



九十四年國家永續發展年報 2005 Annual Report on National Sustainable Development

行政院國家永續發展委員會 編印

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# 前言

1992年，171個國家代表在巴西里約舉行「地球高峰會議」，通過「廿一世紀議程」做為全球推動永續發展的行動方案，並呼籲各國共同行動追求人類永續發展。

10年後，各國代表又於2002年於南非約翰尼斯堡召開「永續發展世界高峰會」，通過「永續發展行動計畫」，以具體行動及目標期程推動永續發展。

為將永續發展的理念納入政府的施政，行政院因而於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工作協調。目前永續會主任委員除由行政院院長親自兼任外，同時為廣納各界的意見，委員會中相關部會首長、學者專家及社會團體代表比例各佔1/3。委員會之下並設有9個工作分組，各依職責推動相關工作。

本年報彙集整理94年度我國政府及民間推動永續發展重要成果，包括了永續會會務及年度重要施政成果（第一章）；93年台灣永續發展指標試算結果（第二章）；縣市政府推動成果（第三章）；民間推動永續發展楷模（第四章）；各工作分組績效（第五章）；國際動態（第六章），以及永續會未來展望（第七章）等。永續會之架構及委員名單等，則詳列於年報附錄。

藉由「國家永續發展年報」之發行，希望國際人士能更了解我國推動永續發展之努力及成果，並希望能提升國人對永續發展的認知，進而為邁向永續發展的願景而共同努力。



# 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 on 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. Under the current structure of the NCSD, the Premier acts as Chairman of the Council. To ensure input from all different fields, the Council comprises an equal proportion of government leaders, experts and scholars, and NGO representatives, one-third each. Council members are organized into nine working groups, each working toward goals in a specific area.

This year's annual report compiles the significant achievements made by public, private and civil sectors toward sustainable development in 2005. Topics covered in this edition include an outline of NCSD affairs and important achievements of the NCSD in 2005 (Chapter 1); a trial calculation of Taiwan's own sustainability index for 2004 (Chapter 2); municipal/county governments' progress toward sustainable development (Chapter 3); models of sustainability in the private and civil sectors (Chapter 4); performance of the working groups (Chapter 5); international developments (Chapter 6); and the NCSD's prospects for the future (Chapter 7). The appendix provides the organizational framework of the NCSD and a list of council members.

The National Sustainable Development Annual Report 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 citizens' awareness of sustainable development and encourage more people to work together in fulfilling the vision for sustainable development.

# 第一章 國家永續發展推動現況及成果

## Chapter 1 Current Status and Achievements in National Sustainable Development



■ 謝院長親自主持永續會委員會議。

Premier Hsieh presides over NCSD meeting.

### 1.1 國家永續發展委員會會務動態

#### 重大建設納入委員會議討論

行政院國家永續發展委員會第19次、20次委員會議，分別於94年4月20日、7月8日下午召開，由行政院謝長廷院長兼永續會主任委員主持。

19次委員會議，首先針對經濟部「水資源永續發展政策規劃」，及氣候變遷暨京都議定書因應小組所提「溫室氣體減量推動方案（初稿）」2案，進行討論，並達成下列決議。

(一) **水資源政策部分**：應朝水資源開發利用總量管制，及枯水季用水零成長2方向規劃。另考量產業政策及水權調整，涉及國家整體長期發展，應由行政院召集各部會組成專案小

組，審慎檢討並規劃相關配套措施。短期措施，如教育宣導、省水器材設備、節水宣導等，原則可行，請各相關部會負責推動。

##### (二) 「溫室氣體減量推動方案（初稿）」，依委員意見修正。

委員會同時採納委員建議，日後有關國家重大之交通建設，應納入永續會討論，同時將交通部長列為永續會委員。

20次委員會議，謝院長首先指出，永續會成立已近8年（86年8月成立），永續發展相關重要文件，已接近完備。未來本會除討論及審議國家永續發展相關重要議案之外，如何協助地方共



■ 第19次委員會議召開情形。  
The 19<sup>th</sup> NCSD Assembly.

## 1.1 Recent Developments in the NCSD

### Major Construction Plans Enter Council Agenda

The National Council for Sustainable Development held its 19th and 20th Assemblies on 20 April 2005 and 8 July 2005, presided by then Executive Yuan Premier Frank Hsieh.

The 19th NCSD Assembly initiated the first formal discussion on the “Water Resource Sustainable Development Policy Plan” drawn up by the Ministry of Economic Affairs, and the “Greenhouse Gas Reduction Promotion Plan (draft)” put forth by the Climate Change and Kyoto Protocol Response Working Group. Under the first

topic of water resources, it was decided that water resource policy should work toward two goals: total quantity control of water resource development and utilization; and zero growth in water use during the dry season. As industry policy and water rights adjustments concern the nation's overall long-term development, the Executive Yuan convened working groups of all ministries to carefully discuss and plan relevant measures. Each agency is responsible for execution of feasible short-term measures such as water conservation equipment and education.

同推動永續發展，促成中央與地方的行動接軌，將是今後重要工作。

當次會議並針對3項議案進行審議，包括：經濟部「國光石化公司雲林石化科技園區投資案及台塑鋼鐵投資案」、「全國能源會議辦理情形及後續推動事宜」，以及交通部「邁向永續發展的交通運輸施政」。針對全國能源會議，委員會決議未來每3年召開一次能源會議，適時因應國內外情勢變動，檢討能源及產業政策。

委員會並通過「召開國家永續發展會議臨時動議案」，於95年比照「青年國是會議」模式辦理。國家永續發展會議由永續會主辦，環保署規劃辦理。

Under the second topic, the NCSD made recommendations to revise the "Greenhouse Gas Reduction Promotion Plan (draft)." The NCSD also heeded members' recommendations to list the nation's main transportation infrastructure among the topics of discussion. The Ministry of Transportation and Communications was accordingly made a member of the NCSD. During the 20th NCSD Assembly, Premier Hsieh pointed out that since its establishment eight years ago (August 1997), the National Council for Sustainable Development is now close to completing some key documents concerning sustainable development. In addition to discussing and deliberating issues integral to national sustainable development, part of the NCSD's future work involves finding ways to support local and collective promotion of sustainable development, and get central and local governments on the same track.

The NCSD also engaged in in-depth discussion on three topics: Ministry of Economic Affairs' "Investment Plan for Kuo Kuang Petrochemical Technology Corp., Yunlin Petrochemical Technology Park and Formosa Plastics and

## 修正設置要點與委員改組

為擴大永續會參與層面，並全面提升永續會功能，行政院再次修正永續會設置要點。委員人數由35位，增加至37位。其中政府機關委員及非政府機關委員各增加1位，分別由交通部長及1位社會團體代表出任。

另為回應國際對氣候變遷及溫室氣體減量的重視，於現行的8個工作分組之外，增加「氣候變遷暨京都議定書因應小組」，全面因應及推動國內溫室氣體減量措施。同時為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為國土與交通工作分組，增聘交通部長為共同召集人。永續會組織圖及委員名單，詳見附錄1、2。

Steel" and "Status of Holding the National Energy Conference and Follow-Up Affairs", as well as the Ministry of Transportation and Communications' "Sustainable Development Transportation Policy." Council members also decided to hold a National Energy Conference energy conference every three years to discuss energy and industry policies, and respond to related developments in Taiwan and abroad in a timely manner.

The NCSD approved of a measure stipulating guidelines for convening impromptu National Sustainable Development meetings based on a model set by the Youth National Affairs Conference. National Sustainable Development meetings are held by the NCSD and planned by the Environmental Protection Administration.

## Installation Guidelines Revised, Council Members Reorganized

To broaden participation in the NCSD and enhance its functions, the Executive Yuan has once again revised the Guidelines for Installing the National Council for Sustainable Development. The number of members has



## 1.2 頒發第二屆國家永續發展獎 鼓勵全民參與

**永**續會期望透過頒發「國家永續發展獎」，選拔及表揚對永續發展有實質貢獻的單位，做為各界學習的楷模，鼓勵全民一起投入永續發展工作，使永續發展能在地化與生活化，實現永續台灣的願景。

本年度評選活動共計32個社區、24所學校、4家企業、5個社團，以及14項行動計畫執行機關參加初選。參選單位經永續會相關分組，依據評

選表揚要點相關規定，邀請分組委員進行初選書面審查。

再由永續會邀請永續會委員、諮詢委員及分組委員，組成各類獎複選委員會，實地至初選勝出單位訪察，聽取參選單位簡報、實地勘查、交流座談，最後再召開決選會議，選出15個具實績貢獻單位，包括3個社區、3所學校、3家企業、3個社團以及3個行動計畫。

increased from 35 to 37. The two additional seats are designated for one member from a government organization and one from a non-government organization. These positions were filled this year by the Minister of Transportation and Communications and an NGO representative. In response to international emphasis on climate change and greenhouse gas reductions, a Climate Change and Kyoto Protocol Response Working Group has been established alongside the existing eight working groups. This new Working Group's goal is to provide an overall

response and promote domestic greenhouse gas reduction measures. Another change is the renaming of the National Land Resources Working Group to the National Land and Transportation Working Group. The renaming was part of a comprehensive response to the impact of transportation infrastructure on planning and development of national land. The Minister of Transportation and Communications was invited onboard as the group's convener. An organizational diagram of the NCSD and the names of council members are shown in Appendices.

## 1.2 2<sup>nd</sup> National Sustainable Development Awards Encourage Citizen Participation

The NCSD hopes the winning organizations chosen for substantial contributions to sustainable development serve as role models for others to learn from. This will encourage the entire citizenry to work in tandem for sustainable development so as to manifest local and vibrant visions for a sustainable Taiwan.

In this year's awards a total of 32 communities, 24 schools, 4 enterprises, 5 NGOs and 14 government implementing agencies participated in the preliminary selection. NCSD working groups first

made a preliminary paper audit of each organization according to selection guidelines. NCSD members, an advisory committee and working group members then form selection committees for each type of award, which then make an onsite survey of preliminary winners. After listening to briefings by the contenders, making onsite inspections, and meeting to discuss award selection, a final meeting is held to select three winners in each category for a total of fifteen outstanding groups.

表1：第二屆國家永續發展獎得獎單位

Table 1. 2<sup>nd</sup> National Sustainable Development Award Recipients

獎項 Category	得獎單位 Recipient
永續社區獎 Sustainable Community	嘉義縣民雄鄉三興社區（鄉村型社區） Sansing Community, Minsitung Township, Chiayi County (Rural Community)
	台南縣後壁鄉長安社區（鄉村型社區） Chang-an Community, Houbi Township, Tainan County (Rural Community)
	台北縣中和市世紀皇家社區（都會型社區） Century Royal Community, Jhonghe City, Taipei County (Urban Comanity)
永續教育獎 Sustainable Education	宜蘭縣慈心華德福教育實驗國民小學 Ci-Xing Waldorf Elementary School, Yilan County
	南投縣瑞竹國民中學 Ruijhu Junior High School, Nantou County
	台南縣南化鄉瑞峰國民小學 Ruijhu Junior High School, Nantou County
永續企業獎 Sustainable Enterprise	聯華電子股份有限公司 United Microelectronics Corp.
	統一超商股份有限公司 President Chain Store Corporation
	大同股份有限公司板橋廠 Tatung Company's Banciao plant
永續社團獎 Sustainable NGO	主婦聯盟環境保護基金會 Homemakers' Union and Foundation
	勵馨社會福利基金會 Garden of Hope Foundation
	中華民國企業永續發展協會 Taiwan Business Council for Sustainable Development
永續發展行動計畫執行績優獎 Sustainable Implementing Agency	設置永續教育推動中心計畫（環保署綜合計畫處） Plan to Establish Sustainable Education Promotion Center (Dept. of Planning, EPA)
	建構及整合國家生物多樣性資料庫及資訊網計畫（營建署太魯閣國家公園管理處） Plan to Build and Integrate National Biodiversity Database and Information Network (Taroko National Park Headquarters, Construction and Planning Agency, MOI)
	推動廚餘回收及利用計畫（環保署環境督察總隊） Food Waste Recycling Promotion Plan (Bureau of Inspection, EPA)

## 1.3 簽辦國家永續發展會議

### 凝聚全民共識

為落實永續台灣理念，陳水扁總統於94年7月5日與環保團體座談會上，允諾將召開「國家永續發展會議」。永續會第20次委員會議決議：「國家永續發展會議」由永續會主辦，環保署規劃。

國家永續發展會議訂於95年4月21~22日（地球日）召開，籌備工作分為議題蒐集、分區及預備會議，與召開大會3個階段。因係首次召開國家級永續發展會議，議題研擬極為重要。同

時為了強化非政府組織（NGO）及民衆的參與機制，建立日後相關會議辦理模式，規劃：

- (一) 由政府部門召開縣市座談會；
- (二) 由民間團體召開區域性論壇；
- (三) 於永續會網站設置永續發展專案網頁，供民衆反映意見等3個方式。透過由下而上的機制蒐集議題，提昇會議議題的深度與廣度，同時凝聚社會共識。

議題蒐集第一階段，環保署於94年11月及12



月間，陸續於25個縣市，與縣市政府合辦「國家永續發展會議議題蒐集會議」。邀請當地關心環境之產、官、學、民意代表、社會團體等各界人士，針對永續環境、永續資源及永續社會等範疇，共同討論我國未來推動永續發展應探討之議題。

議題蒐集會議共蒐集900多項議題，包括：在國家發展願景方面，期能從組織改造、環境權入憲、建立國家永續發展願景及指標著手，重要議題包括國土永續規劃、能源政策、廢棄物處理、永續交通、水資源、綠色採購及消費、生物保育、海洋及海岸保護、工業區生態化、健康人口及社區、綠色產業、永續教育等

事項。相關資料進一步彙整分析後，將提供日後相關會議討論。

第二階段，由環保署協助台灣生態學會等6個環保團體，於95年1月8日至17日於北、中、南、東及離島區域，辦理6場次之會議或論壇，藉由第三部門的意見，檢視各項國家永續發展相關政策，追求國家的永續發展。

「國家永續發展會議」大會，將邀請各界關心國家永續發展之產、官、學、民意代表及團體代表等人士參與，以永續環境、永續經濟、永續社會為範疇，交換意見凝聚共識，作為未來政府推動國家永續發展工作，以及相關政策研擬的重要參考依據。

## 1.3 National Sustainable Development Conference

### Consolidate Citizen Consensus

During a meeting with environmental NGOs on 5 July 2005, President Chen Shui-bian pledged to convene a National Sustainable Development Conference. The purpose of this national conference is to firmly put sustainable development concepts into practice in Taiwan. It was decided during the 20th NCSD Assembly that the NCSD shall hold the National Sustainable Development Conference while the EPA shall help with planning.



The National Sustainable Development Conference will be held on 21-22 April 2006 (Earth Day). Preparation work includes meetings to gather, organize and prepare topics, as well as holding the three main stages of the Conference. As this is the first such forum on sustainable development at the national level, deliberation and selection of topics is very important. Follow up meetings will be held to strengthen participation mechanisms for NGOs and citizens. Three methods have been planned to gather topics: 1) government departments will convene forums at the county and municipality level, 2) NGOs will convene regional forums, and 3) the NCSD will establish a website on which citizens can write in suggestions for topics. This

國家永續發展會議議題蒐集會議(苗栗縣)。  
Meeting to gather topics for National Sustainable Development Forum (Miaoli County).



環保團體區域論壇(離島地區)。  
Environmental NGO regional forum. (outlying islands)

bottom-up strategy of gathering topics for discussion will increase the breadth and depth of topics as well as consolidate consensus among citizens.

At the first stage the EPA held meetings throughout Taiwan's 25 counties and municipalities during November and December 2005 to collect topics for discussion for the National Sustainable Development Forum. People from all circles concerned about the environment were invited including industry, academia, public representatives, and civil groups. Attendees were asked to discuss sustainable development, sustainable resources, and sustainable society, and decide which issues should be discussed during the upcoming forum concerning Taiwan's future promotion of sustainable development.

From these local meetings, over 900 issues were listed. A general consensus was reached on the vision for national development, which should begin with reorganization, including environmental right in the constitution, and establishing a national sustainable development vision and sustainability indicators. Other important issues brought up during the meetings included sustainable planning of national land, energy poli-

cy, waste management, sustainable transportation, water resources, green procurement and consumption, biology conservation, marine and coastal protection, integrating industrial parks with ecological processes, health of populace and communities, green production, and sustainable education. After compiling and researching related information, these issues will be provided for discussion during the forum.

The second stage then consisted of the EPA assisting six environmental NGOs including the Taiwan Ecology Society to hold six meetings or forums from 8 to 17 January 2006 in five regions representing outlying islands, and northern, central, southern, and eastern Taiwan. These meetings will review policies related to national sustainable development from the perspective of the third sector (NGOs and NPOs).

On the day of the National Sustainable Development Forum, all individuals and parties concerned with national sustainable development will be asked to exchange views and reach a consensus to serve as an important reference for future government promotion of national sustainable development and formulation of related policies.



## 1.4 編製綠色國民所得帳

### 整體檢視經濟及環境發展

綠色國民所得帳，一般稱為環境與經濟綜合帳，主要在將人類經濟行為與環境的互動，納入國家經濟活動成果一併考量，以真實反應經濟活動對於自然環境及資源的利用程度。積極編製綠色國民所得帳，除可作為永續發展的指標，亦可作為經濟政策與環境政策制訂及分析的基礎，永續願景組因此編製綠色國民所得帳，希望藉此達到下列目標：

一、建立經濟體系對環境體系影響資訊；

二、使經濟發展成果能更有效地評估與衡量；  
三、完整表現人民生活及福利水準，作為永續發展指標。

#### 編製緣起

為落實憲法揭橥的「經濟與科學技術發展，應與環境及生態保護兼籌並顧」基本國策，做為衡量國民生活福祉、生態平衡及環境發展指標，行政院於87年即決定分短、中、長期三階段，編

## 1.4 Compiling Green GDP

### Balance Economic and Environmental Development

Green GDP is a general term for an integrated look at the environment and the economy. It considers the interaction between human economic activity and the environment in balancing out the results of a nation's economic activities to more realistically reflect the degree to which economic activities affect the natural environment and resources. Active compilation of Green GDP, in and of itself, is not only an indicator of sustainable development, but also builds a foundation for drawing up economic and environmental policies. The Sustainable Vision Working Group hopes to achieve the following goals in compiling the Green GDP:

1. Establish information on how the economic system impacts the ecosystem
2. More effectively evaluate and balance the results of economic development
3. Comprehensively portray standards of living and welfare as sustainable development indicators

#### Origins of Green GDP

Basic national policy as written in the constitution states that environmental and ecological protection should be of equal concern to developing economy and science and technology. In developing indicators to measure the nation's livelihood and welfare, ecological balance and environmental development, the Executive Yuan decided in 1998 that it would begin short-, medium- and long-term stages of compiling Green GDP. In the short-term, the EPA first launched a trial plan called the Indicator of Sustainable Economic Welfare (ISEW) to serve as a reference for compiling the Green GDP. In the medium-term the Council for Economic Planning and Development (MOEA, Executive Yuan) coordinated related agencies to establish basic data for compiling Green GDP, and to begin organizing and testing the plan. For the long-term, the Directorate-General of Budget, Accounting and Statistics, Executive Yuan, was responsible for annual compilation work as well as officially announcing Taiwan's Green GDP.

製綠色國民所得帳。短期由環保署先行試編「臺灣地區永續經濟福利指標（ISEW）」，作為編製綠色國民所得帳之參據。中期由行政院經濟建設委員會協調相關部會，建立綠色國民所得帳基礎資料，進行彙整與試編工作。長期則由行政院主計處負責按年編製，正式發布我國綠色國民所得帳。綠色國民所得帳編制工作，同時列為「國家永續發展行動計畫」重點工作項目之一。

綠色國民所得帳所需資料項目極為龐雜，且涉及諸多不同專業領域。為建立適合我國國情的整體帳目、編算理論與架構，永續願景組除深入蒐集及研析國際各編製系統及各國編製狀況之內涵，同時參考國內外專家學者及相關機關之意見，於92年底完成架構規劃。後以該架構為藍本，召開200餘次之國內外研討會，最後修正完成我國綠色國民所得帳架構（圖1）。

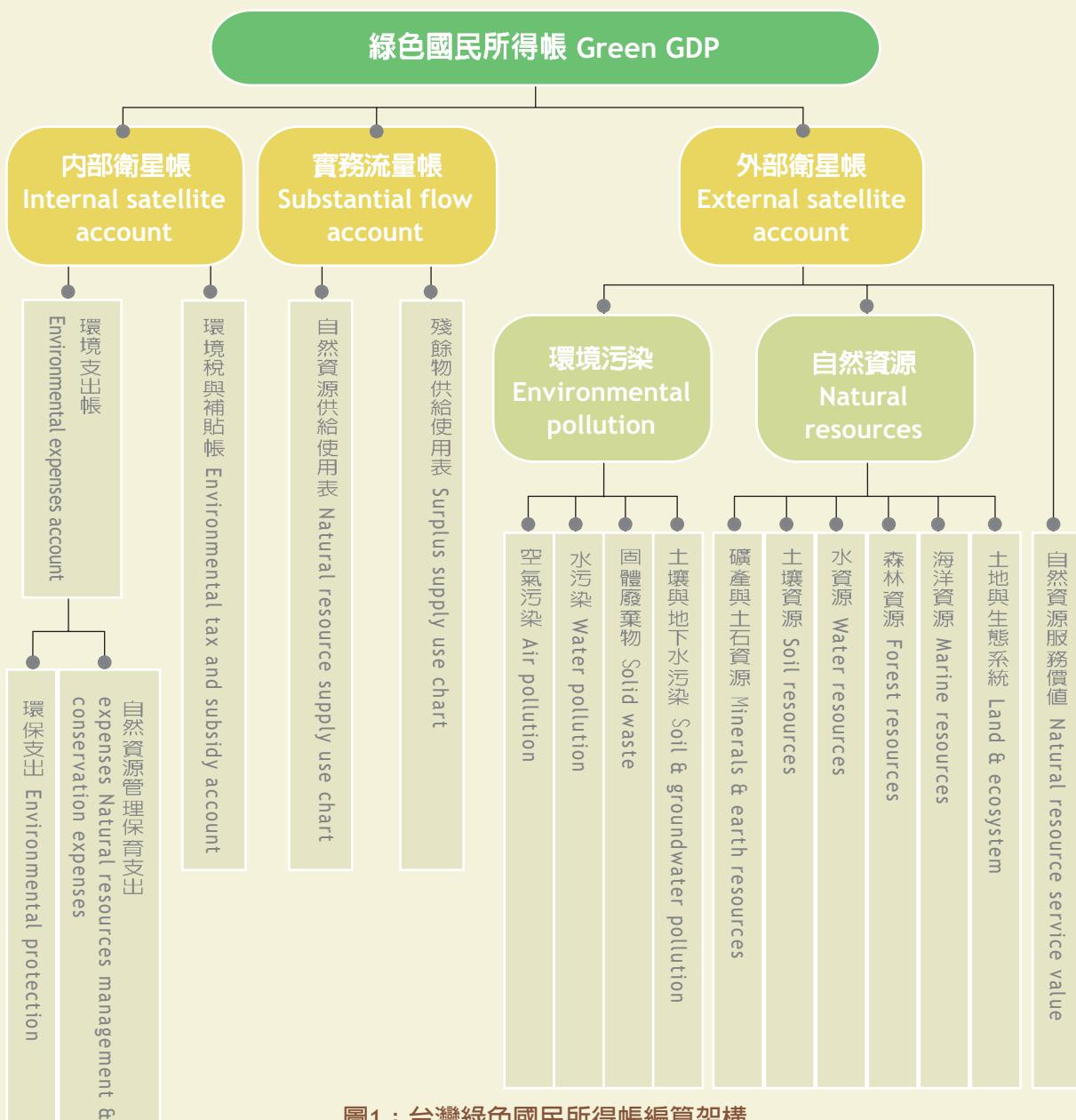
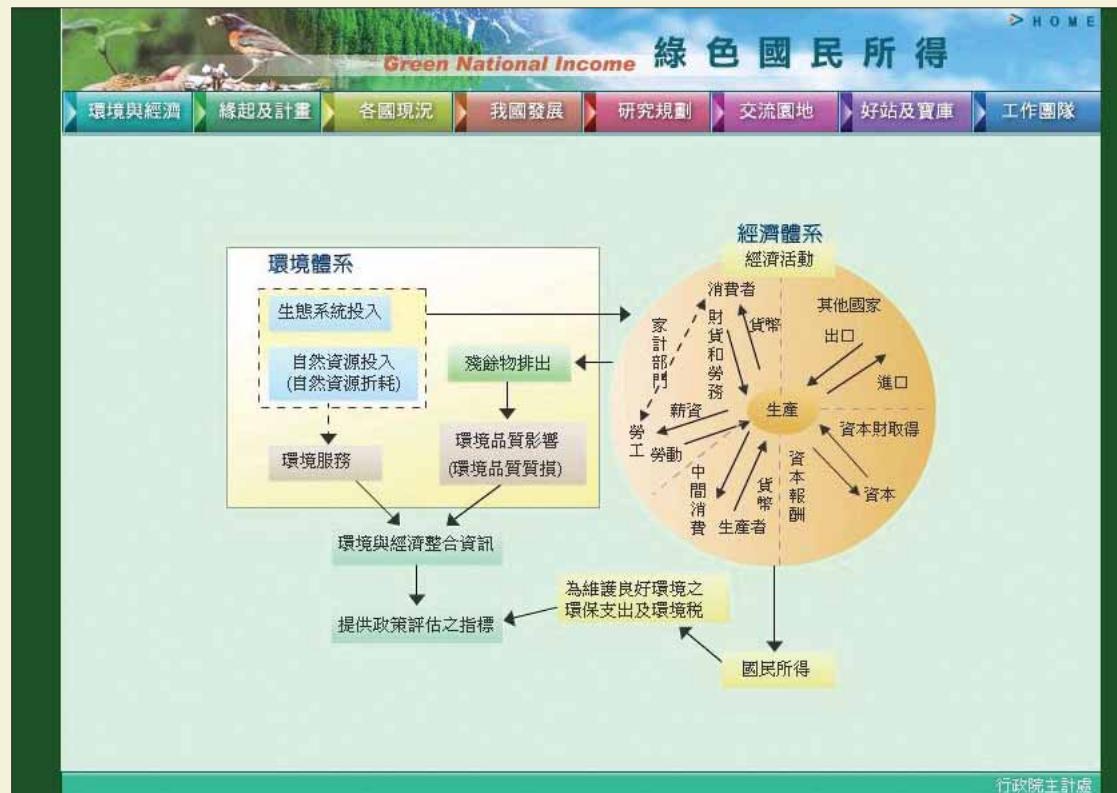


圖1：台灣綠色國民所得帳編算架構  
Chart 1. Taiwan's Green GDP framework



■ 綠色國民所得網站。  
Green GDP website.

Green GDP work is also listed as one of the most important parts of the National Sustainable Development Plan.

The types of data required to calculate Green GDP are numerous and complicated and fall under the realm of many different fields. To establish overall account details, calculation theory and framework suited to Taiwan, the Sustainable Vision Working Group scrupulously gathered and analyzed international compilation systems and the implications of each nation's compilation methods. Finally after referring to recommendations by domestic experts and scholars and related organizations, framework planning was completed in 2003. Over 200 domestic and foreign discussions were convened to review this prototype and make final revisions to the Green GDP framework (see Chart 1).

### Achievements

From January 2001 to September 2005, the Sustainable Vision Working Group has made the following achievements:

1. Gathered and analyzed data dispersed among various agencies, completed expansion of related accounting charts and improved quality of data
2. Promoted inclusion of related organizations' data collection in administrative plans, so as to obtain statistical data on regional environmental pollution
3. Completed international theory data, including related U.N. and E.U. reports and research, and in-depth discussion of each nation's compilation of Green GDP
4. Planned Green GDP comprehensive framework and successive promotion strategy; completed five versions of conclusion report,

## 推動成果

由90年1月至94年9月，永續願景組計完成下列之成果：

- 一、彙集研析分散於各機關之施政資料，完成相關帳表擴編，並提升資料品質。
- 二、推動相關機關將資料彙集納入施政計畫，以取得區域性環境污染統計資料。
- 三、完成國際理論資料，包括聯合國、歐盟相關報告研究，以及各國研編實務探討。
- 四、規劃完成綠色國民所得帳完整架構及分期推動策略，完成5版編製結果報告，以及中英文網站建置及電子書編製。
- 五、建立環境價值矩陣及指標，提升研編品質。

根據94年推算完成之「92年台灣地區綠色國民所得試編報告」，92年台灣自然資源消耗及環境品質折耗合計占NDP比率，由90年之1.27%降至1.03%，且綠色GDP較91年提高686億元，顯示國內生態環境資源耗損漸趨改善。

## 具體績效

- 一、廣邀國內外專家學者與相關部會共同參與，融合國際理論及我國環境資源現況資訊，具有穩健性、前瞻性及國際性。
- 二、綠色國民所得帳將龐雜且分散於各機關之環境資訊，經由部會與專家學者之專業意見，以有意義的帳表架構及資料項目呈現，對決策有極大助益。
- 三、推動「環境價值矩陣及指標研究計畫」，充實成本及決策資訊：共完成38項成本推估、13類指標項目編製、自然資源供給使用表、水污染之經濟因素影響模型之建置等草案，可據以估算各年環境污染之貨幣價值，提昇資料品質。
- 四、以規劃完整架構推動帳表研析，呈現自然資源及環境污染全貌。經與41個機關研討，並據其所提供之資料研析，經專家學者審查及召開兩場研討會後，計完成12類95種帳表，占完整帳表81.20%（詳表2）。

established Chinese-English website, and compiled e-paper

5. Promoted establishment of environmental value matrix and indicators, raised the quality of compilation work.

Based on calculations completed in 2005 on the "2003 Taiwan Area Green GDP Trial Report," in 2003 the ratio of net domestic product accounted for by both depletion of natural resources and degradation of environmental quality had decreased from 1.27 percent in 2001 to 1.03 percent in 2003. Meanwhile Green GDP was NT\$68.6 billion greater than in 2002, attesting to gradual improvement in terms of consumption of domestic ecological and environmental resources (see Chart 1).

### Concrete achievements

1. Domestic and foreign experts and scholars

and related agencies were invited to help integrate international theory into information on the current status of Taiwan's environmental resources to increase its reliability, forethought and international relevance.

2. Green GDP draws on environmental information that is complicated and dispersed across various agencies. Professional advice of agencies, experts and scholars is heeded so that meaningful account framework and data items are readily apparent, thereby greatly benefiting policy-making.
3. Carried out "Environmental Value Matrix and Indicator Research Plan" to provide substantial cost and policy-making information, including 38 cost estimations, 13 indicators, a natural resources supply/use chart, and a draft modeling of the impact of economic factors on water pollution. This information can be



因編製內涵係以完整規劃架構為基礎，且擴編自然資源支出及溫室氣體2節，不但能與國際接軌，對決策應用與學術研究更提供完整且符合需求之資訊。

## 未來展望

綠色國民所得帳研編及分析目標，在於充分揭露環境受經濟發展影響之實況，以提供經濟

及環境發展之決策參據，使臺灣成為經濟與環境兼顧的綠色矽島。惟受限資料來源，尚有森林、海洋及土地與生態資源，未能完整統計。未來除積極推動相關機關建置關鍵資料，擴編綠色國民所得帳外，將與部會及專家學者研商，規劃環境污染對環境品質貨幣化評估法則及數值，進行深入簡明指標之建置，以建立更完整的綠色國民所得帳系統，呈現我國環境受經濟發展影響層面。

表2：帳表達成率

Table 2. Account compilation achievement rate

年度 Item	92年 2003	93年 2004	94年 2005
規劃帳表 Planned accounts	109	109	109+8=117
完成帳表 Completed accounts	41	67	95
達成率 Achievement rate	43.12%	61.47%	81.20%

referred to when evaluating the monetary cost of environmental pollution each year so as to enhance the quality of data.

4. Planned comprehensive framework and account analysis to show the comprehensive status of environmental resources and environmental pollution.

Experts and scholars were asked to examine data analysis provided by 41 discussions among government agencies. Two discussions were then convened during which 95 kinds of accounts in 12 categories were recorded, accounting for 81.20% of all accounts (see Chart 2). As compilation is based on a comprehensive planning framework, and includes natural resources expenses and greenhouse gases, this not only allows Taiwan to get on track with international trends, but also provides comprehensive information for policy-making and academic research.

## Future Visions

The main goal of compiling and analyzing

Green GDP is to fully reveal the true impact of economic development on the environment and to use this information as a reference when deciding policies concerning economic and environmental development. This will help the nation fulfill its ambition of becoming a Green Silicon Island with equal concern for economy and environment. There are still some forest, marine, soil and ecological resources that are not completely accounted for due to limited data sources. In the future in addition to actively pushing related agencies to establish core data and expand compilation of Green GDP, the NCSD will also actively discuss with officials, experts and scholars regarding the establishment of principles and values for evaluating monetary cost of environmental pollution in terms of effects on environmental quality. The NCSD will also establish thorough and concise indicators so as to establish a more comprehensive Green GDP system and clearly show the extent to which economic development influences Taiwan's environment.

## 1.5 研訂生態旅遊白皮書

### 妥善推動生態旅遊

近年來，以自然生態體驗為訴求的遊程活動盛行，永續會國土與交通組為防範錯誤的生態旅遊觀念對環境帶來危害，研擬「生態旅遊白皮書」，並訂定多項管理機制以為因應。

#### 生態旅遊白皮書

根據國土與交通組永續發展行動計畫，生態旅遊推動須在國土保育區有效總量的管制之下，以生態系土地使用方式，結合社區及生活環境資源，推動自然及人文結合的旅遊活動。

鑑於國內生態旅遊的蓬勃發展，以及生態旅遊對台灣當前整體發展的重大影響，國土資源組

認為有必要從國土資源保育的角度，研擬「生態旅遊白皮書」。積極採取必要的管理與防範措施，避免具備優良條件的旅遊據點過度開發，不僅衝擊生態環境及當地人文，亦損及生態旅遊的永續經營。

國土與交通組透過與專家學者的通力合作，於93年9月完成白皮書草案撰擬。白皮書除明訂生態旅遊的定義、精神與目標外，也從永續發展角度，更具體地規劃生態旅遊相關政策，並提出後續的管理計畫、方案、與建議，作為施政參考，期使生態旅遊能永續經營之外，更能成為推動生態保育及文化保存的助力。

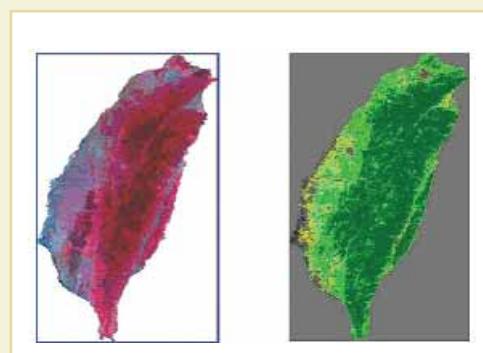
## 1.5 Publishing White Paper

### Promote Sound Ecotourism

Recent years have seen growth in tourist activities that involve direct experiences with natural ecology. To prevent environmental damage due to misunderstandings of the concept of ecotourism, the NCSD National Land and Transportation Working Group has drafted the Ecotourism White Papers and has developed many management mechanisms.

#### The Ecotourism White Paper

According to the National Land and Transportation Working Group's Sustainable Development Action Plan, ecotourism promotion efforts should implement effective total quantity controls in national land conservation areas. Tourist activities should integrate nature and culture, and should be promoted that in a way that fosters ecological land use methods and integrates communities and environmental



利用衛星影像進行全島綠覆率調查成果。  
Satellite imagery survey of vegetation cover in Taiwan.

resources.

In light of prolific development of ecotourism and its strong influence on Taiwan's current overall development, the National Land and Transportation Working Group believes that a national land resource conservation approach should be observed in its formulation of a Ecotourism White Paper. It actively adopted the necessary management and prevention meas-



## 遴選生態旅遊地點

依據生態旅遊白皮書，在永續國土保育原則下，應鼓勵自然體驗、提供健康旅遊環境，改善社區文化經濟，並推動生態旅遊產業。

為達成此目標，國土與交通組首先籌組跨部會「生態旅遊地遴選及督導小組」。小組成員包括生態旅遊主管機關（如行政院農業委員會、行政院國軍退除役官兵輔導委員會、行政院原住民族委員會、交通部觀光局、教育部、內政部營建署等）、專家學者，以及相關團體、優良性生態旅遊社區及生態旅遊產業界代表。

遴選對象包括中央機關、地方政府及民間經營之生態旅遊地，以現有社區或團體經營生態旅遊規劃及經營，且願意接受輔導者為優先考量。經遴選及督導小組召開2次審查會議，初評結果如下：

一、由中央機關管理列入示範之18處生態旅遊地，為當然之生態旅遊地，優先納入94年度生態旅遊輔導團輔導對象。

二、由地方政府管理之25處，選擇績效較優之

50%共13處進入複評，由遴選及督導小組實地複評查訪後，於95年2月公布名單。

## 成立生態旅遊輔導團

此外，也依據生態旅遊白皮書，配合成立「生態旅遊輔導團」，根據各生態旅遊景點的特殊生態環境、生物多樣性資源、地景、原住民文化、古蹟，以及各區域之社會經濟結構，提供有關規劃與管理的專業建議，協助各地發展生態旅遊。

94年度輔導地區，包括台灣地區之國家公園、國家風景區、國家森林遊樂區、其他公部門所屬之生態旅遊地，以及其毗鄰社區之生態旅遊規劃執行等，各階段之諮詢服務，並綜合提出生態旅遊發展方向建議。輔導團並選出墾丁國家公園社頂地區、陽明山國家公園魚路古道、太魯閣國家公園同禮地區、林務局滿月圓森林遊樂區，阿里山國家風景區達邦部落生態旅遊等5處，於94年底辦理成果發表會，提供其他生態旅遊地相關管理及旅遊推廣之參考。

ures to avoid overdevelopment of tourism due to lucrative conditions, which would not only impact the ecological environment and local culture but would also impair sustainable management of ecotourism.

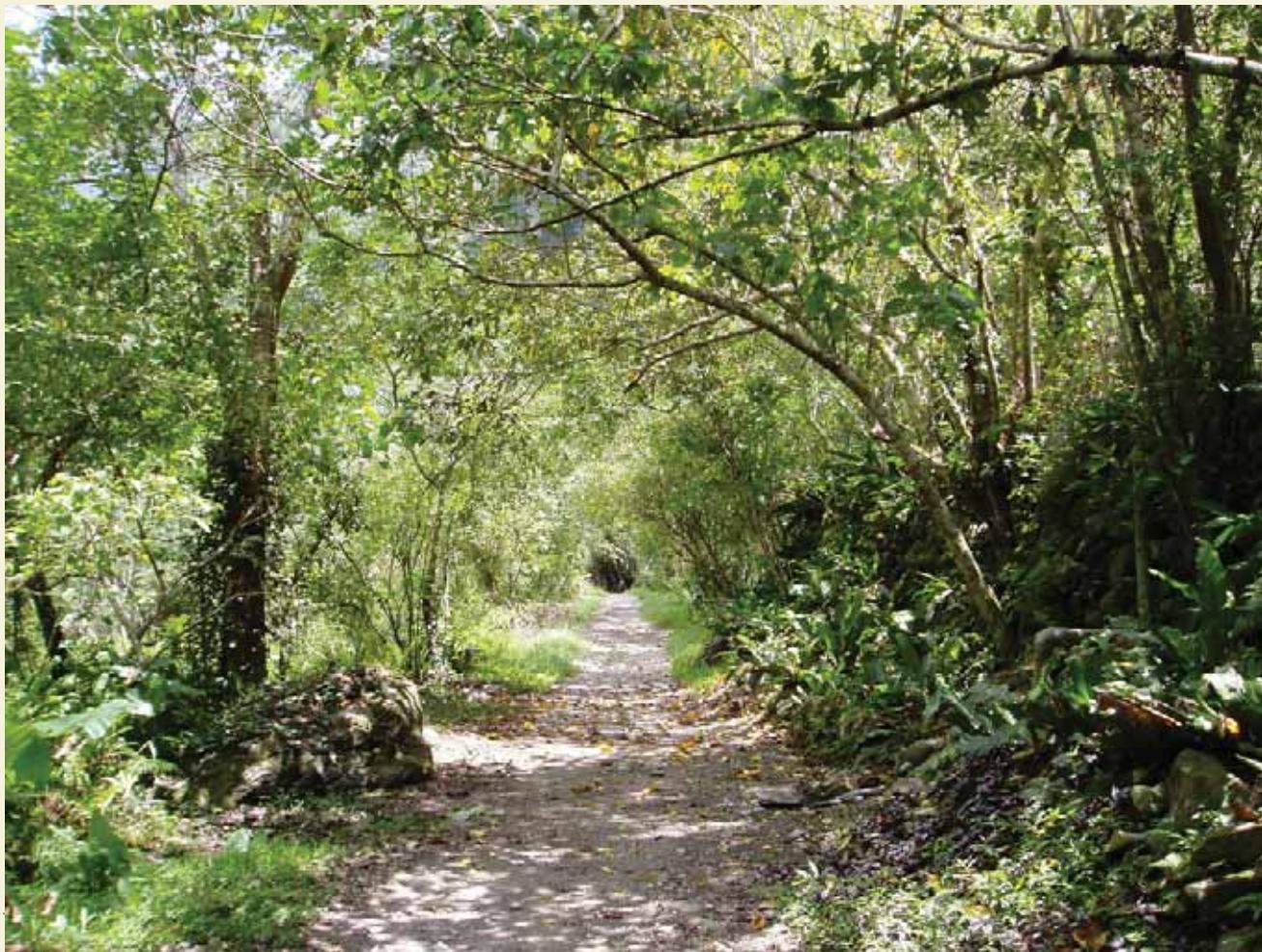
The National Land and Transportation Working Group teamed up with experts and scholars to finish the first draft of the White Paper in September 2004. In addition to stating the definition, spirit and objectives of ecotourism, the White Paper conveys tangible plans for ecotourism related policies from the perspective of sustainable development. The document also outlines follow-up management plans, programs and recommendations to serve as a reference for policy administration. This ensures sustainable management of ecotourism and provides an aid for promoting ecological conservation and

cultural preservation.

## Choosing Ecotourism Sites

The Ecotourism White Paper outlines principles of sustainable national land conservation. Under these principles, nature experiences should be encouraged and healthy environments should be made available for tourism purposes to improve communities, culture, and economy, and to promote the ecotourism industry.

To achieve these goals, the National Land and Transportation Working Group first organized a cross-agency Ecotourism Site Selection and Supervisory Taskforce. Taskforce members consist of authorities in charge of ecotourism [Council of Agriculture, Veterans Affairs Commission, Council of Indigenous Peoples, Tourism Bureau (Ministry of Transportation and Communications), Ministry



■ 墾丁生態旅遊。(國土資源組提供)

Ecotourism in Kenting. (photo: National Land and Transportation Working Group)

of Education, and Construction and Planning Agency (Ministry of Interior)], experts, scholars, as well as representatives from related NGOs, outstanding ecotourism communities, and ecotourism enterprises.

Candidates for selection of leading ecotourism sites include ecotourism sites operated by central agencies, local governments, and private enterprises. Priority is given to existing community or NGO managed ecotourism plans and operations, and to those willing to accept guidance. The taskforce held two review meetings with the following preliminary results:

1. 18 ecotourism sites managed by central agencies as demonstration sites, as

obvious/essential ecotourism sites, prioritized for inclusion into the 2005 Ecotourism Advisory Board.

2. 25 ecotourism sites managed by local governments, selecting 50% (13) of the top performers to enter the second round of selection after onsite inspection by the taskforce. The final selection will be announced in February 2006.

#### **Ecotourism Advisory Board Established**

The Ecotourism White Paper also calls for the establishment of an Ecotourism Advisory Board. Based on the unique ecology, biodiversity, landscape, indigenous culture, historical remnants,



## 1.6 研訂發展條例

### 促進再生能源發展

為提高國內能源供應自主性，同時以發展清潔能源，因應聯合國氣候變化綱要公約降低溫室氣體排放的無悔策略，永續會資源及產業組積極投入再生能源的利用與開發。

#### 研訂「再生能源發展條例」

為更積極有效發展再生能源技術，行政院已審議通過「再生能源發展條例（草案）」，轉送立法院進行立法程序中。初步研擬子法草案約10項，未來將視條例草案立法進度配合修訂。「再

生能源發展條例（草案）」明定：

- (一)再生能源發展之經費來源、用途及基金運作方式；
- (二)再生能源發電裝置容量650萬瓩為獎勵總量上限；
- (三)電業具躉購再生能源電能，並提供並聯及停機維修期間所需電力等義務；
- (四)再生能源躉購費率；
- (五)太陽光電發電以示範計畫補助方式，採階段性推廣措施；

and regional socioeconomic structure of each ecotourism site, this Board assists in developing ecotourism at each site by providing professional recommendations on planning and management.

Sites that received advisory assistance in 2005 included national parks, national scenic areas, national forest recreation areas, ecotourism sites under public management, and adjacent communities' ecotourism programs. During each stage, the board provides advise on the overall

direction for ecotourism development. The advisory board selected ecotourism in five areas: Sheding area in Kenting National Park, Fish Road Historic Trail in Yangmingshan National Park, Tongli area in Taroko National Park, Full Moon Forest Recreation Area of the Forestry Bureau, and Tabangu Village in Alishan National Park Scenic Area. At the end of 2005, an event was held to display the board's achievements as well as provide as a reference for managing and promoting tourism at other ecotourism sites.

## 1.6 Drafting Statutes

### Prompt Development of Renewable Energy

The NCSD Resources and Industry Working Group is actively investing in use and development of renewable energy. Their goal is to increase independent power generation, develop clean energy, and proactively respond to the No Regrets greenhouse gas emissions reduction strategy set by the UN Framework Convention on Climate Change.

#### Statutes for Developing Renewable Energy

To more actively and efficiently develop renewable energy technology, the Executive Yuan has already ratified the Statutes for Developing Renewable Energy (draft), which has been sent to the Legislative Yuan to enter the lawmaking procedure. Ten bylaws have been preliminarily drafted to be further revised during the lawmaking process. The Statutes for Developing

(六)再生能源熱利用獎勵補助辦法之

授權依據：

(七)再生能源發電設備裝置容量達一定規模以上之自用發電設備設置者，得準用「電業法」相關規定，取得工程所需用地等。

### 補助建置再生能源設施

自89年度起，展開「再生能源五年示範推廣計畫」，補助政府機關、學校及民間設置再生能源設施，陸續公布施行太陽能熱水系統、太陽光電及風力發電等示範推廣補助辦法，並依



台朔重工雲林麥寮風力發電系統。  
Formosa Heavy Industries Corp.'s Wind Power System in Yunlin, Mailiao.

Renewable Energy (draft) stipulate: 1) source, uses and fund operations for renewable energy development, 2) 6500 kilowatts as total capacity upper limit incentive on renewable energy electricity generation, 3) electricity industry may buy wholesale renewable energy, and provide parallel connection and necessary power in the event of shutdowns during maintenance, 4) renewable energy buy wholesale rates, 5) methods for subsidizing photovoltaic power generation demonstration plans in stages, 6) authorization of incentive subsidy regulations for use of heat from renewable energy sources, and 7) renewable energy power generation facilities with capacity over a certain scale may obtain land for installation of private power generation equipment through relevant regulations in the Electricity Act.

### Subsidizing Establishment of Renewable Energy Facilities

The Renewable Energy Five-Year Demonstration and Promotion Plan has been underway since 2000. This plan subsidizes government agencies, schools and private enterprises to install renewable energy equipment. Subsidization regula-

tions have successively been promulgated for solar water heating systems, photovoltaic systems, and wind power. The Statute for Upgrading Industries provides guidelines for financial incentives such as investment tax credits and low-interest loans to speed up the dismantling of old power plants. Related projects are enjoying annual growth and to date subsidization has already been approved for 5,037 solar water heaters, 25,000 square meters of photovoltaic panels and 165 photovoltaic systems with a total power generation of 1,703 kilowatts.

In terms of promoting the installation of wind farms, photovoltaic demonstration systems and demonstration solar villages, initial progress has been made on resource surveys, technology guidance, demonstration subsidies and advocacy efforts. This has led to a boom in domestic wind power applications. At present, some private sector enterprises are aggressively developing wind power generation on a large scale on Taiwan's west coast, where nearly NT\$20 billion has been invested toward a total development capacity of over 300 megawatts. Taipower Co. has drawn up a Ten-Year Wind Power



■ 經濟部長何美玥主持節約能源服務團授旗儀式。  
Minister of Economic Affairs He Mei-yue presides over an energy conservation service team flag hand-over ceremony.

「促進產業升級條例」提供投資抵減、加速折舊及低利貸款等財稅獎勵。各項設置案例均逐年成長，截至目前為止，計核准補助太陽能熱水器5,037件，太陽光電板面積2.5萬平方公尺，以及太陽光電系統補助165件，發電量1,703瓩。

在推動設置風力示範電場、太陽光電示範系統及陽光示範電城方面，透過資源勘查、技術輔導、示範補助與宣導推廣，已有初步成效，並帶動國內風力發電應用風潮。目前已有民間業者積極規劃於台灣西海岸大規模開發風力發電，預計

Development Plan, which will install at least 200 wind turbines between 2002 and 2011 for a total power capacity of over 300 Megawatts. This plan has already been approved by the Executive Yuan. Tainan County was selected from 17 county and municipal governments that applied for the "Solar Village Selection and Subsidy Work Implementation Plan." Tainan County is expected to receive NT\$150 million and complete the project by 2007.

#### Renewable Energy Technology R&D

To strengthen research and development of energy technology, the Resources and Industry Working Group coordinated with the Ministry of Economic Affairs and the National Science Council to carry out distributed renewable ener-

gy generation and parallel connection technology. Among the initiatives completed so far include a refuse derived fuel demonstration plant (1 tonne/hour), a biodiesel demonstration plant (50 tonnes/year), more efficient than 18% mono-crystalline solar cells, and urban electricity parallel-connection power regulators. To continue promoting the development and use of biofuels, research and development plans have been drawn up to develop biomass raw materials and use microbial stabilizer technology to develop biodiesel. Private technology companies are investing in the manufacture of solar cells and batteries.

#### Developing the Renewable Energy Industry

In the area of renewable energy industry, the

總投資金額近200億元，總開發容量達300百萬瓦以上。另台電公司亦擬定「風力發電十年發展計畫」，規劃於91年至100年間設置至少200部風力機組，總裝置容量達300百萬瓦以上，並已獲行政院核定通過。此外，「陽光電城評選及補助作業實施計畫」，已由17個申請縣市中，評選出台南縣，預估補助金額將達1億5千萬元，於96年底設置完成。

### 研發推廣再生能源技術

為加強能源科技研究發展及推廣應用，資源及產業組協調整合經濟部及國科會，進行廢棄物衍生燃料技術、生質能技術、高效能太陽光電技術，以及再生能源分散式發電並聯技術等開發工作。目前皆已開發完成垃圾衍生燃料示範系統（1噸／時）、生質柴油示範系統（50噸／年）、效能大於18%單晶矽太陽電池，以及市電並聯型電力調節器等。

此外，為持續推動生質燃料開發及利用，已將生質物料源開發，以及利用微生物固定化技術開發生質柴油納入研發計畫，並有民間科技公司

投入太陽電池晶圓與電池製造。

### 發展再生能源產業

發展再生能源產業方面，資源及產業組積極規劃我國「再生能源產業發展策略」，目前已完成並由相關機關據以辦理推廣應用、產業輔導及技術研發等事項，以建構國內再生能源產業。

在協助國內再生能源設備產業掌握關鍵產品及技術，發展高附加價值產品方面，除依「新興重要策略性產業屬於製造業及技術服務業部份獎勵辦法」，提供廠商5年免稅，另依「主導性新產品開發計畫」補助廠商新產品研發經費，最高科達總研發經費40%。此外，尚依「促進產業研究發展貸款辦法」，提供廠商優惠貸款，最高可貸金額6,500萬元。

未來，資源及產業組將極力尋求以業界科技專案機制，透過研發單位與國際合作，加速開發符合未來需求之技術，或引進成立研發中心。並持續與各部會協調，排除法令限制，加速風力電場設置。

Resources and Industry Working Group has completed the planning of a nationwide Renewable Energy Industry Development Strategy. Applications are being promoted by related agencies through industry guidance and technology R&D. These efforts are hoped to build domestic renewable energy industry.

In helping the domestic renewable energy equipment industry stay abreast of key products and technology so that they can develop high added value products, the government provides a five-year tax exemption through the "Regulations for Assisting New Key Strategic Industries in Manufacture and Technology Service Industry." The "Leading Product Development Plan" is used to subsidize companies' costs for new product research and devel-

opment, providing up to 40% of research and development costs. In addition, the "Regulations on Loans to Promote Industrial Research and Development" provides industries with special loan rates with a maximum loan of NT\$65 million.

In the future, the Resources and Industry Working Group will actively seek industry for technology research projects. Through research and development agencies and international cooperation, [the Working Group will] accelerate development of technology suited for future needs, and establish more research and development centers. [The Working Group will] continue to coordinate with related agencies to eliminate legal barriers and accelerate the establishment of wind farms.



## 1.7 結合社區

### 設置永續教育推動中心

**環** 保署綜計處(永續教育組)為鼓勵民間團體參與社區保育與教育工作，建立永續發展教育相關的示範區，自86年起，輔助630個社區組織環保義（志）工隊，引領社區民衆由自發性環保行動起步，瞭解自己「家園」現況及發展趨勢。經由共同規劃及經營，凝聚社區環保意識，透過推動環境教育、辦理環保活動，落實基礎環保工作提升環境品質，並陸續建立集水區保育、溪流保育、濕地保護、生物多樣性保育、廢棄物處理、環境清潔及綠美化、共同購買及綠色商業、海岸保護、空氣污染防治、綠色能源等環保主題示範區，以及推動社區環保產業，如資源回

收、生態旅遊、有機栽培等，使社區環境、社會及經濟層面的發展獲得長足進步。

未來將持續採行單點突破、逐步擴展策略，推動社區環境改造計畫。鼓勵社區居民組織環保義（志）工及設置環境保護學習中心，透過終身學習，引導居民重新認識社區，建立社區意識發展共同願景。另藉調查社區環境問題，以及規劃發展構想，達成清淨家園，及彰顯當地社區文物景觀特色。此外，將透過社區策略聯盟方式，請示範社區協助其他社區，將已建立的「點」狀營造成果，聯結成「線」狀的社區群落，進一步擴展成為「全面性」的「永續家園」。

## 1.7 Integrating Communities

### Establishing Sustainable Education Promotion Centers

The EPA (Dept. of Planning) endeavors to encourage private groups' participation in community conservation and education work and to establish sustainable development education demonstration sites. From 1997 the EPA has assisted 630 communities to organize environmental protection volunteer teams. These teams attract community residents to voluntarily engage in environmental actions and learn about the status and development trends of the places they live in. Through joint planning and management, these teams draw together community environmental awareness by promoting



■ 環保義工日環保帶動唱活動。  
Singing together on Environmental Volunteer Day.



社區環境改造。  
(三興社區提供)

Community environmental  
reforms.(photo:Sansing  
Community)



■ 第1屆小綠芽獎環保童書首獎作品。

This environmental children's book won the 2005 Little Green Sprout Award.

environmental education, holding environmental protection activities, and putting into practice fundamental environmental protection work to improve environmental quality. The teams launch a variety of environmental initiatives such as cleaning up and beautifying community environments, cooperative purchasing and green business, coastal protection, air pollution control, and green energy. They also pro-

mote community-based environmental businesses such as resource recycling, ecotourism, and organic gardening to help the community's environmental, social, and economic facets develop by leaps and bounds.

The EPA will continue to adopt a step-by-step approach of gradual expansion in its promotion of community environmental reform plans. The EPA encourages community residents to organize environmental volunteer groups and set up environmental learning centers. Lifelong learning can give residents a renewed awareness of their community and establish a common vision for developing community consciousness. By surveying community environmental problems and planning development concepts, residents can work to clean up their living environment and display the uniqueness of their community's cultural landscape. By forming strategic alliances between communities, and asking demonstration communities to assist other communities, we can build up networks of communities working to create sustainable living environments.



## 1.8 結合原住民文化

### 推動國家公園生物多樣性保育

「國家公園」是生物多樣性保育精華地帶，在全球保護區系統中扮演極重要角色，在世界各地不同的生態環境中提供完整就地保護機制。自民國73年迄今，我國共劃設太魯閣等6座國家公園，提供國家珍貴資產之保育、育樂及研究。

以太魯閣國家公園為例，該國家公園成立於75年11月，園區範圍92,000公頃，資源豐富且深具特色。太魯閣為全世界地殼上升速率最快地區，並擁有新構造運動地貌、稀有壯麗的太魯閣峽谷和清水斷崖景觀、多樣及特有之動植物與生態系，以及太魯閣族原住民人文資源及文化。

太魯閣國家公園管理處，為提升園區生物多樣性保育目標，於94年度推動「太魯閣國家公園計畫」，結合保護計畫區內自然生態體系及人文史蹟，並進行合理的經營，使此一區域能永續利用長久保存。

依據此一精神，太魯閣國家公園管理處積極



太魯閣國家公園。  
Taroko National Park.

投入生態保育、環境教育及觀光遊憩之推展，並持續辦理園區自然資源普查與建全環境監測系統、推動社區參與及原住民生態智慧保存，並調整整體保育計畫。其中，棲地保育與生物多樣性環境教育，尤其受到各界肯定。

目前，管理處生物多樣性保育策略包括：  
一、優先針對資源特殊及敏感區域，包括合歡草

## 1.8 Integrating Indigenous Culture

### Promoting National Park Biodiversity Conservation

National parks are essential zones for biodiversity conservation and play an integral part in a global system of protected areas, providing broad local conservation mechanisms for different ecological environments all over the world. From 1984, Taiwan designated six national parks for the conservation, enjoyment and research of our precious national assets.

Taroko National Park was established in November 1986, expanding across 92,000 hectares of abundant and unique resources. Taroko's striking topography is a result of rapid uplifting of the earth's crust-more rapid than any-

where else on Earth-creating a landscape-in-motion of magnificent gorges and crystal clear water. This beauty is accentuated by the diverse and endemic flora and fauna of this ecosystem as well as the indigenous culture of the Taroko tribe.

Taroko National Park Headquarters aims to enhance biology conservation within the park through the Taroko National Park Plan set forth in 2005. This plan integrates conservation plans for natural ecosystems and cultural heritage within the park through sound management so that this area can be enjoyed and preserved sustain-

原、中橫峽谷、圈谷、清水蘇花地區等，進行研究及保育。

二、建立跨領域及組織研究群之整合型研究模式，避免片段式的單一研究，以了解生態系整體關係。

三、長期持續記錄基礎環境資料，並建立公開資料庫，以普及使用。

四、針對能具體反應環境條件與價值的原住民文化與生態智慧，建立系統性資料積極保存，

尤其是民族動植物學相關研究與部落地圖，均為重點工作之一。

五、研究計畫以能回饋經營管理需求為優先。

六、掌握經營管理發展趨勢，預見未來管理需求，提早進行特定資源調查，提供有用之管理參考資料。

基於永續發展考量，太魯閣國家公園依循表3所列的5大方向逐一實踐願景：

表3：太魯閣國家公園五大願景方向

Table 3. Taroko National Park's Five Directions to materialize Visions

方向 Direction	內容 Content
永續的社會環境 Sustainable environment	配合國土復育政策規劃經營方針；實施敏感地區環境承載量管制； 推動生物多樣性保育工作與永續利用； 推動長期生態研究與加強環境監測工作；建立完整生態資料庫及地理資訊系統。 Complement national land restoration policy in planning course of management; implement environmental loading control in sensitive areas; promote biodiversity conservation and sustainable use; promote long-term ecological research and strengthen environmental monitoring
永續的社會 Sustainable society	協助保存原住民的文化資產；建立災害防救體系與防救措施。 Assist in preservation of indigenous cultural property; establish disaster prevention and response system
永續的經濟 Sustainable economy	結合民間力量推展國家公園事業；協助推動地方文化產業永續發展； 落實中橫公路景觀改善計畫；加強古今步道系統的重整。 Integrate private power to develop national park enterprises; assist in promoting sustainable development of local cultural enterprises; implement the Central Cross-Island Highway Scenic Area Improvement Plan
永續發展的動力 Development empowerment	結合社會資源推動環境教育，建立新的環境典範與倫理價值； 推動高山教育，建立維護高山生態環境的新觀念； 善用資訊網路科技，建立電子化及網路化的國家公園服務體系； 提昇國家公園從業人員的專業素養與人才培育。 Integrate social resources to promote environmental education and establish new environmental models and ethics; promote mountain education and cultivate progressive concepts for protecting high-mountain ecology; make best use of information network technology to establish an interconnected electronic national park service system; enhance national park employees' professionalism and talents.
永續發展的推動機制 Sustainable development promotion mechanisms	建立國家公園與原住民共存共榮的合作機制；推動保育機關之重組，使國家公園事權統一； 積極參與國際組織，加強國際合作，推動世界遺產地的設置。 Establish mechanisms for cooperation and symbiosis between national park and indigenous peoples; promote reorganization of conservation agencies to unify authority over national park; actively participate in international organizations, strengthen international cooperation, and establish World Heritage site.



## 1.9 推動廚餘回收利用

### 促進廢棄物減量

我國每日廚餘量為4,500公噸，約佔家戶垃圾2至3成。如能將廚餘回收再利用，不但可減輕垃圾處理壓力、提升環境品質，更能落實資源永續利用目標。因此，以「推動廚餘回收與教育宣



導工作」、「建立廚餘回收清運系統」、「建立廚餘再利用模式」及「開拓廚餘再利用成品通路」，做為推動廚餘回收工作的主軸，全面於各縣市進行。

為配合資源回收政策目標，訂定96年資源回收減量達成率達25%，自92至96年度間，廚餘每日回收目標如表4：

93年度，共辦理1,871場次的宣導說明會，完成2,703輛廚餘回收車之改裝及購置，興建48廠廚餘堆肥廠，並製作文宣海報、宣導短片及建

鄉鎮廚餘回收車。  
Township food waste recycling vehicle.

ably for generations to come.

In this spirit, the Taroko National Park Headquarters is actively promoting ecological conservation, environmental education and tourist recreation. They continually survey park natural resources and implement an integrated environmental monitoring system, as well as promote community participation and preservation of indigenous ecological wisdom. Overall conservation plans are adjusted based on new information or trends. The park has been widely affirmed for its education on habitat conservation and biodiversity.

The Headquarters' current biodiversity conservation strategy includes:

1. Priority on research and conservation of exceptional resources and sensitive areas, including Mt. Hehuan grasslands, the Central Cross-Island Gorge, the Closed Gorge, and the Clearwater Suhua area
2. A cross-disciplinary research team following an integrated research model to avoid frag-

mented research and to understand the interconnectedness of the ecosystem.

3. Long-term continuous recording of basic environmental data and establishment of an open database available to all.
4. Establishment of a systematic database to actively preserve indigenous culture and ecological wisdom that reflect environmental conditions and values, especially research and tribal maps concerning ethnobiology—the focus of current work.
5. Research plans with a priority on giving back to management needs.
6. Staying abreast of development trends in management to anticipate future management needs and promptly conduct special resource surveys that provide useful information for management reference.

Based on sustainable development considerations, Taroko National Park is working in five directions to materialize their visions.

置廚餘回收資訊網站，讓廚餘回收再利用工作順利推展。

目前已25縣市281個鄉鎮市共同推動除餘回收工作，回收區域人口數達1,500萬人，每日廚餘回收量為1,200公噸。自95年1月1日起，更將推廣至全國25縣市319個鄉鎮市全面推動。除餘回收創造的經濟效益，每年約24.2億新台幣，對垃圾減量及資源有效利用貢獻良多。

廚餘回收再利用為國內推動「垃圾全分類，零廢棄」重要一環。我國全面性地推動廚餘回收再利用工作，同時獲得具體成效，在全球尚屬首創。未來，透過政府與國人的再接再勵，預期可讓廚餘全部轉化為資源再利用，並透過國際合作，將成功的「台灣經驗」輸出，提供其他國家參考。

表4：92至96年度 廚餘每日回收量目標

Table 4. Targeted volumes for food waste recovery from 2003 to 2007

年度 Year	回收率 (%) Recovery rate (%)	每日回收量 (公噸) Volume recovered daily (tonnes)	執行鄉鎮市數 (個) Number of implementing townships and cities
92年 2003	13.3	600	160
93年 2004	20	900	200
94年 2005	26.7	1,200	250
94年 2006	26.7	1,200	250
96年 2007	35.5	1,600	319

## 1.9 Promoting Food Waste

### Recovery and Reuse

Taiwan generates 4,500 tonnes of food waste every day, accounting for 20~30% of household garbage. Finding ways to recycle this resource not only reduces pressure on waste management and enhances environmental quality, but also puts sustainable use concepts into practice. The main tasks of food waste recycling carried out by each county and municipality include promotional and educational efforts, establishment of food waste clearance systems and recycling methods, and paving the way for products from recycled food waste.

Tying in with resource recycling policy objectives, the recycling and waste reduction target rate is set at 25% in 2007. Targeted daily recycling rates for food waste from 2003 to 2007 are shown in Table 4.

In 2004, a total of 1,871 briefings were conduct-

ed and 2,703 clearance vehicles were refurbished or purchased for food waste collection. A total of 48 food waste composting plants were built. The word was spread through posters, short films and a website on food waste recycling information, all of which aided successful development of food waste recycling work.

Already 281 townships in all 25 counties and municipalities have begun promoting food waste recycling. With a total population of over 15 million in these areas, already 1,200 tonnes of food waste is collected for recycling each day. From 1 January 2006, the policy took effect nationwide to include all 319 townships. Raking in NT\$2.42 million annually, food waste recycling is not only economically beneficial, but also goes a long way toward reducing waste and efficiently using resources.



表5：推動廚餘回收利用工作主軸

Table 5. Key work in promoting food waste recovery and reuse

執行項目 Program	內容 Content
推動廚餘回收與教育宣導工作 Promote food waste	<p>推動「綠色飲食-廚餘減量」：培訓廚餘教育宣導種籽講師及人員在職訓練。 結合學校、社區、環保團體等辦理教育宣導、觀摩與研習。 印製宣導傳單、手冊教導民眾廚餘分類。於平面及電子新聞媒體宣導。 建立中央、縣、市廚餘回收宣導網頁。</p> <p>Promote “Green Eating-Reduce Food Waste” ; train food waste education seed teacher recycling and education and staff on-the-job training. Integrate educational activities and workshops held by schools, communities, and environmental groups. Print educational flyers and manuals teaching citizens how to sort food waste. Education in the form of printed material as well as electronic news media. Each central, county and municipal government shall create a webpage to promote food waste recycling.</p>
建立廚餘回收清運系統 Establish a food waste recycling and collectionsystem	<p>執行家戶、學校、軍方營區、監獄等廚餘回收工作。 垃圾車改裝、購置廚餘回收專車與回收桶。規劃清運區域、路線、方式及回收量目標。 設置廚餘集中暫存場、購置轉運機具、清洗設備。 觀摩研習其它縣市，改進廚餘回收系統與投入人力。</p> <p>Implement food waste recycling in the household, school, military camps and jails. Retrofit existing garbage collection vehicles and purchase new vehicles and containers specially designed to transport food waste. Plan clearance zones, routes, methods and target collection volumes. Establish food waste storage facilities, purchase transport equipment and washing facilities. Conduct workshops and studies of different areas, improve food waste recycling systems and invest more human resources.</p>
建立廚餘再利用模式 Establish food waste reuse models	<p>回收廚餘以高溫蒸煮養豬或自行堆肥處理。查核以廚餘養豬之養豬場，是否高溫蒸煮及疫苗施打。 興建區域性廚餘高溫蒸煮場、堆肥場等。送禽畜糞堆肥場製成雜項有機堆肥。 提昇各縣市廚餘之堆肥品質及堆肥技術。輔導及獎勵民間業者興建廚餘回收再利用廠(場)。</p> <p>Recycle food waste via high-temperature steaming into pig feed or via composting. Inspect pig farms that use recycled food waste to ensure high-temp steaming and vaccinations are carried out properly. Build regional food waste high-temperature steaming plants and composting plants. Deliver manure from livestock and poultry to composting plants for processing into various grades of organic compost. Enhance food waste composting quality and technology in each county and municipality. Guide and reward private enterprises in building food waste recycling plants.</p>
開拓廚餘再利用成品通路 Open channels for products from recycled food waste	<p>建立廚餘長期之質與量資料。 研擬評估廚餘回收再利用成品之安全性檢驗與測試。 研擬評估可行之廚餘再利用方式。 與農委會、各縣市農業單位及農會共同推動廚餘再利用。</p> <p>Establish long-term data on quality and quantity of food waste. Research and assess safety inspection and testing of food waste recycled into products. Research and evaluate feasible methods for food waste recycling. Work in tandem with the Council of Agriculture and each county/municipality agricultural agency to promote food waste recycling.</p>

Food waste recovery and reuse is an important part of the national “Complete Sorting, Zero Waste” policy. Comprehensive promotion of food waste recycling in Taiwan has resulted in concrete achievements, making us a global leader in this area. In the future, through untiring

efforts of the government and citizens, we aim to turn all food waste into resources. Through international cooperation, the Taiwan experience can be transferred and provided as a reference for other nations.

## 第二章 台灣永續發展指標系統

### Chapter 2 Taiwan National Sustainable Development Indicators

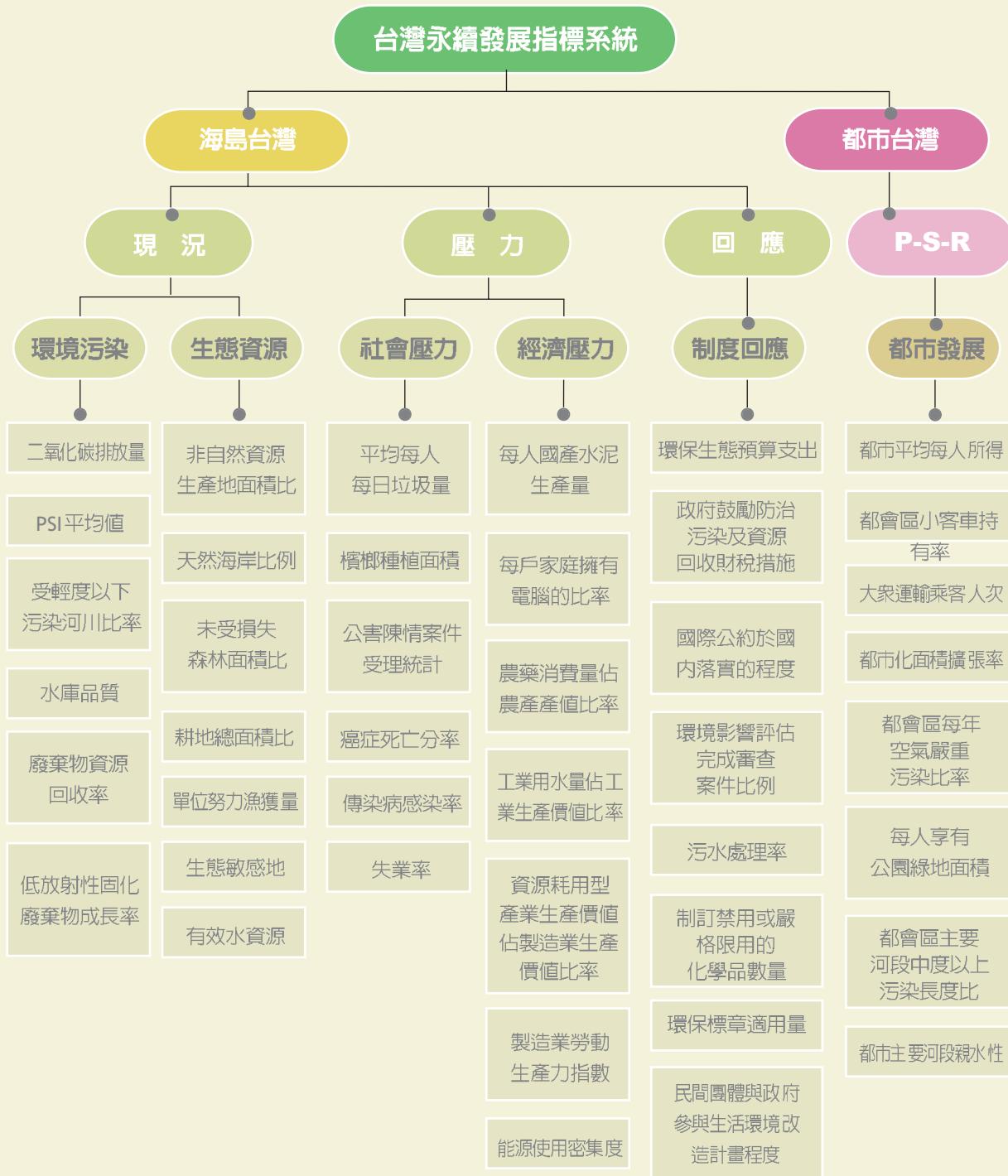


圖2：台灣永續發展指標系統  
Chart 2 . Taiwan Sustainable Development Indicators



## 2.1 永續發展指標

為評估我國推動永續發展的進程，並呼應聯合國要求各國建立指標來評估推動落實永續發展的責任，永續會於92年6月5日第16次委員會，通過以「壓力」、「現況」與「回應」(P-S-R)為架構的「台灣永續發展指標」。指標區分為「海島台灣」及「都市台灣」兩個體系，包含「環境污染」、「生態資源」、「社會壓力」、「經濟壓力」、「制度回應」及「都市永續發展」6個領域、42項核心指標。指標系統並以環保署成立的民國77年為基準年，將該年永續指標值訂為100，評量台灣永續發展趨勢。

綜觀92及93年度指標值，在42項永續指標中，呈現改善並邁向永續的指標項目計25項，呈現背離永續的指標項目計14項，呈現持平者1項，僅「國際公約於國內落實的程度」與「都市主要河段親水性」2項指標，因資料品質及計算方式尚待修正，故暫不列入綜合指標之計算。茲

將93年各項永續發展評量結果及分析如下。

### 6大領域趨勢分析與評量結果

#### 1.生態資源領域

綜合指數在民國77至80年逐年下降，80年至84年以及89年則因多處保護區的陸續成立而小幅提升。整體而言，我國生態資源的狀況在近年是呈現背離永續的趨勢。93年已取得資料的指標值趨勢，除「未受損失森林面積比」、「單位努力漁獲量」、「有效水資源」3項指標值小幅提升之外，其餘指標值仍較92年低，使93年綜合指數(98.57)低於92年(98.79) (見圖3)，呈現背離永續的趨勢。

#### 2.環境污染領域

77年至93年指標值呈現小於100微幅上下震盪趨勢，環境品質長期末見明顯改善。以個別指標趨勢來看，因全國廢棄物資源回收工作持續推

## 2.1 Sustainable Development Indicators

The NCSD reached consensus on the Taiwan Sustainable Development Indicators (SDI) during their 16th Assembly on 5 June 2003. The indicators help assess the progress of sustainable development in Taiwan and respond to the United Nations' request for each country to establish an indicator system that can be used to assess each country's efforts toward sustainable development. Taiwan's SDI system is based on an extended Pressure-State-Response (PSR) framework that is divided into two systems to address the unique situations of Island Taiwan and Urban Taiwan. A total of 42 core indicators are categorized under the following six dimensions: environmental pollution, ecological resources, social pressure, economic pressure, institutional

response, and urban sustainable development. The year 1988 marks the establishment of the Environmental Protection Administration and was thus chosen as the base year and assigned an SDI of 100, the benchmark index against which sustainable development trends in Taiwan are measured. Higher index scores represent a positive trend toward sustainability.

An overview of the 42 core indicators for 2002 and 2003 show that Taiwan is making strides toward sustainable development in 25 indicators, is diverging from sustainability in 14 indicators, and is maintaining a steady course in 1 indicator. Two indicators—"Domestic Implementation of International Treaties," and "Accessibility of Rivers in Urban Areas"—are not calculated into the

動，廢棄物資源回收率指標值自民國87年以來一路呈現穩定改善的趨勢。但二氣排放量指標值一路下降，顯示沒有獲得有效的控制。93年環境污染綜合指標值為98.13，稍低於92年指標值98.40。

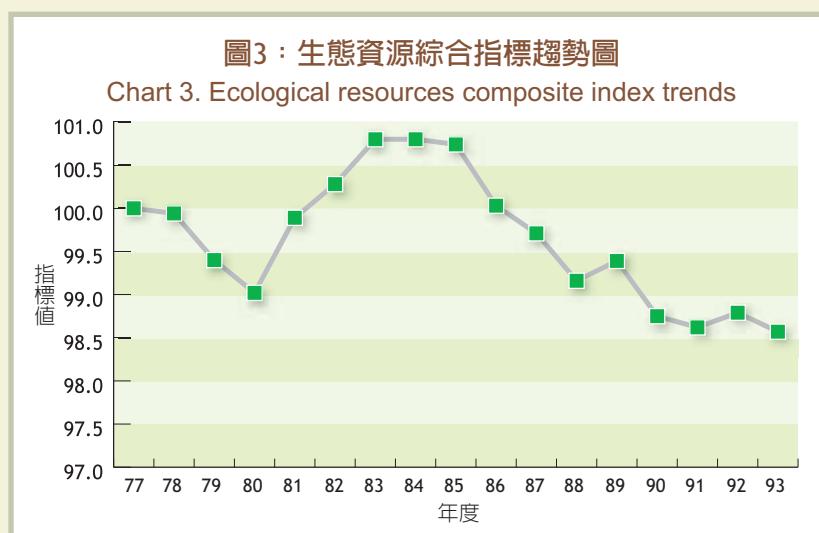
### 3. 社會壓力領域：

77年至92年均呈現下降、背離永續的趨勢，惟93年有停止下降稍微改善的趨勢。在個別指標方面，除了每人每日垃圾量，因資源回收措施實

施，使每人垃圾量有顯著下降外，其他指標如檳榔種植面積、公害陳情案件、失業率、反應國民健康的癌症死亡分率，及傳染病感染率皆有攀升趨勢，反映出社會朝向背離永續的方向發展。

### 4. 經濟壓力領域

經濟永續指標值自77年的100上升至93年的105.57，代表經濟壓力下降，整體呈現邁向永續趨勢。雖然農藥消費量比重及資源耗用型產業佔製造業生產價值比率持續增加，對環境產生負面

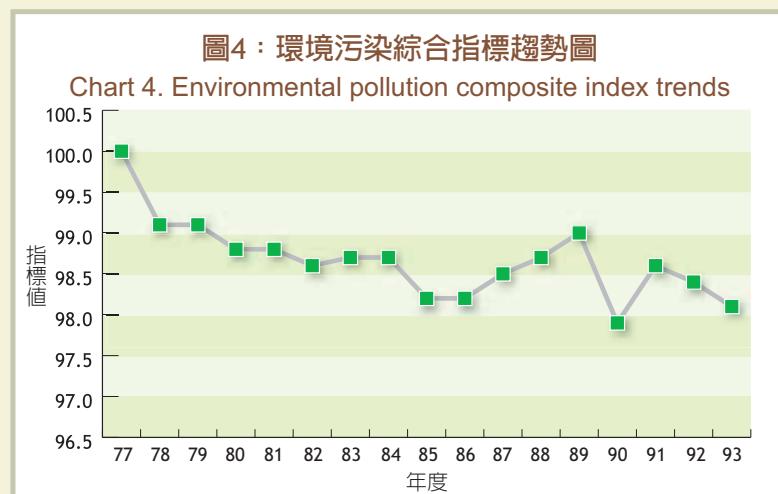


composite index for the time being as quality of data and calculation methods are still undergoing fine-tuning. Conclusions and analyses of various aspects of sustainable development in 2004 are discussed in detail below.

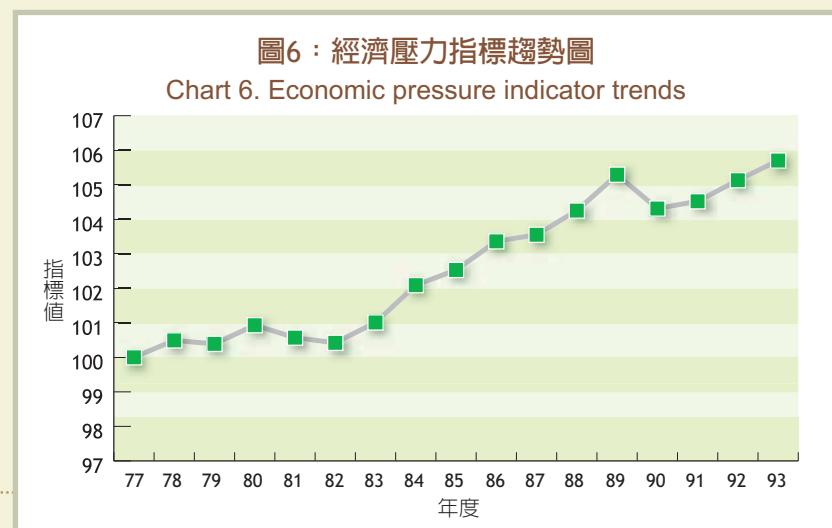
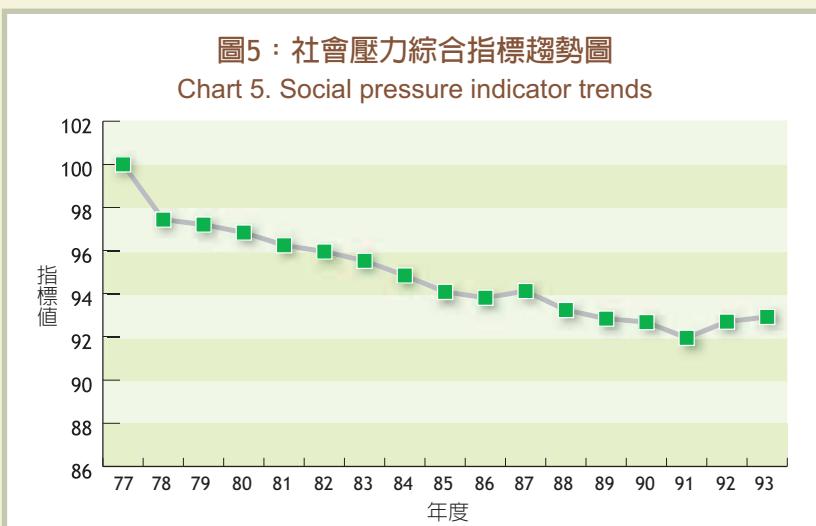
## Analysis of Trends in the Six Major Dimensions

### 1. Ecological Resources

The composite index for ecological resources gradually declined from 1988 to 1991 and then slightly increased from 1995 to 2000 due to the successive establishment of several protected areas. Overall, the state of Taiwan's ecological resources in recent years has been diverging away from sustainability.



Looking at data already obtained on index score trends in 2004, apart from slight increases in the three categories of "Undamaged forest area ratio," "Unit pressure fish catch," and "Effective water resources," all other index scores are lower than those of 2003, making the



composite index score for 2004 (98.57) lower than that of 2003 (98.79) (see chart 3). This represents a deviation from sustainability.

### 2. Environmental Pollution

While index scores for environmental pollution have rapidly fluctuated up and down from 1988 to 2004, a gradual downward trend below the 100 mark can be discerned. Environmental quality in the long term has yet to see substantial improvement. A look at individual indicator trends shows nationwide promotion of waste recycling has steered the recycling index score on a steady upward path of improvement since 1998. However, the carbon dioxide emissions index score has followed a downward trend, revealing that effective controls have not yet

been attained. The index score for environmental pollution was slightly lower in 2004 (98.13) compared to 2003 (98.40).

### 3. Social pressure

Social pressure composite index scores reveal an overall deviation from sustainability from 1988 to 2003, with the exception of slightly improving trends in 2004. In terms of individual index scores, the only positive trend was a decrease in per capita garbage volume due to implementation of recycling measures. All other indicators showed worsening trends, including area of land planted to betelnut, public nuisance cases, unemployment rate, rate of deaths due to cancer, and rate of infectious disease. These indicators show that societal trends are diverging from

影響，但因國內平均每人水泥生產量持續減少、工業用水效率持續提高、勞動生產力逐年提升，加上科技發展、電腦普及，總體經濟面向持續朝永續發展。

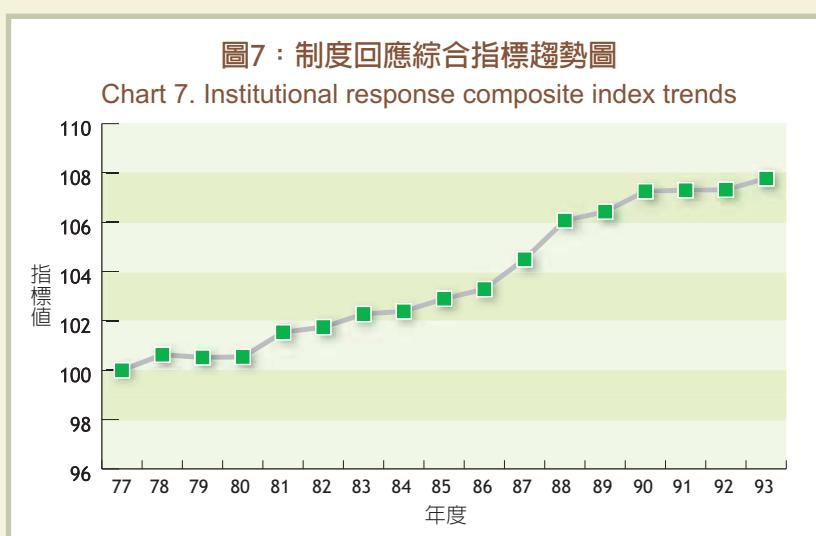
#### 5. 制度回應領域

自80年起，整體制度量能逐步提升，呈現邁向永續。過去10幾年中，制度回應指標值均在100之上，總體趨勢也是持續攀升，顯示歷年來政府對環境議題的重視逐漸增加，從法規制度面引導政府、企業、與民間關注環境問題，政策設

計與執行對永續發展均有正面幫助。

#### 6. 都市永續發展領域

就整體趨勢，都市發展長期趨勢呈邁向永續(見圖8)。在個別指標方面，除都市平均每人所得降低，以及都市小客車持有率持續增加，對都市永續發展較為不利外，其餘指標皆呈現永續趨勢，包括大眾運輸乘客人次、都市化面積擴張率、都會區每年空氣嚴重污染比率、每人享有公園綠地面積等。



the path of sustainable development.

#### 4. Economic pressure

Economic sustainable indicator scores have increased from the original score of 100 in 1988 to 105.57 in 2004, representing an overall decrease in economic pressure. On the downside, pesticide usage has increased, and industrial consumption of natural resources accounts for an increasing proportion of manufacture production value, all of which result in negative environmental consequences. However, the economy at large is making continual strides in the direction of sustainability, as is shown by decreasing per capita cement production, increasing efficiency of water usage in industry, increasing physical labor production force in the manufacture industry, technological develop-

ments, and increasingly universal use of computers.

#### 5. Institutional response

The overall capacity for institutional response has continually increased from 1991, showing a trend toward sustainability. In the past ten years, institutional response index scores have consistently exceeded 100, and continue to rise, showing that the government has increasingly recognized the importance of environmental issues. The regulatory system has guided government, corporate and civil sectors to take more heed to environmental issues. Policy planning and execution are both positive assets to promoting sustainable development.

#### 6. Urban sustainable development

Looking at overall long-term trends, urban devel-



## 綜合分析

現況、壓力及回應3大領域的綜合分析，在生態與環境現況部分，由於歷經長期影響，使生態與環境朝不永續趨勢發展(圖9)。壓力部分，社會及經濟面向呈現分歧發展現象，反映

出台灣過去10幾年經濟結構逐漸轉型，但社會層面的壓力未見減緩。針對台灣面臨的現況及壓力，回應指標則充分顯示政府在政策層面落實永續發展的努力及決心。

圖8：都市永續發展綜合指標趨勢圖

Chart 8. Urban sustainable development composite index trends



opment is showing a trend toward sustainability (see chart 8). Despite a decrease in per capita income in urban areas and a continual rise in numbers of small passenger cars, both of which impede sustainable development, most other indicators show trends toward sustainability. Positive trends include numbers of passengers using public transportation, expansion rate of urban areas, annual rate of serious air pollution in urban areas, and per capita area of parks and green space.

## Composite analysis

State indicators of Taiwan's ecology and environment have been diverging away from sustainable development as a result of several decades of development and exploitation. In terms of Pressure indicators, there is a widening

圖9：現況綜合指標趨勢圖

Chart 9. State Composite Index Trends



gap between social and economic development trends, reflecting a gradual turnaround of Taiwan's economy over the past several years, yet with no easing up on social pressures. An analysis of Response indicators compared against the State and Pressure indicators of issues confronting Taiwan clearly shows the government's determination to implement sustainable development policies.



■ 蘇花公路清水斷崖。  
SuHua Highway.

## 第三章 縣市政府推動永續發展現況

### Chapter 3 Local Government Sustainable Development Initiatives

國家的永續發展責在全民共同參與，由中央及地方合力共同推動，始能達到最大效果。國家整體的永續發展，奠基於各縣市的永續經營。各縣市基於不同的人文及自然環境條件，擬定各自最妥適的永續發展計畫，分別推動、逐項落實，讓永續政策在地方開花結果。

Success of the nation's sustainable development initiatives resides entirely on the active participation of its citizens. Harmonious cooperation between central and local governments guarantees optimal results can be achieved. The sustainability of local government operations is the foundation for the overall sustainable development of the nation. Since each locality is endowed with its own distinctive culture and natural environment, local governments are responsible for planning, initiating, and executing customized sustainable development plans just right for their communities. This approach empowers communities to actualize the best possible outcome for sustainable development.



## 3.1 花蓮縣

### 太平洋左岸的東方明珠

#### 台灣最後淨土 保存好山好水

花蓮縣地處台灣東部，長年交通不便，在過去數十年的經濟發展過程中，免於工業污染的厄運，幸運保有好山好水，被譽為「台灣的最後一塊淨土」。該縣面積4,628.57平方公里，約佔全台1/8，面積居各縣市之冠。



■ 花蓮縣縣花—蓮花。  
Hualien County Flower-Lotus.

花蓮縣環保局於89年10月訂定「花蓮縣環境保護計畫」，宣示力行環保決心，並以達到永續發展為目標。

該計畫內容，主要在彰顯該縣為未來高品質生活環境及合理的國土利用，各種開發行為必須兼顧環境保護與資源永續利用。

因應91年「環境基本法」公告施行，花蓮縣於92年8月及93年12月31日兩次修訂花蓮縣環境保護計畫。誠如該縣施政理念所揭示，花蓮縣需要轉型及蛻變，並點燃生命力。各項發展與建設計畫，著眼於讓花蓮的發展平衡與多元，並配合特有的文化產業，深化與擴大觀光產業基礎。

#### 落實縣政計畫 實現洄瀾夢土

近兩年來，花蓮縣以「洄瀾夢土」的政策主張為基礎，提出各項措施。如在教育上，公平、公正、公開辦理教師、校長甄選，提供最好的教育行政服務，並規劃興建國際青少年交流教

## 3.1 Hualien County

### East Coast Jewel of the Pacific Ocean

#### Preserving the Natural Wonders of Taiwan's Last Paradise

Hualien County is on the east coast of Taiwan and for many years has been isolated by poorly developed transportation routes. In a sense its geographical location has been a blessing, protecting the region from the perils of industrial pollution and preserving its natural wonders throughout the past half century of burgeoning economic development. Thus, Hualien County is sometimes dubbed "Taiwan's Last Paradise."

In October 2000, the Hualien County Environmental Protection Bureau (EPB) drafted the "Hualien

County Environmental Protection Plan," declaring its dedication to environmental protection and the actualization of sustainable development objectives. The focus of this plan is to create a quality living environment for the future and promote sensible use of the land with careful consideration placed on environmental protection and sustainable development.

In compliance with the promulgation of the 2002 Basic Environment Act, Hualien County made revisions to the Hualien County Environmental Protection Plan on 2003 August 31 and 2004 December 31, respectively. As stated in the coun-

花東海岸一小野柳。  
Little Yehliu in  
Hualien-Taitung  
Beach.

育研習中心；實踐輔助就業行動方案，造就1,000個工作機會，其中40%照顧在地原住民；以及以永續觀點、公民社會精神，推動洄瀾2010願景規劃，讓全體縣民共同為花蓮未來定調。

為落實永續，縣政計畫將全力朝下列目標發展：豐富優質觀光內涵、提振產業競爭升級、革新e化創新服務、改善交通網路環境、檢視改善城鄉地貌、樹立優質教育氛圍、深化文化藝術空間、重建社區健康環境、落實公民社會精神。

在花蓮環境保護計畫中，主要包括了5大關



連計畫：

#### 一、花蓮地區污水下水道系統工程

##### 第一期實施計畫

計畫範圍涵蓋花蓮市、吉安鄉及新城鄉，總計畫面積約5,500公頃，分3期實施，以110年為計畫完成目標年。

ty's governmental policy statement, Hualien County must continue evolving and transforming to stimulate vitality and growth. All development and construction plans are dedicated to balanced, diversified development of Hualien, while also coordinating with cultural enterprises to promote the tourism industry.

#### Implementing County Government Plans to Achieve Vision 2010

In recent years, the foundations of Hualien County's policies have been developed with a goal to materialize common visions for our homeland. The county has worked hard to improve the education sector, conducting equitable and open selection processes for teachers and administrators and establishing quality educational administrative serv-

ices. It has also made plans to build an international youth exchange educational research and study center. Regarding the employment sector, the county has set up an employment assistance program to help people find jobs. The program has created 1,000 employment opportunities with 40% of these positions being occupied by local indigenous peoples. Sustainable development concepts and community spirit are propelling the "Vision 2010" plan into fruition with all peoples of the county uniting to create Hualien's destiny. The county government is fully devoted to implementing sustainable development initiatives, including actualization of the following objectives: promoting quality tourism, enhancing industrial competitiveness, creating innovative e-services, improving traffic network, revamping the aesthetics



花蓮瑞穗牧場。  
Rueisuei Ranch.

of urban and rural environments, establishing a high quality educational atmosphere, expanding cultural arts space, renovating the community fitness environment and fully empowering the vitality of community spirit.

The Hualien Environmental Protection Plan encompasses five main projects:

#### **1. 1st Phase of the Hualien Sewerage System Construction Project**

The scope of the plan encompasses Hualien City, Jian Township, and Hsincheng Township, a total area of 5,500 hectares, and will be divided into a three-phase execution plan with the completion date set for 2021.

#### **2. Clean, Green, Beautiful Hualien**

Dedicated to improving the quality of the county's living environment, in early 2002 Hualien began promoting implementation of the "Clean, Green, Beautiful Hualien" environmental reform project.

#### **3. Refuse Derived Fuel (RDF) Model Plant Project**

Construction of the nation's sole RDF model plant was completed in July 2003 in Fengbin Township. This plant can treat the garbage of the township's 6,000 residents, easing waste treatment problems and reducing energy consumption.

#### **4. Environmental Science and Technology Park (ESTP) Project**

The Hualien ESTP in Fenglin Township has been selected as the Northern ESTP by the EPA, Executive Yuan. The function of this park is to treat waste resources generated by local industries and to create green products with the objective of stimulating regional development.

#### **5. Hualien County Waste Treatment Project**

This project includes transporting 200 tonnes of garbage to Yilan County, constructing centralized regional sanitary landfills, and constructing a garbage resource recycling and sorting plant.

## 二、淨化、綠化、美化花蓮

為謀求花蓮縣生活環境品質的提昇，91年初即推動執行「淨化、綠化、美化花蓮」環境改造計畫。

## 三、垃圾衍生燃料示範廠計畫

在豐濱鄉興建廢棄物衍生燃料(RDF)示範廠，廠房於92年7月建置完成。可處理全鄉6千多人的垃圾，減輕垃圾處理問題，並減少能源耗用，為全國唯一的RDF示範廠。

## 四、環保科技園區計畫

花蓮環保科技園區位於鳳林鎮，為行政院環保署擇定之北區環保科技園區。以解決地方產業產生之資源型廢棄物，及生產綠色產品為基礎，希望進而帶動地區發展。

## 五、花蓮縣垃圾處理計畫

包括外運200噸垃圾至宜蘭縣、興建中區區域性垃圾衛生掩埋場、興建垃圾資源回收分選廠等等。



■ 花蓮東海岸。  
Hualien's coastline.

## Creating a High Quality Living Environment in Hualien

A retrospective of the three main initiatives the Hualien County government has been implementing in recent years:

1. “Nature, Culture, Sophistication, and Leisure” creating a quality environment modeled on the successes of Switzerland and California (U.S.A.)

## 打造生活大縣 幸福花蓮實現

回顧花蓮縣政府近年的施政理念，主要以3項工作為主軸：

- 一、以「自然、文化、精緻、休閒」，建造如瑞士及美國加州般優質的環境；
- 二、打造「生活大縣、幸福花蓮」；
- 三、落實「洄瀾夢土計畫」，建設花蓮為「太平洋左岸的東方明珠」。

這3個施政主軸有一個共同不可或缺的基石，即是確保該縣優良的環境品質。除了配合縣政府的施政方針之外，並承續國家環境保護計畫及融入永續發展理念，擬定各期施政目標：  
**近程**－建立安全、健康、整潔的生活環境；  
**中程**－建立寧靜、恬適、適合悠閒旅遊的美麗環境；  
**長程**－建立具有青春活潑氣息、幸福快樂的生活環境。

### 2. Creating a Higher Quality Living Environment in Hualien

### 3. Actualizing the Vision 2010 to develop Hualien into an “East Coast Jewel of the Pacific Ocean”

These three main initiatives are all based on the mutually indivisible foundation of safeguarding the county's exceptional environmental quality. In addition to the local government's policy initiatives, the county is also coordinating with the National Environmental Protection Plan and integrating sustainable development concepts. The staged implementation of these objectives are presented below:

**Short-term**-establish a safe, healthy, and clean living environment

**Mid-term**-establish a quiet, comfortable, and beautiful environment suitable for leisure and tourism

**Long-term**-establish a youthful vibrant atmosphere and a pleasant living environment



## 3.2 嘉義市

### 健康城市、溫馨家園

#### 雲嘉南中心城 化危機為轉機

嘉義市位於嘉義生活圈中心地帶，長久以來為雲、嘉、南政經重鎮，提供生活圈周邊城鎮便捷的交通運輸管道，活絡周邊城鎮的消費經濟活動。

近年來，嘉義市人口總數變化不大，人口結構則有老化趨勢。在高密度的居住環境下，所衍生的醫療保健問題更顯相對複雜。嘉義市政府以危機為轉機，從老化人口的社會問題，提出各種解決方案，促



■ 嘉義市擁有豐沛的醫療資源。圖為署立嘉義醫院。  
Chiayi Hospital, Department of Health, Executive Yuan.

## 3.2 Chiayi City

### Healthy City and Beautiful Homeland

#### Yunlin-Chiayi-Tainan: Key Cities Transforming Crisis into Opportunity

Chiayi City is the pulse of Chiayi County's livelihood and has long been an important city in the governmental decision-making of Yunlin, Chiayi and Tainan counties. It provides convenient transportation channels and stimulates consumer economic activity for the residents of surrounding localities.

In recent years, the population of Chiayi City has remained relatively stable with a trend towards an aging populace. A densely populated resi-

dential environment has given rise to very serious, complex healthcare problems. The Chiayi City government is determined to transform a potential crisis situation into a progressive transition by proposing a number of resolutions to the aging populace situation and establishing a well-defined course for its local sustainable development plans.

#### Sustainability Plans Promote Effective Integration

The Chiayi City government has integrated

成了獨樹一格的地方永續發展策略。

## 永續計畫移交 整合效能提升

嘉義市政府整合局處資源，專案執行「地方永續發展示範計畫」，提出永續策略、指標及組織等規劃雛型，並將永續發展執行秘書工作從環保局移交至企劃室，以充分掌握各部門的施政方向。讓社區與環保、治安、醫療相結合，則是嘉義市永續發展規畫的重點所在。嘉義市政府並於94年4月，配合健康城市議題，將該事永續發展委員會重組為「嘉義市健康城市永續發展委員會」，將總目標訂為「永續環境」、「永續社會」與「永續健康」3大範疇。

## 整合醫療資源 引領永續發展

92年10月1日，嘉義市  
政府承接行政院核定「建構

嘉義市友忠公園啓用典禮。  
Yo-chung Park Opening Ceremony.

departmental resources for the execution of “Local Sustainable Development Model Plans,” in addition to devising sustainable strategies, indicators, and organizational framework. Administrative and secretarial work concerning sustainable development affairs has been transferred from the Chiayi City EPB to the Office of Planning to empower each department with greater control over policy implementation. This also allows communities to effectively integrate environmental protection, public security, and healthcare, which is the primary objective of Chiayi's sustainable development plan. In coordination with the healthy city theme, the Chiayi City gov-

長期照護體系先導計畫」，進一步整合社會局「居家服務支援中心」及衛生局「長期照護管理示範中心」，成立「嘉義市長期照護服務管理中心」，開創優質的長期照護社區服務體系。以此堅實的醫療基礎為開端，嘉義市政府對於永續發展的推動，有了別於其他縣市的出發點。

從行政區域大小來看，嘉義市的空間、範圍及人口分布適中，十分有利於醫療資源的整合應用。嘉義市同時擁有極佳的整體醫療資源，平均病床數為全國第一高，更發展多項先進的醫療照護系統，因此該市永續發展願景—「健康城市、溫馨家園」，即呈現並強調「永續健康」此一特色。



ernment reorganized the sustainable development committee in April 2005 to form the “Chiayi City Healthy City Sustainable Development Committee.” Three broad objectives were set to cover the scopes of - “sustainable environment,” “sustainable society and economy,” and “sustainable health.”

## Integrating Healthcare Resources to Lead Sustainable Development

On 2003 October 1, the Chiayi City government received the Executive Yuan's approval for the



“Guidelines for Establishing a Long-term Healthcare System.” These guidelines provide closer integration of the Bureau of Social Affairs “Resident Services Support Center” and the Bureau of Public Health’s “Long-term Healthcare Management Model Center.” The resultant product of this integration is manifested in the “Chiayi City Long-term Healthcare Services Management Center,” which has effectively established a quality long-term healthcare community service system. The

number of hospital beds per capita and having an advanced medical treatment and healthcare services system. Therefore, “sustainable health” is a key component in manifesting the city’s sustainable development vision for a “Healthy City and Beautiful Homeland.”

#### Creative Policies Overcome Barriers

In addition to comprehensive healthcare resources, a prevailing factor in Chiayi’s sustainable development initiatives is that creativity

#### 政策發揮創意 集思突破瓶頸

除了豐厚的醫療資源，政策上也有創新的想法。社區規劃師、社區營造規劃師，以及社區治安規劃師的培訓，即由各局處自行推動。規畫師全數由社區民衆組成，也顯示

嘉義市政府。  
Chiayi City Hall.

establishment of this stable healthcare mechanism distinguishes Chiayi City government’s sustainable development initiatives apart from other localities.

Taking into consideration the space, area, and population distribution, Chiayi City is an ideal administrative district for the integration of healthcare resources. Chiayi City also possesses excellent healthcare resources, leading the nation in

一股由下而上的力量，持續加入嘉義市永續發展推動工作。為回應此來自民間的關注，嘉義市從94年3月起，發行「諸羅行腳」月刊，免費派送至各戶，讓市民了解各項施政計畫。

然而，推動過程總有未如人意之處。以永續指標為例，嘉義市共擬定了56項指標，但部分資料卻難以取得。除以預算編列或跨課室的資源整合解決問題，未來亦將逐步修正指標，讓指標更符合在地化精神。

嘉義城隍廟。  
Temple of Chiayi City Deity.

and ingenuity should form the basis of all policies. Each department is responsible for the training of city planners, public construction planners, and public security planners. All of the planners are members of the community and this community-based bottom-to-top power structure is reflected in Chiayi City's sustainable development efforts. In March 2005, Chiayi City began publishing a local newsletter, which is sent free of charge to each household to ensure that residents are well informed about policy implementation.

Complications inevitably arise during the policy implementation process. Taking sustainability indicators for example, Chiayi City compiled a total of 56 indicators, but data for some of these



此外，如市內新建停車場加設透水鋪面；招牌、路燈及電力系統整合；永續校園等地方永續工作都將陸續展開。嘉義市正穩建地朝其永續發展願景－健康城市、溫馨家園，大步邁進。



was difficult to obtain. Aside from resolving problems with compiling budgets and integrating departmental resources, indicators will be further revised in the future to better meet the needs and wishes of the community.

Sustainable development work will continue in the future with the construction of a new water permeable parking lot; integration of billboard signs, traffic lights, and electrical system; and continued promotion of sustainable schools. Chiayi City remains dedicated and is making great strides towards actualizing its sustainable development vision for a "Healthy City and Beautiful Homeland."

興安國小入圍行政院國家永續發展教育績優獎。  
Xing-an Elementary School is nominated as National Sustainable Education Award Recipient.



### 3.3 台南縣

#### 永續南瀛 綠色新故鄉

台南的發展，自明朝（1590年）閩粵移民遷居至今，因其特殊的歷史背景與地理環境，孕育豐富多元的文化。

#### 走出傳統農業 邁向多元並進

台南縣位於嘉南平原中心，為傳統農業大縣，但近年來已逐漸由農業邁向科技、文化、觀光和產業的多元發展。綠色矽島的基本精神內涵，更與該縣朝永續生態發展的努力方向一致。

台南縣地方永續發展委員會於93年成立，由縣長擔任主任委員，並由縣府一級主管擔任小組

召集人，針對各小組永續發展相關議題及策略，進行規劃討論。台南縣擬定相關行動方案包括：

#### 一、自然生態

自然綠地恢復（全民種樹運動）、水資源維護、生物棲地復育、海岸防護、濕地生態維護、荒廢鹽地生態重建等。

#### 二、生活環保

進行都市衛生下水道建設與鄉村型污水下水道興建、打造永續校園與生態循環型社區、產業廢水淨化處理、公共空間創意設計與綠美化、水資源合理開發應用、文化與生活環保設計、環保

### 3.3 Tainan County

#### Sustainable Southern Coastal Hometown

#### Unique and Historical Cultural Heritage along the Southern Coast

Tainan's development stretches back from the Ming Dynasty (1590) when people emigrated from Fujian and Guangdong Provinces in China and have remained here to this day. Its unique history and physical environment endows it with a rich, diverse culture.

#### Traditional Agricultural Roots Promote Diversified Development

Tainan County is located at the heart of the Chiayi-Tainan plains and is a traditional agricultural-based county. However, in recent years the agricultural industry has been gradually evolving to incorporate diversified development of advanced technology, culture, tourism, and manufacture industries. Propelled by the vision for a Green Silicon Island, today the county is working with even greater impetus towards the

advancement of sustainable ecological development.

The Tainan County Sustainable Development Committee was established in 2004. The county commissioner serves as committee chairman and high-level county government officials serve as subcommittee conveners.

#### 1. Natural Ecology

Natural green land recovery (National Tree-Planting Activity), water resource conservation, biological habitat restoration, coastal protection, wetland ecological conservation, and ecological rehabilitation of abandoned salt flats.

#### 2. Living Environment

Construction of an urban wastewater sewage system and a rural wastewater sewage system, creation of sustainable school campuses and communities with closed-loop ecologies, industrial wastewater processing facilities, innovative

智慧園區、傳統歷史文化慶典的再生與轉化。

### 三、綠色產業

推廣由營利轉營生的產業創意園區、建立有機農業認證制度、國際生態旅遊觀光與會議展覽產業、傳統產業振興、參與性體驗產業、永續農漁業。

### 四、綠色營建

推廣省能綠色大眾運輸系統、以生態工法進行公共工程、鼓勵使用符合本土型氣候之建築建

設、傳統大型閒置產業空間再利用、傳統歷史街區與聚落的保存與重塑。

### 生產生活生態 創建綠色園區

台南縣並配合「挑戰2008國家重點發展計畫」，規劃設立面積200公頃的「台灣蘭花生物科技園區」，未來將扮演台灣科技與精緻農業前進世界舞台的推手。此外，為改善空氣品質，積極推動「學區種樹」計畫，自92年起，結合29所學



虎頭埤。  
Hutoubei Scenery.

design and green beautification of public space, rational use and development of water resources, environmental design of cultural relics and living environments, environmentally smart parks and recreational areas, and the resurgence and transformation of traditional cultural ceremonies.

### 3. Green Production

Transfer of profits to establish innovative industrial parks, establishment of organic agriculture certification system, international eco-tourism and conference exhibits, revival of traditional industries, participatory and experienced-based industries, and sustainable agriculture and aquaculture industries.

### 4. Green Construction

Promote an energy-wise green mass rapid transportation system; employ ecological engineering concepts in public works projects; encourage the use of architectural designs suited local climate conditions; renovation of idle, large-scale conventional industrial space; and the preservation and renovation of traditional historical districts and villages.

### Establishing Green Industrial Parks for Production, Livelihood and Ecology

In compliance with the "Challenge 2008-National Development Plan," Tainan County has drawn up plans to construct the 200 hectare "Taiwan Orchid Biotechnology Park." This biotech park will be a catalyst in forging Taiwan's advanced technology and sophisticated agricultural industry onto the international stage. The county is also working hard to improve air quality



七股潟湖。  
(交通部觀光局)  
Chigu Sihu  
Lagoon.



七股鹽田。  
(交通部觀光局)  
Chigu Salt Field.



河濱公園。  
Sunset glow at  
Riverside Park.



by aggressively promoting the “School Tree Planting” program, which has planted over 10,000 trees in 29 schools and communities since 2003. At the same time, communities are advancing the “Living Environment Reform Plan,” working towards the successful implementation of four main initiatives: “Green Ecology,” “Water Resource Conservation,” “Resource Reuse,” and “Ecological Construction.” These efforts have already resulted in the renovation of the Fu-Rong Community in Houbi Township. Promotion of special local agricultural by-products, like bamboo charcoal, fresh vanilla tea, and natural rice, are driving local development, attracting tourists, cultivating community tour guides, and opening up niches for the growth of the local handcraft

校與社區，栽種超過1萬棵樹木。同時以社區為單位，推動「生活環境改造計畫」，成功將「生態綠化」、「水資源保育」、「資源再生」及「自然工法」等4大議題深入社區，已輔導包括後壁鄉芙蓉埤再造等成功案例。還發展出竹炭、原生香草茶、自然米等具地方特色的農副產品，帶動各社區總體營造，吸引觀光客，培養社區導覽員，並發展社區手工藝品，架構網路行銷，創造自給自足的社區。

台南縣目前正積極推動環保科技園區設置計畫，整體規劃設計構想結合「生產、生活、生態」三生一體與綠色園區概念：

#### 一、綠色生產

考量既有區域性產業，建構與鄰近地區共蒙其利的產業網路；引進產業規模與環境負荷考量觀念，進行最適土地使用配置；推廣環境管理

industry. The power of Internet marketing and sales continues to expand channels and present opportunities for the creation of sustainable, self-sufficient communities.

Tainan County is currently engaged in the promotion of an Environmental Science and Technology Park site plan. The entire design concept integrates the three green industrial park principles- “ Production, Livelihood, and Ecology” :

#### 1. Green Production

Construct an industrial network that is based on existing zones and unites the common interests of the industries in neighboring areas; introduce industrial standards and environmental impact assessment concepts, determining those most suitable for local implementation; promote environmental controls restricting certain substances, factory waste minimization processing, and natural resource waste recycling and reuse.

#### 2. Green Livelihood



2005南瀛國際民俗藝術節。  
Art Bloosom in Nan-Ying.

物質限用、工廠減廢處理與資源化廢棄物回收再利用。

## 二、綠色生活

結合地方聚落既有生活機能，避免設施重覆開發與資源浪費；積極推廣「再生能源」，率先落實於公共設施；園區開發落實綠建築理念，建立綠色概念示範空間。

Integrate the function of existing public facilities in surrounding localities to avoid overlapping development that wastes resources. Actively promote “reusable energy resources” and have public facilities pioneer implementation. Utilize green construction concepts in public parks and recreation development and establish model spaces based on green concepts.

### 3. Green Ecology

Respect the local culture and natural ecology by establishing ecological green land in public parks. Utilize ecological design concepts to manage green land and drainage systems thus preserving endemic species.

### New Model of Sustainable Urban and Rural Ecology along Taiwan's Southern Coast

With the goal of establishing a new model of sustainable urban and rural ecology for the people of Taiwan in the 21st Century, the Tainan County Government is aggressively advancing sustainable development strategies that integrate the

## 三、綠色生態

尊重地方人文與自然生態，建立園區生態綠地；以生態設計概念經營綠地與排水系統，延續地域性原生物種。

### 優質生態城鄉 永續新南瀛

臺南縣政府以「建構21世紀台灣人永續發展優質城鄉生活」為目標，積極推動永續發展策略，結合「綠色城鄉、永續地球」的理念，以「永續南瀛新故鄉－人文生態、優質生活、綠色科技、綠色矽島」，作為該縣永續發展願景。



臺南縣環保科技園區願景圖。  
Conceptual image of Tainan County Environmental Science and Technology Park.

concept of “Green Urban and Rural Communities and a Sustainable Earth.” The county describes its sustainable development vision as a “sustainable southern coast hometown that integrates culture, ecology, high quality of life, green technology, and fulfills the national goal of becoming a Green Silicon Island.”



## 3.4 台中市

### 陽光活力的新興都市

#### 清新宜人的成長都會

台中盆地為台灣面積最大的盆地，更具有位於台灣心臟地帶的絕佳地理條件。位於盆地之中的台中市，面積163平方公里，下轄8個行政區。

回顧發展歷史，台中市在清朝時期一度為台灣省行政中心。在日治時期，因為鐵路、海港與公路興建開通，躋身為中台灣政治、經濟與文化中心。

台中市年均溫23°C，終年陽光普照，氣候宜人，市民平均擁有的綠地面積全台第一。由於多

樣化的休閒生活，環境舒適宜人，房價又較北高兩市為低，使台中市擁有完善的生活機能。

受宜人環境及舒適生活的吸引，外來人口不斷移入，人口快速成長。統計顯示，台中市民國70年人口為60餘萬人，至92年已突破100萬人。未來隨著工商業的開發，預估至民國100年人口將達120萬人。

#### 成立永續發展委員會

隨著世界永續發展潮流趨勢，永續發展已

## 3.4 Taichung City

### New City of Sunshine and Vitality



巴洛克建築—台中車站。(沈士博攝)  
Baroque building - Taichung Main Station.  
(photo:Shih-po Shen)

#### A New and Pleasant Mature City

Taichung County is situated amidst Taiwan's largest basin and at the heart of the nation's most attractive geographical features. Taichung City is nestled in the center of this basin with a 163m<sup>2</sup> area and has jurisdiction over eight administrative districts.

Taking a retrospective look at its historical development, Taichung City was

the Taiwan Provincial administrative center during the Qing Dynasty. During the Japanese occupation, railway, seaports and public roads were opened up, elevating the city to an influ-



台中市地標—台中公園。  
(沈士博攝)

Taichung's earth site -  
Taichung Park.  
(photo:Shih-po Shen)

ential position as central Taiwan's governmental, economic and cultural center.

With an average temperature of 23°C and sunshine all year round, Taichung City offers a pleasant climate and its residents enjoy the most green land per capita of Taiwan's city dwellers. Taichung City is an ideal place to live, endowed with diverse leisure activities, a comfortable living environment, and reasonable housing costs, lower than both Taipei and Kaohsiung cities.

A pleasant natural environment and a comfortable living environment continue to attract people from outside the city to relocate here, thus spurring rapid population growth. Statistics indicate that in 1981 the Taichung City population was over 600,000 and in 2003 it had already surpassed 1 million. It is estimated that by 2011 continued commercial and industrial development trends will drive the population up to 1.2 million.

### Sustainable Development Committees

Keeping in stride with international sustainable development trends, sustainable development

has progressively made the transition from the conceptual stages to the practical, execution phase of today. Regions and localities are actually putting sustainable development policies into practice, just as other countries around the world are focusing efforts on this phase of sustainable development.

Attuned to these trends back in 2003, Taichung city began working on sustainable development organizational structure and policy planning. On 24 February 2004, the "aichung City Sustainable Development Committee" was officially established as the coordination and information organization for promoting the city's sustainable development. The mayor is the convener of this committee and its members include city officials, local leaders, professionals and scholars. Eight subcommittees were set up to focus on the areas of sustainable vision, sustainable environmental protection, cultural development, education, sustainable community, sustainable industry, sustainable transportation and sustainable resources.



■ 國立台灣美術館外牆。(沈奕助攝)  
National Taiwan Museum of Fine Arts.(photo:Yi-juh Shen)

從過去抽象與宣示的層次，逐漸轉化為具實際可行的行動階段，地區或地方實際推動永續發展的策略規劃，也成為各國推動永續發展的重點。

在此趨勢下，台中市於92年著手進行相關組織架構及策略規劃工作，並於93年2月24日正式成立「台中市永續發展委員會」，做為全市推動永續發展的協調、諮詢機構。該委員會以市長為召集人，成員包括官員、地方菁英、專家學者等，下設8個推動小組，分別為永續願景組、永續環保組、文化發展組、教育推廣組、永續社區

### **Vision: “Shining, Vibrant, Magnificent Taichung”**

Taichung City has worked hard to formulate the city's sustainable development vision during the set up of its organizational structure. After evaluating the results of many discussion forums and a public on-line ballot, the sustainable development vision was chosen- “Shining, Vibrant, Magnificent Taichung.”

Taichung City officials explain that “Shining” accurately describes Taichung's sunny climate and also reveals the city's booming residential environment. “Vibrant” represents the youth and high educational background of residents and the city government's intent to continue stimulating burgeoning development. “Magnificent Taichung” signifies regionally integrated development and also implies the meaning “Live in Taichung” when annunciated in the local Minnanese dialect, which conveys the advantages of living in Taichung City.

After reaching public consensus, Taichung City

embarked on efforts to actualize the “Shining, Vibrant, Magnificent Taichung” vision by promoting these strategic policy objectives: “Integrated Strategic Management,” “Guaranteed Environmental Improvements,” “Innovative Resource Use,” “Dynamic Industry and Economy,” “Unobstructed Transportation Routes,” “Enhanced Community Planning,” “Holistic Education,” “Refined Culture,” “Superior Quality Living Metropolis,” “Comprehensive Eco-City,” and “Hi-Tech Production Base.”

### **Putting Sustainable Development into Practice**

The Taichung City Sustainable Development Committee carefully reviewed the work being done by each specialized subcommittee and drafted a short-range (2005-2008) priority executive operation plan based on sustainable development policy objectives. The contents of the plan are presented in table 7:

組、永續產業組、永續交通組及永續資源組。

### 確定願景—陽光 活力 大台中

在推動組織建立的同時，台中市亦積極研擬該市永續發展願景。經過多方研討，並開放民衆網路票選，最後以「陽光、活力、大台中」做為該市永續發展願景。

台中市官員表示，「陽光」除了傳達台中市充滿陽光的天候特性，也透露該市景氣宜人的居住環境。至於「活力」，則代表居民年輕、高學歷，以及整體市政新興發展的意向。「大台中」，除意味著區域性整合發展，同時其台語發音與「住台中」諧音，也傳達台中市適宜居住的優勢。

依據「陽光、活力、大台中」的願景，台中市以「整合策略管理」、「確保環保改善」、「創新資源利用」、「活化產業經濟」、「暢通交通網路」、「提昇社區營造」、「落實全能教育」、「發展優質文化」、「超優質生活首都」、「全關照生態城市」、「高科技生產基地」，為策略推動總目標，期使在凝聚所有市民的共識下，落實永續發展願景。

### 積極行動 落實永續發展

在實際行動方面，台中市永續發展委員會重新檢視各機關相關工作，依據永續發展目標，擬定該市近程（民國94至97年）優先執行的行動方案，其內容詳如表7：

表7：台中市永續發展目標近程優先執行行動方案

Table 7. Taichung City's Short-range Priority Executive Operation Plan on Sustainable Development

總目標 Overall Objectives	優先執行之行動方案 Priority Executive Action Plan
全關照生態城市 Comprehensive Eco-city	<ol style="list-style-type: none"> <li>台中港、縣、市資源整合初步規劃方案 Preliminary integration of Taichung Harbor, County, and City resources</li> <li>都市公園綠地系統綠美化維護方案 City park and green area beautification and maintenance</li> <li>都市藍帶美化維護方案 City blue belt beautification and maintenance</li> <li>園道系統整合及綠美化維護方案 Public parks and recreation facilities system integration, greening, beautification and maintenance</li> <li>污水下水道第二、三期建設方案 Second and third phase construction of wastewater sewerage system</li> </ol>
高科技生產基地 Hi-Tech Production Base	<ol style="list-style-type: none"> <li>新建第三科學園區計畫 Construct third technology park</li> <li>新建機械科技工業園區計畫 Construct machine technology industrial park</li> <li>新建軟體科技 u業園區計畫 Construct software technology industrial park</li> </ol>
超優質生活首都 Superior Quality Living Metropolis	<ol style="list-style-type: none"> <li>推動捷運藍、綠線建設方案 Promote rapid transit system blueprint and green line construction</li> <li>台中生活圈四號線道工程 Taichung living circle No. 4 line construction</li> <li>台中市鐵路高架化工程 Taichung City railway overpass construction</li> <li>加速網際網路資訊基礎建設方案 Expedite development of Internet information base</li> <li>台中國家歌劇院興建方案 Construct Taichung National Opera House</li> </ol>



台中市官員表示，在組織架構完成及推動願景確定之後，未來將召開永續發展推動小組定期會議，建立橫向合作與整合機制，同時將強化考核及評量系統，以檢核工作進展。

其次，有鑑於民衆參與是永續發展推動成功與否的關鍵，該市未來將加強推廣永續發展教育及永續发展理念宣導，並舉辦相關宣導活動，藉商業行銷方式，將永續發展理念植入民心。

透過政府部門的整合推動，以及民間的持續參與，台中市永續發展之路，將處處充滿陽光及活力。



■ 國立自然科學博物館。(沈奕助攝)  
National Museum of Natural Science. (photo:Yi-juh Shen)



■ 國立台灣美術館戶外雕塑。(沈奕助攝)  
Sculpture in National Taiwan Museum of Fine Arts.  
(photo:Yi-juh Shen)

Taichung City officials explain that once the organizational structure has been completed and a consensus has been reached on how to promote this vision, the sustainable development promotion subcommittee will hold periodic meetings. These meetings will function to establish lateral cooperation and integrated mechanisms, and also strengthen the review system to evaluate work progress.

Second, based on the level of public participation and the success of promoting sustainable development, the city will enhance the promotion of sustainable development education and the dissemination of sustainable development concepts. Related promotional activities will also be held utilizing commercial marketing methods to instill sustainable development concepts within the public consciousness.

Through integrated promotion of governmental departments and continued grassroots participation, Taichung City's sustainable development initiatives will fulfill the vision of sunshine and vitality.



(本文圖片由主婦聯盟提供)

■ 肥皂DIY—做個用得安心 又不污染環境的好肥皂。

Homemade soap is easy to make, good for your skin and doesn't pollute the environment. (photos by Homemaker's Union)

## 第四章 民間推動永續發展之活力

### Chapter 4 Civil Action toward Sustainable Development

永續會自93年度開始辦理「國家永續發展績優獎」，表揚績優的社區、學校、企業、社團及行動計畫執行機關，以鼓勵全民參與，落實地方永續發展，進而實現永續台灣願景。

「第二屆國家永續績優獎」，經永續會相關分組委員進行初選、複選及決選會議，評選出15個獲獎單位。94年度國家永續發展獎共有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」工作項目得獎。各類獎項得獎名單，請詳見永續會網站 (<http://ivy2.epa.gov.tw/nsdn//CH/NEWS/NEWS11.HTM>)，本章將就各類獎項第一名作深入介紹。

Since 2004, the NCSD has held the annual National Sustainable Development Awards to commend outstanding performance of communities, schools, businesses, organizations, and government implementing agencies. The purpose of the awards is to encourage the citizenry's participation in putting sustainable development into practice and actualizing Taiwan's vision for sustainability. For the Second National Sustainable Development Awards, related NCSD working groups carried out a three-stage selection process to select 15 award recipients. Three winners were selected for each of five categories: communities, schools, businesses, NGOs and implementing agencies. A list of award winners and an in-depth report of the first place winners can be found online at: <http://ivy2.epa.gov.tw/nsdn//CH/NEWS/NEWS11.HTM>.



## 4.1 主婦聯盟環境保護基金會

### 凝結婦女共識 落實永續生活

國76年初，一群主婦有感於社會型態急遽變遷，既身為社會的一份子，不能再坐視生活週遭的種種環境病態、教育缺失。於是「勇於開口，敏於行動，樂於承擔」的宗旨自許，成立「主婦聯盟」。「財團法人主婦聯盟環境保護基金會」在78年正式立案，透過參與者合作思考、共同決策、分組執行，致力結合婦女力量，改善生活環境，提升生活品質。



#### 結合婦女力量 提升生活品質

成立近二十年來，組織發展漸趨成熟而完整，主婦聯盟環境保護基金會目前設有環境保護委員會、教育委員會、消費品質委員會和婦女成長委員會等，推動會務。

##### 一、環境保護委員會（民國78年成立）

- (一)、監督政府落實「垃圾分類、資源回收、垃圾減量」政策的執行。
- (二)、推動使用再生紙，自備環保隨餐包、購物袋、廚餘落葉做堆肥、回收廢油做肥皂等運動。

## 4.1 Homemakers' Union

### Women's Consensus to Practice Sustainable Lifestyles

In light of swiftly changing social tides, in 1987 a group of women homemakers felt that as members of society they couldn't just sit to the side as environmental degradation and lack of education continued to take their toll. Aspiring to speak out courageously, wield action sensitively, and take pleasure at bearing responsibility, this group of women formed the Homemakers' Union and Foundation (財團法人主婦聯盟環境保護基金會) in 1989. This NGO drew on collective wisdom, cooperative decision-making, sharing of work among its members, and integrating the power of women to improve the living environment and raise the quality of life.

#### Integrating Women's Power to Raise Quality of Life

Established for nearly 20 years, the organization has reached an ideal level of maturation. The Homemakers' Union and Foundation (HUF) currently has committees for environmental protection, education, consumer quality and women's development. Their duties are as follows:

##### Environmental Protection Committee (est. 1989)

1. Supervise the government's implementation of policies to sort garbage, recycle and reduce waste
2. Promote use of recycled paper, encourage people to carry reusable eating utensils and shopping bags, promote composting of food

(三)、結合環保社團關心環境議題。

(四)、催生「中華民國自然步道協會」。

## 二、教育委員會（民國78年成立）

(一)、關心「國中自願就學方案」。

(二)、鼓勵媽媽積極參與子女學校家長會，出版《家長會面面觀》，催生「台北市家長協會」。

(三)、舉辦「親子遊戲學數學」種子家長研習營，在文山社區大學、社區協會、家長團體開課，積極培養在地義工，共創「公民社會」的理想。

## 三、婦女成長委員會（民國78年成立）

(一)、舉辦健康講座，提昇婦女關心自身及家人健康的能力。

(二)、主婦寫作班，培養婦女自信及第二專長的能力。

(三)、「認識台灣」地理篇，培養愛鄉、愛土的環境教育。



waste and fallen leaves, and make soap from used cooking oil

3. Integrate forces on issues taken up by other environmental NGOs

4. Push for the establishment of the Taiwan Nature Trail Society (中華民國自然步道協會)

## Education Committee (est. 1989)

1. Involvement in the "voluntary Junior High School Enrollment Program"

2. Encourage mothers' active involvement in parent associations of their children's schools; issue the parent association publication

3. bring about the establishment of the "Society of Taipei City Parents" (台北市家長協會)

4. "Children-Parent Math Games "seed parent study workshops; courses for Wenshan Community College, community associations, and parent groups on how to actively cultivate local volunteerism; co-initiated the "Civil

## 四、消費品質委員會（民國80年成立）

(一)、舉辦「吃的自力救濟」消費系列講座，教導如何買的安心，吃出健康。

(二)、凝聚消費者的力量，鼓勵好的生產者，以推動本土有機農業。

(三)、催生「台灣主婦聯盟生活消費合作社」。

## 落實永續理念 從社區、學校出發

主婦聯盟環境保護基金會近年來推動的工作議題，包括：

一、推廣節能教育與非核家園理念；

二、建立資源循環使用之觀念，推動「二手制服

與二手教科書回收再利用」；

三、關心食品安全和學校午餐問題；

四、透過「婦女新聞台」

### 提倡回收—

元宵節推出環保燈籠DIY。

Promoting recycling—DIY environmental lanterns for the Chinese Lantern Festival.

society" concept in Taiwan.

## Women's Development Committee (est. 1989)

1. Hold health seminars, raise women's capacity to care for their family's health and their own health

2. Women homemakers' composition classes; cultivate women's self-confidence and secondary professional skills

3. Issue the geographical publication "Get to Know Taiwan"; environmental education to foster affection for one's homeland

## Consumer Quality Committee (est. 1991)

1. Held a consumer lecture series on "Self-help through Eating" to teach how to buy safe and healthy food

2. Consolidate consumer power and encourage producers to promote local organic agriculture

3. Urge the establishment of the "Taiwan



關心社會重大事件，表達婦女立場；  
五、推廣「親子數學」，為弱勢學生的學習權益發聲。

理念的推動及落實，若只靠一個民間團體效果必定有限。因此，社區及學校的宣導工作，一直是主婦聯盟的工作重點。推動垃圾減量，就到社區學校進行「垃圾變黃金，資源要回收」、「廚餘作堆肥，送堆肥到大地」、「我要用自己的筷子，拒用免洗餐具」、「使用再生紙，落實資源回收再利用」、「回收廢油做肥皂，清淨河川」等宣導工作。推動節約資源，即鼓勵民衆「節約用水，水是生命之源」、「節約能源輕鬆做，大家來省電」。推動綠色消費，即鼓勵「共同購買，支持不傷害環境的產品」。凡此種種，無非

Homemakers' Union and Foundation Consumer Cooperative" (台灣主婦聯盟生活消費合作社)

### Sustainability Starts with Communities and Schools

In recent years, the Homemakers' Union and Foundation has promoted the following issues:

1. Promotion of energy conservation education and the "Nuclear-Free Homeland" ideal
2. Establishment of the concept of cycling resources and promotion of reused second-hand school uniforms and textbooks
3. Concern for food safety and school lunches
4. Express women's stance on major social issues through the "Women's News Channel"
5. Assert education rights of disadvantaged students through promotion of "Parent-child math" initiative.

Progress would be limited if society relied on just one NGO to put environmental concepts into practice. Therefore, communities and schools have always been a focus of the Homemakers' Union. In promoting waste reduction the group has carried out several initiatives in communities and schools, including "Turn waste into gold through recycling," "Food waste composting to

希望環境保護由自己做起，讓人人成為最佳「環保生活家」。

### 培訓人才 經驗傳承 讓環保紮根

此外，主婦聯盟環境保護基金會在開拓婦女參與社區活動方面，也不遺餘力。主婦聯盟以主婦作為主要爭取對象，因主婦在照料家庭之餘，行有餘力照顧社區，是最恰當的人選。但婦女走出家門後，能在社區作什麼事，則需給予培訓。

一個組織經過長期的累積，即能提供相當豐沛的資訊，分享給有需要的人。鼓勵婦女寫作，紀錄觀察及心得，或是安排婦女研習環保理念，環保DIY，甚至透過親子數學課程，傳授可以操作的方向。再加上經營組織的技巧，例如如何寫

restore the Earth's fertility," "BYO chopsticks - say 'no' to disposable eating utensils," "Use recycled paper - put recycling into practice," and "Clean up rivers by making soap out of waste cooking oil." As for promoting green consumption, HUF encourages collective purchasing to support products that do not harm the environment. These initiatives embody the simple hope that environmental protection can start with the individual and everyone can be an environmentalist.

### Training and Sharing to Solidify Environmental Action

The Homemakers' Union and Foundation has made every effort to increase women's participation in community activities. Women are the primary focus of HUF because with their experience in looking after the family and home, they are the most suitable group of people to look after society. However outside of the home, some training is helpful for women homemakers to effectively engage in community work. With its long and rich history of development, HUF has a wealth of information to share with those who need it. The Homemakers' Union opens up new doors by encouraging women to

企劃書，如何尋找社區資源，都可以增進婦女在社區推動環境保護的能力。

在推動過程中遭遇任何困難，都可以主婦聯盟每週的環保、婦女、教育、消費等委員會固定的切磋琢磨時間，共聚一堂，討論及分享工作推動經驗。主婦聯盟環境保護基金會就成為大家推動的幫手，協助尋找資源。主婦聯盟期許，要和社區做好朋友，共同落實對台灣土地的關愛。

經由組織的擴展、不斷結交好朋友，就能把主婦聯盟要推動的工作帶進社區。藉由社區義工及尖兵培訓，挖掘更多有心經營社區的人才，形成夥伴關係。最近幾年，主婦聯盟的夥伴關係已經不限於女性。一些男性社區工作者，也開始與

write and record observations and insights, by arranging workshops to teach environmental concepts or environmental DIY projects, and by organizing parent-child math courses. Group operation skills such as writing up project plans or finding community resources can increase women's ability to protect their community environment.

Difficulties that arise during the process of carrying out tasks are settled through discussion and sharing of experiences during the four committees' regular weekly meetings. HUF is known for its capacity to assist others in searching for resources. It is HUF's aspiration to stand alongside communities as a friend and work together in caring for the land of Taiwan.

HUF is able to promote its work at the community level by continually developing the organization and making new friends along the way. Through training community volunteers and scouts, HUF is able to find and form partnerships with talented individuals dedicated to organizing their community. In recent years, HUF's partnerships have not been limited to women and liaisons are also formed with male community workers. Both

其連結。社區經營應是鼓勵兩性一起來，但家庭主婦仍是現階段開發的重要人力資源。

主婦聯盟目前規劃巡迴各地的「主婦列車」，將基金會關心的議題，推廣至全國各級學校和社區，將社會運動理念落實於日常生活。基金會成員相信「只要多一個人出一份心力，環境就多一點改善」。有計畫地以社區為單位，訓練志工和義工，將環保觀念傳遞給周遭的人，期望環保行動從個人紮根，進而推展到家庭、社區和社會各層面。



■ **節能**—與立委合辦「耗能通報 全民一起來」活動。  
Energy conservation—activity jointly held by legislators.

sexes are encouraged to work together in organizing their community, however female homemakers are the most important human resource at the current stage of development. HUF is currently organizing visits to all levels of schools and communities throughout the nation to promote issues taken up by HUF, and to practice social movement concepts in everyday life. HUF members are of the same mind that the efforts of just one more person will make the environment much better. By treating the community as a whole and training volunteers, environmental concepts will be passed along to more and more people. It is hoped that environmental action will begin with the individual, and eventually spread to their families, the community and all levels of society.



## 4.2 慈心華德福小學

### 伴隨孩子成長的學校

慈心成立於民國56年，是一所採幼稚園到高中一貫學制的華德福（Waldorf）學校，以開放、親和、整合性、藝術化的教學方式，教導學生透過自然界去體驗生命內在，培養敬天愛人的價值觀，及對世界的責任感。

慈心華德福於91年8月正式成為台灣第一所公辦民營小學。為了讓孩子們在此生活、學習、遊戲與探索，在環



（本文圖片由慈心華德福小學提供）

■ 校園內的多孔隙生活棲息空間。  
Even the tiniest of crevices are important habitat for some creatures.  
(photos by Waldorf school )

## 4.2 Ci-Xing Waldorf Elementary School

### Accompanying Children as They Grow

Established in 1967, Ci-Xing (Charitable Heart Foundation) established a K~12 Waldorf school that uses open, affable, holistic and artistic teaching methods. Students are encouraged to experience the intrinsic aspects of life through the natural world, and cultivate a set of values with respect for the heavens and love of humanity as well as a sense of duty to serve the world. Ci-Xing Waldorf officially became Taiwan's first privately operated public elementary school in August 2002. The school encourages children to live, learn, play and explore, always leaving the potential for children to create and change their school environment. Short-term and long-term plans are built around the fundamental idea of

letting the children grow together with their school.

#### Three Years of Greening to Create a Sustainable Campus

Ci-Xing Waldorf school is located in Dongshan Township (冬山鄉) along the upper Dongshan River basin on the Lanyang Plateau, which has recently been developed as an agricultural sightseeing area. Community development highlights the area's history of rice paddy agriculture and cultivation of weaving materials. In recent years, the Ci-Xing group has been actively creating a sustainable campus. The last three years have seen a wealth of results including:

境塑造上，保留了孩子可創造及改變校園的可能性，在時間上也有短程與長程的規劃，期待環境和孩子共同成長。

### 三年致力綠化 創造永續校園

慈心校區位於冬山鄉，屬冬山河流域上游，周遭為蘭陽平原開發晚期的農村景觀，大稻埕文化與農耕織造為社區發展特色。近來，慈心團隊投入永續校園營造行動，三年來成果豐碩，譬如：

- 一、91年3月，將北宜高速公路新建工程移植的樹木，收容移植於校區空地，拯救了256棵樹木。
- 二、92年10月，進行「校園土壤全面換新」，由國道工程局提供土方6,000立方米，免費運送到校。
- 三、92年11月，在「吾校吾土，脫胎換骨」工程完畢後，發起了「親子植樹節」活動，邀請家長和學童們一起植樹，自助進行校園綠色

供鳥兒棲息的人工鳥居。  
People can provide bird habitat by making birdhouses.

1. March 2002: Transplanted trees taken out due to construction on the North Ilan Highway. A total of 256 trees were rescued and planted in open spaces on campus.
2. October 2003: Added 6,000 cubic meters of new soil to the campus grounds. The soil was excavated during road construction and delivered to the campus free of charge.
3. November 2003: After completion of the "Our School Our Soil" project, Ci-Xing initiated the "Parent-Child Tree Planting Day" inviting par-



- 美化。
- 四、92年12月，進行「92年度永續校園局部改造工程」，規劃「教學農園」自然有機農耕，以落葉廚餘堆肥做為養分來源。
- 五、92年12月，與「荒野保護協會」合作搶救百年「穗花棋盤腳木」，舉辦全校迎接老樹儀式，並移植幾種瀕臨絕種的本土植物，開闢本土植物種源保護區。
- 六、93年12月，再獲教育部補助「93年度永續校園改造工程」，進行多層次生態綠化、營造半戶外手工教室、設置「人工鳥居」及「人工蜂箱」等等。

### 以自然為師 校園就是大花園

由於校區當初原規劃為「冬山國小香南分校」，為了落實華德福學校的教育理念，校園環境工作小組依據以下3大原則，提出設計變更：

#### 一、孩子的學校

由孩子的活動出發，使校園成為伴隨學童成

ents and students to plant trees together and help green the school.

4. December 2003: Began the "2003 Sustainable Campus Piecemeal Reform Plan" and



長的有機空間，不做固定的機能區隔。無需一般小學的大運動場，校園即是一個大花園。

### 二、以自然為師

校園是大自然中的小自然，以專業完整的自然保育觀念植栽造園，提供孩子更多的自然學習經驗。人與動植物的生態活動也力求自然，秉持生機互動、永續生長的原則。

### 三、與社區結合

學校是孩童學習社會生活的重要場所。由教師與家長義務形成的環境工作小組，與孩子合作創造華德福教育的實踐空間，對孩子與成人都是可貴的經驗。同時在同樣的前提下，力求學校與

社區和諧共處。

### 結合在地學校 繪製綠色生活地圖

為了將慈心的經驗推廣至鄰近社區，學校於93年的永續校園局部改造計畫中，展開跨校活動聯結。活動主要以荒野保護協會宜蘭分會為界面，串聯宜蘭縣境內4所學校，包括慈心華德福小學、三星國小、育才國小及利澤國中，橫跨冬山鄉、三星鄉、宜蘭市及五結鄉的地理環境，結合社區及社團資源，共同規劃「校園生態景觀」、「社區生活營造」及「地區產業文化」，製作跨校性「綠色生活地圖」。在異地校園的合作



讓小朋友自在伸展的半戶外手工教室。  
Outdoor craft workshops give kids unrestrained room to grow.

planned an educational garden to grow natural organic food, with composted fallen leaves and food waste as a source of nutrients.

5. December 2003: Cooperated with the Society of Wilderness to rescue a century-old freshwater mangrove. The whole school held a welcoming ceremony for the old trees and transplanted several endangered native plants to mark the opening of a botanical protection area on campus.

6. December 2004: Once again received the

Ministry of Education's 2004 Sustainable Campus Reconstruction" grant, and carried out several layers of ecological greening, including a semi-outdoor handicraft classroom, birdhouses and beehives.

### Nature as Teacher - School as Garden

Since the outset, the campus was originally designated as "Dongshan Elementary School Hsiangnan Branch." To put Waldorf school education concepts into practice, the Campus Environment Working Group followed three main principles in proposing designs to change the campus:

#### 1. A School for Children

The campus should be based around the activities of children; rather than creating fixed partitioned spaces, there should be organic space for children to grow up in. Rather than installing the typical large playground like most elementary schools, it was decided to turn the campus into one large garden.

#### 2. Nature as Teacher

The campus is a small window on nature. Professional and holistic nature conservation concepts were used to plant gardens that pro-

基礎上，進行永續營造及維護管理，期望能連結社區產業，推展環教動線，強化教案交流，成為一個清新的示範案例。

任何一項教育作為的目的，皆須回歸到教育的本質—「學生主體」及「課程教學」，永續校園局部改造計畫也是如此。透過4校師生合力繪製綠色生活地圖的過程，讓孩子親身體驗和認識校園內外環境資源，包含自然、人文、生態、環保、



插秧教學，讓孩子親近土地。  
Teaching kids to transplant rice seedlings brings them closer to the Earth.

綠色產業等景點，進一步熟悉自己生活的環境，同時舉辦永續校園小小解說員培訓，讓孩子們在環境中自然成長、自在學習。

vide children with more chances to learn from nature. Every effort is taken to harmonize the ecological activities of people, animals and plants, allowing the forces of life to interact with each other based on the principle of sustainable growth.

### 3. Integrating with Society

The school is an important place for children to learn about social life. Ci-Xing Waldorf School started out as an experiential space created by an environmental working group formed of teachers and parents working together with children. It turned out to be a precious experience for both the kids and adults. The same model is now followed to pursue a harmonious symbiosis between school and community.

#### Integrating with Local Schools to Draw Up Green Maps

To spread Ci-Xing's experience to neighboring communities, the school started up outreach programs as part of the 2004 Sustainable Campus Piecemeal Reform Plan. The Society of Wilderness' Ilan branch provided the main interface for activities, linking together four schools in Ilan: Ci-Xing Waldorf Elementary School, Sansing Elementary School, Yucai Elementary School, and Lizeh Junior High School. This spanned the

geographical areas of Dongshan Township, Sansing Township, Ilan City, and Wujie Township, and integrated the resources of communities and civil organizations. The team jointly planned the "Campus Ecological Landscaping," "Building Community Life," and "Local Business Culture" to create an inter-school "Green Map." A system of sustainable management formed based on cooperation between schools in different areas in hopes of linking community businesses and opening up pathways for environmental education. This strengthened exchange of teaching plans and has become a fresh new model.

The purpose of any education effort must always return to the intrinsic nature of education-students and curriculum. The Sustainable Campus Piecemeal Reform Plan does just this. As the teachers and students of four schools joined forces to create Green Maps, students were able to personally experience and become aware of environmental resources in and around school, including spots that highlight nature, culture, ecology, environment, and green business. This allowed them to become more familiar with their own living environment. Sustainable school interpreter training courses were also held to foster and environment of natural development and unrestrained learning.



## 4.3 聯華電子

### 善盡社會責任 自許綠色企業

**聯**華電子 (UMC)，為台灣第一家半導體公司，奠基於民國69年，至今已歷1/4個世紀。經多年耕耘，資產規模迅速擴增至超過新台幣3千億元，於全球共有10座晶圓廠，員工超過1萬人。93年營業額達1,173億，比92年成長38%，為全球第二大晶圓專工公司。聯電同時也在政府「兩兆雙星」計畫中，扮演火車頭角色。在企業組織不斷轉型蛻變下，聯電歷經創業期及成長期，如今正朝向永續經營的穩定階段。



(本文圖片由聯電提供)

■ 香山溼地生態之旅。  
Siangshan wetland ecotour (photos by UMC)

## 4.3 United Microelectronics Corporation

### A Socially Responsibility Green Enterprise

United Microelectronics Corporation (UMC) was established in 1980 as Taiwan's first semiconductor manufacturer. With a quarter century of experience, its capital assets have already rapidly expanded to over NT\$300 billion, ranking tenth among the world's foundries and employing over 10,000 people. UMC had a turnover of NT\$117.3 billion in 2004, up 38% from 2003, making it the world's second largest foundry. UMC now plays an integral role in the government's "Two Trillion, Twin Star" plan. Working within the ever-changing world of industry, UMC has already experienced pioneering and growth stages, and now approaches a stable stage of sustainable management.

#### Sustainable Management through Green Competitiveness

"Sustainable development and environmental protection have already become important

indicators in international trade," says UMC President Hu Guo-chiang (胡國強). Ever since Taiwan acceded to the WTO, industry began facing the need to raise green competitiveness, respond to international environmental appeals and strengthen international competitiveness. The new challenge for corporate management is how to grasp global business opportunities. In fact, UMC has long felt that environment protection is integral to corporate sustainability. Each year UMC allocates funds to pollution control, industrial safety and health. UMC invested around NT\$2.27 billion on related expenses in 2004.

UMC's organizational structure attests to the corporation's emphasis on environmental safety and health. UMC has established an independent Class A department called the Group Risk Management and Environmental, Safety, and Health Division. This division is responsible for

## 追求永續經營 提升綠色競爭力

「永續發展及環保議題，已成為國際貿易的一項重要指標」，聯電執行長胡國強表示。從我國加入WTO後，產業面臨衝擊，如何提升綠色競爭力，因應國際環保訴求，以及如何強化國際競爭優勢，掌握全球商機，成為新的企業經營議題。事實上，聯電早已體認環保為企業永續重要一環，每年持續在污染防治、工安及衛生上投資挹注，93年的相關支出即佔22.7億元。

聯電重視環安衛的決心，可由其企業組織一窺端倪。聯電設有獨立的「風險管理暨安環部」一級部門，負責規劃及推動全公司環保安全衛生及風險管理事務，不僅著重末端污染防治，並以永續發展角度，推動各項環境管理專案與永續發展工具，成效良好，並成為業界的先驅與模範。

當多數廠商努力想達到環保法規標準時，



生產12吋晶圓的聯電台南Fab 12A廠。  
UMC Tainan  
Fab12A Plant,  
12-inch wafer  
foundry.

『超越環保法規要求』在聯電已不是口號，『零污染』才是最終目標。聯電自89年起推動環境保護目標管理機制，透過環境績效目標訂定與達成，逐年提升污染防治效率及環境管理系統落實度。同時致力推行資源永續利用與環境保護，例如：從生產源頭及生產製程進行管理，實施節約原料物料的綠色生產方案；在生產流程末端進行廢棄物減量管理；評估及與合格廢棄物清除處理

overall planning and promotion of company-wide environmental protection, health, safety and risk management affairs. This division not only emphasizes end-point pollution control but also takes the perspective of sustainable development to promote various environmental management special cases and sustainable development tools. Results have been good, turning UMC into a pioneer and model in the industrial world.

When most companies had just begun efforts to live up to environmental standards and regulations, UMC had already progressed to level of making "zero waste" its ultimate goal, not just a slogan. From 2000, UMC began incorporating environmental objectives in its management system. After years of setting and attaining environmental objectives, UMC has enhanced pollution control efficiency and has created a workable environmental management system. Meanwhile, UMC also began promoting sustainable reuse of resources and environmental protection initiatives. Examples include manage-

ment of production source and manufacturing processes through implementation of a green production program to conserve raw materials; management of post-production downstream waste reduction; assessment of and cooperation with qualified waste clearance and disposal enterprises, management of waste flow during clearance and disposal; and adoption of advanced pollution control equipment to reduce end-of-pipe pollutants.

UMC strives to be a forerunner in the industrial world in terms of introducing sustainable development tools. UMC was the first domestic electronics company to establish an environmental, safety and health accounting system. This system effectively commands and evaluates the overall effectiveness of environmental safety and health activities on business operations. Up and running for five years, the system has proved beneficial in terms of successful implementation of environmental safety and health initiatives. From 2000, UMC has published an environmental report to share its achievements in working



商合作，並進行清除處理流程管理，及採用先進污染防治設備，降低末端污染物排放等等。

針對永續發展工具導入，聯電自許為業界先驅。聯電是國內第一家創立環安衛會計制度的電子公司，透過該制度有效掌握及評估環保安全衛生活動在營運上的整體效益。該制度已推行5年，在環安衛的執行成效上有相當助益。同時，自89起發行環境報告書，公開環保與永續發展的努力成果，並為落實無紙化，自90年起將報告書改為電子版。近年來聯電亦將環保理念延伸至採購供應鏈，推動綠色供應鏈體系及產品生命週期評估，針對供應商的整體環境保護績效、提供的原物料，及聯電公

司產品環境負荷進行整體評估。在溫室氣體減量、蒙特婁議定書及化學品管制(WEEE及RoHS)等國際環保議題上，聯電都投注相當心力。

聯電在追求企業營利成長的同時，仍不忘善盡社會責任。相關公益活動透過財團法人聯華電子科技文教基金會進行，每年公益活動支出逾千

萬台幣，並以教育、文化、體育及環保為主要關懷目標。為展現聯電深耕台灣、回饋本土的心意，95年將投下5,000萬元公益經費，獎助清寒大專生，並與家扶中心、博愛基金會等公益團體合作，挹注偏遠地區或弱勢族群學童，將科技人的



聯電的工安環保月海報。  
UMC's environmental safety and health monthly newsletter.

toward environmental protection and sustainable development. To foster a paper-free business environment, this report has been issued in electronic form since 2001.

In recent years, UMC has extended environmental concepts to the procurement and supply chain, promoting the concepts of green supply chains and product life cycle assessments. UMC conducts evaluations of suppliers' overall environmental performance, including raw materials and environmental footprint of UMC products. UMC has also invested considerable effort in international environmental issues such as greenhouse gas reductions, the Montreal Protocol and controls on chemical substances including WEEE and RoHS.

As UMC pursues business profits it does not forget its obligation toward society. Related public welfare activities are conducted by way of the non-profit UMC Science and Culture Foundation. Each year, expenses on public welfare activities exceed NT\$10 million, and mainly target education, culture, physical fitness and environmental protection. In 2006, UMC will invest NT\$50 million

toward public welfare in Taiwan to display its dedication to Taiwan and in return for local support. UMC also shows its care for Taiwan by shifting funds to Taiwan's remote areas and disadvantaged students through cooperation programs with public welfare groups including Chinghan Junior College students, family support centers, and the Taiwan Catholic Mission Foundation.

### Environmental Safety Performance Affirmed through Awards

To eliminate the popular misconception that semiconductor foundries are a high-polluting industry and to let outsiders better understand UMC's dedication to environmental protection and sustainable development, UMC actively participates in various industrial, governmental, and academic environmental technology seminars. UMC encourages its colleagues to publish dissertations and openly share their experience with the industry world. UMC has also worked together with government and research organizations to hold onsite workshops on environmen-

愛心種子播撒得更廣更遠。

## 環保工安表現 多次獲獎肯定

為杜絕一般大眾對晶圓廠為高污染工業的誤解，並讓外界了解聯電在推動環境保護與永續發展上的用心，聯電積極參與各項產官學界舉辦的環保技術研討會，鼓勵同仁進行論文發表，將自身經驗與業界分享，並多次配合政府機關與研究機構辦理環保績效現場觀摩，展現聯電優異的環保績效。讓社會有目共睹的是，由於歷年來在環保工安上的種種努力及投入，聯電除獲頒94年國家永續發展獎之外，近三年(92~95)已多次得工業永續精銳獎(93年)、亞洲企業社會責任獎(2004)、企業環保獎(92、93、94)、節約能源獎(93、94)、節約用水績優獎(92、93、94)等多項

環保獎項的肯定。

此外，為與國際環保趨勢接軌，在參與國際組織方面，聯電亦不遺餘力。如加入世界半導體協會所設的子機構ESH委員會，聯電今年並代表台灣半導體業者出席年會，除基於產業本身的立場，並兼顧國家權益考量發聲，參與溫室氣體(如PFC)減量等議題的討論及交流，進而了解其他會員國相關法規及需求，後續再將會議共識或結論，向國內業者進行宣導及教育工作，以善盡代表本地業者的角色責任。

展望未來，聯電除持續以「綠色企業」為努力目標，將綠色經營的發展策略，融入企業願景中。並在企業目前既有的制度與系統中，導入環境保護觀念，自我期許創造綠色企業的核心競爭力，達成企業永續經營最終目標。

tal performance and to share UMC's own outstanding environmental performance.

UMC's efforts and investments in environmental safety and health are visible for all to see. Apart from its earning of the 2005 National Sustainable Development Award, in the last three years (2003~2006), UMC's environmental performance has been affirmed through its earning of the Industry Sustainable Excellence Award (2004), the Asia Corporate Social Responsibility Award (2004), the Corporate Environmental Protection Award (2003, 2004, 2005), the Energy Conservation Award (2004, 2005) and the Water Conservation Outstanding Performance Award (2003, 2004, 2005).

UMC has worked hard to participate in international organizations in the interest of keeping up with international environmental trends. UMC joined the ESH committee, an affiliate organization set up by the World Semiconductor Council. In 2005, UMC represented Taiwan's semiconductor industry in the annual ESH meeting. Apart from standing up for the industry, UMC also voiced the rights of the nation and participated



■ 聯電獲頒2004亞洲企業社會責任獎。  
UMC earned the 2004 Asian Corporate Social Responsibility Environmental Excellence Award.

in discussions and exchanges on issues such as greenhouse gas (i.e., PFCs) reductions. This helped to further Taiwan's understanding of other member nations' related regulations and requirements. Taking full responsibility for the nation's industry, after the meeting UMC informed domestic industries of the consensus and conclusions reached at the meeting. As for future prospects, UMC will pursue its goal to green industry and incorporate a green management and development strategy in its corporate vision. UMC's ultimate goal is to attain corporate sustainable management by introducing environmental concepts in the existing corporate system, and by demanding an emphasis on green competitiveness.



## 4.4 嘉義縣三興社區

### 凝聚共識營造社區

#### 社區改造歷程

嘉義縣三興村位於民雄鄉東北，村民多半從事農業。過去以種原料甘蔗為主，近10年來為配合經濟發展朝向精緻農業發展。目前鳳梨栽種是村民主要收入，雖然村內土壤較為貧瘠，但透過品種改良後，社區附近已遍植鳳梨，三興鳳梨也成為全台名產，每年的鳳梨文化季吸引不少觀光客到此品嚐。

民國80年中正大學完工啓用，廣大的校園成為知名的遊覽與休閒勝地，大學周圍也逐漸發展

為大學城。但鄰近中正大學的三興村等社區，卻因限建及人口外流等因素，社區生活品質受到限制。另一方面，三興社區一直未成立發展協會，社區內部的意見難有溝通管道，地方的發展與建設也因此停滯。

面對這樣的困境，有心人士開始思考推動社區營造的可能。92年底，在民雄文教基金會及中正大學學者的協助下，在三興村舉辦社區營造說明會，正式開啓了三興社區營造序幕。次年2月，三興村正式成立社區發展協會，並選出理監

## 4.4 Chiayi County Sansing Community

### Consensus on Community Building



本文圖片由三興社區提供

整理荒廢屋舍成為共享的公共綠地。

Dilapidated houses were transformed into public green spaces for everyone to enjoy. (photos by Sansing Community)

#### Milestones in Community Reform

Sansing Village is located in northeast Minsiung Township, Chiayi County. Most villagers are farmers and the primary crop in the past has been sugar cane. However in the last decade, Sansing has cooperated with economic development initiatives by switching to more refined agricultural development. The main source of income for the villagers at present is pineapples. Despite the relatively infertile soil around the village, improved strains of crops have allowed the cultivation of pineapples near the community. Sansing pineapples are now a well-known product throughout Taiwan. Each year the pineapple

atively infertile soil around the village, improved strains of crops have allowed the cultivation of pineapples near the community. Sansing pineapples are now a well-known product throughout Taiwan. Each year the pineapple



栽植鳳梨為村民主要經濟來源。

Planting pineapples is the main source of income for villagers.

season attracts many tourists to Sansing to try out the new harvest.

After construction on Chungcheng University was completed in 1991, the expanded campus became a popular spot for tourism and recreation. Adjacent areas also eventually developed into university-centered communities. However, restricted development and population outflow from Sansing and other nearby communities limited the quality of community life. Sansing community had never established a community development association, making communication of views within the community difficult, eventually bringing a halt to development and construction in the area.

Faced with this predicament, some people began to consider the possibility of rebuilding the community. At the end of 2003, with assistance from the Min-Hsiung Cultural Foundation and scholars at National Chung Cheng University, the community held a public briefing on community building, formally initiating a peri-

od of community reform for Sansing Village. In February 2005, Sansing Village officially established a community development association and selected chairpersons and supervisors to make up an organization to promote community development.

### Holistic Community Building

The motive for establishing the community development association came from the devotion of organizers and volunteers, with the common objective and ideal of sustainable management. After discussion and deliberation among community residents, it was agreed that education was the key to achieving their mission. Therefore the association held a series of welfare activities and development courses geared toward all ages of community residents. These included parent-child study groups, after-school student counseling, children's environmental winter and summer camps, culinary courses for mothers, dance classes, women's



事，社區營造推動組織因而完備。

### 全方位地推動社區營造

社區發展協會成立的動力，來自幹部及志工們對鄉土故里的熱愛，永續經營是大家共同的目標與理想。經過社區居民一連串的討論及思考，認為唯有透過「教育」才有可能達成任務。因此對社區居民各年齡層，推動一系列的福利活動與成長課程，例如：親子讀書會、學童課後輔導、兒童環保冬令營、媽媽烹飪教室、舞蹈班、婦女成長營、關懷社區弱勢居民等。同時，也配合個個節慶，舉辦文化活動，讓全村村民大團圓，凝聚社區的向心力。



志工主動從事環境清潔。  
Volunteers cleaning up the environment.



■ 社區敬老活動。  
The elderly-friendly activity in community.

development workshops, and assistance to disadvantaged community members. The community also held cultural activities on holidays to build up the sense of unity among village residents and consolidate the strength of the community.

Community volunteers regularly maintained environmental cleanliness to raise the community's quality of life and surrounding environment. Areas previously deserted or unkempt were cleaned up through ecological engineering or greening methods that caused the least envi-

ronmental impact to become public parks or green areas for recreation. These activities also helped to preserve community livelihood and culture.

Among these initiatives, remediation of the Longcuan River was an important effort toward protecting the environment and restoring the ecology. Focusing their efforts on the heavily polluted Longcuan River, volunteers adhered to ecological engineering methods by first laying down stones to protect the embankment and applying concrete to the sluiceway to let water collect in a small manmade dugout in the middle of the stream. They also planted native aquatic plants, which work to filter household sewage discharged from the side of the stream bank as well as provide habitat for aquatic life. The stream ecology has since made a comeback, and one could even see traces of the Zhuluo tree frog, a rare species in the Yunlin-Chiayi region.

At the outset of the establishment of the community development association, the common desire to implement sustainable management

為了提升社區環境與生活品質，社區志工們定期維護環境整潔。幾處原已荒廢或髒亂不堪的地點，利用最不破壞自然的生態工法或綠美化方法，整理成可親的公園綠地與休憩場所，同時也保留了社區的產業與文化。

其中，龍泉溪整治是環境保護與生態復育的重點工作。原本已成為廢棄物棄置場的龍泉溪，在志工的努力下，遵循生態工法，用砌石的方式堆築護堤，疏濬堆積的泥沙，並在溪道中挖掘人工小水池蓄水，並種植原生種水生植物，過濾溪岸附近住家排放的廢水，同時提供水生生物棲息場所。溪流生態逐漸恢復後，甚至看到雲嘉地區最珍貴的諸羅樹蛙的身影。

此外，協會成立之初，即體認到協會要永續經營，必須重視社區產業發展。因此三興村也整

合全體社區的力量，嘗試開發鳳梨副產物。為了加速及擴大社區營造步伐，三興村在推動各項工作時，也盡可能結合社區附近的資源與力量，如縣政府、鄉公所、民雄文教基金會、中正大學、三興國小等，在各方的協助下，使協會得以穩定地成長茁壯。

### 社區營造的甘苦及經驗

由於三興村大都從事農業經營，因此對社區營造十分生疏。雖然村民對改善生活環境都願意奉獻心力，但文書、財務方面的工作，以及要承擔的責任卻超乎想像。所幸協會有很好的指導單位，按部就班協助社區完成每一項環節。

也就是為了讓社區更美好的責任心，讓協會成員不斷要求自己，完成每一項該做的工作，並

以生態工法整治龍  
泉溪。  
Longcyuan River  
remediation using  
ecological engi-  
neering.



practices called for an emphasis on developing community businesses. Sansing Village integrated the strengths of the entire community in attempts to develop more pineapple-based products. To expand and accelerate community building, Sansing integrated resources to the fullest extent by promoting various initiatives near the community, including county and township governments, Minsiung Culture and Education

Foundation, Chungcheng University, and Sansing Elementary School. Drawing on assistance from these sources allowed the community development association achieve steady and vigorous growth.

### Bittersweet Experience of Community Building

At the start, community building was quite unfa-



## Chapter 4 : Civil Action toward Sustainable Development

在做中學、學中做。有時也可能被社區居民誤解，但是，大家不斷地自我叮嚀，彼此鼓勵，讓自己轉個彎、換個心情，繼續向前行。

從三興村的經驗來看，社區營造首要工作是社區資源調查。第一、找出社區居民最迫切需要的事項，訂定目標和方向。第二、進行人力資源調查，結合社區鄰近機關、學校、團體的人



齊力打造社區新象。  
Work altogether for building up a new vision.

miliar territory for many in Sansing Village as agriculture is the primary occupation. Although the villagers were all very willing to contribute time and effort to improving their living environment, the work and responsibility required to handle documents and financial affairs was beyond their expectations. Fortunately, the association had a very good guiding agency and kept to the work schedule by providing assistance to the community during each step of the way.

This experience gave the community a stronger sense of responsibility and made association members constantly demand more of themselves, complete each required task, and learn by doing. At times when misunderstood by other community members everyone continually reminded themselves that through mutual encouragement could get them around the next corner and change their frame of mind to allow continual progress.

In Sansing Community's experience, the most important task of community building is to survey community resources. Their first step was to find



重視小朋友的環保教育。  
Children-centered environmental education.

才，形成人力資源網路，對社區成長是一股不容忽視的力量。協會幹部，除了熱情的特質，更須具備使命感。社區營造的工作繁瑣，有強烈的使命感，才能在挫折中勇往直前。

三興社區發展協會成立僅一年多，在大家的努力經營下，已經獲致許多成果。但協會每一份子都表示不能以此自滿，因為社區營造必須一棒一棒接續下去，才能讓社區更為發光發亮。

the most urgent needs of residents, and set forth goals and direction. The second step was to survey human resources and integrate talented people from nearby organizations, schools and organizations to form a network of human resources. Potential human resources cannot be neglected in community development. Apart from having enthusiasm, the community development association more importantly needs to have a sense of mission. Community building involves minute and complicated tasks; therefore a strong sense of mission is vital in order to advance bravely in the face of setbacks and frustrations.

Established for one year Sansing Community Development Association has earned numerous results through the hard work of everyone. All members are aware that these achievements should not let them slip into complacency. Community development requires following through one step at a time in order to let the community shine its brightest.



■ 花蓮長虹橋美景。  
Scenic Chonghoung bridge in Hualien County.

## 第五章 工作分組年度績效

### Chapter 5 Working Group Achievements in 2005

永續會目前設有「永續願景」、「國土與交通」、「資源與產業」、「生物多樣性」、「生活與生產」、「國際環保」、「健康風險」及「永續教育」8個工作分組及氣候變遷暨京都議定書因應小組，辦理永續發展推動工作，本章將概述各組於94年度之工作績效。

The National Council for Sustainable Development currently has eight working groups (Sustainable Education, National Land and Transportation, Technology and Industries, Biodiversity, Life and Production, International Environmental Protection, Health Risks, Sustainable Education) and one response task-force (Climate Change and Kyoto Protocol Response) working on promotion of sustainable development. This chapter outlines the achievements of these groups in 2005.



## 5.1 永續願景組

### 編製92年綠色國民所得帳

根據94年推算完成之「92年台灣地區綠色國民所得試編報告」，92年台灣自然資源消耗及環境品質折耗合計占NDP比率，由90年的1.27%降至1.03%，且綠色GDP較91年提高686億元，顯示國內生態環境資源耗損漸趨改善（詳表7）。

### 公布93年永續發展指標

完成93年度「台灣永續發展指標」計算，並於94年環境日對外公布。在42項指標中，呈現邁向永續的指標計25項，背離永續的指標計14項，持平者1項。93年各項永續發展評量結果詳如第二章。

表7：綠色國民所得帳

Table 7. Green GDP

項目 Item	90年 2001	91年 2002	92年 2003
國內生產毛額 Gross Domestic Product (GDP)	94,476	97,354	98,442
國內生產淨額 Net Domestic Product (NDP)	84,351	86,768	87,374
自然資源消耗及環境品質折耗合計 (A) Depletion of natural resources and degradation of environmental quality (A)	1,073	982	903
占NDP比率 (%) Percentage of NDP (%)	1.27	1.13	1.03
綠色國民所得 (=NDP-A) Green GDP (=NDP-A)	83,278	85,786	86,472

## 5.1 Sustainable Vision Working Group

九九峰。  
Jioujiou Peak  
Mountain.



### Compilation of 2003 Green GDP

Based on calculations completed in 2005 on the "2003 Taiwan Area Green GDP Trial Report," in 2003 the ratio of net domestic product accounted for by both depletion of natural resources and degradation of environmental quality had

decreased from 1.27 percent in 2001 to 1.03 percent in 2003. Meanwhile Green GDP was NT\$68.6 billion greater than in 2002, attesting to gradual improvement in terms of consumption of domestic ecological and environmental resources (see Table 7 ).

### Results of 2004 Sustainable Development Index Announced

The Taiwan Sustainable Development Index 2004 was compiled and announced on Earth Day 2005. Out of the 42 indicators, 25 showed a trend toward sustainability, while 14 diverged from sustainability and 1 indicator kept a steady course. A detailed evaluation of sustainable development outcomes in 2004 is shown in Chapter 2.

## 5.2 國土與交通組

### 推動全國綠資源調查

推動國有林事業區檢訂調查工作，包括林班境界檢訂，林班境界數值化建檔，建立地理資訊系統資料庫，計完成南澳、大溪、大武及潮州等4個國有林事業區，共359個林班161,644公頃調查工作，並建立森林調查簿資料庫。此外，並利用衛星影像，進行全島綠覆率調查及綠覆率變遷調查，完成歷年全島綠覆率影像分析及調查資料庫之建置，及綠資源網際網路查詢系統開發。

### 推動綠建築

推動綠建築標章制度，截至94年11月792件公私有建築物獲得候選綠建築證書、70件獲得綠建築標章。預估獲得證書及標章之建築完工後，

每年可節省用水1,096萬噸，節省用電2.6億度。內政部另於建築技術規則，增訂「綠建築專章」，於94年1月1日發布實施。為推動綠建築與國際接軌，協助成立「台灣綠建築發展協會」，以產官學合作機制，加入「世界綠建築委員會」等國際組織。



■ 優良綠建築設計獎-宜蘭縣政府辦公大樓。(國土與交通組提供)  
Green Building Award - Yilan County Government Official Building.

## 5.2 National Land and Transportation Working Group

### Promoting Nationwide Survey of Green Resources

As part of investigation and survey work on National Forestry Lands, the government has delineated and created numerical data files on forestry boundaries as well as established a GIS database at four National Forestry Lands in Nanao, Dasi, Dawu, and Chaozhou. Basic forest survey archives have been established for 359 surveyed forest areas covering 161,644 hectares. In addition, satellite imagery has been employed to survey vegetative cover over the island as well as changes in vegetative cover. The government has completed image analysis and a survey database on the entire island's vegetative cover over the years. They have also developed an online search system on Taiwan's plant resources.

### Promoting Green Building

In the area of promoting green building certifica-

tion system, by November 2005, already 792 public and private buildings had been chosen as candidates for green building certification. In the end, 70 of these received green building certification. These certified buildings are estimated to save 10.96 billion tonnes of water, and 260 million kilowatt hours of electricity. Incorporating green building technology into the regulatory system, the Ministry of the Interior has formulated an official "Green Building Certification" system. Promulgated on 1 January 2005, this system enforces green building design for newly constructed buildings. To stay abreast of international building trends, the Working Group has facilitated the establishment of the Taiwan Green Building Development Association. This Association builds up cooperation between industry, government and academic circles and has joined the World Green Building Council (WGBC).



## 5.3 資源與產業組

### 推動風力發電 再生能源

依據「全國非核家園大會」共識，2010年所有再生能源發電容量配比以提高至10%為目標，其中2010年風力發電推動目標為2,159 MW裝置容量。目前已完成設置風力發電系統達23,900瓩，另有其他私部門能源業者，積極於台灣西部沿岸規劃籌設風力發電廠，總發電量約21萬瓩，業經核准籌設，完工後可大幅提高再生能源發電量。

### 產業及政府機關節約能源技術服務成效

為協助產業及政府機關節能，成立「節約

能源服務團」，協助公司部門能源大用戶，進行能源查核輔導與技術服務。另推動能源技術服務產業，擴大民間參與節約能源。94年度推動成果，總合計省能127,596公秉油當量，包括間接效益，1年共產生114,979萬元的省能效益。

### 工業用水效率提升輔導與推廣

94年度針對電子零組件製造業等8種產業、60家廠商，進行用水效率提升輔導作業。總節水量達到7,686,094噸/年，評估可節省達88,390仟元/年之用水成本。

## 5.3 Resources and Industry Working Group



工廠製程水回收現場評析。(資源與產業組提供)  
Evaluation of water recovery facilities at manufacturing plant.

### Promoting Wind Power in Taiwan

Responding to a new era of international environmental trends and high energy prices, Taiwan's energy policy strongly promotes wind power and other renewable energy sources. Based on the consensus reached during the National Nuclear Free Homeland Conference, renewable energy generation capacity should increase 10% by 2010. The target for wind power generation is 2,159 megawatts by 2010. Current wind power systems are putting out a total of 23,900 kilowatts. Some private sector energy enterprises are actively planning wind farm installations along Taiwan's western coast. These will boost Taiwan's wind power generation up to 210,000 kilowatts. After these plans put into practice, they will greatly increase the ratio of renew-

able energy generated in Taiwan.

### Industry and Government Energy Conservation Technology and Services

To assist industry and government organizations in enhancing energy efficiency, this Working Group has established the Energy Conservation Service Team. This team assists the energy departments of some of the biggest energy user companies by providing energy inspection, guidance and technical support. The team also promotes the energy service company (ESCO) industry to increase people's participation in energy conservation efforts.

### Promoting Efficient Use of Water in Industry

The Resources and Industry Working Group has increased guidance on water usage efficiency for 60 companies in eight industries. These efforts have saved up to 7,686,094 tonnes of water per year and an estimated NT\$88.39 million per year in water utility costs. They have also effectively conserved regional water resources and costs of industrial water use.

## 5.4 生物多樣性組

### 生物多樣性資料調查及資料庫建置

完成台灣生物多樣性國家入口網站，進行生物多樣性資料庫建置，另執行植群、溼地及珊瑚礁分佈調查。目前累計完成714個植群地面樣區調查及50個地面樣區複查，並繪製700幅植群圖初稿，同時完成「西海岸濕地保育軸」及「東海岸珊瑚礁保育軸」草案。

### 復育土地及漁業資源

受污染土地部分，完成約258公頃重金屬污染農地改善。集水區及河川水質部分，執行劣化地復育共420公頃，以及海岸林造林77公頃、定

砂149公頃。同時輔導台東等10個漁會，針對轄屬海域保育區、禁漁區及人工魚礁區，籌組管理機制，協助漁政機關進行維護管理。

### 加強入侵種管理

依據入侵種造成之衝擊及危害，將入侵種分為「優先防治」、「長期管理」及「觀察評估」3類，「優先防治」物種包括：入侵紅火蟻、刺桐袖小蜂、蘇鐵白輪盾介殼蟲、小花蔓澤蘭及香澤蘭等5種，由跨部會分工機制，進行防治工作，並隨時調整列管名單。

## 5.4 Biodiversity Working Group

### Building the National Biodiversity Database

This Working Group has completed the portal website for Taiwan's National Biodiversity Information Center, and has continued to establish a biodiversity database. This work also involves distribution surveys of plant communities, wetlands and coral reefs. Already 714 plant community ground surveys have been taken and 50 of these ground survey plots have been reinvestigated. The Working Group has drawn up 700 preliminary plant community maps and has drafted the West Coast Wetland Conservation Principles and the East Coast Coral Reef Conservation Principles.

### Restoring Degraded Environments and Aquaculture Resources

The Group has completed farmland improvement work on 258 hectares of heavy metal contaminated soils. Recovery work has been carried out on degraded lands over an area of 420 hectares. Coastal afforestation has been carried out on 77 hectares and sand stabilization on 149

hectares. On revitalizing aquaculture resources, the Group provides guidance to ten fisheries around Taiwan including the Taitung area, targeting marine conservation areas, areas where aquaculture is prohibited and artificial reefs. Planning management mechanisms have been drawn up to assist fisheries agencies in implementing maintenance and management work.

### Strengthened Management of Invasive Species

The three methods for dealing with invasive species are categorized as priority control, long-term management, or observation and assessment based on degree of impact and damage caused. The five current priority control species include the red imported fire ant, erythrina gall wasp, cycad scale, Mikania micrantha (mile-a-minute weed), and Chromolaena odorata. Control work is divided across government agencies through a cross-ministerial mechanism and the list of control species is adjusted when necessary.



## 5.5 生活與生產組

### 輔導二手交易市集

94年度首先對國內攤販型二手交易市集及各型二手商店等進行調查，建立近千筆二手經營業者資料。並辦理2場二手交易經營管理培訓班以及公聽會，除傳統二手交易經營業者，另有網路二手賣家及創業人士參與，反應熱烈。

### 推動綠色商業

建置完成國內綠色商店通路資料庫，共11類930筆。綠色商業輔導5家(綠色市場2處、綠色商店3家)。同時進行綠色商業輔導，包括進行示範點整頓、輔導市場建立常設綠色商業與環保推動小組、辦理綠色商機訓練課程、協助業者申請研發計畫進行商品綠色包裝的改良等。此外，並於各級學辦理「綠色消費觀念」校園宣導。

### 推廣環保標章

我國為全球環保標章組織發起國之一，並陸續與7國的環保標章組織完成相互承認協議簽署，擴大環境友善產品市場。94年度上半年機關



綠色採購金額達34億元，綠色採購比率為79.7%，目標比率95年度將提高為80%。

■ 綠色商業業者示範觀摩-臺南市東門市場。(生活與生產組提供)  
A model green bazaar at the Dongmen Market in Tainan City (photo: Livelihood and Production Working Group)

## 5.5 Livelihood and Production Working Group

### Assisting Second-Hand Markets

In 2005 the Working Group carried out the first survey of second-hand street vendors and stores, and data was collected on 1,000 second-hand enterprises. Two business management training workshops and two public hearings were held for second-hand businesses. These events were met with enthusiastic response not only by traditional second-hand businesses, but also vendors of second-hand goods on the Internet.

### Promoting Green Business

The Livelihood and Production Working Group established a green business database with a total of 930 businesses in 11 categories. Meanwhile, the government provided assistance to green businesses including supervision of demonstration sites, guidance to markets to establish green businesses and environmental protection committees, green business training

courses, and assistance to businesses applying for research plans to make packaging more environmentally friendly. Training workshops were also held at schools regarding the green consumption concepts.

### Promoting the Green Mark

As one of the founding nations of the Global Ecolabelling Network (GEN), Taiwan has successively signed mutual recognition agreements with ecolabel organizations in seven countries. Promoting the purchase of Green Mark products, the Working Group inspected and passed over 600 products in 2005, boosting the total number of Green Mark products up to 3,000. In the first half of 2005, the government spent up to NT\$3.4 billion on green procurements, achieving a green procurement rate of 79.7%. The target green procurement rate has been raised to 80% for 2006.

## 5.6 國際環保組

### 「能源技術系統分析研究計畫」

#### 國際研討會

首次爭取國際能源總署 (IEA) 2005年「能源技術系統分析研究計畫」(ETSAP) 國際研討會主辦權，於4月4日至7日在台北舉辦。來自美、加等21個國家50多位專家代表與會，探討能源與環境的區域模型、國家與地方性模型，以及模型工具之運用，交換各國能源規劃與溫室氣體減量模型之經驗。

#### 舉辦「中美洲區域模型整合會議」

為擴展我國參與國際清潔發展機制溫室氣體跨國合作減量機會，繼2000年、2002年辦理兩次

中美洲國際合作研討會之後，於2005年7月12～13日在貝里斯首都貝里斯市舉辦「中美洲區域MARKAL模型與國際溫室氣體減量合作研討會」，協助中美洲友邦建立區域MARKAL資料庫，並與友邦進行國際合作討論。

#### 與中美洲友邦會談開創國際合作新局

94年12月5日在加拿大蒙特婁參加聯合國氣候變化綱要公約第11次締約國會議中，與中美洲友邦7國代表進行會談。會中表示將加強與中美洲友邦國家在環境議題上合作，包括：溫室氣體減量、氣候變遷衝擊調適與生質能源等，並積極籌辦雙方環境部長級會議。

## 5.6 International Environmental Protection Working Group

### International Forum on Energy Technology System Analysis Research Plan

2005 marked the first year for Taiwan to obtain sponsorship rights to hold an international forum in conjunction with the International Energy Agency's Energy Technology System Analysis Program (ETSAP) in Taipei on 4~7 April 2005. Over 50 experts from 21 countries, including the U.S. and Canada, attended this forum to discuss regional, national and local models and applications of energy and environmental modeling tools. The event provided a forum for each nation to exchange experience in energy plans and greenhouse gas reduction models.

### Central America Regional MARKAL Model

To broaden Taiwan's participation in the international Clean Development Mechanism (CDM), a transnational agreement to reduce greenhouse gases, after holding two international cooperation forums in 2000 and 2002, the Working Group held a third forum, the Central American Region

MARKAL Model and International Greenhouse Gas Reduction Cooperation Forum on 12~13 July 2005 in Belize City. This program assists Central American nations with diplomatic ties to Taiwan to establish a regional MARKAL database and facilitates international cooperation and discussion.

### International Cooperation with Central America

In conjunction with the 11th Meeting of the Parties to the UN-FCCC on 5 December 2005 in Montreal, Canada, Taiwan engaged in discussion with seven Central American nations. During the meeting, Taiwan promised to strengthen cooperation with Central American nations on environmental issues, including greenhouse gas reductions, adjusting to climate change and bioenergy. The nations also actively made plans for ministerial level bilateral environmental meetings.



## 5.7 健康風險組

### 增修訂動植物檢疫措施

因應我國加入WTO，強化國外動植物及相關產品輸入檢疫工作，以防範動植物疫病蟲害入侵，94年除修正「中華民國輸入動物及其產品檢疫條件」、「植物防疫檢疫法」等檢疫規定，並增修動植物檢疫措施20餘項。

### 戴奧辛風險管理及監測

**戴奧辛風險管理**：發布「煉鋼業集塵灰高溫冶煉設施戴奧辛排放及管制標準」，研擬「固定污染源戴奧辛排放標準」，全面規範所有污染源。

**辦理總膳食調查**：執行「食品污染物總膳食調查」

計畫，並進行長期監測，以瞭解飲食攝入污染物或毒性物質含量及潛在風險。已完成工作包括：所有樣品之農藥、戴奧辛、重金屬及黃麴毒素分析；國人膳食污染物總暴露量試算；我國總膳食調查風險評估架構；發表總膳食調查戴奧辛研究結果。

**人體血液戴奧辛背景值監測**：分析台中及花蓮地區45位血液樣本，受測者血液中17種多氯戴奧辛呋喃總毒性當量濃度平均值，以及12種擬似戴奧辛之多氯聯苯同源物總毒性當量濃度平均值，與其他國家，如德、日、紐、韓等相似年齡者之分析結果比較，並無偏高。

## 5.7 Health Risk Working Group

### Plant & Animal Quarantine Measures Revised

The government revised the R.O.C. Terms for Quarantining Imported Animals and Animal Products, and the Plant Matter Epidemic Prevention Quarantine Act in 2005. These amendments strengthen customs control and quarantine of foreign animals, plants and their products to guard against invasion of blight or epidemic diseases stemming from transboundary movement of plants and animals. Twenty new articles were added to existing animal and plant quarantine measures.

### Dioxin Risk Management and Monitoring

The Health Risk Working Group took the following initiatives toward dioxin risk management:

**Dioxin Risk Assessment and Management:** A priority is placed on strengthening pollution emission controls, pollution reduction, and pollution source controls. The government promulgated the Dioxin Emission Control Standards for Dust and Ash from High Temperature Steelmaking Facilities, and also drafted the Dioxin Emission

Controls for Stationary Pollution Sources.

**Total Diet Study:** The Working Group conducted the Total Diet Study on Pollutants in Food, which established background data on food contamination and initiated a long-term monitoring study. The following measures have been carried out in conjunction with this plan: 1) analysis of pesticides, dioxin, heavy metals and aflatoxin in all samples, 2) a trial calculation of contamination exposure in people's diets, 3) total diet study risk assessment structure, 4) the forum "Sustainable Taiwan-Recognizing the Risk of Dioxin in the Environment," which presented the total diet study conclusions on dioxin.

**Monitoring background levels of dioxin in human blood:** Blood samples were taken from 45 persons in Taichung and Hualien. Of the male and female subjects tested for mean concentration of 17 kinds of (PCDDs) and (PCDFs) and total mean concentrations of 12 kinds of PCBs similar to dioxins, the test results were not higher than those of similar tests conducted in other countries.

## 5.8 永續教育組

### 永續課程融入國民教育

「永續發展課程資料庫」係以教學模組形式建制之資料庫，主要包含綠色學校、永續校園、全球變遷與環境發展、大氣保護及溫室氣體減量、減少及避免地層下陷等5大類別，下分13個



■ 永續理念已在基礎教育紮根。(慈心小學提供)  
Sustainable development concepts root in fundamental education. (photo:Ci-Xing Elementary School )

子類別，包括水資源、能源、生物多樣性等與永續發展等相關議題教學模組。資料庫共77個教學模組，且在各階段、各領域至少都有2個以上教學模組可供使用，提供全國中、小學教師使用，將觀念向下扎根，實現永續發展的教育目標。

### 永續發展教育相關研究及國際合作

為擴展國際視野，與世界永續發展教育接軌，獎勵國內碩士及博士生參與國際會議及永續發展相關活動。94年度共補助共66名研究生出席國際會議或活動。此外，並成立重點非政府組織青年國際參與工作圈，公告甄選非政府組織，以鼓勵青年及團體參與國際事務。同時另籌設國際志工協會(IAVE)國際資訊中心，提供青年志工國際參與的機會及平台。

## 5.8

## Sustainable Education Working Group

### Sustainable Education Incorporated into K-9 Public Education System

The Sustainable Development Curriculum Database is based on an organized system of teaching modules including the five main categories of Green School, Sustainable Campus, Global Change and Environmental Development, Atmosphere Protection and Greenhouse Gas Reduction, and Reducing and Preventing Land Subsidence. The teaching modules are further divided into 13 subcategories including water resources, energy, biodiversity and sustainable development related issues. The 77 teaching modules in the database provide at least two teaching modules for each grade and each topic. The database is provided to elementary and junior high schools nationwide as a way to root important concepts and attain sustainable development education objectives.

### Sustainable Development Education Related Research and International Cooperation

To broaden international vision and keep up with sustainable development education trends worldwide, the government subsidizes Master's and doctorate students to participate in international meetings and sustainable development related activities. In 2004, the government subsidized 66 well-known research students to attend international meetings or activities. The government also established a core NGO youth international participation taskforce, and announced selected NGOs to encourage youth and groups to participate in international affairs. The government also established an International Association for Volunteer Effort (IAVE) international information center to provide opportunities and a platform for youth volunteers to participate in international affairs.

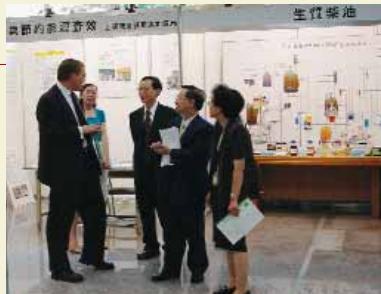


## 5.9 氣候變遷暨京都議定書因應小組

### 辦理「因應京都議定書生效論壇」

94年6月1日至2日舉辦「因應京都議定書生效論壇」，討論議題有「非政府組織氣候變遷講座」、「氣候變遷與永續發展」、「台灣氣候變遷與因應之道」、「減緩氣候變遷，從解決能源問題做起」、「用電設備聰明GO，節省電費又降溫」、「突破技術困境，重現產業減量契機」及「再造綠色交通網、重視潔淨運具發展」等，並

因應京都議定書生效論壇會議（環保署提供）。  
Forum on Taiwan's Response to the Kyoto Protocol.



舉辦周邊宣導展覽活動，展示各界致力推動生態保育、環境友善標章制度、氣候變遷防制技術相關成果。

### 召開「全國能源會議」

「全國能源會議」於6月20至21日舉辦，與會各界代表於會中達成電價調漲至能源價格合理化、核電裝置容量占總發電量在2025年降至5%、再生能源比提升至10~12%、二氧化碳排放量納入環境影響評估機制、新投資事業須提出短中長程減量計畫與目標、推動二氧化碳排放交易機制、評估課徵碳稅可行性等。其他決議包括：提高能源效益、推動節能、推廣能源技術服務業、擴大工業能源查核範圍、輔導及推廣再生能源等。

## 5.9 Climate Change and Kyoto Protocol Response Working Group

### Forum on Response to the Kyoto Protocol

On 1~2 June 2005, the government held the Forum on Taiwan's Response to the Kyoto Protocol. Topics for discussion included "NGO Forum on Climate Change," "Climate Change and Sustainable Development," "Climate Change and Response Measures in Taiwan," "Mitigating Climate Change by Solving Energy Problems," "Smart Use of Electric Appliances Saves Energy Costs and Reduces Temperature," "Breaking Through Technical Obstacles and Reintroducing Industry Reduction Agreements," "Reconstructing Green Transportation Network to Emphasize Development of Cleaner Transportation Vehicles." The government held peripheral educational expos to show each industry's promotion of ecological conservation, the Green Mark ecolabel system, and results of new climate change prevention technology.

### National Energy Conference

The National Energy Conference took place on 20~21 June 2005. Each attending field representative agreed to electricity price inflation to reflect a reasonable price for energy. Nuclear power capacity will decrease to 5% of the total power generation by 2025, and the ratio of renewable energy will increase to 10~12%. Carbon dioxide emissions will be included into environmental impact assessment mechanisms. New invested industries must submit short-, mid- and long-term reduction plans and targets, promote carbon dioxide emission trading mechanisms, and evaluate feasibility of carbon taxes. Other resolutions include increasing energy efficiency, promoting energy conservation, promoting energy technology service industry, expanding the scope of inspections on energy in industry, and guiding and promoting renewable energy.



(本文圖片來源：[iisd](http://www.iisd.org) 網站)

■ UNCSD每年定期召開年會。

The UNCSD holds meetings every year.(Source : [www.iisd.org](http://www.iisd.org)).

## 第六章 國際永續相關公約發展動態

### Chapter 6 Updates on Global Sustainable Development Conventions

為有效推動世界永續發展，聯合國於1992年底成立永續發展委員會(UNCSD)。委員會每年定期集會，檢討並協助各國推動永續發展。此外，為解決跨國界環保問題，近年各國紛紛參與雙邊及多邊國際環保公約的談判與簽署。

本章特別介紹本年度聯合國永續發展委員會年會討論重點，並簡介重要國際環保公約之發展，使各界了解國際永續發展最新動態。

The United Nations Commission on Sustainable Development (UNCSD) was established by UN General Assembly in December 1992 to promote sustainable development around the world. The Commission meets annually to review and provide assistance to its member States. To address transboundary environmental problems, more and more countries have entered bilateral and multilateral negotiations and conventions on environmental protection in recent years.

This chapter provides updates on global sustainable development by focusing on vital issues discussed in the UNCSD annual meeting this year as well as the latest development of important international conventions on environmental protection.



## 6.1 聯合國永續發展年會

### 檢討各國推動進程

UNCSD自成立迄今每年定期召開年會，討論並確認地球高峰會及2002年永續發展世界高峰會相關計畫推動情形。2005年度召開之第13屆委員會議議題，考量全球60億人口中，仍有1/3缺水，並有超過10億人口缺乏潔淨飲水，另有24億人基本衛生條件不足，本次會議以改善全球人類安全用水、公共衛生、及居所問題為主題。

會議於4月11日至22日在聯合國總部舉行，共有超過百位各國部長級官員參加。經12天的研討，針對水、衛生及人類居所面，決議敦促各國



永續發展年會會議一景。

A glimpse of UNCSD annual meeting.

爭取資源改善。

會議決議訂定政策及規範，以加速進行「世界高峰會永續發展行動計畫」中，承諾改善水、衛生及人類居所的環境目標，其中包括：

- (1)在2015年時將全球無清潔用水及基本公共衛生的人數減半；
- (2)在2005年開發整合水資源處理及水資源效益提升計畫；
- (3)在2020年前大幅改善全球1億貧民的生活。

針對安全用水，會議建議以經濟工具或誘因著手，鼓勵業者參與；同時可透過徵收合理的水稅（費），促進水資源永續利用。UNCSD另強調改善水資源使用方式，包括於農業區進行高效率灌溉、更廣泛運用雨水耕作技能等。

對於公共衛生及相關設施，UNCSD強調需先建立公共衛生機構，並在國家建設計畫中訂定優先順序及經費，投資在最需要及最有影響力的項目上。

在居所品質改善部分，會議建議各國研訂以消滅貧窮為導向的專業政策，並給予貧民合理及

## 6.1 Annual Session of UNCSD

### Reviews Member States' Progress

Since its establishment the UNCSD has held meetings every year to discuss and ensure follow-up implementation of the Earth Summit and World Summit on Sustainable Development in 2002. The 13th Session of the UNCSD this year prioritized three areas: water, sanitation and human settlements in its agenda due to the fact that one third of the planet's six billion people now face water scarcity, with over one billion lacking adequate clean drinking water and 2.4 billion lacking access to basic sanitation.

The session met at the UN Headquarters from 11-22 April, attended by more than a hundred government ministers. The 12-day session concluded by calling for increased resources toward water, sanitation and housing to promote sustainable development of human settlements.

The session reached agreement on policy decisions and practical measures aimed at speeding up implementation of water, sanitation and human settlements goals. Among the goals discussed include:



環保人士於會中呼籲重視全球環境惡化的問題。  
An environmentalist calls for increased attention to degradation of the global environment.

基本的安全居所。會議同時也建議，應給予女性擁有土地的平等權益。

本次會議決議，並納入聯合國9月召開的「聯合國世界高峰會議」結論，重申將持續推動聯合國千禧發展目標相關工作。

## 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

為遏止全球氣候暖化，1997年「聯合國氣候變化綱要公約」第3次締約方會議通過京都議定書，歷經7年折衝，終在2005年2月16日正式生效。

為落實京都議定書，各國代表於2005年12月召開聯合國氣候變化綱要公約第11次締約方大會及第一次京都議定書締約方會議。會中通過蒙特婁行動計畫，重點包括：

一，京都議定書中所規範的減量諸國，包括歐盟、日本、俄羅斯等，同意在京都議定書第一階段減量目標達成後(2012年)，持續進行第二階段溫室氣體減量工作。具體減量目

標，將自2006年5月開始討論確定。

二，各國同意進行更大規模合作減量協商，讓未參與京都議定書的國家，如美國、澳洲，以及開發中國家，如中國、印度等，能一起參與溫室氣體減量工作。

三，已開發國家將於2年内提撥1,300萬美元，協助非京都議定書締約國，推動「清潔發展機制」。此外為確保各國依京都議定書既定目標減量，會議同意成立「承諾委員會」。另對於受氣候變遷影響嚴重的海島國家，也將成立「適應基金」，協助其因應氣候變化帶來的影響。

1. Halve the proportion of people without access to safe drinking water and basic sanitation by 2015;
2. Develop integrated water resources management and water efficiency plans by 2005;
3. Significantly improve the lives of 100 million of the world's impoverished people by 2020.

To provide access to safe drinking water, the UNCSD recommends instituting economic tools or incentives to encourage participation of service providers, and implementing affordable water tariffs to contribute to the financial sustainability of water services. The UNCSD also calls for better water management, including more efficient irrigation and wider use of rainwater harvesting tech-

nologies in the agricultural sector. On sanitation, the UNCSD calls for first establishing public sanitation agencies, which should be given priority in national development plans and budgets, and should focus investments on areas of greatest need and greatest impact.

For human settlements, the UNCSD recommends that governments, design policies to eliminate poverty by providing safe and affordable housing. It also recommends the equal rights of women to own land.

The Commission's decisions were included into the conclusions of the September 2005 UN World Summit to spur progress on the UN Millennium Development Goals.



在通過蒙特婁行動計畫後，各國溫室氣體減量壓力增大，預期將加速推動相關工作，使人類因應氣候變遷的脚步，更向前邁進。

### 蒙特婁議定書

蒙特婁議定書第25次不限成員工作小組會議於6月27至30日在加拿大蒙特婁舉行。由於許多針對公約第五條國家（泛指開發中國家），或非公約第五條國家的管制措施都在2005年生效，加上支援議定書執行的多邊基金也自2006年重新編列，會議內容普受重視。

本次會議完成10個決議草案，包括：非公約第五條國家2006年之必要用途豁免建議、非公約第五條國家2006與2007年必要用途豁免新建議、高濃度與低濃度ODS銷毀技術與財務影響、製程



■ 經過冗長協商，與會人士對通過蒙特婁計畫感到興奮。  
After lengthy negotiations, the passage of the Montreal Action Plan filled participants with excitement.

藥劑豁免檢討、四氯化碳實驗與分析用途、溴化甲烷實驗與分析之關鍵用途、多邊基金補充之固定交換率機制、預防ODS非法貿易，以及溴化甲

## 6.2 Updates on International Environmental Conventions

### UN Framework Convention on Climate Change & Kyoto Protocol

The Kyoto Protocol was adopted at the third session of the Conference of Parties (COP 3) to the UN Framework Convention on Climate Change in 1997 to curb global warming. After seven years of intense negotiations it finally entered into force on 16 February 2005.

To advance implementation of the Kyoto Protocol, the eleventh session of the Conference of the Parties to the Climate Change Convention was held in conjunction with the first meeting of the Parties to the Kyoto Protocol (MOP1) in December 2005. The Montreal Action Plan adopted in this session includes the following measures:

1. Participating countries, including EU, Japan and Russia, agree to continue the second phase of greenhouse gas reductions by the time the first phase ends in 2012. Talks on reduction targets will take place next May.
2. Member states agree to take cooperation and negotiations on greenhouse gas reductions to a larger scale by including the participation of

countries that refuse to sign onto the Kyoto Protocol such as Australia and United States as well as developing countries like China and India.

3. Developed countries agree to establish the "lean Development Mechanism" by allocating US\$13 million within two years to assist non-signatory nations. To ensure that Kyoto reduction targets are met, a Compliance Committee will be set up. In addition, for small island developing states particularly vulnerable to climate change, an Adaptation Fund will be collected to help them cope with environmental challenges.

Further steps have been made with the passage of the Montreal Action Plan, which pressures all nations to address climate change by accelerating greenhouse gas reductions.

### Montreal Protocol

The 25th Open-Ended Working Group Meeting of the Parties to the Montreal Protocol (OEWG-25)

烷之吸附、回收及銷毀等。

其中溴化甲烷關鍵用途及替代技術，為本次會議焦點。其次因美國持續要求CFCs必要用途豁免，使國家庫存CFCs管理問題亦受矚目。工作小組認為，化學物質的品質如符合法規要求，則應優先供應必要用途之需求，而不應持續提出更多必要用途的生產豁免量。

## 巴塞爾公約

巴塞爾公約2005年度主要會議為第4次開放式工作組會議(OEWG4)，於7月4日至8日在瑞士日内瓦召開。會議主題包括：巴塞爾公約夥伴計畫、開放式工作組2005~2006年工作方案、拆船議題、巴塞爾公約損害責任賠償議定書、財務事項、環境無害管理技術準則等。

was held on 27-30 June, 2005 in Montreal, Canada. The meeting received great attention from all parties as many control measures for Article 5 parties (mainly developing countries) or non-Article 5 parties will come into effect this year, and the 2006 budget for the Multilateral Fund established for the implementation of the Montreal Protocol has been renewed.

The session came up with ten draft conclusions including recommendations for 2006 CUEs applicable to non-Article 5 parties, renewed recommendations for 2006~2007 CUEs applicable to non-Article 5 parties, ODS destruction technologies and financial impact, manufacture agent exemption review, use for experimental testing and analysis of carbon tetrachloride, critical use for experimental testing and analysis of methyl bromide, exchange rate mechanism for the Multilateral Fund, prevention of illegal trade in ODS, and absorption, recycling and destruction of methyl bromide.

CFC critical use and alternative technologies were focal points of the meeting. As the United States continued to demand Critical Use Exemptions be approved for CFCs, the management of national

會議重點在持續研擬DDT、戴奧辛及呋喃，以及農藥等3份技術準則。由於上述有害廢棄物，在開發中國家造成許多環境問題，且為巴塞爾公約及斯德哥爾摩公約共同議題，因此討論熱烈。相關準則內容，預訂於2006年召開之OEWG5定案。

公約預定於2006年3月和11月，召開OEWG5與第8次締約方大會。優先討論議題包括：新的技術準則草案、保險與賠償範圍、增加基金規模、授予巴塞爾公約區域中心支援能力建置權等。

## 斯德哥爾摩公約

斯德哥爾摩公約第1次締約方大會，5月2日至6日於烏拉圭埃斯特角舉行。本次大會成立2個技術委員會，POPs評估委員會將針對未來增列化學

CFC stockpiles also became a hot issue. The working group believed that chemical substances that meet quality requirements should be supplied to priority applications and production for CUEs should be discouraged.

## Basel Convention

The Fourth session of the Open-ended Working Group to the Basel Convention (OEWG5) was held in Geneva, Switzerland from 3-7 July 2005. The delegates discussed partnership program, the work program for 2005-2006 OEWG, issues related to dismantling ships, Basel Protocol on Liability and Compensation, financial matters, and technical guidelines for environmentally sound management.

The meeting focused on drafting technical guidelines for DDT, dioxin & furan, and pesticides, all of which are hazardous wastes that cause serious environmental problems in developing countries and are common concerns of Basel Convention and Stockholm Convention. Contents will be finalized at the OEWG5 session next year.

The Fifth session of the Open-ended Working



物質名單相關技術提供作業規範，最佳可行技術及最佳環保作業委員會則將針對建立有效處理廢棄POPs之程序，提供作業準則。

大會另達成各國將訂定管理POPs國家計畫之決議，並將於2006年底前提交國家報告。會議同時通過戴奧辛、呋喃排放量評估技術工具，各國同意未來將依科學證據與新資訊持續增訂。

### 鹿特丹公約

有關危險化學品進出口管理的鹿特丹公約，要求締約方通報各國因人類健康和環境原因而禁止或嚴格限制使用的化學品，以及對管制化學品是否進口做出裁量，並於管制化學品輸出前告知

Group (OEWG5) and Conference of the Parties (COP8) to the Basel Convention will be held in Geneva, Switzerland in March and November 2006. Priority agenda is set on drafting new technical guidelines, insurance and compensation coverage, fund increase, and enabling capacity building facilities in the Basel Convention Regional Centers.

### Stockholm Convention

First Meeting of the Conference of the Parties to the Stockholm Convention was held in Punta del Este, Uruguay, 2-6 May 2005. Among the two technical committees established in the meeting, the POPs Review Committee adopted rules of procedure reviewing nominations for new chemicals, while the committee of best available techniques and best environmental practices adopted guidelines on management and disposal of POPs waste. The meeting also established a schedule for reporting national plans for POPs management by the end of 2006. In addition, it adopted a toolkit for the identification and quantification of dioxin and furan releases while delegates agreed to improve the toolkit based on scientific evidence and new data.

進口國。公約於1998年9月通過，於2004年2月24日正式生效，目前已批准該公約的締約方總數達100個。

公約第2次締約方大會於2005年9月27日至30日在義大利羅馬召開，會議主要議程包括公約推動現狀報告、審議化學品審查委員會專家名單、公約遵約機制、公約財務機制、與其他國際組織之合作、未來工作方案及預算等。會議討論主軸的遵約機制部分，因各國對未遵守公約規範行為的監督及後續處置作為，及如何將新的化學物質納入公約管制等，未能達成共識，將留待2006年10月於日內瓦召開的第3次締約方大會再研議。

### Rotterdam Convention

The Rotterdam Convention enables the world to monitor and control the trade in certain hazardous chemicals. In order to protect human health and the environment, the Convention requires Parties to label characteristics of banned or restricted chemicals, providing importing Parties with the power to make informed decisions and creating legally binding obligations for the implementation of the Prior Informed Consent (PIC) procedure. The Convention was adopted in September 1998 and entered into force on 24 February 2004 with 100 signatures and ratifications so far.

The second meetings of the Conference of the Parties was held in Rome, Italy on 27-30 September this year. Its main agenda covered convention promotion updates, the confirmation of experts of the Chemical Review Committee, a compliance mechanism, a financial mechanism for the Convention, the program of work and budget for 2006, and cooperation with other international organizations. Consensus was not reached on a non-compliance mechanism for the Convention and inclusion of new chemicals. These issues have been left to the Conference of the Parties at its third meeting in Geneva on October 2006.



■ 執行長召開永續會工作會議情形。  
Chief Executive Officer Yeh convenes NCSD work meeting.

## 第七章 未來展望—專訪葉執行長俊榮

### Chapter 7 Chief Executive Officer Yeh Jiunn-rong's Vision for the Future

回顧去（94）年，天災事故發生較不頻仍，因災害所導致的傷亡人數也較少，我們可歸因於部份的運氣，但也可歸功於相關單位的準備充裕、應變得當。

自然環境或時有變化，但就國家永續發展的願景，本就應設定在如何因應不可測知的重大變異，並避免國土、國人的損傷，設法將危害降至最低。就全球氣候變遷觀測，颱風有隔年出現的特性，即若去年波瀾不興，今年卻或有驚濤駭浪，這些都提醒我們在因應制度上不可疏忽。

Looking back on 2005, there were fewer natural disasters and human mortalities caused by disasters. This can, in part, be attributed to good fortune, but on another level the ample preparation and appropriate responses initiated by government authorities made a significant impact.

Change is the inevitable constant of the natural environment. Thus, the nation's vision for sustainable development must incorporate response measures to deal with these unexpected and potentially catastrophic changes. Only in this way can we minimize injury to the nation's people and resources. Global climate changes must be closely monitored, such as observing wave characteristics and patterns during the previous year to predict the occurrence of severe storms and typhoons during the following year. These are stark reminders of the importance of establishing adequate response mechanisms.



## 能源成永續發展重要議題

回顧94年的2月16日，正值京都議定書生效，各界也滿懷期待，希望政府端出具體的能源政策。台灣約有97.7%的能源仰賴進口，這是一



## Energy Is Key Sustainable Development Issue

When the Kyoto Protocol officially came into effect on 16 February 2005, the entire world was primed with anticipation and hope that governments would establish meaningful energy policies. Approximately 97.7% of Taiwan's energy resources are imported; this is an alarming figure that warrants concern. The entire nation must squarely confront and respond to this situation by working together to resolve the nation's energy problems.

Over the brief course of a year, the results of these policies haven't fully manifested. However, progressive indications have been reflected in a healthier stock market. Last year, the nation's development of alternative energies and energy conserving industries, including photovoltaics and LEDs, suddenly leaped into the spotlight and

個值得警惕的數字，需要國內各界共同正視與因應，如何在再生能源及節約能源上，多管齊下地解決國內能源問題，尤須朝野嚴陣以待。

短短一年的政策效應尚無法彰顯，但由反映景氣變化的股市則可一見端倪。去年國內開發替代性能源或節能的產業，包括太陽光電或LED，乍時躍為衆所矚目的明星，股價大放異彩。這些產業竄紅絕非短期效應，而是一種趨勢指標，代表民間已對能源問題普遍重視。

在此熱絡氛圍下，去年召開的全國能源會議，為國家能源問題尋找出路及答案。能源政策關係到政治面、社會面及經濟面，須包括不同面向的思考。不止如此，這場全國性會議更透露出「機會面」，時下的能源政策，絕非只是傳統「增加能源供給」的單向思考，如今更要導向「能源多元化」，從供給面及需求面多元化地思考解決

開啓永續會多元對話管道，提昇運作效率。

Opening diverse channels for dialogue on sustainable development to enhance effectiveness of initiatives.

stock prices showed unexpectedly impressive results. This progressive upturn is by no means a fleeting effect. Rather, it indicates a trend that energy problems have already entered mainstream awareness.

Amidst this intensified atmosphere, last year the National Energy Conference was convened as a platform for finding solutions and answers to the nation's energy issues. Since energy policies directly concern the entire political, societal and economic spectrum, these issues must be evaluated from a unique perspective. The National Energy Conference also opened up a new "window of opportunity" for energy policies that transcends far beyond the conventional, one-sided mentality of increasing energy supply. Nowadays the focus is on energy diversification, striving to work out diverse resolutions from both the supply and demand sides.

方案。

去年國際原油價格飆漲，最高每桶到美金70元，國內油價政策面臨考驗，但行政院面對國際波動，仍力求油價、物價穩定，採用如：台電備載容量率從原先的20%降低到16%、汽電共生的重新檢討等穩定措施，使物價相對穩定。今年，油價及電價問題，政府仍須面對及解決，但能源價格若未能反應成本，對替代性能源產業的蓬勃成長恐有影響，能源價格機制如何調整得當，將是今年的重要課題。

### 推動立法 邁向永續能源目標

京都議定書生效正屆滿週年，行政院在國家永續發展委員會的架構下組成「氣候變遷暨京都議定書因應小組」，環保署也適時公布「溫室氣體減量法（草案）」。我國外交處境困難，不易獲得國際資訊，也很難與各國簽訂國際公約，由國會制定溫室氣體減量立法，將有與國際規範同步的正面功能。

International crude oil prices skyrocketed last year with the highest price peaking at US\$70 per barrel. Though domestic oil pricing policies were put to the test, the Executive Yuan worked hard to stabilize oil and commodity prices amidst international fluctuations. The following measures were introduced: The reserve margin of Taipower Company was reduced from 20% to 16% and an updated review of steam-electricity cogeneration was conducted prompting the stabilization of commodity prices. This year the government still must work on resolving oil and electricity price issues. However, energy prices have yet to be reflected in costs, a factor that is unfortunately inhibiting the vigorous growth of the alternative energy industry. The focus of this year is figuring out ways to appropriately adjust energy pricing mechanisms.

制訂溫室氣體減量法，將可彌補在國際環保參與之不足，進一步與國際規範相接軌。未來，更可推展到碳稅徵收機制的建立、溫室氣體減量目標的訂定、溫室氣體減量工具發展等等，使我國在溫室氣體減量工作上，與國際間同步連動。

溫室氣體減量立法，若能在下一會期於立法院審議、通過，將可使我國在溫室氣體減量上有具體的法律依據。採取國會立法，不僅是符合國際環保潮流，善盡地球村成員責任，並彰顯我國參與國際氣候變遷相關活動的積極意願，減量規範將機動隨國際標準調整，彈性採取管制措施。

「溫室氣體減量法」若通過國會立法階段，屆時再加上「再生能源推動條例」，將可達到全民期許，開創「永續能源立法」的新格局。

### 從校園及地方 落實永續發展

個人對過去一年永續發展的另一項觀察是，永續教育的推動成果已逐漸彰顯。永續會副執行長—范巽綠次長在任內，不遺餘力的推廣永續校

### Legislation to Promote Sustainable Energy

The Kyoto Protocol has been officially in effect for one year now. In response, the Executive Yuan formed the Climate Change and Kyoto Protocol Response Taskforce, under the framework of the National Council for Sustainable Development and the EPA concurrently announced the Greenhouse Gas Reduction Act (draft). Taiwan's diplomatic predicament makes it difficult to obtain international information and enter international treaties with other countries. The National Congress has therefore drawn up legal guidelines for greenhouse gas reductions, which functions as a vehicle to keep astride with international standards.

The Greenhouse Gas Reduction Act supplements the nation's incapacity to participate in international environmental protection initiatives and further provides a means of keeping up with



執行長召開永續會工作會議的情形。

Chief Executive Officer Yeh convenes NCSD work meeting.

international standards. In the future, the nation will be better able to push for setting up carbon tax collection mechanisms, draft greenhouse gas reduction targets, and advance development of greenhouse gas reduction tools. These measures will enable the nation's greenhouse gas reduction initiatives to stay abreast with the international community.

If greenhouse gas reduction legislation can be deliberated and approved during the next Legislative Yuan review session, Taiwan's greenhouse gas reduction initiatives will be empowered with a legal basis. Adopting National Congress legislation will achieve compliance with international environmental protection trends and fulfill the nation's obligations as a member of the international community. It will also serve as a clear indicator of the nation's desire to participate in international climate change related activities and to flexibly adopt control measures that will establish reduction standards in compliance with international standards.

Once the Greenhouse Gas Reduction Act passes the approval phase in the National Congress, a "Renewable Energy Promotion Statute" will also be included to fulfill citizens' aspirations to inaugurate a new era for sustainable energy legislation.

### Campuses and Localities

#### Implementing Sustainable Development

My own observations of the past year of sustainable development initiatives are that efforts toward sustainable education are gradually bearing fruit. During her tenure at the NCSD, Deputy Chief Executive Officer and Deputy Minister of Education Fan Sun-lu did everything in her power to promote the Sustainable Campus Plan. At present these subsidization plans have been completely implemented and are bearing the fruits of success across the nation. Green concepts have indeed become deeply engrained in elementary and middle schools. These sustainable schools continue working in coordination with local governments. For

園計畫，如今這些補助計劃都已完成，並在各地深耕、開花結果，綠色概念已深入中小學。

這些永續學校也往往與地方結合，如台北縣的深坑國小，校園內成功的環保教育、師生共同打造生態池等綠化設施，使得學校成為遠近馳名的著名景點，並與當地的觀光資源結合，成為受歡迎的生態旅遊路線，這些成績，都有目共睹。

在永續會與地方的結合上，永續願景組自93年起，即選定全國11個縣市推動地方永續發展計畫，對於地方民衆，這才是真正地紮根，也讓永續發展不限於中央，而是充份在地方落實。結合在地產業及地方需求，發展出不同特色的永續成果，才是真正符合地方精神的永續。而政府正在推動的「台

instance, Shenkeng Elementary School in Taipei County has successfully implemented an environmental education curriculum and students and teachers have worked together to make an eco-pond. The pond has become a local tourism resource and is a well-known scenic spot on ecotourism itineraries, attracting visitors from near and far.

Integration of the NCSD and local initiatives started with the establishment of the Sustainable Vision Working Group in 2004 when 11 local governments were selected to advance local sustainable development plans. This was really when roots took hold in the local communities and the scope of sustainable development was extended beyond the central government. Through the integration of local industry and local needs, a very unique kind of development that authentically imbues the spirit of local sustainability has culminated. Furthermore, the government is currently promoting the "aiwan

灣健康社區六星計畫」，即在協助落實地方的永續精神。

## 積極參與 多元發展國際動能

日前由耶魯大學與哥倫比亞大學團隊在世界經濟論壇架構下公布的環境績效指數 (Environmental Performance Index, EPI)，台灣排名24，比美國與南韓還要好。但是去年另一次環境永續指數 (Environmental



■ 永續校園-北縣深坑國小荷花池。  
Sustainable Campus program - Lotus pond at Shenkeng Elementary Sch.

Healthy Communities Six-Star Plan" directed at assisting the implementation of local sustainable energy.

## Increased Impetus for Diversified International Participation

Recently, delegations from Yale University and Columbia University laid down the framework for the Environmental Performance Index (EPI) at the World Economic Forum. Taiwan was ranked 24th, a higher rating than both the U.S. and South Korea. However, in last year's Environmental Sustainability Index (ESI) evaluation, invalid information stemming from the nation's disadvantaged international status prompted an inexplicable ranking of second to



Sustainability Index, ESI)評比，台灣因為資訊不正確等國際聯動的弱點，排名竟然落為倒數第二名。這顯示出只要記取失敗教訓，汲取國際經驗，蒐集完整環境資訊及符合國際標準，成績即有大幅改善。

對於國際參與，我們切不可掉以輕心，不管是亞太經濟合作(APEC)、世界貿易組織(WTO)及民間非政府組織等，不管是政府、業界或媒體，都應持續努力。尤其台灣在永續發展議題上，有一半以上與國際相關，更應加強國際化。未來，更應積極強化與民間社團的夥伴關係，多元發展國際動能，提高國際能見度及影響力。

last place. This offered a crucial lesson and brought attention to areas that must be strengthened in order to improve evaluation results, such as gaining international experience, collecting comprehensive environmental information, and meticulous compliance with international standards. International participation cannot be taken lightly and efforts must continue in the struggle for acceptance, whether it's APEC, WTO, NGOs, government, industry, or the media. Strengthening internalization is especially critical for Taiwan's sustainable development issues since over half require integral cooperation with the international community. In the future, the nation must work harder to solidify partnerships with grassroots organizations, diversify development in concert with international trends, and heighten our international visibility and image.

The NCSD is an advisory council established with the goal of expanding collection and deliberation of opinions from all sides. Since the council has so many members, diverse channels for dialogue must be opened to overcome the limitations of meetings and ensure exchanges among all members. Thus the interactive capacity of the Internet is one of the most important com-

行政院國家永續發展委員會屬諮詢性委員會，目的在廣泛蒐集及參酌各界意見。但因為委員人數衆多，為能突破開會限制，廣泛諮詢委員意見，開放多元的發言管道，網站的互動功能是很重要的溝通工具。除讓委員們就議題深入表達意見，並可使其充份掌握資訊，將可彌補機制運作的不足，使永續會在推動上更富效能。

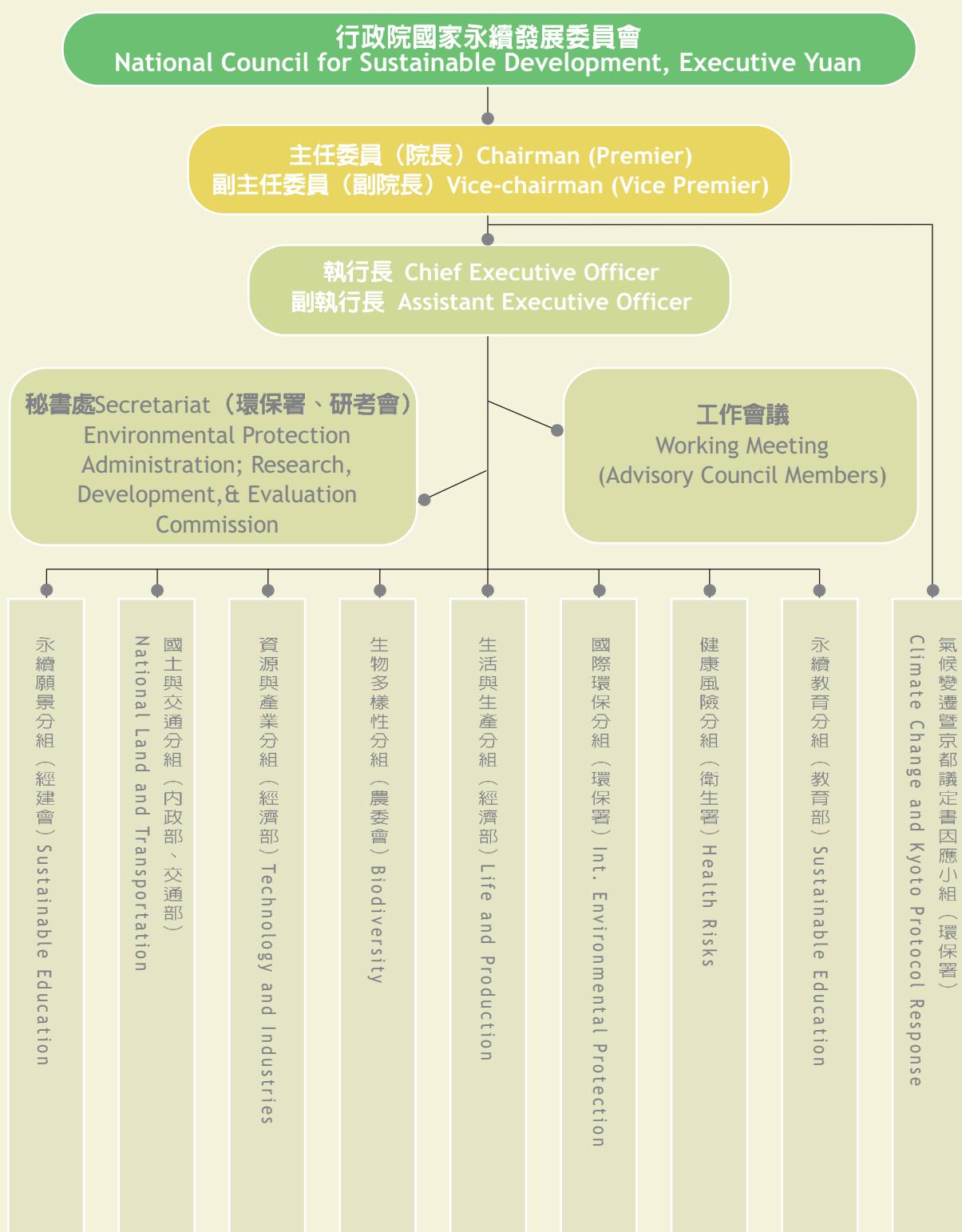


■ 永續會將積極發展國際動能，提高國際能見度。  
The NCSD is actively developing international participation to enhance Taiwan's visibility.

munication tools used by the NCSD. In addition to allowing members to share their opinions and debate issues, the Internet offers powerful information search and retrieval capacity. It can be used to overcome the inadequacies of mechanical operations and provide the NCSD with the means to more effectively promote their initiatives and achieve

# 附錄一 行政院國家永續發展委員會組織圖

## Appendix 1 Organizational Structure of NCSD





## 附錄二 行政院永續發展委員會委員名單

### Appendix 2 Appendix II Members of NCSD

#### 第八屆 The 8<sup>th</sup> Members of NCSD

中文	職稱	機構
謝主任委員長廷 Frank Chang-Ting Hsieh	院長	行政院 The Executive Yuan of the Republic of China
吳副主任委員榮義 Rong-I Wu	副院長	行政院 The Executive Yuan of the Republic of China
葉執行長俊榮 Jiunn-Rong Yeh	主任委員	研考會 Research, Development, and Evaluation Commission, Executive Yuan
林盛豐先生 Sheng-Fong Lin	政務委員	行政院 The Executive Yuan of the Republic of China
蘇嘉全先生 Jia-Chyuan Su	部長	內政部 Ministry of the Interior
陳唐山先生 Tan-Sun Chen	部長	外交部 Ministry of Foreign Affairs
杜正勝先生 Cheng-Sheng Tu	部長	教育部 Ministry of Education
何美玥女士 Mei-Yueh Ho	部長	經濟部 Ministry of Economic Affairs
胡勝正先生 Seng-Cheng Hu	主任委員	經建會 Council for Economic Planning and Development, Executive Yuan
李金龍先生 Ching-Lung Lee	主任委員	農委會 Council of Agriculture, Executive Yuan
候勝茂先生 Sheng-Mou Hou	署長	衛生署 Department of Health, Executive Yuan
張祖恩先生 Juu-En Chang	署長	環保署 Environmental Protection Administration, Executive Yuan
林副執行長中森 Join-Sane Lin	次長	內政部 Ministry of the Interior
范副執行長巽綠 Sun-Lu Fan	次長	教育部 Ministry of Education
施副執行長顏祥 Yen-Shiang Shih	次長	經濟部 Ministry of Economic Affairs
戴副執行長振耀 Chen-Yao Tai	副主委	農委會 Council of Agriculture, Executive Yuan
蔡副執行長丁貴 Ting-Kuei Tsay	副署長	環保署 Environmental Protection Administration, Executive Yuan
王委員鑫 Shin Wang	教授	國立台灣大學 Department of Geography, National Taiwan University
王委員塗發 To-Far Wang	教授	國立台灣大學 Department of Economics, National Taipei University
李委員玲玲 Ling-Ling Lee	教授	國立台灣大學 Institute of Ecology and Evolutionary Biology, National Taiwan University
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林委員國峰 Gwo-Fong Lin	教授	國立台灣大學 Department of Civil Engineering, National Taiwan University
胡委員念祖 Nien-Tsu A. Hu	教授	國立中山大學 Center for Marine Policy Studies, National Sun Yat-sen University
紀委員駿傑 Chun-Chieh Chi	教授	國立東華大學 Institute of Ethnic Relations and Culture, National Dong Hwa University
賀陳委員旦 Tan Hochen	董事長	中華電信股份有限公司 Chunghwa Telecom Co., Ltd.

中文	職稱	機構
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劉委員錦添 Jin-Tan Liu	教授	國立台灣大學 Department of Economics, National Taipei University
蕭委員新煌 Hsin-Huang Michael Hsiao	教授	中央研究院 Institute of Sociology, Academia Sinica
蘇委員慧貞 Huey-Jen Su	教授	國立成功大學 Department of Environmental and Occupational Health Medical College, National Cheng Kung University
尤委員美女 Dagmar Mei-Nu Yu	理事長	台灣婦女團體全國聯合會 National Union of Taiwan Women Association
余委員範英 Alice Yu	董事長	時報文教基金會 China Times Culture & Education Foundation
李委員偉文 Wei-Wen Lee	理事長	荒野保護協會 The Society of Wilderness
李委員永展 Yung-Jaan Lee	理事長	台灣環境資訊協會 Taiwan Environment Information Association
林委員俊興 Chun-Shin Lin	董事長	佑生研究基金會 Archilife Research Foundation
紀委員惠容 Hui-Jung Chi	理事長	台灣少年權益與福利促進聯盟 The Garden of Hope Foundation
陳委員曼麗 Man-Li Chen	董事長	主婦聯盟環境保護基金會 Homemakers' Union and Foundation
黃委員茂雄 Theodore Mao-Hsiang Huang	理事長	中華民國企業永續發展協會 Chinese National Association of Industry and Commerce
楊委員智偉 Chih-Wei Yang	理事長	台灣原住民族政策協會 Association for Taiwan Indigenous Peoples' Policy
劉委員小如 Severinghaus, Lucia Liu	理事長	中華民國國家公園學會 National Park Association in Taiwan

### 第九屆 The 9th Members of NCSD

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葉執行長俊榮 Jiunn-Rong Yeh	主任委員	研考會 Research, Development, and Evaluation Commission, Executive Yuan
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蘇委員嘉全 Jia-Chyuan Su	部長	內政部 Ministry of the Interior
陳委員唐山 Tan-Sun Chen	部長	外交部 Ministry of Foreign Affairs
杜委員正勝 Cheng-Sheng Tu	部長	教育部 Ministry of Education
何委員美玥 Mei-Yueh Ho	部長	經濟部 Ministry of Economic Affairs
胡委員勝正 Seng-Cheng Hu	主任委員	經建會 Council for Economic Planning and Development, Executive Yuan
李委員金龍 Ching-Lung Lee	主任委員	農委會 Council of Agriculture, Executive Yuan
候委員勝茂 Sheng-Mou Hou	署長	衛生署 Department of Health, Executive Yuan
張委員國龍 Kow-Lung Chang	署長	環保署 Environmental Protection Administration, Executive Yuan
林委員陵三 Lin,Ling-San	部長	交通部 Ministry of Transportation and Communications



## Appendix I, II

中文	職稱	機構
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范副執行長巽綠 Sun-Lu Fan	次長	教育部 Ministry of Education
施副執行長顏祥 Yen-Shiang Shih	次長	經濟部 Ministry of Economic Affairs
戴副執行長振耀 Chen-Yao Tai	副主委	農委會 Council of Agriculture, Executive Yuan
蔡副執行長丁貴 Ting-Kuei Tsay	副署長	環保署 Environmental Protection Administration, Executive Yuan
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溫委員肇東 Chao-Tung Wun	教授	政治大學科技管理研究所 Graduate Institute of Technology and Innovation, National Cheng-Chi University
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李委員偉文 Wei-Wen Lee	理事長	荒野保護協會 The Society of Wilderness
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楊委員智偉 Chih-Wei Yang	理事長	台灣原住民族政策協會 Association for Taiwan Indigenous Peoples' Policy
高委員志明 Luis Ko	執行長	義美環境保護基金會 I-Mei Environmental Protection Fundation
陳委員淑華 Shu-hua Chen	理事長	台灣環境保護聯盟 Taiwan Environmental Protection Union
賀委員陳旦 Tan Hochen	董事長	中華電信公司 Chunghwa Telecom Co., Ltd.
顏委員美娟 Mei-Chuan Yen	董事長	主婦聯盟環境保護基金會 Homemakers' Union and Foundation
林委員聖崇 Sam Lin	董事長	淨竹文教基金會 Hsinchu Foundation