

105 年

國家永續發展年報

**2016 ANNUAL REPORT ON NATIONAL
SUSTAINABLE DEVELOPMENT**



行政院國家永續發展委員會 編印
Published by National Councils
for Sustainable Development, Executive Yuan

2016 ANNUAL REPORT ON NATIONAL SUSTAINABLE DEVELOPMENT

前言

01 第一章 | 105年國家永續發展委員會年度工作概況

07 第二章 | 永續會年度工作重點與成果

23 第三章 | 105年國家永續發展獎得獎單位介紹

36 附錄

行政院國家永續發展委員會第17屆改聘委員名單

37 Preface

38 Chapter 1

The 2016 Annual Work Progress of the NCSD

44 Chapter 2

The highlights and achievements of the annual meeting

64 Chapter 3

The 2016 National Sustainable Development Award Winners

78 Appendix Members of the NCSD

前言

台灣因地狹人稠、自然資源有限、天然災害頻繁、國際地位特殊等因素，致對永續發展的追求，較其他國家更具需要性與迫切性。為因應全球永續發展趨勢，行政院於86年8月以台八十六環字第33137 號函核定成立「行政院國家永續發展委員會」（以下簡稱永續會）；91年12月總統頒布實施「環境基本法」，該法第29 條賦予永續會法定位階。

本年報彙整永續會105年推動永續發展工作的重要成果，包括105年永續會年度工作概況、年度工作重點與成果、105 年國家永續發展獎得獎單位介紹等；另委員名單，詳列於年報附錄。

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



第一章 105年國家永續發展委員會年度工作概況

壹、行政院林全院長頒發第17屆改聘委員聘書

為落實「2025非核家園目標」及因應105年5月20日政權交接及行政院改組，永續會於105年10月依據設置要點第四點，進行民間委員改聘作業。

「委員聘書頒發儀式」於105年11月3日下午3時，在行政院一樓大廳舉行，由林全院長一一頒發委員聘書，後續進行大合照，並強調永續發展的目標設定與議題討論上，希望委員會發揮功能，讓政府在形塑公共政策的思慮能更周延。政府也將參考聯合國永續發展目標，廣納委員意見，以精進永續發展工作；期望永續會所有的努力，都能讓人民有感。



▲ 林旺根 委員



▲ 林盛豐 委員



▲ 周蓮香 委員



▲ 施信民 委員



▲ 高志明 委員



▲ 孫璐西 委員



▲ 郭慶霖 委員



▲ 許添本 委員



▲ 黃呈琮 委員（吳文雅秘書長代理）



▲ 張振亞 委員



▲ 黃俊鴻 委員



▲ 黃得瑞 委員



▲ 劉麗珠 委員



▲ 滕西華 委員



▲ 歐蜜偉浪 委員



▲ 謝志誠 委員



▲ 蘇慧貞 委員



▲ 委員聘書頒發儀式大合照

貳、本會第29次委員會議

本會第29次委員會議於105年11月3日在行政院2樓第1會議室召開，由行政院林全院長兼永續會主任委員主持，會議議程計2項討論案。第一項討論案：本會運作及組織架構調整案；第二項討論案：研訂我國永續發展目標及主政分組。

一、討論案「本會運作及組織架構調整案」之主席裁示

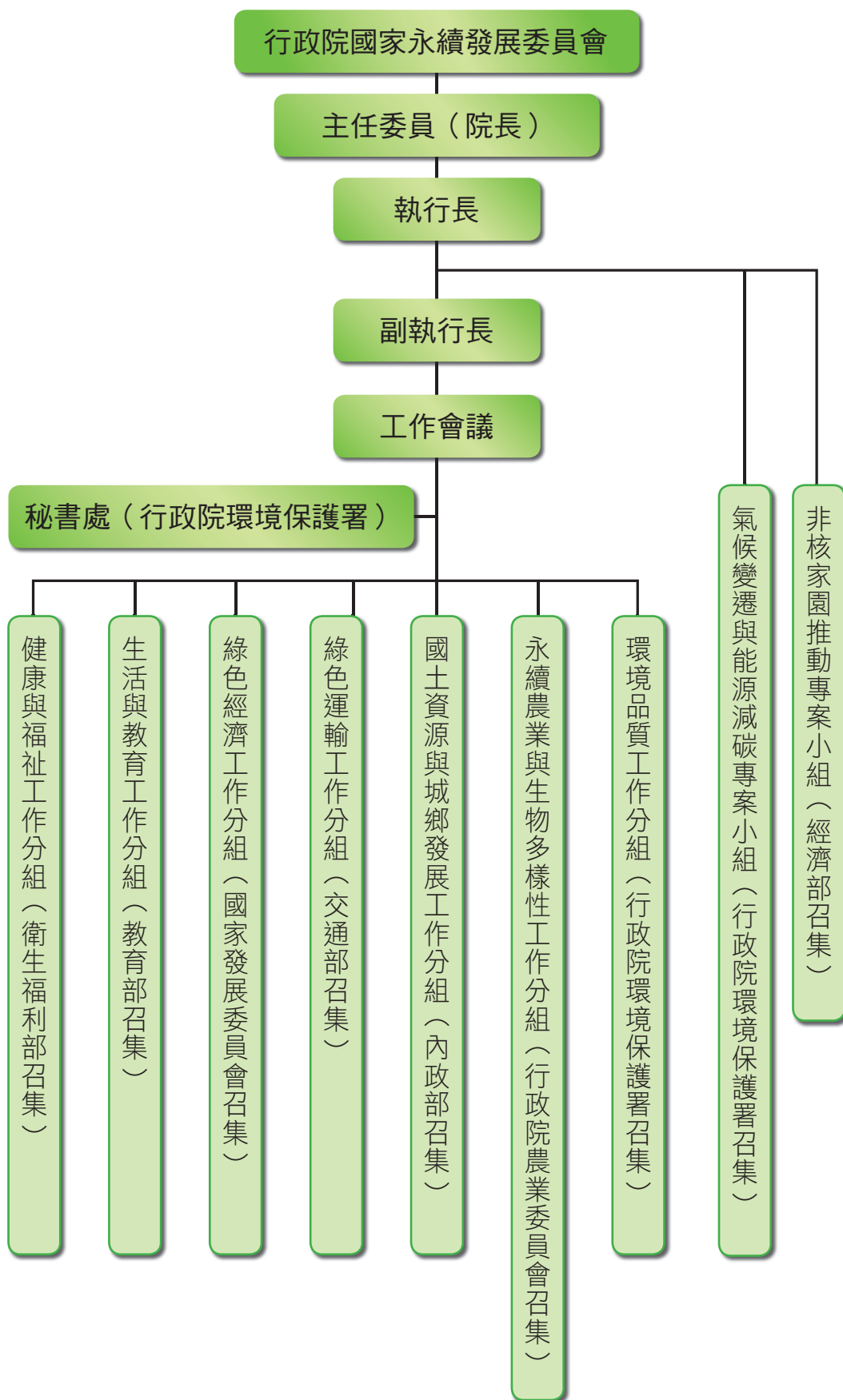
- (一) 永續會運作及組織架構調整目的是為順應國際永續發展趨勢及落實「2025非核家園目標」。本會組織架構自本次委員會議起，調整為7個工作分組及2個專案小組。7個工作分組分別是「健康與福祉工作分組」，由衛生福利部召集；「生活與教育工作分組」，由教育部召集；「綠色經濟工作分組」，由國家發展委員會召集；「綠色運輸工作分組」，由交通部召集；「國土資源與城鄉發展工作分組」，由內政部召集；「永續農業與生物多樣性工作分組」，由本院農業委員會召集；「環境品質工作分組」，由本院環境保護署召集。另2個專案小組，分別為「非核家園推動專案小組」，由經濟部召集；「氣候變遷與能源減碳專案小組」，由本院環境保護署召集；並配合專案小組設置，請秘書處配合修正本會設置要點。
- (二) 「非核家園推動專案小組」涉及部會增列內政部、本院農業委員會、交通部。請各工作分組及專案小組召集機關檢視各組成員之涉及部會；召集機關認為有需要納入之部會，各部會均應全力配合。
- (三) 本會委員會議至少每半年召開1次，工作會議則視需要隨時召開，其內容與分工可隨時討論調整；且基於政府一體的精神，有關各分組的參與部會，亦尊重各該召集人依工作需要，彈性納入。

二、討論案「研訂我國永續發展目標及主政分組」之主席裁示

- (一) 我國永續發展應訂定分階段目標，包括以西元2030年為達成期程之核心目標，及4年內（西元2020年）應達成之具體目標。
- (二) 為研訂我國永續發展目標，請依據秘書處建議之各項目標召集分組分工，並請民間委員自由報名參加1~3個工作分組，研訂我國4年後（西元2020年）擬達成之具體目標，再依據具體目標研訂西元2030年前擬達成之核心目標，以淺顯易懂文字呈現其最核心之價值。
- (三) 為協助我國永續發展目標研訂，請各工作分組及小組儘速召開目標研訂研商會議，參考聯合國永續發展目標，儘速完成核心目標及具體目標草案，提報下一次委員會議討論。並請各組推選1位民間委員為代言人，於下次委員會議召開前，先行開會討論就核心目標達成共識。並請秘書處彙整過去19年永續發展相關目標研訂的成果，整理為背景資料，提供給各工作分組及委員作為討論的基礎。
- (四) 為期於6個月內訂定完成我國永續發展核心目標及具體目標，請秘書處掌握期程，於下一次委員會議前召開1次以上工作會議討論共識，俾於期限內召開委員會議確定我國永續發展目標。

行政院國家永續發展委員會架構

(105年11月30日核定)





▲ 行政院國家永續發展委員會第29次委員會議



▲ 行政院國家永續發展委員會第29次委員會議

第二章 永續會年度工作重點及成果

壹、氣候變遷與節能減碳面向

本面向以環保署為召集單位，負責協調推動能源節約、溫室氣體減量、氣候變遷衝擊評估及調適行動規劃，並協調推展氣候變遷相關國際合作事務。其年度工作成果如下：

一、建構溫室氣體管理機制

- (一)「溫室氣體減量及管理法」於104年7月1日公布施行，明定我國西元2050年長期減量目標及以5年為一期的階段管制目標，研訂管理機制，完備7項子法及配套措施；搭配具經濟誘因的管理措施，逐步建立從免費核配到有價配售的總量管制與交易制度。
- (二)發布「2015年中華民國國家溫室氣體清冊報告」，掌握溫室氣體排放基線。



▲ 2015年中華民國國家溫室氣體清冊報告

- (三)推動自願減量機制，提升綠色經濟成長及降低社會成本，抵換案件投資金額約新臺幣84.6億元，增加總體經濟約126.1億元生產總值，降低約57.6億元之社會成本。

二、部門別因應氣候變遷行動

- (一)經濟部能源局推動「千架海陸風力機計畫」政策，設置341架陸域風場，年發電量可達15.2億度；推動「風力發電離岸系統示範獎勵辦法」，推展4架離岸示範機組建置。

- (二)配合世界氣象組織（WMO）氣候服務議題與目標，交通部中央氣象局舉辦「第一屆臺灣與西北太平洋全球預報系統發展研討會」、「氣候服務健康國際研討會」、「氣象資訊與環境應用論壇」，推動跨領域氣候應用服務。

- (三)交通部臺灣區國道高速公路局推動高速公路電子收費系統，規劃全國綠色路網，電子收費系統利用率約92%，105年1月至6月減碳量達1.3792萬公噸。

三、推動實質參與氣候公約

- (一)由環保署負責籌組國內相關產官學研各界代表參與聯合國氣候變化綱要公約第22次締約國大會暨京都議定書第12次締約國會議（UNFCCC COP22/CMP12），掌握全球減碳管制發展的第一手動態資訊，與各國代表、專家學者交流，適時宣揚我國節能減碳的努力成果與維護全球環境的堅定立場，爭取國際認同，厚植我國未來減碳責任談判的利基。

- (二)促進氣候變遷國際合作

- 1.環保署及歐洲經貿辦事處（European Economic and Trade Office, EETO）舉辦「2016年氣候變遷國際研討會-區域性碳市場能力建構」，邀請到歐盟、德國、韓國、泰國、越南及重要國際組織等氣候變遷政策及碳市場重要智庫主管



▲ 「2016年氣候變遷國際研討會－區域性碳市場能力建構」

及主政官員與會，分享各國因應氣候變遷及推動碳市場建構經驗，促進臺灣與其他國家政府及非政府組織（NGO）在氣候變遷課題上更多合作機會。

- 2.環保署推動太平洋溫室氣體觀測研究計畫，與歐盟、海運、航空業者及研究單位合作，掌握亞洲及太平洋地區溫室氣體和大氣污染物的三度空間分布。顯示我國積極投入溫室氣體資料觀測工作的態度與決心，期能與世界各國共同推動全球暖化及氣候變遷觀測與研究，共同評估並因應氣候變遷所帶來之衝擊。
- 3.交通部中央氣象局派員參與「TGA 臺灣地球科學聯合學術研討會」、「2016 亞洲大洋洲地球科學學會（AOGS）年度會議」、「APEC「科技創新政策夥伴第7次會議（PPSTI-7）」、「APEC Climate Symposium 2016 and APCC WG Meeting」（亞太氣候研討會）國際會議、「聯合國氣候變化綱要公約第22次締約國大會暨京都議定書第12次締約國會議（COP22/CMP12）」等場次。

四、擴大公民參與

環保署與桃園市政府、農委會及水利署共同辦理「2016世界環境日主題活動」，期望結合中央、地方以及跨部會合作，能有效強化活動宣導效益，將臺灣打造成一個安居樂業的低碳永續家園。

五、輔導產業低碳綠化

- （一）經濟部工業局推動產業節能減碳，鋼鐵、石化、造紙、水泥、人纖、棉布印染、絲綢印染、複合材料等11行業投入溫室氣體自願減量措施總金額約新台幣30億元，二氧化碳減量60萬公噸，衍生之節能經濟效益約新台幣30億元。媒合工業區內廢熱、廢能及資源廢棄物之再使用，鏈結量約383萬公噸/年，降低產業生產成本及外售蒸汽效益達33.1億元/年，減少152座高污染鍋爐之使用，換

算減少85.1萬公噸二氧化碳排放。

（二）國營機構節能減碳

- 1.台電公司完成10座火力發電廠溫室氣體排放量盤查登錄工作，排放量約為8,525萬公噸。另配合經濟部能源局完成2件電力設施氣候變遷調適評估工作，預定自行完成3件氣候變遷調適相關報告。
- 2.台糖公司以製程減廢減少溫室氣體之排放，為國內第一家精製食用植物油及其調合油取得碳足跡查證合理保證等級查證聲明書及碳標籤申請，又利用剩餘蔗渣發電、焚燒垃圾餘熱發電約3億度；全民造林、環保林園大道平地景觀造林面積累計1萬2千公頃，共約可吸存二氧化碳18萬4千公噸。
- 3.中油公司在供油中心油槽區地質災害潛勢調查分析暨改善計畫中，持續進行油槽區地層沉陷量監測，已完成注儲工程處管群區下陷防治工作、設備基礎沉陷資料管理及儲槽基礎沉陷資料管理。

六、宣導綠色樂活

- （一）於「2016臺北國際春季旅展」，設置「低碳新生活 寶島悠遊行」主題館，展出低碳飲食及低碳旅遊方式，推展低碳生活的觀念及作為。
- （二）推廣低碳樂活與調適因應素養溝通，完成建構「氣候變遷資訊整合平台」，作為知識傳播及教育宣傳管道；推動「低碳永續家園認證評等」、培訓社區規劃師及物業管理業。
- （三）推動低碳城市示範計畫，依105年度「補助地方政府推動低碳永續家園專案計畫申請原則」，核定37項計畫、2億812萬餘元，賡續補助與協助地方政府維運「低碳永續家園運作體系」及執行具體行動項目、輔導社區低碳建構工作。

(四) 建置金門低碳島計畫，以「金門低碳島計畫推動小組」作為溝通協調平台，管考計畫執行成效；辦理2場次會議探討「綠色運輸－電動機車推廣」、「金門再生能源最大裝置容量評析」等之技術、法令規範及成本效益等相關議題。

貳、國土資源面向

本面向之召集單位為內政部營建署，主要任務在於確保國土安全，並依國土功能分區，建立國土保育利用及管理計畫，推動相關機制作法化，以實現國土資源之永續發展。其年度工作成果如下：

一、水資源開發、利用、管理及保育

(一) 翡翠水庫永續水環境綠色水庫行動計畫，建構低碳綠能生態化水庫。為確保翡翠電廠長期運轉效能與安全，105年3月7日至17日停機辦理水輪發電機組定期歲修工作。統計105年1至8月翡翠發電廠生產潔淨能源合計1億5,7百萬度，相當於提供約8萬公噸二氧化碳當量之減碳效益。再者，翡翠水庫肩負大臺北地區目前及未來的供水重任，做好水源涵養工作等於是水庫永續經營的保障，為涵養水源而積極植樹造林，105年初造林約3.3公頃，以防止土地續遭墾殖及加強集水區水土保持。

(二) 翡翠水庫供應質優量足原水，105年1至8月供應臺北自來水事業處自來水原水量達8,175萬餘立方公尺，支援台灣自來水公司達7,434萬餘立方公尺。



▲ 水庫上游石碇區小格頭段獅子頭坑小段復舊造林

(三) 改善大壩安全監測系統，實際辦理大壩各項儀器監測、評析及現場檢查。105年1至8月共計辦理大壩現場檢查361人次，大壩儀器自動監測119,560筆及人工量測15,798筆，確認大壩結構及基礎均保持安全穩定。

二、地下水資源之保育與管理

雲彰地區地層下陷具體解決方案暨行動計畫，雲林縣下崙養殖漁業生產區海水統籌供應系統正常運作中，經分析地下水減抽量100至105年底，共減抽353萬7,600噸。

該縣水井養殖漁業生產區海水進水系統、下湖口養殖漁業生產區供排水系統及推廣循環水養殖技術，輔導13.8公頃養殖產業朝向節水發展，計估年節水量為300萬噸。

三、海洋資源之永續經營

依據104年2月4日公布施行之海岸管理法，於104年8月4日劃定公告海岸地區範圍。並依該法於105年2月1日發布施行該法施行細則等5項子法，研擬完成「整體海岸管理計畫」（草案），於105年8月19日函請各直轄市、縣（市）政府協助辦理公開展覽，並於105年8月29日、8月30日、9月2日及9月5日辦理北、中、南、東部分區公聽會。



▲ 翡翠電廠歲修（水輪機內部檢查）

四、國土規劃與管理

(一) 國土計畫法立法通過：為因應氣候變遷，確保國土安全，保育自然環境與人文資產，促進資源與產業合理配置，強化國土整合管理機制，並復育環境敏感與國土破壞地區，追求國家永續發展，內政部依據行政院政策指示，推動「國土計畫法」立法作業，該法經立法院於104年12月18日三讀通過，於105年1月6日公布，並經行政院定自105年5月1日起施行。

(二) 辦理全國地質敏感區劃定、審議及公告作業：全國地質敏感區規劃分五批完成劃定、審議及公告，截至104年底，已完成第一批至第四批之40項地質敏感區劃定公告作業，105年度預計完成第五批共14項地質敏感區之劃定公告。

(三) 強化自然步道系統體驗與環境教育，截至105年8月推廣無痕山林運動，辦理步道工作假期、環教解說、遊憩活動與訓練計畫共30場次，推廣森林遊樂區及自然教育中心相關之各項生態旅遊、環境解說、教育訓練活動116場次，促進維護國有林生態旅遊地區之生態與環境品質；國有林出租造林補償收回，105年辦理補償收回林地253.8公頃，就已收回之林地，視現場林木狀況編列造林計畫復育造林或改善林相，以強化國土保安功能。



▲ 結合民間團體辦理步道認養及淨山活動，有效推動無痕山林運動



▲ 已完成補償收回之造林地執行林相改良工作

(四) 推動農地資源空間規劃並建立農地合理利用機制，為因應國土計畫法功能分區劃設作業，協助20個縣（市）政府掌握各分級農地更精確之土地使用情形，建立各分級農地所屬之國土功能分區定位，作為將農地資源分類分級成果轉換為農業發展地區之管制參據。

五、國土保育

土石流警戒基準值及參考雨量站檢討、調整與更新：針對105年2月6日美濃大地震，受強震影響地區之警戒值調整評估，共計提出5縣市10鄉鎮區之警戒值異動建議；並對105年度新增14條潛勢溪流地區，訂定警戒值與劃定警戒分區。

六、推廣永續及節能減碳公共工程概念

辦理數位學習課程，介紹公共工程全生命週期（包括可行性評估、規劃、設計、施工、維護管理等階段），推廣永續經營環境政策及理念，減輕公共建設對於環境的衝擊。105年截至第2季數位學習平台網路線上課程取得認證人數為2,502人。

參、生物多樣性面向

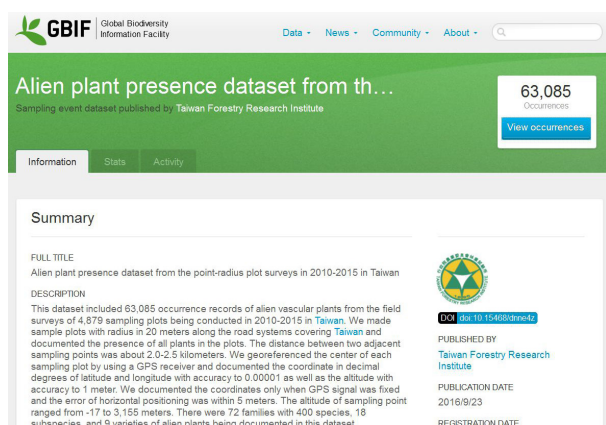
本面向之召集單位為農業委員會，整合政府部門共同維護生物多樣性，以達本土生物多樣性保育及永續利用之目標。推動重點及重要成果如下：

一、持續推動棲地保育

- (一) 確認我國陸域、濕地及海域的生物多樣性熱點，進行蓮花池耕地、蝙蝠族群動態及鳥類族群健康風險、保育類物種、臺灣暗蟬及凶狠圓軸蟹等復育生態監測與智慧監控。另於核三廠出水口以人工白化珊瑚為代表，分析珊瑚宿主的熱反應，結果顯示水溫穩定區的維氏腦紋為熱最敏感的珊瑚。
- (二) 檢討、改善現有保護區系統與經營策略，函請直轄市、縣（市）政府依「自然保護區域經營管理計畫修正期程規畫表」辦理，完成27處保護區經營管理計畫書修訂。
- (三) 制訂各縣市政府及社區或漁會增設海洋保護區及自行管理取締之鼓勵措施，基隆市政府已公告「望海巷潮境海灣資源保育區及有關限制事宜」，並與當地海巡單位、志工及潛水人員組成巡守隊；輔導貢寮區漁會成立「卯澳栽培漁業示範區」，由志工設立巡守隊。

二、發展物種保育與生物技術

- (一) 持續推動生物多樣性資訊公開及增修訂，與環境、海洋、國土資訊等其他相關領域資料庫整合，並與國際接軌（GBIF, IUCN, OBIS, EOL GEOS, GEO-BON等）。經由TaiBIF IPT 發佈一份外來植物分布取樣調查開放資料集至 GBIF，收集63,085筆分布紀錄。



▲ 外來植物分布取樣調查開放資料集

- (二) 加強分類學能力建設，聘用分類人才、標本典藏（含遺傳物質、組織標本）、生物誌編撰及增修訂、物種多樣性之普查及編目。完成臺灣地區蚜小蜂誌之編撰，研究顯示因臺灣地區具獨特之地形及氣候，繁衍出龐大的小蜂多樣性，在生物多樣性、演化生態與以及農學應用領域提供後續發展的基礎。
- (三) 加強基改產品之查驗能力，並建立與執行生物技術研發與衍生產品對生物多樣性衝擊之評估能力與管理體系。包括對市售黃豆、玉米食品進行標示調查，是否為查驗登記核可之基因改造黃豆及玉米品項；進行市售木瓜苗基因改造抽查檢測30件，以監測基改生物外流。
- (四) 加強具指標性之動物、植物、微生物物種族群變化之研究，以福山25公頃森林動態樣區主要研究平臺，藉由物種的分布中心、繁殖物候、樹種更新率、功能性狀分化及其與生態環境因子的相關分析，探討全球暖化對福山森林生態系的影響。補助重要石虎棲地保育評析、馬祖地區鳳頭燕鷗繁殖族群動態研究、水雉生態教育園區及臺灣東方草鴉族群長期監測系統建立計畫。

三、推動社區保育與棲地復育

- (一) 建立兼具生產、生態、生活的永續社區，執行「結合社區加強森林保護工作計畫」，邀集19個社區、部落參與（含18個原住民社區），執行林班巡視計1,188次，共同落實林保護工作，降低森林被害程度。
- (二) 完成現有原住民族及地方社區傳統生物多樣性知識調查整理鑑識並建置資料庫，並與國際接軌，經由田野調查蒐集生物多樣性傳統知識資料，完成5,555筆調查資料上傳。
- (三) 建立溝通平台及合作關係，確保國內有足夠之資源協助並鼓勵民間企業、社區

及保育團體，參與生物多樣性與保護生物多樣性棲地工作。補助非政府組織參與生物多樣性宣導與保護生物多樣性棲地計畫共11案，其中《上課了！生物多樣性4：綠色經濟幸福學》榮獲第40屆金鼎獎圖書類政府出版品獎。



▲ 《上課了！生物多樣性4：綠色經濟幸福學》

(四) 調查現有劣化生態系之地點、面積、範圍劣化狀況並擬定復育劣化生態系之對策。進行崩場地整體調查規劃，訂定崩場地優先治理順序，完成復育約10公頃；運用衛星進行山坡地變異監測，有效輔助山坡地管理，完成6次、偵測變異點計4,000件，山坡地變異面積約1,600公頃。持續評估國道高速公路道路致死改善設置動物通道成效，並確認友善設施—跨越溝渠棧橋可提供動物脫困。持續辦理外來入侵種防除及生態綠化復育，監測結果顯示鋪設雜草抑制蓆可有效抑制銀合歡萌蘖和種子萌芽，並訂定「國道外來入侵植物銀合歡防除作業程序」。

四、加強外來入侵種防範與監測

(一) 建置外來種輸出入管理機制（包括物種輸出入管理及檢疫措施），建置簽審通關共同作業平台，持續依現況調整簽審通關共同作業平台之內建高風險、風險未明、第4條公告保育類、華盛頓公約物種、及較低風險審查名單資料庫，依需求補強並擴充簽審通關共同作業平台之結構、內容與效能，以利強化對危險性、高入侵性或與其他影響本土物種存續物種之管理機制。

(二) 建立外來種輸入風險評估及引入生態影響評估體系並將評估結果據以擬定監（偵）測及防治策略。以兩棲類及爬行類生物為分析對象，執行利用生活史資料評估外來動物入侵衝擊之分析與應用計畫。



▲ 簽審通關共同作業平台

(三) 建立外來種監（偵）測、鑑定及早期預警機制，包含輸入之外來種後續追蹤管理。執行外來種斑腿樹蛙族群監測計畫以及外來種帝王脊斑壁虎入侵現況及其影響之評估，預估在台灣族群數量應有1千3百隻以上。

(四) 強化外來種走私查緝，查獲走私農漁產品共45案、76,279公斤及活體動物257隻。運用檢疫犬加強入境旅客行李及郵遞包裹之偵測，防杜境外重要疫病蟲害隨違規攜帶之動植物及其產品入境，自入境旅客攜帶行李、快遞貨物及國際郵包中，查獲動植物或其產品逾3.4萬件、約36公噸。



▲ 檢疫犬執勤情形

肆、能源與生產面向

本面向以經濟部工業局為召集單位，業務以發展永續能源、促進綠色生產為主軸。包括確保能源安全、提高能源生產力；推動產業結構綠化發展、提高國際競爭力。其年度工作成果如下：

一、推動區域能資源整合及綠色工廠

辦理22座重點產業園區推動能資源整合工作，完成蒸汽、無機性污泥、有機性污泥、廢保溫材、廢溶劑等360項能資源鏈結規劃，且已促成104項實質鏈結，達成每年約382萬公噸鏈結量及 CO₂ 排放減量達每年85.1萬公噸。另已核發40張綠色工廠標章及通過78家廠商清潔生產評估系統符合性判定，獲證廠商相關綠建築及清潔生產推動作為合計每年可減碳67.8萬噸，節省成本達新台幣33.6億元。

二、輔導企業推動節能減碳

協助診斷5家生活服務業連鎖企業節能效率，發掘整體企業的節能空間，提出整體改善建議報告書，供門市裝修或設置新門市參考。協助診斷105家中小企業生產設備節能效率、碳足跡盤查、能源管理系統建置；完成中小企業綠色節能環保、節能技術等培訓；節能減碳與節水觀念宣導等工作。

三、建置檢測實驗項目

完成建置「太陽光電系統用直流斷路器試驗設備」，對保護供應直流電形式能源科技產品之斷路器提供型式試驗檢測，有助提昇供電系統安全。完成太陽光電國家標準草案2份，作為產品 CNS 國家標準制定之參考。推廣 LED 檢測校正服務、認證實驗室服務及研討光學相關技術。

四、促進潔淨能源發展

- (一) 推動太陽光電政策，規劃太陽光電114年設置目標量達 20GW，年發電量250億度電，其中屋頂型目標114年完成3GW，推動公有屋頂 PV-ESCO 模式，累計19縣市投入公有屋頂標租設置太陽光電，合約總量達約 200MW；地面型

目標114年完成17GW，推動利用地層下陷、不利耕作土地及受污染土地等進行設置。

- (二) 推動「建置澎湖低碳島專案計畫」，初步成果包含太陽光電1.56MW、太陽能熱水器2,493平方公尺、LED 路燈5,309盞、節能家電（節能冰箱與空調）12,028臺、智慧電表1,105戶（高壓用戶105戶及低壓用戶1,000戶）、雨水回收2,500噸、垃圾分選廠50噸、漏水率降至23.09%、造林212公頃、電動機車3,874輛及充電柱612座等，為達成低碳島建置目標奠下良好基礎。對於尚待積極辦理之項目，相關權責單位皆已有配套措施持續推動。



▲ 105年6月18日林全院長視察澎湖中屯風力園區

- (三) 推動「綠色電價制度」，105年度將臨時用電用戶納為計畫適用對象之一，並增加申購證明及綠電標章兩項辨識系統，便利認購用戶彰顯其對於再生能源發展的支持與貢獻。年度認購量已達2億6,727萬2,100度，共6,814戶認購。
- (四) 訂定106年度「再生能源電能躉購費率及其計算公式」、新增太陽光電水面型躉購類別，以利多元選擇設置案場。提高設置誘因如：太陽光電高效能模組及北部地區設置躉購費率加成、離島費率獎勵、離岸風力發電階梯式費率等機制。

五、推動多元就業、創業服務及職業訓練

- (一) 依「就業保險促進就業實施辦法」，辦理各項促進就業措施，以促進失業者儘

速就業之目標，推動「低收入戶及中低收入戶就業促進實施計畫」，補助參加技術士技能檢定計1萬6,631人次，提供個管專業服務計3,812人就業相關協助；推動「結合大專校院辦理就業服務補助計畫」，邀請4,107家廠商參與，提供22萬7,916個就業機會，總計服務18萬3,474人次；推動「青年就業讚計畫」、辦理「青年就業達人班」協助4,224人就業及「提升國高中就業準備力計畫」服務1萬3,427人次；運用就業促進津貼提供短期工作機會或推介至多元就業開發方案，協助特定對象及弱勢者就業，辦理求職登記26萬2,373人次，推介就業18萬4,604人次。



▲ 辦理提升國高中就業準備力計畫就業講座

- (二) 建立創業諮詢輔導機制，提供女性、離島居民、中高齡者創業貸款；建置微型創業鳳凰網站，提供活動及課程等相關創業資訊，協助1千1百人創業，創造2千8百個就業機會。
- (三) 辦理多元就業導向職前訓練課程，以提升失業者就業技能，計訓練2萬6,923人。對勞工辦理多元化、實務導向之在職訓練，並透過補助訓練費用或提供輔導訓練服務方式，激勵事業單位持續投資員工，計訓練14萬7,703人

六、發展產業特色、維護生態永續

- (一) 推動畜禽產業升級，辦理畜牧場與飼養場登記及稽查1千5百場並輔導其聘任獸醫師，推動家禽契約飼養制度，白肉雞契養比例達9成5，土雞達8成5，鴨達8成，鵝達5成。透過農情調查、供

銷調配及產銷資訊研判會議，國內豬源實際供應頭數與預供量每月誤差值低於5%。推廣異地、分齡、批次高效率生產模式及自動化餵飼系統以提高生產效率。

- (二) 推動優良農產品標章，4家驗證機構、255家生產廠之645大項（5,420細項）產品通過 CAS 驗證。並推動產銷履歷，輔導4家養禽場及禽肉屠宰加工業者通過驗證，家畜產品567公噸。
- (三) 保護農業水土資源，建立農田水利會灌溉管理地理資料庫，包括全臺17個農田水利會之渠道總長約6.8萬公里，地理空間圖資處理平台完成優先清查項目總計約28.5萬筆土地，面積約2.8萬公頃及生產環境資料庫使未來分析加值面向更加多元。
- (四) 持續推動漁業監控、管制及調查工作，遠洋漁業觀察員隨船觀察及採樣計80艘次、沿近海觀察員隨船科學觀察70航次及海上目視檢查及登臨檢查210航次以上，藉以遏止違法漁業行為，有效管理漁業資源狀況。



▲ 遠洋漁業觀察員收集漁獲資料

- (五) 啟動「林產經濟振興策略規劃」，全面進行人工林清查作業，規劃合理穩定之國產材供應策略。輔導24處、5,970公頃農業經營專區，以發展區內核心產業，建立安全、優質生產基地。

伍、交通與生活面向

交通與生活面向主要執行與永續運輸、綠色生活與綠色消費等議題相關之行動計畫，推動重點及重要成果如下：

一、推動公路公共運輸提昇計畫

推動「公路公共運輸提昇計畫（102-105年）」，載客量自98年之10.39億人次成長至105年之12.60億人次，成長21.27%。

- (一) 補貼1,094條市區與公路客運偏遠路線共11.76億元，維持基本民行不中斷；補助汰換為低地板公車278輛及通用無障礙大客車81輛，強化無障礙通用設計之運輸服務。
- (二) 協助公共運輸覆蓋率較低之10個縣優先推動需求反應式公共運輸（DRTS）專案計畫，提升聯外公共運輸服務。
- (三) 補助7縣市政府及臺灣高鐵公司建置多卡通設備，以完善全國電子票證系統。推動建置「公路汽車客運動態資訊管理系統」計畫，提高民眾搭乘大眾運輸工具意願、提升客運業服務品質及營運效率。

二、持續推動軌道運輸建設及提升服務效能

積極推動軌道運輸建設，提升軌道運輸服務，滿足旅客需求，減少旅行時間及節省成本。

- (一) 執行都會鐵路立體化、捷運化，已完成臺中都會區鐵路高架捷運化計畫第一段工程，完成後可能創造出面積達42公頃綠化廊帶，提供大臺中市民低碳、慢遊及友善公共空間。完成壽豐至豐田間電氣化工程，提升花東線鐵路運能。臺鐵整體購置及汰換車輛計畫購置296輛區間客車投入營運，提升都會區捷運化旅運服務效能及縮短平均班距。
- (二) 持續推動大都會區大眾捷運系統，已完成臺灣桃園國際機場聯外捷運系統建設

計畫之土建標、自動收費系統及航班顯示系統等。臺北都會區捷運路網已核定並執行中之路線為臺灣桃園國際機場線三重至臺北段、環狀線第一階段、信義線東延段、萬大—中和—一樹林第一期及新莊線（新莊機廠），總長度約為30.7公里，捷運安坑線統包工程案及捷運三鶯線統包工程案已開工。

三、建構全臺智慧型運輸系統

提供「智慧化交通運輸服務」以使用路人充分掌握即時交通路況資訊及交通運輸的便利，達成降低旅行時間、減少運輸能源消耗與污染排放。

- (一) 交通部運輸研究所辦理交通服務e網通計畫，介接整合資訊及提供開放資料，申請即時路況事件資訊為50家，各縣市路側設施資訊為44家，公共運輸資訊為48家。



▲「交通服務 e 網通」網站

- (二) 臺灣鐵路管理局「臺鐵多卡通電子票證」服務已完成全線連通，另已完成建置全國市區、一般公路客運公車及臺鐵多卡通電子票證設備、臺北捷運及高雄捷運全閘門多卡通設備，方便民眾轉搭乘各項公共運具。

四、推動自行車友善環境路網計畫

- (一) 以自行車環島為主幹路線串連路網，設置專屬標誌、標線及相關友善設施；結合臺鐵、鐵馬雙運具推動「兩鐵環保列車」、進行新城站、光復站、玉里站之自行車友善設施設置。

(二) 辦理國家風景區自行車路線建設及周邊服務設施改善工作，包括東北角暨宜蘭海岸、東部海岸、澎湖、大鵬灣、花東縱谷、參山、北海岸及觀音山、日月潭以及雲嘉南濱海等9個國家風景區管理處。

五、辦理「金門海域海氣象觀測及特性研究計畫」

於金門港一港三港區已設置風速儀、潮位站、波浪儀、能見度觀測儀等設備20處，以即時觀測蒐集資訊，整合船班車班資訊並將即時潮位、能見度、風速等展示資料於水頭候船室與九宮旅服中心提供予旅客；另整合海象預報模擬資訊、藍色公路、港區即時影像以及臺灣周圍海域附近船舶動態資訊，建置「金廈e條龍 show 三通」APP 以提供全面性、加值性及便利性資訊服務。

六、宣導道路交通安全教育

於院頒「道路交通秩序與交通安全改進方案」框架中，運用全國道安體系針對各面向措施強化，結合中央各部會署及地方政府投入。辦理推廣路考、中小學交通安全教育、大學機車安全策進以及抑制酒駕等各項道安作為。

七、推廣生態旅遊、環境教育及友善旅遊環境

積極經營管理國家公園及國家風景區之園區環境，利用豐富多元之環境特性，配合推動環境教育，通過環境教育設備場所認證者9處，國家風景區管理處已取得綠建築標章者計有7件。

八、提升氣象預報及地震測報能力

完成新版高解析度天氣研究與預報模式上線作業、與鄰近國家、日本、菲律賓、香港與韓國之東亞雷達回波資料整合等基礎建設及技術開發。完成養殖漁業精緻化預報、體感溫度預報及紫外線指數預報、地震測報 APP 等應用服務。



▲ 行動裝置應用軟體地震測報 APP

九、提升高速公路橋梁耐震補強標準

呼應國家防災計畫，完成「國道高速公路橋梁耐震補強第2期工程（第1優先路段）」及國道3號田寮燕巢段及國道10號高雄支線共343座橋梁之耐震補強工作。

十、民航場站導入永續發展機制並飛航安全及旅客服務

(一) 交通部民用航空局高雄國際航空站通過「企業社會責任」(Corporate Social Responsibility, 簡稱 CSR) 認證，並推動溫室氣體排放，獲頒 ACA Level 3 碳認證標章，為臺灣第一座獲得此認證之國際機場。



▲ 2016國際機場協會澳洲亞太區年會獲碳認證之機場代表合影

(二) 更新高雄及恆春機場氣象自動觀測系統，提供塔臺航管及氣象觀測人員優質測報資料。完成汰換臺中清泉崗機場塔臺終端資訊自動廣播系統，提供更精準與快速之機場飛航服務廣播資訊。航空情報服務網新增提供17個機場場面飛航公告服務，擴大服務層面。

(三) 建置金門、馬公及臺北機場國內航線聯合候補登記系統、松山機場國內航線聯合候補登記系統擴增軍機候補及作業功能並設置服務即時回饋系統、花蓮機場飛航資訊顯示系統汰換暨升級，以創新科技運用形塑智慧機場。

(四) 徵求業者籌設經營離島偏遠航線，已全面完成機隊更新，提供往返離島偏遠地區民眾更穩定、優質之空運服務。

十一、推動全民綠色消費

(一) 建立具公信力之綠色產品驗證制度，已開放152項產品規格標準申請、1萬3千餘件產品獲准使用環保標章。

(二) 辦理綠色消費行銷推廣活動及綠色採購專責人員講習訓練課程、宣導講座，表揚17個綠色採購績優政府機關、70個民間企業與團體及19個綠色商店推廣綠色消費表現優異之業者；政府機關、民間企業與團體整體申報綠色採購金額合計逾255億元。

陸、科技與評估面向

本面向之召集單位，為科技部自然科學及永續研究發展司。工作內容在於將現有科學基礎研究及技術創新能力，應用於地球生態及各類環境系統評估；藉由評估資訊整合，輔助決策；培育科技人才，強化技術交流與國際合作，以科技的力量來緩解人類追求發展所產生之重大威脅。其年度工作成果如下：

一、臺灣氣候變遷推估與資訊平台建置計畫

(一) 氣候變遷資料服務與推廣應用。

1. 建置英文版資訊平台，提供計畫簡介 (About US)、臺灣氣候的過去變遷 (Past Climate) 與未來推估 (Projection)、歷次活動 (Activities) 以及出版品 (Publishes) 等資訊。

2. 持續提供氣候變遷知識轉譯服務；每週更新“知識專欄”頁面。

(二) 氣候變遷資料應用技術發展與研發

1. 利用天氣衍生器及根據觀測資料建立的迴歸模式產製 AR5 未來情境下日最高溫、日最低溫、日雨量和日輻射量等日氣象資料；驗證結果顯示資料特性符合 AR5 情境檔的預期。

2. 建立序率暴雨模擬模式和水文參數經驗模式，作為時雨量模擬的基礎；已完成時雨量模擬模組建置並進行初步的驗證。

3. 應用 TCCIP 繁衍之日最高溫、日最低溫、日輻射進行作物產量模擬分析。

4. 利用溫熱指標臨界值與相對風險值運算其相對應之心血管健康影響函數。

5. 以測站歷史觀測氣象資料，只考慮氣溫變數下建立埃及斑蚊分布指標。

6. 全流域防災影響評估。

(三) 氣候變遷降尺度推估技術發展與資料產製

1. 建立臺灣區域降雨量日資料統計降尺度方法。可與 Team3 應用月資料反演的結果比較，並可加快資料庫建立的進程。

2. 完成 MRI-AGCM 三組不同未來海溫氣候推估的動力降尺度，及 HiRAM 四組系集模擬的侵台颱風事件動力降尺度。

3. 完成系集模擬氣候推估的臺灣地區季節降水、溫度及颱風降水分析。

4. 完成春雨及夏季午後降雨氣候型態與其環境特徵分析、侵台颱風個數、強度特性與其環境特徵分析，有利於災害衝擊的應用。

(四) 臺灣地區氣候變遷觀測與模式資料分析

1. 利用包含澎湖地區的新版地形資料及方法，將日降雨資料網格化，配合104年度下半年完成的日均溫、日最高溫、日

最低溫三組溫度網格資料，以提供更期益於農業、公衛、水資源領域應用的資料。

2. 完成模式模擬鋒面表現評估量表與未來推估環流場特徵分析，可應用於極端降雨及水資源相關研究。

二、整合臺灣生物多樣性資訊國家入口網 (TaiBIF) 及與 GBIF 接軌

- (一) 科技部與農委會補助中研院生物多樣性研究中心建置「臺灣生物多樣性資訊網 (TaiBIF)」、「臺灣物種名錄 (TaiCOL)」及「臺灣生命大百科 (TaiEOL)」等，以推動跨部會生物多樣性資料的蒐集與整合，並加強宣導與落實開放資料政策。
- (二) 持續維護、更新「臺灣電子版生物誌」(<http://biota.taibif.tw/>) 之臺灣本土動、植物物種解說資料。
- (三) 2016年2月15-20日受邀參加東協生物多樣性研討會 (ASEAN Biodiversity Conference) 及第七屆亞太生物多樣性觀測網 (AP BON) 會議。
- (四) 接受 GBIF 亞洲生物多樣性基金 (BIFA) 補助，規劃辦理2016年亞洲生物多樣性資訊學訓練研習。

三、推動空間資訊科學結合人文社會經濟於跨領域研究以及推動都市化下有關水、糧食與能源安全之鏈結跨領域研究 (Water-Energy-Food Nexus ; WEF Nexus)

於104年9月公開徵求105年度計畫，並於105年2月完成構想書審查、4月完成獲推薦計畫之計畫書收件。

柒、城鄉發展面向

本面向召集單位為內政部營建署，工作內容主要在於推動城鄉發展、促進都市更新再生、落實居住正義、執行住宅政策、加速下水道建設、整合車道 (都市道路、自行車道)、建置人行環境無障礙空間、營建都市綠色景觀人本環境空間、推廣環保再生透水鋪面。藉由都市環境改造，提升國民生活品質，確保國土永續發展。其年度工作成果如下：

一、水資源開發、利用、管理及保育

汰換舊漏管線約679公里，建置完成約360個分區計量管網。

二、污水下水道發展

內政部依據行政院核定「污水下水道第五期建設計畫」，105年度中央編列126億元，由內政部營建署及各縣市政府積極推動用戶接管建設，提升污水下水道普及率，並擴大辦理公共污水處理廠放流水回收再利用，達到永續水資源利用的目標。

三、城鄉永續發展

(一) 推動政府主導都市更新案

自94年起已勘選244處都市更新示範地區，目前27處刻正辦理先期規劃作業，66處辦理招商前置作業及公告招商，26處已成功引進廠商投資實施，10處由政府投資自行實施中。

(二) 輔導民間都市更新案件核定實施

自87年都市更新條例發布實施以來，民間申辦都市更新事業計畫計1,703案，其中565案已核定公布實施。

(三) 補助民間自主更新案件

自100年起開辦中央都市更新基金補助辦理自行實施更新辦法補助作業，業已核定補助66案 (包括重建規劃設計12案、整建維護規劃設計46案，其中含耐震評估3案及整建維護實施工程8案)。

四、生態城市綠建築

- (一) 推動綠建築標章評定，通過**456**案綠建築標章及候選綠建築證書，預估每年約可省電**1億5,162**萬度、省水**725**萬噸及減碳**8.39**萬噸。
- (二) 推動綠建材標章評定，通過綠建材標章**141**件（**105**件健康、**14**件再生、與**22**件高性能），產品種類涵蓋**902**餘種。

五、推動社會住宅

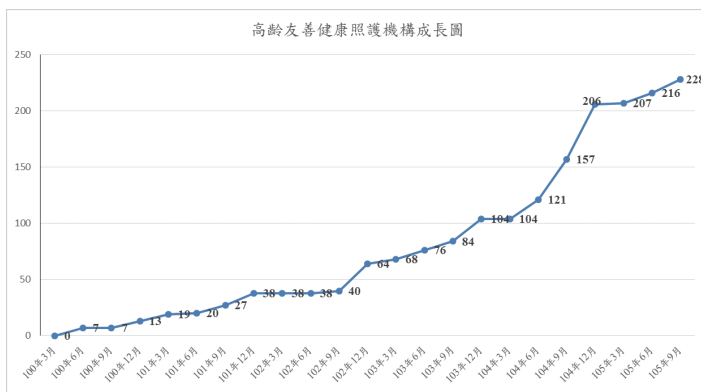
- (一) 依據行政院**100**年**6**月**16**日核定之「社會住宅短期實施方案」，推動臺北市及新北市之五處試辦基地（含臺北市萬華青年段、松山寶清段，及新北市三重大同南段、三重大安段、中和秀峰段），規劃興建**1,923**戶。
- (二) 依據行政院**103**年**1**月**6**日核定之「社會住宅中長期推動方案」，自**103**年至**112**年匡列**67**億餘元，補助地方政府興辦社會住宅之先期規劃費、工程費或用地有償撥用費，預計至民國**112**年社會住宅將可達到**3萬4千**戶。

捌、健康與福祉面向

本面向召集單位為衛生福利部國民健康署，具體工作事項，包括人口動態關注、健康環境營造、社會保障強化、弱勢照護及婦女權益保障等。其年度工作成果如下：

一、完善高齡照顧體系，建構高齡友善環境

- (一) **99**年綜整 WHO 高齡友善照護三大原則及 WHO 之健康促進醫院標準，發展「臺灣高齡友善健康照護導入架構」，至**105**年**8**月底已有**228**家健康照護機構（含**156**家醫院、**29**家衛生所、**43**家長期照護機構）通過高齡友善健康照護機構認證。
- (二) 衛生福利部推動我國長期照顧十年計畫，優先發展居家及社區式服務，提供失能長輩所需居家服務、日間照顧、交



▲ 通過高齡友善健康照護機構認證之數量不斷增加

通接送等多元照顧服務，**105**年計有**18萬5,241**人受益。

二、深化新住民輔導與建構多元文化社會

105年補助全國**22**縣市政府辦理新住民生活適應輔導事宜，補助經費新臺幣**412**萬**4**千元，補助內容為新住民生活適應輔導班、種子研習班、推廣多元文化活動、生活適應宣傳等事項，並持續辦理新住民母語學習及多元文化親子共讀。

三、健全醫療需求，充實山地、離島、偏遠地區醫療設施、資源

- (一) 為加強並補實原住民及離島地區醫事人力，賡續辦理原住民及離島地區醫事人員養成計畫，迄今已培育**910**名公費生，本年度已錄取分發**42**名。養成公費生畢業後近**7**成續留該些地區服務，提供當地良好的醫療服務，並核定補助原住民族及離島地區衛生所（室）醫療相關設備更新**232**項。
- (二) **105**年完成建置原住民族地區衛生所**6**家醫療資訊系（HIS）。為讓偏鄉地區民眾享有與本島相同的判讀品質及即時服務，由衛福部醫院提供影像支援判讀。**105**年度支援判讀約**7,000**件。

四、落實防疫整備，免除疾病威脅

(一) 補助臺灣兒科醫學會、台灣急診醫學會及台灣家庭醫學會辦理「腸病毒臨床診斷處置及預防接種實務教育訓練」、「社區高度傳染性疾病防治研討會」與「成人重要急性傳染病教育訓練」。共辦理13場腸病毒、三麻一風等傳染病相關之教育訓練，約3,000人次參加。

(二) 疾管署與日本國立感染症研究所(NIID)於9月6至7日共同辦理「第13屆台日雙邊研討會」，雙方針對抗藥性疾病、急性呼吸道傳染病、結核病及流行病學調查等議題進行交流。



▲ 第13屆台日雙邊研討會

五、推動稻米產銷專業區、優質茶集團產區及優質穩定果樹安全生產供應鏈

辦理優質果品年度農藥殘留抽檢786件，合格率达96%以上；加強茶葉農藥殘留抽檢，訂定年度茶葉田間、集貨場田菁(乾)抽檢計畫，加強田間及市售產品抽驗，抽驗402件，合格率达98.7%。

六、營造兼顧工作及家庭照顧責任之友善職場環境

於105年7月28日修正發布「哺集乳室與托兒設施措施設置標準及經費補助辦法」，放寬申請托兒措施經費補助要件，不以與托兒服務機構簽約為限，雇主提供受僱者未滿12歲子女送托於托兒服務機構之托兒津貼者，每年可申請經費補助，最高補助新臺幣60萬元，另增辦經費補助申請由1年1次增加為1年2次。

七、健全福利體系，優先照顧弱勢族群

督導地方政府落實針對遭逢特殊境遇之單親家庭、隔代教養家庭、家暴受害家庭、未婚懷孕婦女及重大變故家庭等，提供緊急生活扶助、子女生活津貼、兒童托育津貼、傷病醫療補助、法律訴訟補助等相關扶助。105年截至6月底止，計扶助1萬5,933戶家庭、6萬2,656人次、補助金額2億1,116萬餘元。

八、推動食品安心消費環境

(一) 持續檢討並適時增修我國食品相關法規及管理措施，已累計完成檢討或增修訂8187項農藥殘留、動物用藥殘留及食品添加物標準。

(二) 依據歷年稽查抽驗結果、施政重點、輿情關切議題及產品風險特性，由中央與地方以系統性合作方式，執行市售食品抽查檢驗，105年已抽驗24,216件，符合規定23,440件(合格率96.8%)。

九、永續發展全民健康保險制度，保障醫療平等

(一) 105年度全民健保一般保險費率依全民健康保險會研訂之「全民健保財務平衡及收支連動機制」調降為4.69%，補充保險費率連動調降為1.91%，健保收支累計結餘2,314億元。

(二) 自105年6月7日起實施「健保欠費與就醫權脫鉤(全面解卡)案」，推動健保全面解卡，給予國人就醫權益的公平性保障，民眾只要辦理投保手續，均可安心就醫。

十、檢討、增修相關環境保護法規與進行環境監測

(一) 持續調查與檢測固定污染源排放戴奧辛情形及空氣品質監測站戴奧辛數據，並公開相關資訊於行政院環境保護署列管污染源查詢系統(<http://prtr.epa.gov.tw/>)及環境資源資料庫網站(<http://>

erdb.epa.gov.tw/) 讓民眾免費瀏覽與查詢。

- (二) 行政院環境保護署與地方政府合作，推動特予保護農地水體之重金屬排放總量管制，對於放流水排入經地方政府公告之總量管制區者，加嚴銅、鋅、總鉻、鎳、鎘、六價鉻之管制限值。
- (三) 修正發布「放流水標準」、「晶圓製造及半導體製造業放流水標準」等；修正「水污染防治措施計畫及許可申請審查管理辦法」；訂定「應揭露排放廢（污）水可能含有之污染物及其濃度與排放量之事業」；修正「注入地下水體水質標準及有害健康物質之種類、限值」；訂定「廢（污）水處理專責單位或人員設置及管理辦法」及「廢（污）水處理專責人員違反水污染防治法罰鍰額度裁罰準則」等，落實管理，降低污染事件發生。

玖、教育與宣導面向

本面向召集單位為教育部。工作內容主要在於增進全民永續發展之知識與認知；整合政府、民間、企業及學校資源推動永續發展，並加強相關研究、國際合作與擴大全民參與。年度工作成果如下：

一、增進全民永續發展之知識與認知

- (一) 透過常設展、相關會議、教育課程、廣宣媒介等活動，提供民眾有關臺灣陸域及海域豐富的生物多樣性之教育及資訊，並充分應用社會資源提供適合各學習階段之永續教育學習資源以推廣永續發展之概念。
- (二) 配合農委會政策，午餐食材採用國產優質農產品四大標章（有機、吉園圃、產銷履歷、CAS）及生產追溯系統（QR-code）食材。
- (三) 落實全球暖化及氣候變遷等永續發展議題融入課程，國民中、小學九年一貫課

程綱要，已將「環境教育」列為重大議題並融入各學習領域及重大議題中實施，其課程目標包含相關永續教育知識，教導學生瞭解環境概念知識、環境價值觀與態度（如：非核家園、永續發展、全球氣候變遷、生物多樣性等）。

- (四) 青年社區參與行動計畫，鼓勵青年自組團隊與社區、大專校院及非營利組織擴大結盟，開發符合社區需求之創意行動方案，以創意、活力投入社區營造、地方產業、環保生態與弱勢關懷等面向，協助社區活化及發展。
 - (五) 針對節約用水、防災防汛等攸關水資源永續發展之議題，製作電視廣告、平面媒體及雜誌等廣宣，進行水資源保育知識及理念傳達。
 - (六) 提升企業社會責任理念及綠色企業概念，辦理觀摩會，並表揚致力推動環境保護工作的企業。
 - (七) 辦理企業社會責任報告書研習會及環境管理系統（ISO 14001）說明會，協助企業建立環境管理方式之知識及認知，並提高企業於環境揭露面之品質。
 - (八) 辦理智慧節電計畫成果分享發表會、節能宣導活動、節約能源表揚大會與完成能源政策宣導短片，號召全民一同成為節能行動家，並提升民眾對在地節能參與度，以減少家庭用電，擴大節能推廣效益。
- ### 二、整合政府、民間、企業及學校資源推動永續發展
- (一) 配合「政府機關及學校『四省專案』計畫」，教育部所屬國立學校，105年亦納入例行性節能輔導，提供節能輔導手冊，以利學校後續執行節能減碳相關工作。
 - (二) 辦理「補助地方政府成立環境教育輔導

小組計畫」，協助地方政府環境教育輔導團隊，針對不同對象，規劃合宜且具在地特色之環境教育計畫，補助22縣市約200項子計畫。另補助53校汰換高耗能設備，汰換後每年節電146.47萬度，節約潛力約0.6%。

- (三) 完成綠網通報操作流程簡化，提升綠網含手機 APP 操作的友善度，大幅減少環境巡檢通報的操作時間，並辦理綠網平臺教育訓練與宣導活動，有效加強民眾使用綠網之意願，並以行動關心所處的環境。

三、進行永續發展教育相關研究與國際合作

- (一) 補助專題研究計畫25件，包括12年國民基本教育融入環境教育之研究、環境素養教學策略之研擬、環境教育有效的教學策略與方法及配套課程之發展研究等。
- (二) 國內辦理國際會議及活動共補助8案共1,454位青年參與；赴海外參與國際組織及非政府組織重要會議或活動共補助12隊共49位青年參與；實踐國際壯舉計畫共補助2隊共12位青年參與。
- (三) 10月16至17日於美國威斯康辛州麥迪遜市辦理全球環境教育夥伴會，約15個國家環境教育相關專家學者或官員與會，以持續推動全球環境教育合作及執行經驗交流，並於10月21日辦理全球環境教育夥伴北美地區啟動儀式，邀請北美地區環境教育專家學者或官員與會，以促進各國環境教育及永續發展之合作。

四、擴大全民參與，提升公民環境素養

- (一) 於偏遠鄉鎮市區設置數位機會中心，提供偏鄉民眾使用電腦及網路學習環境、開設資訊課程，補助校外教學約500車次，超過400所國中、小學參加校外教學活動，並鼓勵社區大學開設環境永續教育課程活動。
- (二) 核定補助高中（職）、特教學校經費與21個直轄市、縣（市）國中小學校經費共1億8,651萬4,000元。
- (三) 青年暑期社區工讀計畫，媒合500位工讀青年至273家非營利組織工讀。另推動大專生公部門見習計畫，第一、二階段見習計媒合376人次。
- (四) 鼓勵或輔導公、私立博物館推動文化平權計畫，補助31案；補助各身心障礙團體、機構等，辦理相關活動之案件數及經費，補助206案，補助經費約510萬元。
- (五) 購買具節能及環境意涵紀錄片之網路公播版權於「環境通訊網」進行宣傳，供大眾免費觀賞，激起民眾對環境的關懷及行動。全年約有40萬人次觀賞。
- (六) 結合全國在地節能志工辦理節能推廣講座與宣導活動999場，25,405人次參與；另結合台電公司辦理台電70週年節能觀摩會，展出互動體驗教具，使民眾透過互動體驗、寓教於樂的模式瞭解生活節能手法，擴大節電宣導效益，推廣人次超過20萬人次。
- (七) 臺灣土壤陳列館提供團體民眾超過23場次、1,050人次參訪。透過實體土壤樣本與教育影片，傳遞土壤功能多樣性與土壤永續利用之重要性，提升環境永續意識。

第三章 105年國家永續發展獎得獎單位介紹

壹、105年國家永續發展獎評選結果

「105年國家永續發展獎」經永續會相關工作分組的「書面初審」，永續會民間委員的「實地複評」及全體複評委員參與的「決選」等3階段評選後，共選出12個得獎單位：教育類為臺北市北投區大屯國民小學、新北市板橋區埔墘國民小學、彰化縣北斗鎮螺陽國民小學；企業類為友達光電股份有限公司、菲凡能源科技股份有限公司、華碩電腦股份有限公司；民間團體類為社團法人中華民國自然步道協會、南投縣草屯鎮碧峰社區發展協會、高雄市寶來人文協會；永續發展行動計畫類為行政院農業委員會水土保持局之水土保持導入生態保育計畫、雪霸國家公園管理處之國寶魚臺灣櫻花鉤吻鮭生態棲地監測及復育行動計畫、國家災害防救科技中心之臺灣氣候變遷推估與資訊平台建置計畫。



▲ 105年國家永續發展獎—頒獎典禮

貳、各得獎單位介紹

一、教育類

(一) 臺北市北投區大屯國民小學

1. 單位簡介

大屯國小位於陽明山國家公園西側大屯山半山腰，校園依山而建，生態豐富，動植物種類繁多，著力於維護生態環境，山區氣候多變，景色迷人，是個鳥語花香、四季變化萬千的小地方。鳥瞰臺北盆地，眺望半個臺北市，一覽淡水河、基隆河匯流處及關渡平原，開闊的眼界，盡收眼底，小校學習無限延伸，期盼養成學生開闊的胸襟。

2. 永續發展工作推動現況

校際策略聯盟勤交流：

湖山、泉源與大屯三校互訪，認識校園環境、分享教學成果，每學期一次驚喜之旅，將持續與湖田國小及他校進行校際參訪，成為共享共榮的教學圈學習群。

校外教學補學習不足：

「讀萬卷書，行萬里路」，促進學生了解環境、熱愛土地，認識新朋友，更能體認自己的學習方向，畢業旅行到花蓮台東部落，讓學生嘗試沒水沒電原始生活或是體驗所有陸地交通工具。

人生有夢，築夢踏實：

愛肯（I CAN）計畫引導學生如何自我學習，為自己設定學習目標，重視歷程，不論成敗，展現分享學習。泳渡日月潭、單車環島、解魔術方塊、作曲、跳繩、彈琴等，成果可觀。寒假送暖（I CARE），是我們的行動關懷時間，對週遭的人事物，表達感謝與祝福，培養一顆悲天憫人的心，關心人事物。

個個都是小小解說員：

四年級開始，每一個孩子參與解說，自備自製解說的材料，孩子就是老師，生態愛護，從說開始。

食農教育田園慶豐收：

學期初由班級決定栽種植物種類，細心照料高麗菜、蘿蔔、小黃瓜、玉米，期末慶豐收，從土裡到嘴裡，感恩在心裡。

百年老樹護校展新愛：

4棵百年老樹與社區12棵老樹是課程活教材，跨領域全校協同教學，共同編織大樹下的童年回憶。

四大天王學習靠自己：

平日班級經營鼓勵孩子朝向「品德好孩子」、「健康真達人」、「閱讀小博士」、「才藝大高手」四個向度，暱稱「四大天王」。

想畢業不容易：

畢業生攀爬大屯山西峰主峰、校內外美展、畢旅、謝師宴（才藝發表）、5000公尺越野、60公里單車行，為每一個孩子量身訂做的畢業典禮。

全國最美校樹：

大樟樹下階梯上看繁花落盡，一地繽紛。福田樹木保護基金會辦理第一屆全國最美校樹選拔，榮獲優選。

領角鴞回來了：

領角鴞育雛曾被不肖攝影人士不當手法拍攝，師生共憤，一年後，領角鴞育雛三隻幼鳥，長大了便展翅高飛。

老鷹想飛遇見郭台銘：

學生觀賞「老鷹想飛」後，主動提及想寫信給郭台銘，請他救救老鷹。沒想到105年1月初，郭台銘先生親自接見這一班孩子，並為全國各中、小學取得「老鷹想飛」公播版影片。

3. 未來發展願景藍圖

教師教學精彩，不如學生學得精彩，如何具體與落實學習，永續經營兼具傳統與創新，山上小學連年招生額滿。

感謝評審委員對大屯國小的肯定，未來持續秉持著「尊重生命、友善環境」的永續校園共榮共好。



（二）新北市板橋區埔墘國民小學

1. 單位簡介

埔墘國民小學位於新北市板橋市區，是一所都會大型學校。我們期待透過硬體建物和軟體課程，讓在寸土寸金都市裡的孩子熟悉自然脈動，實踐對於環境的敏察和行動。

「健康、活力、人文、進取」來自於對新生代、都會型孩子的圖象，在校長帶領下，思考學生的個別差異，達到適性教學；結合學校資源及社區特色，引領社區與家長參與；運用「科學、文學、美學、生態、實踐」的軸線，以「老建物，新生命」的概念轉化教學，期許打造人才永續、資源永續、文化永續的校園。

2. 永續發展工作推動現況

埔墘國民小學擬具8年發展計畫，塑造生態低碳校園，活化閒置空間，藉以提供學習、參觀、體驗的教學場域。101年獲新北市教學卓越特優、102年獲經濟部能源局推動能源績優學校傑出獎、102年獲新北市低碳學校銀鵝標章，104年獲全國中小學老舊廁所改造銅牌獎、104年獲新北市特色學校永續之星。

在硬體方面，包括「生態環境恢復與維護」以及「永續低碳節能建築」兩個區塊。全校更換燈具迴路和 T5 燈管，更換率已達98%；積極投入綠建築的施作，建置薄層綠屋頂、將老舊廁所改建為節能環保廁所、完善水資源系統、圖書館改建後低耗能且兼具生態環保教育功能、老舊建物電源改善工程、校舍補強等。改善過程中，學校成為教學場域，讓親師生共同參與、體驗。

教師自主成立教師社群（教師科普讀書會、食農社群、健康促進社群、自然而燃社群等），編寫環境教育補充教材，靈活運用多樣教學方法，培育學生了解人與環境的關係。

學校乃社區中心，開放校園並提供平台與社區居民分享，每週四下午的社區長青日語班、每周三晚間的客家舞蹈、週一至週五清晨的養生武功班，皆可見社區民眾在校園中進行



▲ 低耗能圖書館

多元活動與學習。同時重視人文關懷，多元兼蓄包容尊重各種族群的親師生；配合節慶辦理活動（教師節敬師活動、跨年活動、五月感恩活動等），涵養學生感恩惜福知福的生活態度。

3. 未來發展願景藍圖

從參加到獲獎，一路走來對於團隊是一種肯定和榮耀，同時也提供我們思考永續議題更寬廣的面向與不同切入點的視角。感謝教育部永續校園局部改造小組長年的指導、新北市政府教育局的推薦與提攜、社區里長與家長會志工隊在人力物力的支持。

人才的傳承、資源的永續、文化的延續，正是我們每天的工作。明天，在講台前，在操場上，我們秉持初衷，在硬體建物改善和軟體課程研發繼續延續永續的精神，讓永續的種苗深植在埔墘孩子的生命中……。



▲ 學生落葉創作

（三）彰化縣北斗鎮螺陽國民小學

1.單位簡介

螺陽國小（蝴蝶特色學校）是位處農業區的平地森林小學，校地面積3.3公頃，校內多達200多種原生植物，處處可聽到蟲鳴鳥叫。遍植蝴蝶食草、蜜源，隨處可見蝴蝶翩翩起舞、鳥語花香。師、生胼手胝足開闢有機「童耕園」，種植在地稻米及有機農作物為學習活動，更有樸實敦厚的藝術人文資源。師法自然，營造自然棲地，實踐自然農法，以建構「五生五力學習基地」為永續發展的目標。

2.永續發展工作推動現況

團隊秉持「拔尖、固本、扶弱」的教育精神，以有效能的溝通對話，營造扁平式的「五生五力」團隊組織。整合校內外教育資源，建立「五生五力」持續發展之動能，建置出「工程、教程、課程、學程、遊程」網絡型永續發展之教學場域，體現成就每個孩子，讓螺陽國小成為孩子的學習樂園。

以「五生五力」深耕在地化校本特色的永續發展，在103年榮獲教育部教學卓越金質獎、103及104年獲教育部空間美學特色學校特優、105年獲教育部空間美學特色學校標竿、105年獲教育部生命教育特色學校，肯定螺陽打造福（蝴）稻特色永續校園的努力。

「五生五力系統課程」從在地生活中取材，透過多元教材教法、實作課程吸引孩子主動學習，讓學生從做中學及體驗學習，內化成自己的知識與能力。藉由多元創新課程的實施，從探索、體驗中了解自己，從服務中創造生命的價值，進而熱愛生命、關愛生態、樂活學習。

3.未來發展願景藍圖

螺陽國小從「環保、生態、藝術、人文」的核心理念出發，打造五生一生命、生產、生態、生活、生存的教學型態，符應十二年國教及順應國際教育趨勢，培養學童帶得走的五力一生命力、學習力、創新力、適應力及溝通力。透過「五生五力」培育對環境的認同與愛護，對生命的尊重與關懷的全人教育，用教育愛及專業來灌溉，讓每個孩子在自我的土地成長發芽醞釀奇蹟。



二、企業類

(一) 友達光電股份有限公司

1. 單位簡介

友達光電致力於經濟、環保及社會三大構面之平衡發展，已連續2年獲選臺灣證券交易所公司治理評鑑排名前5%企業，肯定友達光電在落實治理制度、重視股東權益、營運透明度、風險管理、即時資訊揭露等各管理面向表現卓越。在永續發展委員會運作及董事會監督之下，積極朝向「永續發展」努力，並與各界攜手邁向永續之路。本公司亦獲外界評比肯定，連續7年入選「道瓊永續指數世界榜（DJSI World Index）」，其中4年為同組榜首。

2. 永續發展工作推動現況

友達光電針對高溫室效應潛勢之 PFCs（全氟碳化物）破壞去除設備安裝率達100%，為世界唯一之面板製造業累計至104年溫室氣體減量達12.1百萬噸，約等於31,000座大安森林公園1年的二氧化碳吸收量。

友達光電104年全球製程水回收量達1,209百萬噸，回收率為88%，104年底宣示將於109年達到「減水、創水、水中和」三大水資源發展目標，其中「減水」目標為生產用水強度減少30%，透過製程技術研發及水資源處理設備效能的提升，有效減少生產用水；「創水」目標為台中廠區每日導入10,000噸再生水，在響應國家水資源政策的同時大幅提升用水自主性；「水中和」目標為龍潭廠區繼達成製程用水全回收後更加精進，透過自身減量並提供供

應鏈節水技術服務，整合供應鏈一同節水，致力成為全台第一個達成水中和的企業。

友達光電在台中廠區以綠色廠房及再生能源利用，於103年成為全台第一家製造業通過環保署「環境教育設施場所」認證之企業。另於龍潭廠內打造「AUO Green Ark 水資源教育館」，搭配104年完成全台首座自主設計整合之製程用水全回收系統，將專業工程技術與珍惜水資源之理念向外分享與傳播，期望為水資源教育盡一己之力。

在社會人文關懷貢獻上，友達光電以「培養老實聰明人」、「公益關懷/推動原創文化」、「推動光電科普教育」及「親近大地生態節能環保」為公益活動四大主軸，讓員工投入志工參與，實現自我，同時為更美好的社會努力。友達光電成立六大服務性質社團，由同仁定期至鄰近社福機構服務，服務內容包含陪伴、環境清掃、課輔等項目，對象為社會局緊急安置兒童、身心障礙院童與中輟少年。104年共服務150場次、志工投入逾2,000人次。

3. 未來發展願景藍圖

做為液晶顯示器及太陽能解決方案的專業供應商，友達光電不僅致力於產品上的創新，更以核心價值觀三大支柱「熱情務本、追求卓越、關懷社會」來落實「永續發展」的決心。在完成三大支柱後，最終實現願景亮麗創新「曼妙生活」，以及使命「成為頂尖的綠色方案解決企業」之目標，期望透過優質企業文化，使友達光電成為「永續經營的卓越企業」。



▲ AUO GreenArk 水資源教育館

（二）非凡能源科技股份有限公司

1. 單位簡介

非凡能源科技公司創立於民國94年11月，所研發出來的產品不但獲得國內廠商的肯定，更獲得了多項的專利。在企業理念上，本公司本著誠懇踏實的態度，開發及設計，研發綠色能源產業，積極參與投資磷酸鋰鐵電池之研發及代理，所研發出的產品突破傳統鉛酸電池所沒有的特性，具環保、安全、節能、減碳之良好特性，均合乎國際環保規範 RoHS 之標準，未來將持續朝向開發綠色科技能源為目標，也為地球村的環保及永續發展盡一份心力。

2. 永續發展工作推動現況

非凡能源技術研發團隊歷經10年研發磷酸鋰鐵可行性，是業界唯一能由掌控材料配方技術至創新應用端成品的業者。所有技術產品均由公司自行開發及研製，在鋰鐵電池領域研究數年，率先開發出以低電流控制大電流保護板（專利），並擁有汽車電瓶的革命性多項世界專利，包括大電流電池保護板、有救援功能的汽車電瓶、有防盜功能的汽車電瓶等專利，此項汽車電池經測試報告，可以讓每一輛汽車減少排放一氧化碳**26%**、碳氫化合物有毒物質**8%**，且救援功能的發明不需外車救援更減少救援車輛油耗及人力浪費，在節能上有莫大貢獻。

在創新研發方面，傳統電動車輛推廣不易的問題在於電池太重、充電太久與行程太短，然而快充電池就可解決這些問題。非凡能源的快充電池可降低電池用量，利用快充特性，迅速補充電力，以分段方式延長行程。將使得綠色運輸達到實用化、也令移動電源能精簡化的目標。

非凡能源不僅對客戶、同仁、股東負責任，同時也力行企業承諾，為社會責任與環境保護盡一份心力。結合「改變是當下開始、服務是默默行善、貢獻是積少成多、夢想是腳踏實地」的公益概念，非凡能源將自家產品回饋社區、延伸關懷至國際世界村，協助國內所需團體與海外偏遠地區，以為對社會企業之責任。

3. 未來發展願景藍圖

非凡能源本著要成為「永續經營的優質企業」目標，實現「專注應用研發，引領綠色未來」的願景，達成「頂尖的綠色能源創新發展」企業使命。

展望未來，短期以成為綠能市場的領導領導品牌，中期目標將建構完整的服務鏈，深化客戶對非凡能源的品牌肯定度，長期目標為提供節能減碳完整解決方案，進而協助各產業在節能減碳上的躍進，打造更便利與低污染的科技生活，善盡企業對之社會責任。



▲ 參與公益活動

（三）華碩電腦股份有限公司

1.單位簡介

華碩創立於78年，為全球最大的主機板製造商，並躋身全球前三大消費性筆記型電腦品牌。華碩從一個專業的自有品牌，到行銷全球的國際3C品牌，我們將我們在這快速變動的產業中獲得重大成長，歸因於兩項不變的因素：我們對於創造全新使用者體驗的熱切渴望，以及我們對於品質的堅定承諾。這些價值都包含在我們的品牌承諾之中：「精采創新、完美品質」。

2.永續發展工作推動現況

華碩專注於品質優越與環境友善的產品設計與研發，導入 ISO 9001 與 QC 080000 系統管理為品質與環保把關，也將產品責任延伸到對企業員工的照顧，導入 ISO 14001 與 OHSAS 180001 保障員工於無虞與安全的環境工作。更進一步因應全球暖化議題，導入 ISO 50001 提升能源使用效率與降低溫室氣體排放。

華碩於98年進入永續營運轉型，成立企業永續發展辦公室，納入綠色創新、企業永續績效、供應鏈社會責任管理、員工關懷及社會參與等功能，涵蓋經濟、環境與社會等全方位的永續發展面向，在堅守產品綠色品質的同時，思考著永續創新力。

在「再生電腦數位培育計畫」專案中，廢棄電腦經回收處理，將可用零件重新組裝，賦予再生電腦新生命，除了減少環境負荷外，也成為推廣數位學習、縮短數位落差的第一步。我們建立數位機會中心搭配資訊志工的服務來推廣數位學習，7年間於全球成立超過100間電腦教室，受惠人數超過10萬人。

華碩在98年訂立初期減量目標，104年前較97年溫室氣體排放量減少15%已順利達成。104年承諾到期後，進一步訂立第二階段的溫室氣體減量承諾在114年前：

- （1）溫室氣體排放量減少50%（以97年為基準）
- （2）主要產品的能源效率提升50%（以102年為基準）

3.未來發展願景藍圖

華碩在追求卓越創新及堅持品質之餘，也傾注心力在環保與企業社會責任上，此項殊榮再次肯定華碩在歷經競爭激烈與變化迅速的市場態勢中依然穩健經營。永續是一條漫長的道路，未來華碩仍以永續力做為企業競爭力與差異化的基石，躋身世界級的綠色高科技領導群，對人類社會真正做出貢獻的經營理念，朝著永續經營的方向努力。



三、民間團體類

(一) 社團法人中華民國自然步道協會

1. 單位簡介

中華民國自然步道協會最初是從主婦聯盟環境保護基金會的自然步道推廣委員會開始，發展自然步道的概念和生態保育、教育的理念。在持續推廣多年後，自然步道推廣委員會的解說導覽老師們決定自立門戶，於是在88年6月5日世界環境日創會，以「推廣自然步道、落實生態保育」為成立宗旨。17年來，自然步道協會仍秉持創立的初衷，在郊山步道、在社區中辦解說教育等活動，推動自然保育環境教育。

2. 永續發展工作推動現況

徐貴新理事長於102年開始推動在步道生態導覽解說活動中，加入以環境議題設計之環境教育方案，如：水土保持、生物多樣性概念、外來物種的影響、無痕山林的觀念和人與自然的互動等主題，並以不同的教學元素，如：動手操作、實境模擬模型、偶劇、說故事、行動劇等，期待讓教學更活潑，效果更彰顯，未來也會更努力在教學法的研究上。協會也與東南科技大學觀光與生態旅遊系合作，提供環教推廣活動（包含：機關團體委託、團體預約導覽、假日免費導覽、環境教育推廣課程、環境教育生態營隊、社區大學和社區

環教方案等），一年約有18,000人次參與。這些年來，除了完成許多出版品之外，銀髮族的樂齡學習課程將是潮流所趨，協會也組成教學團隊，陸續在台北市的文山、士林、中山、松山、信義、中正、萬華，新北市的樹林、新莊、林口、新中和、淡水、三鶯和桃園市等十四所社區大學及國父紀念館、中正紀念堂等開設近40班的課程，都深獲好評。

3. 未來發展願景藍圖

其實我們一直很平實、很低調，很少上媒體做宣傳，但我們一直在走，也帶著民眾慢慢走，學習不錯過步道沿途的美景和令人驚奇的生態，培養民眾喜歡自然的、尊重自然的環境素養。一如我們一直持續走步道，不疾不徐、不厭煩的，我們還將繼續“走”下去。



▲ 臺北平溪青年壯遊點



▲ 104年步道生態環境解說導覽

（二）南投縣草屯鎮碧峰社區發展協會

1.單位簡介

碧峰社區發展協會位於南投縣草屯鎮一個純樸的村落，協會成立於81年，協會積極推動社區社區弱勢族群之關懷、環境維護環保回收工作、各項成長課程提升社區居民素質，社區亦成立守望相助隊守護居民安全。

2.永續發展工作推動現況

社區極力推動各項活化活動提供社區居民不斷地學習成長。推動社區資源回收工作，除了垃圾減量外，社區還藉由回收物品製作童玩；稻米為社區最大宗產業，社區利用收割後的稻稈編織，讓原本不被受用的物品蛻變可再利用。

社區已邁入高齡化社會，社區承辦各項老人活動適時提供社區老人支持性服務，社區每星期辦理關懷據點活動及快樂廚房集中用餐，聘請專業營養師一起為老人的健康及午餐而努力。

社區亦開設成長課程陶冶社區居民文化素養，課程有陶笛班、舞蹈班、日文班、歌唱班、書法班、氣功班、親子繪畫班。陶笛班與舞蹈班除了平時課程外，也利用所學參與其他活動表演，增加與其他單位互動交流機會；社區居民也因日文班的開設，學習另一種語言、認識不同文化；歌唱班的設立，亦讓愛好歌唱之居民，在此展現好歌喉；書法班讓居民陶冶性情，增添更多書香氣息；社區氣功班之成立讓想調養身心之居民，藉此有鍛鍊自己的機會；親子繪畫班讓對繪畫有興趣的孩子多一個學習的地方。

社區每年元宵節與地方三級古蹟龍德廟一同舉辦顧庄頭活動；社區內亦保有林姓祖廟，每年春、秋兩季社區民眾皆熱烈參與祭祖活動。因碧峰產稻因此拓展稻草文化結合社區學習，將稻草文化傳承活化，創造新想法。105年社區藉由農村再生活動推廣米食文化，學習傳統古法製作米食方法，讓傳統技術得以繼續傳承。社區結合稻米文化，推動社區產業，利用在地產業，創造更多不同商機，增加更多就業機會。也利用在地產業延伸利用於不同領域學習上，讓原本不起眼的物品，再次找到生機。

3.未來發展願景藍圖

碧峰社區發展協會努力著發出微微的光線，雖然不是最亮的星，卻總是閃著溫暖而微亮的光，是有溫度的光，就像是每天等候回家的那盞燈。碧峰社區發展協會希望社區是有溫度的，所以碧峰社區發展協會用笑容建構社區；碧峰社區發展協會希望社區是有歡笑的，所以碧峰社區發展協會用和諧建構未來；透過笑容與和諧，碧峰社區發展協會看到世代交替、看到潛力與未來。

最平實的社區、最接近大家印象中的鄉下社區，卻也是最有溫度與熱能的地方；碧峰社區發展協會的人物地產景沒有最特別，但卻非常有故事性；草地如歐洲草皮地毯一樣溫柔，孩子如不懼虎的一樣對您微笑，志工像充滿電力的電池持續發威，阿公阿嬤就像一本本人生的書，隨時等候您來翻閱，生態就像無限驚奇一樣等著您來發掘。



▲ 稻草編織及環保童玩

（三）高雄市寶來人文協會

1. 單位簡介

『大石也要小石拱』，是高雄市寶來人文協會（原名高雄市六龜寶來重建協會）謹記在心的共好理念，團體的共同投入才是促成美事的力量，八八風災後的重建工作更體認到老人家們智慧之語的真諦所在；災後，高雄市寶來人文協會以自然建築工法建置「樣仔腳文化共享空間」，重新學習與大地和平共存的方式，提供植物染、陶藝、生態導覽解說及窯烤麵包、披薩等技術解說與經驗分享，以培養居民第二專長、解決災後失業問題，並協助居民藉由參與過程找尋生活重心，重建信心為主要工作。

2. 永續發展工作推動現況

永續經營在地的初衷已內化成本協會的最高宗旨，這樣的經營過程裡，體認到唯有強化文化內涵，方能重新賦予人心重振、經濟重起、觀光再興的力量，基於此，這些年來，以下列方向構築前述提及的「與大地和平共處」的良善循環：

（1）社區培力、共學及藝術據點的建構

建置社區工坊一樣仔腳文化共享空間，導入培力、世代共學等課程，對組織的發展充滿特殊意義，形同精神指標。

（2）人才培育，蓄積社區人力資本

培育多元之師資與專業人力，例如組織運作管理、照顧服務、工藝技能、導覽解說等人才。

（3）開發銀髮智慧，翻轉照顧角色

開發社區銀髮族群之能力，讓以往印象中受照顧的長輩轉化其角色，使其也能成為社區重要的人力資源。

（4）社區環境教育、文化傳承

從寶來的生態調查及記錄開發的課程，包括童玩體驗、民俗植物運用、聚落老樹故事紀錄和傳統節慶食物等素材，匯集出版「野趣過生活」教案手冊，與寶來國小連結合作，成為常態性社區共學課程。

（5）開創社區產業、發展多元產業型態

在農產、人文風俗、工藝等面向開發友善環境、人文精神的體驗學習課程，發展出多元的產業型態。

3. 未來發展願景藍圖

永續，對高雄市寶來人文協會而言，就是世代都能在這片土地安居樂業。這是一個簡單渺小的希望，但實踐起來卻不容易。高雄市寶來人文協會為因應莫拉克風災重建議題而成立，走過莫拉克風災，體會到人力（能力）的培養才能使在地蓄積永續的能量。從人力養成、團隊形成到組織的運作，都是推動在地永續發展的基本要件。人是重要資本，人力培養更是資本累積必要的投資。因此，以人為起點，延伸到土地、環境及社區，從生活、生態、生產三個面向介入，營造一個『與大地和平共處』的良善循環，持續發展對永續的想望。



▲ 愛土地，從小開始扎根



▲ 愛家鄉，從小開始陪伴



▲ 樣仔腳文化共享空間

四、行動計畫類

（一）行政院農業委員會水土保持局「水土保持導入生態保育計畫」

1. 單位簡介

水土保持局秉持水土保持為社會服務之精神，使農村居民免於山坡地土石流災害之威脅與恐懼，推動整體性治山防災，建構社區安全之土石流防災體系，強化水土保持教育宣導，落實山坡地監督管理，維護山坡地健康安全環境，及為改善農村交通，維護農民用路安全及農產運輸功能，辦理農路設施改善等相關業務。水土保持局自民國96年開始研發工程生態檢核機制，以逐步朝向具有生態思維的水土保持工程為目標，儘量減少工程對環境造成衝擊之生態友善作為。

2. 永續發展工作推動現況

為及早掌握工區附近的重要棲地、重要物種、環境特性及生態課題等，透過建置不同尺度之生態敏感圖，判斷工程可能造成之潛在生態影響，以提出衝擊最小之友善對策建議，並定期進行更新以符合現況需求與運用。

制定生態檢核機制以協助工程生命週期中進行生態相關考量工作，於不同階段擬定其生態檢核項目，由生態專業人員在蒐集調查工區周圍的生態資料，據以提出生態資源的保全對象，研擬減輕衝擊的生態友善建議，讓工程人員瞭解各階段需要釐清的生態課題或應進行的保育措施。生態檢核執行依工程生命週期階段循序推行，包含：（1）計畫核定階段建立生態價值觀，評估工程可能的生態影響、生態成本與效益；（2）規劃設計階段關鍵在於評估潛在生態課題、確認生態議題與生態保護對象，根據工區生態現況擬定迴避、縮小、減輕、補償等生態友善對策和重要生態保護對象；（3）施工階段的重點在落實前階段擬定

之生態保育措施，確保施工時生態保護對象與生態關注區域完好，並維護環境品質；（4）維護管理階段注重後期追蹤生態保護對象狀態，監測評估治理範圍的棲地品質、分析生態課題與研擬保育措施，以驗證、檢討與回饋生態檢核之成效。

自96年生態檢核機制建立以來，運用於石門水庫集水區治理工程及曾文南化烏山頭水庫集水區治理工程共計237件的案例運用。

為強化生態保育理念及落實執行，水土保持局修正「工程採購契約範本」並增加「環境友善措施」相關規定條文，制定「環境友善措施標準作業書」，如於敏感區位整治時能將生態考量納入，以兼顧保育治理需求及生態保育，並作為設計單位、監造單位及承攬廠商辦理之依據。其中在契約範本中，納入罰則規範，如未依約執行環境友善措施實施，則要求實施補救方案，或依約扣罰違約金，此項規定實屬強化生態保育落實與檢查的有利工具。

進一步考量相關生態環境保育團體與在地民眾意見，於工程基本設計與施工前之現場勘查會議邀請關心當地生態環境之人士，將基本設計說明會與施工前說明會作為民眾參與及溝通協商之契機，藉由公開說明並展示治理目標構想，透過面對面溝通，討論蒐集各界意見納入治理參考，釐清各方疑慮，減少政策溝通成本及誤解。

3. 未來發展願景藍圖

臺灣地質條件脆弱及降雨劇烈等因素，土砂災害常致使民眾生命財產及公共設施安全遭受嚴重威脅，為保育水土資源及維護山坡地環境安全，工程治理手段在所難免，然山坡地生態環境敏感，如無妥善規劃及評估相關工法與措施之適當性，易造成生態不良影響。水土保持局已逐步邁向儘量減少對環境造成衝擊之生態友善作為，以安全為基礎同時考量生態保育相關因素，降低工程對生態之負面影響，以維護生態棲地環境。

未來，水土保持局將持續落實與推動水土保持工程生態保育工作，以永續生態環境營造及生物多樣性保育為目標，遵循自然環境條件採取因地制宜之設計，兼顧防災與生態保育，創造人與自然之互利共生。



▲ 嘉義縣阿里山鄉頓阿巴娜野溪整治五期工程

（二）雪霸國家公園管理處「國寶魚臺灣櫻花鉤吻鮭生態棲地監測及復育行動計畫」

1. 單位簡介

雪霸國家公園園區內高山、溪流縱橫，造就許多美麗且令人讚嘆的地形景觀，如雪山圈谷、大霸尖山、聖稜線、品田山，動植物資源更是豐富。這裡也是淡水河、大安溪的發源地，更是大甲溪最重要的集水區之一，永續自然資源即為雪霸處最重要的工作。

2. 永續發展工作推動現況

81年雪霸處之初，臺灣櫻花鉤吻鮭族群數量曾經不到300尾而瀕臨滅絕，族群生存空間亦只侷限於七家灣溪流域，為保育櫻花鉤吻鮭，首要改善水質，與武陵農場協調逐步於七家灣溪沿岸停止農業活動，並徵收農地8.1公頃並進行生態復育。並公告禁止遊客進入七家灣溪，設置武陵地區污水處理廠改善遊憩活動帶來之衝擊。

94年起持續辦理「武陵地區溪流生態系復育監測與研究」計畫，以溪流生態系之觀點整合武陵地區各分散生態相關研究，建構七家灣溪生態系基礎資料，持續多年的監測已建構一套可依循運用之生態模式，將可用來預測環境變遷與人為干擾活動影響，並再更深入了解武陵地區環境生態。

針對攔砂壩阻隔鮭魚溪流棲地迴遊情況，89年完成七家灣溪支流高山溪四座攔砂壩壩體改善工作，再於100年5月執行七家灣溪一號攔砂壩壩體改善，建立七家灣溪上下游的河川廊道，改善七家灣溪流環境。監測結果顯示各類生物族群量於壩體改善後迅速恢復，臺灣櫻

花鉤吻鮭可上溯至上游河段，顯示壩體改善有助於河道的暢通。

就地保育工作已減緩國寶魚滅絕危機，因此逐年將養殖族群放流至歷史溪流，建立臺灣櫻花鉤吻鮭之衛星族群，增加遺傳多樣性。其中有勝溪支流羅業尾溪棲地經98、99年放流作業後，放流個體已建立穩定族群不需再放流，103年於樂山溪放流250尾；105年夏季調查發現放流個體繁殖之野生族群：羅業尾溪有416尾、樂山溪286尾，族群量均已穩定成長，顯示雪霸處多年來努力就地及異地保育成果。

96年設立臺灣櫻花鉤吻鮭生態中心及建立種源庫，以保存野外族群之基因變異，維持遺傳多樣性，並提供解說教育服務提供民眾參觀，落成啟用後每年度服務10萬人次以上，推廣保育理念並為環境教育紮根。

推動在地保育，結合鄰近部落以「封溪護漁」方式保護園區內外之臺灣櫻花鉤吻鮭進行保育巡查護溪，分別與環山、南山與松茂社區合作成立保育巡守隊，也讓這些原住民社區實際參與投入重要的保育工作。

3. 未來發展願景藍圖

為維繫永續發展，雪霸處以科學研究來了解更有效的保育方向，包含七家灣溪流生態系、雪山高山生態系之各項生態資源之研究，以及大氣、水質、水文、物理環境等調查監測工作，據以改善棲地環境。近年結合周邊部落推動在地保育，共同永續經營，期待友善土地的農業，推廣部落生態旅遊並能兼顧國寶魚保育。並灑下環境教育種子紮根保育，也與部落建立保育夥伴關係，不只是公部門，而是與全民從小做起一起努力。



▲ 結合周邊部落共同保育並於歷史溪流放流櫻花鉤吻鮭

（三）國家災害防救科技中心臺灣氣候變遷推估與資訊平台建置計畫

1.單位簡介

科技部長期推動本地氣候變遷推估與衝擊研究，以面對處於氣候變遷高風險的臺灣所面臨的各項挑戰。民國98年起，科技部陸續推動包括本行動計畫（「臺灣氣候變遷推估與資訊平台建置」，以下簡稱 TCCIP 計畫）在內的三個氣候變遷優勢領域計畫，從氣候變遷的物理機制研究、現象分析、推估能力精進、資訊平台建置、資料處理與分析方法建立等各方面協助政府及民眾積極面對氣候變遷產生的衝擊，並採取適切的調適作為。

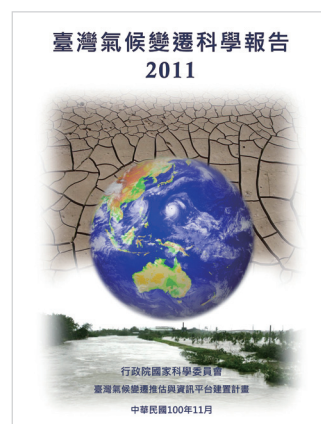
TCCIP 計畫為科技部氣候變遷優勢領域計畫整體架構的核心；由行政法人國家災害防救科技中心統籌，結合中央氣象局、經濟部水利署、農委會農業試驗研究所、衛生福利部疾病管制署、中央研究院環境變遷研究中心、臺灣師範大學、臺灣大學、交通大學、中央大學、成功大學、臺北市立大學、文化大學、長榮大學、國家高速網路與計算中心等單位的研究能量，由氣候變遷科學研究、資料產製、後端應用以及服務溝通四大面向，打造臺灣專屬的氣候變遷科研服務平台。

2.永續發展工作推動現況

計畫團隊整合公私部門的氣候觀測資料、數位化早期氣象觀測資料；經過嚴謹的資料檢核及網格化程序建立臺灣長期而穩定的高時空解析度氣象觀測資料。透過統計計算方法（統計降尺度）及物理模式模擬（動力降尺度）方式產製臺灣地區高解析度區域氣候推估資料。大量的臺灣氣候變遷趨勢與未來氣候推估的科學數據，可應用於氣候變遷的現象分析與風險評估，對國內災害、水文、農業、公共衛生、生態、能源等相關領域的研究以及政府部門推動氣候變遷相關工作產生具體且實質的貢獻與影響。

TCCIP 資料服務系統於103年3月正式上線，使用者經過資料申請程序可免費下載氣候變遷資料。截至105年6月底為止，平均每月服務5件次研究計畫。包括科技部的專題研究計畫、研究單位的自主性研究、中央與地方政府所推動相關計畫都會利用本計畫之成果產出。

「臺灣氣候變遷推估與資訊平台」（TCCIP 資訊平台，<https://tccip.ncdr.nat.gov.tw>），將科學數據轉化為易於理解的圖文資訊，提供氣候資料、資訊與知識，以精簡、易懂的圖文讓一般使用者理解；出版「臺灣氣候變遷科學報告」論述氣候變遷的物理現象與機制，釐清相關科學數據的涵義；舉辦各類資料服務與應用推廣活動，相關資料（包括會議手冊、簡報資料及影音檔）經演講者同意公開後皆置於 TCCIP 資訊平台；未能實地參與討論的民眾及科學社群可隨時瀏覽或下載。專業的剖析及科學數據可提供政府擬定氣候變遷調適策略之參考；圖文並茂的說明亦是民眾獲取正確氣候變遷資訊的有效來源。民眾若於搜尋引擎 google 搜尋「臺灣 氣候變遷」關鍵字，將於首頁直接出現 TCCIP 網站以及「臺灣氣候變遷科學報告」，非常容易獲得本計畫之相關資訊。



3.未來發展願景藍圖

聯合國多次呼籲各國政府需持續減少溫室氣體排放以減緩全球暖化、積極面對氣候變遷產生的衝擊，並採取積極的調適作為。科技部投入氣候變遷推估與衝擊研究逾20年，近年來更積極推氣候變遷整合研究。行政法人國家災害防救科技中心非常榮幸能擔任 TCCIP 計畫的統籌與執行單位；感謝科技部經費補助與發展方向的指導，更要感謝前述各部會及學研單位的共同參與。

臺灣氣候變遷推估與資訊平台建置計畫提供國內最新的氣候變遷研究資料，同時也透過和使用者的互動、溝通與反饋，掌握氣候變遷服務的關鍵知識與經驗，作為未來持續推動氣候變遷科學服務的基礎。

透過 TCCIP 計畫落實科研工作與政府部門的施政業務產生連結。本次能夠獲獎，代表行政院國家永續發展委員會委員對我們的勉勵與期待；相信科技部與國家災害防救科技中心及相關學研界同仁將持續積極參與科研工作，對國家永續發展做出更多的貢獻！

附錄

行政院國家永續發展委員會委員第17屆改派委員名單 政府部門委員

姓 名	職 稱
林全主任委員	行政院院長
張委員兼執行長景森	行政院政務委員
葉委員俊榮	內政部部長
潘委員文忠	教育部部長
李委員世光	經濟部部長
賀委員陳旦	交通部部長
林委員奏延	衛生福利部部長
鄭委員麗君	文化部部長
曹委員啟鴻	行政院農業委員會主任委員
陳委員添枝	國家發展委員會主任委員
李委員瑞倉	金融監督管理委員會主任委員
李委員應元	行政院環境保護署署長

※ 自105年6月24日起至106年12月26日止。

行政院國家永續發展委員會委員第17屆改聘委員名單 民間委員

姓 名	職 稱	姓 名	職 稱
高志明	義美食品公司總經理	滕西華	民間監督健保聯盟發言人
張振亞	財團法人資源循環台灣基金會 常務理事	歐蜜偉浪	台灣原住民族部落行動聯盟秘書長
陳藹玲	媽媽監督核電廠聯盟發起人	陳亮恭	臺北榮民總醫院高齡醫學中心主任
施信民	臺灣環境保護聯盟創會會長	黃俊鴻	國立中央大學土木工程系教授
屠世亮	亞洲開發銀行環境部門資深研究員	周蓮香	國立臺灣大學生命科學系教授
王寶貫	中央研究院環境變遷研究中心主任	黃呈琮	中華民國企業永續發展協會理事長
蕭代基	台灣環境與資源經濟學會理事長	郭慶霖	北海岸反核廢聯盟執行長
林盛豐	實踐大學建築設計學系教授	呂忠津	國立清華大學電機工程學系教授
林旺根	財團法人臺北市都市更新推動中心 董事	孫璐西	國立臺灣大學食品科技研究所 終身特聘教授
林國慶	國立臺灣大學農業經濟學系教授	黃得瑞	國立交通大學光電學院教授
劉麗珠	財團法人自行車新文化基金會執行長	蘇慧貞	國立成功大學校長
許添本	國立臺灣大學土木工程學系交通組 副教授	謝志誠	財團法人浩然基金會 海園教育休閒農場籌設負責人

※ 自105年10月24日至106年12月26日止

Preface

Taiwan is an island-nation with a high population density, limited natural resources, numerous natural disasters, and a special international position. Under this circumstance, the necessity and urgency of pursuing sustainable development would be more important compared with other countries. In response to the global trend of sustainable development, the Executive Yuan established the National Council for Sustainable Development (hereinafter referred to as NCSD) in August 1997. In December 2002, the President promulgated the Basic Environment Act, in which Article 29 authorizes NCSD's official position.

The 2016 Annual Report compiles the main achievements by the NCSD through its efforts toward promoting activities of sustainable development in 2016. This Annual Report includes: The 2016 Annual Work Progress of Committee of the NCSD, 2015 Key Performance and Achievements of Working Groups of the NCSD, and the 2016 National Sustainable Development Award Winners, etc. For the NCSD's member-list, please refer to the appendix.

Sustainable development depends on participation of the entire citizenry. Through the "2016 Annual Report on National Sustainable Development", we expect the people in Taiwan and the international community to gain a better understanding of the processes and outcomes of sustainable development in Taiwan. We hope to thereby deepen the public's understanding of sustainable development, and their participation in national sustainable development work.



Chapter 1 The 2016 Annual Work Progress of the NCSD

1. The Premier of the Executive Yuan Lin, Chuan issued the Certificate of Appointment to the reappointed members of the 17th Committee.

To implement the goal of establishing a “Nuclear-free Homeland in 2025” and because of the transfer of government as well as the reorganization of the Executive Yuan on May 20th, 2016, the NCSD proceeded with the reappointment of the non-government members based on the 4th rules in October, 2016.

The “Certificate Ceremony” took place in the Hall on the 1st floor of the Executive Yuan at 3:00 p.m. of November 3rd, 2016. The certificate was issued to each member by the Premier of the Executive Yuan Lin, Chuan in person with a group picture taken together afterwards. The goal setting and the topic of discussion of the NCSD were emphasized with the expectation that the committee can well perform the functions so the government could be more thoughtful on establishing the public policies; the government will refer to the Sustainable Development Goals of the UN and adopt the opinions of the committee to advance sustainable development; the government would make every effort to impress the people.



▲ Committee Member Lin , Wan-ken



▲ Committee Member Lin , Sheng-fong



▲ Committee Member Chou, Lien-Siang



▲ Committee Member Shih, Shin-Min



▲ Committee Member Kao, Chih-Ming



▲ Committee Member Lucy Sun



▲ Committee Member Kuo, Ching-Lin



▲ Committee Member Hsu, Tien-Pen



▲ Committee Member John C. T. Huang
(Authorized Secretary-General Wayne W. Wu)



▲ Committee Member Angela Chang



▲ Committee Member Huang, Jin-Hung



▲ Committee Member Huang, Der-Ray



▲ Committee Member Vicky Liu



▲ Committee Member Eva Teng



▲ Committee Member Omi Wilang



▲ Committee Member Shieh, Jyh-Cherng



▲ Committee Member
Huey-Jen Jenny Su



▲ Group picture of the Committee Members

2. Convening the 29th Council Meeting

The 29th council meeting was held on November 3rd, 2016, in the 1st Conference Room, on the second floor of Executive Yuan and presided by Premier and Chairman of the Committee Lin, Chuan. The agenda of the meeting included two focal points. The first point was the adjustment of the operation and organization chart of the committee whereas the second point was to develop the sustainable development goals of our country and the grouping of the organization.

1. The chairman proposed “The adjustment of the operation and organization chart of the committee”

- (1) The goal of the adjustment for the operation and organization chart of the committee is to conform with the trend of the NCSD and to implement the goal of “Nuclear-free Homeland in 2025”. The organization chart of the committee would be divided into seven working groups and two ad hoc teams from this council meeting. The seven working groups are named respectively “The health & well-being group” which was convened by the Ministry of Health and Welfare; “The life & education group” convened by the Ministry of Education; “The green economy group” convened by the National Development Council; “The green transport group” convened by the Ministry of Transportation; “The national land and urban and rural development group” convened by the Ministry of the Interior; “The sustainable agriculture and biodiversity group” convened by the Council of Agriculture, Executive Yuan; “The environmental quality group” convened by the Environmental Protection Administration, Executive Yuan; The two ad hoc teams are named respectively “The nuclear-free homeland steering team” convened by the Ministry of Economic Affairs; “The climate change and low-carbon greening team” convened by the Environmental Protection Administration, Executive Yuan. For setting the ad hoc teams, the Secretariat of the Department was asked to amend the rules of the committee.
- (2) The relevant departments of “The nuclear-free homeland steering team” would be expanded to include the Ministry of the Interior, the Council of Agriculture, Executive Yuan and the Ministry of Transportation. Each working group and ad hoc team was asked to convene the agencies to inspect the members of the involved departments; all necessary agencies to the department and all departments shall do their best to cooperate.
- (3) The council meeting should take place at least once every 6 months, whereas the working meeting should be convened anytime when necessary. The content and workload can be adjusted upon discussion anytime; according to the spirit of one government. The participation of each team should be considered flexibly based on the job requirement of each convener.

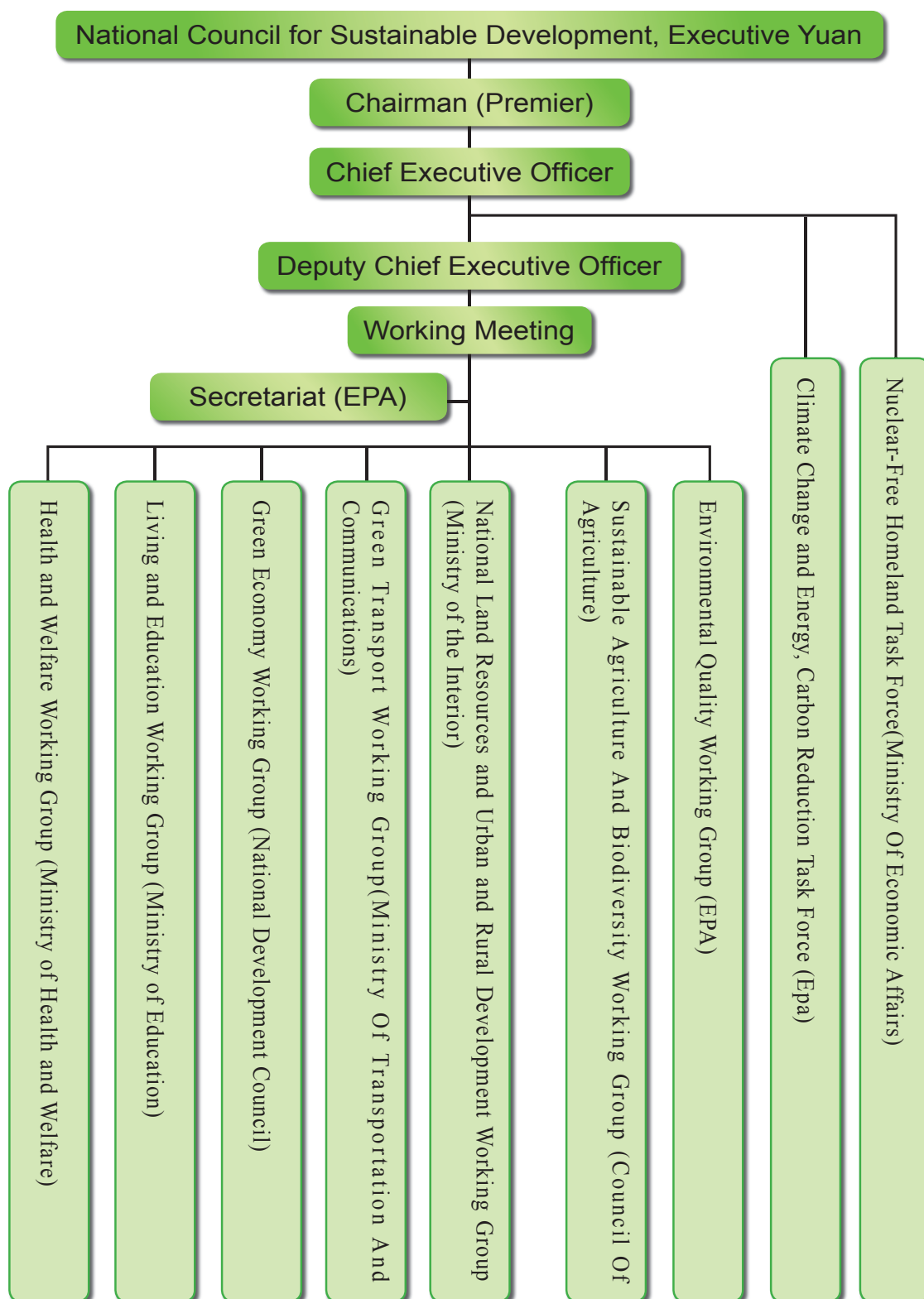
2. The chairman proposed “The development of the sustainable development goals of our country and the grouping of the organization”.

- (1) The sustainable development of our country should be set with goals at different phases which includes the achievement of the core target in 2030 and the specific goals to be reached within four years (2020).
- (2) To set the sustainable development goals of our country, please convene each group to share the work based on the goal of each subject recommended by the Secretariat of the Department, and have the non-government members to join 1~3 working groups voluntarily. Setting the specific goals to be reached in four years (2020) and drawing up the core target to be achieved in 2030 according to the specific goals, to present the most core value with easy to understand wording.
- (3) In assistance with the setting of the sustainable development goals of our country, each working group and team should convene the meeting for discussion and set the goals with reference to the Sustainable Development Goals of the UN to finalize the draft of the core goals and specific target as soon as possible in order to propose for discussion for the next committee meeting. One non-government member is to be nominated as the spokes’ person on each team and reach an agreement towards the core goals in advance before the next convention. The Secretariat of the Department should organize the outcomes for the relevant goal setting of the Sustainable Development in the past 19 years as the background information for the committee members as reference for discussion.

- (4) The core goals and specific target for the Sustainable Development of our country should be set within 6 months, and the Secretariat of the Department is asked to control the schedule. One working meeting is to be held to discuss the agreement before the next council meeting, and the council meeting is to be convened within the term to confirm the Sustainable Development goals of our country.

Organizational Structure of the NCSD

(approved on 11/3/2016)





▲ The 29th council meeting of the NCSD



▲ The 29th council meeting of the NCSD

Chapter 2 The highlights and achievements of the annual meeting

I. Climate change and carbon reduction energy saving

The Environmental Protection Administration (EPA) co-ordinated and is responsible for negotiating and promoting energy saving, greenhouse gas reduction, impact assessment and corresponding action planning of climate change, and international cooperation of climate change coordination. The annual work results are listed below:

1. Construction of greenhouse management mechanism

- (1) The 'Greenhouse Gas Reduction and Management Act' was promulgated on July 1st, 2015. It stipulates the long-term goal of the reduction in 2050 with five-year phases. The management mechanism would be developed, and the seven sub-laws and supporting measures will be completed; collocating economic incentives management measures, gradually set up the total amount management and trading system from distributing for free to allocating prices.
- (2) 'Report of the National Greenhouse Gas (GHG) Inventories of the Republic of China in 2015' was published, to master the GHG emission baseline.



▲ Report of the National Greenhouse Gas Inventories of the Republic of China in 2015

- (3) Promoting voluntary reduction mechanism to enhance green economic growth and reduce societal costs, the investing money for deduction case are about 8.46 billion NT,

which increased the overall economy by about 12.61 billion GDP and reduce the societal costs by about 5.76 billion NT.

2. The actions of each department for climate change

- (1) The Energy Bureau of the Ministry of Economic Affairs promoted the policy, 'One Thousand Sea-Land Wind Turbine Project', which set up 341 land-based wind turbine with an annual energy generation of 1.52 billion kWh; promoted 'Award Scheme for Wind Power Offshore System Demonstration' and constructed four offshore demonstration units.
- (2) In conjunction with the World Meteorological Organization (WMO) Climate Services Issues and Objectives, the Central Meteorological Bureau of the Ministry of Communications organized the 'First Taiwan and Pacific Northwest Global Forecasting System Development Seminar', 'International Symposium on Climate Services and Health', and 'Meteorological Information and Environmental Applications Forum' to promote cross-cutting climate applications services.
- (3) The Taiwan Area National Freeway Bureau, MOTC promotes the highway electronic toll system and plans the national green road network, resulting in the utilization rate of electronic charging system of about 92%, the reduction of carbon emission by about 13,792 metric tons from January to June in 2016.

3. Promote substantive participation in the United Nations Framework Convention on Climate Change (UNFCCC)

- (1) Environmental Protection Administration (EPA) is responsible for preparing and organizing national relevant industry, administration, and academia to participate in the 22nd session of the Conference of the Parties (COP22) to the UNFCCC and the 12th session of the Conference of the Parties (CMP12) serving as the meeting of the Parties to the Kyoto Protocol to the UNFCCC, UNFCCC COP22/CMP12, in order to receive

firsthand dynamic information for global carbon reduction management development and communicate with international representatives, experts and scholars, also suitably promote the results of Taiwan's energy saving and carbon reduction to show the effort our country put in and the firm stand we have to preserve the global environment; to increase international recognition and to build the foundation for future carbon reduction responsibility negotiation of our country.

(2) Promote international cooperation on climate change

- ① Environmental Protection Administration (EPA) and European Economic and Trade Office (EETO) organized the 'International Symposium on Climate Change in 2016 - Capacity Building in Regional Carbon Markets' and invited European Union (EU), Germany, South Korea, Thailand, Vietnam and major market leaders and chief officers of international organization of climate change and carbon market, to share experiences of constructing a carbon market for climate change, to increase the cooperation opportunities with other countries and non-governmental organizations (NGO) for climate change.



▲ International Symposium on Climate Change in 2016 - Capacity Building in Regional Carbon Markets

- ② The EPA promotes the Pacific Greenhouse Gas Observational Research Program with the EU, maritime industry, aviation industry, and research institutes in order to master the three-dimensional distribution of greenhouse gas and atmospheric pollutants of the Asia Pacific area. It shows our attitude and determination to observe greenhouse gas actively; we hope to observe and research global warming and climate change with other countries

and assess the impact of climate change together.

- ③ The Central Weather Bureau of the Ministry of Communications participated in the '2016 Taiwan Geosciences Assembly (TGA)', '2016 Asia Oceania Geosciences Society (AOGS) annual meeting', 'Asia-Pacific Economic Cooperation (APEC) the seventh Policy Partnership on Science Technology and innovation (PPSTI-7) meeting', 'APEC Climate Symposium (APCS) 2016, and Intergovernmental Panel on Climate Change (IPCC) Working Group (WG) Meeting', and UNFCCC COP22/CMP12.

4. Expand citizen participation

The EPA, Taoyuan City Government, Council of Agriculture (COA) and Water Supplies Department jointly held the "2016 World Environment Day Theme Activity" to strengthen the promotion of the day and combined the cooperation between central and local governments and cross department cooperation, to build Taiwan into a peaceful low-carbon home.

5. Guiding industry to be low-carbon and green

- (1) The Industrial Development Bureau of the Ministry of Economic Affairs promotes carbon reduction in industries, like steel, petrochemical, paper, cement, fiber, cotton printing and dyeing, silk printing and dyeing, and composite materials. Greenhouse gas reduction can save about 3 billion NT and carbon dioxide reduction of 600,000 metric tons will save about 3 billion NT in economic benefits. The releasing heat, energy, scrap and wastes are recycled and reused, which are about 3.83 million metric tons/year, and reduce industrial production costs and benefits of steam for sale reaches 3.31 billion NT/year; this will reduce the use of high polluting boilers by 152 which will reduce 851,000 tons of carbon dioxide emissions.

(2) State-run institute carbon reduction

- ① Taiwan Power Company completed the data entry of greenhouse gas emission of 10 thermal power plants, which has about 85.25 million tons of emission. Climate change adaptation assessments for 2 electric power facilities with The Energy Bureau of the Ministry of Economic Affairs, with 3 climate change adaption relevant reports

will be completed separately.

- ②Taiwan Sugar Company received reasonable assurance levels to verify carbon footprint verification statements and Carbon labeling applications as the first refined edible vegetable oil and blending oil company; they also generate about 300 million kWh from heat of burning waste. All citizens afforest and build environmental protection forest park landscape. About 12 thousand hectares can reduce about 184,000 tons of carbon dioxide.
- ③CPC Corporation has continuously monitored the subsidence of the oil sump area in the investigation and analysis of the potential geological hazard of oil tank areas of oil supply centers; the sinking prevention work, data management of equipment foundation sinking, and data management of storage tank foundation sinking of working zone control area are completed.

6.Promoting living green and happy

- (1)At the“2016 Taipei International Spring Festival”, “Low Carbon New Life Treasure Island” theme pavilion promoted low-carbon living ideas and actions to display low-carbon diet and low-carbon tourism.
- (2)The Low-carbon living happily and adaptation campaign will be promoted, “climate change information integration platform” will be completed for knowledge and education dissemination channel; “Low Carbon Sustainable Home Certification”, community planner and property management training will be promoted.
- (3)According to 2016 “application principles of compensating local governments to promote low carbon sustainable home land projects”, there are 37 projects and 2,812 million NT passed; continuous subsidy and assist local government for maintenance and operation of “low carbon sustainable home operation system” and implement specific actions and community low-carbon construction work guidance to promote low carbon city as demonstration.
- (4)Kinmen island low carbon plan was established as the communication platform with “Kinmen Low Carbon Island Project Promotion Group” to manage and test the operating effectiveness; two meetings were held to discuss “Green transport-electric

vehicle promotion” and “Kinmen renewable energy max capacity of device evaluation” with technologies, laws and regulations, and cost-effect relevant issues.

II.Land and Resources phase

The recruiting unit of this phase is The Ministry of the Interior construction, and the major task is to ensure homeland security and distribute homeland with its function, to establish homeland use conservation and management plans to promote the legalization of related mechanisms in order to achieve the sustainable development of land. Its annual work results are listed below.

1.Water resources development, utilization, management and conservation

- (1)Feitsui Dam sustainable water environment green dam action plan, which construct low carbon green energy ecological dam. In order to ensure the long-term operation efficiency and safety of Feitsui power plant, turbine generator unit were shut down for routine repair work between March 7th and 17th, 2016. According to statistics between January and August 2016, Feitsui Power Plant produce total clean energy 156.69 million 6,244 kWh, which is equivalent to 8,386 metric tons of carbon dioxide reduction efficiency. In addition, Feitsui Dam is responsible for the present and future water supply of Taipei area, so taking care of water resource guarantees the dam’s sustainable management. For protecting water resources we are actively recovering forests, by 2016 there were 3.3 hectares of forest recovered, which will prevent land from harvests and strengthen the land and water conservation of water gathering area.
- (2)Feitsui Dam is responsible for supplying high quality water. From January to August 2016, Taiwan Water Supply Department has supplied 8.175 million cubic meters of tap water, which supplied 74.34 million cubic meters of water to Taiwan Water Supply Company.
- (3)In order to improve the Dam safety monitoring system, all the equipment in Dam are processing monitoring, evaluation, and on-site inspection. From January to August 2016, there are 361 staff involved in on-site inspection, 119,560 dam equipment auto-inspected and 15,798 manual-inspected to ensure the structure and foundations of the Dam are safe and stable.

2. Conservation and management of underground water resources

The specific solution and action of land subsidence of Yunlin and Changhua area are that the operation of water supply system of Yunlin County downstream are working well. There are 3.53 million tons water less according to the analysis of underground water pumping from 2011 to 2016.

This county has seawater inlet system in wells aquaculture fisheries production area, aquaculture fisheries production area drainage system in downstream lake, and promoting recycle water aquaculture technology, which counseling 13.8 hectares of aquaculture industry to water-saving development; under estimation there are about 3 million tons saving water annually.

3. The sustainable development of marine resources

According to the Coastal Administration Law announced on February 4th, 2015, coastal area shall be demarcated on Aug 4th, 2015. In accordance with this law the detail five sub-law will be announced and operated on Feb 1st, 2016; after discussing and setting the "overall coastal management plan" (draft), municipality, cities and counties government will be invited to attend a public hearing on Aug 19th 2016, hosted at North, Central, South, East region on Aug 29th and 30, Sep 2nd and 5th 2016.



▲ The upper shiding area small lattice section lion head pit afforestation



▲ Feitsui Power plant repairing (internal turbine inspection)

4. Land Planning and Management

(1) Legislation of the Land Planning Law:

Due to climate change, in order to ensure homeland security, protect the natural environment and cultural assets, the rational allocation of resources and industries are promoted, the management mechanism of territorial integration are strengthened, and environmentally sensitive and homeland-damaged areas restored, so the country can have sustainable development; The Ministry of the Interior directed by Executive Yuan promotes the legislative work of the "Land Planning Law", which was passed by the Legislative Yuan on December 18th 2015, announced on Jan 6th 2016, and implemented on May 1st 2016.

(2) National geologically sensitive areas delineation, review and announcement:

The delineation, review and announcement of national geologically sensitive areas are completed in five stages. There are 40 geologically sensitive areas and announcing tasks until end of 2015 from first to fourth stages; in 2016 we expect to complete the fifth stage which is the demarcation and notice of 14 geologically sensitive areas.

(3) For strengthening the experience of nature trail and environmental education, there

are 30 activities and training projects for promoting trackless forest movements, trail working holiday, environment education and explanation, recreation until Aug 2016; for promoting forest recreation area and natural education center relevant ecological travel, environmental explanation, there are 116 education training activities hosted, in order to promote the maintenance of the quality of the ecology and environment of state-owned forest eco-tourism areas; for withdrawing the rental state-owned forest to recover the forest, in 2016 there are 253.8 hectares of forest land withdrawing and recovering; according to the situation of the withdrawing forest trees there are reforestation plans to recover or improve the look of the forest in order to strengthen the homeland security.

(4) To promote agricultural land spatial arrangement and establish a rational mechanism for agricultural land, also for allocating land according to their function,

there are 20 counties (cities) government assisted in order to control and more specific use the land from the grade of the farm; the function and allocation of each area are

divided from their agricultural grade, the result of the agricultural land and resources classification will be the reference of agricultural development and management.



▲ Combining with the trail adoption and mountain cleaning activity non-governmental organizations promote trackless forest movement



▲ The look of the forest after completing the withdrawing and recovering afforestation

5.National Land protection and preservation

The review, discuss, and update of the debris flow warning benchmark value and rainfall reference: According to the alert value of the target affected MINO earthquake area on Feb 6th 2016, after evaluation we suggest 5 counties (cities) and 10 towns to modify their alert value; in 2016 there were 14 new potential streams and river areas set warning values and warning zones.

6.Promote the concept of sustainable and energy-saving carbon reduction public works

Digital learning courses and platforms will be created, to introduce the life cycle of public works (including feasibility assessment, planning, design, construction, maintenance and management) to promote environmental policies and concepts of sustainable management, in order to reduce the environmental impact of public works. As of

the first half of 2016, there are 2,502 people receiving online digital course certifications.

III.Biological diversity

This meeting is convened by the Council of Agriculture, which integrates government departments to protect biodiversity and achieve the goal of conservation and sustainable use of native biodiversity. The key and important results are listed in below.

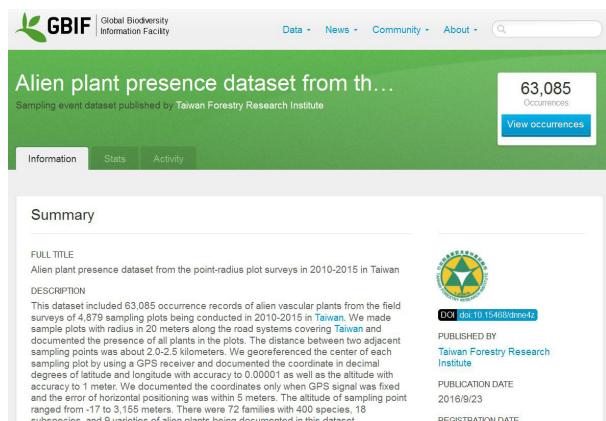
1.Continuing to promote habitat conservation

- (1)The hotspots of biodiversity of our land, wetland, and sea areas were identified and the recovering of bats population dynamics and health risks of bird population in lotus pond, conservation species, Taiwanese cicadas, and vicious round crabs ecology were measured and remotely monitored. In addition, at the outlet of number three nuclear power plant artificial algal corals are sampled, to analyze the thermal response of the coral host, and the result shows that the *Platygyra Verweyi* at the water-temperature stable region are the most sensitive coral.
- (2)The existing systems and management strategies of current protected areas were reviewed and improved. The municipalities and counties (cities) complete the 27 nature reserve management plans in accordance with the “The Revising Periodical Plan for the Management of Natural Conservation Areas” book.
- (3)Each county (city) government, community and fishery union develop marine protected areas and self-management reward system. Keelung city government has announced “WanghaiShon Bay conservation area and relevant restriction” also form a patrol team with local coast guard unit, volunteers, and divers; counseling Gongliao fishermen union to set “Mao-o cultivation of fisheries demonstration area”, which will be guided by volunteer patrol team.

2.Development of species conservation and biotechnology

- (1)Continued to promote the disclosure of information of biodiversity and its revisions, and integrated with the database of other related fields such as environment, ocean, land information, as well as connected to global networks (GBIF, IUCN, OBIS, EOL

GEOSS and GEO-BON). A total of 63,085 distribution records were collected from the open data set of the alien plant distribution sampling survey through TaiBIF IPT.



- ▲ Open data set of sampling and survey of distribution of foreign plants
- (2) Strengthened to create the capacity of taxonomy, employed talents in different fields, specimen collection (including genetic material, tissue specimens), biology compilation and revision, species diversity survey and cataloging. The compilation of Taiwan aphids was completed. The study shows that Taiwan breeds a large wasp diversity, which provides the basis for follow-up development in the biological diversity, evolutionary ecology and agronomic applications due to its unique terrain and climate.
- (3) Strengthened the capacity of inspection for GM products, and established and implemented R & D of biotechnology as well as the assessment capacity and management systems that the food give rise to the impact of biodiversity, including marking and investigation on soybeans and corn foods commercial availability, checking if they are GM soy and corn products that have been approved for inspection and registration; and 30 samplings of genetically modified products of papaya seedlings were conducted to monitor the outflow of GMOs.
- (4) Strengthened the research on the indicative animals, plants and population change of microbial species based on the main research platform of forest dynamics plot of 25 hectares of forest dynamics in Fushan. By the center of distribution of the species, reproductive phenology, regeneration rate of trees, functional differentiation and the correlation analysis of ecological

environment factors, explored the impact of global warming on Fushan forest ecosystem. Evaluated and analyzed the conservation of important habitat of leopard cats, studied the breeding population of greater crested terns dynamically in the Matsu region, created a plan for long-term monitoring system for Jacana Ecology Education Park and the population of eastern *Tyto capensis* in Taiwan.

3. Promotion of community conservation and habitat rehabilitation

- (1) Built a sustainable community with production, ecology, and living qualities, implemented "the working project on strengthening forest conservation combined with the Community", invited 19 communities and tribes to participate in the project (including 18 aboriginal communities). The implementation of forest compartment inspection tour totalled 1,188 times totally. Implemented forest protection together, and reduced the degree of forest damage.
- (2) The investigation and collation of the existing aborigines and the traditional biodiversity in communities were completed, and a database was created to connect to the global network. The traditional data and knowledge of biodiversity through field investigation are completed to upload 5,555 survey data.
- (3) Established a communication platform and cooperative relationship to ensure that there is sufficient resources in Taiwan to assist and encourage private enterprises, communities and conservation groups to participate in biodiversity and biodiversity conservation work. There were 11 cases of plan that subsidized non-governmental organizations to participate in biodiversity dissemination and conservation of biological diversity of habitat, of which "Attend the class! Biodiversity 4: Happiness for Green Economy" won the 40th Golden Tripod Awards for Government Publications in the book category.



▲Attend the class! Biodiversity 4: Happiness for Green Economy

- (4) Investigate the existing degraded ecosystem of the location, area, degree of degradation and draw up a strategy of restoration of the degraded ecosystem. The Regarding landslides, the entire investigation and planning is conducted, of priority to the order of implementation is set up, the rehabilitation of about 10 hectares is completed; slope variation is monitored using satellite to effectively help control slopes with six times the cases completed and 4,000 cases of detecting variation points in total. The area of variation of slope land is about 1,600 hectares. Continue to assess national freeway and roads improves the effectiveness of animal passageways and confirm friendly facilities – bridges across gullies can provide relief from animal traps. The monitoring results showed that anti-grass cloth could effectively control the sprouting of seeds and sprouting of *Leucaena leucocephala*, and set up a "national alien invasive plant *Campylobacter leucocephala* control program".

4. Strengthen the prevention and monitoring of alien invasive species

- (1) Establish a mechanism for import and export of alien species (including import and export management of species and quarantine measures), build a joint operation platform for customs clearance, and continuously adjust review of checklist databases with the high risk, unknown risk, the conservation of species in Article 4 of the Washington Convention, and lower risk on the joint operation platform for customs clearance, intensify and expand the structure, content and effectiveness of joint operation platform for customs clearance to facilitate to intensify the management mechanisms for the endangered, high intrusiveness or other management mechanisms that affect the survival of native species.

- (2) Establish the risk assessment of alien species imported and introduced that can influence the ecology and draw up strategy for monitoring (detection) and prevention according to assessment results. Using amphibians and reptiles as the object of analysis, implement and use the life history data to assess the analysis and application plans of the impact of alien invasive animals.

- (3) Establish the monitoring (detection), identification of the alien species and early warning mechanism, including of the follow-up tracking management for the import of the alien species. Implement the monitoring plan of the alien species for the population of Spot-legged tree frog and the assessment of the impact and the invasive conditions of alien species for *Gekko monarchus* with the estimate of a population of more than 1,300 in Taiwan.

- (4) Strengthen the investigation and seizure of smuggled alien species. A total 45 cases, 76,279 kilograms and 257 live animals of smuggling of agricultural and fishery products was seized. Introduce quarantine dogs to intensify the detection of inbound passengers' luggage and parcels, prevent outbound important diseases and pests from the animals and plants and their products brought illegally into the country. Animals and plants or their products with more than 34 thousand cases, about 36 tons were seized from the inbound passengers' luggage, courier goods and international parcels.



▲Joint operation platform for sign up for custom clearance



▲ on-duty detection dogs

IV. Energy and production

Industrial Development Bureau, Ministry of Economic Affairs coordinates and is responsible for developing sustainable energy and promoting green production, including the assurance of energy safety, improvement of energy productivity; Promoting the development of green industrial structure, and enhancing international competitiveness. Its achievements are as follows:

1. The promotion of the integration of regional energy and resources and green factories

Went through 22 key industrial parks to advance the integration of energy and resources and completed 360 linked plans of energy and resources such as steam, inorganic sludge, organic sludge, waste insulation materials, waste solvents, and contributed to 104 real links, reaching the linked amount with about 3.82 million tons per year and reducing CO₂ emissions of 851,000 tons per year. In addition, 40 green plant marks have been issued and the compliance determination of 78 manufacturers' Cleaner Production Assessment System is certified. Green building manufacturer award was awarded and the promotion of cleaner production can reduce total carbon emissions by 678,000 tons and save 3.36 billion NT.

2. Guidance on the promotion of energy conservation and carbon reduction of enterprises

Assist in the diagnosis of five life service chain enterprises for efficiency of energy conservation, explore the overall business of energy-saving space, and propose the report for the overall improvement and suggestions to provide references for the store in stallations or setting

up a new store. Help to diagnose the energy-saving efficiency of production equipment, carbon footprint inventory, the establishment of energy management system for 105 small and medium enterprises, and complete training such as on green energy conservation and environmental protection, energy-saving technology and work such as energy conservation and carbon reduction as well as publicizing water-saving concepts.

3. The establishment of testing experimental projects

Completed the establishment of "DC circuit breaker test equipment used for photovoltaic system" to provide the model and the experiment as well as the test for the circuit breakers that protect the energy technology products provided with DC power to help enhance the safety of power supply systems. The completion of 2 drafts for solar photovoltaic national standards are for reference for the formulation of CNS of national standards. Promoted the LED testing and calibration services, laboratory certification services and research related to optical technology.

4. Promotion of clean energy development

- (1) Promote solar photovoltaic policy. Planning for the target amount of solar photo voltage up to 20 GW in 2025 with the annual generating capacity of 25 billion kWh of electricity, whose target of rooftop type will reach 3 GW in 2025. Promote public roof PV-ESCO model, accumulate 19 counties and cities to invest in the rent of public roof for setting up solar photo voltage with a total of about 200 MW, the completion of 17 GW target of ground-mounted in 2025. Promoted to take advantage of land subsidence, unfavorable tillage and contaminated land to install.
- (2) Promoted the "Construction of Penghu Low Carbon Island Project", the preliminary results include 1.56 MW of solar power, 2,493 m² of solar water heaters, 5,309 LED lights, 12,028 energy-saving appliances (energy-saving refrigerators and air conditioners), 1,105 smart meters (High-voltage users with 105 households and low-voltage users with 1,000 households), 2,500 tons of rainwater recycling, 50 tons of garbage sorting plants, leakage rate dropped to 23.09%, 212 hectares of afforestation, 3,874 electric scooters and 612 charging pillars, etc. In order to achieve the target of low carbon island to lay a good foundation, the relevant competent authorities

have packages to launch continuously for the projects that have to wait for active handling.

- (3) Promote the "Green power pricing system", The users of temporary power in 2016 will be selected as one of the targets of the project, and increase two identification systems such as the purchase certificate and green electricity badge to help the subscribed users highlight their support and contribution to renewable energy development. The annual subscription amount has reached 267,272,100 kWh with a total of 6,814 subscriptions.
- (4) Set up the "Feed-in tariffs for Renewable Energy Electricity and Its Calculating Formula" in 2017, and added the feed-in category of solar photovoltaic water surface type to facilitate diversified choices for installation. Improve incentives such as: solar high-performance modules and the northern region to set the purchase rate addition, the island rate award, the offshore wind power of the ladder rate mechanism.



▲ Premier Lin Chuan visited the Penghu Zhongtun Wind Park on June 18th 2016

5. Promote diversified employment, startup services and vocational training

- (1) According to "Regulations on the implementation of employment promotion of employment insurance", implemented the measures for a variety of employment promotion to reach the target that makes the unemployed people obtain employment immediately. Promoted "the plan of the employment of low-income households and low and middle income families. 16,631 people are subsidized to participate in Technician Skills Certification, and 3,812 people are provided with professional services for cases of job-related assistance. 4,107 firms were invited to promote "Projects on subsidies of employment with universities", providing

opportunities for 227,916 employment, 183,474 people are serviced in total. Promote "Project on youth employment", implement "class of expert of youth employment" to help 4,224 people obtain employment and provide "Enhancing the Employment preparation project for the Senior High School" for the service of 13,427 people. The Employment Promotion subsidy is provided for short-term employment opportunities or referrals to the Multi-Employment Development Program, assisting in obtaining employment for targeted and social vulnerable groups, registering 262,373 job seekers and 184,604 employment referrals.



▲ Hold the lecture for Employment Promotion Program for Senior High School

- (2) Establish a startup counseling mechanism to provide startup loans for women, residents living in the offshore islands and middle-aged and elderly people; to establish a Phoenix Micro Start-up website to provide information related to start-ups such as activities and courses, with the start-up assistance for 1,100 people and creating 2,800 employment opportunities.
- (3) Implement a diversified employment-oriented pre-employment training program to enhance the employability of the unemployed, with a total of 26,923 people trained. Provide diversified and practice-oriented in-service training to labor, and encourage enterprises to continue to invest in staff through subsidized training fees or provision of guide and training services, with a total of 147,703 people trained.

6. Development of industrial characteristics, maintenance ecological sustainability

- (1) Promote the upgrading of livestock and poultry industry, register and inspect 1,500 livestock farms and other farms as well as guide them to employ veterinarians. Promote the contract system for poultry farming. The proportion of broiler chicken reaches 95%, 85% is for free-range chickens, 80% is for duck, 8 percent, 50% is for goose. Through the agricultural survey, allocation of supply and sale, meeting for judging the information of production and sale, the error of each month between the actual numbers of domestic pig supply and pre-supply amount is less than 5%. Promoted the mode of high efficient production according to off-site, age, batch and automated feeding system to improve production efficiency.
- (2) Promoted badges for best agricultural products, four certification bodies, 645 main items (5,420 particulars) products in 255 production plants through the CAS verification and launched the traceability, guided four poultry farms and poultry slaughtering and processing factories to pass the certification, with 567 tons of livestock products.
- (3) Protect the agricultural water and soil resources, create Geographic database for irrigation management in Irrigation Association and, including 17 channels of Irrigation Association in Taiwan with total length of about 68,000 km. The checklist items with priority for completion on the processing platform of geographic space map data has a total of about 285,000 plots, with an area of about 28,000 hectares and a production environment database enabling more diverse analysis in the future.
- (4) Continue to promote fishery monitoring, control and investigation. The offshore fisheries observers follow ships to observe them 80 times. The far sea fisheries observers followed ships to observe them 70 times and conducted 70 visual inspections and more than 210 boarding inspections to deter illegal fishing behavior, and manage fishery resources effectively.



▲ Offshore fisheries personnel collecting fishery data

- (5) Launched the "Strategy Plan for revitalizing Forest Product economy" to carry out comprehensive inventory of planted forests, and planned the reasonable and stable supply strategy for domestic timber production. Guided 245,970 hectares of agricultural operation area to develop regional core industries and establish safe, high-quality production bases.

V. Transportation and life

Transportation and life is the action plan related to the issues of mainly implementation and sustainability of transportation, green living and green consumption. Its focus and achievements are as follows:

1. Launch public transport upgrade program for highways

Launch "public transport upgrade program for highways (2013-2016)". The passenger capacity increased from 1.039 billion in 2009 to 1.26 billion in 2016, a growth of 21.27%.

- (1) Subsidize 1,094 remote routes for urban and road passenger transport, totaling 1.176 billion NT dollars to maintain basic transport for the public without interruption; and replace 278 low-floor buses and subsidize 81 universal barrier-free buses to strengthen the transport service of barrier-free universal design.
- (2) Help Ten counties with low public transport coverage give priority to push forward Demand Response Transit Service (DRTS) to upgrade public transport services.

- (3) Subsidized 7 counties (cities) governments and the Taiwan High Speed Rail Corporation to develop equipment compatible with different stored value cards to improve the national electronic value-card system. Promote the establishment of a "Real Time Bus information System" to raise the willingness of taking public transport and enhance quality and operational efficiency of bus operators.

2. Continued to promote the construction of rail transport and enhance service effectiveness

Actively promoted the construction of rail transport, improved rail transport services to meet passengers' demand and reduce travel time as well as save costs.

- (1) Implemented metropolitan railway grade separation and railway rapid transit systematization. The elevated railway and the railway rapid transit systematization in the Taichung Metropolitan Area has completed the first phase of the project. After completion, a green corridor may be created with up to an area of 42 hectares, providing the public in Taichung with low carbon travel and friendly public space. The electrification engineering from Shoufeng to Fongtian was completed to enhance the transport capacity of the Eastern Line railway. The TRA purchased 296 buses and put into operation the plan of overall purchase and replacement of vehicles to enhance efficient services of the metropolitan railway rapid transit systematization and to shorten the average journey time.
- (2) Continued to promote the Mass Rapid Transit System in the Metropolitan Municipality. The civil engineering works, automatic toll collection system and flight display system for the projects on Taoyuan International Airport MRT system has completed. Taipei Metropolitan MRT network has been approved, whose lines operated are the Taiwan Taoyuan International Airport Line of Sanchong to Taipei section, the first phase of the ring line, the East Extension of the Lutheran Line, million - and in - Forest Phase I and the new Zhuangzhuang Line (Xinzhuang Machine Factory) with a total length of about 30.7 kilometers. The case of the Ankeng Line and the SanYing Line of the MRT Project have been commenced.

3. Construction of Taiwan's intelligent transportation system

Provide "intelligent transport services" to enable pedestrians to fully grasp the real-time traffic information and the convenience of transportation to reduce travel time and reduce transportation energy consumption and pollution emissions.

- (1) Institute of Transportation, MOTC launched the project on e-IOT to integrate information and provide open access to information on real-time road traffic for 50 companies. The application for each county and city of roadside facilities is 44, and the application for public transport information is 48.



▲ Website of e-IOT

- (2) The services of "Electronic stored-value card for TRA" for Taiwan Railways Administration, MOTC has completed connection. In addition, the equipment for electronic stored-value cards for the urban area in Taiwan, and the bus, TRA, Taipei Gate MRT and Kaohsiung MRT station has been completed to facilitate the public to take public transport.

4. Promoted plans for bicycle friendly road network

- (1) Set up exclusive signs, marking lines and related friendly facilities by connecting the main route based on bicycles ridden around the island; promoted the "two kinds of environment-friendly vehicles" with TRA and bicycles to carry out the installation for bicycle riders in Shin Cheng station, Guangfu Station, Yuli Station Bicycle-friendly facilities.
- (2) Carried out the construction of bicycle routes and improvement of peripheral service facilities in the National Scenic Area, including nine National Scenic Area Management Offices such as the northeast and Yilan coasts, the east coast, Penghu, Dapeng Bay, Huadong Rift Valley, Sanshan,

North Coast and Guanyinshan, Sun Moon Lake and Yulin, Chiayi, and Tainan Coastal Park.

5. Launch the "Kinmen Meteorological Observatory and Characteristics Study Program"

Anemometers, tide stations, wave gauges, hazemeters has been installed in 20 areas in Kinmen Port, the first and the third port to gather information of real-time observation, integrating the information on the schedule of the bus and the ship and providing the demo information such as tide, visibility, wind speed for the tourists in harbor waiting room and Jiugong travel service center; In addition, integrated the information of coastal forecast simulation, blue road, port real-time images and real-time information of ships around the waters around Taiwan, establish "Jin Sha e dragon show links" APP to Provide comprehensive, value-added and convenient information services.

6. Promotion of road safety education

In the framework of "Road Traffic Order and Traffic Safety Improvement Program", the national road safety system is adopted to strengthen various measures to invite the bureau and the department of central government and local governments to invest. Promotion the road safety behavior such as the road test, traffic safety education for primary and secondary school, policy for the University of Motor Safety, as well as the suppression of drunk driving

7. Promotion of eco-tourism, environmental education and friendly tourism environment

Actively manage the environment in National Park and National Scenic Area, and make use of rich and diversified environmental characteristics to promote environmental education. Through 9 spots where are certified by the environmental education equipment, the National Scenic Area Management Office has achieved green building badge with a total of 7 pieces.

8. Enhance the ability of weather forecasting and earthquake forecasting

The new version of high-resolution weather research and forecasting model of on-line operations are completed. Developed

the technology and infrastructure such as East Asian radar echo data integration with neighboring countries, Japan, Philippine, Hong Kong and South Korea. Completed the applications such as forecasting for aquaculture, apparent temperature forecasting, UV index forecasting and earthquake forecast APP.



▲ Application software for seismic forecast on mobile device

9. Enhance the seismic retrofit standards for freeway and bridges

"The seismic retrofit for freeway and bridge of the second phase engineering (No. 1 Prioritized Road)" and a total of 343 bridges in the Tianliao Yan Chao section on the National Freeway No. 3 and Kaohsiung Sub-line of National Freeway No. 10 was completed to be consistent with the National Earthquake Disaster Prevention Program

10. Introduction of civil airport into the sustainable development mechanism and flight safety and passenger services

(1) Kaohsiung International Airport of Civil Aeronautics Administration, Ministry of Transportation and Communications passed the certification for Corporate Social Responsibility (CSR) and promote the GHG emissions, being awarded the ACA Level 3 Carbon Certification Mark, the first international airport in Taiwan to obtain the certification.



▲ 2016 International Airport Association Australia Conference for certification for carbon trust

- (2) Updated the meteorological automatic observation system at Kaohsiung and Hengchun Airport, and provided high-quality forecasting data for the staff in charge of air traffic control and meteorological observation. Replaced Tower Terminal Information Automatic Broadcasting System at Taichung Chingchuankang Airport to provide more accurate and fast information on the airport flight service broadcast. Aviation Information Service Network expanded flight announcement services for new airport to improve the service level.
- (3) Established joint waiting registration system for domestic flights of Kinmen, Magong and Taipei airports. To the joint waiting registration system for domestic routes of Songshan Airport was added a waiting system for military aircraft and the function of operation additionally, provided for operational real-time feedback system. Replaced and upgraded the Hualien Airport Flight Information Display System with innovative technology to shape it into a smart airport.
- (4) Seek business operators to develop remote routes for the offshore islands. The fleet has been fully updated to provide people living in remote areas of offshore islands with more stable, high-quality air services.

11. Promotion of green consumption

- (1) Established a credibility of the green product certification system. The application for 152 products with specification standards has been approved, with more than 13,000 products approved to use of green mark.
- (2) Conduct marketing promotion activities for green consumption and green procurement training courses and lectures. Recognized 17 government agencies with best green procurement, 70 private enterprises and organizations and 19 dealers whose green shops promoted green consumption with outstanding performance; The amount of green procurement declared by government agencies, private enterprises and organizations totaled more than 2.55 billion NT dollars.

VI. Technology and assessment

The convening unit is the Department of Natural Sciences and Sustainable Development, Ministry of Science and Technology. The content of the work lies in the application of the existing basic scientific research and technological innovation capacity to the assessment of the earth's ecology and various environmental systems. By the integration of assessing the information, assist in decision-making, fostering scientific and technological talents, intensifying technical exchanges and international cooperation to reduce the major threats that human beings face in development. Its achievement are as follows:

1. Projection of Taiwan's climate change and establishment of plan for information platform

- (1) Service for data on climate change and promotion of application
 - ① Build an English-language information platform to provide information such as introduction of plan (About US), past change of Taiwan's climate (Past Climate) and projection in the future (Projection), historical activities (Activities) and publishing.
 - ② Continuously provide climate change knowledge translation services; update "knowledge column" page weekly.
- (2) The development of application technology and research & development of climate change information
 - ① Use weather derivatives and regression models built based on observed data to produce daily meteorological data such as daily maximum temperature, daily minimum temperature, daily rainfall amount and daily radiation amount in future scenarios of AR5; the verification results show that the data characteristics are in line with the expectations of AR5 scenario files.
 - ② The simulation model for sequence and rate of rainstorms and the empirical model of hydrological parameters are established as the basis of hourly rainfall simulation. The hourly rainfall simulation module is completed and the preliminary verification is carried out.
 - ③ Use TCCIP to analyze and simulate the productivity of crops by the maximum temperature, daily minimum temperature and daily radiation.

- ④The cardiovascular health effect function was calculated by using the threshold and the relative risk value.
 - ⑤Considered the distribution of *Aedes Aegypti* under temperature variation using the historical observing data in the station.
 - ⑥Disaster risk assessment in the whole basin
- (3)Development of climate change downscaling technology and production of data.
- ①Established a statistical downscaling method for data on regional rainfall in Taiwan. It can be compared with the results of Team3 monthly data inversion to speed up the process of database establishment.
 - ②Completed the dynamic downscaling estimated by the three different sets of estimated sea temperature and climatological changes in the future of the MRI-AGCM, and the dynamic downscaling of the simulated typhoon events hit Taiwan simulated by four ensembles of HiRAM is completed.
 - ③Completed the analysis of seasonal rainfall, temperature and typhoon rainfall in the Taiwan area estimated by the ensemble climate simulation.
 - ④Completed the spring rain and summer afternoon rainfall and its analysis of environmental characteristics of rainfall, the numbers of typhoons reaching Taiwan, characteristics of intensity and environmental characteristics to be helpful to the application of disaster impact.
- (4)Observations of climate change in Taiwan and analysis of model data
- ①Mesh data of daily rainfall using the new terrain data and methods of Penghu area to combine the daily rainfall data with three sets of grid temperature data such as the average temperature, daily maximum temperature and daily minimum temperature data in the second half of the year of 2015 in order to provide the data to benefit agriculture, public health, water resources applications.
 - ②Complete the performance evaluation scale for the model of front simulation and the analysis of estimation of the circulation field characteristics in the future, which can be applied to extreme rainfall and water resources related research.

2.Integration of Taiwan Biodiversity Information Facility (TaiBIF) with GBIF

- (1)The Ministry of Science and Technology and the COA subsidize the Biodiversity Research Center, Academia Sinica to establish "Taiwan Biodiversity Information Facility (TaiBIF)", "Catalogue of Life in Taiwan (TaiCOL)" and "Taiwan Encyclopedia of Life (TaiEOL)" "to promote the collection and the integration of biodiversity information across the ministries and strengthen the dissemination and implement the Open Information Policy.
- (2)Continued to maintain and update the information on Taiwan native plant and animal species explained in the "Biota Taiwanica" (<http://biota.taibif.tw/>).
- (3)Invited to participate in the ASEAN Biodiversity Conference and the 7th Asia-Pacific Biodiversity Observation Network (APBON) meeting from February 15 to 20, 2016
- (4)Accepted the subsidy from GBIF Biodiversity Information Fund for Asia (BIFA), and planned for the implementation of the training and the study of Biodiversity Information for Asia in 2016.

3.Promotion of the integration of space information science with humanities and socio-economics under the cross-research and urbanization on water, food and energy safety (Water-Energy-Food Nexus; WEF Nexus).

In September 2015, we began to ask for the 2016-year plan and completed the concept proposal to review in February, and completed the acceptance plan in April.

VII.Development of urban and rural

Construction and Planning Agency Ministry of the Interior coordinates and is responsible for promotion of development of urban and rural areas, promoting urban renewal and regeneration, implementing residential justice and housing policy, speeding up sewer construction, integrating lanes (urban roads, bicycle lanes), and building a barrier-free environment for pedestrians, constructing urban green landscapes with human environmental space, promoting environmental regeneration permeable pavement. By the improvement of urban environment,

enhancing the quality of life and ensuring the sustainable development of land. Its achievements are as follows:

1. Water resources development, utilization, management and conservation

Replace the old leak pipeline about 679 km, the construction of about 360 partition metering pipe network.

2. sewage sewer development

The Ministry of the Interior, in accordance with the "Sewage and Sewer Construction Plan 5" approved by the Executive Yuan, Construction and Planning Agency the Ministry of the Interior and the municipal government actively promoted the user to do pipework and upgrade the sewage sewer connection rate with 12.6 billion NT dollars appropriated by the central government in 2016. Public sewage treatment plants will start water recycling, to achieve the goal of sustainable use of water resources.

3. Urban and rural sustainable development

(1) Promote government-led urban renewal case

Since 2005, 244 urban renewal demonstration areas have been selected. Currently, 27 projects are being planned for preliminary planning, 66 for pre-investment projects and 26 for investment promotion, and 10 by government investment.

(2) Counseling civil urban renewal cases approved implementation

Since the promulgation and implementation of the Urban Renewal Ordinance in 1998, 1,703 private urban renewal project plans have been approved, of which 565 have been approved for implementation.

3. Subsidize the case of civil autonomous renewal

Since the establishment of the Central Urban Renewal Fund in 2011, the subsidy has been approved by the Central Government for the implementation of the subsidy for self-renewal. The subsidy has been approved in 66 cases (including reconstruction planning and designing 12 cases, 46 cases of construction, maintenance, planning and design, among which include 3 earthquake assessment cases and 8 maintenance and implementation Project cases).

4. Eco - city green building

(1) To promote green building badge assessment, 456 cases of green building badge and candidates of green building certificate passed, annual energy savings of about 151.62 million kWh, 7.25 million tons of water and carbon reduction of 83,900 tons are expected.

(2) Promote the assessment for badge of green building materials, pass 141 cases of green building materials badge (105 cases related to health, 14 cases related to regeneration, and 22 cases related to high-performance), covering more than 902 product categories.

5. Promotion of social housing

(1) Based on the "Short-term Implementation Plan for Social Housing" approved by the Executive Yuan on 16 June 2011, five pilot sites for Taipei City and New Taipei City (including Taipei Wanhua Youth Section, Songshan Baoqing Section, The northern part of the city, the northern section of the southern section of the Three Great Harmony, the San'an section, the Zhonghexiufeng section) and 1,923 households were planned to be built.

(2) According to the "Medium and Long-term Social Housing Promotion Program" approved by the Executive Yuan on 6 January 2014, a total of 6.7 billion NT dollars has been set aside for 2014 to 2023. Subsidized the local government to set up the early planning fees, construction costs or land use fees for social housing, which will be expected to reach 34,000 households up to 2023.

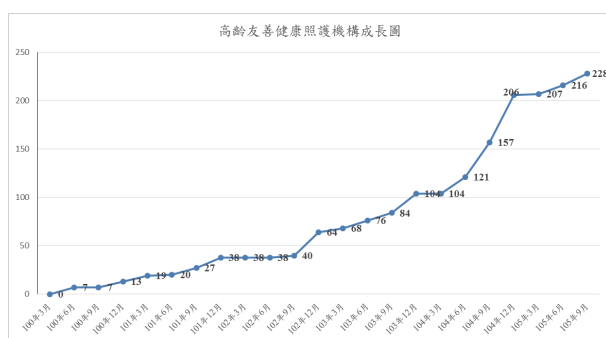
VIII. Health and well-being

Composed of the Ministry of Labor, the Ministry of the Interior, the Ministry of Water Resources, the Environmental Protection Agency, the Agriculture Commission, the Indigenous Peoples' Committee, the National Institutes of Health and the Ministry of Health and Welfare, which jointly implement health risk management and social welfare. The Ministry of Health and Welfare National Health Department is responsible for convening specific work items including the dynamic attention of the population, the creation of health environment, the intensification of the social security, care of vulnerable groups and protection of women's rights. Its achievement is as follows:

1. Finalize the elderly care system, build an age-friendly environment

(1) The introduced structure for the elderly friendly health care in Taiwan was developed in accordance with the 3 WHO principles for the elderly-friendly health care and WHO standards for Health Promotion in Hospitals. Until the end of August 2016, 228 health care institutions (156 hospitals, 20 health centers and 29 long-term care institutions) have obtained the accreditation as elderly-friendly health care institutions.

(2) The Ministry of Health and Welfare pushed forward the plan for the long-term 10-year care, giving priority to the development of home and community-based services, providing diversified care services such as home care, day care, transportation pick-up for the elderly, with 185,241 people obtaining the services in 2016.



▲ The number of accredited health-care providers is increasing

2. Deepen the new residents counseling and building a multi-cultural society

Provided 22 counties and cities for new residents to adapt to life counseling matters in 2016 with NT 4,124,000 NT dollars in subsidies. The subsidy will cover remedial classes for new residents, seed workshops, promotion of multicultural activities, and promotion of living and other matters. Also for language learning and multicultural parent-child raising.

3. Improved medical services for mountain, ous outlying islands and remote areas

(1) In order to strengthen and complement the medical staff of the Aboriginal and outlying islands, the Government has continued to develop programs for Aboriginal and Outlying Islands medical personnel, and has so far trained 910 public health students. 42 students were admitted this year. After graduation, nearly 70% of the students will continue to provide services in these areas and provide local good medical services. In addition, 232 new medical and related equipment will be provided to the Aboriginal and Outlying Islands Health Centers

(2) Completed the establishment of health medical Information (HIS) for 6 Departments in aboriginal Regional Health Center, in order to allow people in the rural areas to enjoy the same interpretation quality and real-time services. Interpretation of images is provided by the Ministry of Health. The support interpretation had about 7,000 cases in 2016.

4. The implementation of epidemic preparedness

(1) Subsidize the Taiwan Pediatric Society, the Taiwan Emergency Medical Association and the Taiwan Family Medicine Association to provide “training on clinical diagnosis, treatment and vaccination of enteroviruses”, “seminars on prevention and treatment of highly communicable diseases in the community”, and “education training for major adult acute infectious diseases”. A total of 13 education trainings related to infectious diseases for enterovirus, Poliomyelitis, Congenital Rubella Syndrome, Neonatal Tetanus and Measles with about 3,000 people attended.

(2) CDC held “the 13th seminar for both Taiwan and Japan” with the National Institute of Infectious Diseases (NIID) from September 6th to September 7th. Both parties exchanged opinions and communicated issues concerning Drug Resistance, Acute Respiratory Infection, Tuberculosis and Epidemic Disease investigation.



▲ The 13th seminar for both Taiwan and Japan

5.Promotion of the professional zone for the rice production and sale, the group production zone of good quality tea and safe production and supply chain for good and stable fruit trees

Sampled 786 pieces of the annual best fruit for tea pesticide residues, with 96% qualified rate; strengthened the sampling of pesticide residues for tea. Set the sample plan for annual tea field, cargo yard of seaban (dry) to strengthen the sample for the field and market products, with 402 sampling, sampling 402 and a pass rate of 98.7%.

6.Creation of a career-friendly environment to balance the responsibility between job and home care

- (1)“Measures for Granting Breast-feeding Facilities and Nursery Facilities” were amended and revised on July 28, 2016. Applying for child-care measures of the subsidy requirements was relaxed and was not limited to contracts with child-care service institutions. Employers providing employees with the subsidies of child card for child care of under 12-years-old. These child care workers can apply for grants each year, with the maximum subsidy of 600 thousand NT dollars, and additional funding grants applied for once per year becoming 2 times per year.

7.Improve the welfare service system, give priority to the socially vulnerable groups

Supervised local governments to implement the supply of the related assistance such as emergency life support, child subsistence allowances, child care allowance, injury medicaid, legal aid for encountering special circumstances such as single-parent families,

separated from family, families with domestic violence, unmarried pregnant women and major family changes, with a total of 15,933 families supported and 62,656 people supported until the end of June 2016, with subsidies over 211 million and 160 thousand NT dollars (Social and Family Affairs Administration Ministry of Health and Welfare).

8.Promotion of food safety

- (1)Continuously review and timely amend the relevant laws and regulations on food in Taiwan. 8,187 pesticide residues, animal drug residues and food additive standards have completed the review or revision.
- (2)According to the results of sampling inspections, the key points of administration, the issues of public opinion and concern about the risks and the characteristics of product risks over the years, the implementation of commercially available food sampling inspection is implemented by the central and local governments in a systematic way, with 24,216 samples sampled, of which 23,440 samples met standards in 2016. (96.8% pass rate).

9.Sustainable development of national health insurance system to protect medical equality

- (1)The annual general health insurance premium rate in 2016 was reduced to 4.69% according to the "National Health Insurance Financial Balance and Revenue and Expenditure Linkage Mechanism" stipulated by the National Health Insurance Association in 2016. The supplementary premium rate was lowered to 1.91%. The accumulated balance of income and expenditure amounted to 231.4 billion NT dollars.
- (2)Since implementation of the "health insurance arrears and medical treatment rights decoupling (comprehensive card) case" was implemented on June 7, 2016, comprehensive health card solutions have been promoted to give people the right of equitable protection. As long as people conduct the insurance procedures, they can feel at ease for medical treatment.

10.Review and amend the relevant environmental protection laws and regulations and carry out environmental monitoring

- (1) Continued to investigate and detect dioxin emissions from the fixed sources of pollutants and oxygen data at the air quality monitoring stations, and made public the relevant information on websites such as the Environmental Protection Administration of the Executive Yuan (<http://prtr.epa.gov.tw/>) and the Pollution Release and Transfer Register (<http://prtr.epa.gov.tw/>); Environment Resources Database website (<http://erdb.epa.gov.tw/>) to allow people to freely browse and query.
- (2) The Environmental Protection Administration of the Executive Yuan cooperated with local governments to promote control over the total amount of heavy metals emitted from farmland water bodies that are protected by the government, and shall impose strict control over the total amount of copper, zinc and total chromium, nickel, cadmium, hexavalent chromium in effluents discharged into areas where total control is announced by a local government.
- (3) Amended Standards for Discharged Water, the Standard for Discharge of Water from Wafer Fabrication and Semiconductor Manufacturing, amended the Administrative Measures on Water Pollution Control Measures and the Examination and Approval of Permit Applications, set up Water quality standards for water injection into underground water bodies and the types and limits of harmful substances; amended the water quality standards and harmful substances injected into the underground water body types, limits; established Measures for the Establishment and Management of Special Units or Personnel for Wastewater Treatment and the Waste (sewage) water treatment personnel in violation of Water Pollution Prevention Act for the amount of fines penalty criteria, implemented management properly to reduce pollution.

IX. Education and Promotion

This unit was convened by the Department of the Information and Technology, Education of the Ministry of Education, whose major tasks are to increase public knowledge and awareness of sustainable development, integrate government, civic, enterprise and school resources to promote sustainable development, strengthen related research and international cooperation and expand civic participation. Its achievements are as follows:

1. Increased the public knowledge and awareness of sustainable development

- (1) Offered the public information about the rich biodiversity in the land and sea of Taiwan through permanent expositions, relevant meetings, other press media and related educational activities; to promote the concept of environmental protection and to apply social educational resources to sustainable education and learning resources in different educational stages to promote the concept of sustainable development.
- (2) In line with the policy of the Council of Agriculture (COA), ingredients are made of high-quality agricultural products (Organic, Garden, Sales and Marketing, CAS) and QR-code.
- (3) Implemented the integration of sustainable development issues such as global warming and climate change into the curriculum. The Grade 1-9 Curriculum Guidelines include environmental education as a major issue and integrates it into different teaching fields for implementation. The course objectives include related knowledge on sustainable education and issues like global warming and climate change, to educate students to understand the knowledge behind environmental concepts, values and attitudes. (Such as nuclear-free homeland, sustainable development, global climate change, biodiversity, etc.).
- (4) The Youth Community Participation Program, which encourages the youth of self-organizing teams to expand their alliance with communities, tertiary institutions and non-profit organizations to develop creative action programs that meet the needs of the communities, to invest in community creativity, local industry, and care of vulnerable people for the community to help activate and develop.
- (5) Made TV commercials, broadcast tapes, print, on-line and outdoor ads on issues related to the sustainable development of water resources such as water conservation, disaster prevention, flood prevention; to transmit the knowledge and concepts of the water resource protection through different channels.
- (6) Elevated the concepts of corporate social responsibility and of green enterprise environmental education, to celebrate the seminar about the corporate social

responsibility and to reward the enterprise owners for corporate social responsibility.

- (7) Conducted seminar on Corporate Social Responsibility Reporting and Environmental Management System (ISO 14001) to assist enterprises in establishing knowledge and understanding of environmental management methods and to improve the quality of environmental disclosure.
- (8) To share the results of smart energy-saving projects, to publicize energy-saving activities, to commemorate energy conservation and to complete the energy policy announcement, to call on all people to become energy-saving activists, and to increase public participation in energy conservation to reduce household electricity and expand efficiency of energy saving.

2. Integrate public, civic, enterprise and school resources to promote sustainable development

- (1) In line with the "Four Provincial Projects" program of the Government and schools, the National School of the Ministry of Education has also been incorporated into the guidance routine on energy-saving and provided guidance manuals in 2016 to facilitate the school's follow-up work on energy conservation and carbon reduction.
- (2) Go through with the Local Government Environmental Education Support Team to assist local governments in setting up an Environmental Education Guide Group to assist local governments to plan appropriate and local environmental education programs for different target groups, subsidizing about 200 sub-projects in 22 cities and counties. In addition, subsidized 53 schools to replace high energy-consuming equipment. After replacement, 146.47 million kWh will be saved per year with potential savings of about 0.6%.
- (3) Completed the green network communication process to simplify and enhance the green network with the friendly operation of mobile phone APPs, significantly reduced the operating time of environmental inspection and notification, and carried out education, training and publicity activities for the green network platform go as to effectively strengthen the willingness of the public to act green and care for the environment.

3. Carried out related research and international cooperation on sustainable development

- (1) Twenty-five research projects were subsidized, including the integration of 12-year compulsory education into research on environmental education, the development of environmental literacy teaching strategies, effective teaching strategies and methods for environmental education, and the development of package courses.
- (2) Subsidized a total of 8 cases with 1,454 young people participated in international conferences and activities domestically. Subsidized a total of 12 teams with 49 young people to participate in major conferences and activities of overseas organizations and non-governmental organizations. A total of 2 teams with 12 young people participated in international youth programs were subsidized.
- (3) Participating in the Global Environmental Education Partnership in Madison, Wisconsin from October 16th to 17th, about 15 national environmental education related experts, scholars or officials attended the meeting to promote the cooperation and experience exchange of global environmental education. On 21 October, the Global Environmental Education Partnership of Northern America (NAEP) was launched in North America to invite environmental experts and officials from Northern America to participate in the promotion of environmental education and sustainable development.

4. Expanded civic participation to elevate civic environmental consciousness

- (1) Set up a Digital Opportunity Center in remote urban areas to provide a computer and internet learning environment for the rural population, provided information courses, and subsidized about 500 field trips. More than 400 primary and secondary schools participated in field trips and encouraged Community University to offer environmental sustainability education curriculum and activities (Ministry of Education).
- (2) Approved to subsidies for high schools (vocational high school) and special education schools and for primary and middle schools in 21 municipalities and counties (cities) totaling 186 million, 514 thousand NT dollars (Education Administration).

- (3)Planned for youth part-time work programs in communities. Matched 500 young people to 273 non-profit organizations for part-time work. In addition, promoted the public sector training program for tertiary institutions with a total of 376 student trainees (Youth Department Administration) in the first and second stages.
- (4)Encouraged or coached public and private museums to promote cultural affirmative programs with 31 subsidized cases. Granted subsidies and assistance to organizations and organizations for people with disabilities, provided funds, subsidies and other related activities with subsidies amounting to about 5.1 million NT dollars.
- (5)Procured a webcast of documentary films on energy conservation and environmental issues to be broadcast on the "Environmental Communication Network" for free public viewing and aroused public concern to take actions for the environment. About 400,000 people watched during the year.
- (6)Lectured on energy conservation and promotion activities with 999 rounds in conjunction with the National Energy Conservation Volunteers. 25,405 people participated. In addition, Taipower Company held the energy-saving demonstration of Taipower for its 70th anniversary to demonstrate the interactive teaching aids to let the public understand the skills of energy conservation through interactive experiences, entertaining modes and expanded energy-saving publicity benefits, with more than 200,000 people.
- (7)The Taiwan Soil Museum provided the public with visits with more than 23 rounds and more than 1,050 visits to enhance the consciousness of environmental sustainability and convey the importance of soil functional diversity and soil sustainable use through physical soil samples and educational films .



Chapter 3 The 2016 National Sustainable Development Award Winners

I. The 2015 National Sustainable Development Awards

The 2015 National Sustainable Development Award campaign was a 3-stage process: preliminary document review, field visits and assessments by the Committee's civilian members, and then the final objective appraisal by the entire Committee members, in that order. By this process, the 12 winners of 4 categories were recognized. They are: (1) 3 educational institutions—Da-Tun Elementary School, Beitou District, Taipei City; Puqian Elementary School, Banqiao District, New Taipei City; and Luo-Yang Elementary School, Beidou Township, Changhua County; (2) 3 enterprises—AU Optronics Corporation, Masterhold Int'l Co., Ltd. and ASUSTeK Computer Inc.; (3) 3 NGOs—Taiwan Nature Trail Society, Bifeng Community Development Association, Caotun Township, Nantou County and Paulai Association of Culture and Humanity, Kaohsiung City; (4) 3 sustainable development programs—The project of ecological conservation introduced into soil and water conservation (Soil and Water Conservation Bureau, Council of Agriculture, Executive Yuan), The project for Recovering the Formosan Landlocked Salmon and Monitoring its Habitat (Shei-Pa National Park Headquarters), and Taiwan Climate Change Projection and Information Platform (National Science and Technology Center for Disaster Reduction).



▲ The 2016 National Sustainable Development Awards ceremony

II. Description of the Winners

1. Education Category

(1) Da-Tun Elementary School, Beitou District, Taipei City

a. Introduction

Da-Tun Elementary School, located on the west side of Yangmingshan National Park, Datun mountain, is built on a mountainside. It is rich in flora and fauna, and devoted to maintain the ecological environment. Its ecological environment is varied and its scenery is fascinating. It overlooks the Taipei Basin and Taipei City as well as Tamsui river, Keelung River confluence and Guandu Plain with a panoramic view. Look forward to developing students to have open-minded spirits though unlimited school learning

b. Sustainable Development Promotion

• Inter-school Strategic Alliance Exchange:

Three schools, Hushan, Chuen Yuan and Datun conduct mutual visits to understand their campus environments and share teaching results. A surprise trip every semester will continue among the schools and other schools to share and enjoy teaching and learning.

• Field trips supplement learning:

"It is better to travel far than to read voluminously." Trips helps students to understand the environment, love the land, make new friends and realize their own learning direction. Graduates travel to Hualien Taitung Tribe to experience the original life or all land transport without electricity.

• Life has dreams, build a dream at ease:

I CAN program guides students how to learning by themselves and set learning goals, focusing on the course, and sharing and learning no matter if it is successful. Swim across the Sun Moon Lake, cycle around the island, solve magic box, compose a songs, jump rope, play the piano. I CARE is our care time, expressing gratitude and blessing, cultivating a compassionate heart, care for people to the surrounding people and things.

• Each is a guide:

From the fourth grade, each child participates as a guide, preparing narrative materials by themselves. The child is the teacher with the ecological care from the beginning.

• Vegetable farming education celebrates harvest:

In the beginning of the semester, the class decides which plants will grow with careful care of cabbage, radish, cucumber, corn until the harvest is celebrated at the end of the semester. Have a gratitude from the heart.

• Hundred years old trees protect the schools and love:

4 hundred year old trees and 12 old trees in the community are the curriculum of living materials. Teach and cross-field collaboration, weaving childhood memories together under the tree.

• Four kings learn on their own:

Manage to encourage children to go toward "good moral child", "Expert understanding health", "Reading master", "talent master" four dimensions in weekdays class, with nickname "four kings".

• It is not easy to graduate:

Graduates climb up the main peak of Datun Xifeng, the art exhibition inside and outside the school, graduation trip, feast for thanking for the teacher (talent show), 5000 meters chase, 60 km cycling, which are the tailor-made graduation ceremony for each child.

• The domestic most beautiful school tree:

The fallen flower is seen on the ladder under big camphor trees with beauty, which won the selection by Futian Trees Protection Foundation for the most beautiful school tree selection.

• Otus lettia comes back:

Teachers and students are very angry at the event where a baby bird fed by Otus lettia has been taken photo by unscrupulous photographers using improper shooting. A year later, the three baby birds fed by Otus lettia has grown up and fly away.

• Eagle want to fly and meet Terry Gou:

After students watch "Eagle want to fly", take the initiative to write to Terry Gou to ask him to save the eagle. It is unbelievable that in early January in 2016, Mr. Terry Gou personally met these children, and obtain "Eagle to fly" public broadcast version of the film for the national primary and secondary schools.

C. Vision for Future Development

Teachers teaching wonderfully is not better than students learning wonderfully. How to implement learning specifically and operate sustainably to have both tradition and innovation is to make mountain primary school fulfil the quota when enrolling year after year.

We thank the members of the judging panel for their recognition of Datun Elementary School. We will continue to maintain the spirit of "Respect for Life and a Friendly Environment".

2. Puqian Elementary School, Banqiao District, New Taipei City

a. Introduction

The school, located in New Taipei City, is a large city within a city. We look forward to using the hardware and software courses to familiarize children with the natural pulse and practice environmental awareness and action.

"Health, vitality, humanity, and progress" comes from the image of the new generation of urban children. Under the leadership of the principal, we will consider the individual differences of the students and achieve the appropriate teaching, leading the community and parents to participate in the project using the school resources and community characteristics. Turn the concept of "old buildings, new life" into teaching by using the axis of "science, literature, aesthetics, ecology and practice", so as to build a campus with sustainable human resources and a sustainable resources and culture.

B. Sustainable Development Promotion

We plan to develop an 8-year development program to create a low-carbon eco-campus and activate vacant spaces to provide a learning, visiting and experiencing teaching field with excellent teaching awards by New Taipei City in 2012, an award to promote the outstanding performance of the school energy by the Ministry of Economic Affairs Energy Bureau in 2013, an award with low-carbon school silver goose badge by New Taipei City in 2013, an bronze medal award with primary and secondary schools in the old toilet renovation in 2015, an award of school of sustainable stars by the new Taipei City in 2015.

In the aspect of the hardware, there are two aspects of "Eco-environment Recovery and Maintenance" and "Sustainable Low-carbon Building". The school has replaced the lamp circuit and T5 lamp with the replacement rate up to 98%; actively engaging in the construction of green buildings, building a thin green roof and turning the old toilet into an energy saving toilets, improving the water resources system. After the library is rebuilt, it will have low energy consumption and eco-friendly education. The power in old buildings is planned to improve, reinforce the school buildings. During the process of improvement the process, the school has become a teaching field so that teachers and students can participate in and experience.

Teachers set up teachers' community independently (teacher science popularization meeting, food and agriculture community, health promotion community, natural burning community, etc.), compiling the supplementary

material for the environmental education, flexibly exercising the diverse teaching methods to cultivate students to understand the relationship between human and the environment

The school is a community center. Open campus and provide platform such as every Thursday afternoon community Japanese classes for the elderly, every Wednesday night Hakka dance, health martial arts classes from Monday to Friday morning and community residents to share, which can see the public of the community carrying out multiple activities and learning in the campus. At the same time pay attention to humanistic care, multi-inclusive and respect for the various ethnic groups of teachers and students; to be in consistent with the festivals for activities (Teacher's Day activities, New Year's Eve, Thanksgiving activities in May, etc.), to cultivate the students to have the attitude of appreciation of life.

C. Vision for Future Development

From participation to winning an award, it is not only an affirmation and glory from a long way for the team, but also provides us with a broader view of the theme of sustainable and different point of view. Thank the Ministry of Education for guidance led by the continuous transformation of local campus team for many years, thank Education Department, New Taipei City government for the recommendation and the guidance, thank the chief of village of community and volunteer team of parent teaching association for the support in human power and material resources.

Talent heritage, resource sustainability and cultural continuity are our daily work every day. Tomorrow, we uphold the sustainable spirit in the hardware building improvement and software curriculum research and development in front of the podium, in the playground so that the sustainable seedlings are deeply rooted in child's life of Puqian



▲ Creation of fallen leaves

(3)Luo-Yang Elementary School, Beidou Township, Changhua County

a.Introduction

Luo-Yang Elementary School (the school with the characteristics of butterfly and rice), a primary school located in the agricultural area of the plain forest, whose area is 3.3 hectares with up to 200 kinds of native plants and the chirps and whirrs of insects and birds can be heard everywhere. Overgrown with butterflies herbivores, nectar, butterflies can be seen everywhere dance, flowers. Teachers and students grow organic rice and organic crops for learning activities in the "children farm" set by themselves with more simple and honest resources of the arts and humanities. Learn from nature to create a natural habitat and practice natural agricultural method in order to build the "five five-force learning base" for the sustainable development goals.

b.Sustainable Development Promotion

Team upholds the "top-notch, consolidate and support the weak" spirit of education to create a team with flat-style "five five" in a manner of effective communication and dialogue. Integrate the educational resources inside and outside the school, establish the "five-five-force" sustainable development of kinetic energy, build a "engineering, curriculum, courses, courses, run" network-based sustainable development of teaching field, embodies the achievements of each child so that Luo-Yang become the children's learning paradise.

The sustainable development of the characteristics of the local school is rooted deeply by "five five", which won an award of teaching excellence gold by Ministry of Education from 2014, awarded the 1st place of space aesthetics

characteristics of the school by the Ministry of Education from 2014 to 2015, awarded aesthetic characteristics of the school benchmark, by Ministry of Education in 2016, awarded life education characteristics of the school by the Ministry of Education in 2106, which certainly get recognition that Luo-Yang made an effort for sustainable campus with blessing (butterfly) characteristics

The five-for-five system is obtained from local life and teaches children learn from implementation and experienced learning to become their own knowledge and abilities as well as abstract the children through multi-teaching materials, implementation curriculum to. Through the implementation of multiple innovation courses, understand themselves from the exploration and experience and create the value of life from the services to further love life, concern ecology, learn happily.

c.Vision for Future Development

From the core concept of "environmental protection, ecology, art and humanities", Luoyang Elementary School builds a teaching pattern of life, production, ecology, life and survival in conformity with the 12 year compulsory education and the trend of international education to develop students with the five power to go - vitality, learning, innovation, and adaptability and communication skills. To cultivate the recognition and love for the environment through the "Five Five Strengths", respect for the life and holistic education with the care. Immerse the children with the love of education and professionalism so that each child will grow up with miracle in their own land.



2. Business Category

(1) AU Optronics Corporation (AUO)

a. Introduction

AUO devotes to the balanced development of three dimensions such as economy, environmental protection and society, and regarding governance and evaluation has been in the top 5% places of enterprises selected for 2 consecutive years by the Taiwan Stock Exchange. AUO performs excellently regarding the implementation of management such as governance system, attention to shareholder rights, transparency, risk management, real-time information disclosure. Under the operation of the Council for Sustainable Development and the supervision of Board of Directors, the company makes an effort towards "sustainable development" efforts, and works together with all walks of life towards the sustainable road, and has also been recognized by the outside world and has been selected as the DJSI World Index for 7 consecutive years, of which four years is leading in the group.

b. Sustainable Development Promotion

The rate at which AUO replaces the destructive PFCs equipment for the high-temperature potential reached 100%, which is the only panel manufacturing industry in the world to do so. Its accumulated greenhouse gas reductions reached 12.1 million tons by 2016, equivalent to carbon dioxide uptake of about 31,000 Daan Forest Parks per year.

The AUO's global recycling capacity in 2016 reached 1,209 million tons with a recovery rate of 88%. By the end of 2016, the company declared reaching the goal of reducing water, creating water, water and Water Neutral by 2020, of which "Water reduction" aims to reduce the intensity of production water by 30%. Reduce water for production efficiently through R & D of process technology and the improved performance of water treatment equipment. The goal to "create water" is to produce 10,000 tons of recycled water per day from the Taichung plant. Increase the usability of water substantially while responding to the national water policy. The goal of "Water Neutral" is further use after the Longtan plant recycles the water for manufacturing fully. Through the reduction and the services that provides supply chains with water-saving technology services, integrate to save water with supply chain and become Taiwan's first enterprise achieve water neutral in Taiwan.

AUO built a green factory building in Taichung and uses renewable energy, becoming Taiwan's first manufacturing enterprise to pass certification of "facilities and places for environment and

education" granted by Environmental Protection Administration in 2014. In addition, the company shares and disseminates the professional engineering technology and the concept of cherishing water resources through the "AUO Green Ark Water Education Center" built in the Longtan plant and the completed first self-designed water recycling system in 2015 in Taiwan, expecting to do our part for water resource education.

In the contribution of social humane care, AUO has set up four major programs for charitable events: "cultivating honest and intelligent people", "charitable caring / promoting original culture", "promoting science and technology education in optoelectronics" and "Getting close to earth eco-energy conservation and environmental protection" to let the employees participate in volunteers, realize self-fulfillment and make an effort for a better society. AUO sets up six service clubs. The colleagues go to the neighboring social welfare agencies regularly for services, including the accompanying service, environmental cleanup, touring for the targets of the social bureau emergency placement of children, the children with physical and mental disorders in the hospital and the dropouts. There were 150 services, more than 2,000 volunteers in 2016.

c. Vision for Future Development

As a professional supplier of liquid crystal displays and solar energy solutions, AUO not only devotes to product innovation, but also to has the determination of the core values of the three pillars of "passion for this, the pursuit of excellence, caring society" to implement the "sustainable development". After the completion of the three emphasis, the Company will realize the vision of a bright and innovative "graceful life" and a mission of "becoming a top green solution company." We hope to make AUO a "sustainable excellent enterprise" through a high-quality corporate culture.



▲ AUO Green Ark Water Education Center

(2) Masterhold Int'l Co., Ltd.

a. Introduction

Masterhold Int'l Co., Ltd. was founded in November 2005. Its product research and development not only won recognition by domestic manufacturers, but also obtained a number of patents. In its corporate philosophy, the Company holds a sincere and pragmatic attitude to develop and design, research and develop the green energy industry, as well as actively participate in investment in R & D and agents of lithium iron phosphate. The products developed break through in the characteristics that the traditional lead-acid batteries do not have the characteristics for environmental protection, safety, energy saving, carbon reduction, which are in line with international environmental norms RoHS standards. In the future we will not only continue to develop green energy technology as the goal, but also do our part for the global village through environmental protection and sustainable development.

b. Sustainable Development Promotion

The R & D team in Masterhold Int'l Co., Ltd. studied the lithium iron phosphate feasibility for 10 years, which is the only industry to master material technology and the innovative application of its end-product. All the technology and products are developed and researched and manufactured by the company. In the field of lithium-iron battery research for several years, develop protection board with a low current to control high current (patent) first, and possess several revolutionary patents with automotive battery in the world, including the patents such as battery board with high-current, car battery with the function of rescue, car battery with anti-theft features. These car battery can let each car reduce emissions of carbon monoxide by 26%, hydrocarbon toxic substances by 8% according the test report, and the invention of rescue function do not need to rescue vehicles so that it can save more fuel consumption and human waste. Therefore, it has a great contribution to energy conservation.

In the aspect of innovation and research and development, the problem that the traditional electric vehicles is not easy to promote lies in the heaviest battery, which take too long to charge and shortest trip. However, fast-recharge batteries can solve these problems. Masterhold Int'l Co., Ltd. fast rechargeable battery reduces battery usage, quickly recharges using fast-charge features, and extends the trip in a way of segments. It enables the green transport to achieve practicality, and enables mobile power to reach the goal of simplification.

Masterhold Int'l Co., Ltd. is not only responsible for customers, colleagues, shareholders, but also exercises the commitment of corporations to make a contribution to society. With the concept of "change is the beginning, the service is quietly doing good, contribution is accumulated, the dream is down to earth" concept, Masterhold Int'l Co., Ltd. will take advantage of the products to make contribution to the community, extending care to the global village, helping domestic groups and overseas remote areas to be a responsible social enterprises.

c. Vision for Future Development

Masterhold Int'l Co., Ltd. aims at becoming a "Quality Enterprise for Sustainable Management", and implementing the vision of "Dedicated Application R & D, Leading the Green Future" to reach the mission of "Top Green Energy Innovation and Development" for enterprise.

The company expects its products can become the leading brand in green energy markets in the short-term, and built a complete service chain in the medium-term, and deepened the recognition for the customer to the product brands of Masterhold Int'l Co., Ltd.. It provides complete solutions of energy-saving and carbon reduction in the long-term goal to help each industry go forward for energy-saving carbon reduction and create a more convenient and low-polluting technology life to fulfill the corporate social responsibility.



(3)ASUSTeK Computer Inc.

a.Introduction

ASUSTeK Computer Inc., founded in 1989, is the world's largest motherboard manufacturer and ranks as one of the world's top three consumer notebook brands. From a professional brand to the international 3C brand worldwide, we have achieved significant growth in this fast-changing industry due to two constant factors: our eager to create new experience for users, and our steadfast commitment to quality. These values are part of our brand promise: "Excellence in innovation, superior quality."

b.Sustainable Development Promotion

ASUS focuses on best quality and environment-friendly product design and R & D, introducing ISO 9001 and QC 080000 system management to keep close tabs on quality and environmental protection, and also extending the product liability to the care for the employees, introducing ISO 14001 and OHSAS 180001 to protect employees from working in unsafe environments. In response to further global warming issues, ISO 50001 is introduced to enhance energy efficiency and reduce greenhouse gas emissions.

ASUS entered a sustainable business transformation in 2009 with the establishment of the Corporate Sustainability Office, incorporating features such as green innovation, corporate sustainability performance, supply chain social responsibility management, employee care and social engagement, covering the comprehensive sustainable development such as a full range of economy, environment, and society. While adhere to the green quality of products at the same time, we also think about sustainable innovation.

In the "Digital Recycling Program" project, were-assemble the usable parts of recycled discarded computers to give new life to regenerated computers. In addition to reducing the environmental impact, it also has become the first step in promoting digital learning and reducing the digital divide. We establish a Digital Opportunity Center to promote digital learning with the help of information volunteers. Over seven years, we have set up more than 100 computer classrooms worldwide, benefiting more than 100,000 people. ASUS set its initial reduction goals in 2009. The 15% compared with 2008 reduction of greenhouse gas emissions by 2015 have been successfully reached. After the commitment expired in 2015, the second phase commitments for GHG reductions will be made further for 2025:

- (1)Reduction of greenhouse gas emissions by 50% (based on 2008).
- (2)50% increase in energy efficiency of major products (based on 2013).

c.Vision for Future Development

After the pursuit of excellence and adherence to the quality of innovation, ASUS also devotes fully to environmental protection and corporate social responsibility. This privilege once recognizes ASUS operates steadily in the competitive and rapidly changing market. Sustainability is a long road. ASUS still regards sustainability as the basis of enterprise competitiveness and differentiation in the future, ranking the leading enterprise among the green high-tech leading groups. Making a real contribution of business philosophy to human society, go toward the sustainable operation.



3.The NGO Category

1.Taiwan Nature Trail Society

a.Introduction

Taiwan Nature Trail Society was initiated by the nature trail steering committee of the Homemakers' United Foundation at first with the philosophy of developing the concept of the nature trail, ecological conservation and education. After continuous promotion in years, the members of the nature trail steering committee decided to set up their own organization. Therefore, they established the association on June 5th, 1999, world environment day with the philosophy of “promoting the nature trail, implementing the ecological conservation”. In the past 17 years, the nature trail society held interpretation and education activities in mountain trails and communities to promote the conservation of nature and environmental education with its original passion.

b.Sustainable Development Promotion

The Director, Hsu Kuei-Hsin, included the environmental education project which was designed with the environmental issues, such as, the themes of soil and water conservation, the concept of biodiversity, the effect of the exotic species, Leave no Trace principle and the interaction between people and Nature in the activities to promote the eco-environment of the trail since 2013. With different teaching elements, ex. DIY, reality simulation prototype, puppet show, story time and stage show to activate the demonstration and enhance the effect. He will also try harder on the research of the teaching in the future. The association also elaborated with the Department of Travel and Ecotourism in Tungnan University, to provide the environmental education promotion activity (including the consignment of the agencies, group tour guide

reservation, free tour guide on the holiday, environmental education promotion courses, environmental education eco camps, community university and community environmental education programs, etc.), which attracted around 18,000 to join per year.

During these years, the association not only finished many publications but also continually formed the teaching groups to offer almost 40 courses in Wenshan Dist., Shilin Dist., Zhongshan Dist., Shongshan Dist., Xinyi Dist., Zhongzheng Dist. And Wanhua Dist., in Taipei City; Shulin Dist., Xinzhuang Dist., Linkou Dist., Zhonghe Dist., Tamsui Dist., Sanying Dist. in New Taipei City and fourteen community universities as well as Sun Yat-sen Memorial Hall and Chiang Kai-shek Memorial Hall which all had great comments.

c.Vision for Future Development

Actually, we've been very simple, low-profiled and rarely promoted ourselves via media. However, with our continuous efforts, we keep leading people to experience the beautiful sciences and amazing ecology along the trails so people can establish the attitude to be friendly and respective to the Nature. Just like we keep our paths on the trail, slowly and yet casually, we will keep “walking”.



▲ Youth travel spot in Pingxi, Taipei



▲ The introduction and guide to the eco-environment of the trail in 2015

(2) Bifeng Community Development Association, Caotun Township, Nantou County

a. Introduction

Bifeng Community Development Association is in a modest valley located in Tazutuen Township of Nantou County. The association established in 1992 and it has been zealously promoting the caring for the vulnerable groups in the community, maintaining the recycling job for environment, offering the courses to enhance the cultural quality of the residents as well as establishing the neighborhood watch team to protect the safety of the residents.

b. Sustainable Development Promotion

The community makes every effort to promote all the activation activities to help the residents continuously learn while growing. To promote the recycling work in the community not just by reducing the amount of garbage, but to make the kid's toys with the recycling items. Rice is the biggest industry in the community so the community weave the rice straw to turn the unused material into something useful.

The community has transformed into an society for the elderly and it hold all kinds of activities for the elderly, supporting services for seniors. Every week, the community will hold a caring activity at different spots and offer meals to have the residents gather together. A dietitian is employed to take care of the health and lunch for the elderly.

Offering courses to enhance the cultural quality of the residents ranged from ocarina class, dancing class, Japanese class, singing class, calligraphy class, Qi-gong class and parent-child painting class. Besides the regular classes, the ocarina class and dancing class also perform in other activities to interact with other units; at the Japanese class, the residents can learn another language and know different cultures; at the singing class, residents

who enjoy singing can have their own stage; the calligraphy class allows residents to cultivate their minds; the Qi-gong class enables the residents who want to nourish their bodies have the chance for a physical training; the parent-child painting class provides the kids an extra place for learning.

On every Lantern Festival, the community will hold a traditional activity with the Grade-3 listed historic monument- Longde Temple; the Temple for The Lins is also remained so every spring and autumn, the residents would worship together. Since Bifeng supplies rice locally, the straw culture is able to be promoted to the community for inheritance and creativity. In 2016, the community promoted the rice culture through the rural regeneration activity to inherit the traditional technique of making rice. The community successfully promotes the local industry with rice culture and creates different business opportunities to increase job openings while the local industry can be applied on different fields for better purposes.

c. Vision for Future Development

Even if we are not the brightest star, we still do our best to shed our light with warmth to lead people home. We hope the community be full of warmth so we build it with smiles; we hope community be filled with smiles so we develop our future with harmony; with smiles and harmony, we see possibilities and future in our next generation.

The most modest community is the countryside community where you can feel the warmth and energy. There is nothing particularly special here, but we have our stories; our grass is as soft as the European carpet and our kids will smile at you without fear. The volunteers in our community are full of energy and the elderly here are like a library where you can find wisdom. Our ecology is full of amazement for you to explore.



▲ Straw weaving and environmental friendly Chinese toys

(3)Paulai Association of Culture and Humanity, Kaohsiung City

a.Introduction

“Every effort counts” is the philosophy of the Baolai Humanity Association in Kaohsiung (formerly Baolai Reconstruction Association in Kaohsiung) as they believe the power to make things happen relies on the group devotion. The reconstruction progress after the destruction by Typhoon Morakot made us realize the true value of the elderly’s words. After the disaster, our association used natural building techniques to build “Shezaijiao culture shared space” and learn how to coexist with the land from the very beginning. We shared the technique and experiences of making vegetable dyes, ceramic art, eco-environment education, Kiln roasted braid and pizza to develop the second skill of the residents and resolved the problem of unemployment. The major mission is to assist the residents to find life focus through the progress and re-establish confidence.

b.Sustainable Development Promotion

The original intention for local sustainable operation has been internalized to the premier philosophy of our association. During the operational process, we realized only to reinforce the cultural connotations so we can refresh our hearts and regain the power to revive the economics and tourism. Therefore, we’ve been working on the below aspects to develop the above mentioned-cycle of goodness for “coexisting with the land”.

①Developing the space for empowerment, cooperative studies and arts in the community.

Building the community workshop-Shezaijiao culture shared space to conduct the courses of empowerment and cooperative studies to cultivate the spirit.

②Developing talents to cultivate the human capital in the community.

Developing various professionals for different fields, such as, organizational management, caring services, industrial skills and docent ability.

③Developing the abilities of the elderly for caring services.

Developing the abilities of the elderly to expend the human resources in the community.

④Implementing the community-based environmental education and transmit the culture.

The courses Baolai developed for the ecological investigation and records which included folklore experience, growing plants, the history of the old trees and the traditional holiday foods were published in a brochure-“Nature fun with life” as a teaching material for Baolai Elementary School to use as the regular cooperative study course with the community.

⑤Exploring the industry in the community and developing diversified industries.

Being eco-friendly for developing agriculture, cultural customs and crafts with humanism to develop diversified industries.

c.Vision for Future Development

Sustainability for us, is to have our future generations live and work in this land. It’s a simple and small hope, but it’s difficult to accomplish. Our association was established in coping with the reconstruction from the impact of Typhoon Morakot. After that disaster, we realized only by developing talents (abilities), can we accumulate sustainable strength. From talent development, team establishment to organizational operations, these are all essential conditions to promote the local sustainable development. Human capital is the most important, and talent cultivation is a necessary investment to grow capital. Therefore, starting with people and then extending to the land, environment and community. Intervening from the three dimensions-life, ecology and production to establish a cycle of goodness for “coexisting with the land”.



▲ Love this land, start planting from childhood



▲ Love the hometown, keep company with children



▲ Shezaijiao culture shared space

4. Action Plan Category

(1) The project of ecological conservation introduced into soil and water conservation (Soil and Water Conservation Bureau, Council of Agriculture, Executive Yuan)

a. Introduction

The Soil and Water Conservation Bureau promotes the overall watershed conservation and disaster prevention with the spirit to conserve soil and water as well as to serve society by protecting residents of rural villages from the threat and fear of landslides. It established the landslide prevention system in communities, advocates education on soil and water conservation, implements the supervision and management of hillsides, maintains hillside health and safe environment, improves traffic in rural villages, maintains road safety and transportation for agricultural products and handles the relevant affairs of the facility improvement for the farm track.

The Soil and Water Conservation Bureau started to research and develop inspection methods of the eco-engineering since 2007, with the goal of having the soil and water conservation construction based on the ecological thinking as an eco-friendly behavior in order to reduce the impact on the environment caused by construction.

b. Sustainable Development Promotion

In order to control the important habitats, species, environmental characteristics and ecological subjects, set different scales of environmentally sensitive area index map as the reference to determine the potential ecological effects caused by construction, and bring up counter suggestions to minimize the impact on the environment and ecology as well as to update regularly for meeting requirements and application of the current status.

Setting the ecology inspection system to help the relevant ecological assessments of the life cycle engineering, and drawing up the ecology

inspection items at different phases for the ecological specialist to collect and investigate the ecological information around the construction area and propose the protected targets accordingly. To draft the eco-friendly suggestion of reducing the impact so the engineers can understand the ecological subjects to be clarified or the conservation measures to be advanced at each phase. The implementation of the ecological inspection is based on the order of the life cycle engineering phase which includes: (1) The plan approval phase is to establish the ecological value, assess the possible ecological effects from the construction, ecological cost and ecological benefits; (2) the key point of the scheming and designing phase is to assess the potential ecological subjects, confirm the ecological issues and the ecological protected targets. According to the ecological status of the construction area to set the avoidance, reduction, compensation, etc., such eco-friendly strategy and the important protected targets; (3) the majority of the constructing phase focuses on setting the ecological conservation measures before the implementation phase, and ensure the completeness of the ecological protected targets and the area of concern during the construction as well as to maintain the environmental quality; (4) the maintenance and management phase emphasizes the follow-up of the ecological protected targets at the later stage, evaluates the quality of the habitat within the control range, analyzes the ecological subjects and draft the conservation measures to validate, review and respond to the effect of the ecological inspection.

Since the ecology inspection system was established in 2007, it has been applied to watershed protection projects of the Shihmen Reservoir and Tsengwen and Nanhua Reservoirs, altogether 237 cases.

To reinforce the philosophy and implementation of ecological conservation, the Soil and Water Conservation Bureau amended the "Engineering, Procurement and Construction contract template" and increased the relevant regulations of "eco-friendly measures", set the "Eco-friendly Measures SOP" which would consider the ecology while improving the sensitive area to cover both requirements for the conservation improvement and the ecological conservation and take it as a base for the design unit, inspection unit and contractors as reference. In the contract template, the penalty regulation was included. If the implementation of the eco-friendly measures is against the contract, the compensation program would be required or the penalty would be occurred for breaching the contract. This regulation is indeed a useful tool to reinforce the



▲ The fifth construction of the improvement for Duen-abanang stream in Alishan Township, Chiayi County

implementation of the ecological conservation and inspection.

To further consider the opinions from the environmental and conservation organizations and the local residents, the relevant people who care about the local ecological environment will be invited to attend the site survey meeting before the basic design and construction, and take it as an information session to explain the goals and ideas of the construction in public for the residents to participate and communicate. The residents can fully understand and offer related suggestions at this information session whereas the opinions from different fields would be gathered and included for the construction reference. The concerns from all parties can be clarified to reduce the cost and misunderstanding of the policy communication.

c. Vision for Future Development

For the factors of the vulnerable geologic conditions and the several rainfall in Taiwan, the sediment disaster often put people's lives and properties as well as the public infrastructure in danger. To conserve water and land resources and maintain the environmental safety of the hillside, construction management is necessary. However, since the ecological environment of the hillside is sensitive, adverse effects will be easily caused if there is no proper plan and appropriate assessment of the relevant techniques and measures. The Soil and Water Conservation Bureau has gradually reduced the impact on the environment with the eco-friendly behavior and decreased the negative effects from the construction in view of the ecological conservation while protecting habitat at the same time.

In the future, the Soil and Water Conservation Bureau will continuously implement and promote soil and water conservation construction and ecological conservation work, and set goals for developing the sustainable ecological environment and biodiversity conservation to follow the natural environment and design based on the local conditions. To achieve disaster prevention and ecological conservation for symbiosis between human beings and nature.

(2) The project for recovering the Formosan Landlocked Salmon and Monitoring its Habitat (Shei-Pa National Park Headquarters)

a. Introduction

Surrounded by various peaks and streams, such as the cirque glaciers of Xue Mountain, Dabajian Mountain, Xue Mountain Range, Pintian Mountain and abundant animals and plants, is how amazing the landscape looks in Shei-pa National Park. This is where the Tamsui River and Da'an River originate, and is one of the most

important watersheds for Dajia River. To sustain the natural beauty is the most important work in Shei-pa Headquarters.

b. Sustainable Development Promotion

In the beginning stages when Shei-pa Headquarters was established in 1992, the amount of the formosan landlocked salmon was less than 300 which was close to extinct. The space for the group to subsist was limited to the basin of Cijiawan River only. The primary objective to conserve the formosan landlocked salmon was to improve the water quality and coordinate with Wuling Farm to stop agricultural activities in the basin of Cijiawan River as well as expropriate 8.1 hectares of farm to proceed with the ecological restoration. Also, making a public announcement to forbid the visitors to enter the basin of Cijiawan River and setting the sewage treatment plant in Wuling area to improve the impact caused by the recreation activities.

The plan to "Monitor and research the restoration of the river ecosystem at Wuling area" was continuously conducted since 2005 based on the aspects of the river ecosystem and integrated relevant research on dispersal ecology in the Wuling area to establish the basic data of the ecology system for the basin of Cijiawan River. The observation in years has built an ecology system that can predict the effects of the environmental change and human interference and further understand the environmental ecology at Wuling area.

Regarding the obstruction of the migration at the habitat of formosan landlocked salmon caused by the check dam, the improvement work of the four check dams at Cijiawan River has been finalized in 2000, and another amendment of the check dam No.1 at Cijiawan River in May, 2011. Building the river corridors at the upstream and downstream of Cijiawan River to improve the environment of the basin. The result of the monitor showed the quantity of all types of species was rapidly recovered and the formosan landlocked salmon could be traced upstream which indicated the improvement of the dam contributed to the river flow.

The local conservation work has reduced the extinction risk for the formosan landlocked salmon, and by releasing the cultured fish species to the historical rivers, the satellite genome of the formosan landlocked salmon was established so the genetic diversity was increased. Among these rivers, the released fish have established a stable group at the habitat of the Yousheng Creek tributary - Lo-Ye-Wei creek after the releasing process in 2009 and 2010 and is no longer in need of the releases. 250 formosan landlocked salmons were released to Leshan River in 2014 and have reproduced to a wild population at the summer survey in 2016. 416 formosan landlocked salmons were in the Lo-Ye-Wei creek and 286 were in Leshan River which means the population has been growing stably and reflected the local

and remote conservation outcome which has been done by the Sheipa Headquarters in years.

The ecology center of the formosan landlocked salmon and species database were established in 2007 to conserve the genes of the wild population and maintain genetic diversity as well as to provide guided services for residents to visit. The number of the visitors after the inauguration is above 100,000 per year and the conservation philosophy was rooted in the education.

Promoting local conservation including the method of “sealing off the river area for protecting fish” with the nearby tribes to preserve the formosan landlocked salmon around the park. Composing the conservation patrol team with Huan Shan Community, Nanshan community and Songmao community to protect the rivers so these aboriginal communities can participate in the important conservation work in person.

c. Vision for Future Development

To maintain the sustainable development, the Sheipa Headquarters further understood the conservation directions with scientific research which included research on the ecology system of Cijiawan River, ecological resources of the alpine ecosystem of Xue Mountain and the inspection of the atmosphere, water quality, hydrology and physical environment to improve the environment of the habitat. Promoting local conservation with nearby tribes for the sustainable operation these years in hopes of having the eco-friendly agriculture to promote the ecology tour of the tribes and care of the conservation of the formosan landlocked salmon at the same time. The philosophy of the conservation should be rooted in the education and the partnership with the tribes should be established so everyone apart from the public sector can make the effort together since childhood.



▲ Making efforts on the conservation with the nearby tribes and releasing the formosan landlocked salmon to their historical rivers.

(3) Taiwan Climate Change Projection and Information Platform (National Science and Technology Center for Disaster Reduction)

a. Introduction

The Minister of Science and Technology has been promoting the estimation of local climate change and impact research to face all the challenges caused by the high risk of climate change in Taiwan over the long term. Since 2009, the Ministry of Science and Technology continuously implemented this action plan (“The plan of establishing Taiwan climate change projection and information platform”, hereinafter referred to as TCCIP plan) which included plans of three advantaged areas for the climate change to encourage the government and people to actively face the impacts caused by climate change, in the aspects of investigation on the physical mechanisms, phenomenological analysis, the advance of the estimation ability, the establishment of the information platform, data processing and analysis methods for making proper adjustments.

The TCCIP plan was the core of the overall framework for the plan of advantaged areas for the climate change towards the Ministry of Science and Technology. Being organized by the National Science and Technology Center for Disaster Reduction with the cooperation of the Central Weather Bureau, Water Resources Agency, Taiwan Agricultural Research Institute, Centers for Disease Control of the Ministry of Health and Welfare, Research Center for Environmental Changes of the Executive Yuan, National Taiwan Normal University, National Taiwan University, National Chiao Tung University, National Central University, National Cheng Kung University, University of Taipei, Chinese Culture University, Chang Jung Christian University, National Center for High-performance Computing. These units with build the exclusive scientific research platform for climate change in Taiwan.

b. Sustainable Development Promotion

The team integrated climate observation data from both the public and private sectors and digitalized the climate observation data from earlier times. Next a thorough inspection and grid computing process established the long-term and stable climate observation data in high spatial resolution in Taiwan and the estimation data of the regional climate model in Taiwan through statistical methods (statistical downscaling) and physically based modeling (dynamical downscaling). The huge volume of the estimation of the climate change in Taiwan and the scientific data of the future estimation can be used for the phenomenological analysis and risk assessment

of the climate change, which provided the specific and substantial contribution and effects on the research of domestic disasters, hydrology, agriculture, public health, ecology and energy.

The data service system of TCCIP was officially online in March 2014 and the users could download the climate change data for free by completing the application process. By the end of June 2015, it served 5 research projects on average per month. The achievement of this plan covered the research project of the Ministry of Science and Technology, autonomous research of research units, and the related projects promoted by the central and local governments.

This plan established “Taiwan climate change projection and information platform” (TCCIP information platform <https://tccip.ncdr.nat.gov.tw>), to transform the scientific data to understandable illustration, provided climate data, information and knowledge in a simple and understandable way for users to realize. Publishing the “Scientific report on Taiwan climate change” to describe the physical phenomena and mechanisms of the climate change and clarify the meaning of the relevant scientific data; holding all types of data services and activities and providing the relevant data (including the meeting handbook, briefing and audio file) on the TCCIP information platform with agreement from speakers so people and the scientific community who were unable to participate in person could browse or download anytime. The professional analysis and scientific data could be the reference for the government to set the adaptive strategy for climate change. The illustration was the effective resource for people to obtain accurate climate change data. If people search the key words with “Taiwan, climate change” on google search engine, the homepage will show TCCIP website and “Scientific report on Taiwan climate change” directly which is easy to obtain the relevant information about this plan.

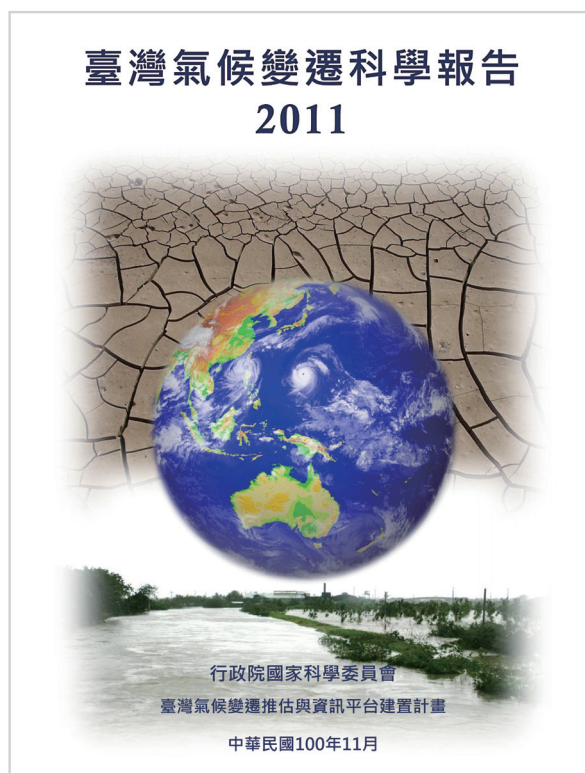
c. Vision for Future Development

The United Nations have appealed to the governments of all countries to continuously reduce the release of the greenhouse gases in order to reduce global warming, actively face the impacts caused by climate change and make proper adjustments. The Ministry of Science and Technology is devoted to research on estimation of climate change impacts for more than 20 years and even more actively promoted the integrated research on climate change recently. The National Science and Technology Center for Disaster Reduction was honored to organize the TCCIP plan and implement it. Much appreciation to the grant funds and instruction by the Ministry of Science and Technology as well as to the above stated agencies and academic & research units for

their participation.

This plan provided the latest research data of the domestic climate change and grasped the essential knowledge and experience through the interaction, communication and feedback from the users which would be the base to continuously promote the science service of climate change in the future.

We are very pleased to connect with the business affairs of the government branches through the implement of the TCCIP plan. The award we received this time represented the encouragement and expectation from the NCSD committee; we believe the Ministry of Science and Technology, the Technology Center for Disaster Reduction and all colleagues from the relevant academic & research fields will contribute more on the national conservation sustainable development.



▲ Scientific report on Taiwan climate change 2011

Appendix Members of the NCSD

Government Official Members		
Name	Position	Organization
Chuan Lin	Premier	The Executive Yuan of the Republic China
Jing-Sen Chang	Minister without Portfolio	The Executive Yuan of the Republic China
Jiunn-rong Yeh	Minister	Ministry of the Interior
Wen-Chung Pan	Minister	Ministry of Education
Chih-Kung Lee	Minister	Ministry of Economic Affairs
Chen- Tan HO	Minister	Ministry of Transportation and Communications
Tzou-Yien Lin	Minister	Ministry of Health and Welfare
Li-chiun Cheng	Minister	Ministry of Culture
Chi Hung Tsao	Minister	Council of Agriculture, Executive Yuan
Tain-Jy Chen	Minister	National Development Council
Ruey-Tsang Lee	Minister	Financial Supervisory Commission
Ying-Yuan Lee	Minister	Environment Protection Administration, Executive Yuan

Government Official Members		
Name	Position	Organization
Pao-Kuan Wang	Director	Research Center for Environmental Changes, Academia Sinica
Chung-Chin Lu	Professor	Institute of Electrical Engineering, National Tsing Hua University
Wang-ken Lin	Director	Taipei Urban Redevelopment Center
Sheng-Fong Lin	Professor	Institute of Architecture, Shih Chien University
Kuo-Ching Lin	Professor	Institute of Agricultural Economics, National Taiwan University
Lien-Siang Chou	Professor	Institute of Life Science, National Taiwan University
Shin-Min Shih	President	Taiwan Environmental Protection Union
Luis Ko	General manager	I-MeiFoods Co., Ltd
Lucy-Sun Hwang	Professor	Institute of Food Science and Technology, National Taiwan University
Ching-Lin Kuo	CEO	Anti-Nuclear Action Alliance of North Coast Taiwan
Angela Chang	Executive Director	Taiwan Circular Economy Network
Liang-Kung Chen	Director	Center for Geriatrics and Gerontology, Taipei Veterans General Hospital
Ai-Lin Chen	Executive Director	Fubon Cultural & Educational Foundation
SHIH-LIANG TU	Consultant	The World Bank (consultant)
Tien-Pen Hsu	Professor	Institute of Civil Engineering, National Taiwan University
Cheng-Tsung Huang	Chairman	Business Council for Sustainable Development(BCSD)
Jin-Hung Hwang	Professor	Institute of Civil Engineering, National Central University
Der-Ray Huang	Professor	Institute of Photonics, National Chiao Tung University
Vicky Yang	CEO	Cycling Life style Foundation
Eva Teng	Spokesperson	National Health Insurance Civic Surveillance Alliance
Omi Wilang	Presbyterian Church	Taiwan Indigenous Mission Committee Program secretary
Jyh-Cherng Shieh	Farmer	His Ran Foundation
Daigee Shaw	Professor	Institute of Economics, Academia Sinica
Huey-Jen Su	President	National Cheng Kung University

發行機關：行政院國家永續發展委員會秘書處
<http://nsdn.epa.gov.tw/>

地 址：100 臺北市中正區中華路一段83 號

電 話：(02)2311-7722 轉2200

傳 真：(02)2311-5486

總 編 輯：簡慧貞

副總編輯：曹賜卿

執行編輯：鍾寧心、楊峻維、張英華、游振煥、
彭暉鈞、劉秀鳳、詹靜蕙

美術編輯：致琦企業有限公司

英 譯：陳晏琳

製作單位：豐鐸環境科技管理股份有限公司

地 址：110 台北市信義區松德路6號5樓

電 話：(02)2723-0355

G P N：1010600373

出版日期：106年3月

Publishing Office：National Council for Sustainable
Development, Executive Yuan, Secretariat
<http://nsdn.epa.gov.tw/>

Address：83, Zhonghua Rd. Sec. 1, Zhongzheng
District, Taipei City 10042, Taiwan (R.O.C.)

Tel：886-2-2311-7722#2200

Fax：886-2-2311-5486

Editor-in-Chief：Hui-Chen Chien

Deputy Editor：Su-Chin Tsao

Executive Editor：Ning-Hsin Chung，Chung-Wei
Yang，Ying-Hua Chang，Chen-Huan Yu，Wei-Chun Peng，
Shelley Liu，Ching-Hui Chan

Art Editor：Jyh_Chyyi Enterprise Co., Ltd.

Translation：Teresa Chen

Production：Fusion Environmental Technology
Management Corp.

Address：5F., No.6, Songde Rd., Xinyi Dist., Taipei 110

Tel：886-2-2723-0355

2016 ANNUAL REPORT ON NATIONAL SUSTAINABLE DEVELOPMENT



行政院國家永續發展委員會 編印

**Published by National Councils
for Sustainable Development, Executive Yuan**