consideration from a local perspective on how to enhance local governments' capacity to promote sustainable development.

Although the central government in Taiwan has achieved initial results in its pursuit of sustainable development, concrete objectives can only be realized with the participation of local government. In 2002, the NCSD placed a priority on assisting local governments to promote local Agenda 21 plans. County and municipal governments began drafting Strategic Plans for Local Sustainable Development in 2003 in hopes of consolidating local power and having local residents discuss and decide the direction of local future development. The aim of this approach was to consider problems faced by localities overall and, where existing laws, technology and resources allow, adopt the sort of system changes and response strategies needed to put sustainable development concepts into practice and realize local visions for sustainable development.

In 2004 the Council for Economic Planning and Development, Executive Yuan, convening body of the NCSD Sustainable Vision Working Group, selected 11 county and city governments to subsidize implementation of Strategic Plans for Local Sustainable Development. In addition, Taoyuan

County and Tainan City completed Strategic Planning Reports on a self-financed basis. Thus a total of 13 county and municipal governments have already completed Strategic Plans for Local Sustainable Development and draft local Agenda 21 plans.

5.2 Local Sustainable Development Promotion Mechanism Evaluations

In an effort to ensure local governments are implementing sustainable development plans, the NCSD is working through the Research,Development and Evaluation Commission (RDEC), Executive Yuan, to conduct evaluations of local sustainable development promotion mechanisms. The purpose of these evaluations is to determine whether localities are integrating the diverse strengths of government, NGOs, communities and schools to reach sustainable development objectives.

Experts and scholars were first convened to establish the topics and focal points of local sustainable development promotion mechanism evaluations. An evaluation committee was then formed to conduct a three-stage evaluation process involving onsite reviews, paper audits, and county/municipality evaluations addressing the four tiers of environmental, social, economic, and institutional initiatives. In addition, regional briefings were held to clearly explain evaluation topics and focal points. Aside from analyzing successful elements of top performing counties and municipalities, evaluation results provide recommendations for the future direction of development in accordance with each locality's unique requirements and characteristics.

5.3 Local Sustainable Development Evaluation Results

The RDEC completed evaluations of 13 counties and municipalities in May 2006. Preliminary results found outstanding models of local sustainable development in Taipei City and Tainan City as urban examples, Changhua County as an agricultural/industrial example, Kinmen County as an offshore island example, and Kaohsiung County-Kaohsiung City-Pingtung County (KKP) as a regional example. It was found that leaders of these counties and municipalities attached great importance to sustainable development and incorporated sustainable development concepts into policy administration. Sustainable development plans were drawn up to address the unique qualities of the local environment, areas in urgent need of improvement, and trends of deteriorating environmental quality. Evaluation results showed that each locality set visions, strategies, action plans and quantitative assessment goals, and actively engaged in each stage of work from planning, coordination and execution to evaluation.

In the category of urban sustainable development, Taipei City set an outstanding example in terms of its high level of NGO participation in decision-making, a 60% reduction of garbage, and establishment of a system for evaluating decision-making for major policies concerning sustainable develop-

ment. Tainan City's strong points included initial results on its 120-item action plan, completion of the Tainan City Health City White Paper, active efforts to encourage citizen participation through holding a civil forum and a city charter forum, and publication of the Tainan City Sustainable Development White Paper. Changhua County showed remarkable initiative and substantial results in its focus on water in combination with strategy and action plans. Initial local sustainable development indicators are already proving to be useful tools for monitoring development activities. Integration of county and municipal development plans throughout each stage of local sustainable development facilitates comparison and revision during the development process. Kinmen County was worthy of praise for formulating sustainable development policy based on unique offshore island development characteristics, developing concrete feasible "Regulations on Strategic Implementation Performance Evaluation," working through the media and forums to understand citizens' response and level of participation in various circumstances of strategic implementation, and achieving a high ratio of community and school participation (all grade levels) in the Greenschool Partnership Program with marked results.

As for regional models of sustainable development in the KKP region (Kaohsiung County-Kaohsiung City-Pingtung County), Kaohsiung City's strong points included setting mid- and long-term objectives, establishing focal issues for the KKP region, establishing action plans based on issue analysis and planning goals, and playing a leading role in the region. Kaohsiung County was noted for establishing the southern Environmental Science and Technology Park (ESTP), developing the resource recycling and resale industry, establishing a cross-regional waste management support network, and actively promoting environmental engineering. Pingtung County proposed the Pingtung County Declaration of Sustainability and formulated strategy and action plans for promoting sustainable water environments, sustainable organic farming, riverbank control, green resources, agricultural development, health risk assessment, safe communities, welfare communities, protection of water resources, and economically and environmentally sustainable biotechnology parks. The KKP team cooperated in drawing up Strategic Plans for Local Sustainable Development and the leaders of these three local governments made frequent use of reporting and liaison mechanisms to increase the effectiveness of promoting local sustainable development.

5.4 Local Sustainability Indicators Help Evaluate Implementation

Aside from conducting evaluations of promotion mechanisms, the RDEC has assisted various counties and municipalities in establishing the "Local Sustainability Indicator Database Framework" and the "Local Sustainable Development Action Website." Establishment of the local sustainability indicator database required planning a local sustainability indicator database framework and assisting in the formulation of local sustainability indicators. A comprehensive local sustainability indicator database was established by gathering localized data on sustainable

development indicators and integrating these with national level sustainable development indicators. Different from the national level "Taiwan Sustainable Development Indicators," local sustainable development indicators consist of two levels: comprehensive system indicators that must tie in with national level indictors; and local internal operation indicators that are determined according to the current status and vision of each county and municipality.

5.5 Website to Promote Experience Exchange in Local Sustainable Development

The establishment of a Sustainable Development Action Website benefits all counties and municipalities by providing a channel for sharing promotion outcomes. Website content includes reports on county and municipality Strategic Plans for Sustainable Development; guiding principles and action guidelines; data evaluation results; an indicator database, the government's Six Star plan and the Taiwan Green School Partnership program; case studies tracking foreign sustainable local development programs; a map of local sustainable development actions; and links to relevant websites. The RDEC indicates that evaluation mechanisms can be used to discover valuable points that counties and municipalities can learn from each other. Evaluation data and results for each locality can be shared through this website and between local governments and NGOs to enhance the quality of local sustainable development efforts.

5.6 Subsidies Broaden Scope of Local Strategies for Sustainability

Local governments are the key to whether sustainable development concepts are put into concrete action. In the past two years, already 13 county and municipal governments have completed Strategic Plans for Local Sustainable Development, however some counties and municipalities have not yet begun. Thus the next phase of action for the NCSD will be to continue evaluations and subsidy programs through the EPA to assist the remaining localities complete strategic planning work. Taipei County, Taichung County, Yunlin County and Chiayi County continued to promote Local Sustainable Development Plans in 2006. In compiling the budget for 2007, subsidies will be continued for those counties and municipalities that have yet to compete these plans. Therefore it is recommended that future local sustainable development planning should actively integrate community efforts and demonstrate the unique characteristics of local communities.

The NCSD anticipates that local sustainable development plans will soon be completed through devoted efforts of central and local powers, and joint participation from community and civil organizations. Resolute action toward implementing these plans will raise public awareness of the government's determination to promote local sustainable development. By actively creating an environment conducive to local sustainable development, all circles can work in concert to ensure Taiwan's progress on the path of sustainability.

Chapter 6 Global Sustainable Development Trends

Elimination of poverty is an internal objective of sustainable development (photo: Chang Shao-wen)

6.1 UNCSD Annual Session

Discussion of Important Issues Ushers Progress

The fourteenth session of the United Nations Commission on Sustainable Development (CSD-14) was held on 1~12 May 2006 at the UN Headquarters in New York City. Themes discussed included progress in the areas of Energy for Sustainable Development, Industrial Development, Air Pollution/ Atmosphere, and Climate Change.

During this integrated discussion, several attendees emphasized the importance of the Rio Declaration and felt that the CSD-14 should clarify the obstacles of all countries and especially developing countries in implementing the objectives and indicators of the abovementioned themes. Some attendees emphasized that elimination of poverty is not only a global priority, but is an integral objective of sustainable development.

During the ministerial meetings, the ministers of various nations identified a number of challenges to be addressed in the course of the next year with a view to strengthening the implementation of Agenda 21, the Johannesburg Plan, and the Mauritius Strategy and to facilitate achievement of the Millennium Development Goals. Among these challenges include:

(a) Mobilizing financial resources from all sources, including international, regional, national and local, public and private, as well as official development assistance;

(b) Integrating energy for sustainable development, industrial development, air pollution/atmosphere and climate change in national sustainable development strategies, poverty reduction strategies and national development plans;

(c) Enhancing international and region-

al cooperation, including both North-South and South-South cooperation, engaging the participation of all governments, international organizations and stakeholders;

(d) Enhancing the role of partnerships in mobilizing new and additional resources, and encouraging those that effectively contribute to meeting national needs;

(e) Enhancing means of implementation by building capacities in developing countries, increasing the transfer of appropriate technologies and strengthening education and training;

(f) Addressing the special needs of Africa, the least developed countries, small island developing States and landlocked developing countries;

(g) Enhancing the roles and status of women, as participants and agents of change;

(h) Providing energy for all - access to reliable and affordable energy services;

(i) Promoting energy efficiency and increasing the share of renewable energy;

(j) Strengthening the development, use and transfer of cleaner energy technologies;

(k) Promoting, with a sense of urgency, international cooperation on climate change,

(l) Reducing air pollution, with particular attention to indoor air pollution from traditional biomass fuels and its health impacts on women and children; and among others,

(o) Changing unsustainable patterns of consumption and production, with developed countries taking the lead.

The CSD-14 paid particular attention to obstacles and barriers to the abovementioned four themes. CSD-15 will continue with discussion on actual implementation measures and policy decisions.

6.2 Developments of Key Global Environmental Agreements

United Nations Framework Convention on Climate Change and the Kyoto Protocol

The twelfth session of the UN Framework Convention on Climate Change (COP12) and the second meeting of the Kyoto Protocol were held from 6 to 17 November 2006 in Nairobi, Kenya. A total of 189 national ministers and officials attended these meetings. Currently 168 nations are signatories to the Kyoto Protocol. The foremost topic of discussion was post-Kyoto (beyond 2012) reduction strategies. Other issues included implementation status of the Convention, climate change policy implementation experience, related scientific discoveries, a framework for global climate regimes after 2012, stricter emission controls, and technology transfer to developing countries. The two most important outcomes of these meetings were agreements on a five-year adjustment plan and financial assistance. Each nation will reconsider the content of the Kyoto Protocol during the 2008 meeting. All nations will assist Africa in developing clean energies such as wind power and hydropower, and begin working toward consensus on related financing. This fund is anticipated to provide US$1.1 trillion in aid to developing countries before 2012.

Vienna Convention and Montreal Protocol

The seventh Conference of the Parties

to the Vienna Convention and the seventeenth Meeting of the Parties to the Montreal Protocol were held from 12 to 16 December 2005 in Dakar, capital city of Senegal. Over 400 people attended, including signatory nation representatives, UN officials, international organizations, NGOs, and members from academic, industry and agriculture sectors. The focus of these meetings included ratification and observance of revisions to the Montreal Protocol, a report by the Technology and Economic Assessment Panel (TEAP), the Multilateral Fund, methyl bromide issues, essential use exemptions (EUE), illegal trade and destruction of ozone depleting substances (ODS), and processing aids. Resolutions were reached for over 50 agenda items.

The eighteenth Meeting of the Parties to the Montreal Protocol (MOP-18) was held from 30 October 2006 to 3 November 2006 in New Delhi, India, and was attended by 550 national and NGO representatives. The meeting adopted 37 resolutions including a listing of basic use ODS, a listing of essential-use exemptions for ODS and methyl bromide, and a review of applications of controlled substances for quarantine and pre-shipment purposes.

Basel Convention

The fifth session of the Open-ended Working Group of the Basel Convention (OEWG5) was held from 3 to 7 April 2006 in Geneva, Switzerland. The goal of the meeting was to trace the outcomes of implementing resolutions made at COP7, as well as make preparations for COP8. The resolutions of COP7 focus on Basel Convention Strategic Plan, Mobile Phone Partnership Initiative, and technical guidelines on persistent organic pollutant (POP) waste.

COP8 of the Basel Convention was held from 26 November 2006 to 1 December 2006 in Nairobi, Kenya. Over 1,000 delegates from 120 countries attended this week-long meeting which included the World Forum on E-waste. According to statistics, the global production of waste electronic products has reached an annual rate of 20 to 50 million tonnes, comprising 5% of all solid waste. The United Nations Environment Programme (UNEP) explains that apart from controlling transboundary movement of hazardous waste, the Basel Convention exists to promote sustainable development and attain UN Millennium Development Goals.

Stockholm Convention

The second Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants was held from 1 to 5 May 2006 in Geneva, Switzerland. There are currently 122 signatories to the Stockholm Convention, including the European Union. The main objectives of this meeting include confirming estimates of continued use of DDT as a disease vector control method and strategies for alternatives to DDT, reviewing standards on special exemption procedures, deciding on best available technology (BAT) guidelines and best environmental practices (BEP) provisional guidelines, confirming and measuring the status of dioxin and furan emissions, and discussing perfluorooctane sulfonate and pentabromodiphenyl ether. A report on the first stage of a review on the properties of five chemical substances-pentabromodiphenyl ether, chlordecone, lindane, perfluorooctane sulfonate, and hexabromobiphenyl-was submitted for approval. Risk assessment and review of social and economic impacts must be conducted before these sub-

stances can be added to the list of regulated POPs.

Rotterdam Convention

The third Conference of Parties to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC COP-3) was held from 9 to 13 October 2006 in Geneva, Switzerland, with an attendance of over 500 delegates from 140 countries. The Conference Chair requested that consideration be given on whether to add pesticide ingredients already under regulation. The EU expressed concern that signatory nations expressed inability to effectively implement a response regarding import of products listed in the Annex. Sixteen resolutions were made during the conference, including planning and budget for 2007~2008, implementation of the convention, financial mechanisms, mechanisms for noncompliance to convention, and cooperation and coordination with the Secretariat of the Basel Convention. The addition of carcinogenic substance chrysotile asbestos to the list of regulated substances was blocked by Canada and other chrysotile exporting countries. Further discussion on this topic will resume at the next meeting in October 2008 (PIC COP-4).

Chrysotile accounts for 94% of global asbestos consumption. It is rarely used in Western countries, however is in common use in developing countries, mainly as a cement additive. The UNEP cites that every year at least 90,000 people die of asbestos related diseases.

Convention on Biological Diversity and Biosafety Protocol

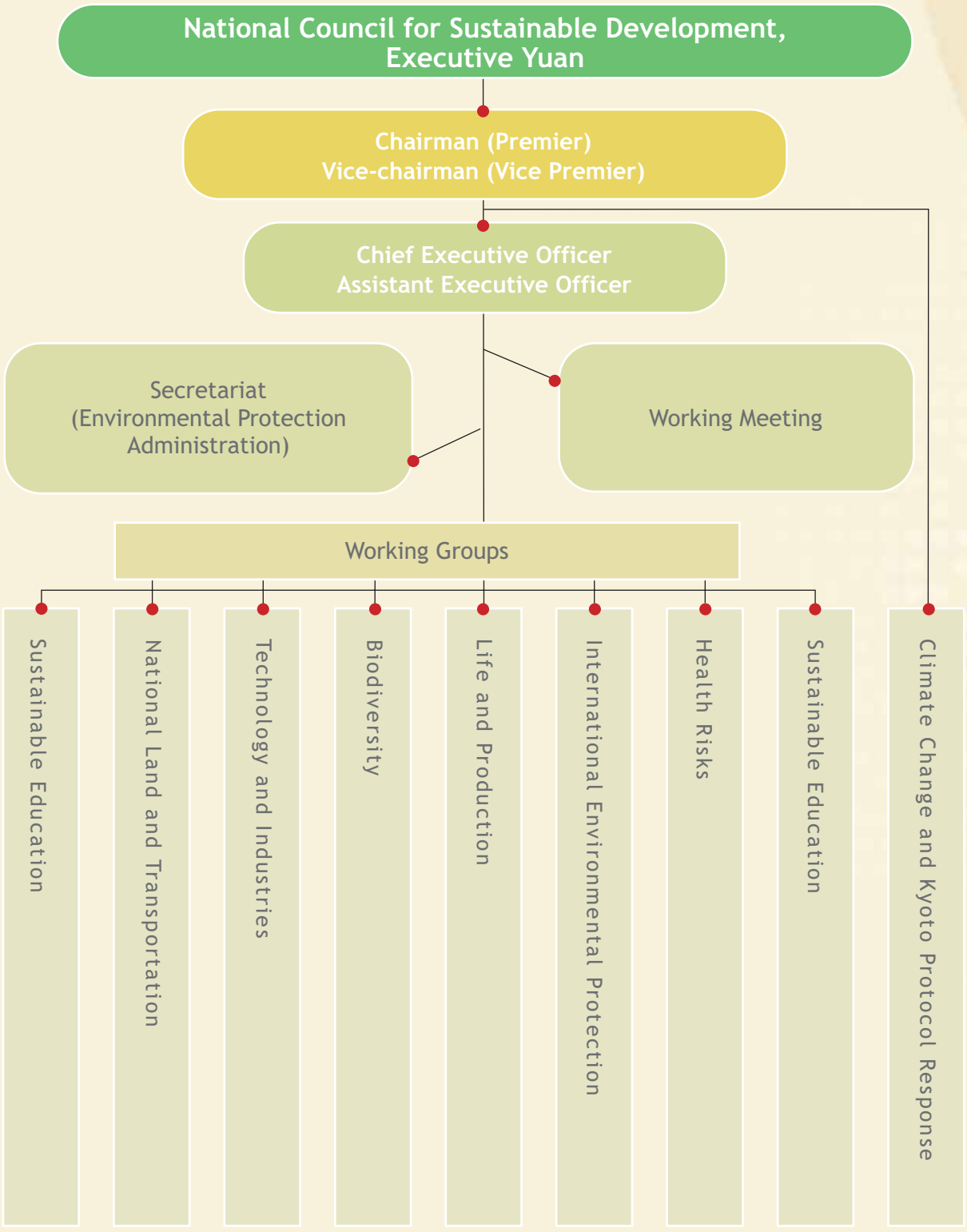
The eighth Conference of the Parties to the Convention on Biological Diversity was convened from 20 to 31 March 2006 in Curitiba, capital of the state of Parana, Brazil. About 3,900 people attended the conference, including ministers of 93 countries. Main topics discussed included:

1)island biodiversity,
2)biological diversity of dry and sub-humid lands,
3)the Global Taxonomy Initiative,
4)access and benefit-sharing,
5)Article 8(j) and related provisions,
6)communication, education and public awareness.

Resolutions were reached on 34 items including two voluntary guiding principles on environmental impact assessments and strategic environmental assessments of biodiversity, deletion of recommendations to conduct risk assessment of genetically modified crops on a case by case basis in relation to the issue of genetic use restriction technologies (GURTs), restatement of the COP5 resolution to ban field experimentation of genetically modified crops, and ratification of the new version of the programme of work on island biodiversity.

The third Meeting of the Parties to the Cartagena Protocol on Biosafety took place from 13 to 17 March 2006 in Curitiba, Brazil. Apart from hearing reports on Protocol implementation evaluations, resolutions were reached on 18 topics including risk assessment and management. One important resolution was made to confirm documents on applications of genetically modified organisms in food, feed and processing. Due to discrepant views among signatory nations, discussion on transference of rights and responsibilities, and whether voting procedures should be majority or consensus based will continue at the next meeting.

Appendix I Organizational Structure of NCSD



Appendix II Members of the Tenth Council of the NCSD

The 10th Members of NCSD

Name	Position	Organization
Su Tseng-Chang	Premier	The Executive Yuan of the Republic of China
Tsai Ing-Wen	Vice Premier	The Executive Yuan of the Republic of China
Lin Si-Yao	Minister without Portfolio	The Executive Yuan of the Republic of China
Yi-Yang Lee	Minister	Ministry of the Interior
Tu Cheng-Sheng	Minister	Ministry of Education
Chen Steve Ruey Long	Minister	Ministry of Economic Affairs
Tsai Duei	Minister	Ministry of Transportation and Communications
Hu Seng-Cheng	Minister	Council for Economic Planning and Development, Exeuctive Yuan
Su Jia-Chyuan	Minister	Council of Agriculture, Executive Yuan
Shih N.-Jay	Minister	Research, Development, and Evaluation Commission, Executive Yuan
Hou Sheng-Mou	Minister	Department of Health, Executive Yuan
Chang Kow-Lung	Minister	Environmental Protection Administration, Executive Yuan
Lee Lin-Ling	Professor	Institute of Ecology and Evolutionary Biology, National Taiwan University
Hu Nien-Tsu A.	Professor	Center for Marine Policy Studies, National Sun Yat-sen University
Chang David Chang-yi	Professor	Department of Geography, National Taiwan University
Hong David-S.	President	Taiwan Institute of Economic Research
Huang Chung-Huang	Professor	Department of Economics, National Tsing Hua University
Hsu Tien-Pen	Professor	Department of Civil Engineering, National Taiwan University
Ouyang Chaio-Fuei	President	Taiwan Water Environmental Association
Hsiao Michael Hsin-Huang	Professor	Institute of Sociology, Academia Sinica
Su Huey-Jen	Professor	Department of Environmental and Occupational Health Medical College, National Cheng Kung University

Name	Position	Organization
Yohaniisqaqavut	Chairman	Native Taiwanese Sustainable Development Association
Chu Hsin-Sen	President	Taiwan Wind Energy Association
Yu Alice	President	China Times Culture & Education Foundation
Lee Wei-Wen	President	The Society of Wilderness
Lin Chun-Shin	President	Archilife Research Foundation
Wu Yu-Chin	Secretary General	Federation for Welfare of the Elderly
Chen Man-Li	President	Nation Alliance of Taiwan Women's Associations
Chen Jiau-hua	Chairperson	Taiwan Environmental Protection Union
Tan-HoChen	Chairman	Chunghwa Telecom Co., Ltd.
Huang Theodore Mao-Hsiang	Chairman	Chinese National Association of Industry and Commerce
Jeng Ming-Shiou	President	Taiwan Coral Reef Society
Yen Mei-Chuan	President	Homemakers' Union and Foundation

Appendix III Chronicle of NCSD Events in 2006

Date	Events and Achievements
1/1	Revised and promulgated the "Regulations Governing Partial Rewards for Emerging Strategic Manufacture and Technical Service Industries"
1/1	Reviewed standards for using animal pharmaceuticals and deleted three pharmaceutical feed additives including lincomycin
1	Published the "Water Resource Policy White Paper"
2/7	Held the 4th Taiwan-Japan Energy Cooperation Forum
2/7	Completed pollution improvement work on 15 parcels of farmland in Taichung City (4.77 hectares) listed as heavy metal control sites
2/27	Completed the "Study on Establishing the Green GDP Environmental Value Matrix and Indicator System." Results were applied to the Green GDP account as a compilation of investments and generated outputs
3/2	Provided subsidies to the Environmental Protection Bureaus of Lianjiang County, Kinmen County, Penghu County and Taitung County for conducting remote medical consultation plans

Date	Events and Achievements
3/3	Encouraged companies to enter environmental incubation centers, selected 13 subsidy plans and approved over NT$20 million in subsidies
3/6	Convened the 18th NCSD Working Group Meeting
3/23	Completed pollution improvement work on 16 parcels of farmland in Taichung County (2.35 hectares) listed as heavy metal control sites
3/27	Revised and promulgated the "Regulations Governing Investment Allowances for Companies Purchasing Energy-Saving or Clean-Energy Equipment or Technology"
3/31	Issued the "2005 Annual Report on National Sustainable Development" booklet and CD-ROM
4/10	The Department of Health announced revisions to standards on establishing psychiatric hospitals
4/17	Subsidized Taipei County, Taichung County, Yunlin County, and Chiayi County to carry out Local Sustainable Development Promotion Plans and to continue planning for sustainable development
4/21 ~ 4/22	Held the National Sustainable Development Conference - the meetings were attended by over 4,000 person-times, and resolutions were compiled for policy administration reference
4/26 ~ 4/28	Attended the 19th meeting of the APEC 3/ine Resource Conservation Working Group (MRCWG) and submitted Taiwan's proposal for 2007, Satellite Application in Knowledge-Based Economies (SAKE 2007)
4/30	Conducted the Evaluation of Local Sustainable Development Promotion Mechanisms (Mechanism for Assessing Local Promotion of Sustainable Development) on 13 counties/municipalities that have completed Local Sustainable Development Strategic Plans
4	Completed planning of 23 important coastal wetlands for a total area of 35,000 hectares, and completed a book on the subject
5/3	Formulated the National Land Use Monitoring Plan Implementation Working Guidelines
5/15 ~ 5/19	During its participation in the 31st conference of the APEC Energy Working Group, this Working Group helped Taiwan gain entry into the newly established Biofuels Task Force, and garnered support from other members for Taiwan's proposal of a "Liquefied Natural Gas Information Sharing and Public Education" action plan
5/23	Promulgated the "Solar ElectriCity Second Stage Selection and Subsidy Implementation Plan"
5/24	Completed delineation of National Land Conservation Areas in adherence to the National Land Planning Act (draft)
5/24	Announced revisions to the "Animal Infectious Disease Control Statutes, " which set jail sentences and fines for illegally import of prohibited animals
5/26	Convened the 21st NCSD Assembly
5	Submitted the "Renewable Energy Development Statutes (draft)" to the Legislative Yuan for review

Date	Events and Achievements
6/5	Conferred the 2006 National Sustainable Development Awards
6/5	Announced the results of the 2005 Taiwan Sustainable Development Index
6/12	Held the National Park Seasonal Protected Area Ecotourism Forum, attended by around 150 people
6/24 ~ 6/25	Held the 2006 Youth International Affairs Seminar, recruiting and selecting youth to participate in international youth activities
6/29 ~ 6/30	Held the "Taiwan Indigenous Peoples Biology Seminar" and an activity to share the experience of tribal life
7/11 ~ 7/12	Held the 2006 Environment Ministers Meeting in El Salvador and promoted cooperation between Taiwan and Central American allies on environmental issues
7/19	Announced revisions to the "Quarantine Regulations for Plant or Animal Products Imported into Taiwan"
7/21	Related agencies conducted necessary investigations and controls to address an incident of dioxin contaminated goats in Bali and Linkou Townships, Taipei County
7/24	Convened the 19th NCSD Working Group Meeting
7/28	Held the "Forum on Status and Control Strategies for Invasive Aquatic Products in the Taiwan Area"
7/28 ~ 9/24	Held the 2006 science exposition on "Biodiversity in Taiwan" to increase public understanding of the rich diversity of Taiwan's geological, biological and cultural resources
8/1	Completed compilation of the "2006 Green GDP" account, and submitted a compendium of the central government total budget to the Legislative Yuan for reference
9/7 ~ 9/8	Convened "The Fourth Forum on Plant Diversity in Taiwan" and issued the results of the third year of the "National Plant Diversity Survey and Mapping Plan"
9/20	Submitted the "Greenhouse Gas Reduction Act (draft)" to the Legislative Yuan for review
9/24	The EPA held the "Citizen Carbon Dioxide Reduction Festival"
9/21 ~ 9/29	Held the "Seminar on Strengthening Coordination in Environmental Protection and Food Security"
9/29	Displayed the results of gift box packaging reduction measures. The nine companies participating in this initiative achieved a total packaging reduction rate of 36%
9	Completed revisions to the "Industrial Policy Sustainability Review," and provided strategies and measures for promoting green supply chains
9	Established the "Industrial Waste Reuse Documents Database" and the "Database on Tracking and Guidance of Materials for Mandatory Reuse"
9	Established the "Communicable Disease Report System and Emerging Infectious Disease Report System"
9	Taipower Company cooperted with InfraVest GmbH to complete construction of five wind power plants

Date	Events and Achievements
9	Completed online "Environmental Change and Sustainable Development" e-learning model curriculum and junior college general education teaching materials
10/15	Held the "Environmental Consensus Meeting," encouraging citizen participation to consolidate public consensus on future environmental policy.
10/18 ~ 10/19	Held the "2006 Taiwan-Central America Environment Ministers Meeting." Seven environment ministers and senior officials from Central America ally nations participated and signed a joint declaration to strengthen bilateral cooperation toward sustainable development
10/26	Collected donated used computers and reassembled them into 250 functional reused computers, which were donated to Nicaragua and Mongolia
11/8	Held a briefing to promote the "International Enterprise Sustainability Evaluation Tool" for assessing outstanding enterprises in the area of social responsibility
11/17	Published "Genetic Biodiversity--A Compilation of Articles on Conserving Genetic Diversity of Taiwan's Wildlife "
11/20	Convened the 20th NCSD Working Group Meeting
11/30	Compiled the results of government green procurement for 2006 from agencies under the Executive Yuan, local governments (including townships), the Presidential Building and the four Yuans. Green products accounted for 81.7% of government spending in designated product categories.
11/30	Conducted onsite assistance and surveys at community mental health centers throughout all counties and municipalities, and held an evaluation meeting
11	Completed a report on a project to compile data and development trends of global industry sustainable development issues relevant to the last three years of case studies compiled in the Forbes Global 2000.
11	Held a food waste recycling award activity to select exemplary communities. A total of 57 communities and 2265 households participated in this event.
11	Formulated the "Guidelines and Measures on Preventing the Spread of Multiple Drug-Resistant Pathogens (draft)" and the "Uses of Antibiotics and Microbial Resistance Control Plan (draft)"
12/04 ~ 12/15	Held the "Sustainable Cities Seminar" to promote action toward local sustainable development
12/22	Announced the "Sihcao Wildlife Important Habitat" and ratified the Sihcao Wildlife Protected Area Conservation Plan
12/30	Completed 11 ecotourism guidance plans