

2012

Annual Report on National Sustainable Development



Contents

Preface	71
<hr/>	
Chapter 1 Current Status and Achievements of NCSD in Taiwan	72
1.1 Meetings Convened	72
1.2 Participation in the 2012 United Nations Conference on Sustainable Development (Rio+20)	74
1.3 Evaluation Results of the 2011 Sustainable Development Indicators Announced	75
1.4 Sustainable Development Action Plan	76
1.5 Selection and Commendation of the 2012 National Sustainable Development Award	76
<hr/>	
Chapter 2 Summary of Working Group Achievements	77
2.1 Energy Conservation, Carbon Reduction and Climate Change Working Group	77
2.2 National Land and Resources Working Group	79
2.3 Biodiversity Working Group	82
2.4 Energy and Production Working Group	85
2.5 Transportation and Livelihood Working Group	87
2.6 Technology and Evaluation Working Group	89
2.7 Urban and Rural Development Working Group	91
2.8 Health and Welfare Working Group	93
2.9 Education and Promotion Working Group	95
<hr/>	
Chapter 3 Evaluation of Taiwan's Sustainability Indicators in 2011	99
3.1 Summary of Taiwan's Sustainable Development Indicators	99
3.2 Evaluation of 2011 Sustainable Development Indicators	101
<hr/>	
Chapter 4 2012 National Sustainable Development Award Recipients	102
<i>Education Sustainable Development</i>	
Longdu Elementary School of Meinong District, Kaohsiung City	102
Changkeng Elementary School of Bali District, New Taipei City	105
Hsingchung Elementary School, Chiayi County	108
<i>Sustainable Enterprise Award</i>	
Pegatron Technology Co., Ltd	111
O'right International Inc.	114
ZyXEL Investment Holdings Group	116

Contents

<i>Civic Sustainable Development Awards</i>	
Chinese Wild Bird Federation	118
Tainan County Black-faced Spoonbill Conservation Society	121
Cancer-no no Foundation, Taichung City	123
<i>Execution of Sustainable Development Action Plan Award</i>	
Forestry Bureau, Council of Agriculture: Promotion of Afforestation Programs	125
Taipei Feitsui Reservoir Administration: Feitsui Reservoir Sustainable Environment Green Reservoir Action Plan	128
Forestry Bureau, Council of Agriculture: Forest Environmental Education Resource Integration Promotional Platform Implementation Plan	131
<hr/>	
Chapter 5 The Participation of United Nations Conference on Sustainable Development 2012 (Rio+20)	134
5.1 Overview and Preparation	134
5.2 Major events participated in Rio+20	135
5.3 United Nations Conference on Sustainable Development and Related Activity	135
5.4 Conclusion and the Results of the Participation of Rio+20	137
5.5 Participation in the Side Events and Bilateral Talks	140
5.6 Post-Meeting work for the Executive Yuan Delegation	142
<hr/>	
Chapter 6 Words from Our Members	144
Completing Its Current Task to Become the Cornerstone of Taiwan	144
Playing the Role of Overseer and Guardian for the Government	145
The Concept and Practice of Sustainable Development	147
Sealing the Gap between “Ideals” and “Practices”	148
<hr/>	
Index	150
Appendix I Organizational Structure of NCSD	150
Appendix II The Members of NCSD	151

Preface

On 23 August 1997, the National Council for Sustainable Development (NCSD) was established by Executive Yuan to construct healthy sustainable homeland and pursue national sustainable development. Besides evaluating issues related to sustainable development, the NCSD completed important documents such as include the “Taiwan Sustainable Development Declaration,” “Taiwan Agenda 21,” and the “Sustainable Development Action Plan”.

Premier of the Executive Yuan, Sean Chen appointed the Deputy Minister of Environmental Protection Administration Shin-Cheng Yeh as the leader of the delegation of Executive to participate in Rio+20 in Rio de Janeiro. We shall not be absent in the Rio+20 held once a decade in June, 2013, as we are a member of global village. The participating Rio+20 details of delegation were reported in Chapter 5.

This year's annual report compiles the significant achievements made by public, private and civil sectors toward sustainable development in 2011. Topics covered in this edition include Current Status and Achievements of the NCSD (Chapter 1); Summary of Working Group Achievements (Chapter 2); Evaluation of Taiwan's Sustainability Indicators in 2011 (Chapter 3); 2011 National Sustainable Development Award Recipients (Chapter 4); the Participation of United Nations Conference on Sustainable 2012 (Chapter 5) and Words from Our Members (Chapter 6). The appendix provides a chronicle of important events related to sustainable development, the organizational framework of the NCSD and the names of council members.

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

Current Status and Achievements of NCSD in Taiwan

1.1 | Meetings Convened

1. Committee Meetings

The 25th National Council for Sustainable Development Meeting (hereinafter referred to as NCSD Meeting) was convened on 9 September 2011 and presided over by Executive Yuan Premier and NCSD Chairman Sean Chen. Participants at the meeting included government and civil committee members of the NCSD and representatives from various relevant agencies. Two themes were discussed at the meeting:

(1) the results and responses from the NCSD delegations participation in the 2012 United Nations Conference on Sustainable Development (Rio+20) and Promoting Low-carbon Sustainable Homeland (draft). Regarding the results and responses from the

NCSD delegation participation in the 2012 United Nations Conference on Sustainable Development (Rio+20), Premier Sean Chen stated: (1) The contents of documents from the 2012 United Nations Conference on Sustainable Development (Rio+20) must be further reviewed and analyzed and subsequently adopted into the nation's current sustainable development related documents and plans; (2) In congruence with international sustainability trends, a feasibility study for the nation's green economy promotion was drafted, and the efforts made at the last (34th) Working Meeting to form the Green Economy Task Force with the Council for Economic Planning



↑ The 25th NCSD Meeting was presided over by Premier and NCSD Chairman Sean Chen (middle).

serving as the convening agency and NCSD CEO Chi-ming Yin in charge of planning affairs are worthy of commendation. A Green Economy is a mindset and execution approach demanding effective promotion and implementation throughout all levels of government tasks and spheres of society; and (3)



NCSD CEO Yin Chi-ming (the third one from right) presided over the NCSD Working Meeting.

In regards to the United Nations Conference on Sustainable Development initiative to strengthen the United Nations Environment Programme's (UNEP) capacity through universal membership, the Secretariat is asked to study the definition of universal membership and continue tracking the possibility of participation.

- (2) Regarding the Promoting Low-carbon Sustainable Homeland (draft), Premier Sean Chen stated: (1) In accordance with the 184 items of action proposed in the Promoting Low-carbon Sustainable Homeland (draft), each unit is asked to evaluate and take inventory to determine which of those agencies currently possess the level of technical, economic, and administrative capacities for executing these items; and (2) Following up, the EPA is asked to invite relevant units to conduct studies and when needed coordinate and discuss matters at NCSD Working Meetings.

2. Working Meetings

Three NCSD Working Meetings were convened

on March 30, August 13, and December 4, respectively. CEO Chi-ming Yin, presided over the meetings and participants included government and civic committee members of the NCSD and representatives from various agencies.

- (1) The 33rd NCSD Working Meeting was convened on March 30. Two themes were discussed: framework for Promoting Low-carbon Sustainable Homeland and preparations for the NCSD delegation's attendance at the 2012 United Nations Conference on Sustainable Development (Rio+20) in Rio, Brazil.
- (2) The 34th NCSD Working Meeting was convened on August 8. Two themes were discussed: results of the NCSD delegation's attendance at the 2012 United Nations Conference on Sustainable Development (Rio+20) in Rio, Brazil and appraisal mechanisms for Promoting Low-carbon Sustainable Homeland (draft).
- (3) The 35th NCSD Working Meeting was convened on December 30. The theme discussed: participation in the Rio+20 voluntary commitments.

1.2 Participation in the 2012 United Nations Conference on Sustainable Development (Rio+20)

1. Attending the 2012 United Nations Conference on Sustainable Development (Rio+20)

The United Nations convened the decennial United Nations Conference on Sustainable Development (Rio+20) in June 2012 in Rio, Brazil. This summit included participation by 188 countries, three observing members, and 9,856 major groups. A total of

57 heads of state, 31 heads of government, 487 ministers, and 45,000 people in all attended the convention coming together to find resolutions for advancing global prosperity, reducing poverty, and promoting social equity and environmental protection. Two major themes were discussed: Building a green economy to achieve sustainable development and lift people out of poverty, and an institutional framework for sustainable development.

EPA Deputy Minister Shin-Cheng Yeh led the nation's 35-member delegation comprised of government officials from the Ministry of Foreign Affairs, the Council for Economic Planning and Development and Industrial Development Bureau of the Ministry of Economic Affairs, Council of Agriculture, Forestry Bureau, Ministry of the Interior, Urban and Rural Development Branch and National Parks, and representatives from various industrial and academic organizations. The city governments of Taipei City, Taichung City, and Tainan City, Kaohsiung City Environmental Protection Bureau, Environmental Quality Protection Foundation, Taiwan Institute for Sustainable Energy Research Foundation, and Taiwan Environmental Protection Union also sent participating members. Aside from attending Conference meetings, the delegation actively participated in side meetings and activities, and engaged in bilateral dialogue with numerous



UN Secretary General Ban Ki-moon presided over the meeting in Rio+20.

nations and international bodies. For more details, please refer to Chapter 5.

2. Follow-up Initiatives from Attendance at the 2012 United Nations Conference on Sustainable Development (Rio+20)

- (1) The delegation returned home and on July 5 attended the 3,305th Executive Yuan Cabinet Meeting and on September 11 the Premier presided over the 25th NCSD Meeting reporting the results of participation in Rio+20. The Premier indicated: The Secretariat of the NCSD is requested to further evaluate and analyze the contents of documents from the 2012 United Nations Conference on Sustainable Development (Rio+20) and adopt these initiatives into the nation's current sustainable development related documents and plans.
- (2) From July 22-23, the NCSD held the Follow-up Meeting of the 2012 United Nations Sustainable Development Conference (Rio+20) inviting industry and academic representatives, government agencies, civic organizations, and public citizens interested in sustainable development concerns to participate in discussions and exchange views with speakers. In addition to inviting representatives of government agencies and civic organizations to share their experiences

and provide suggestions at the Meeting, the Rio+20 The Future We Want—outcome document was also publicly introduced.

- (3) Following a review and analysis for adopting the Rio+20 The Future We Want—outcome document into the nation's current sustainable development documents and plans (Sustainable Development Action Plan, Sustainable Development Indicators, and Sustainable Development Policy Guidelines), the NCSD proposed preliminary recommendations that include: Each chapter will have a corresponding section on The Future We Want and the nation's Sustainable Development Indicator System will make recommendations (including recommendations for updated themes and indicators) corresponding to The Future We Want. Additionally, working meetings and relevant agencies were called together to address this matter, and following discussions

the government agencies in charge of studying and evaluating each chapter have been asked to explore the possibility of adopting relevant topics and amending the nation's sustainable development policies. Sustainable development working groups have also been requested to invite civic committee members to convene a Working Meeting that addresses the 283 articles in The Future We Want and to evaluate whether or not updates can be made to the action plan.

- (4) In response to trends towards greater green economy promotion worldwide, on August 13 the NCSD convened the 34th Working Meeting, putting forth a resolution for the Council for Economic Planning and Development to establish a Green Economy Ad Hoc Committee (Task Force) to serve as a convening agency to draft the nation's feasibility plan for promoting a green economy.

1.3 | Evaluation Results of the 2011 Sustainable Development Indicators Announced

- (1) As objective criteria to evaluate implementation results of the country's sustainable development efforts, the Secretariat of the NCSD announced the Sustainable Development Indicators (SDI) evaluation results. Indicator calculations for the 2011 SDI were calculated by the relevant computational authority in August 2012 and following evaluation and analysis an Annual Indicator Assessment Report (draft) was completed. These results were discussed at the Annual Indicators Assessment Meeting convened by the NCSD and after confirming the validity of each indicator calculation, evaluation result, and document content, the final results were announced on 31 December 2012 on the NCSD website.
- (2) The 2011 Sustainable Development Indicator

Assessment Report is categorized into 12 aspects: environment, energy conservation and carbon reduction, land and natural resources, biodiversity, production, livelihood, science and technology, urban and rural culture, health, welfare, governance, and participation. Each indicator's annual assessment results are organized by aspects, themes, indicator names, definitions, relevance to sustainable development, interpretation and analysis, annual data sheet, and annual trend graph. The announcement of the 2011 indicator assessment results consist of 12 aspects and 41 themes, and a total of 86 indicators. For more information, please visit the NCSD website at <http://nsdn.epa.gov.tw/CH/DEVELOPMENT/2011TAIWAN.HTM> .

1.4 | Sustainable Development Action Plan

Installation of the Sustainable Development Action Plan tracking management and data testing data system was completed, and relevant units were requested to receive structured educational training from August 9-10. Also, an online form can be filled out and posted on the NCSD information website to announce

Sustainable Development Action Plan tasks completed during the first and second half of 2012, providing a venue for everyone to view. For more information, please visit the NCSD website at <http://nsdn.epa.gov.tw/CH/DEVELOPMENT/DEVELOPMENT.HTM>

1.5 | Selection and Commendation of the 2012 National Sustainable Development Award

The 1992 Earth Summit/United Nations Conference on Environment and Development (UNCED) advocated the “think globally, act locally” concept to encourage more people to participate in sustainable development work. The 2002 World Summit (WSSD) ratified the United Nations Sustainable Development Action Plan to encourage all nations to action for the sustainable development of humanity. In congruence with global sustainable development trends, the NCSD encourages everyone to participate in sustainable development action plans. Since 2004, the NCSD has held the National Sustainable Development Award, screening and selecting those among various categories with exceptional

achievements in sustainable development action and providing award recipients the opportunity to share their experiences and further advance sustainable development throughout all spheres of society.

The National Sustainable Development Award is held to encourage public participation in sustainable development efforts. Through sharing and learning from experiences, the spirit of sustainable development reaches deep into the fabric of society and the daily lives of the people. The 9th annual 2012 National Sustainable Development Award ceremony was held this year with a three-phase selection process consisting of a written preliminary examination, field reviews, and the final selection. The four award categories

were education, corporation, civic, and sustainable development action plan implementation; and 12 winners were selected. The commendation ceremony was held at the main auditorium of the Executive Yuan on 6 December 2012 at 2 pm, and awards were presented personally by Executive Yuan Premier Sean Chen to commend exceptional achievements in sustainable development promotion. For detailed reports on each award winner, please refer to Chapter 4.



Premier Sean Chen presented the National Sustainable Development Education Award to the winner.

Summary of Working Group Achievements

2.1 | Energy Conservation, Carbon Reduction and Climate Change Working Group

1. Establishing greenhouse gas management infrastructure (EPA)

Promotional efforts in 2012 included: Completed first reading of the Greenhouse Gas Reduction Act (draft), and will complete due process by the Legislative Yuan; announcement of six air pollutants (CO₂ included), with priority on the emission of greenhouse gases reporting process by industries; announced amendments of the Principles Governing Promotion of Early Stages of Greenhouse Gas Exchange Plan, and processed 23 pilot cases, 22 exchange cases and 17 reduction method cases; announced the Code Format Governing the EPA Greenhouse Gas Reduction Amount, and processed 14 cases of volume reduction application; Implemented certification system of greenhouse gas and in total, one accreditation institution and nine

certification agencies had been approved, and completed the Technical Directions for Carbon Footprint Inspection of Products and Services; completed the Implementation and Announcement Directions for Carbon Neutrality, and established the Carbon Neutrality Management Platform; continued to promote voluntary inspection with 452 companies voluntarily submit inspection results; activated the National Greenhouse Gas Reduction Trading Platform.

2. Encouraging international participation

(1) Deputy Minister of the EPA, Mr. Tzi-Chin Chang, led a delegation of domestic representatives and experts to attend the United Nations Framework Convention on Climate Change 17th Conference of the Parties/Parties to the



↑ 2012 Taiwan Cycling Day held to promote cycling for carbon reduction.

Kyoto Protocol (UNFCCC COP17/CMP7). Representatives from Taipei City, Tainan City, Kaohsiung City, Taiwan Institute of Sustainable Energy (TAISE) and Environmental Quality Protection Foundation were part of the delegation.

- (2) Attended the UNFCCC COP18/CMP8.
- (3) Organized the 2012 5th International Workshop on Pacific Greenhouse Gases Measurement in September.

3. Expanding public participation

Four regional citizens meetings were held in east, southern, northern and central parts of the nation from 2011-2012; more than 1,300 participants attended these meetings, which focused on themes concerning national climate change. On 19 May 2012, the National Climate Change Symposium: World Cafe was held to facilitate exchanges of around 500 officials and civic representatives with regard to assembled themes. The Taiwan 20XX: Preparations for Taiwan in the Face of Climate Change symposium was held from 5 to 6 June; 300 participants gathered to deliberate on the short-, mid- and long-term policies and plans in response to climate change; President Ma Ying-jeou personally graced the occasion to listen to the summaries by the said representatives.

4. Integrating government agencies (CEPD)

The Council for Economic Planning and Development (CEPD) organized the Promoting Climate Change Adaptation Strategy Guidelines and Action Plan working group which completed draft of the National Adaptation Programmes of Action (NAPA); completed drafting of the National Climate Change Adaptation Policy Guidelines; completed drafting of the National Climate Change Adaptation Public Education Plan and promoted formulation of regional implementation plans; Taipei City and Pingtung



↑ EPA Minister Stephen Shu-hung Shen gave the opening speech in World Cafe.



↑ The World Cafe held by EPA.

County were selected in 2012 as demonstrations.

5. Counseling the greenification of industries (MOEAIDB)

- (1) 1,110 cases of volume reduction measures were implemented by 241 enterprises through participation in the Ministry of Economic Affairs (MOEA) voluntary emission reduction agreements in 2012; a total of NT5 billion was invested and 1.18 million tonnes were reduced, giving a derivative economic benefit of NT4.8 billion.
- (2) Energy conservation and carbon reduction technical consultation and guidance were provided to the manufacturing industry through a professional team. One thousand two hundred and fifty improvement plans were made to 388 factories over a span of 1,800 consultation cases in 2012. Foreseeable reduction of CO₂e is estimated at 160,000 tonnes.
- (3) Eleven localized reduction measures were developed in 2012, and nine enterprises were incorporated as part of the demonstrations

of greenhouse gas trade-off plan, with an estimated access to 840,000 tonnes of CO₂e quota (a ten-year period); organized training courses for low-carbon industry professionals, and through development of diagnostic tools, organizing of energy reduction and carbon conservation accomplishment demonstrations, as well as matching of industry-based reductions, the positive effects of such reductions can be enhanced.

- (4) Promoted green buildings to support energy conservation and carbon reduction (ABRI): 347 cases of green building marks and candidate green building certificates were passed as of end of September 2012. One hundred thirty-five point eight million kw of power, 4.64 million tonnes of water and 69,700 tonnes of carbon emission were estimated to reduce annually.
- (5) As of 25 October 2012, 36 cases of inspection and registration cases were conducted through telephone inquiry of enterprises under assistance. This was coupled with inspection of underlying statistics of on-site quality. Around 50% of the energy industry was registered. As of mid-November 2012, the registration rate achieved the set goal of over 95%.
- (6) Completed document inspection, on-site inspection and verification of inspection quality statistics of ten energy-industry related enterprises (venues), and conducted discussions of said statistics in accordance with ISO14064-1 regulations.
- (7) Gradually enhanced automobile and motor-cycle energy efficiency standard; a full-

scale implementation of enhanced energy efficiency standard (10% increase) began in force in 2012; the new phase of such increase (15%) will be in force in 2015, for a total of 25% increase in efficiency. An expert consultation meeting was held on 13 September to gather expert opinions on the next phase of automobile energy consumption management and standard, and to provide legislative reference for automobile energy consumption standard. A press conference was held on 24 October 2012.

6. Promoting green LOHAS and low-carbon transportation (EPA)

- (1) Based on statistics of government agencies, civic corporations and green shops, a total of NT13.5 billion was spent on green consumption as of end of October 2012; The Tourism Bureau of MOTC organized the 2012 Taiwan Cycling Day, cycling and tourism events to promote cycling in Taiwan.
- (2) An environmental protection low-carbon platform was established and 4,363 activities were registered thus far; New Taipei City, Taichung City, Tainan City and Yilan County piloted such low-carbon measures. On 9 June 2012, the EPA and Kinmen County jointly activated the Green Energy and Low-Carbon Transportation System Master Plan – to actualize city-level greenhouse gas inspection and registration; in 2012, Taichung City and Yilan County were selected as demonstration sites to conduct on-site inspections.

2.2 | National Land and Resources Working Group

1. Water resource development, utilization, management and conservation (Water Resources Agency, MOEA)

- (1) Promoted Zhongzhuang Retention Basin project: Work commenced on 3 June 2012 and is scheduled for completion in June 2015. The project will create a 4.92 million-

cubic-meter retention basin that provides timely backup during times of high turbidity the Yuanshan Weir, and support for Shihmen Reservoir during water resource allocation mechanism. The retention basin will provide backup to water resources and steady water supply to the region.

- (2) Promoted management of Tsengwen, Nanhua and Wushantou reservoirs and stabilized water supply for the southern region: suppressed sand collection of 9.9 million m³ at the watershed area, reclaimed 260 hectares of national rental land of the Forestry Bureau, reduced sludge accumulation of approximately 1.56 m³ at the Tsengwen Reservoir watershed area, removed 69,000 tonnes of driftwood at Tsengwen Reservoir and 33,000 tonnes at Nanhua Reservoir; a total of 701,200 m³ of sludge were reduced at the aforementioned reservoirs.
- (3) Sustainable Environment and Green Reservoir Action Plan for Feitsui Reservoir (Taipei Feitsui Reservoir Administration): Implemented self-developed Precipitation Prediction Method to predict water levels at reservoirs, adopting a 10-days-based progressive inspection method to stabilize water supply to the greater Taipei area.

2. Conservation and management of underground water resources (WRA)

- (1) Strengthened underground water management and prevention of land subsidence: land mass that suffered subsidence was reduced to 534.4 km², and the trend had been alleviated.
- (2) Strengthened underground water recharge and nurtured underground water environment: Completed underground water recharge facilities for Zhuoshui

River, with an estimated 40.88 million tonnes of water recharged at the Changhua and Yunlin area; continued to encourage local governments in strengthening underground water patrols and successfully averted the setting up of 51 new wells, blocked 100 existing wells and blocked 501 illegal wells.

3. Sustainable management of maritime resources (Fisheries Agency)

Public announcement of a classification system for maritime protection zones on 8 June 2012, divided into 3 categories: prohibition from entering or influencing, prohibition from harvesting and multi-purpose zone.

4. National land planning and management (CPAMI)

- (1) Promoted legislation of the National Land Planning Act: Review of the entire act in collaboration with pertinent agencies and local governments was completed; the Act was deliberated by the Executive Yuan on 31 October 2012.
- (2) Established a comprehensive national land monitoring system: In 2012, four phases of land utilization change detection, non-urban land development plan change detection and phase two coastline change detection were organized.



⊕ Zhongzhuang Retention Basin project.

- (3) Satellites were used to conduct plain change detection (SWCB): Five plain detection tests were completed and results were uploaded to the Plain Management Information System.
- (4) Current survey and evaluation of landslide potential rivers (SWCB): In 2012, 290 evaluations of landslide potential rivers were scheduled; as of the end of June, 123 such surveys were completed.

5. National Land Conservation Area

- (1) Overall mountain conservation and disaster prevention plan (SWCB): 36 cases of land remediation for landslide were organized, covering a total of 15 hectares of remediated land in 2012.
- (2) Treatment plan for flood-prone areas (WRA): 405 km² of land had been treated as of the end of June 2012.

6. Integrating regional areas to be in line with the international community, and promoting wetland ecological remediation (CPAMI)

- (1) Assisted local promotion of key national wetland action plan and management of operations: The Taiwan Wetland's Ramsar Citizen focused on the maintenance of wetland ecological stability and diversity, wise use of wetland resources, remediation of wetlands, and cultural interaction and legacy with surrounding communities. The plan collaborated with the Forestry Bureau, WRA, EPA and MOE in the management of wetlands; local governments, academic institutions and local environmental groups were included as well. NT92.7 million were budgeted for cross-ministerial collaborations in 2012; in particular, the Ministry of the Interior invested NT33.8 million in assisting 16 county and city governments in implementing 27 projects, including the investigation, planning, design, ecological facilities, monitoring, patrol



⬇️ Cross-ministerial promotion of key national wetlands.

and education of the public pertaining to the maintenance and remediation of wetlands.

- (2) Strengthened international exchanges and cooperation: From 14 to 22 April 2012, three international experts were invited to Taiwan to conduct one keynote speech and two international exchange workshops on wetland conservation. In addition, delegation from Taiwan was sent to Orlando, USA to participate in the 9th INTECOL from 1 to 10 June.
- (3) Established Wetland Sustainability Act and Management System: The Wetland Conservation Act draft was sent to the Executive Yuan on 30 March 2012. The Act contains 8 chapters and 42 articles.



⬆️ In June 2012, Delegation from Taiwan we sent to Orlando, USA to participate in the 9th INTECOL.

2.3 | Biodiversity Working Group

1. Hotspot investigation and confirmation of land and maritime biodiversity possibilities

Green Island, Dongsha, Lanyu, Kenting and Nansha are hotspots for Taiwan's maritime biodiversity. The National Science Council (NSC) promoted an integrated plan in one of the regions in terms of investigation and monitoring; the MOI executed Hotspot Investigation and Confirmation of Land and Maritime Biodiversity in Kenting National Park, and the Kenting National Park Headquarters had six research projects pertaining to biodiversity in 2012; the results were abundant. The Taiwan Endemic Species Research Institute (TESRI) of the COA analyzed hotspot distribution of Taiwan's land organisms and conducted porosity analysis in the protected

regions using a geographical information system and spatial distribution prediction model.

2. Twenty percent of maritime region incorporated as Protection Region prior to 2020 (Fisheries Agency)

The Fisheries Agency is responsible for the announcement and promotion of our country's maritime protection classification system. Two cross-ministerial coordination meetings were held on 27 April and 17 May, and reached the resolution that respective maritime competent authorities for the protection of the ocean should formulate their annual protection plans; the decision was unanimous among the competent authorities and scholars; there will be three classification categories, designated upon the



↑ Vice President Wu presented the logos of classification of maritime protection zones.

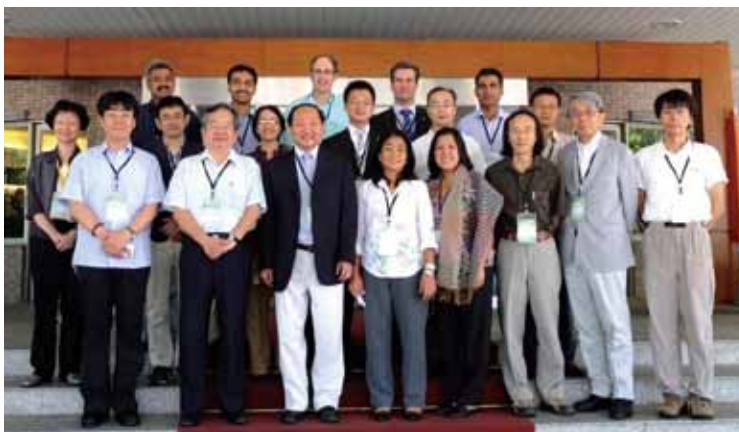
level of maritime protection:

3. Strengthening the establishment of dichotomy for the compilation of Taiwan's various animals, plants and microorganisms catalogs (NSC)

Ten catalogs of Taiwan's animals, plants and microorganisms were completed and published in 2012. Works will be directed toward the strengthening of species research, verification and classification; preliminary tasks were completed regarding the features description and index of Taiwan's odonata larvae. Twenty-five species of Isoetes on the brink of extinction were measured and cataloged based on their previous distribution and population.

4. Strengthening research on changes of indicative animals, plants and Microorganisms (NSC)

Seven cases of pertinent research plans were subsidized. The TESRI chose birds as indicator, and expanded the scope, built long-term monitoring systems and regularly announced indicative monitoring reports with regard to endangered bird species, breeding bird species, wetland bird species and invasive bird species. Pertinent plans include Breeding Bird Survey Taiwan, Monitoring Avian Productivity and Survivorship Program (MAPS Taiwan) and AIS Stop.



2012 Asia-Pacific workshop on sharing biodiversity information and the Integrated Publishing Toolkit (IPT2).



the rescued sea turtle moves toward the ocean.



The TESRI personnel moves away the invasive bird Black-headed Weaver's nest.



The invasive species *Bidens pilosa* var. *radiata*.



The Chigu sandbank changed over time toward the direction of land.

5. Establishing National Biodiversity Model Resource Center (NSC)

Established a National Biodiversity Model Resource Center for conservation and utilization of the genetic resources of agriculture, forestry, fishery, husbandry and wildlife animals and microorganisms; continued the maintenance of operation and services for agriculture model resource center, Taiwan microorganism knowledge database and fungi barcoding database.

6. Maintaining and upgrading the Information Management System of biodiversity monitoring

The EPA organized the Environmental Resources Database Integration Plan in 2012; TESRI edited over 150,000 entries for the database, including Taiwan Bryophyta Resource Investigations and Information Establishment and Application,

Unique Lithocarpus Sample and Breeding Bird Species Investigation BBS Taiwan; continued to operate Taiwan Biodiversity Network (TBN).



Taiwan Biodiversity Network (TBN).

7. Regular monitoring and evaluation of land, wetland and maritime biodiversities every three to five years

The EPA conducted detections for heavy metals and pollutants of environmental water, sludge and organisms of three wetlands: Chiayi Aogu Wetland, Haomeiliao Wetland and Budai Salt Pan Wetland; BBS Taiwan investigation led by TESRI encompassed a large-scale and long-term monitoring, with an expected annual data entries of over 40,000.

8. Establishing directory (NSC)

Established a list of domestic and foreign invasive species, analyzed ecology, economic defects and management strategies; established a list of international high-risk invasive species and formulated preventive measures.

9. Evaluative capacities and management system of the impact on biodiversity through the establishing and implementing of biotechnology research and derivative products (NSC)

Formulated a list of priorities for the remediation of inferior environments; inferior environments will be actively remediated by the EPA, CPAMI,



The rehabilitation results of National Important Wetlands.

Transplanting finger corals.

Taiwan Area National Freeway Bureau and Directorate General of Highways. As of 16 October 2012, 162 lots of land spanning 23.8 hectares of farmland were deemed polluted in accordance with soil contamination control standards. The MOTC conducted inferior environment remediation along the national highways.

10. Promoting the establishment of artificial wetlands to improve the quality of hydrological system and aquatic ecology

The WRA assembled international drainage manuals and standards, and the EPA continued to promote on-site water purification treatment facilities; as of the end of September 2012, 106 on-site treatment venues were completed,

covering an area of 529 hectares that is capable of treating 840,000 tonnes of polluted water daily, with a maximum reduction of 24,000 kg of BOD (biochemical oxygen demand). MOI's Taiwan Wetland's Ramsar Citizen focused on

the maintenance of wetland ecological stability and diversity, wise use of wetland resources, remediation of wetlands, and cultural interaction and legacy with surrounding communities as its objectives.

2.4 | Energy and Production Working Group

1. Promoting energy integration of industrial parks (MOEAIDB)

- (1) Eight green factory marks were processed in 2012. The group provided demonstration assistance to 3 green factories and 20 cleaning companies; assisted in meeting green building and clean production standards for those companies applying for green factory mark.
- (2) From 2009 onward, 13 industrial parks were selected as energy integration pilots; 190 items of energy integration were completed thus far; an annual integration of 2.98 million tonnes was planned.

2. Invigorating measures for agriculture (COA)

- (1) **Promoted agricultural business zones and advanced better utilization of farmlands:** 14 business zones were established nationwide that covered 3,500 hectares; the farmlands were rented by farm associations and farmers that aid young farming business people into production.

- (2) **Established agriculture central satellite system:** Assisted farm associations in popularizing local unique products, established a value-added platform for the industry, and integrated a stable supply-demand relationship among the farmers.

- (3) **Priority for corn and grain crops in the restoration of fallow lands:** Promoted crop rotation and planted around 72,000 hectares of corn. Twenty thousand hectares of land were soiled with organic fertilizers in 2012, and 80,000 tonnes of organic fertilizers were subsidized to farmers.

- (4) **Counseled marketing classes and industrial group purchases in adopting land separation, age category and batch production model, as well as automatic feeding systems to increase production efficiency:** 12 rounds of land separation, age category and batch production model symposiums were held from January to September 2012.

- (5) **Maintained poultry marketing balance with a 80% market share of domestic poultry; implemented husbandry farm registration and management:** More than 2,000 incidents of husbandry farm registration and inspection conducted by the COA in 2012.

- (6) **Promoted CAS label products:** Four accreditation agencies were certified by the COA and responsible for the testing of 15 food



↑ The Bi-Sha Fishing Port (Keelung) started on 21 September 2012.



↑ The fishing patrol boat inspects on ocean against illegal fishing.

items such as meat, frozen food, grain, eggs, water, dairy and forestry products.

(7) Improved production and operation environment of agriculture leisure areas and environmental greenification: As of 16 October 2012, 71 agriculture leisure areas were planned. From January to August 2012, the areas attracted more than 6 million people.

(8) Encouraged farmers in lifelong learning, organized Farmers' Institute to develop current and new farmers, implemented a systematic development and nurturing system, promoted testing and certification system of professional abilities, and strengthened professionalism of farmers.

(9) Provided technical support for on-site investigation and information gathering for DOIE (Department of Irrigation and Engineering): Assisted and counseled grassroots personnel of DOIE in constructing around 330,000 hectares (6,410 lots) of cadastral maps; promoted GIS technology for DOIE, established irrigation geographical database for DOIE, developed DOIE Web GIS; established comprehensive irrigation water monitoring network to improve irrigation water quality passing rate.

(10) Converted harbors to modern harbors that embrace both industry and leisure: As of September 2012, 730,000 people traveled to the ocean for recreational purposes; established specialized sea water supply drainage facilities and as of September 2012, 13 projects were approved. In 2012, around 2,439 fishing boats were equipped with VMS to assist in the monitoring of fishing boat operations.

3. Advocating energy conservation and carbon reduction to improve energy efficiency (MOEABOE)

(1) Counseled SMEs and business districts to

implement energy conservation and carbon reduction: In 2012, the BOE assisted 120 SMEs and 5 business districts in reducing energy consumption; 10 chain stores were provided with diagnostic services in terms of overall energy efficiency.

(2) Completed research, demonstration and 3E (economy, efficiency and effectiveness) evaluation plan for hydrogen fuel cell motorcycle certification and monitoring system: 2.5 years were spent on the successful completion of the world's first hydrogen fuel cell motorcycle certification system. Currently, Taipower estimates the completion of 23,600 AMI establishments by 2013.

(3) Promoted the use of electric motorcycles: Chianan Center provided four electric motorcycle battery swapping service stations in its administrative district from 7 July 2012 onward; Taipei Center had nine such stations at petroleum stations, which were operated by CityPower Corporation.

(4) Encouraged the establishment of renewable energy by corporations and individuals: Promoted the simplification and de-regulation of solar power applications, and results of amendments will be announced. Established industry certification platform to strengthen demonstration and broaden practical application: provided one-test-multiple-certification service for domestic solar power module owners; demonstrated the country's first professional large-scale outdoor solar



↑ The first large-scale solar power battery lifespan testing platform.

power battery lifespan testing platform on 11 April 2012.

(5) Promoted Low-Carbon Island Plan for Penghu, developed off-shore wind power resources: Announced measures governing demonstrations and evaluations began for industry owners. Winners will be announced by January 2013; three offshore wind power development sites will be awarded based on the plan.

(6) Voluntary energy reduction participation from corporations: Facilitated 31 enterprises from the finance, catering and shoe

industries to participate in voluntary energy reduction. Promoted energy efficiency classification labels and completed draft for Energy Efficiency Classification Label System: 9,577 product models were registered and managed based on the Energy Efficiency Classification Label System.

(7) Innovative application of LED lighting, developed LED modules and AI-control systems: Application and promotion of LED people-based lighting system; improved and designed people-based sensory flat-panel source.

2.5 | Transportation and Livelihood Working Group

Accomplishments of traffic and transportation related tasks by the MOTC included:

1. Promoting public road and transport development plans

- (1) Subsidies were provided to public transport of 15 counties and cities and public routes operated by the Directorate General of Highways, MOTC; altogether, 957 routes were subsidized with an amount of NT1.102 billion.
- (2) 388 buses were replaced by new ones for the public transport and public routes at certain counties and cities in 2012; another 143 low-floor buses were added as part of the operation.
- (3) Assisted Keelung City, Kaohsiung City and Chiayi County bus service operators to establish multi-card checking machines and related hardware; besides Hualien, Taitung and Matzu regions, bus services in all regions had an electronic ticket system established. In addition, ticket incentives were provided to non-contact electronic tickets.
- (4) Operation conditions of highway and city bus services were evaluated on a regular, fair and open basis.



↑ EMU of Taiwan Taoyuan International Airport Access MRT System.

- (5) Encouraged upgrading of old taxis by providing NT30,000 subsidy to each purchase of a new taxi. The EPA added another NT10,000, making the total subsidy up to NT40,000.

2. Continuing to promote railway transport construction and upgrading services

Railway Reconstruction Bureau, Bureau of High Speed Rail, Taiwan Railways Administration and Department of Railway Transit Systems actively promoted pertinent construction of railway transportation, including connection of metropolitan railroad, rail transportation of metros, improving rail transportation services,

molding energy conservation stations, continuing promotion of metropolitan public metro system, speeding construction of THSR stations in Miaoli, Changhua and Yunlin.

3. Organizing demonstration plan for Eastern bicycle path networks

The Eastern Bicycle Path Networks Demonstration Plan in Response to Energy Conservation and Carbon Reduction was promoted in the eastern Taiwan region. As of the end of 2012, 627.7 km of path had been planned, and can reach a total of 1,136km of path with the inclusion of routes from other subsidized agencies. A 2012 Taiwan Bicycle Festival series of events was held from 10 to 18 November 2012.

4. Integrating environmental protection and ecological road projects

- (1) Widened Wugu to Yangmei section of National Highway 1: After completion of the project, transportation speed and benefits of Daxi 5 Viaduct will be enhanced.
- (2) Completion of National Highway 2 Widening Project – transportation infrastructure of Taoyuan Aerotropolis's connection: the project was completed on 27 May 2012.

5. Establishing pan-Taiwan smart transportation system

To facilitate the general public with the latest traffic information, the IOT and TANFB respectively organized the Traffic and Transportation Service Center, and internet management system for

highways and freeways.

6. Completing offshore harbor construction plan

Provided safer maritime transportation between Taiwan and Matsu islands. Addition of Floating Harbors for Kinmen Services Project finished inspection and began operation on 24 May 2012.

7. Advancing road traffic safety education

The Road Traffic Safety Inspection Committee formulated three main themes of motorcycle accident prevention, accident prevention for the elderly and DUI accident prevention for the year 2012. Main tasks included: strengthening road traffic project facilities and management planning, strengthening and improving effectiveness of road traffic safety seminars, tightening the regulation of road traffic safety, providing more diverse ways of promoting community and school road traffic safety education.

8. Promoting ecotourism

Administration offices of the Tourism Bureau at various scenic areas organized beach cleaning, planting and wetland remediation (South west Coast); in addition, ecotourism (Matsu) and construction of green buildings at tourism centers (Matsu – Nangan Tourism Center) were adopted.

9. Improving weather forecast and earthquake detection capabilities



⬆ The pond recovery of Widened Wugu to Yangmei section of National Highway 1.



⬆ Magong Airport - BIPV (Building- integrated photovoltaic) demonstration project.



⬆ Provincial Highway Disaster and Traffic Information APP.

- (1) Implemented the Establishment Plan for the Monitoring and Reporting of Severe Weather, and Sea Weather Prevention Technology Research Plan.
- (2) Organized renewal and addition of precipitation automatic detection system in Yunlin, Chiayi, Tainan, Kaohsiung and Pingtung area.
- (3) Established a new generation seismic observation network and completed 8 underground seismic detection stations; altogether, 30 such stations were completed.
- (4) Earthquake and geophysical monitoring system enhancement plan: In 2012, 63 geophysical database management system stations, 3 structural strong-motion systems and 19 global positioning monitoring systems were upgraded. After the upgrade, monitoring system efficiency of seismography and global satellite positioning monitoring system was improved, giving better quality of monitoring information.

10. Strengthening disaster prevention system for railways, road and bridges

- (1) TRA Linbian River Bridge improvement plan completed transfer and station activation work on 10 January 2012. The plan reinforced flood prevention plan and improved regional drainage, thereby alleviating traffic problems in 5 railway level crossings in Linbian area.
- (2) Implemented prevention mechanism for road disasters: 229 preventive road blocks had

been in place as of 6 September 2012; 148 of those blocks avoided road slides, demonstrating the effectiveness of such mechanisms.

- (3) Improved shock reinforcement for highway bridges: The plan is currently in its second phase since its inception in 2010; 336 bridges were reinforced, with NT7.7 billion in budget. As of the end of 2012, reinforcement designs for 278 bridges were commissioned and completed, and 40 such bridges were reinforced.

11. Introducing environmental management system for the aviation industry

Taipei International Airport established its Environmental Management System in early 2012. Ninety-one items that encompassed environmental management mechanisms such as aviation noise, exhaust fumes, energy consumption, water resources, waste and community protection were completed through the Discernment and Evaluation of Environmental Considerations for the Taipei International Airport.

12. Promoted Central Corridor of Magong Airport – BIPV (Building-integrated photovoltaic) motorcycle parking lots demonstration project.

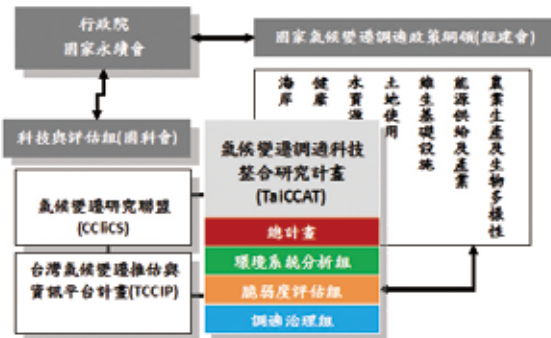
Over 5,000 m² of solar power panel established at Magong Airport, providing solar power into usable electricity for the airport.

2.6 | Technology and Evaluation Working Group

1. Taiwan Climate Change Projection and Information Platform

The Taiwan Climate Change Projection and Information Platform (TCCIP) initiated by the NSC provided the following functions: strengthening analysis and forecast capabilities of climate change; establishing downscaling

key technologies; applying weather information to conduct disaster impact risk evaluation; integrating climate information and downstream application capabilities; conducting climate change cross-discipline research and application. The following provided key accomplishments of climate information application and services:



↑ The status of Taiwan integrated research program on Climate Change Adaptation Technology (TaiCCAT).

(1) Information platform and provision of information:

The TCCIP was established by the end of 2010; more than 13,000 hits were registered as of October 2012. The value-added information of observation data and climate change forecast provided timely information services to the academia and ministries in terms of research data and adjustment strategies.

(2) Information application explanations:

The Workshop for Instruction in Taiwan Climate Change Scientific Report was held on 25 October 2012, to demonstrate the characteristics of climate data and restrictions of application to members of the CPAMI's National Climate Change Adjustment Policy Guidelines and Action Plan, and Local Climate Change Adjustment Plan. The meeting helped promote the reaching of consensus between the central and local governments, of which adjustment strategies and actions plans were realized.

(3) Climate Change in Taiwan: Scientific Report (Summary) :

The 67-page English version of the 2011 Climate Change in Taiwan: Scientific Report publicized Taiwan's efforts on climate change research to the international community.

2. Establishing, maintaining and integrating TaiBIF and GBIF

The Biodiversity Research Center, sponsored by

the NSC and COA, established the TaiBIF, TaiBNET and TaiEOL. The objective was to gather and assimilate cross-ministerial biodiversity information; at the same time, international standards for database labeling, information communication coordination and software tools were utilized. Exchanges with GBIF, Catalogue of Life and EOL provide substantial international exchanges. Pertinent accomplishments were summarized as follows:

- (1) Chairman and general affairs members of the 3rd GBIF were elected. The committee agreed to assist the Taiwan Forestry Research Institute in conducting AP-BON work, with the objective of establishing CT-BON and T-BON.



↑ Taiwan Climate Change Projection and Information Platform (TCCIP).



↻ Workshop for Instruction in Taiwan Climate Change Scientific Report.

- (2) TaiBIF is one of the national nodes of GBIF, which is responsible for promoting and integrating biodiversity information of Taiwan with the international community. After introducing Darwin core, TAPIRE and IPT, a cross-ministerial information infrastructure is complete. It integrated most of herbarium information and ecological investigation information of agencies. Currently, the TaiBIF website provides access to 18 providers, 40 information collections and 1.62 million entries.
- (3) Biota Taiwanica (<http://biota.taibif.org.tw/>) has an English version that explicates Taiwan's indigenous animals and plants. The website is developed using LifeDesks platform of EOL. Thus far, 6,961 kinds of public species information, 3,751 types of explanations and 5,236 pictures are available.
- (4) Catalog of the TaiBNET thus far included: 466 viruses, 1,440 bacteria, 6 archaea, 1,361 protozoa, 1,930 chromista, 6,229 fungi, 8,335 plantae, 36,303 animalia. In total, there are 1+7 kingdoms, 59 phylum, 143 class, 668 order, 3,194 family, 18,125 genus and 56,075 effectives' species. Further, there are 64,859 alternative name entries. In effect, TaiBNET includes most of the living organisms in the Taiwan region, and more are being added continuously.



↑ TaiBIF's website, manual, and related web pages.

- (5) Erick Mata – CEO of TaiBIF and EOL – utilized opportunities at international symposiums in Taiwan to facilitate preliminary cooperative agreements. Academia Sinica and the Smithsonian Institution signed a 2-year MoU (until August 2014). The plan will continue to provide English explanations of collected organisms to EOL.
- (6) TaiBIF and Taiwan Forestry Research Institute jointly hosted 2012 Asia-Pacific Workshop on Sharing Biodiversity Information and the Integrated Publishing Toolkit (IPT2) at Jiji Endemic Species Center from 25 to 27 June 2012 to promote improvement of information sharing format and use of new information announcing platform.
- (7) The 4th GBIF Asia Node Committee Meeting was hosted from 28 to 30 June 2012. Consensus of the meeting was to compose one action plan for the entire Asian region.

2.7 | Urban and Rural Development Working Group

1. Water resource development, utilization, management and conservation (Taiwan Water Corporation)

- (1) Lowered water leakage rate and stabilized water supply plan: From 2012 to 2013, 1,216km of water pipes were replaced: in particular, 852km of those were replaced in 2012, with the remaining 364km to be replaced in 2013.
- (2) Accelerated water leakage reduction plan: Established 500 district metered network prior

to 2012; an additional 200 district metered networks to be built in 2012.

2. Sewage system development (CPAMI)

- (1) Fourth phase of Sewage system development: NT11.2 billion set aside for the project, which was handled by the CPAMI and various county and city governments.
- (2) Strengthening own sewage system technology and recycle sludge resources and volume

reduction: A Sewage Sludge Recycling Feasibility Meeting for the nation was held on 25 May 2012 on a nationwide scale; on 6 and 8th June 2012, preliminary planning was done at Tainan and Taichung City Governments. After confirmation of the aforementioned feasibilities, considerations will be taken into account in the setting up of sludge treatment plants.

3. Urban and rural sustainable development (CPAMI)

- (1) Promoted government-led urban renewal projects: From 2005 to September 2012, 206 demonstrate sites were subsidized, and preliminary invitation to bid works was formulated: early phase planning, urban change plan and urban renewal plan. Currently, 150 urban renewal demonstration sites are in progress of being developed; in particular, 12 of those sites are self-managed by pertinent agencies; 12 sites are in the bidding process; 78 sites are in the preliminary invitation to bid stage and 48 sites are still at the early planning phase.
- (2) Assisted private participation in urban renewal: To strengthen and accelerate urban renewal, the Urban Renewal Industry Action Plan (2011-2014) was proposed and approved by the Executive Yuan; the plan aims to enhance residents' willingness to participate in urban renewal through loosening of regulations, providing subsidies, lowering interest rates, providing education training and assistance from professional teams; a counseling window was established to provide consultation services of pertinent regulations; a consultation mechanism was established to provide support to applications. The EPA invited assistance from relevant agencies and local governments to form a coalition consultation working group; the group actively invite pertinent competent agencies

to assist in problem-solving and facilitate cross-ministerial coordination at various stages of the plan. This measure accelerated the urban renewal process.

- (3) Demonstration Plan of Coastal Line Remediation and Landscape Improvement: Budgets were allocated annually; competitive evaluations allowed county and city governments to conduct coastal area reduction, remediation and environmental cleaning tasks. These measures maintained the natural form of coastal lines and improved the coastal landscapes. Two hundred and twenty-four hectares and 32,000 meters of coastline environment had been improved, and nearly 3,100 meters of natural coastal line has been remediated. In 2012, 8 projects from 7 direct municipalities, county and city governments were approved and subsidized, with a total budget of NT26.5 million.
- (4) Created a natural environment for rivers (EPA, WRA): Actions began from 2012 onward to guide local governments in formulating timely management plans and systematically improve water quality of river basins. Pollution inspection control and remediation were targeted toward pollution hotspots, and invigoration of riverside environment was targeted toward river basin highlights. Weighted pass rate for dissolved oxygen concentration level of 11 key rivers (greater or equal to 2 mg/L) reached 91.5% as of October 2012.

4. Green building for eco-cities (CPAMI, ABRI)

- (1) Encouraged public green building design and improvement demonstrations: At least 15 cases of green building diagnosis and improvement evaluation services were commissioned to the general public.
- (2) NT21.95 million were allocated for the year 2012 to assist 18 direct municipalities and

county/city governments and designated competent architecture agencies to promote green buildings. As of June 2012, 240 cases of green building label and candidate building certifications were completed.

- (3) Organized on-site tour at green building demonstration venues.
- (4) Building materials mark evaluation: 94 marks were passed as of June 2012.
- (5) Organized green building renewal diagnosis and improvement plan: 36 improvement cases were organized in 2012.

5. Enhancing living environment (ABRI)

- (1) Established a real-estate information platform: Completed the construction of such a platform.
- (2) Promoted functionality evaluation mechanism for households.
- (3) Promoted barrier-free household evaluation: 91 congregate housing projects signed up for the event.
- (4) Organized earthquake-resistant building mark evaluation: There were 23 consultation cases, of which 8 cases were first-time applicants.

2.8 | Health and Welfare Working Group

1. Protection for the weak and actualizing welfare measures (MOI)

- (1) From 1 January 2012 onward, NT2,500 to 5,000 subsidies were provided to parents looking after toddlers (less than 2-years-old) on their own, with approximately 142,000

people benefiting from this measure. Annuity payments and basic guaranteed amount for the elderly was adjusted to NT3,500. Annuity payments and basic guaranteed amount for the disabled was adjusted to NT4,700.

- (2) Promoted Pilot Plan for Enhancing Child



2012 Cross-Strait Conference on Cancer Prevention and Control.

Protection Alert Quality, and developed appropriate manuals for domestic alert personnel; child protection structure strategic model evaluation tool pilot plan introduced structured decision making (SDM) model common in children protection system in countries such as the US and Australia. The model aimed to establish a standardized, structured decision-making strategic model to ensure that qualities of social workers for children reached a certain level.

- (3) Ten Year Hospice Plan began on 1 April 2008 and had looked after 100,000 elderly as of October 2012. The plan cared for more than 25% of all disabled elderly, a significant increase from the 2.3% figure in 2009.
- (4) The National Immigration Agency established the automated immigration clearance system (e-Gate), effective from 1 January 2012 onward. On 3 October, the US declared visa-free for Taiwanese passports, and e-Gates were established at airports and harbors, strengthening international anti-terrorism and preventions of forged passports.

2. Comprehensive medical services and system (DOH)

- (1) PCV vaccines were provided for children aged 5 and below of middle and low-income families, thereby lowering any serious complications if contaminated with pneumococcal conjugate and enhancing the children's immune system; second dose of MMR vaccine and Tdap-IPV vaccine were administered to new elementary school students in September 2012 at various health clinics or affiliated hospitals; health insurance cards are fully accessible for a year for all pregnant women to ensure their health.
- (2) Encouraged the establishment of critical or major illness care centers at remote hospitals. Planning was done on a county-by-county basis, with considerations for the people's requirements for special treatment – development was focused on external injury, cardiovascular, illnesses stroke, perinatology, emergency and child care. As of 2012, 24 care centers in 17 hospitals were approved and aided.
- (3) Screening services for 3.696 million people were provided from January to September 2012, and 31,000 cases of pre-cancer mutations or cancers (carcinoma in situ) were discovered.
- (4) Jointly organized the 20th International Conference on Health Promoting Hospitals and Health Services with WHO Collaborating Centre for Health Promotion in Hospitals and Health Care; the conference broke three records for the sessions it held outside of Europe: most countries (45), most participants (1370) and most published theses (744).
- (5) Organized the 2012 APEC Asia-Pacific Conference on Age-friendly Cities and Age-friendly Economy, which discussed topics such as: age-friendly cities and age-friendly economics, age-friendly health care and age-friendly society. Three hundred participants attended the 2012 Cross-Strait Cancer Prevention Symposium.
- (6) The Bureau of Health Promotion was invited to participate in the 2012 CleanMed Europe (held in Malmo, Sweden from 26 to 28 September 2012) - Sustainability reporting and responsibility in healthcare session, to share Taiwan's energy conservation and carbon reduction efforts in hospitals: Director Shu-Ti Chiu traveled to Hong Kong to participate in the Feeding the World The nine billion-people question Summit organized by the Economist Group and acted as an introductory spokesperson for the health & nutrition discussion: Asia's double burden session. Director Chiu shared our nation's National Health and Weight Management Plan, as well as the plans and accomplishments of

combating non-communicable diseases (NCD).

3. Continue promoting excellent agricultural products (COA)

- (1) In 2012, vegetables deemed competitive abroad were subsidized, and 9 lots spanning 4,800 hectares were set aside for carrots, edamame, iceberg lettuce, brassica oleracea and broccoli; contract-based farming was introduced, safety management implemented, use of pesticides was counseled, inspection of insecticide residue and education training were provided to empower foreign marketing abilities.
- (2) Counseled national farming associations and established 76 hectares of greenhouse agriculture; continue to promote CAS certification. As of September 2012, CAS fruits spanned 24,712 hectares and produced a value of NT\$1.12 billion.
- (3) Assisted in the planting of orchidaceous and flowers in 21 lots spanning 492 hectares, creating an industry agglomeration and introducing energy conservation, environmental consciousness, ideas and

techniques of automation, thereby improving production facilities, efficiency and saving energy. Counseled the establishment of 37 rice production areas, and through a two-year contract-based farming, 15,772 hectares were dedicated to the planting of rice.

4. Environmental quality management and supervision (EPA)

- (1) Completed Manual of Inspection Results for Toxic Chemical Substance Distribution in the Environment.
- (2) 2012 dioxin environmental monitoring: the average concentration of 0.034 pg I-TEQ/ m³ was significantly lower than the 0.089 pg I-TEQ/ m level in 2002 and 2003, and lower than the standard dioxin level of 0.6 pg I-TEQ/m³ in Japan.
- (3) Completed random inspection for electromagnetic waves (EMW) at 200 sites in 2012, including extremely low voltage transformers, high voltage towers, broadcast stations and transmission bases, and the results were available to the public in collaboration with the GIS.

2.9 | Education and Promotion Working Group

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

- (1) Developed related courses and plans for different levels of education, such as:
 - A. Established an information platform to encourage schools to share their achievements with other schools and the general public regarding the education of environmental protection efforts and work results; 6,269 entries were submitted in 2012.
 - B. Invitation to bid and assisted 61 cases

of promoting environmental education. Further, the Situational Learning Center: Outdoor Learning Promotion Plan advocated 25 such learning environments.

- C. Opened 19 CSR courses in 9 schools for the second semester of the academic year 2011, with 764 students attending such courses.
- D. Organized incentive inspection visits for community colleges in 2012; Modern Citizen Cultivation Course – Sustainable Environment Education was adopted as the basis for incentive.



↑ 2013 Consequence Event of Environmental Education Counseling Plan.

(2) WRA utilized various sources of media and distribution channels to educate the public about the theme of sustainable development. A book was published and a 3D promotional film "2884 mm" was produced to increase awareness of the destructive impact that Typhoon Morakot had on the environment.

(3) The Environmental Protection Administration:

A. Counseled direct municipalities, county and city governments in promoting a low-carbon community:

i. Completed energy diagnosis for 52 demonstration communities, organized low-carbon community establishment meetings; these communities were visited respectively to explain the results of diagnosis and corresponding improvement measures.

ii. NT40,000 were invested to upgrade lighting facilities and simplify greenification in communities.

B. Encouraged all spheres to apply for environmental education certification:

15 environmental education facilities, 4 environmental education facilities and 405 environmental education personnel were

devoted to environmental education after having been certified by the EPA.

(4) 2012 NSC subsidized science education and publications:

A. Popular science activities: 36 cases were assisted.

B. Popular science lectures: 13 themes regarding green energy were organized, with 2,647 people participating in the events.

C. Popular science New Knowledge Gazette: 14 articles related to sustainable development, ecology and climate change.

D. Monthly publication of Science Development (published March 2012) focused on the theme of ocean energy, hoping to attract the public's attention on such sustainable topic.

E. Knowledge website: popular science seminars were included on NSC's Sci-Tech Vista website. As of 26 October 2012, 88 related videos were collected, with 21,577 hits in viewership.

(5) The MOEAIDB organized two explanatory meetings for CSR reports and two CSR

symposiums for mid- and high-level managers in 2012. Four hundred and ninety-four people participated in the event, and CSR report consultation and distance analysis for 23 corporations were supported.

- (6) Six key themes underlay Bureau of Energy's energy conservation measures: five 4-6 minutes promotional videos were produced and distributed through various channels: a 30-second promotional video was produced during the peak of electricity use in summer.
- (7) The Ministry of the Interior: Assisted private organizations in hosting colleges for the elderly, promoting the elderly's participation in society and guaranteeing their opportunity in gaining knowledge on sustainable development; developed evaluation manual on ecological community as reference for future promotion of ecological community; organized plans for community planners to stay and assist.

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

(1) The Ministry of Education

A. Assisted counties and cities in organizing



↑ Ecological Workshop for Community Opinion Leaders.



↑ 2012 Workshop for the Global Seiaenidae Conservation Network.

Environmental Education Counseling Work Group, encouraging resource integration across county/city governments, and formulating plans and strategies for environmental education of international and domestic scope.

- B. Thirty-four schools replaced old electrical facilities with energy-saving ones and through such upgrades, the objectives of a achieving sustainable environment and secure campus is achieved.
- C. Since the 2010 academic year, contents for higher education included the following: (1) knowledge and understanding of national sustainable development; (2) related knowledge on global warming and climate change; (3) enhanced public participation to improve citizen awareness of the environment; (4) promoted diversified education to forge national unity among various ethnic groups, facilitated respect and care for the welfare of the disadvantaged, lowered conflict and depletion of cultural resources of minority groups.

(2) Bureau of Energy: Training of energy volunteers and energy conservation activities impacted 34,028 people; collaborated with the National Science and Technology Museum to conduct aforementioned activities; completed cloud resource network for the energy volunteers.

↻ A family of four generations gave the performance with aboriginal song and dance.



3. Strengthening social education centers and promoting sustainability and environmental protection

- (1) The MOE produced sustainable campus promotional video that encompassed four themes: water resources, energy conservation and carbon reduction, environmental sustainability and health efficiency; respective social education centers displayed various exhibits, displays and educational activities, which attracted 450,000 visits; the National Museum of Marine Biology and Aquarium established a Marine Education Learning Center.
- (2) WRA: Central Region Water Resources Office established a water resource center at Jiji Weir and continued water environment education and conservation work.



↑ Event held for implementing Environmental Education Act one year.

- (3) EPA organized water environment education and conservation symposium: Water environmental patrols took up alternative role as promoters of water environment education, collaborating with communities and schools.
- (4) NSC assisted the production of various science related television shows that covered themes related to the environment and sustainability, using media to popularize science; in 2012, television broadcast included new themes such as renewable energy, green buildings and ecological conservation. Television rating points registered 0.46 at its peak, and an estimated 7.4 million views were registered.

4. Promoting related research and international cooperation on education of sustainable development

- (1) The MOE assisted the Chinese Society for Environmental Education in organizing international symposiums on environmental education and sustainable development; river ecology classrooms were established at Tamsui River, Xinhwei River and Erren River out of the country's 11 main rivers, in accordance with principles of natural ecological conservation and environmental education promotion.
- (2) NSC assisted 15 sustainable development related projects in 2012.

Evaluation of Taiwan's Sustainability Indicators in 2011

3.1 | Summary of Taiwan's Sustainable Development Indicators

Sustainable development is a fundamental national policy and a common goal pursued by nations worldwide. To establish an objective evaluation of the nation's sustainable development progress, in 2002 the NCSD referenced the first edition of the Sustainable Development Indicator (SDI) system announced by the United Nations (UN) in 1996 as a framework to develop the Taiwan's own sustainability indicators. The nation's SDI system was established in May 2003 and the computational results are posted annually on the NCSD website as a reference for all parties.

To keep in step with the latest international

sustainable development trends, a consensus was made at the NCSD 25th Working Meeting in December 2008 to reference the framework of the UN's third edition of the SDI system announced in October 2007, along with other relevant international SDIs. Drafting of the nation's second edition of the SDI system began in January 2009 and was approved during discussions at the 29th Working Meeting on December 31 of that same year. The NCSD's 2nd SDI system includes 12 themes, 41 sub-themes, and 86 indicators, which is considerably more encompassing than the 1st edition. The themes and corresponding indicators

The screenshot shows the website header with the title '行政院國家永續發展委員會全球資訊網' and 'National Council for Sustainable Development Network'. Below the header is a navigation menu with various links. The main content area displays the title '永續發展指標系統年度評量結果' and a list of years from 2003 to 2011, with 2011, 2010, 2009, 2008, and 2007 highlighted in blue.

行政院國家永續發展委員會全球資訊網
National Council for Sustainable Development Network

中文 | EN

選單

- 本會介紹
- 本會相關會議決議
- 永續發展指標
- 本會工作分組業務
- 國家永續發展獎
- 國家永續發展年報
- 永續發展政策綱領
- 永續發展行動計畫
- 本會完成文件
- 其他成果
- 永續發展小百科
- 文章發表
- 國內外永續發展新聞
- 意見信箱
- 回首頁

永續發展指標系統年度評量結果

[2011年](#) [2010年](#) [2009年](#) [2008年](#) [2007年](#)

[2006年](#) [2005年](#) [2004年](#) [2003年](#)



↑ Taiwan Individual SDI Information Management System.

are as follows:

1. Environment (12 indicators):

PSI (pollution standards index), air pollutant concentrations, water reservoir quality, marine environment quality and marine environmental water quality, ratio of rivers suffering minor pollution, biochemical oxygen demand (BOD) concentration, garbage recycling rate, daily per capita garbage volume, environmental impact assessments (EIA) approval rate, number of publicly announced toxic substances placed under monitoring, ratio of environmental and ecological budget by the central government, and financial measures in promoting pollution prevention and recycling.

2. Energy Conservation and Carbon Reduction (8 indicators):

Per capita CO₂ emissions due to fuel combustion, annual increase of CO₂ emissions due to fuel combustion, daily per capita power consumption, energy concentration, ratio of resource-consumption based industries to manufacturing industry, percentage volume of renewable energy, energy conserved due to green buildings, and bicycle path length per 10,000 people.

3. National Land Resources (11 indicators):

Slope variation ratio, subsidence land ratio, developed land ratio, forest coverage area, natural coast ratio, natural coastline loss ratio, effective

water resources, ratio of water usage to production value of the manufacturing industry, underground water recharge volume (tonnes), total national land area with betel nut plantations planting betel nuts, and human casualties and economic loss due to natural disasters.

4. Biodiversity (6 indicators):

Genetic resources and species preservation of biodiversity, change in specific wild life population, land area covered by specific exotic plants, populations of specific exotic invasive species, eco sensitive area, ratio of protected area to total land area, and marine protection area.

5. Production (13 indicators):

Reuse rate of industrial waste, reuse rate of toxic industrial waste, reduction rate of low-radioactive solid waste, ratio of cultivated land, area of organic cultivation, fertilizer usage rate per hectare of farmland, pesticide usage rate per hectare of farmland, labor production and unit production cost, ratio of females receiving salary in non-agricultural sectors, per capita GDP, ratio of gross domestic capital formation to GDP, annual increase in consumer price index (CPI), and ratio of all levels of government borrowing above 1 year with outstanding non self-liquidating debt to GNP.

6. Livelihood (10 indicators):

Percentage of population with access to suitable

drinking water, sewage treatment rate, daily per capita water consumption, number of times public transport journeys, domestic energy consumption by transport sector, number of tourist visits in Taiwan, road casualties every 10,000 vehicles, road maintenance efficiency, total green procurement of public and private sectors, and number of green marks awarded.

7. Technology (3 indicators):

Percentage of GDP spent on domestic R&D, ratio of internet users, and number of people using handphones for every 100 people.

8. Urban and Rural Culture (4 indicators):

Preservation of ancient monuments and sites, number of villages in compliance with SDI, expansion rate of urban areas, and green area per capita.

9. Health (8 indicators):

Percentage of population with access to basic health care infrastructure, infection controls and

immunization measures for children's diseases, usage rate of preventive health insurance by those 65 and above, standardized cancer mortality rate, infection rate of contagious disease, smoking rate of those above 18, betel nut use rate of those above 18, and children's nutritional health.

10. Welfare (6 indicators):

Ratio of low-income families, accommodation rate, average family income and expenditure per household by five equal divisions of households according to disposable income, National Pension Plan coverage ratio, elderly participation in society, and suicide rate.

11. Administration (3 indicators):

Crime rate, dropout students, and adult education participation ratio.

12. Participation (2 indicators):

Official Development Assistance (ODA) ratio and community-based participation of social welfare.

3.2 | Evaluation of 2011 Sustainable Development Indicators

To evaluate the results of the 2011 sustainable development indicators (SDI), the NCSD Secretariat requested the competent authorities for each indicator to fill in and submit year-end data and information via the online NCSD indicator information system, starting in August 2012. The Secretariat completed the preliminary draft of the evaluation results at the end of October, and on November 28 invited competent authorities for the indicators and NCSD civic members to convene the 2011 Sustainable Development Indicator Advisory Meeting. At the meeting, the year-end data was further analyzed and reviewed, with the Secretariat subsequently

compiling this data and publishing the final 2011 Sustainable Development Indicator Evaluation Results at the end of December 2012 on the NCSD website, making this information available to the general public.



📍 Sustainable Development Indicator Advisory Meeting.

2012 National Sustainable Development Award Recipients

The 2012 National Sustainable Development Award preliminary selection and reassessment tasks for the four categories began in August 2012. Reassessment for each category was

completed on October 3, and a runoff selection meeting was convened on October 11. Twelve winners were chosen among the four categories with an introduction of each provided below:

Education Sustainable Development

Longdu Elementary School of Meinong District, Kaohsiung City

Longdu Elementary School is located in a cove at the foot of the Meinong Tea Hills and though it is a remote, rural agricultural area, people have lived there since ancient times. The school was established in 1920 and in the early days roughly three hectares of land were devoted to practical farm training with a flourishing natural ecosystem. On the school grounds, elegant baroque style architecture stands amidst lush forests, dark green grasslands, and the perpetual sounds of insects and birds.

On one side, there is history and culture, and on the other, a natural environment with natural materials for children to learn everywhere, a true ecological showcase.

The Longdu team coordinated with the National Education Policy, integrating local industry and Hakka culture in striving towards Cultivating Hakka Farming-Reading Culture and Building an Eco-School for future development with Hakka farming-reading culture at its core, life education at its foundation, and environmental





⤴ Passing through the ecological corridor welcoming new students' Hakka-style.



⤴ Food and agriculture experience, the scent of learning and vegetables-lunch is in the bag!!



⤴ Visiting and reading local Hakka literature onsite-the Chung li-ho Memorial.

education for protection and sustainability. A multi-faceted learning experience is created that applies cognitive psychology and encourages awareness of the five senses to elevate children's learning achievement and competitiveness. Maximizing learning potential/ achieving peak performance through firsthand experience, broadening world perspectives through reading, learning about the knowledge of ancestors/ earlier generations through daily living, and cherishing ecological resources through interaction with the environment, to build an "ecological, humanitarian, innovative, and sustainable" LOHAS paradise that fulfills and enriches the children's lives through experience and fosters livelihood through learning.

Dialogue-based/Interactive environmental policy for an innovative environmental curriculum

Parents, teachers, and students get together with others in the community to discuss and seek a consensus from the bottom up, formulating mid- to long-term local sustainable environment plans based on the school's unique locality, culture, and ecological environment that uses environmental improvement as a teaching tool/ focus/approach to build a beautiful ecological

environment. Spatial aesthetics are created through the use of natural construction, artistic spaces, and the expression of time through space. The construction process provides students a chance to participate in artistic design simultaneously combining both a barrier-free learning environment and caring for every disadvantaged student.

Water ditches and rural industries were integrated to promote children's food and agriculture experiential learning courses, arousing the senses of students through experiential learning and creating an organic LOHAS garden. Also, ecological long-distance walking paths were made to help explore the local geography and history. To commemorate the green campus anniversary and carbon reduction sporting event, each year new students and alumni plant a memorial tree either on campus or in the community. Every Friday a facilitator oversees the environmental education curriculum for the entire school, including classes on life education, climate change, nature conservation, and ecological reading, elevating the environmental education knowledge and abilities of students and teachers and building an environmentally sustainable campus. A multi-faceted and innovative teaching activity is also organized—



👤 Farming-reading youth enjoying a plentiful harvest-ready to go!

the "Reading a thousand books and walking a thousand miles" course, or a graduation trip to an uninhabited island of the Penghu Archipelago to experience life with just a bottle of water.

Practicing environmental protection in daily life through community participation and concern for humanities

Students collect fallen leaves, fruit peels, and kitchen waste to make organic compost that is used to improve the soil quality on campus. Monday of each week is designated as Organic Vegetarian Day, serving vegetarian lunch using the rice and vegetables grown by the children in hopes of achieving food self-sufficiency on campus. Students are also encouraged to walk or ride bicycles to and from school and to drink plain tap water, thus staying fit and reducing carbon emissions, and a family accountability system has been initiated encouraging mixed-age group teams to participate in cleaning up the environment.

To carry out the Longdu 3311 Movement, 30

minutes each day is set aside for reading and exercising respectively, either a chore at home or a positive activity in general must be completed everyday, and speaking the Hakka language daily is mandatory. An ecological culture camp is also organized allowing children to take a closer look at the ecology and culture of their homeland, providing a truly localized education. For the semester finals, community outreach fieldtrips are organized taking the children to community nursing homes where they give singing performances and comfort the elderly. This is an educational movement that upholds the unique local qualities, participates in community green environmental protection activities, and advances domestic and international cultural exchanges.

Significant environmental and ecological improvement: breaking down walls for a transparent and open campus that is community-based and a community that is campus-based. Green building concepts and ecological engineering methods have been implemented, resulting in the entire school's water permeation of 80% and the ratio of green cover of over 75% a barrier-free learning environment. Cross-industry and NGO resources have been introduced working together to sponsor environmentally-themed activities, such as participation in the Yellow Butterfly Festival, and cooperation with the Agriculture and Food Agency resulting in the design of an experiential farming course. A broad diversity of flora have been planted to create a multi-tiered ecological environment that fosters an increasing abundance of species. The biological record of protected species now contains 38 bird species, 11 frog species, 31 butterfly species, and 16 species of reptile. In 2011, the school received the Environmental Protection Administration Environmental Protection School Excellence Award, and also was selected by the Ministry of Education as the 2011 Elementary and Middle School Integrated

Spatial Resources and Development School of Distinction.

Overwhelming affirmation of curriculum and instructional methods: To promote their special farming-reading course, a documentary about rice entitled "Rice, Rice" was made. This film won the 2007 Public Television Young Director's Best Vision Award, it presented a portrait of Taiwan's education at the 2008 Australia Day celebration, and in 2009 received the Ministry of Education National Archive Specialty Education Film Award. In 2000, the school made "Duck, Duck" a film exploring the relationship between humans and other organisms, and an experiential environmental education documentary called "The 120 km Grand Cycling Tour" that won the 2000 Ministry of Education National Archive Excellent Educational Film Award. In 2009, CommonWealth Magazine covered the school in a special report—on the top 300 featured key capacity schools; in 2000, Business Week magazine featured the school in a specialty education report; in 2012, the CommonWealth Magazine Better Parenting and Educating

segment reported on the Rainbow Village Long Walk Course; and for its promotion of the farming-reading specialty course it was awarded the Ministry of Education 2011 Elementary School Promotion of Reading Achievement Excellence Bedrock Award.

Striving to actualize the native land education dream

"Life doesn't require us to be the best, just to put forth our utmost efforts." Natural ecology teaching sites surround Tea Top Mountain, sweat drips down into the rice paddy soil while the five-senses experiential learning and the farming-reading culture of Hakka ancestors is passed down devoted to bringing the traditional songs of the native land back to life. Cultural heritage is being passed down from the school into the community nurturing a harmonious synthesis of growth in both the children and the land below Tea Top Mountain. This is an organic campus that breathes—an ecological elementary school below Tea Top Mountain opening up infinite hope for life.

Changkeng Elementary School of Bali District, New Taipei City

Changkeng Elementary is located in the Bali District in New Taipei City bordering the Tamsui River Estuary along the coast of northern Taiwan. The area is home to thirteen cultural heritage environments and ecological and humanities sustainable seedlings. For over 40 years, the school has been an educational partner, passing the tradition down one after another, with parents, teachers, and students alike conglomerating resources of the school, families, and community, hand-in-hand searching for their roots, development, and excellence. In recent years, the school has received the New Taipei City 2011 Annual Low Carbon School Certification—the Silver Goose-level Mark; in

2011, it also received an Honor of Excellence Award from participation in the Greater Asian Green Alliance Waterways and Urban Ecological Innovative Remodeling Award "Rainwater Recycling—Innovative Home Remodeling" Contest; it won the 2012 Annual Public Toilet Merit of Excellence; and it won 2nd Place in the 2008 Annual National All-Level Schools Energy-Saving Electricity Use Competition.

Locals and school joining hands to manifest unique local characteristics

"Bamboo whistles in the breeze and butterflies leave traces in the fragrance of pomelo scent" is readily envisioned from the vantage along both



Parents and volunteers help build the butterfly corridor.



The school's green roof and solar power electricity generating installations.

sides of the grandstand. Bali is well known for its bamboo shoots and pomelo fruit and the friendly nature of its people. The school has integrated the resources of the Department of Education and Environmental Protection Bureau, coupled with district offices and parents going all out while guided by sustainable ecology concepts to gradually complete various projects on campus, such as overall greening, hedgerows, ecological corridors, aquatic education garden, multi-level hedgerow enclosures, thin-layered green roof, a butterfly ecological corridor, paradise reading area, frog family water-saving hand washing basin, energy-saving toilets, sustainable energy systems (solar power and wind generators), and accessing mountain spring water for use on campus.

Surrounded by green hills, clean fresh air, and the joy of students, the campus ecosystem is home to the sounds of insects and birds, and the

fluttering rainbow brilliance of butterflies, etc. The developments on this campus are inspiring, and it's hard for anyone not to feel relaxed and happy there. The renovations transformed the traditional campus environment and facilities in line with the various green building indicators of being green, ecological, environmentally friendly, healthy, energy-saving, and resource-saving.

The development of local courses integrated within the community utilizes the unique resources of the school and community to provide a quality and fulfilling ecological education environment. The unique local characteristics of the school and community were developed to achieve the goal of making the environment the teaching material, the environment a curriculum, and a curriculum the environment. The school also shares its special curriculum with other schools as well as its model of school serving as a catalyst in leading the way for community environmental consciousness: utilizing community services to expand learning venues and integrating the teachings of various disciplines to advance environmental education.

The school environment and community share diverse and unique resources and has a complete selection of educational resources including a flourishing ecology of the surrounding natural environment and close proximity to the Bali Sustainable Development Environmental Education Center and Shihsanhang Museum of Archaeology. An incineration plant, power plant, and sewage treatment plant provide practical operations related to sustainable environment that can enhance students' capacity to establish excellent learning base. A sustainable campus environment and green partner schools provide sufficient conditions for building a diverse and quality learning and development environment. Changkeng's big family has established this foundation and drafted a sustainable development education plan incorporating the following goals:

Combine sustainable environment and generational justice educational course activity planning.

Comprehensively elevate students' learning achievement involving sustainable knowledge, attitudes, and skills.

Have school development and construction initiatives take into consideration sustainable environmental load and educational implications.

Encourage community concern for their daily living environment and the desire and devotion to participate in protection efforts.

Creating a green campus and practicing sustainability in daily activities

Synthesizing sustainable development, the transmission of local cultural traditions, the spirit of the school's curriculum, thorough implementation of environmental education, building an environmental protection pollution-

free green campus (green campus ecological planting, buildings, landscape, etc.), applying sustainable concepts into daily activities (the 3R's consisting of resource recycling and reuse, and energy saving and carbon reduction habits) and enabling sustainable concept educational activities to gradually take root and develop. Provide children with a sufficient learning environment to grow happily; and establish green energy and low carbon sustainability, innovative technological capacity, and a healthy, vibrant international quality school transforming vision into action to give children the capacity to shape their future.

Just as the principal of Changkeng Elementary School said: "We are all passengers on the sustainable spacecraft Earth, and the present period of our voyage marks a time of unprecedented resource consumption." The responsibility of education begins in the schools and requires the common consensus, planning, and methodology of all the school's teachers and students, and this process has further solidified convictions. In coordination with the



⬆ Integrating unique features of the community—experiencing pomelo harvesting.



➤ Growing up together—cultivating Antrodia activities.



➤ Energy-saving eco toilets.

Nine Year Integrated Curriculum implementation and in line with campus environment reforms, Changkeng's has created its own learning environment and teaching materials to establish an ecologically friendly and practicable environmental education model for the entire community and society.

The fact that the school was asked to participate as a member of this year's selection committee to offer its guidance and suggestions indicates the high regard for the

school's advanced degree of development and achievements. In the future, the school will continue with its philosophy of using nature as teacher, learning from the Earth, and encouraging parents, teachers, and students to work together hand-in-hand to build a sustainable development campus garden that allows Changkeng to perpetuate the arduous efforts of predecessors and continue to work for the cause of good in a pleasant environment and get the job done the right way.

Hsingchung Elementary School, Chiayi County

Hsingchung Elementary School of Chiayi County was founded nearly a century ago as a "big school in the small countryside". In efforts to create a "Hsingchung Centennial Sustainable Well-being" campus while simultaneously echoing Chiayi County's core development "Garden City" policy measures, the school hopes to use the "1/3 environment + 1/3 industry + 1/3 culture = Chiayi County Garden City" concept to create the three vital elements of a vibrant community—livelihood, production, and ecology.

Scholarly, Healthy, and Upstanding Character vision on educating students

Since the beginning of the 2008 academic year, Hsingchung Elementary School has

promoted the Scholarly, Healthy, and Upstanding Character educational development vision believing that all children at Hsingchung can build a scholarly foundation for healthy development, and at the same time cultivate an upstanding character of "gratitude towards others, devotion to deeds, cherishing the surroundings, and exercising restraint on oneself".

Striving to nurture "love of family, school, and community", in recent years Hsingchung has more energetically developed the school, community, and homeland as the heart of the school's curriculum and utilized local teaching materials. Community elders have been invited to serve as instructors and the community environment as teaching materials. Putting the ideals of a community based school and

a school based community into practice, and gradually taking steps towards establishing its own teaching materials and instilling students with the sustainable values of loving their family, community, and resources.

For course instruction, aside from actively implementing environmental protection and energy saving and carbon reduction into daily life teaching activity coursework, the school's Magic of Life Math Teacher teaching team combines community resources, campus scenic spots, and the ecological environment with elements of mathematics developing a series of math courses called Numbers Fun Hsingchung. Through the process of playing with math, talking about math, and learning to love math, the students also experience the importance of a balanced development encompassing humanities and natural ecology.

For campus sustainable construction improvement projects, the school energetically seeks funding for building the campus environment and encourages community participation. These communal efforts advance the people's conception of sustainable development and make it possible to create a

compatible and friendly school and community using energy-saving, sustainable, and natural building materials. This has enabled the school to really become the ecological and environmental education center in the community and locality.

Assisting disadvantaged students actively enter society

Hsingchung Elementary School also faces the same challenges as other elementary and middle schools in remote rural disadvantaged townships—an aging society, low birth rates, disadvantaging trend, diversification, etc. These development trends have left remote rural disadvantaged townships with limited resources and placed further challenges and complications on school education and teaching venues.

Therefore, to support the disadvantaged and address community humanities concerns, Hsingchung has actively organized various disadvantaged student assistance and remedial teaching programs, and has also made its way into the community launching a Night Illumination Angel and LOHAS Silver-Haired Senior Citizens educational activities. By reaching out and planting roots in the community, it is hoped

that this will bring the community to the forefront of education efforts, and by opening up diversified educational assistance resources, it hopes to utilize the strength of the entire community to provide better care for each child.

Hsingchung upholds high expectations and intends to take one step at a time to achieve the following goals:



➡ Measure the pool bed for yourself, one step at a time, to see how big it is.



⤴ A green hedgerow improving the community environment and bringing people closer together.



⤴ Holding an environmental protection clean street advocacy parade in efforts to expand environmental awareness throughout the community.



⤴ Integrating old trees to form a sundial, fusing mathematical elements into the campus attractions.

1. Improve campus safety and establish a

humanistic campus environment: Regulate traffic movement on and outside of campus making separate lanes for pedestrians and vehicles and devising optimal traffic flow schemes to improve parking space and traffic movement.

2. Invigorate campus space by providing

teaching and speaking platforms: Build a safe, healthy, humane, green, beautiful, and teaching friendly sustainable campus environment.

3. Implement the concept of a community-

based school and a school-based community: Consolidate the integration of the school and surrounding environment to create a transparent and safe campus and extend the campus green landscape into the community to build a natural and friendly community environment that puts the community-based school concept into practice. Also, implement a curriculum that integrates sustainable green campus and related supporting coursework which will give teachers, students, and parents the chance to get involved in making green environmental protection a reality.

4. Activate a professional learning community with problem-solving at the core and learning-by-doing as the strategy:

Establish professional learning communities, develop related teaching activities, and build a communications platform free of temporal

or spatial limitations that provides teachers and students with online multimedia learning instructional tools to learn about astronomical constellations, natural ecology, and other science topics.

5. Care for the disadvantaged through innovative and diverse learning assistance mechanisms:

Integrate community assistance and academic resources to actively open disadvantaged auxiliary course activities, providing students with diverse opportunities and creating a variety of educational possibilities. By tapping into these diverse auxiliary course activities resources, it is hoped that the power of the entire community can come together and take good care of every child.

Ongoing efforts over the years by the school's teachers and students have resulted in receiving the Ministry of Education Specialty School Excellence Award three consecutive years (2010,



⤴ Recycled hand-washing-basin water resources forms an ecological irrigation ditch on the campus grounds.

2011, and 2012). However, Hsingchung hasn't rested on its laurels, instead it has continued implementing Chiayi County's Garden City development vision and driven by interdisciplinary cooperation at the heart of the "Hsingchung Centennial Sustainable Well-being" the school continues to develop its own curriculum featuring Hsingchung's distinct local qualities.

Education is the school's relentlessly enduring lifeline and the catalyst that propels it in search of all possibilities and resources to confront difficulties and challenges. Education and its responsibility for providing guidance to children and adults is a work of immense magnitude and little by little, bit by bit touches the daily lives of everyone in the community.

Sustainable Enterprise Award

Pegatron Technology Co., Ltd

Pegatron Technology Co., Ltd. was founded on 1 January 2008 with extensive experience in product development and vertically integrated manufacturing capabilities. It is committed to providing customers with products ranging from cutting-edge innovation designs to systematized production and manufacturing services, comprehensively and effectively satisfying all of their customers' needs. Globalization has made regional barriers obsolete, and the expansion of manufacturing centers and operational bases across the globe provides the fastest, most effective, and most efficient services.

Besides, each of its production plants receiving approval of certification for various corporate social responsibility and environmental protection efforts in its early stages, such as ISO 14001, OHSAS 18000, and QC 080000. It has established an in-house Corporate Social Responsibility Steering Committee, and since its establishment it holds regular bimonthly meetings to advance corporate social responsibility and environmental protection related activities. Simultaneously, it also joined the Electronic Industry Citizenship Coalition (EICC) echoing its promotion of corporate social responsibility activities.

Pegatron's sustainable development performances are classified into four sections/aspects/levels with an introduction provided below:



Design and R&D from diversified development and cross-industry alliances strengthening and exhibiting Taiwan's spirit through quality daily living products.

1. Environmental Level

● Assessing the environmental impact of electronic products:

In 2009, the company became the first to formulate classification regulations for notebook computer product categories, assisted customers gain approval of third category environmental declaration certification, assisted customers become the first to gain approval of the notebook computer product PAS 2050 carbon footprint certification, conducted water footprint studies, and conducted periodic surveys of greenhouse gas emissions for several designated first-tier suppliers.

● Minimize climate change—formulates the 536 energy-saving plan:

The chairman of Pegatron personally

announced the launch of the 536 energy-saving plan, which puts energy-saving and carbon reduction concepts into effect; and since 2009 up to the present, the annual energy saving target of 3% has been achieved. (The 536 Energy-Saving Plan stipulates that within a five-year period starting from 2010 annual energy saving of 3% or above and a total energy-saving amount of at least NT\$600 million must be achieved.)

● **Renewable resources—Mona Lisa portrait:**

Considering both the rational and emotional aspects, this rendition of Leonardo da Vinci's Mona Lisa embodies the archetype of remarkable accomplishments in the arts and sciences. It contains nearly 1,500 pieces of waste motherboard that was cut, selected, and arranged to recreate a Mona Lisa portrait and give waste recycling and renewal an aesthetic touch.

2. Operation Level

● **Continued increases for consolidated revenues and annual revenue growth rates:**

Pegatron is dedicated to the development of this industry and has witnessed consolidated revenues grow from NT\$513.3 billion in 2008 to NT\$599.9 billion in 2011. The first half of 2012 has seen even more substantial growth with consolidated revenues of NT\$391.1 billion, a growth rate increase of 63% compared to the same period in 2011.

● **Happiness at Work and Well-being in Life—Pegatron employees are the most cherished resource:**

In salary and bonuses, vacation time, welfare benefits, employee health and recreation, group activities, employee contests, and a safe environment, Pegatron strives to cover 100% of employee needs and concerns. To this end, it has contracted a five-star fitness



♻️ Renewable resources re-creating the Mona Lisa.

and recreation center giving employees free access with their employee IDs, while family and friends of employees can also use these facilities for free on holidays. Regarding labor safety and health in the work environment, the company not only complies with but is dedicated to exceeding regulatory standards to ensure employee comfort and safety, and in 2011, its efforts were acknowledged when it received the Taipei City Labor Safety and Health Award.

● **Giving back to the local community by improving the environmental quality of life:**

Pegatron is actively engaged in giving back by serving the needs of neighboring organizations and schools in the local community, such as



☀️ Dawn rays × Pegatron Design = Boundless Dreams Activity.

donating funds and providing resources. It has made donations to the Guandu Elementary/ Middle School education savings account and Taoyuan Elementary School, provided evening meals for needy students at Taoyuan Middle School (supplied by the Pegatron employee cafeteria), and donated items such as clothing etc. for the elderly at Changching Senior Citizens Joy of Aging Foundation. Pegatron has cooperated with Chiayi Christian Teacher's Hospital to hold charitable events (Dawn rays × Pegatron Design = Boundless Dreams Activity), donated the company's foldable lamps as raffle donation prizes, and invites hospitals staff and students to head up north to participate in Pegatron's Summer and Fall Family Day events.

3. Technical Level

● **Winner of international awards for innovative designs:**

Pegatron's designs have received numerous acclaims from Germany's iF design awards, and in 2011 alone the enterprise received four design awards, including the Package Design Award, Communication Design Award, and Materials Design Award. Environmentally friendly products are at the heart of Pegatron's product R&D efforts, and this is evident from winning Germany's iF design awards Materials Design Award three consecutive years in a row—



↻ Caring for disadvantaged groups—R&D of braille learning device.

bamboo laptop and acetate fiberboard laptop (2009), PLA + Recycled PC innovative laptop materials (2010), and Paper Polypropylene Alloy (2011).

● **Design and R&D from diversified development and cross-industry alliances strengthening and exhibiting Taiwan's spirit through quality living products:**

In collaboration with Eslite Bookstore, Pegatron launched a series entitled Taiwan Design, Taiwan Manufactured, and Taiwan Brands with the spirit of Taiwan as the central theme, and an emphasis on natural materials combined with the ultimate integration of craftsmanship and art—PEGA CASA RENAISSANCE quality living products.

4. Sustainable Development Innovation Level

● **Caring for disadvantaged groups—R&D on braille learning device:**

In 2012, Pegatron independently completed development of an entirely new product—a Braille learning device, designed to help blind



↻ Advancing employee safety— petitioning for pedestrian lanes.

↻ Pegatron Chairman and General Manager participate in Fall Family Day Activity

children learn how to spell simply and easily at home on their own and thus advancing their progress towards social adaptability.

Happiness at Work and Well-being in Life is Pegatron's operational concept and it hopes that all employees will take great pride in their work and through the challenges faced on the job inspire them to actualize each individual's potential, continuously striving to surpass themselves in the pursuit of superior performances. Simultaneously, by building close, cooperative and supportive relationships

among work team members, employees genuinely enjoy and value their endeavors and create exceptional products that exceed customer expectations and share the fruits of success. Pegatron persistently devotes energies towards the advancement of corporate social responsibility and environmental protection activities, working to fulfill its responsibility as a corporate citizen. These efforts are helping corporations and society generate greater attention and support for corporate social responsibility related activities.

O'right International Inc.

Pioneering niche in green innovation

O'right was founded in 2002, and during that same year, General Manager (GM) Wang-Ping Ge's parents passed away due to complications of kidney disease and cancer. As a result, he vowed to help people extricate themselves from the grips of dangerous substances, such as toxic heavy metals and chemicals, and has been determined to shift the tides of the cosmetics industry towards green environmental protection development ever since.

In 2006, the brand made a commitment to green sustainable development. The "O" in O'Right symbolizes the holistic beauty of the earth hoping that everyone on the planet can manifest the "right" behavior. O'Right

propounds health concerns and friendliness to the earth's environment as its mission, backed by an underlying philosophy of Nature, Purity, Environmental Protection and the unwavering vision of Greater Beauty, Greater Good. Product development is based on the cradle-to-cradle design concept, from raw materials and production to consumer use, all facets encompassing environmentally friendly principles in hopes that Green Seeds can be spread throughout the environment and one day sprouting to establishing sustainable roots.

World's first green product differentiation

Renowned cosmetic brands use extravagant fashion shows and celebrity endorsements to display their products, but O'right relies on unique green sustainable innovation to imbue new value in its brand. To produce even healthier, more environmentally friendly green products and increase its competitiveness, the company actively integrates upstream and downstream suppliers forming a Green Supply Chain. Each year funds are allocated for R&D to promote innovation, resulting in the creation of its revolutionary original hair growth perfume "tonic" and the world's first "tree in a bottle"



↑ Asia's first cosmetics Green Factory in compliance with Green Building standards.



↑ Solar panels installed on roof of plant.

shampoo. These products have not only received the Ministry of Economics Affairs Commercial Services Excellent Product Award, but prompted the company to become the first small and medium enterprise (SME) to be awarded the Carbon Footprint label and the world's first bottle of "carbon neutral" shampoo, propelling Green Hair Care products to carve new milestones.

For O'right's hard-working colleagues dedicated to green sustainability, the company provides fresh organic foods and fair trade coffee every day, rewards employees with local and overseas eco tours, dinner gatherings, and gifts, and offers diverse educational training courses of even greater value. It is quite clear that O'right looks out for both employees' health as well as encourages their personal development. Family Days are periodically held bringing families of employees closer together, and every year cards and gifts are prepared for Mother's and Father's Day to thank employees' parents for all their loving care and efforts.

Green honors and acclaims

O'right has actively obtained green environmental protection certifications and continues to receive favorable affirmation and the trust of customers and consumers. In 2011, GM Ge was invited to represent SMEs at the APEC Meeting in the US, sharing green innovation experiences and receiving considerable international recognition. As the sun set on the 5

June 2012 World Environment Day, the company christened the opening of Asia's first Cosmetics Green Factory Complying with Green Building Standards, and is currently the only cosmetics plant to receive the EEWH Green Building Gold Certificate (the Gold Level being the highest level designation awarded for a plant of its size). Since opening up this plant, thousands of officials and customers representing various disciplines from both sides of the straits have visited, including the Taiwan Federal Drug Authority (TFDA), the Communist Party of China (CPC) Youth League, and Hong Kong's Excellent Outstanding Group. O'right's intent is clear, promoting and educating respect and concern for the natural ecology, and filling every nook and cranny with friendliness and compassion.

Green sustainability and social responsibility

O'right is the only SME to receive the Corporate Social Responsibility Award for two consecutive years, 2011 and 2012. Its efforts and achievements in Green Innovation have continued to receive the attention of academia, government agencies, and civic groups as GM Ge remains a popular figure for guest speaking appearances, sharing his experiences and achievements. These achievements have encouraged more SMEs to participate in green environmental protection efforts and prompted green MIT to become more families rooted and widely disseminated on campuses. Additionally, GM Ge pays for all his traveling expenses and fees when attending lectures, and any proceeds that he does receive are given back to society through charitable donations.

Public welfare events are convened annually on a regular basis, and since 2006 these events have included extending support and assistance to economically disadvantaged children, the Orbis Foundation who helped 200 children with eye diseases to see again, the August 8

flood reconstruction after-school educational centers, participation in Earth Hour lights-out-for-an-hour activity, cooperating with customers to participate in the National Taiwan University Experimental Forest 20-year Tree Planting Plan, etc.

Green compassion touching people's hearts

"Attending class is more important than work"—this is what GM Ge constantly encourages employees to do; because only through continuous pursuit of learning can one be filled with a limitless supply of assets for innovation. The

passage that has had the greatest influence on him is from an excerpt of Dr. Steven Chu's speech to Harvard University graduates: "Enthusiastically pursuing a professional career, though important, is not the only goal for the future. When you get older and look back on the achievements of this life, the greatest honor comes not from material objects or fame, but the effect you had on people and the changes that this influence brought about..."

This is what O'right does now and will continue to strive for in the future. This passage influenced GM Ge and through him it has influenced every O'right employee, their friends, and now, this

passage has also deeply influenced you.



Employee outing

ZyXEL Investment Holdings Group

ZyXEL Communications Corporation was founded by Dr. Shun-Yi Chu in 1989 at the Hsinchu Science-based Industrial Park. The company is devoted to the R&D of innovative communications products and marketing its own brand. ZyXEL has successfully established itself as an original brand manufacturer (OBM) and also has its own network communications technology, along with an excellent reputation of goodwill and integrity. In 2010, the organization expanded into a holdings company subsidiary of a parent conglomerate. ZyXEL Communications Corporation and MitraStar are subsidiaries of ZyXEL Investment Holdings Group. ZyXEL Communications Corporation specializes in ZyXEL brand marketing development and market

development, while MitraStar specializes in product and technology innovation and OEM manufacturing services.

The ZyXEL Investment Holdings Group subsidiary ZyXEL Communications Corporation's ZyXEL brand has been honored as among Taiwan's top ten international brands for the past ten years straight. Well-regarded in the area of corporate social responsibility, in 2007 it was ranked second in Asia by the Asian Corporate Governance Association and recognized as Taiwan's first Green Industry, and in 2009 Global Views Monthly magazine awarded the company with a Corporate Social Responsibility Award. For product technology, in 2010 it was awarded the Industrial Technology Development Award



⬆️ ⬅️ A health center is established for employees.

and Industrial Excellence Award, and in 2011 it received the Green Classics Award. Besides maximizing its potential and striving to attain the highest profits for shareholders and investors, ZyXEL Investment Holdings Group and the subsidiaries under its flagship are committed to promoting the vitality of society and environment and manifesting its value by serving its role as a responsible corporate citizen.

“Integrity” corporate governance principle

ZyXEL's corporate governance emphasizes the principle of “integrity” complying with relevant regulations and also independently volunteering to abide by business ethics standards. ZyXEL strives to create economic value to maximize the profits of shareholders and investors. Regarding business ethics standards compliance, as stipulated in the Employee Code of Conduct Agreement, when employees perform their duties they are required to abide by basic conduct norms and ethical standards, resonating the spirit of the company's philosophy, values, and ideals and complying with relevant laws. During day-to-day work and operations, employees and partnership enterprises are expected to heed closely and obey relevant standards, and also ensure that fair and equitable methods are employed when engaging in transactions with customers, suppliers, and competitors to achieve the company's goal of sustainable operations.

Leader in green network communication products

ZyXEL is actively involved in R&D of green products, pioneering the way in Carbon Footprint inventory participation and assuming a leading role in instituting home network product category rules (PCR) that have laid the foundations for green environmental protection—the first network communications manufacturer to receive the Environmental Protection Administration's Carbon Footprint Label, received the world's first Carbon Footprint Certification for VDSL2 home appliances, participated in formulating the world's first Home Gateways Product Category Rules and Home Network Infrastructure Devices Product Category Rules, and officially published the GEDNet website becoming the reference index for the industry's products. ZyXEL hopes to attract international spotlight and bring attention to the environmental protection initiatives of ZyXEL Group and Taiwan's network communications manufacturers, and also hopes to encourage Taiwan enterprises as a whole to squarely confront the importance of environmental protection.

Developing green products technology and function

ZyXEL Group's R&D is geared towards green production and green environmental protection, conducting R&D on a variety of energy-saving technology applications for its green environmentally friendly products with functions

like auto regulation of power, wireless scheduling, auto sleep mode, fan auto tuning mode, and Ethernet smart power saving, etc., providing consumers with environmentally friendly energy-saving products.

Green collaboration integrated management across the board

ZyXEL Group comprehensively implements green industry management by devising a customized set of "cradle to grave" collaboration and integrated management, or Green Collaboration Integrated Management, allowing for linked integration of the raw material supplier, producer, manufacturer, transporter, user, and disposal phases for ZyXEL's existing relevant system processes, while simultaneously executing green management practices throughout every link in the chain.

The Green Product Collaboration Information Management System includes Green Component and Design Database, Product Life-cycle Assessment (LCA) Management System, 3R Product Recovery Assessment Databank System, and Green Supply Chain Hazardous Substances

Restrictions Management System to achieve low toxicity, debulking, easy disassembly, recoverability, and energy-saving green products that satisfy a corporate citizen's commitment to environmental ethics.

Healthy, happy employees in a pleasant work environment

Talent is an important asset for propelling the continued growth of a company. Besides creating an innovative and diversified company culture, ZyXEL is dedicated to providing employees with a challenging and pleasurable work environment and equitable remuneration. ZyXEL salary and benefits merit considerable competitive advantage, and it continues employing and developing diverse work-life balance programs that care for the physical, mental, and spiritual health of employees. A comprehensive educational training system and employee planning development assists employees enhance professional capacity and encourages personal growth to become a vital driving force for the company's sustainable development.

Civic Sustainable Development Awards

Chinese Wild Bird Federation

Investing in bird conservation and joining international organizations

The Third Estate has consistently been the indicator for a society's vitality. The Chinese Wild Bird Federation (CWBF), backed by the support of local ornithological groups, was founded in 1988 as a coalition whose principal initiative is conservation and has been doing so for nearly a quarter of a century. In 1994, the CWBF also joined the world's largest unofficial bird conservation organization, Bird Life International, located in Cambridge, UK, becoming more actively involved in bird conservation work and

going on to assume a pivotal role in this field both in Asia and the world.

Since its inception, CWBF has received support and encouragement from all sides, and its overall development can be roughly divided into three phases. The first phase occurred from 1988-1999 and mainly entailed the popularization of bird-watching and environmental education. During this period, aside from performing a role assisting Taiwan's local ornithological groups promoting activities and publishing books, CWBF also energetically engaged in various exchanges with ornithological groups throughout Asian,

➡ Big Snow Mountain Bird-Watching contest is a grand occasion for bird enthusiasts from across the nation, and private enterprises have joined together in recent years.



Europe, and the US. Over period of this more than ten years, CWBF primarily promoted local bird-watching activities across the nation to expand its local membership and further solidify the foundation of ornithological groups as a whole.

Mobilizing the nation's ornithological groups participation in IBAs surveys

From 2000-2011, thanks to the support of Important Bird Areas (IBAs), CWBF was able to make the stride into its second phase. CWBF and local ornithological groups advanced IBAs in Taiwan with citizens as the source of designation. At that time, ornithological groups nationwide



➡ Transitioning from a conservation advocacy group to a social enterprise, taking into consideration both conservation and production.

were mobilized to conduct large scale surveys and planning, which resulted in the designation of 53 IBAs. In addition to formally logging into BirdLife International (BLI), this partnership effectively connected habitat conservation initiatives with the international community, convening international seminars and inviting experts and ornithological groups from a total of 21 nations, including England, the US, and Japan, to participate. To this day, local ornithological groups continue to conduct periodical surveys on the status of birds in their local IBA region.

Besides international participation in conservation, the promotion of local bird-watching activities also began twenty years ago and has propelled the tide of public concern for the natural environment. Eagles were counted at Kenting and Changhua's Bagua Mountain, black-faced spoonbills were counted in Chigu, Tainan, the pheasant-tailed Jacana was recovered in Guantian, Tainan, and bird-watching fairs were held in Guandu, Taipei and Chengching Lake, Kaohsiung. Wildlife sanctuaries sprung up all over Taiwan with wildlife habitat environments and eight national parks, a national nature park, and bird enthusiasts across the nation continued participation in planning and monitoring assistance, the essential element and life force of nature conservation implementation.

2012 was the year CWBF began working on community conservation efforts. The Pinglin Village Mountain Recovery Plan was launched,



⬆ Periodic fixed point ecological surveys allow the Chinese Wild Bird Federation to set root in Taiwan's land.



⬆ A bird-watching enthusiast setting up a camouflage tent to facilitate long periods observing ecological behavior of birds.

Pinglin District organic tea farm production of Blue Magpie Tea and joining Yunlin County's Wild Bird Society to produce organic green bamboo shoots to Tainan City Wild Bird Society's production of Pheasant-tailed Jacana Water

laying out a business model for community participation in habitat recovery and making Pinlin a pilot experiment to determine whether a farmers' livelihood and bird habitat and the fusion of Taiwan's cultural landscape and conservation farming concepts could successfully create a perfect combination of "production" and "conservation".

This year the CWBF launched the Pinglin Village Mountain Center utilizing an abandoned farmhouse in the hills surrounding Pinglin Tea Museum for a base with the community taking part in renovating the structure turning it into an education center. Motivated by the principal goal of preserving the lifestyles and healthy habitats of birds in Taiwan's low-elevation mountains, the endemic Formosan Blue Magpie was chosen as the symbol for the launch of Formosan Blue Magpie Tea, combining production and ecology.

Engaging in extensive study seeking methods for both soil and water conservation and pesticide elimination, and with the bird habitat of the emerging Blue Magpie Farming, CWBF set up a social enterprise platform through community participation using Pinglin Tea Farm to promote Taiwan's low-elevation mountain bird habitat Formosan Blue Magpie Tea.

Combining production and ecology and practicing sustainable living

In recent years, CWBF has taken root in localities and communities from New Taipei City's

Chestnuts in Guantian District. CWBF has worked closely together with its local partners to promote organic production and ecology preservation and putting sustainable living into practice.

The 2012 Formosan Blue Magpie Tea experiment marked CWBF's evolution from recreation, public welfare, and knowledge-based initiatives and elevated its status beyond the Third Estate. Backed by the support of IBA, structurally CWBF made major strides into the realms of social enterprise. The next step is to integrate production, ecological conservation, and bird habitat protection through the "Bend and Pick Tea Environmental Protection" experiment. Nearly 25 years of bird life has been recorded, and the CWBF anticipates that apart from lifting our heads to appreciate the splendor of birds, we must also carefully listen to the hearts and sounds of the "people" on the land, allowing humans and birds to work in unison to recover the natural environment.



⬆ The Chinese Wild Bird Federation is among the five nations sponsoring the Asian Bird Fair, and in 2011 Taiwan hosted the Fair in Tainan with 14 Asian countries participating.

Tainan County Black-faced Spoonbill Conservation Society

Tainan County Black-faced Spoonbill Conservation Society was established nearly 14 years ago, in 1998, and since its inception has always protected Taiwan's coastal environment and devoted to the preservation of the black-faced spoonbill and other natural ecological resources. Volunteers and members come from all circles of society, including local residents, teachers, students, retirees, scholars, farmers, artisans, and merchants. Most of these volunteers began participating in the Society's affairs after taking the Society's entry-level tour guide training program, while others began participating after being introduced by volunteers. Presently, the Society mainly engages in research on black-faced spoonbills and their ecological environment, with the results of these studies providing black-faced spoonbill habitat management protection, while ecological tours encourage people to focus attention on ecological conservation concerns, thus advancing the goals of a sustainable global village.

There are only six species of black-faced spoonbill in the world, and the most common trait they all share is their flat, spatulate beaks. The

black-faced spoonbill (*Platelea minor*) is the last of the six to be classified (Temminck & Schlegel, 1849, Japan), the most sparsely populated of its species, and appears in the IUCN Red List of Threatened Species indicating that is on the verge of becoming endangered. It is confined to the Asia-Pacific coastal areas and winters in Taiwan, Hong Kong, Macau, China, Vietnam, Japan, and South Korea. Large numbers of black-faced spoonbills winter in Tainan, Taiwan with more than half of the world's population coming to spend the winter in Tainan. According to the Hong Kong Bird Watching Society 2012 global census results, a total of 2,693 birds were recorded and Taiwan accounted for 1,562, constituting 58% of the total.

Guided tours and education: sustainable promotion of the ecological environment

The Society is currently involved in the following black-faced spoonbill ecological research studies:

1. The Three Treasures Survey (Black-faced Spoonbill, Black-winged Stilt, and Pied Avocet) is conducted annually from December to March. These three bird species found



⤴ Conducting a fish source survey with a fishing net.



⤴ Black-faced spoonbill adorned in breeding plumage awaiting a northern migration journey



↑ Participating in the 2010 International Symposium on Black-faced Spoonbill Conservation and Jianghai Mudflats Utilization.



↑ Tainan County Black-faced Spoonbill Conservation Society.

along the southwest coastal area serve as a significant indicator, utilizing these distribution and abundance surveys to understand environmental changes.

2. The Qigu Long-Term Bird Survey is conducted on various sampling plots throughout Qigu, such as floating land, fish ponds, salt marshes, wind break forests and general agricultural land. Various bird species composition within different environments are recorded to understand seasonal changes in bird species, and ongoing efforts are made to cultivate and enhance the specialized skills of surveyors.
3. The Global Black-faced Spoonbill Survey was launched in 2003 by the Hong Kong Bird Watching Society, an affiliate of BirdLife International. In January each year, a three-day synchronized survey is conducted at black-faced spoonbill wintering areas to understand current black-faced spoonbill global population and distribution.
4. The Black-faced Spoonbill Leg Band Survey Census takes place annually starting in October until the end of the black-faced spoonbill season in May with these superscripted leg bands getting academia and researchers and bird enthusiasts alike on the right track. These superscriptions provide a better understanding of the black-faced spoonbill migratory path, distribution, and habitat selection.
5. The Black-faced Spoonbill Refuge Fish Source Survey uses various fish-collection methods

to conduct surveys on the types of fish species, abundance, and size and weight. Besides learning about black-faced spoonbill food sources, the results also provide an understanding of the habitat productivity and biological carrying capacity.

The results of these surveys and research over the years have been compiled into guidebooks and education publication series. Environmental education efforts are conducted providing classroom special topic lectures and ecological workshops to outdoor activities and eco-tourism, inspiring people from all walks of life with a curiosity and interest for learning about natural ecology to step outdoors and care for the land.

This year the Society participated in an academic symposium to share its results. A black-faced spoonbill leg band reporting system was set up and has been operating on the Society's website since 2007. It was designed to cooperate in research on South Korea's black-faced spoonbills breeding grounds conducted by their local Bird Banding Team under the supervision of Dr. Ki-Sup Lee. Representatives from the Society visited the South Korea breeding grounds to conduct black-faced spoonbill surveys and share results. In addition to serving as Taiwan's representative portal for international black-faced spoonbill research, the power of public participation in society was fully realized through extensive volunteer service assistance.

Volunteers are the most important assets of

civic groups. The Society is a non-governmental organization and non-profit organization civic group. Volunteer participation in ecological surveys exceeded 7,767 hours/532 people and participation in environmental education, interpreters, and guides reached 110,100 hours/203 people. Over the years the black-faced spoonbills have been through shootings, refuge establishment, airport development, botulinum toxin, etc. on its way to becoming Taiwan's showcased superstar species. Initially its single species protection was expanded into habitat conservation, and besides the black-faced spoonbill, this habitat also is home to innumerable other organisms to create rich diversity of biological resources. The onsite

volunteers and conservation groups have also made a sustainable mark on this land.

Sustainability as "knowledge" and "ability"

The Society serves as a bridge linking science and on-site fieldwork, people and nature, and people with other people. To observe is to explore, this is "learning"; and transforming the unknown into development is "ability". In the future, the Society will continue its dedication to environmental ecology, while continuing to fulfill its purpose in ecological surveying and environmental education. Through volunteer participation sustainability becomes both "knowledge" and "ability".

Cancer-no no Foundation, Taichung City

Cancer-no no Foundation (CNN), Taichung City was founded in 2005 by the president of Giant Group, Liu, Jin-Biao. President Liu's own experience being diagnosed and treated for stomach cancer over ten years ago and the prevailing awareness that an increasing number of his friends and relatives were becoming afflicted by cancer made him reflect on the importance of "early detection, early treatment." Thus, President Liu established this Foundation and asked his doctor to serve as the Foundation's first director (Dr. Chen, Gran-Hum, a former director of the Division of Gastroenterology and Hepatology at Taichung Veterans General Hospital) working to advocate the prevention of cancer.

In recent years, CNN has organized many health lectures and screenings in central Taiwan, but CNN's abundant medical resources and medical professional expertise alone cannot overcome limited donations, which have stifled efforts to fully implement promotional objectives.

Advocating sustainable health on campus

Since 2008 when the current director of the Internal Medicine Division at Taichung Veterans General Hospital Dr. Chi-Sen, Chang succeeded as the CNN Director for the second and third terms, the main focus has been on advocating cancer prevention and the health-starts-young-and-in-schools message on school campuses. To implement cancer prevention advocacy, correct eating habits and medical information were introduced and professional theater troupes were specially invited to fuse "nutrition education" and "health knowledge" into creative and lively performances, replacing the previous structured teaching approach. Nutrition education was divided into three segments based on the different needs with the first segment a Five Fruits & Vegetables a Day campus tour.

From the results of students' pre-show questionnaires, only half ate all of the vegetables in their nutritious lunch. But after watching the children's theater performance, learning about



⬆ Advocating “Five Fruits & Vegetables A Day” on campus.



⬆ CNN forms a Cancer Prevention Squad.

the One Vegetable Serving, One Fruit Serving, and Eating All Your Vegetables provided in school lunches, and the Try-a-bite-of-a-fruit-or-vegetable-you've-never-eaten-before message the post-show questionnaire answers showed dramatic improvement. In the second segment, Balanced Diet campus tour, and results of the Balanced Diet follow-up questionnaire showed that nearly 70% of the students eat all the vegetables in their nutritious lunch. These marks reveal a two-fold improvement compared to 2008 results, while also reducing the amount of food waste.

Regarding the intake of bean, fish, meat, and eggs, and aimed specifically at soybeans and soybean products, after watching the performance, the children showed dramatic improvements, indicating that the children began to understand that soybean products not only lower cholesterol absorption but are



⬆ Newspaper report on the donation of books to Heping Township by CNN.

⬆ “Foundations Helping Foundations” —United Way publication feature report.

also an excellent source of proteins and can be a substitute for meat. In the third segment, the Disease-enters-from-the-mouth campus tour, the students gained a better understanding of how beverages and snack foods impact health through this theater advocacy.

Through CNN's past four years of efforts providing nutrition education advocacy, it discovered that the children of Heping Township were in need of children's books and within a month's time of energetic efforts, over 6,000 children's books had been collected from donations in central Taiwan, utilizing urban resources and bringing them to remote areas. While CNN only has two full-time employees, they are totally dedicated and devoted to educating the next generation on leading healthy lives.

In 2011, the CNN (Cancer NoNo) Cancer Prevention Special Forces Squad was established to provide a full range of services. CNN continued to engage in campus advocacy



⬆ Open Theater Group performs at schools to promote “Disease enters from the Mouth” public awareness.

work, but also began cooperating with medical centers going out into the community to conduct cancer screening. It also specially organized the Speedy Recovery—Nutrition Care Plan targeting economically disadvantaged patients during treatment and recovery periods, administering appropriate amounts of nutritional supplements to effectively shorten recuperation time for a speedy recovery back to a normal life.

Foundations helping foundations for resource sustainability and sharing

Looking out for the health of disadvantaged groups has been the initiative of CNN's service plan in recent years, and just as with other social welfare groups, it has been affected by a lack of resources, making it difficult to improve service

quality. Since applying for funding assistance from the United Way in 2010, the health and nutrition perspectives of social welfare counseling institutions have improved and kitchen hygiene now satisfies safety standards. Additionally, CNN has opened up health seed instructor training courses to aide social welfare groups achieve self-management by teaching how to use instruments and devices to improve the institute's quality of care and provide children with a healthy environment to grow up in. In its present phase, CNN is applying a foundations-helping-foundations model to accomplish the concept of resource sharing and hopes that in the future more institutions will echo in response, joining hands and striving for the objective of sustainable social resources.

Execution of Sustainable Development Action Plan Award

Forestry Bureau, Council of Agriculture: Promotion of Afforestation Programs

The Forestry Bureau is coordinating with the General National Plan for Energy Saving and Carbon Reduction objectives and the vision of "creating a safe, ecological, and quality

homeland". It strives to strengthen green resource conservation efforts, increase afforestation area and quality, maintain biological diversity of the ecological environment, and provide the public



↑ 21 May 2011 Hualien Forest Park opens to the public.



⬆ Hualien County plains afforestation
—*Elaeocarpus japonicus*.



⬆ Pingtung County Jiuming Community
Beautification.



⬆ Hsinchu County slopeland afforestation—
Calcoedrus formosana.

with outdoor recreation space. Through the fusion of ecology, daily life, and production into one operational mode and developing green recreation industry on the plains, the Bureau hopes to revitalize and invigorate the green resources industry.

Details of this plan's execution strategy entail augmenting afforestation, promoting popularization and technical training, providing guidance and assistance to community's tree planting and beautification efforts, and encourage enterprise organizations to embrace afforestation in hopes of deeply rooting forest resources and creating an enriched homeland. The results of plan implementation from yearend 2008 to 2011 are presented below:

1. Promoting Afforestation: Augmenting state-owned forests, outlying islands, and slope land afforestation, coordinate the turnover of Taiwan Sugar Corporation's fallow cane fields for afforestation, assist farmers to participate in afforestation, and coordinate the participation of various agencies, schools, and organizations in afforestation and beautification efforts to expand overall afforested area. Statistical data indicates a total of 18,695 hectares of newly afforested area, which exceeds anticipated targets by over 1,405 hectares. The following are four specific results of afforestation and beautification:

(1) Equivalent to 748 Daan Forest Parks

effectively increasing each citizen's green area by 8.13 hectares

- (2) Can absorb 280,000 metric tons of carbon dioxide annually, equivalent to the annual carbon emissions of 346,600 air conditioning units.
- (3) Prevents sediment loss and water conservation efficiency worth NT\$6.704 billion.
- (4) Assists in the practical participation of the afforestation incentive plan with the total afforested area of reaching 6,662 hectares, including private land owners and land renters; and if each person has roughly 0.5 hectares of land then this will benefit over 13,000 farmers who have taken part in afforestation.

2. Fulfilling Global Commitment: The 2007 Asia-Pacific Economic Cooperation (APEC) resolution mandates that by 2020 the reforestation area of APEC members must reach 20 million hectares, and based on national land area, Taiwan has already accounted for 11,550 hectares, exceeding its required area by 7,145 hectares.

3. Cultivating Quality Saplings: Success or failure of afforestation and beautification is contingent upon the quality of saplings. The Bureau cultivates 76.3 million high-quality saplings, and these saplings are provided to government agencies, organizations, and

schools at all levels to execute afforestation and beautification efforts.

4. Afforestation Advocacy Promotion and

Technical Training: To help people understand afforestation incentive policies and heighten environmental protection awareness, townships and villages nationwide are holding afforestation advocacy explanatory meetings, incentive afforestation monitoring technology study groups, and have organized a National Tree-Planting and Sapling Donation Activity. Statistics show that there were a total of 504 afforestation advocacy and monitoring technical training gatherings with 81,923 people participating. The National Tree-planting and Sapling Donation Activity held 363 workshops with the number of participants exceeding 440,000 people.

5. Community Tree-Planting Beautification

Assistance: Starting out from a “point” encouraging communities across the nation to actively join in on the tree-planting green beautification procession aspiring to elevate environmental quality. Assistance has already been provided to 1,479 communities accounting for a total of 338 hectares planted.

6. Encouraging Enterprises and Organizations to Adopt Afforestation:

In view of “limited government resources and unlimited public capacity, to increase public participation in afforestation effort, and considering the ever-increasing commitment to social responsibility of private enterprises and organizations, since 2008 the Bureau has encouraged private enterprises and organizations to embrace afforestation, and now there are over 50 enterprises and organizations participating in the adoption of 482 hectares of land afforestation.

7. Planning Design of Plain Forest Parks: Three large-scale plain forest parks over 1,000 hectares each are planned for Hualien, Chiayi, and Pingtung:

- (1) Hualien Danongdafu Plain Forest Park—a LOHAS Forest Park: Creating a diversified recreational experience in this rift valley park featuring LOHAS leisure, organic production, historical land and environmental healing, local culture and sustainable development, and also linking up with the Hualien-Taitung Railway slow tour circuit.
 - (2) Chiayi Dongshi Fishing Port and Aogu Wetland Forest Park—a World Class Wetland Park: Located on the Tropic of Cancer showcasing both coastline and forest resources, developing environmental education and consolidating wetland protection.
 - (3) Pingtung Linhousilin Forest—Dawushan Low Altitude Natural Forest: A mountainous and plains environmental remediation ecological park, developing local environment innovative industries and cultural experiences.
- Of these, Hualien Park opened for visitors 21 May 2011 and Chiayi Park won the 2011 Analysis and Planning Category Award of Excellence (First Prize) awarded by the American Society of Landscape Architects (ASLA) for its master plan.

8. Draft Afforestation Related Regulations: The Bureau drafted eight afforestation policy related laws and regulations to facilitate promotion of the afforestation plan, and produced various handbooks and pamphlets for execution agencies, civic organizations, and the public to improve administrative efficiency and make execution easier for everyone.

9. Test Monitoring and Research: Aimed at issues involving forest growth of afforested land, hydrology, blight, management and utilization, and community consciousness, policies were amended based on the results of scientific data from monitoring and research.

Taipei Feitsui Reservoir Administration: Feitsui Reservoir Sustainable Environment Green Reservoir Action Plan

Feitsui Reservoir is a regulation center for the Hsindian River and serves as the main public and municipal water source for the Greater Taipei Metropolitan Area currently supplying water to five million people. This Action Plan provides the cornerstone of building and implementing Feitsui Reservoir sustainable operations and perpetuating its “regulating flood, supporting droughts, and citizen’s welfare” philosophy aggressively working to provide a safe sustainable water environment with an ample water capacity and high quality water. On the basis of its three visions, the Administration will continue developing sustainable management methods and promoting the Sustainable Environment Green Reservoir Action Plan. Significant results of this Plan are summarized below:

1. High Quality Feitsui—supplying a high quality and ample capacity water source and laying the foundations for economic prosperity

- (1) Engaging in innovative R&D on risk reduction and precipitation forecasting methods to predict future water conditions and strengthen water capacity regulation risk management to avert water crisis in the Greater Taipei area. Over the past four years, the water shortage ratio has been held at 0% and the raw water supply has reached 100%; and during the periods of draught of 2009 and 2011 in northern Taiwan, the Administration worked at full bore to provide expanded water supply.
- (2) During periods of flooding, storage capacity over the past four years has averaged 200 million cubic meters, working to sharply reduce peak flow of downstream waterways and lower the flood level.
- (3) Cutting-edge technological analysis conducts essential dam safety monitoring

tasks, employing an independently researched and developed automated diagnostic system, which is the first fully automated domestic dam safety diagnostic system of its kind.

2. Ecological Feitsui—establishing a low carbon green ecological reservoir

- (1) Reinforcing soil and water conservation and water source reserves and cooperating with relevant agencies to manage landslide-prone areas surrounding the reservoir. An automated reservoir water quality stratification monitoring system provides real-time data to store the clear and release the turbid water using hydraulic de-silting to purify the water. From 2008-2011, approximately 90,000 cubic meters of turbid sediment was released. The reservoir sedimentation rate is 5.85%, and the average sedimentation rate over the past four years has declined by 0.83%.
- (2) Routine weekly and monthly sampling and inspection are conducted onsite and automatic water quality monitoring stations have been installed at seven different sites to fully utilize the water reservoir upstream pollution early-warning system and access



↑ EPA Minister presents charter for greenhouse gas (GHG) monitoring/inspection.



↑ Feitsui Reservoir water quality sampling work.

the dam station stratification water quality real-time data to initiate store-the-clear-and-release-the-turbid-water storage adjustment processes. Various pollution prevention and mitigation measures are employed via installation of 19 water quality sampling stations that provide regular physiochemical and algae sampling and inspection, conducting a total of 34 water quality tests. The reservoir's Carlson's Trophic State Index (CTSI) over the past four years (2008-2011) has averaged 40.92, indicating a stable, high quality water supply.

- (3) During flooding periods release of low turbidity reservoir water to assist attenuation and reduce sedimentation rates in the Nanshi River to prevent the downstream Hsindian River water from excessively high turbidity leading to a water shortage crisis.
- (4) In 2011, the Administration became the first domestic reservoir to complete greenhouse gas (GHG) emission investigations and

received approval certification from the Environmental Protection Administration (EPA), and its GHG net carbon reduction benefit is approximately 121,000 metric tons. The Administration is accelerating the replacement of old power consuming equipment, implementing daylight controls and power-saving fuel-efficient methods, and promoting energy conservation. To reduce harmful street light glare and create an eco-friendly environment, in 2012 it employed green power vehicles (electric motor boats, electric vehicles, and electric motorcycles) using its power plant's own electricity to recharge.

- (5) Augmenting the water environment ecological conservation and restoration, the Administration organized and assisted baseline survey work on ecological resources, conducting a study on the life history of the emerald green tree frog (*Rhacophorus prasinatus*). In recent years, it has also propagated over 10 thousand saplings of the local endemic species Wulai rhododendron (*Rhododendron kanehirai* Wilson). A Taiwan reservoir fern classroom was established, with its fern garden home to more than 130 native fern species and receiving over 30,000 visitors since its inception in 2008.

3. Education Feitsui—encouraging everyone to participate in water resource conservation

- (1) A 2011 survey revealed that up to 97% of respondents were satisfied with the "water supply stability" of their tap water and 88.7% of respondents were satisfied with their "tap water quality."
- (2) Feitsui Reservoir Hsindian River Chingtan water quality and water level protection area has an average annual attached levying of roughly NT\$288 million water resource conservation and compensation fees, manifesting the spirit of water



⤴ A sustainable water source for Greater Taipei.

compensation policies.

(3) The Feitsui Reservoir Environmental Study Center and website was established. On 17 November 2011, it became the nation's first government agency to obtain environmental education facilities venue certification, holding general activities such as city government visits, water resource native land pilgrimages, student guided tours and ecological camps, and volunteer tour guides. Annual visitor cap restrictions of 16,000 people are enforced.

(4) Calling on residents in catchment areas to join hands and work together to provide water resources. Besides providing indigenous inhabitants with boat transportation to visit ancestral burial grounds, relevant agencies have launched the Pinglin District Organic Liquid Fertilizer Model Plan to prevent fertilizers from being washed down into the reservoir from the roughly 1,275 hectares of tea plantations in its catchment area. The Administration holds workshops educating tea farmers about liquid fertilizer application methods and precautions, and also subsidizes tea

farmers' purchase of organic fertilizers as an incentive to reduce chemical fertilizer use.

Looking to the future, the Administration will remain vigilant employing its sophisticated dam safety management and water and soil conservation and de-silting measures, upgrading reservoir operational mechanisms and water supply control efficiency, engaging in energy conservation and carbon reduction and supplying green power, and building a biological habitat and eco-friendly environment. It will continue promoting green energy vehicle prototypes, working together with residents to reduce pollution and strengthen measures to live



⤴ Joint investigation of catchment area for pollution source.

in harmony with the environment, and engraining water environment education advocacy and elevating general public participation. Lastly, it will continue cooperating with responsible authorities in water resource areas to expand water quality and capacity, enhance sewage

water pollution processing capacity, promote proper fertilization at tea plantations to reduce non-point source pollution, conducting joint investigation of pollution sources, and promoting a reservoir protection strip to prevent fertilizers from entering the reservoir.

Forestry Bureau, Council of Agriculture: Forest Environmental Education Resource Integration Promotional Platform Implementation Plan

The Forestry Bureau is the central competent authority of Taiwan's forest management agencies and conservation affairs, and is also Taiwan's largest natural resource management unit. Thus, it has the responsibility to initiate the integration and promotion of environmental education resources and providing first-hand learning environments that raise peoples' environmental sustainability knowledge, attitudes, and skills as well as allowing them to realize the value of resolving problems and taking action in the pursuit of sustainable development.

When the Forestry Bureau amended the Forest Recreation Area Facility Management Act in July of 2005, it formally brought environmental education into forest recreation, making it an important initiative. In 2006, it drafted the Forestry Bureau Nature Education Center Development System and Promotion Strategy with implementation occurring in three phases from 2007-2009. Commanding jurisdiction over the forest recreational areas, forestry culture parks, and tree banks, eight Nature Education Centers have been established, bringing in specialized personnel, systematic and structured development, and integrating formal and informal education to provide the five service categories of outdoor education, themed events, specialized learning, special planning, and environmental guided tours. On 5 June 2011, the Environmental Education Act was implemented, becoming Taiwan's most comprehensive forestry education learning network.

The guiding principle of the Forestry Bureau's Nature Education Center is "Nature Teacher and LOHAS Learning". Its ten-year vision (2012-2021) is to "inform more people about forestry", "ensure high quality services", and "become identified as a leader in outdoor environmental education" thus actualizing the Forestry Bureau's core values of "protecting the forest ecology and conserving natural resources". Presently, service capacity is gradually increasing and as of 2011 yearend, it had launched more than 250 programs, providing an average of over 100,000 people with learning opportunities annually, and online services to tap into social media and network applications. Additionally, Forestry Bureau publications spread environmental messages throughout the land, and it actively engages in domestic and overseas cooperative exchanges, personnel training, learning effectiveness assessments, assessment mechanisms, and ongoing quality control strategies to continue improving service quality and ensuring sustainable development.



Timber storage pool became an eco pond providing habitat for wild flora and fauna.



↑ Green building concepts revitalize old buildings to create a Nature Education Center educational and office space, while achieving environmental friendliness.

The Forestry Bureau's Environmental Education Resources Integrated Promotional Platform encompasses relevant natural resources management, statutes and policies, site facilities, operational management, human resources, and financial planning as it strives for sustainable development operational strategies. It is anticipated that the Forestry Bureau's development experience can become a model for domestic environmental education center development.

International cooperation from friendly diplomacy

The Forestry Bureau signed a memorandum of cooperation with the Field Studies Council in England promising concerted efforts to promote environmental education. At the 1st APEC Forestry Ministerial Meeting, it shared Nature Education Center experiences with other nations, it held the 3rd Asian Zoo Educators Seminar, and together with Japan organized the 311 Fukushima Earthquake Orphan Forest Healing Activity, actively pursuing and taking advantage of opportunities to get involved in international exchanges.

Receives acclamations and environmental education site certification

In 2010, the Forestry Bureau's Nature Education Center Facility Development and Service Quality Improvement Project was awarded the Executive Yuan 2nd Session Government Services Quality Award. In line with Environmental Education



↑ Students peer through homemade peep canisters to get acquainted with a water world they normally can't see.

Act implementation, as of July 2012, all eight Nature Education Centers had been certified as Environmental Education Sites, and 15 staff members had received environmental education personnel certification.

Developing strategies in step with the times

The Forestry Bureau faces external issues of socioeconomic structural change, the implementation of the 12 Year National Education Plan, and the launching of the Environmental Education Act; as well as the internal issues of natural resources management, legislation and policies, site facilities, curriculum programs, human resources, operational management, and finances. In response to these conditions, the Forestry Bureau has adopted an Action Study Model and created a "learning model organization", encouraging all members to continue improving skills, innovative thinking, gathering enthusiasm, and building consensus for better resolving problems. The Forestry Bureau's promotion of the Forest Environmental Education Resources Integration and Platform development process can be used as a benchmark for other environmental study centers, and its team development and operational management methods can also serve as prototypes for other public sector organizations.

Forest management requires everyone's participation

Forestry is an ancient tradition and trade, and today's forestry professionals face many land challenges (finding a balance in harmony with nature, determining the most just and beneficial public values, etc.), water challenges (typhoons and torrential rains, landslides, water shortages and drought, driftwood, etc.) and authority challenges (knowledge and technology transmission, communication, persuasion, negotiation, decision-making, etc.). Thus, the



Binoculars let us see farther, while also opening up children's vision for the future.



The forest is everyone's essential asset and we all need to join hands and take care of it together.

Forestry Bureau must rely on public participation to consolidate policy discussions and utilize environmental education and environmental mass media channels to forge a common public consensus on forest management.

In the future, the Forestry Bureau's Nature Education Center will continue accumulating operational development experience, building interactive exchange mechanisms to connect a diverse array of interested individuals and organizations for the promotion of environmental education. It will collectively encourage everyone's participation and provide lifelong environmental education to create "Nature Teacher and LOHAS Learning" quality nature education sites. Through these efforts, the Forestry Bureau anticipates that it can elevate the environmental literacy of the entire population and take further steps towards the nation's sustainable development.

The Participation of United Nations Conference on Sustainable Development 2012 (Rio+20)

5.1 | Overview and Preparation

The United Nations has made the conclusion in the 64th Congregation, in December 2012 that the United Nations Conference on Sustainable Development, UNCSD would be held in Rio, Brazil in June 2012, also known as Rio+20. "Green Economy within the context of Sustainability Development and Poverty Eradication" and "Institutional Framework for Sustainable Development" will be regarded as two major constructs. After "Earth Summit" in 1992, "World Summit on Sustainable Development" in 2002, this is the third time all the leaders worldwide would be invited to participate in the global summit and discuss the problems all human beings are facing at hand while seeking sustainable development.

Since UNCSD declared the commission of Rio+20 in 2012 on the Internet, UNCSD has included the issue of Rio+20 in the 30th regular meeting since October 2012. Afterwards, three discussion meetings were summoned to invite the related departments and committee members of UNCSD to contribute ideas and opinions.

Wu Den-yih, Former Premier of Executive Yuan indicated in the 24th Committee Meeting of NCSD that 1. R.O.C shall not be absent in the

"Rio+20" held once a decade in June, 2013, as we are a member of the global village. NCSD is in charge of the preparation of the meeting and collaboration. 2. Related-departments shall allocate budget for the participation of "Sustainable Development 2012" and related NGOs shall be invited to participate in the meeting.

Premier of the Executive Yuan, Sean Chen appointed the Deputy Minister of Environmental Protection Administration (EPA) Shin-Cheng Yeh as the leader of the delegation of Executive Yuan to participate in Rio+20 in Rio de Janeiro.

The Purposes of the Delegation of Executive Yuan for participating in Rio+20 are as follows:

1. R.O.C's participation in the United Nations Summit held only once a decade is a strong demonstration and evidence to the international society, "R.O.C has a strong pledge to seek sustainable development along with other nations, also we are willing to shoulder the responsibility as a member of the global village."
2. To follow the latest trend of global sustainable development and plan out the responsive



↑ The Assembly published "The Future We Want" as the result of Rio+20.

measures for sustainable development in the R.O.C.

3. Through the participation of Rio+20 and bilateral talk, the vision and effective results of the promotion of sustainable development and green economy in the R.O.C shall be widely recognized by all nations.
4. Based on the conclusion and documents of Rio+20, the strategy of sustainable development can be adjusted for the acceleration of R.O.C. becoming a nation of sustainable development.

The preparation and process of participation of the Delegation includes:

1. four group meetings were called before the trip

2. Subsidy was given to help NGOs in the private sector for the booths stand in Rio+20
3. Assembly registration and the preparation for the participation of the surrounding meetings
4. The connection among the private sector groups, youths and student groups and local government representatives
5. Prepare the related documents for "bilateral talks"



The outside of the building at Rio+20's site.

5.2 | Major events participated in Rio+20

The R.O.C. delegation departed respectively on June 4 and 16 and arrived Rio de Janeiro, Brazil on the 15th and 17th. The side meetings, including on-site side events and off-site events, were held between June 13 and 22.

The Environmental Quality Protection Foundation(EQPF) of R.O.C. organized the on-site side events held on June 16. The Ministry of Foreign Affairs invited vice environmental ministers of Honduras and Nicaragua to be the keynote speakers which shows our diversity on

the international stage. This was the first time the R.O.C. held a side event in UNCSD which has significant meaning. No seats were empty and it was a successful event.

The delegation started the dialogue on sustainable development, side meetings and sustainable learning on the morning of June 18th. On the same day, they participated in the side-meetings off the assembly held by EQPF from 2-3 pm.

5.3 | United Nations Conference on Sustainable Development and Related Activity

The Rio+20 had two major topics for discussion: the green economy within the context of sustainable development and

poverty eradication; Institutional framework for sustainable development. The main purpose of the discussion was the evaluation of the progress



↑ "Green Collar Taiwan in Action" is the main theme of Taiwan's NGOs to participate in Rio+20.

of policy implementation and the gaps needed to be shortened. Further political commitments to sustainable development and dealing with new challenges were also discussed. The Secretariat of the Conference listed seven critical issues: employment, energy, urban, food, water, oceans and disasters. These critical issues provided decision makers and other stakeholders focus for urgent and top-prioritized issues during the meetings.

Related Activities

1. SD Dialogue

The Brazil government has won the support of the UNDP on the major topic of constructing a green economy and institutional framework for sustainable development and the major seven critical issues. It held a four day public forum on "sustainable development" from June 16th to 19th. The participants ranged from all aspects of the high-level delegates from society, including the private sector, NGOs, the science community and major groups. The whole process had open and action-oriented debates. The dialogues were followed by voting by all citizens through the Internet: <https://www.riodialouges.org/login>, and the dialogues would be held at the venue of Rio+20. Finally, along with the vote of the

participants of the conference and the votes by the experts involved in the talk, conclusions were reached to serve as the discussion base for the delegates from all nations. According to the calculation by Rio+20, 1,787 in total have joined the on-site discussion.

2. Partnership Forum

In order to strengthen the importance of the partnership, the UN held the Partnership Forum from June 20th to 22nd, with five sessions in total. The Partnership Forum aims to develop

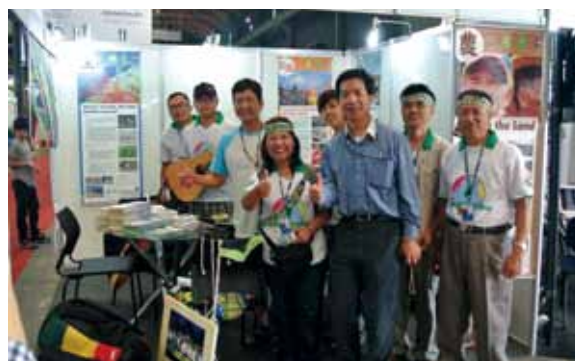
partnerships on the safety of food and nutrition, health, gender equality, sustainability and visions for the future. Also discussed were how sustainable development can be implemented with businesses, and learning, opportunities and challenges at the grass-roots level.

3. SD Learning

To provide participants the skills to develop sustainability, Rio+20 planned a series of sustainable development issues courses. They invited experts or international organizations to plan 3-hour courses. The participants can register on-line or on the spot.

4. Exhibition Hall for All Nations

Parque dos Atletas (Athletes' Park) across from the main hall Riocentro, served as the main court for UN member countries and the Brazil

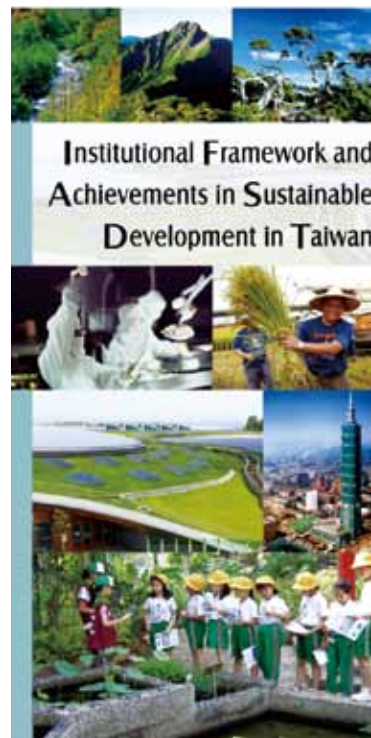


↑ Deputy Minister Yeh (the third from right) visited the exhibition stand of Taiwan's NGOs.

government to display the fruits of sustainable development. There was an exhibition area of 7,000 square meters displaying sustainable development in 57 countries, and another area of 1,305 square meters with the displays of 33 international organizations and specialized agencies.

5. Other activity from private sectors

Citizens from around the world and NGOs held activities at the People's Summit at Flamengo Park (Parque do Flamengo). As the documents produced by the delegates from all nations in Rio+20, the civic society would hold a series of discussions in Flamingo Park and make a declaration at the summit on June 28.



1 Organizational Structure

Taiwan Council for Sustainable Development
Taiwan formed the Taiwan Council for Sustainable Development (hereby referred to as the TCSD) in 1997. One third of the list of 24 to 30 members consists of governmental agencies, one third experts and scholars, and one third non-governmental organizations. There are nine working groups under the TCSD framework, convened by corresponding agencies.

To date, the TCSD has completed various significant documents such as the 'Agenda 21: Sustainable Development Framework for Taiwan' (2000), 'Taiwan Sustainable Development Action Plan' (2002) and 'Taiwan Declaration on Sustainable Development' (2003), 'Sustainable Development Indicator System' (2003), as well as hosted the annual evaluation of the 'Taiwan Sustainable Development Awards' and compiled the 'Annual Report on Sustainable Development'.



Operation Model and Implementation Method of the TCSD



The related brochures to introduce our achievements in Sustainable Development.

5.4 Conclusion and the Results of the Participation of Rio+20

Rio+20 in 2012 reached its perfect ending on June 22. All nations made declarations of their work and commitment and carried on the discussion. After the discussion, the assembly published "The Future We Want" as the result of the conference.

UN Secretary General Ban Ki-moon made the closing ceremony remarks that "The Future We Want" is an important basic principle for the human society, environment and economic development. It mainly consists of 1. How can we attain sustainable development with the means of green economy, 2. the drafts of SDGs, 3. strengthening the function of UNEP, 4. taking necessary measures to increase the benefits and welfare of all nations, 5. proposing a financial strategy for sustainable development, 6. constructing a sustainable production and consumption structure. "The Future We Want"

is divided into six chapters, 283 articles. The six chapters are as follows: Chapter 1. Our Common Vision, Chapter 2. Political Commitment Renewal, Chapter 3. Green Economy under the Context of Sustainable Development and Poverty Eradication, Chapter 4. Institutional Framework for Sustainable Development, Chapter 5. Action and Sequential Development Structure, and Chapter 6. Implementation Approach.

"The Future We Want" proposes the following 13 points in Our Common Vision:

1. We, the Heads of State and Government and high-level representatives, having met at Rio de Janeiro, Brazil, from 20 to 22 June 2012, with the full participation of civil society, renew our commitment to sustainable development and to ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future

generations.

2. Poverty eradication is the greatest global challenge facing the world today and an indispensable requirement for sustainable development. In this regard, we are committed to freeing humanity from poverty and hunger as a matter of urgency.
3. We therefore acknowledge the need to further mainstream sustainable development at all levels, integrating economic, social and environmental aspects and recognizing their interlinkages, so as to achieve sustainable development in all its dimensions.
4. We recognize that poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development. We also

reaffirm the need to achieve sustainable development by promoting sustained, inclusive and equitable economic growth, creating greater opportunities for all, reducing inequalities, raising basic standards of living, fostering equitable social development and inclusion, and promoting the integrated and sustainable management of natural resources and ecosystems that supports, inter alia, economic, social and human development while facilitating ecosystem conservation, regeneration and restoration and resilience in the face of new and emerging challenges.

5. We reaffirm our commitment to make every effort to accelerate the achievement of the internationally agreed development goals, including the Millennium Development Goals by 2015.
6. We recognize that people are at the centre of sustainable development and, in this regard, we strive for a world that is just, equitable



UN Secretary General Ban Ki-moon made the closing ceremony remarks.

and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all.

7. We reaffirm that we continue to be guided by the purposes and principles of the Charter of the United Nations, with full respect for international law and its principles.
8. We also reaffirm the importance of freedom, peace and security, respect for all human rights, including the right to development and the right to an adequate standard of living, including the right to food, the rule of law, gender equality, women's empowerment and the overall commitment to just and democratic societies for development.
9. We reaffirm the importance of the Universal Declaration of Human Rights, as well as other international instruments relating to human rights and international law. We emphasize the responsibilities of all States, in conformity with the Charter, to respect, protect and promote human rights and fundamental freedoms for all, without distinction of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, disability or other status.
10. We acknowledge that democracy, good governance and the rule of law, at the national and international levels, as well as an enabling environment, are essential for sustainable development, including sustained and inclusive economic growth, social development, environmental protection and the eradication of poverty and hunger. We reaffirm that, to achieve our sustainable development goals, we need institutions at all levels that are effective, transparent, accountable and democratic.
11. We reaffirm our commitment to strengthen international cooperation to address the persistent challenges related to sustainable

development for all, in particular in developing countries. In this regard, we reaffirm the need to achieve economic stability, sustained economic growth, the promotion of social equity and the protection of the environment, while enhancing gender equality, women's empowerment and equal opportunities for all, and the protection, survival and development of children to their full potential, including through education.

12. We resolve to take urgent action to achieve sustainable development. We therefore renew our commitment to sustainable development, assessing the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development and addressing new and emerging challenges. We express our determination to address the themes of the United Nations Conference on Sustainable Development, namely, a green economy in the context of sustainable development and poverty eradication, and the institutional framework for sustainable development.
13. We recognize that opportunities for people to influence their lives and future, participate in decision-making and voice their concerns are fundamental for sustainable development. We underscore that sustainable development requires concrete and urgent action. It can only be achieved with a broad alliance of people, governments, civil society and the private sector, all working together to secure the future we want for present and future generations.

The Executive Yuan delegation not only divided up work according to professional fields before the trip, the two major topic issues and seven critical issues were thoroughly discussed and the "Future We Want-zero draft" related articles proposed by the assembly underwent thorough discussion. During the meetings and

activities, including the ones at Riocentro and side events, the Rio+20 Assembly, side meetings, sustainable Development dialogue, Partnership Forum and SD-Learning and Exhibitions for nations were all carefully discussed and analyzed by the group in the pre-tour meetings. The data related to the topic and issues were gathered and concluded. Besides participating in the UNCSD side meetings and activities, the delegation also started bilateral talks with many countries

and international organizations, successfully highlighting R.O.C's presence in the area of sustainable development in the international society. The conclusions of the bilateral talks and the conclusions of the main assembly happened to reach the same result, which could benefit mutual understanding to realize the commitment in the Rio+20 and future cooperation opportunities.

5.5 | Participation in the Side Events and Bilateral Talks

The Accomplishments of side events

1. The accomplishments of participating in on-site side events

The on-site side meetings organized by the EQPF of R.O.C. and Forestry Bureau at 13:30 on June 16 was the first on-site side meeting held by the R.O.C. in UNCSD. The theme of the meeting was "Forest, Livelihood and Green Economy." After the disaster caused by Typhoon Morakot in 2009, Taiwan has developed a sustainable management plan for its forests, and actively

carried out the restoration of forests in the affected areas while taking care of the livelihood of the people and soil and water conservation. The execution of the humanitarian relief work in disasters caused by climate change and the opportunity and hurdles while promoting sustainable development of forests on the local, urban and national levels were all shared in the meeting.

The director of EQPF of R.O.C, Dr. Yin-Shi Hsieh made the opening remarks as the opening of the



➡ The delegation leader & EPA Deputy Minister, Shih-chen Yeh, made a speech on "the Environment Governance of Taiwan"

on-site side meeting and the EPA Deputy Minister, Shin-Chen Yeh made a keynote speech on "the Environment Governance of Taiwan," which proposed that sustainable development shall be cooperated on by institutions. Take Taiwan for example, future environment and natural resources management will be integrated to coordinate pollution control, fight against climate change, manage rivers, prevent disease and protect nature.

The vice director of the Forestry Bureau, Hung-chih Yang elaborated on the topic of "Forestry Management and Restoration in Taiwan," in which he shared the successful factors for Taiwan forest management and protection, mainly counting on the close cooperation with those who live on the forest. The vice secretariat-Shu Fang Lin of the Red Cross society made a speech on "Climate Change and Humanitarian Relief" that described the rescue relief, restoration and rehabilitation after the Typhoon Marokot disaster in 2009 and pointed out that community involvement, sensitivity of the area and sustainable development principles were the key factors to consider to mitigate natural disasters.

Taiwan has invited many officials and leaders of international environmental protection groups from our ally countries. Marco Jonathan Laínez Ordoñez, the vice minister of Environmental Protection of Honduras made introduction on the "ECOSISTEMAS" Program and how the multiple benefits of resource efficiency and sustainable consumption investment can protect biodiversity and aid the development of agricultural villages. Also, Paul Kelly, the presidential policy advisor of Nicaragua, spoke about his national development program; Professor Héctor Velasco-Perroni, Centre for International Sustainable Development Law; CISDL touched on the subject of the hottest topic of REDD+ development law, to lessen destruction and receding of forest, and the carbon emissions of other forestry activities. Also through the involved preparation of the

law-making of REDD+ of Mexico, Vietnam and Zambia, we can monitor the effectiveness of the local governments' willingness to establish the foundation of federal law making through national legislation, local carbon markets and social development programs.

Ms. Maria Fernanda Gebara Abifadel, representative from Fundação Getúlio Vargas (FGV), an NGO that promotes higher education, shared the improvements and challenges of REDD+ in Brazil. She pointed out that NGOs, State governments in Brazil and the private sector have launched preparations for REDD+ in Brazil, including mutual profit sharing and forestry monitoring. However, land use rights, processes and the vertical and horizontal coordination within government institutions need some improvement.

The delegation consisting of representatives from the Executive Yuan, private sector, NGOs and student groups held an on-site meeting, attended by foreign friends, which filled a room of 80 seats. The on-site events were covered by Taiwan media such as TVBS and Liberty Times so that the people in Taiwan could understand the meeting. The event was honored by the International Institute for Sustainable Development's (IISD) recommendation of the information sharing platform, UNCSD-L.

2. The results of the off-site event

The Environmental Quality Protection Foundation of the R.O.C. organized another off-site event at 15:00 on June 18th, with the same topic as the on-site event but a greater emphasis on the environmental education aspects. Vice-Director Yeh made a speech on "Environmental Education and Sustainable Development History and Challenges." Meanwhile vice director of the Forestry Bureau, Mr. Yang spoke on "Forestry Management and Restoration in Taiwan." Professor Osamu Abe from Rikkyo University lectured on Education for Sustainable Development in Japan.

3. Subsidy for NGOs to participate in Rio+20

The EPA subsidized NGOs (Taiwan Environmental Protection Union) to set up the stand for the venue of Rio+20. The UNCSO participated in the Taiwan's NGO activities at Flamingo Park and visited the exhibition stand at Pier Maua on June 17th.

The outcomes of Bilateral Meetings

Before the trip to Brazil for Rio+20, the delegation researched other nations and the issues to be discussed in bilateral talks and made connections through the Ministry of Foreign Affairs. During the conference, the bilateral talks involved were: 1. meeting with four officials of the Environment Ministry from Burkina Faso on June 16 and bilateral talks with Jean Couliadiati, the Minister of Environment of Burkina Faso. 2. a bilateral talk with Leal, Brazilian Congressman on June 19. 3. bilateral talk with Hon. Faton Ndeye Gaye, the Minister of Environment and Forestry of Gambia and Timo Makela, the Director of International Affairs of European Commission on June 20. 4. a bilateral talk with the Brazilian Senator Samey and Congressman Rollenberg on June 21.

Ally Countries Talk about the R.O.C. in Rio+20

1. Burkina Faso

The leader of the delegation of Burkina Faso, the Minister of the environment urged the assembly of Rio+20 to accept R.O.C as a member country. While international society is devoting to a low-carbon economy and sustainable development, the R.O.C. (Taiwan)

with its economic strength and investment in sustainable investment should be part of the global effort. Burkina Faso proposed at Rio+20 to accept Taiwan as Permanent observer.

2. Tuvalu

Prime Minister Willy Telavi led the Tuvalu delegation and made a declaration to support the R.O.C's participation in international organization. Besides the 002 telegraph, Mr. Telavi spoke on June 20, saying: "It is undoubted that Taiwan shall participate in the UN affiliated organizations to achieve the shared vision of sustainable development desired by the international society."

3. Saint Christopher (St. Kitts) and Nevis

Denzil L. Douglas, Prime Minister of Saint Christopher and Nevis stated the point to assist Taiwan, saying "The government of Saint Christopher and Nevis lays high hope for the president of the assembly to notice Taiwan is excluded from global environment governance, and we strongly urge the assembly to provide an opportunity for Taiwan to participate in the global sustainable development mechanism and negotiation."



⬆ The Rio+20 conference venue during the meeting.

5.6 | Post-Meeting work for the Executive Yuan Delegation

The result and advice reported in the Executive Yuan regular meetings

After the delegation returned to Taiwan, the

Executive Yuan invited the delegation to report the results and feedback of Rio+20 in the regular meeting 3305. The Deputy Minister of the EPA

Mr. Yeh gave the report "The Executive Yuan delegation participation of Rio+20," and the Executive Yuan made the following decisions:

1. The UNCSD in Rio Janeiro, Brazil outlined two main topics, which are to develop an institutional framework for sustainable development and green economy, which by definition has a wider range than green industry. Through multi and bilateral exchanges that the delegation made at Rio+20, we shall recognize the importance of the future trends. Also through the interactions, participating nations gained a better understanding of the efforts and results of Taiwan's sustainable development and green economy.
2. Deputy Minister Yeh proposed resolutions based on the issues discussed and the related documents would be submitted at a NCSD meeting as special cases to be fully studied so that relevant departments can understand how to promote a green economy. For example, the Council of Labor Affairs will be connected to the promotion of green economy, instead of being limited to involvement in understanding green industry.
3. The UNCSD did not establish the WEO as hoped, however, the function of UNEP would be strengthened and vie more widely for universal membership. The Environmental Protection Administration and Ministry of Foreign Affairs and related departments shall watch closely the development to vie for international participation space so that R.O.C. international cooperation can have a more solid foundation for sustainable development policy.

Organizing the post Rio+20 2012 seminar

Four weeks after the delegation came back, the Environmental Protection Administration and

Sustainable Development Committee organized a "UNCSD 2012 after Rio+20 Seminar" at GIS conference center in Taipei. NGOs, youth groups, experts and scholars, representatives from local government and the Executive Yuan delegation were invited to report their feedback and advice on the event. The document produced after the conference— "The Future We Want" was properly introduced as well. A total of more than 200 people participated in the seminar. The speakers were as follows:

1. NGOs:

Dr. Yinshih Hsieh, Environmental Quality Protection Foundation; Chi-rong Li, Taiwan Youth Climate Coalition; Chun-hsiu Wang, President of Taiwan Environmental Protection Union; Men-li Chen, CEO of Homemakers Union and Foundation; Ping-huan Chen, member of New Environment Society of Taichung; Yung-chen Li, member leader of Taiwan Community Alliance.

2. Expert and Scholar:

Professor Ho-ching Li, Center of General Education National Central University; Professor Tsz-luen Lin Department of Political Studies, National Taiwan University .

3. Delegation from the Executive Yuan:

Tsui-yu Kuo, Director of Urban Development, Council for Economic Development; Shu-chen Hsu, Executive Officer of Urban Development, Council for Economic Development, Hung-chih Yang, Vice Director of Forestry Bureau, Council of Agriculture; Chia-hung Hung, Director of Urban Development Branch, Construction and Planning Agency, MOI; Ming-feng Wu, Section leader Fishery Agency, Council of Agriculture; Liang-dong Chen, Specialist of Industrial Development Bureau, MOEA; Kung-yin Huang, Supervisor of Taijiang National Park Administration; Si-chin Tsao, Chief Researcher of EPA.

Words from Our Members



► Completing Its Current Task to Become the Cornerstone of Taiwan

By council member: Chun-Hsin Lin, Chairman of the Archlife Research Foundation

I am truly honored to be a member of the National Council for Sustainable Development (NCSD). In recent years, I've focused on the overall system to observe the development of the council. In terms of the general framework of the council, the greatest achievement and breakthrough of the council and related ministries is the completion of the amendments to the "National Sustainable Development Policy Guidelines". In accordance with the new Sustainable Development Indicators of our nation, the council worked hand in glove with the action plans of various ministries and was thus able to self-review the performance of relevant policies. Although the benefits of these amendments can not be seen immediately, the overall structure has been substantially complete. I believe that future policy makers of the council will be able to utilize this overall structure to gain a comprehensive overview, and promote the sustainable development of Taiwan with effective tools of operation. As we all know, the task of sustainable development includes three dimensions: social, economic, and environmental; none of these should be emphasized to the neglect of the other two. The final vision of the NCSD is, in truth, the integration of the three dimensions into one. Therefore, it is vitally important for the overall structure of the council to have some degree of homogeneity and unity. The absence of a system or structure that can foresee the outlooks of the future will make it difficult for those participating

in the decision-making process to obtain a comprehensive overview of the whole picture. They will become unable to determine whether sustainable development is being carried out homogeneously and with great unity, and they are liable to fall into the trap of prejudice. There is no denying that amendments of the "Sustainable Development Policy Guidelines" is a major breakthrough for Taiwan, but this does not mean it is all smooth sailing from now on. Rather, this signifies that participating decision makers must resolve to push forward the sustainable development of our country toward the goals set forth by the policy guidelines by combining the forces of all parties. Only by doing so can we construct a recycling type development system, achieve a recycling society and economics which co-exist with our emphasis on the environment. Then, and only then, will we be assured of a bright sustainable future for Taiwan.

Compared with the mechanisms for sustainable development in other countries, Taiwan's agenda for the promotion of sustainable development has its own merits. Ours is a system arrived at through our own efforts, which evolved around our modernization process. If we were to review Taiwan's current mechanisms for sustainable development, even with the inclusion of the "policy guidelines", we would find that what we have done so far still falls short of what people expected of us. In other words, although we have come up with many goals, policies, and the corresponding action

plans, we do not know whether these action plans are complementary to the other plans which are already in action. Do they complement or contradict each other? There is much room for discussion. Therefore, we need to come up with a set of assessment tools like they do in other countries.

As far as the assessment tools are concerned, the Secretariat Office of the Council Is in the process of consigning some outsourcing agency to write up a draft on a project base. Although at present most of the assessment tools have been envisaged, it will take time and due process to have them fully implemented, not to mention the fact that the assessment tools will have to be passed by the Legislature. I do hope that in the future, before the implementation of various policies, all government agencies can utilize this self-assessment tool to self-evaluate whether their policies fall in line with the conditions for sustainable development so that the policies

they implement will be complementary to the directions of the "Policy Guidelines."

In sum, from the implementation of the policy guidelines, the promotion of the action plans to the self-assessment of sustainability, we should seek a high degree of internalization. When sustainable development is internalized within various government agencies, all ministries and departments will have a comprehensive mechanism for sustainable development, which, coupled with the government's reform movement, will render the functions of the NCSD totally unnecessary, as sustainable development will become an autonomous operation within each governmental unit. In other words, when sustainable development becomes an internalized mechanism, the NCSD will have served its purpose. The council can make its exit while Taiwan inherits its spirit, pushing its essence to the full, thereby attaining true and comprehensive sustainable development for our country.



▶ **Playing the Role of Overseer and Guardian for the Government**

*by council member Alice Yu,
Chairwoman of the Yu Chi-chung Cultural and Educational Foundation*

Sustainable development is perpetually continuous. It is also a long-term goal with no end in sight. I have been a member of the National Council for Sustainable Development (NCSD) for a number of years. From my participation in the affairs of the council, and from my observation of the promotional efforts on the part of various government agencies, I feel that the Taiwan Government has made some achievements in promoting sustainable development. It is also incumbent upon me to

say, however, that the functions of the NCSD have been constrained to some extent due to some institutional and contextual factors.

In my personal opinion, the shortcomings of the NCSD are as follows:

1. Its meeting schedules are not stable. Often the meetings are held irregularly or indefinitely postponed; and the officials in charge often fail to show up.
2. The resolutions of the council are not consigned to the related ministries for proper

implementation as per Article 29 of the Basic Environment Act, resulting in the lack of real performance. More often than not, these resolutions were shelved for good.

3. When ministries or other government agencies make decisions on policies or governance related to sustainable development, they often fail to notify council members or invite them to join the discussion process. As a result, the council members are unable to play the role of an overseer or guardian.

At present, the legal base for the installment of the NCSD is the Basic Environment Act. This gives people the impression that our government only emphasizes environmental protection. This is a far cry from the ideal that our government should pay equal attention to environmental protection, economics, and society. In the meantime, our government's decision making in the economics and society realms lacks the voice of the NCSD. I am of the opinion that we should vie to have the NCSD incorporated into the Organic Laws of the Executive Yuan. For one thing, this will comply with the procedural requirements of an organizational setup. And, for another, this will elevate the council to a higher level, thus highlighting its function.

Secondly, the council should not exist only in the organizational structure and decision-making process of the central government. To reflect that our citizens attach universal importance to environmental sustainability, and that our local governments also stress the importance of sustainable development, the Basic Environment Act, together with its set of guidelines, should explicitly stipulate that sufficient resources be provided to the council, and that the local governments should install their respective councils for sustainable development as well. Only by strengthening the vertical integration between the councils for sustainable development in the central and local governments can we make our citizens

understand, participate, and practice the concept of sustainable homes.

Moreover, in terms of the promotion of sustainable development within our country, there are tremendous gaps that need to be closed in interacting with our citizens. For instance, there are gaps between the demands of ecological conservation and economic development, the concept of sustainable development and system policies to enforce the concept, a civilian society and official governance, local and global policies of sustainable development, so on and so forth. All these chasms have been long existing and need to be bridged so we can arrive at a convergence and consensus.

It is my sincere hope that, with the kick-off of the reform of our governmental structure, the Council for Sustainable Development could be subsumed under the National Development Council, and the set of guidelines for the installment of the Council for Sustainable Development could be revamped as well, so that the above-mentioned shortcomings could be amended, and the functions of the council could be brought back to life. In this way, the progress of our nation can be ensured, and the policy goal of sustainable development for Taiwan can be achieved. As for the selection of council members, the council's rules of operation, the convocation of meetings (such as work meetings and members' meetings), the decision-making process and follow-up checking, these should all be institutionalized and subject to review at any time.

In the future, the set of guidelines for the installment of the NCSD must beware that laws are only minimum requirements. In the provisions of the guidelines, the council should be endowed with substantial room for development and real power which, coupled with the joint efforts of an ideal-minded chairman, should be able to keep abreast of international trends, expand its vista

and perspective, echo the demand of the general public, and allow the council to

appropriately play the role of being an overseer and guardian of our government.



► The Concept and Practice of Sustainable Development

*by council member Shang-Lien Lo,
Honorary Chairman of Taiwan Environmental Management Association*

Ever since the 1992 Earth Summit in Brazil, the world at large has tried to find a coherent interpretation of the ideas and concepts of sustainable development. From the United Nations, international organizations, various governments, academic institutions to the private sector, research and seminars are constantly being held to arrive at a consensus about the definition of the term. Sustainable development, on its own, has evolved from what initially started as an environmental and ecological point of view, to a level that is consonant with the implementation of social and economic systems. In short, the scope of sustainable development has been greatly extended.

To implement the concepts of sustainable development, most nations have installed an assessment system for evaluating whether a nation has made strides in pursuing sustainable development. Theoretically, the establishment of indicators for sustainable development should be closely tied to the concepts and contents of sustainable development. The definitions of sustainable development, however, varies greatly from country to country, and the abstract definitions would only become "word games" if they could not be connected to the real experience of our national development or be materialized in our current political, economic, social or educational conditions. Thus, sustainable development will have little effect in guiding the policies of our nation. Therefore, to go beyond these abstract definitions, we must firstly understand the basic concepts of sustainable development.

Sustainable development includes several concepts. Environments should have a carrying capacity which must be watched over without over exploitation. In the process of resource development and utilization, intergenerational justice should be adhered to, and under no circumstances should the rights of the next generation be deprived or usurped. All externalities should be accounted for, and economic internalization should prevail, so that environmental pollution will not be dealt with from the angle that it is external to the economy, and thus real economic welfare can be pursued. Finally, institutional capacity building should be established, so that a mechanism for supervision and evaluation can be installed with due respect to scientific principles, market mechanisms, the pluralistic values of democracy and the rule of law, to avoid the making of wrong decisions which can not be reversed in the future.

Therefore, sustainable development of any nation should take into account three dimensions: environment/ecology, social/economic policies, and political systems. These three dimensions are interlocking and inseparable from one another. Any investigation and control of the environmental quality or ecological resources should have a solid scientific base. The response and design of social/economic systems should also depend on scientific information as a basis for decisions. When our environment and ecological systems are impacted severely, the impacts can be largely attributed to our society's behavior and activities. Consequently, we need to think about

this problem from the angle of sustainable development for our social systems.

If we examine the indicators for sustainable development over the last 5 years, we will find that environmental pollution has gradually improved, but the ecological resources still tend to be not sustainable. The economic structure has been gradually metamorphosing, but demographic pressure has not slowed. These indicators show that although efforts on the policy level are moving towards sustainable development, we still need to actively promote sustainable environmental education, so as to enhance universal environmental literacy.

Because 99 indicators is a large number to manage, often the results of evaluation fail to achieve the effect of being an "indicator." So the phenomenon of "one indicator, different interpretation" emerges. For instance, in the cases of Su-hua highway, the 5th phase of the 6th naphtha cracker complex, and the EIA for Kuo Kuang petrochemical plants, environmental protection groups focused on the control of carbon dioxide emissions, soil and water resources, ecological conservation and the health of our citizens. In essence, they stressed the importance of "sustainable development."

On the other hand, the developers emphasized that these cases could mitigate traffic jams, ease social and economic pressure, and that the supervising governmental agencies would strengthen their management tools to reduce the negative impacts brought by these development projects. As we can see, the environmentalists focus on "sustainability," while the developers emphasize "development," each holding onto one end of the rope, so they will never intersect.

The good news is that sustainable development is not totally without progress. For instance, under the joint exploration efforts of scientists and business men from different nations, environmentally friendly technologies such as green chemistry was developed, while industrial ecology was being promoted as well. Cleaner production was implemented, and pollution of all kinds was controlled from their very source. Ecological agriculture, ecological cities and towns were also promoted. Efforts were made to research renewable energies and develop a recycling economy. All these achievements have made the long and lonely journey called sustainable development shine with the radiant rays of dawn.



▶ Sealing the Gap between "Ideals" and "Practices"

by Council member Huei-Chu Liao, Professor of Economics, Tamkang University

The National Council for Sustainable Development (NCSD) of the Executive Yuan was established in 1997. In over a decade, the NCSD has had many achievements. From my experience and observation as a Council member for several years, I personally believe that the NCSD has completed four major tasks that are worthy of commendation:

1. Completion of several important documents related to sustainable development, such as

"Taiwan Sustainable Development Declaration," "Sustainable Development Policy Guidelines," and "Sustainable Development Action Plan."

These documents laid a solid foundation for the promotion of sustainable development in Taiwan.

2. Assisting in the formulation of the Sustainable Development related acts : The "Homeland Security and Restoration Plan"(draft) was discussed many times in the meetings of the

NCSD. During the discussion process, representatives from the various ministries fully exchanged ideas with scholars and experts. Through collective brainstorming, a confluence of ideas was reached, which made the contents of the laws related to sustainable development richer and much more pertinent, and the conflict of opinions was reduced to a minimum, with the spirit of sustainable development fully integrated into the bills.

3. Supervising and urging related ministries to strengthen the policies of sustainable development :

In their regularly scheduled meetings, the NCSD members passed resolutions with regard to “Promotional strategies for energy-saving and biomass energy” and “To maintain the natural beauty of our coastlines, the proportion of natural coastlines shall not be reduced” etc., giving these policies a higher level status, which prompted the various ministries under the Executive Yuan to follow and process. In this manner, the NCSD played a pro-active role in policy enforcement.

4. Enhancing the sustainable development of education, business , and civilian groups :

The NCSD set up the Sustainable Development Awards which had four categories (education, community, corporation civic and action plan implementation) for entries. Capitalizing on their respective areas of specialization, council members offered professional and in-depth suggestions from the preliminaries to the finals, especially during the final re-evaluation process. In the meantime, as some small and medium sized enterprises were not familiar with the nature of the council, members also introduced the positions and functions of the council while broadening the international horizons of the units under review and assisting them to implement far-reaching and diverse sustainable management.

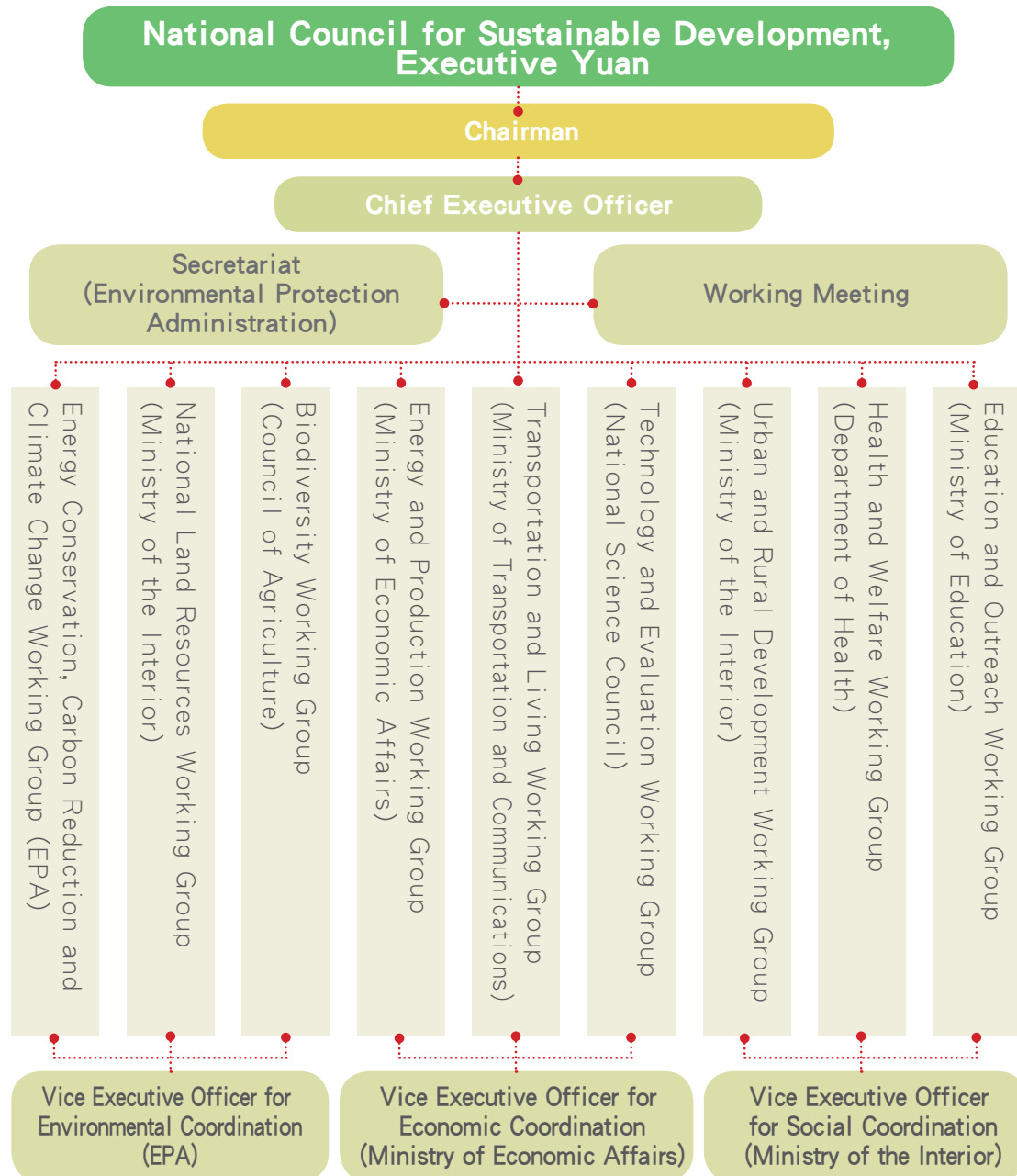
The NCSD still has room for improvement, of

course. I personally suggest that the NCSD enhance its “visibility.” I once participated in a national NGO conference on the Environment. To my chagrin and surprise, I found that many representatives from various community groups were not aware of the fact that the council had been established for many years. This gives proof that the reputation of the council left a lot to be desired. After all, the government’s resources are much more plentiful, if people from all walks of life were cognitive of the existence of the council, not only would they become more aware of the government’s good intentions, they could also play a leading role in building the nation’s sustainable future. A case in point is the National Conference on Climate Change which was held recently. The fact that the National Conference was held in the Northern, Middle, Southern, and Eastern part of Taiwan shows that it was not confined only to the Central government. By going deep to the different localities and interacting with the general public face to face, the council shall become much more recognizable to Taiwan’s people.

Secondly, I believe that the NCSD should emphasize the integration of ideals and practices. From my personal experience, I often saw members from non-governmental agencies such as scholars and experts with diverse backgrounds put forward their suggestions, but the results they could acquire were quite limited. The problem, I presume, stemmed from the lack of sufficient legal base which resulted in various governmental agencies “being unable to respond” to the suggestions. In a nutshell, the absence of legal authorization is the main reason for the gap between ideals and practices. It is my sincere and humble hope that both the government and the private sector can cross this big yawning chasm, improve their mutual understanding, so that the policies on sustainable development are not only ideals, but a working blueprint which can be gradually implemented!

Appendix I

Organizational Structure of NCSD



Appendix II

The Members of NCSD

Government official members

Name	Position Organization
Jiang Yi-huah	Premier, Executive Yuan
Kuan Chung-ming	Minister of Council for Economic Planning and Development, Executive Yuan
Lee Hong-yuan	Minister, Ministry of the Interior
Chiang Wei-ling	Minister, Ministry of Education
Chang Chia-juch	Minister, Ministry of Economic Affairs
Yeh Kuang-shih	Minister, Ministry of Transportation and Communications
Chen Bao-ji	Minister, Council of Agriculture
Chu Ching-yi	Minister, National Science Council
Chiu Wen-ta	Minister, Department of Health
Stephen Shu-hung Shen	Minister, Environmental Protection Administration

Expert and academic members

Name	Position Organization
Lee Ling-Ling	Professor, Graduate Institute of Ecology and Evolutionary Biology, College of Life Science, National Taiwan University
Shao Kwang-Tsao	Researcher, Research Center for Biodiversity, Academia Sinica
Chang Ssu-Li	Professor, Institute of Planning, National Taipei University

Index

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

NGO representative members

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