



# 2021 Annual Report on National Sustainable Development

National Council for Sustainable Development, Executive Yuan



# 2021 Annual Report on National Sustainable Development

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Sustainable development is a shared value across the globe. To seek for national sustainable development and to align ourselves with the world, Taiwan has formulated the Sustainable Development Goals (SDGs) in reference to the United Nations' Sustainable Development Goals, SDGs. To this means, the National Council for Sustainable Development (hereinafter "NCSD") has been founded under the Executive Yuan in 1997, and Taiwan's Sustainable Development Goals (SDGs) have been established in December 2018. In addition, the corresponding indicators for the SDGs were further established in July 2019. Currently, Taiwan's SDGs consist of 18 goals, 143 substantial targets and 336 corresponding indicators. The 18 SDGs are promoted by 17 working groups, Nuclear-Free Homeland Promotion Task Force, and Climate Change and Net Zero Emissions Transition Task Force.

The purpose of preparing the "Annual Report on National Sustainable Development" (hereinafter "Annual Report") is to systematically report on the results of Taiwan's SDG performances in the hopes of calling on participants across all fields to engage in the promotions of SDGs across Taiwan and to contribute toward Taiwan's sustainable development through increasing the awareness of both national and international entities toward the progress and results of our SDG promotions.

The NCSD regularly organized relevant meetings in 2021 to strengthen inter-departmental communications and collaborations, and has prepared the Annual Report through compiling the sustainable development tasks and results throughout the year; NCSD also regularly monitors the status of Taiwan's core SDGs and corresponding indicators to fulfill the goal of sustainable development. This Annual Report is a compilation of key results of NCSD's SDG implementations in 2021, which include Overview of NCSD's Annual Work in 2021 (Chapter 1), Overview of Taiwan's Sustainable Development Goals: Annual Work Progress (Chapter 2), and a summary on the future directions of sustainable development in Taiwan.

The value of sustainable development lies in full participation from everyone, and by preparing the "Annual Report on National Sustainable Development", we hope that more citizens and international parties can acquire insights to the progress and results of Taiwan's SDG promotions, enhance Taiwanese citizens' awareness for sustainable development, and thereby joining us in collectively promoting Taiwan's sustainable development.



The members of the National Council for Sustainable Development, Executive Yuan (hereinafter, "NCSA") meet once or twice in each year, while working conferences are convened by its CEO in order to coordinate the proposals from the council member meetings as well as to supervise the executions of their resolutions.

In 2021, the NCSA convened 1 council meeting (the 33rd council meeting) to discuss the active revision of "Greenhouse Gas Reduction and Management Act" into the "Climate Change Act" to strengthen the responses to climate change. In addition, 2050 Net Zero targets are also included, while implementations from the 32nd council meeting were reported, and the "Annual Review Report on Taiwan's Sustainable Development Goals in 2020" was approved.

In addition, 4 working conferences were convened in 2021 (working meetings No. 49 to No. 52). The meeting tasks for the first half of the year were reported during the 49th working conference, which included adjusting the organizational framework, nominating and awarding the recipients to the 2021 National Sustainable Development Awards, filling out the corresponding indicators to Taiwan's Sustainable Development Goals (SDGs), and strengthening adaptations to climate change, as well as developing sustainable development education in younger students; The 50th working conference saw a report on the sustainable development policy planning by building circular economy systems in Taiwan's agriculture, forestry, aquaculture, and animal husbandry industries, implementations of low-carbon and sustainable green transportation, executions of the Green Building Certification, as well as responding to composite disasters under extreme weather; The 51st working conference saw reports on Taiwan's Spatial Planning Act and Sustainable Development Report, promoting responsible production which emphasizes both healthy workplace and green production, as well as issues to promote the awareness for sustainable development in Taiwan's small and medium enterprises (SMEs); The 52nd working conference was a continuation of unfinished proposals at the previous meeting. The analysis on "Building a Digitized and

Sustainable Future" was reported, and two resolutions including the strategic planning to reduce fatality ratio of pregnant women, newborns, and children under the age of five, were made. Major resolutions from this year's meetings are as follows.

## I. Convened the 33rd NCSA Council Meeting

The 31st Council Meeting was held on August 30, 2021 in the 1st Conference Room on the second floor of the Executive Yuan and was presided over by ROC Premier and NCSA Chairman, Su Tseng-chang. The meeting included three reports, and major resolutions are as follows:

### 1. Report 1: The progress on the resolutions from the previous (32nd) meeting

#### Resolution:

There are many SDG corresponding indicators and targets, thank you council members for giving us such invaluable suggestions using your own respective expertise. A correlation analysis is indeed crucial to promoting the SDGs. Thus, the NCSA will ask the National Development Council to serve as our Secretariat.

- (1) The CEO and the implementation units are asked to analyze the operating method proposed by the council member. Please ask the council member for advice.



▲ Figure 1-1 33rd National Council for Sustainable Development (NCSA) Council Meeting

(2) Regarding the "rolling adjustment of the SDGs", all working groups and task forces are asked to review and adjust the indicators and definitions needing revisions, and these will continue to be controlled. NCSO has consented to release the others from control.

## 2. Report 2: Annual Review Report on Taiwan's Sustainable Development Goals in 2020

### Resolution:

Having formulated the Sustainable Development Goals (SDGs) in 2019, year 2021 marked the second annual follow-up management. Of the 336 corresponding indicators, 242 of which, or 72%, have been completed. However, the progress of 45 indicators is behind schedule, and some of the causes may not have been their respective implementations, but rather, factors such as changes in current conditions, laws, or pandemic preventions.

- (1) Regarding the changes in current conditions, the NCSO Secretariat is asked to propose a report on whether certain targets should be kept or altered.
- (2) For indicators whose targets are not altered, the working groups should strengthen supervision and invite relevant authorities and professional members of NCSO to convene working conferences. They should collect opinions and implement continuous reviews and amendments of the corresponding targets to enhance the achievement rate of the indicators.
- (3) The "Annual Review Report on Taiwan's Sustainable Development Goals in 2020" was approved, and the Secretariat is asked to announce it on the NCSO's website.

## 3. Report 3: Strengthening adaptations to climate change

### Resolution:

Extreme weather has become a global challenge and it is occurring at a much faster rate with much more severity than previously imagined. We were

only able to cope with disasters such as the May 2021 drought - the worst of the century - through the forward-looking infrastructure plans. However, we were subsequently hit with disastrous rainstorms in July and August. The severity of the extreme weather conditions has led to significant impacts. Nations across the world, including Japan and nations in Europe, have suffered similar impacts. It is an issue that must be addressed by the world together. As a member of the global community, Taiwan must be part of the solution.

More than 130 nations worldwide have already declared "net-zero emission" targets, and 11 nations including those in the European Union and Japan have already included the targets in legislation. Four countries, including Republic of Korea, are currently in the process of enacting legislation. China has also announced its target of attaining carbon neutrality by 2060. The targets set by Taiwan in the past are no longer adequate for keeping up with the world. On Earth Day on April 22, 2021, President Tsai Ing-wen stated that "net-zero emissions by 2050" is a universal goal as well as our national goal in Taiwan. Premier Su Tseng-chang has also decreed at the Executive Yuan on the same day that, compared to other nations' adaptations to the challenges from climate change, we need to pick up our pace and Taiwan's "Greenhouse Gas Reduction and Management Act" must be committed to achieving the net zero emissions by 2050 target.

The European Union plans to impose "carbon tariffs" starting from 2026 and many countries have prepared response measures for carbon tariff adjustment mechanisms. Countries such as those in the European Union have announced targets and set deadlines. They even enacted regulations for reducing payment if the country of origin has implemented carbon pricing. As a major exporter, if Taiwan fails to collect carbon taxes, companies would pay carbon taxes in other countries instead of paying them in Taiwan. The time has come for Taiwan to speed up relevant processes. As long as we work together as one, we can flexibly achieve our targets.



- (1) The EPA is requested to actively proceed with the amendment of the "Greenhouse Gas Reduction and Management Act" and include the "net-zero emissions by 2050" target in the legislation. The EPA shall engage and communicate with all relevant sectors to improve legislation and ensure sustainable development.
- (2) The EPA and Ministry of Economic Affairs are requested to communicate with all sectors on the carbon pricing system and build consensus on detailed implementation and response measures. They are also requested to engage in active communication and careful evaluation on carbon pricing and carbon fees to be used exclusively for mitigating climate change, as well as comprehensive plans for carbon reduction allocation. This will enable Taiwan to create a sustainable green homeland in terms of supply, manufacturing, utilization, and the environment.
- (3) Many council members have proposed oral and written suggestions during this meeting, and relevant departments are requested to coordinate relevant opinions and to further inquire and communicate with the council members in order to build consensus. The CEO of the NCSD and the National Development Council are also requested to actively coordinate the subsequent operations.

## II. Convened working conferences No. 49 to 52 for the NCSD

Working conferences No. 49 to 52 were convened in order to organize the 33rd council meeting. The 49th working conference was held on April 16, 2021, in the 1st Conference Room of the Executive Yuan. It was presided over by Minister without Portfolio and NCSD CEO Chang Jing-sen. The conference included 4 reports, and major resolutions from this conference are as follows:

### 1. Report 1: The progress on the resolutions from the previous (48th) working conference.

Resolution: Approved.

### 2. Report 2: NCSD's tasks for the first half of 2021 were reported.

#### Resolution:

- (1) Report on the organizational framework adjustments of the NCSD: NCSD's current organizational setup was not formulated in correlation with the Sustainable Development Goals (SDGs), and certain goals, such as Goal 5 "Gender Equality", Goal 10 "Reduced Inequalities", Goal 16 "Peace, Justice and Strong Institutions", and Goal 17 "Partnerships for the Goals", could not be correlated with the existing framework. Thus, in line with Taiwan's SDGs, NCSD's organizational framework has been restructured to form 18 working groups based on the 18 core goals. In particular, Goal 5 "Gender Equality" is now headed by the Ministry of Health and Welfare, Goal 7 "Affordable and Clean Energy" is headed by the Ministry of Economic Affairs, Goal 12 "Responsible Consumption and Production" is headed by the EPA, Executive Yuan, Goal 14 "Life Below Water" is headed by the Ocean Affairs Council, Goal 17 "Partnerships for the Goals" is now headed by the Ministry of Foreign Affairs, while the other working groups are still headed by their original departments or ministries that were in charge of the Goals. Goal 6 is abbreviated as "Environmental Quality" and Goal 9 is abbreviated as "Sustainable Transportation". Furthermore, in line with the fact that the conveners of each working group are the heads of their respective ministries or departments, the Deputy CEO of NCSD is now concurrently served by the Head of the Secretariat. The Secretariat is requested to sign and proceed with the revisions to NCSD's Organizational Charter.

- (2) Selection and commendation for the 2021 National Sustainable Development Awards: Selection and commendation of the National Sustainable Development Awards will continue to be handled by the Secretariat, and the conveners of the SDGs will assist in recommending high-performing organizations for the Awards. The participants will not be classified as either an educational institution, enterprise, private organization, or public entity, and their contributions to the 18 SDGs will be factored into consideration during the selection. Its schedule will be postponed for two months; the Secretariat is requested to study and revise the commendation plan.
- (3) Status of filling the corresponding indicators for Taiwan's Sustainable Development Goals: In case any corresponding indicator has not been filled or filled with insufficient content, the department or ministry in charge of the Goals are requested to oversee that the departments in charge of the corresponding indicators should complete the forms before April 22nd. The Secretariat is also requested to handle the subsequent revisions of the indicators.
- (4) NCSD's meeting tasks for the second half of the year: The topic submission mechanism for subsequent working conferences and council meetings will be processed in line with the procedures planned in the current meeting.
- (5) Since the Sustainable Development Goals (SDGs) cover a wide range of topics and some of which are relatively abstract, a Goal Spokesperson may be set up for each Goal in order to properly share and communicate knowledge. The candidates of which may be served by ministry heads or individuals with the positive image from private sectors or experts/scholars. These individuals will assist in conveying the policies and results of SDGs externally and build channels of communication between the government and the public.

### 3. Report 3: Strengthening adaptations to climate change

Resolution: The Climate Change and Energy and Carbon Reduction Task Forces are requested to submit reports to the 33rd Council Meeting after revising their reports in line with the council members' suggestions.

### 4. Report 4: Developing sustainable development education in younger students

#### Resolution:

- (1) When promoting sustainable development, the Ministry of Education shall factor in the differences in physical and mental development, maturity, as well as skills in elementary, junior high, high school, and college students, and formulate different key targets accordingly. For instance, elementary and junior high school students should develop sustainable, low-carbon habits, and students living within 500 meters to their respective schools should be encouraged to walk to school, which will reduce the number of parents who drive their children.
- (2) The Ministry of Education's past efforts in promoting a sustainable and circular campus are highly commendable. Going forward, it should find ways to implement the sustainable development slogans in daily practices. For instance, concepts such as food and agricultural education and energy transition should be introduced to course curriculum.
- (3) The Life and Education Working Group is requested to revise the contents of its report based on the recommendations from the council members.
- (4) Topics for NCSD's 33rd council meeting will be selected from the reports in the current (49th), 50th, and 51st working conferences.

The 50th working conference was held on Tuesday, April 20, 2021, in the 3rd Conference

Room of the Executive Yuan. It was presided over by Minister without Portfolio and NCSD CEO Chang Jing-sen. The conference included 4 reports, and major resolutions from this conference are as follows:

### **1. Report 1: Sustainable development policy planning in Taiwan's agriculture, forestry, aquaculture, and animal husbandry industries - Building circular economy systems**

#### **Resolution:**

- (1) New agriculture is an important Presidential policy and the Council of Agriculture shall engage in proper planning for the next three years in order to build sustainable and circular agriculture using innovative added values. Members of the NCSD may be invited to engage in the process and to regularly listen to reports from the Council of Agriculture. Through collective thinking and having the NCSD manage the process, we hope to deliver stellar performance before the President finishes her second term.
- (2) The most important factor in agriculture is the production environment, in which water is a crucial element. The agricultural water use requires significant transition and adjustment to pave the way toward sustainable development and mitigations for climate change during extremely dry weather in the future.
- (3) The greatest problem in forestry is the low wood self-sufficiency ratio. Though manmade forests (such as bamboo forests) are very large, but such forests cannot be reasonably utilized even when they reach a certain stage of maturity, leading to inadequate carbon sequestration. And currently, there is little consensus regarding the national policy on forestry. Efforts need to be made to raise accurate awareness on forestation in the public and to increase the wood self-sufficiency ratio.
- (4) In terms of aquaculture, coastal fishing resources have been depleted and overfishing continues to be an important issue. We need to truly examine the underlying problems.
- (5) Reutilization of the animal husbandry industry has begun to show positive results in the past few years, but structural transformation remains the core issue in this industry. For example, some of the problems that should be solved include unmanaged small-scale farms that have led to environmental impacts and have low yield.

### **2. Report 2: implementations of low-carbon and sustainable green transportation**

#### **Resolution:**

- (1) To achieve carbon reduction targets, the transportation process still needs to reduce fossil energy use and develop toward electrification, hydrogen, carbon-less, and shared rides. Currently, in terms of shared rides, shared vehicle services are only promoted in remote areas, but to reduce the ratio of private vehicles, there is also room for growth in urban areas.
- (2) Approximately 3,000 persons die from traffic accidents annually. This is a major national loss and we hope to include it as an important task over the next three years, as well as to achieve the target of less than 2,000 fatalities from traffic accidents before the end of 2030.
- (3) We hope to work toward carbon-less transportation vehicles and public rides. In general, elementary school and junior high school students live within 500 meters from their schools, and we can discuss with the Ministry of Education over the possibility of having the students walk to school. Furthermore, pedestrian planning within the city should be promoted to make the pedestrian environment safer. We could also build more pedestrian overpasses, cycling lanes, and advocate for low-carbon vehicles

and call on all departments to jointly advocate for the sustainability target.

### 3. Report 3: Green Buildings and Ecological Communities: Executions of the Green Building Certification

#### Resolution:

- (1) The latest trends should be used as a reference in the evaluation criteria for Green Building certification, and the methods used in building approval should be reviewed and updated.
- (2) In terms of the overall number of buildings, the ratio of new buildings is relatively low in the buildings overall and there are very few applications. We hope to focus on the improvements of existing buildings. By referencing award-winning cases of building improvements overseas, we can research and propose incentives for energy and water conserving improvements in old buildings.

### 4. Report 4: Responding to composite disasters under extreme weather

#### Resolution:

- (1) To address the effects of climate change and extreme weather, Taiwan shall undertake reasonable planning and strategic layout regarding large-scale floods, droughts, earthquakes, and land spatial structures. The public infrastructures also require transformations and adjustments. In response to the current drought, the Ministry of Economic Affairs is already engaging in strategic adjustments to water resources, which include building a water-saving system. Additionally, earthquakes and typhoons also present enormous challenges, and their respective responses also require meticulous planning.
- (2) The other reports will be reported at NCSA's 51st working conference. The Secretariat is

requested to arrange subsequent matters related to calling the meeting.

The 51st working conference was held on April 30, 2021, in the 1st Conference Room of the Executive Yuan. It was presided over by Minister without Portfolio and NCSA CEO Chang Jing-sen. The conference included 2 reports, and major resolutions from this conference are as follows:

### 1. Report 1: Resolutions regarding the National Spatial Planning Act and Sustainable Development

#### Resolution:

- (1) The National Spatial Planning Act was announced in 2016, and the Spatial Planning Act for each municipality and county/city was announced in this year. To promote sustainable development of Taiwan, the spatial planning may be arranged by function in four years. However, the concept for mitigating and adapting to climate change has been integrated into spatial planning system, and the spatial planning strategy is required to undergo major adjustments and revisions, including: This year's drought involves the adjustments of water resource utilization strategies. Going forward, droughts and floods will both occur under the extreme climate conditions; moreover, Taiwan is exposed to the threats of both rising sea levels and storm tides, and the flood prevention system should be integrated with water resource management, such as: Using rainwater collection system to store water in order to mitigate possible impacts from climate change.
- (2) The President has announced the vision to achieve carbon neutrality by 2050 on this year's Earth Day, and directed the Executive Yuan to oversee the planning and evaluation of pathways to achieve net zero emission target. However, the core issue for net zero emissions lies in energy and it is therefore

greatly intertwined with the strategic planning of energy consumption. In addition, due to insufficient land mass dedicated for green energy, the key to fulfilling green energy development in Taiwan will be the strategic targets of the overall Spatial Planning Act.

- (3) The strategies originally planned for the Spatial Planning Act need to be remedied since they cannot encompass contemporary critical issues. In response to floods and droughts as well as severe typhoons associated with climate change, we should achieve the net zero-emission target by 2050. To this means, topics such as water resource management and green energy infrastructure building should be considered. The Ministry of the Interior is requested to begin examining the current Spatial Planning Act and to propose a comprehensive strategic plan to address the current and future needs.
- (4) The Secretariat is requested to notify the Council of Indigenous Peoples to plan a visit to the Smangus tribe, a sustainable community, as reference for subsequent promotions.

## **2. Report 2: Promoting responsible production which emphasizes both healthy workplace and green production, and promoting the awareness for sustainable development in Taiwan's small and medium enterprises (SMEs)**

### **Resolution:**

- (1) Green finance is to achieve sustainable development in environmental, social, and economic aspects three reallocating financial resources. It encourages financial institutions to increase resources in the fields of green, low-carbon, and circular economy, and guides the society (including consumers and investors) to shift its preference to green production and consumption. To this means, the government shall formulate an overall framework and to systematically promote

relevant practices, which would prevent impacts of the European Union's carbon tariffs on Taiwan's exports.

- (2) To promote green economic development and to align Taiwan's practices with international standards and thereby enhance the international competitiveness of Taiwan's industries, the Ministry of Economic Affairs, Financial Supervisory Commission, and Environmental Protection Administration are requested to properly research and discuss standards on environmental and social responsibilities for the industries as well as a promotional mechanism for green finance standards based on the council members' suggestions.

The 52nd working conference was held on Wednesday, May 5, 2021, in the 1st Conference Room of the Executive Yuan. It was presided over by Minister without Portfolio and NCSD CEO Chang Jing-sen. The conference included 2 reports, and major resolutions from this conference are as follows:

### **1. Report 1: Analysis report on "Building a Digitized and Sustainable Future"**

#### **Resolution:**

Though the Executive Yuan has already integrated the promotions for the digital development policy and advocated for the long-term "Smart Taiwan" Project, and the concept of establishing a Digital Development Department has also been proposed; nevertheless, currently there is no single competent authority in charge of coordinating the digital development and governance in Taiwan. From this report, it can be seen that all departments have engaged in digitization plans on an individual level, but currently there is no comprehensive policy structure. Going forward, further project report may be conducted at the working conference upon consulting relevant Ministers without Portfolio.

## 2. Report 2: Report on strategic planning to reduce fatality ratio of pregnant women, newborns, and children under the age of five

### Resolution:

Compared with the international status, Taiwan's mortality rate during pregnancy and childbirth, as well as newborns and children under the age of five is relatively low, which also indicates Taiwan's exceptional developments in medical and social care. Nevertheless, we can continue to conduct more meticulous research on our existing foundation to pursue for further improvements. In addition, from Taiwan's overall population structure, the overall mortality rate and deaths from diseases and illnesses, and from traffic accidents, continue to be relatively high. This is particularly true for deaths related to traffic accidents. The Ministry of Health and Welfare is requested to assist in in-depth research on the causes of death in Taiwan, and the Ministry of Transportation and Communications is requested to study and draft relevant response measures to deaths from traffic accidents, and to report at a subsequent working conference.

## III. Review the Sustainable Development Goals

NCSD's review on the Sustainable Development Goals will include an annual review on relevant operations, as well as to assist central and regional competent authorities to submit self-inspection reports. The purpose of the "Annual Review Report on Taiwan's Sustainable Development Goals in 2020", which was published in 2021, was mostly to assist and guide the departments/ministries in charge of overseeing Taiwan's Sustainable Development Goals (SDGs) as well as the institutions in charge of their corresponding indicators to fill out annual data in order to compile and prepare a follow-up review report. That was



▲ Figure 1-2 2020 Annual Review Report on Taiwan's Sustainable Development Goals

the second annual evaluation of Taiwan's SDGs, and pursuant to regulations from Article 5 of "Tracking and Evaluation Guidelines for Sustainable Development Goals", each department/ministry in charge of overseeing the SDGs will compile its annual executions for the Goal's corresponding indicators, which includes three chapters, namely, Abstract, Annual Progress on Promoting the Sustainable Development Goals, and Review on the Annual Tracking and Evaluation of the Sustainable Development Goals". The review report will also include An Overview on the Implementation Status of Sustainable Development Goals in 2019, Analysis for Failing Corresponding Indicators in 2020, Analysis for Failing Corresponding Indicators in 2019, and Analysis on the Corresponding Indicators' Levels of Risk and more.



Sustainable development is a core value that Taiwan is committed to. In active pursuit of our path toward sustainable development and to address global sustainable development actions as well as to align our practices with international standards while also taking care of local developmental needs and to address the United Nations' 2030 Sustainable Development Goals (SDGs), Taiwan has initiated the "Taiwan SDGs" operation in 2016, which was completed in the 31st NCSD council meeting in 2018. In addition, the corresponding indicators to the SDGs were subsequently formulated in 2019.

Currently, the NCSD has established 17 working groups that correspond with the 18 SDGs, and the Nuclear-Free Homeland Promotion Task Force as well as the Climate Change and Net Zero Transformation Task Force have also been formulated. This chapter will introduce the annual progress toward Taiwan's Sustainable Development Goals, and separate descriptions will be provided sequentially in order to give an overview of the implementations of major policies and regulations, and major plans related to each Goal.

## GOAL 1

### Strengthen social care services and economic security for the disadvantaged

#### 1. Increased the independence ratio of the economically disadvantaged, and continued to promote public assistance, care for low-income and middle-to-low-income households, assist persons in need during emergencies or disasters, and help them to live independently:

The Ministry of Health and Welfare has provided a total of 41 grants to assist the six municipalities, county, and city governments as well as private groups in organizing diverse anti-poverty measures. The total sum of such grants amounted to NT\$31,848,018. In 2021, the independence ratio of low-income households and middle-to-low income households was 14.25.

#### 2. Protecting the economically disadvantaged groups:

Grants for supporting the daily lives of low-income households (including subsidies for children) benefited 886,060 individuals, who came from 356,903 households. Total grants amounted to NT\$5,574,193,318. Grants for supporting the educational rights of low-income households cumulatively reached NT\$2,943,299,444, and benefited 463,007 individuals.

#### 3. Payout ratio of National Pension old-age annuity benefits has increased:

Recipients of old-age annuity benefits (including old-age basic guaranteed pension payment) have increased from 902,455 persons as of December 31, 2008, to 1,723,963 persons at December 31, 2021. The payouts have also increased from NT\$5,398,054,782 to NT\$78,346,011,638. These figures indicate that the number of elderly Taiwanese citizens enjoying the benefits from National Pension have grown over the years. The government will continue to promote the National Pension system to protect the basic economic security of the senior citizens.

#### 4. Assisting individuals with the ability to work in low-income households or middle-to-low income households to find jobs:

The Ministry of Labor provides employment consulting services to those with the ability to work in low-income and middle-to-low income households through the one-stop employment service. By evaluating their occupational skills and needs, the Ministry of Labor will either conduct job referrals or arrange such individuals to attend occupational training, on top of utilizing various employment incentives and financial aids to help them secure jobs. As of December 31, 2021, the number of individuals from low- and middle-to-low income households who received employment services have cumulatively reached 82,752 persons.

#### 5. Basic insurance protection for disadvantaged and minority groups:

As of December 31, 2021, the cumulative number of policyholders for all types of micro-insurance



▲Figure 2-1 Minglun Social Housing in Datung District, Taipei City (top); Wuguwang Youth Social Housing at Sanchong, New Taipei City (bottom)

have reached 1.16 million persons, and regulations regarding "Matters of Caution in Insurance Companies Handling the Micro-insurance Business" have been amended twice to expand the eligibility criteria, so that even more disadvantaged persons can file for the micro-insurance.

## 6. Comprehensively provide social insurance systems for all citizens, particularly disadvantaged groups, and enhance long-term care system:

We reinforced resource distributions and service provisions, and continued to promote daily life support for disadvantaged senior citizens, youth and children, and physically and mentally disabled persons. In addition, the objects of Long-Term Care 2.0 have been expanded and its funding and service institutions have also been increased. New innovative services have been introduced and the coverage ratio of long-term care is also increased to build a diverse, continuous caring service system centered around each community in order to realize the target of aging in place. In 2021, the service coverage ratio of long-term care has reached

56.6%. The Council of Indigenous Peoples has set up 429 culture and health stations to develop professional care services based on the needs of the tribe and the location. In addition, approximately 1,176 local indigenous people have been trained as caregivers to provide continuous, accessible, and cultural professional care to about 13,742 elderly indigenous people.

## 7. Increase the ratio of social housing and rent subsidy recipients to the number of disadvantaged households with potential needs:

As of December 31, 2021, in terms of directly-built social housing projects, all municipalities, counties, and cities have collectively submitted plans to build 220 projects, which would house 47,533 households. The National Housing and Urban Regeneration Center has submitted 56 projects, which would house 22,078 households. Cumulatively, this sums up to 69,611 households. Additionally, actual housing units available for moving in (existing units 6,426 + newly constructed 13,086 units) accounted for 19,522 units. In terms of social housing lease and rental management, a total of 30,158 housing units have been achieved. 120,000 households received rent subsidies.

## GOAL 2

### Ensure food security, eradicate hunger, and promote sustainable agriculture

#### 1. Improving agricultural production environment & enhancing resilience of local farms to realize sustainable development in agricultural industry

(1) Farming communities are assisted in maintaining infrastructure and improving their production environments via the "Inter-regional Farming Industry Plan and Highlights in Farming Villages Plan". Relevant departments worked together to integrate regional resources throughout the farming industry chain. In 2021, 36 farming regions were approved and 534 environmental improvement and relevant engineering projects were executed, while 255 agricultural production technologies plans were also carried out.



(2) Farming communities were facilitated in achieving enterprise management and transforming themselves into enterprises or co-ops through the "Farming Village Enterprise Management Guidance Plan", which strengthened their business management and innovative skills, thereby striving toward a more stable and effective operating model. From 2017 to 2021, a total of 152 farming enterprises were assisted, cumulatively creating N\$4.729 billion of production value, 3,231 job opportunities, and led to NT\$1.276 billion of enterprise investments toward the agricultural industry. This also prompted 2,454 returning youths to engage in agriculture or to assist in relevant industry development.

**2. Promote youths to take out agricultural innovation loans and engage in agricultural management to improve agricultural population structure and sustainable agriculture:**

A 5-year \$5 million interest-exempt loan was provided to the top 100 young farmers, while a 5-year NT\$2 million interest-exempt loan was provided to general young farmers as a part of the youth entrepreneurship loan. In addition, these loans were provided at more beneficial rates and young farmers could turn to the Agricultural Bank of Taiwan Corporation for loan applications in case they experience any difficulty in getting loan approval. An online loan mediation platform and dedicated hot line consultancy service were also provided by dedicated personnel. In 2021, young farmers received a total of N\$4.8 billion, which benefited 3,351 households with young farmers.

**3. Hose irrigation facility was promoted to enhance water utilization rate and agricultural product quality:**

In 2021, farmers were guided to install irrigation hoses and the relevant control equipment in their paddies. It was implemented over a total of 2,355 hectares of paddies, benefiting 3,626 farmers. The measures enhanced water utilization rate in agriculture and the resilience of agricultural water resources, thereby improving food security.

**4. Ratio of sustainable agricultural practices including food traceability, organic farming,**



▲Figure 2-2 Youth Returnees revolutionizing aquaculture industry

**and Traceability Agriculture and Food Products Retrospective System:**

- (1) To address major environmental and ecological issues including climate change and net-zero emissions, organic farming will play a critical role in terms of agricultural adaptive strategies. As of December 31, 2021, certified organic farms in Taiwan cumulatively reached 11,765 hectares, certified eco-friendly farming practices reached 5,162 hectares, and cumulatively, they have reached 16,927 hectares, or 2.14% of the total farmland in Taiwan.
- (2) The Agriculture and Food Agency reduced the burdens related to certification through subsidizing expenses including wages for dedicated personnel for product inspection and information reporting, and computers and bar code scanners required by group certifications; As well as through organizing training for mentors on food traceability, increasing the capacity for mentoring the food and produce traceability and optimizing the traceability information system and organizing relevant training; And continued to encourage farmers to participate in traceability certification by providing environmental subsidies for those who pass the traceability inspections. As of December 31, 2021, as much as 57,132 hectares of farmland has been approved for farming traceability, accounting for 7.23% of the 790,079 hectares of total statistically recorded farmland in 2020.
- (3) The traceability agriculture and food products (QR-code) system discloses information on the



▲ Figure 2-3 Developing dietary and nutritional guides for the Taiwanese public

producers via information and communications technology. Consumers can use mobile devices to scan the bar code or enter the traceability number on the online Traceability Agriculture and Food Products Retrospective System to understand information on the agricultural producers, production source, product information, and pesticide residue inspection results. The system helps consumers to immediately obtain relevant information, and as of December 31, 2021, traceability practices have been practiced at 60,554 hectares of farmland.

## 5. Developing dietary and nutritional guides for the Taiwanese public:

The Health Promotion Administration is committed to safeguarding the health of the Taiwanese public. By regular monitoring and research to understanding the dietary intake and nutritional status of the public and incorporating concepts of environmental friendliness and balanced, healthy diet into such facts, the Administration has developed the dietary and nutritional guides for the Taiwanese public, including: Daily dietary guide, public dietary indicators, and sheets and pamphlets on nutritional needs throughout all stages of life. The Administration also engaged with other departments to design recipes around diverse ingredients,

thereby allowing the public to easily practice healthy and balanced diets and achieve the nutritional goals required by each life stage.

## GOAL 3

### Ensure healthy lives and promote well-being for all ages

#### 1. Increase maternity care:

To increase maternity care and protect the health of both the mother and the baby, the scope of pregnancy checkups has been expanded since July 1, 2021. The number of prenatal examinations has been increased from 10 to 14, while gestational diabetes mellitus (GDM) screening and anorexia screening has been added for women in their 24 to 28 weeks of pregnancy. The number of general ultrasounds has also been increased from once to 3 times to reduce the risk of pregnancy. The mortality rate of pregnant women in Taiwan (number of deaths) has been reduced from 16.0  $\text{‰}$  (28 persons) in 2019 to 14.0  $\text{‰}$  (22 persons) in 2021.

#### 2. Reduce mortality of newborns and children under 5 years old:

The Executive Yuan has formulated the "2021-2024 Optimized Children's Medical and Healthcare Plan", in which resources are invested toward children's health and medical care and perinatal mother and infant medical centers are set up to be in charge of intensive care (ICU) for high-risk pregnancies and newborns. This plan was executed at eight medical institutions in 2021. In 2021, 24-hour emergency care and ICU were provided at pediatric wards across 17 counties/cities. To enhance the quality of medical care for major illnesses and rare diseases in children, and major illness transfer and professional diagnostic capabilities, six teams were formed to focus on major illnesses, two professional referral teams, and one Complex Disease Diagnostics Platform were established in 2021. To establish a dispatch and control center for clinical mandatory drug and medical equipment that are necessary for

pediatric care but are difficult to acquire, in 2021, a list of regulatory items (26 drugs and 53 medical equipment) have been confirmed. The Administration collaborated with 19 counties and cities to jointly promote the "follow-up care on high-risk perinatal mothers and infants project" and planned to enroll 3,997 persons. The project actually enrolled 5,909 persons, thereby achieving an enrollment ratio of 147.8%. Executed a trial run of the "Home Care of Low-weight Infants Project", in which the enrollment ratio of babies born with a weight of  $\leq 1,500\text{g}$  was 95.9%, While the enrollment ratio of babies born between 1,500g and 2,500g was 100%.

### 3. Actively promote preventive policies including diverse AIDS screening and counseling, immediate drug intake in confirmed cases, and Pre-exposure prophylaxis (PrEP); new AIDS infections among 15-49 year-olds continue to decline:

Organized anonymous AIDS screening service to provide friendly rapid tests in order to accelerate the timeliness of diagnostics; Promoted self-AIDS screening to make test kits more accessible to the public through manual service locations, automated machines, and online order and in-store pickups; Promoted AIDS screening and Pre-exposure prophylaxis plan to prevent spouses/partners of AIDS patients or young people from getting infected with AIDS; Promoted service quality enhancement of designated AIDS medical institutions scheme to provide comprehensive medical care and encourage regular hospital visits and drug use in order to reduce incidence rate and reduce the risk of AIDS infections. From the mid-year population data in 2020, it could be estimated that the new confirmed AIDS cases reported in persons aged 15 to 49 have been reduced from 0.21/1,000 persons in 2016 to 0.10/1,000 persons in 2021.

### 4. Continue to promote chronic respiratory disease preventions via diverse channels to reduce rate of premature deaths from chronic respiratory diseases:

Besides the front-line tobacco prevention tasks, the Administration also collaborated with private associations and organizations (Taiwan Society of Pulmonary and Critical Care Medicine) to



▲Figure 2-4 Press conference for the World AIDS Day on November 30, 2021

achieve early diagnostics and early intervention. It also utilized the National Health Insurance Administration's "chronic obstruction pulmonary disease" (COPD) payment service; in 2020, the patient care rate for the COPD quality improvement project has reached 40.3%. The standardized mortality rate from 30-70 year-old COPD patients has been reduced from 3.68/100,000 persons in 2011 to 2.9/100,000 persons in 2020. In addition, the mortality rate for chronic respiratory diseases among patients aged 30-70 years has also been reduced from 0.55% in 2011 to 0.42% in 2020.

### 5. Increased service coverage ratio for drug and alcohol addiction treatments:

In 2021, of all patients receiving drug addiction and alcohol addiction treatment subsidies, a total of 13,208 patients were subsidized for drug addiction treatments, and a total of 2,801 patients received subsidies for alcohol addiction treatments. Additionally, as of December 31, 2021, a total of 6,737 patients were still receiving opioid addiction-substitution treatments, and 21 counties/cities and 64 institutions participated in the "cross-regional drug administration for Methadone replacement therapy". Over the past 3 years, to enhance the convenience of receiving drug addiction treatment, 11 satellite drug administration points were also set up for the replacement therapy. In 2021, a total of 93 demonstration centers on drug addiction treatment have been set up, including regional hospitals, clinics, psychological counseling/therapy, social worker offices, and private organizations. As

of December 31, 2021, there were 202 hospitals with psychiatric departments, and 143 of which were designated drug addiction treatment institutions (accounting for 70.1% of hospitals).

#### **6. Implemented the 4th National Cancer Control Programme, NCCP (2019 to 2023):**

In 2021, the Administration continued to provide comprehensive cancer screening services for cervical, breast, colorectal, and oral cancers through dedicated medical institutions and health centers. Screenings were provided to approximately 3.91 million persons. Though the COVID-19 pandemic continued, screening services and follow-up diagnostics cases on confirmed cases were both reinforced, and more than 54,000 pre-malignancy and cancer cases were found, thereby achieving the target of early treatment.

#### **7. Continued to promote diabetes preventions via diverse channels to reduce rate of premature deaths from diabetes:**

The joint diabetes caring network was promoted and the certification system of medical personnel was developed, in which more than 13,000 medical staff were certified and 300 diabetes health promotional institutions were set up. The medical care system was linked to the National Health Insurance Administration's diabetes quality payment service on the disease management side. In 2020, the quality care coverage ratio of diabetic patients has received 63.3%. In addition, the standardized mortality rate from 30-70 year-old diabetic patients has been reduced from 37.1/100,000 persons in 2002 to 22.3/100,000 persons, thereby achieving a 40% reduction. The diabetes mortality rate for people aged 30-70 years was further reduced to 0.91% in 2020 from 1.16% in 2010.

#### **8. Enhanced drug review process and completed the number of drug reviews that met International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH) standards to satisfy the needs of the citizenry:**

To protect the citizen's right to medicine, the Administration continued to improve the drug review process. In 2021, reviews for 134 new drugs (including biopharmaceuticals) and 318 generic

drugs were completed. Cumulatively, 452 reviews were in line with the review standards ICH.

## **GOAL 4**

### **Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

#### **1. Actively develop public childcare centers and continue to promote the quasi-public childcare center system:**

As of December 31, 2021, 127 community public childcare centers and 186 privately-managed public childcare centers were set up. Cumulatively, these institutions can care for up to 10,130 children under the age of 2. Additionally, 22,880 childcare providers (signing rate was approximately 92.98%) and 859 childcare centers (signing rate has reached 97.84%) have signed agreements with local governments to care for up to 78,675 children under the age of 2.

#### **2. Expand the service capacity of public and quasi-public childcare centers:**

From 2017 to 2021, a total of 2,155 classes were added in public childcare centers (creating approximately 55,000 educational opportunities). Throughout 2021, more than 230,000 slots were made available in public childcare centers. Cumulatively, 1,695 private childcare centers have joined the quasi-public childcare system, creating more than 190,000 educational opportunities at affordable prices. In sum, there were approximately 4,496 affordable childcare centers (accounting for approximately 65% of all centers and showing an approx. 26% growth from 2016), which provided more than 420,000 educational opportunities at affordable prices (approximately increased by 230,000 slots from 2016).

#### **3. Building diverse channels for lifelong learning including community colleges to provide diverse learning opportunities for adults and providing educational services for the public and diverse groups in order to promote participation in lifelong learning:**

In 2021, the Ministry of Education commissioned National Chi Nan University to organize the "2020 educational statistical survey". The participation rate from adults in lifelong learning accounted for 39.51% in 2020, showing a significant 36.26% improvement over the percentage of lifelong learning in 2019 and indicating the effectiveness of Taiwan's advocacy for policies related to lifelong learning. Actual results include:

- (1) Fostering community education: In 2020, there were a total of 89 community colleges, which collectively had approximately 407,000 students.
- (2) Building a comprehensive learning system for the elderly: In 2020, there were a total of 369 senior learning centers throughout Taiwan. The centers made senior learning resources accessible to 3,175 villages and provided 89,127 sessions of service.
- (3) Promoting family education: In 2020, various family education activities were organized, in which parental education projects or activities accounted for 4,365 sessions, while marriage education projects or activities accounted for 2,092 sessions.
- (4) Building intelligent services for lifelong learning: The Ministry of Education promoted the "Intelligent Education for Learning - Technological Innovative Service Project at National Community Education Institutes", which assisted community colleges through innovative facilities and equipment, building cross-departmental value-added service networks and adding to their resource collections. In 2020, 12 detailed plans from 10 institutions received relevant grants.
- (5) Enhancing the service quality of public libraries: In 2020, 3 national libraries and 541 public libraries under the jurisdictions of 22 regional governments all received grants for operating system improvement plans. Their facilities and equipment were updated, and diverse reading advocacy events were also organized. In addition, to integrate library resources across Taiwan, inter-library book lending and book tours were also organized at 12 regional resource centers.

#### **4. Enhance youths' information and communications technology (ICT) skills to improve their work-related and vocational competencies:**

In line with regulations from the 108 Curriculum (year 2019), information technology has been listed as a MOE-mandated curriculum. In 2021, the percentage of senior high schools organizing this course has reached 100%. In the first semester of 2021, the number of current college/university students studying program design courses has been: 62.92% for students whose majors were not related to IT, and 94.49% for IT-related majors, or cumulatively, 65.24% across all current students. In 2021, 4,422 persons received vocational training, while 4,894 youths were also assisted in participating in information and communication technology (ICT)-related vocational training courses.

#### **5. Ensuring diverse access to education in mentally/physically challenged individuals, indigenous people, and disadvantaged groups, and strengthening their vocational training:**

In 2021, 28,424 unemployed people from underprivileged groups participated in the pre-employment training.

- (1) In 2021, 36 schools were approved by 11 municipalities and county/city governments, respectively, to organize indigenous experimental education for the 10 indigenous tribes. These included 30 elementary schools, 3 junior high schools, 2 elementary and junior high schools, and 1 senior high school.
- (2) To enhance the employability of physically and mentally challenged college/university students, career path transition training was carried out for mentors at university/collegiate resource classes at 2 districts in northern and southern Taiwan, and 6 colleges/universities received subsidies for developing the transition guidance and services for physically/mentally challenges.
- (3) In 2021, a total of 2,513 persons have utilized the career transition services at the career coaching center, while 7,182 persons received workplace internship coaching. A total of 9,032 persons used phone or online consulting services; 1,603



▲ Figure 2-5 Enhancing the occupational competencies of physically and mentally challenged students through fostering their second expertise and skills

persons were successfully placed in internships across 945 workplaces; 429 persons were assisted to secure jobs across 371 workplaces.

#### 6. Strengthening sustainable management at museums and practicing equality to increase engagement at museums and local cultural museums:

In 2021, the engagement rate in museums and local cultural museums reached approximately 32.2%.

## GOAL 5

### Achieve gender equality and empower all women and girls

#### 1. Advocacy for gender equality to the citizenry via diverse channels:

- (1) From May to November 2021, campaigns including "Say No to Sex-selective Screening - All Babies are Born Equal" were promoted, and the "Anti-sex-selective screening" web page of the Health Promotion Administration also contained promotional video of "Girl Babies and Boy Babies are Both Precious". This campaign reached an exposure of 18 million clicks.
- (2) The HPA's Mammy Care Facebook page also organized a "Girl Babies and Boy Babies are

Both Precious As Long As They Are Healthy" lucky draw. This campaign is focused on advocating for gender equality, and that both girl babies and boy babies should be treasured.

#### 2. Amended the minimum age for women to marry at the age of 18:

After passing the third read at the Legislative Yuan on December 25, 2020, and following an announcement for the amendment from the President on January 13, 2021, the minimum age for a woman to marry has been amended to be 18.

#### 3. Reduced number of marriage registrations whose applicants were under the minimum age for marriage:

To protect young people's right to sound physical and mental development, an automated age verification mechanism for those applying for marriage registration has been established at the Household Registration Information System. In case of any circumstance that does not comply with the regulations of the Civil Code, such as a man is less than the age of 18 or a woman is less than the age of 16, the marriage registration will not be approved to prevent the marriage of anyone below the minimum age of marriage. In 2021, it was investigated that the number of females aged 20 to 24, who has had a marriage record when they were 16 or below was 0.019, indicating that the expected target of the figure dropping below 0.02% has been met.

#### 4. Increase the ratio of female police officers:

To encourage females to enter the police force, the "Regulations Governing the Promotion and Transfer of Police Personnel" has specified that there shall be at least one woman in either a police captain or vice captain role in the women and children protection brigade of a municipal or county/city police department. As of December 31, 2021, the number of female officers (ranks 1 through 3) accounts for 14.35% of all police officers.

#### 5. Increase of the ratio of female managers in listed companies:

To encourage enterprises to promote females to managerial roles, the Financial Supervisory Committee (FSC) has first clarified the definitions



▲ Figure 2-6 Handover ceremony for Chiu-Mei Fang, the first female captain of Pingtung Precinct of Pingtung County Police Bureau



▲ Figure 2-7 2021 Women Entrepreneurship Award Ceremony and Gala Dinner

and scope of a manager in 2019, and supervised the TWSE and TPEX to collect statistical data on the gender of managers in listed companies in 2020 based on the definition of a manager that was set in 2019. As of December 31, 2021, there were cumulatively 29,124 managers in all listed companies throughout Taiwan, of which 9,076 were female, accounting for 31.16% of all managers. This shows an improvement as compared to the 29.4% at the end of 2020.

## 6. Mentor and encourage women to represent enterprises:

The Ministry of Economic Affairs is implementing the "Women Entrepreneurship Flying-geese Program", which provides customized and integrated services to female entrepreneurs at different stages and needs. By creating a startup environment that is friendly to women, female economic competitiveness will also increase accordingly. In 2021, 2,296 female entrepreneurs received training, and startup consulting and assistance was provided

to 182 female startups. In addition, 10 winners were selected for the Women Entrepreneurship Award, and cumulatively amounted to more than NT\$1.8 billion in private investments.

## GOAL 6

### Ensure environmental quality and sustainable management of environmental resources

#### 1. Building sewage systems and sustainable development:

The Ministry of the Interior continues to implement sewage system and relevant renewable water construction projects in line with the "Six Stage Sewage System Construction Plan" that was approved by the Executive Yuan.

(1) In 2021, the central government has allocated a NT\$11,701,807,000 budget in which the Construction and Planning Agency, Ministry of the Interior (CPAMI) and all county and city governments will continue to implement the constructions of household connection pipes. As of December 31, 2021, the household connection rate for public sewage has reached 39.78%, while a total of 3,576,713 households have been connected to the sewage. The overall wastewater treatment rate is 66.93%.

(2) Eight projects, including the "Public Sewage Treatment and Renewable Water Demonstration Project" and "Forward-looking Infrastructure Development Program" have been gradually implemented since 2021. Three new projects have been introduced, in which Fengshan plant and Linhai plant in Kaohsiung are supplying 78,000 tons of water on a daily basis to Linhai Industrial Park, while the trial run of the Yongkang plant has also provided 8,000 tons of water/daily to Southern Taiwan Science Park in 2021.

#### 2. Industrial or wastewater sewage system audit:

In 2021, in-depth audit and other pollution reduction strategies were successfully executed. As a result, the water quality of the 50 major rivers

in Taiwan has improved from an average river pollution index (RPI) of 3.91 in 2001 to 2.6 in 2021. In addition, the length of river segments that were severely polluted has been greatly reduced from 13.2% in 2001 to 3.7% in 2021. Overall, water quality continues to show improvement.

### 3. Increasing the water recycling rate within industrial parks:

The Ministry of Economic Affairs' policies include water conservation coaching, evaluation of diverse water source applications, water consumption inspection, and factory water consumption management and more. The purpose of these policies is to enhance the water utilization efficiency across industries and to encourage the manufacturers' willingness to invest in water-saving facilities, thereby increasing the total water utilization efficiency across all industry parks.

- (1) The overall water recycling rate in industry parks has increased from 46.0% in 2002 to 73.5% in 2021. It is expected that the target of 75.0% by year 2031 as a part of the "Industry Stable Water Supply Strategy Action Plan" can be met.
- (2) In 2021, water-saving diagnostics coaching was completed at 62 manufacturers, in-depth coaching was executed at 6 manufacturers, while 3 water source integrations were also planned, in which manufacturers to coordinated to utilize wastewater treatment plants at the water resource center, or to use alternative water sources including renewable water sources from nearby plants. The total potential water savings have reached 4.04 million tons per year.
- (3) To implement the factory personnel water use management and water conservation, 4 sessions of water consumption management personnel training, 3 sessions of water use status reviews, and 2 sessions of water utilization efficiency enhancement coaching seminars were organized.

### 4. Salute to the Seas: Through collaborating with private sector, outstanding results in beach and coastal cleanup were achieved:

The central and regional governments jointly implemented the "Salute to the Seas - coastal



▲Figure 2-8 Kaohsiung Linhai Wastewater Treatment Plant

cleanup and maintenance project". In 2021, governments of all levels have collectively cleared 48,310 tons of marine debris. In addition, 389 coastal debris reports were received from the public. On November 13, 2021, the Environmental Protection Administration collaborated with 14 countries with diplomatic relations with Taiwan, including Saint Kitts and Nevis, to jointly organize the "Salute to the Seas: Borderless and Clean Oceans" beach cleanup event. This was the first time for Taiwan to work with dignitaries from multiple allied countries in a beach cleanup. Moreover, on October 17, 2021, the EPA also collaborated with Changhua County Agricultural, Fishing and Farming Industry Tourism Promotion Association to host 2 rounds of "Beach Cleanup and Plastics Reduction: From Trash to Gold" events, which were cumulatively participated by approximately 500 people, and 2.2 tons of marine debris was cleaned up.

### 5. Reinforcing business waste renewable management and properly clean and strengthen resource cycling:

The volume of business waste has more or less stabilized in recent years, and approximately 20 million tons of such waste is generated in each year. Most of which is industrial waste, accounting for 87.2% of total waste.

- (1) To advocate for reuse, 13 business waste reuse management procedures have been formulated by 10 departments and divisions, and more than 2,700 recycling institutions are being regulated. The procedures are also being amended on a rolling basis to increase the rate of reuse. 2021 statistics indicated that the volume of reused



business waste has reached approximately 18.7 million tons, achieving an 85.4% rate of reuse. This shows a slight 0.8% increase from the 84.6% in 2020.

- (2) The "Resource Cycling Action Plan (draft)" is being proposed, and the Renewable Resource Recycling Promotions Council is in charge of formulating key promotional items to assist both industry development and environmental sustainability. Over the past five years, Taiwan has experienced faster economic growth than the rate of consumption, thereby boosting Taiwan's resource productivity. In 2020, resource productivity has reached NT\$76.86/kilogram, showing a NT\$0.5/kilogram increase over the 2019 figures.
- (3) To encourage and promote the development of the renewable resource industry, the "Business Waste Reuse Management Procedures of the Ministry of Economic Affairs" has been formulated and amended. The regulation regarding the permit for reuse can be extended to five years has been added to the Procedures. In 2021, the ratio of reuse in industrial waste has reached 81.1%, while the production value of the renewable resource industry has reached NT\$77.5 billion.
- (4) The business waste reuse ratio at science parks has reached 91.71%, and implementation results in 2021 have included promoting source reductions and resource cycling, as well as reinforcing the inspections over the permits for reusing business waste.

## GOAL 7

**Ensure access to affordable, reliable, sustainable, and modern energy for all**

### 1. Enhancing energy efficiency and increasing the coverage ratio of mandatory energy-saving measures:

- (1) To pave the way for energy transition, the Executive Yuan has approved the amendments



▲ Figure 2-9 Taipower's offshore wind farm in Changhua formally began operation at the end of 2021

to the "Guideline on Energy Development" in 2017, in which 2016 was set as the base year for energy intensity, and the target is to achieve an annual average improvement of 2% by 2025. Through implementing energy-saving regulations over the years, demonstrating and guiding energy-effective technologies, and developing energy-saving technologies, the annual average improvement in Taiwan's energy intensity from 2017 to 2021 has reached 3.06%.

- (2) Through executing energy efficiency management over equipment and tools, vehicle energy consumption management, and industry energy conservation rules, Taiwan's "coverage ratio of mandatory energy saving measures" has increased from 34% in 2015 to 40% in 2020.

### 2. Completed the grid interconnectedness of the first domestic TPC demonstration offshore wind farm:

- (1) To comply with the "Offshore Wind Power System Demonstration Incentive Regulations", Taiwan Power Company (TPC) has utilized large-scale support vessels in line with motion compensated gangway to overcome unfavorable tidal conditions in the wintertime, and successfully completed engineering projects including submarine cable installations and wind turbine hoisting.
- (2) TPC's demonstration wind farm 109.2MW (21 single-capacity wind turbines at 5.2MW, 7.2 to 8.7km offshore, with water depth 15 to 30m) has obtained the license for commercial operation of electricity generation on December 30, 2021, and its expected annual electricity generation



▲Figure 2-10 Shalun Green Energy Science City - Green Technology Demonstration Site (Shalun Zone D)

will reach 360 GWh, which can supply one year's worth of electricity for nearly 90,000 households.

- (3) As of December 31, 2021, Taiwan has cumulatively constructed 237.2MW, leading Taiwan to become one of the pioneers in international offshore wind farms, and we also aspire to become a hub of offshore wind farms in the Asia-Pacific.

### 3. Outstanding solar power implementation results:

The government has accelerated the promotions for renewable energy constructions in Taiwan since 2017. Over the past five years (2017 to 2021) the capacity of the newly installed renewable energy devices has reached approximately 6.9 GW. In particular, the device capacity of solar power generation has reached 7,700MW in 2021, showing a 1,883MW increase over the 5,817MW newly installed device capacity in 2020 and indicating a well-rounded success in the promotions of renewable energies.

### 4. Innovative energy technology and the sustainable, green energy industry ecosystem:

(1) The Green Technology Demonstration Site at Shalun Smart Green Energy Science City is a world-class demonstration site of green energy applications founded on the four themes of innovation, energy conservation, energy storage, and smart systems. A joint effort of the industry, academia, and research and development, it is a hub designed to promote the green energy industry through the "sales promotion" and "site service" platforms.

(2) Tasks, including formulating management rules,

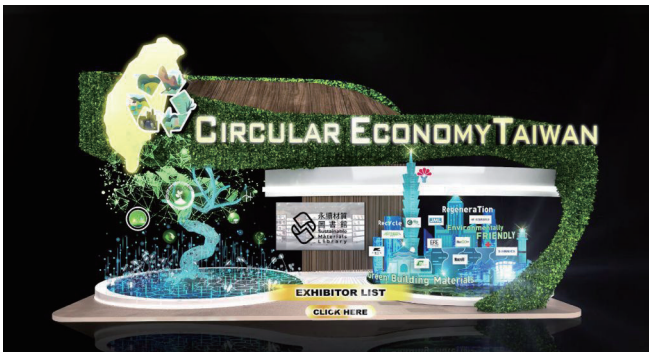
curtain testing and verification at SPINLab (increasing average brightness by 50% under the new curtains under the same indoor temperature conditions, thereby saving 41% of electricity from lighting), and energy conservation scheduling (water chillers conserved NT\$4.15 million, solar power generation conserved NT\$2.1 million, and electricity scheduling conserved NT\$2 million, cumulative savings reached approximately NT\$8.25 million) at the Green Technology Demonstration Site are all executed following the aforementioned platforms. Vendor space utilization rate reached 81.22%, investment deals secured reached approximately NT\$770 million, vendors visited 21 factories, and 3 sessions of green energy exchange were held to a total of 2,188 participants. In addition, green energy themed competition was participated by 492 contestants, 3 inter-disciplinary vendor mediation projects were executed, and 2 field testing and verification were carried out.



## Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all

### 1. Facilitate SMEs to work toward green and innovative transition and enhance corporate sustainability:

- (1) Implemented the "national development guaranteed incentive measures" to provide a maximum 95% guaranteed percentage for green energy technology small and medium enterprises (SMEs), as well as an additional guaranteed NT\$100 million bank credit line. In 2021, SMEs in the green energy industry were facilitated to obtain more than NT\$103.316 billion in financing.
- (2) Ten projects, consisting of 84 Taiwanese SMEs were selected and mentored to deploy circular economy business models in 2021. Green and innovative applications were implemented in various aspects, including technical cycles,



▲Figure 2-11 Participating in international online exhibitions to promote circular economy from Taiwan' s SMEs

redesign, service models, biological cycles, and thermal cycles. Systematic coaching was used to assist the SMEs to fully comprehend and seize the international trends and dynamics of the circular economy and to achieve green and sustainable growth. In addition, the government assisted in promoting a circular economy from Taiwan's SMEs. Through participating in international exhibitions.

**2. Enhance economic resilience to ensure economic inclusivity and sustainable growth:**

- (1) The "Stimulus 4.0" was quickly enacted to support industries and individuals that were affected by the pandemic. In addition, measures including the "Quintuple Stimulus Vouchers" were launched to boost internal demand. In addition, to seize opportunities in industry chain restructuring across the world and digital transition, the government has actively developed six core strategic industries and implemented the "Asia Silicon Valley Development Plan 2.0". By investing in 3 major projects throughout Taiwan and reinforcing key talent development and recruitment, the government can increase Taiwan's economic resilience and ensure long-term sound economic growth.
- (2) With the collective effort from the government, the industries, and the citizenry, Taiwan's overall economic performance has been outstanding. Economic growth has set a new record in eleven years to reach 6.57% in 2021. In particular, the digital economy has accounted for 26.4% of the GDP. Furthermore, the unemployment rate has been reduced to 3.64% in December, setting a historical low month-on-month since 2001.



▲Figure 2-12 Organizing entrepreneurship seminar to incubate management know-how

Additionally, the GPD per capita has reached over US\$30,000 for the first time. According to purchasing power parity calculations from the International Monetary Fund (IMF), this figure has exceeded the national standard of many OECD nations.

**3. Actively encouraging youth employment and safeguarding occupational safety and health:**

- (1) To promote youth employment, efforts have been made to incorporate employability with technical heritage. The three professional systems, namely "career counseling," "career training," and "job matching" have been integrated, and a training-cum-application model has been built to increase the technical skills of young people and to provide a smooth transition to their careers. In 2021, it has helped 196,778 youths to seek for employment.
- (2) To further reduce occupational hazards and protect the occupational safety and health of workers, 2021 was established as a reinforced disaster prevention year at the construction industry, and the "2021 construction industry disaster prevention improvement strategies" have been proposed. In 2021, mortality from occupational hazards has been reduced from 0.023/1,000 persons in 2020 to 0.021/1,000 persons, representing an 8.69% reduction. Disability and illness from occupational hazards have been reduced from 2.526/1,000 persons in 2020 to 2.448/1,000 persons, representing a 3.09% reduction. Total occupational hazard has been reduced from 2.549/1000 persons in 2020 to 2.469/1,000 persons in 2021, indicating a 14.57% decrease.

#### 4. Accelerated financial technology innovations to enhance financial competitiveness:

- (1) By focusing on both innovative experiments and business trial runs, the FSC has accepted 17 applications for financial business trial runs in 2021 and approved 14 of them, thereby achieving the annual target.
- (2) To assist businesses to develop financial technologies, FSC not only provides coaching for innovative experiments, but also regularly provide supervisory and diagnostics services at the FinTech Space to help businesses clarify any concerns regarding legal compliance.
- (3) The FSC encouraged insurance companies to research and develop innovative products and to submit them to review in line with the Regulations Governing Pre-sale Procedures for Insurance Products. Besides approving 2 innovative insurance products that were submitted by the life insurance industry in line with the Regulations Governing Pre-sale Procedures for Insurance Products, another 20 innovative insurance products that could be classified as 3 major types, namely, comprehensive insurance on vaccinations, medical insurance for hospitalized immigrant workers due to COVID-19, and health insurance with premium on specific treatment expenses. Cumulatively, 22 products have been approved.

## GOAL 9

### Build affordable, safe, environmentally friendly, resilient and sustainable transportation

#### 1. Promoted highway public transportation development:

- (1) To reduce the age of city buses and to augment the accessibility transportation services, the government continued to subsidize purchases of accessibility buses in all cities and counties. In 2021, the ratio of accessibility buses has been increased to 69.82% in metropolitan areas.



▲ Figure 2-13 Subsidizing Chiayi City to purchase accessible buses

- (2) To provide basic transportation services in remote areas in order to make up for the gap in public transportation, the government continued to implement the Happy Buses in Remote Areas scheme in 2021. As of December 31, 2021, the Happy Bus scheme has been implemented at 321 routes (including 163 routes in 53 remote regions) throughout 120 villages and districts. The highway public transportation service coverage ratio in remote areas throughout Taiwan has also reached 89.78%.
- (3) To encourage the public to ride public transportation, the government continued to implement various measures to prioritize the passage of buses on the highway in 2021. These measures have included allowing buses to travel on the shoulder of the road, exempting buses from ramp controls, and dedicated bus lanes and more, and the purpose of which is to build a more friendly environment for public transportation.

#### 2. Continued implementation of railway transportation construction projects and improving its relevant services:

- (1) The government is actively strengthening mid-to-long-haul and cross-highway transportation in eastern Taiwan as well as the transmission lines and commuting and transportation in western Taiwan. It also continued to implement automated ticketing procedures to strengthen the use of the railway in combination with the THSR and other public transportation systems, thereby providing more convenient services to passengers. However, continued impacts from the COVID-19 pandemic in 2021 had led to a drastic decline



▲ Figure 2-14 TRA reinforcing epidemic prevention measures at the railway stations

in passenger volume. The passenger volume in June 2021 even reached an all-time-low in the history of Taiwan Railways Administration (TRA), with a mere average of 116,000 passengers per day. The TRA has reinforced its epidemic prevention measures, and the passenger volume also gradually increased after the pandemic has stabilized. The annual average daily passenger volume throughout 2021 was 4,24,500 persons per day.

- (2) All 100% of the TRA railways are now stair-free. The platform renovation project has been implemented at 133 stations, in which the ratio of platforms that were the same height as the railway cars has reached 55.18% of the total number of stations (241 stations). The TRA completed the construction of accessibility elevators at 9 stations, including Yongjing Station, in 2021. Cumulatively, as of December 31, 2021, elevators have been completed at 173 stations, covering approximately 97.6% of all passengers serviced by the TRA.
- (3) To increase the number of passengers, Taiwan High Speed Rail (THSR) continues to develop innovative passenger service models. For instance, the THSR has launched its own "THSR Quintuple Stimulus Vouchers" to encourage passengers to ride the THSR and to join the government's stimulus voucher program. This program has attracted nearly 210,000 passengers.

### 3. Enhancing road traffic safety:

- (1) The Ministry of Transportation and Communications (MOTC) continues to promote

road traffic safety, and the nine key points in 2021 are as follows: 1. In-depth road safety education; 2. Implementing automated traffic law enforcement; 3. Strengthening motorcycle safety; 4. Preventing road accidents from the elderly; 5. Implementing "Traffic Safety Month" campaign; 6. Executing drunk driving preventions; 7. Proposing legal amendments to terminate the driver's license of those with subpar records and increased penalties; 8. Improving high-risk corridors and forks; 9. Supervision by walking around to enforce road safety practices at a regional level.

- (2) To reduce traffic accidents from young motorcycle riders, the following implementation results have been achieved: 1. Encourage riders to participate in training lessons; in 2021, cumulatively 19,432 persons participated in motorcycle riding lessons and obtained their respective licenses and received subsidies; 2. Increased riders' defensive rider skills and to foster safe riding habits. By watching actual videos on motorcycle riding, riders could foster their sensitivity toward defecting potential risks. As of December 31, 2021, the educational platform has been utilized by 1,516,773 persons; 3. First-time students in riding lessons are arranged to receive lessons on blind spots from large vehicles and the difference of radius between inner wheels; 4. Continue to implement measures to allow buses to access school campuses.

## GOAL 10

### Reduce inequality within and among countries

#### 1. Continued to improve income distributions and gaps:

According to the household income statistical research announced by the Directorate General of Budget, Accounting and Statistics, the Executive Yuan, the average annual growth rate of household income of those in the bottom 40% has been 3.67%

over the past five years (2016 to 2020), while the overall average annual growth rate of all household income has been 3.51%, thereby achieving the target of having the income from households in the bottom 40% growing at a faster rate than the overall households. Additionally, according to the household income statistical research announced by the Directorate General of Budget, Accounting and Statistics, the Executive Yuan, the Gini coefficient of the household disposable income has been 0.340, indicating that the target Gini coefficient of the household disposable income being less or equal than 0.35 has been met.

## 2. Implementing the recruitment ratio of indigenous peoples to protect their right to work and economy:

To encourage the indigenous peoples to work and to protect their right to work and economic life, the Council of Indigenous Peoples has formulated the "Indigenous Peoples Employment Rights Protection Act". It is committed to implementing the statutory recruitment ratio of indigenous peoples to protect their employment rights, and coordinates with various departments to mentor various institutions and manufacturers to comply with statutory hires to ensure that indigenous peoples are given fair employment opportunities. Average income has also been increased from NT\$24,729 in 2009 to NT\$31,291 in 2021, indicating more than NT\$6,000 in increase. In addition, unemployment rate has been reduced from 8.08% to 4.21%.

## 3. Protecting the rights of physically and mentally challenged individuals and promoting their employment:

(1) A total of 372 laws and administrative measures were reviewed and examined in line with the Convention on the Rights of Persons with Disabilities (CRPD). As of November 5, 2021, amendments to 357 laws have been completed (96%) and amendments to 15 laws are being drafted (4%). In the second stage, 90 laws and administrative measures were reviewed. As of November 5, 2021, amendments to 88 laws have been completed (98%) and amendments to 2 laws are being drafted (2%).

(2) The Ministry of Labor continues to actively assist



▲ Figure 2-15 On-site visit and evaluation to redesign the roles and tasks of physically and mentally challenged workers

those with mental or physical disabilities to seek for employment opportunities by eliminating barriers at work through employment services, occupational restructuring services, and redesigning roles and responsibilities. In 2021, a total of 19,795 persons with disabilities have been referred to work, thereby achieving an employment referral rate of 78.24%.

## 4. Focusing on gender equality, eliminating workplace discriminations, and building a comprehensive gender-based violence and children and youth protection system:

(1) The Ministry of Labor advocated for gender equality and anti-workplace discrimination policies through its "Gender Employment Equality" website. As of December 31, 2021, the website has reached approximately 2 million persons.

(2) The 113 dedicated hotline is also committed to receiving reports and to helping domestic violence, elderly protection, disabled persons protection, children and youth protection and sexual assault or sexual harassment incidents. In 2021, the ratio of consultation, reporting, and help for protection incidents accounted for 38.8% of all calls received, in which intimate partner violence accounted for approximately 35%, children and youth protection accounted for 30%, while other domestic violence accounted for approximately 23%.

## 5. Preventing human trafficking; rated as a Rank-1 country for 12 consecutive years:

(1) In 2021, Taiwan was rated a Rank 1 country in human trafficking preventions by the United

States Department of State. This is the 12th consecutive year that Taiwan has received this designation, and we will continue to develop human trafficking preventive actions and strengthen the labor rights of Taiwan's fishermen as well as to prevent their exploitations. We will also enhance international partnership relations with other nations to enhance the ratio of human trafficking investigation and prosecution cases, enhance the protective measures over victims, and foster orderly, normal, and responsible population flow.

- (2) The Ministry of the Interior has formulated the "2021-2022 Anti-exploitation Action Plan" at the end of December, 2020 in an inter-departmental conference. The action plan has proposed 25 human trafficking preventive plans and 76 specific strategies. In 2021, by referencing the International Labor Organization (ILO), the National Immigration Agency, Ministry of the Interior, has proposed 11 indicators as well as the Ministry of Justice's "Reference Indicators for Identifying Victims of Human Trafficking", and drafted the "Suspected Labor Trafficking of Foreign Crew Member Examination Chart (Draft)". Subsequently, the draft will be provided to front-line personnel by coordinating with the schedule from the Action Plan for Fisheries and Human Rights (draft).

#### **6. Continue to assist the developments from developing countries:**

There were 98 external technical cooperations executed in 2021. Some of these projects included "Palau Gardening Promotional Project", food and farming education activities organized by the technical team stationed in Nauru, the Honduras-based technical team's "Innovative R&D project to use biomass fuel technology to enhance the conversion of waste trees (leaves) into household energy", "city resilience disaster prevention plan" from the Belize-based technical team, "Guatemala maternal and infant care function and medical technology improvement plan", "metabolic syndrome prevention system reinforcement plan" at Saint Kitts and Nevis, and the maternal and infant care function and medical technology improvement plan at Eswatini and more.

## **GOAL 11**

### **Make cities and human settlements inclusive, safe, resilient and sustainable**

#### **1. Spatial planning and management:**

- (1) Formulated the national and municipal/county/city Spatial Planning: The Spatial Planning Act was enacted on May 1, 2016, and 18 municipalities and counties/cities solicited for opinions, held public exhibitions, and public hearings regarding the spatial planning in line with the law. And after reviews from the Review Council at the municipalities, cities, and county governments, and the central Spatial Planning Review Council, relevant procedures were announced and executed on April 30, 2021 as planned.
- (2) Promoting overall planning of rural areas: To assist the municipalities, city and county governments to undertake the overall planning of rural areas, the Ministry of the Interior has approved a grant of NT\$59 million in 2021 for 19 villages (townships, cities, districts) in 13 counties and cities across Taiwan to carry out relevant operations. Overall rural area planning meetings were also regularly held at these municipalities/cities/counties in order to supervise and mediate the planning from each county/city. In addition, educational training for the overall rural area planning was carried out to systematically guide the respective regional governments to accelerate the implementation of the overall planning of rural areas.
- (3) Maintaining crop and food-producing farmlands throughout Taiwan: The spatial planning at municipal and city/county level was announced and implemented on April 30, 2021, which includes a total of approximately 808,000 hectares of farmland that shall be maintained. In line with diagrams drawn according to the third-stage spatial planning by function, the Council of Agriculture has also proposed a principle of prioritizing the input on agricultural resources

圖模糊



▲Figure 2-16 Schematic diagram of Spatial Planning Act implementations in municipalities and cities/counties

in accordance with the functions classified based on the spatial planning, which will guide the municipalities and counties/cities to include quality farmland in appropriate categories beneficial to agricultural development.

- (4) Revitalizing idle land: The Ministry of Economic Affairs has announced that from 2016 to 2020, there was a total of 245.45 hectares of idle land in industrial parks under its jurisdiction. As of January 31, 2022, a total of 226.72 hectares of land has been revitalized, accounting for 92% of the announced idle land. This indicates that by implementing "diverse and gradual" control measures, the purpose of the idle land revitalization policy has been achieved.

## 2. Protecting cultural and natural heritage:

- (1) In 2021, the total investments toward protecting and preserving cultural heritage has reached NT\$1,710,363,044. Expenses have included the Cultural Asset Environmental and Value Enhancement Program, in which a valuation of relics, historical buildings, and memorial buildings as well as overall environmental preparation works were conducted, archaeological efforts toward relics and artifacts as well as artifact preservation and maintenance, displays and exhibitions of the unearthed relics, and environmental improvements of intangible cultural assets and customs and preservation plans.

In addition, the Cultural Asset Digital Archiving and Disaster Prevention Application Project was implemented to make the collection and display system of cultural asset and information more comprehensive as well as to promote integrated disaster prevention technologies. Cultural Asset Grounds System Governance Project was also implemented to promote systematic governance as well as to relieve the spatial memory of cultural asset grounds such as industries, military villages, tribal communities, cultural landscape and historical relics.

- (2) To realize the philosophy of autonomous management in indigenous lands and to achieve the target of maintaining natural ecological resources, the Council of Indigenous Peoples continued to execute the "Preservation Project on Traditional Indigenous Lands and Ecological Resources". A total of 144 locations were documented, including tribal cultural relics, traditional migration route research, and information documentation. Cumulatively, 3,842 kilometers of road was cleaned and preserved, and by coordinating tribal and traditional mountainous and river resources, either new, suitable plants were planted, existing flora was cared for, reforestation was conducted, while prevention tasks against foreign invasive plants and pests were also undertaken. In sum, traditional ecological resource maintenance and



sustainable utilization was conducted on 4,150 hectares of land, which helped to both preserve the traditional indigenous culture as well as the target on sustaining the natural ecology.

- (3) The Hakka Affairs Council organized the painting and restoration of Wanan Temple in Shigang. The painting was an iconic piece of work from famed local Hakka artist Liu Pei (1884-1972) and his descendants. The artist, who was already 82 years old at the time, has designed the 3 pairs of door gods - including Qin Shubao, the court lady, and the eunuchs. - himself. The coloring and painting of the door gods was done by his eldest son, Fu-yin and his eldest grandson, Chang-chou. To preserve this work of art, the Hakka Affairs Council has subsidized Taichung City Government to restore the paintings based on the original cultural asset. The original painters, Liu Chang-chou and his brothers Chang-chih and Chang-wu were asked to restore their artwork from 60 years ago while also promoting the traditional style of painting to the local community, so that the residents could learn to treasure the memories from those olden days.

### 3. Promoting urban and rural development:

- (1) Implementing social housing scheme: To achieve the target of building 200,000 social houses in eight years, the Ministry of the Interior's "Social Housing Project" was approved by the Executive Yuan in March 2017, and would be implemented with the goal of building 120,000 households and having another 80,000 households available under social housing lease and rental management. As of December 31, 2021, cumulatively 69,611 social housing units have been built across all municipalities, county/city governments, and the National Housing and Urban Regeneration Center. Actual units available are 19,522 households. A total of 30,158 housing units under social housing lease and rental management have been achieved. 120,000 households received rent subsidies.
- (2) Promoting urban renewal: Amendments to the Urban Renewal Act were completed in 2021, in which building bulk ratio bonus for mid-to-high rise buildings before implementing the



▲Figure 2-17 Painting and restoration of Wanan Temple in Shigang

building bulk control was relatively lessened to accelerate the speed of its reconstruction. Moreover, statistical data as of the end of 2021 indicates that 982 urban renewal projects have been approved for execution. Of all government-led urban renewal projects, 27 are being planned for urban renewal feasibility appraisal, pre-processing for public tender is being executed at 26 of the projects, 12 are being announced, and 44 are being executed by the winners of the open tender (investors), while another 10 is being implemented and funded by the government itself.

- (3) Enhancing safety of public areas and making them greener: To provide a friendly and accessible recreational space to the public, the government has been implementing the "Urban Park Access-free Environment Supervision Project" in which park entrances, paths and roads, signs, and facilities are all being evaluated. Physically and/or mentally disabled individuals are also asked to serve as evaluators and to jointly engage in random on-site supervisions throughout Taiwan in order to assist regional governments to implement inspections and improvements over the accessibility of public areas. As part of the current term of the "Urban Park Access-free Environment Supervision Project", on-site inspections were carried out at all municipalities and county/city governments between July 1, 2020 to May 11, 2021, and review conferences were separately held on September 29, 2020 and October 6-7, 2021. All evaluations have been completed.

## GOAL 12

### Ensure sustainable consumption and production patterns

#### 1. Encouraged industries to go green and work toward sustainable development:

##### (1) Enhancing the industry's green competitiveness:

In 2021, a total of 13 manufacturers have either achieved the Green Factory mark or were determined to meet clean production standards. Cumulatively, these designations have been achieved by 215 manufacturers. In addition, the "Clean production Evaluation System for the Paper Manufacturing Industry" has been formulated in line with industry-specific characteristics, and the contents of these standards will continue to be reviewed and improved.

##### (2) Assisted green enterprises to secure working capital:

The government continued to encourage domestic banks to actively provide loans to key innovative industries while balancing their risks. As of December 31, 2021, domestic banks have cumulatively lent more than NT\$5.7886 trillion to companies in key innovative industries in order to assist these 5+2 industries to secure working capital. High-performing banks in this aspect were also awarded.

##### (3) Executing environmental sustainability actions:

A total of 211 Product Carbon Footprint marks and certificates for carbon footprint reduction were issued in 2021. A total of 8 manufacturers were awarded the low-carbon product awards for their commitment to practicing carbon footprint reduction measures, such as replacing air conditioners and machinery/equipment, enhancing energy efficiency, deploying green energy, promoting paperless operation, or reducing raw materials in products or waste during the production process.

##### (4) Encouraged Taiwanese enterprises that

actively promoted reuse and circular economy: The Environmental Protection Administration has been nominating and awarding green and sustainable enterprises since 2018. Currently, 36 enterprises have received the highest-ranking 2-star award and 39 have received the 1-star award. Cumulatively, 75 high-performing enterprises have been awarded. The "Best Practices of Resources Cycle" ebook has also been prepared to share experiences on how these high-performing enterprises have practiced resource cycling.

#### 2. Increased green procurement in both public and private sectors to promote green consumerism:

In 2021, green procurement of government agencies has reached NT\$11.2 billion, showing a NT\$900 million increase, or 8.8% over that of 2020. By effectively expanding the scale of the environmental protection products market, more and more manufacturers will be encouraged to practice green production. In terms of green procurement from private entities, a total 1,986 private institutions have reported relevant procurement in 2021 and the cumulative amount of which has reached NT\$52.3 billion. This figure indicates a NT\$7.7 billion, or 17.2% increase over 2020. By strengthening the awareness of private enterprises and groups for green procurement, we can promote the development of green industries and enhance environmental quality.

#### 3. Led green production and reducing waste generation:



▲ Figure 2-18 Interdepartmental Chemical Substance Information Service Platform (Chemistry Cloud)

To solve the circular use of waste generated by industries, 2 sessions of technical collaboration meetings were held in 2021, and memorandums of understanding (MOU) were signed with 7 vendors. By persuading manufacturers to utilize the innovative technologies that have been developed, their willingness to invest toward the construction or expansion of resource cycling firms can be increased and such firms can be realized going forward, thereby creating investment benefits for the industries. In addition, the government continued to advocate for business waste reduction at science parks through on-site inspections, and "Best Enterprise for Waste Reduction and Resource Cycling" was held to award high-performing businesses and to encourage them to share their experiences. The Interdepartmental Chemical Substance Information Service Platform (Chemistry Cloud) was developed to compare/contrast and screen information, as well as to track the flow of chemical substances generated. In 2021, there were 148 cases of chemical substance flow tracking, and information was provided to all departments by email for risk control.

#### 4. Practiced environmental friendliness and promote waste cycling and reuse:

- (1) Building a comprehensive industry production and sales supply chain: As of December 31, 2021, 14 regional agricultural processing centers have been set up and received coaching, and some of the industries covered include vegetables, fruits, grains, and special crops. Total area of contract farming has reached 1,950 hectares, which consume 27,042 tons of locally processed raw materials on an annual basis.
- (2) Waste cycling and reuse: Livestock farms were guided on recycling and processing (or outsourcing the processing) manure from livestock; this has been achieved by more than 99% of all farms; In 2021, 13 sessions of guidance of processing chicken manure into fertilizer production and relevant equipment were held, and in 4 of which, the permit for processing chicken manure into fertilizer has been received. In addition, the Council of Agriculture and Environmental Protection Administration have separately promoted farm irrigation using manure



▲Figure 2-19 A renovated guest house leased by Kinmen National Park Headquarters

from livestock. As of December 31, 2021, a total of 2,238 farming sites have been approved, and the annual permitted manual irrigation volume has reached 8.2591 million tons. In 2021, the centralized disposal and reuse of waste from livestock farming industry has reached 24,000 tons (centralized disposal reached 18,000 tons, while 5,900 tons were reused).

#### 5. Developed sustainable tourism to build green and localized travel models:

To cultivate regional industries and to promote eco-tourism, managerial divisions of all national park have all actively organized relevant events to enhance the citizenry's understanding of local arts and culture as well as their developments over the years. The goal of these events is for local residents to identify with the philosophies of the national parks, and to form co-prosperous, synergistic partnerships with them. For instance, the Kenting National Park organized the "community eco-tourism", Yushan National Park organized the "Strolling through Nan'an Guided Tour", Yangmingshan National Park organized the "friendly farming coaching", Taroko National Park organized the "tribal music concert and traditional cultural DIY", Shei-Pa National Park organized the "Cultivating Local Ecology Tourism Package", Kinmen National Park organized the "Lease, Guidance, and Evaluation of Old Houses and Military Dormitories", Taijiang National Park organized the "Promoting Local Industry, Culture, and Wetland Ecology", and South Penghu Marine National Park organized the "Dongyuping Culture and Artistic Resources Explorations".

## GOAL 13

### Take urgent action to combat climate change and its impacts

#### 1. Initiate dialogues for the amendment of the Greenhouse Gas Reduction and Management Act:

The Environmental Protection Administration thoroughly inspected and planned laws related to Taiwan's carbon reduction pathway and climate change. The amendments to the Greenhouse Gas Reduction and Management Act (hereinafter "GHG Management Act") was announced in advance on October 21, 2021, and conferences were convened regarding the GHG Management Act revisions on December 20th, 22nd, and 23rd of the same year. To make the contents of the law more comprehensive, all departments, elected representatives, industry representatives, and private groups were invited to engage in in-depth discussions regarding the contents of the draft.

#### 2. Encouraged voluntary GHG reductions in industries:

To encourage more enterprises and citizens to partake in carbon reduction tasks, the government continued to offer projects on incentives for reductions. As of December 31, 2021, a total of 86 projects have completed registrations, in which 19 have already received the reduction incentives. Cumulatively, reductions of 23,635,213 tons of CO<sub>2</sub>e have been approved. Moreover, cumulatively, 34 projects have completed carbon reductions.



▲ Figure 2-20 Building skills to adapt to climate change: Statistical data on the climate data usage on the TCCIP Platform (left); Decrypting the Future of Climate Change: A TCCIP Expert Seminar (right)

#### 3. Building adaptive scientific competencies for climate change and relevant services:

- (1) The new generation of climate change integrative service platform (<https://tccip.ncdr.nat.gov.tw/>) was launched on October 2019. The website provides data, information, knowledge and tools required by the industry, the government, academia, and for research purposes. As of December 31, 2021, the site has received more than 940,000 visitors. There were 554 data service on climate information in 2021, and as of December 31, 2021, the website contains 1,386 data services.
- (2) In response to the Physics and Basic Science Report in the Sixth Assessment Report announced by the United Nations Intergovernmental Panel on Climate Change (IPCC), the Central Weather Bureau, Research Center for Environmental Changes at the Academia Sinica and other relevant departments have announced the key points in this report using press release, and information on the climate change in Taiwan has also been updated accordingly. In November, an expert seminar was held to summarize the key contents of the report to approximately 400 attendees. The National Science and Technology Council participated in the 2021 Taiwan Climate Action Expo in December to showcase the results of integrated services on climate change. Their booth was visited by approximately 2,000 persons and showcased the results of the government's efforts to building scientific competencies to adapt to climate change and relevant services. The "Taiwan Sustainability Action Awards - SDG13 Scientific services for climate change and risk evaluation" was received



from the Taiwan Institute for Sustainable Energy (TAISE), as well as the "Outstanding Talent Award" from the 2021 IT Month.

**4. Completed the draft on the mid- to long-term plan of the "New generation Environmental Education Development" policy:**

To promote the shift in Taiwan's environmental education paradigms and to implement a sustainable development-oriented environmental education strategy in order to ensure that all faculty and students in Taiwan are learning about core competencies necessary for sustainable development, the Ministry of Education has formulated the mid- to long-term plan to achieving the "New generation Environmental Education Development (NEED)" policy in 2021. Climate actions and net-zero emissions, sustainable development education, and the Sustainable Development Goals (SDGs) have been incorporated into the mindset of environmental education. It has also proposed to reinforce systems to support the policy, enhancing professional skills in faculty, promoting the development of quality sources, optimizing learning and training environment, promoting climate action from youths, innovating region-specific sustainable solutions and connections. The target is to foster systematic thinking and skills geared to sustainable development in grades 1 through 12, and to enhance the teachers' perspectives on environmental, social, and economic aspects as well as to enhance the functions of environmental education mentoring teams (groups) in order to assist schools to develop environmental education for the new generation in ways that are specific to their respective locations.

**5. Enhancing adaptability to climate change:**

"The National Adaptation Action Plan to Climate Change (2016-2022)" has named eight major aspects, including disaster, critical structures, water resources, land utilization, ocean and coast, energy supply and industry, agricultural production and



▲Figure 2-21 Mid- to long-term plan of the Ministry of Education's "New-generation Environmental Education Development"

biodiversity, and health, as well as their respective competency-building strategies. In line with these aspects, 125 adaptive actions will be carried out by 17 institutions including the Environmental Protection Administration. In particular, 71 of the actions have been prioritized and will enhance the basic skills to adapt to climate change as well as to integrate and reinforce the executions of adaptive actions.



**GOAL 14**  
**Conserve and sustainably use the marine ecosystems, and prevent the degradation of marine environment**

**1. Reinforcing the Ocean Conservation Act and the Marine Pollution Control Act:**

The Ocean Conservation Administration, Ocean Affairs Council promoted the formulation of the Ocean Conservation Act in 2021, and it was submitted to the Executive Yuan for review on December 29, 2021. In addition, the Marine Pollution Control Act was also amended in this year. Key amendments included changing the competent authority of the ocean-related affairs, collecting marine pollution prevention and control fees, establishing the Marine Pollution Control Fund, and updating regulations on disposal of waste offshore and other relevant articles in line with the international legal developments and emerging issues. In addition, regulations on compensations for damages, enforcement, increasing the level of penalties for violations, and ceiling for such penalties and more. The amendments were reported to the Executive Yuan on November 30, 2021.

**2. Implemented the "General Description of Operation Directions for Recycled Marine Debris Product Label" and held the mark authorization ceremony:**



▲Figure 2-22 Product labeling and mark approval ceremony for "Marine Debris Circular Product"

On April 9, 2021, the Environmental Protection Administration announced the "General Description of Operation Directions for Recycled Marine Debris Product Label". This is the first product label throughout the world to be supported by the government, requires rigorous verification procedures to prove that raw materials or products are made from recycled marine debris, and clearly defines marine debris as well as the sources and contents of the marine debris. The Recycled Marine Debris Product Label ceremony was held on December 27th to celebrate 4 enterprises (including a total of 13 products). The scope of which ranged from raw material-grade plastic particle to general consumer products, which not only educates the consumers on environmental education, but also sets a role model on recycling and reuse.

### 3. Protected at least 10% of the coast:

(1)The "Salute to the Seas - coastal cleanup and maintenance project" was implemented, in which the outsourced "2021 Penghu Dongjiyu and Xijuyu coastal cleanup" and outsourced "2021 Penghu Dongyuping and Xiyuping coastal cleanup" were executed. Beach cleanup was also carried out, in which all coastal areas within the South Penghu Marine National Park were cleaned. Cumulatively, 137,716 m<sup>2</sup> of the coast was cleaned, and 202.88 tons of marine debris were cleared.

(2)A total of 18 cable float switches are set up and maintained at the South Penghu Marine National Park. These floating devices are available for the public to secure their vessels during offshore recreational activities, and would help to prevent

damages to the coral reefs from the vessels lowering their anchors, thereby protecting marine ecology.

(3)The Kenting National Park, Underwater Photography Association Taiwan, and Taiwanese Coral Reef Society co-organized the 2021 Coral Reef Conservation Week, with activities ranging from beach cleanup and marine debris removal, "Beautiful Corals" photo exhibit, and live streamed videos of coral reef spawning. The series of activities are designed to encourage the public to participate in and to understand about coral reef ecology, as well as to pay more attention to the marine and coral reef conservation.

(4)Set up and promote Marine Protected Areas (MPAs) to increase the area of protected oceans: In 2021, the number of Marine Protected Areas (MPAs) have been increased to 46, reaching a cumulative area of 5,264 km<sup>2</sup>. After adding in relevant fishery practices and specific no-fishing areas (including 3 nautical miles of no-trawling areas), the total surface has been increased from 30,949.4 km<sup>2</sup> to 31,718 km<sup>2</sup>. By calculating this particular target (the original target denominator) using a 12-nautical mile surface of 65,076.96 km<sup>2</sup>, the MPAs have increased from 47.56% in 2018 to 48.7% in 2021, thereby achieving the 47.8% target.

### 4. Cleared marine debris by joining forces with private sectors:

In 2021, the Ocean Conservation Administration, Ocean Affairs Council has cumulatively recruited 4,628 fishing ships and 3,040 divers to serve on the environmental protection fleet, and regional

governments were subsidized to remove a total of 2,061.7 tons of marine debris.

## GOAL 15

### Conserve and sustainably use terrestrial ecosystems to ensure the persistence of biodiversity and prevent land degradation

#### 1. Protecting, maintaining, and promoting terrestrial ecosystems:

In 2021, the Council of Agriculture and the Ministry of the Interior have announced the designation of the natural reserve to the Longqi Niupu Mudstone Area. Cumulatively, the area of all natural reserves including the Longqi Niupu Mudstone Area Soil and Water Conservation Park and the Mudstone Badland Geopark at Kaohsiung, account for 729,809.55 hectares. Conservation projects for wetland and black-faced spoonbills were carried out; conservation and utilization projects for Caiyuan, Niaosong, and Yuanzhonggang Wetland Park (regional) were approved and announced in line with the Wetland Conservation Act. Global census on the number of black-faced spoonbills in 2021 showed a total of 5,222; its population continues to reach record-breaking figures. In particular, Taiwan has a total of 3,132 black-faced spoonbills, making up 60% of its world population.

#### 2. Reinforcing the maintenance, management and monitoring over river and stream biodiversity:

In 2021, the Council of Agriculture completed the second around of investigations on current river status for 9 rivers including Puzi River, Danshui River, Zhonggang River, Zhuoshui River, Beinan River, Hualien River, Lanyang River, Gaoping River, and Bazhang River. All 100% of the water governance plan (rivers, coasts and regional discharge under the central government jurisdiction) worth more than NT\$50 million from the Water Resources Agency, MOEA, the "wild stream governance engineering project for mountainous areas near reservoirs" from the Soil and Water Conservation Bureau, Council of Agriculture, and the "national land and river



▲Figure 2-23 General Science Annual Report "The Fairies on the Farm 2021"

governance engineering project" from the Forestry Bureau have included and implemented ecological assessments. The Forestry Bureau published the "Living with the Wilderness: Eco-friendly Governance Engineering Projects at National Forests", a compilation of 16 engineering projects that were committed to balancing mountainous and villager safety with ecological conservation. The illustrated book depicted ecologically friendly measures and provided information to the public and government's engineering agencies regarding governance engineering and ecology.

#### 3. Reinforce afforestation efforts to increase the coverage of forests and promote sustainable management over forests:

The Council of Agriculture continues to implement afforestation and forest management, a total of 486 hectares of afforestation was completed in 2021, while 755 hectares of forests are managed. Forest Management (FM) verification from the international NGO, Forest Stewardship Council (FSC), has been introduced to the stewardship over national forests. In 2021, 133,103 hectares of forests have received FSC's FM certification. In addition, the National Police Agency and the Forestry Bureau also continue to pursue illegal logging activities in the forests. In 2021, a total of 119 cases of illegal theft over the forest's major and minor products have been found, which cumulatively reached 541.26 square meters of wood.

#### 4. Long-term agricultural monitoring system included biological monitoring and water and drought rotation to reduce the salinization of the land:

The Council of Agriculture began implementing the long-term biological monitoring plan in agriculture in 2021. Surveillance over birds, amphibians, and reptiles are carried out at 8 surveillance stations throughout Taiwan. In the future, the monitoring data will be used to build trends in individual species and to reflect the changes in wildlife in agricultural environments. In addition, the general science annual report, "The Fairies on the Farm 2021", was published to introduce biodiversity in the farmland as well as nature conservation on the farm. Water-saving "water and drought rotation" farming system continues to be promoted, and its implementations are widened through demonstration site along the coast to reduce overuse of groundwater in water-depleted farmlands along the coast, thereby reducing salinization of the land. The "corn - rice paddy - soybean" rotational farming model is advocated along the coastal areas of Changhua and Yunlin in 2021. The effects of different sowing and cultivation methods on crop growth and volume are compared against one another, and the effectiveness of water conservation and cost-benefit analysis will also be evaluated subsequently.

and department have separately completed the amendments to the "Regulations Governing Anti-Money Laundering and Counter-Terrorism Financing for Notaries", "Regulations Governing Anti-Money Laundering and Countering the Financing of Terrorism for Certified Public Accountants", "Regulations Governing Anti-Money Laundering and Counter-Terrorist Financing for Certified Public Bookkeepers and Bookkeeping and Tax Return Filing Agents", "Regulations Governing Anti-Money Laundering and Countering the Financing of Terrorism for Jewelry Businesses", "Regulations Governing Anti-Money Laundering and Counter-Terrorism Financing for Land Administration Agents and Real Estate Brokerages", and "Regulations on Anti-Money Laundering & Countering the Financing of Terrorism Operations Matters Conducted by Attorneys".

#### 2. Results of promoting openness of government information in 2021:

(1) As of December 31, 2021, the "Open Data" platform has provided 51,824 kinds of information. Cumulatively, it has been browsed over 90.5 million times. Cumulative downloads exceeded 16.85 million times, and high-quality "Gold Label" information which is machine readable, structured, and open has accounted for 83% of all data available.

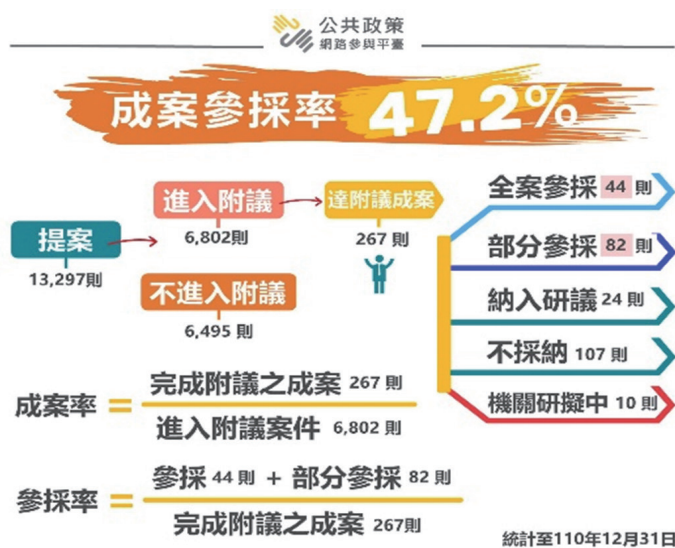
(2) The "Open Data" platform will continue to make highly applicable and valuable information

## GOAL 16

### Promote peaceful and inclusive societies, provide access to justice for all and build effective, accountable inclusive institutions

#### 1. Anti-money laundering and reducing illegal cash flow:

On December 27, 2021, draft amendment to the Money Laundering Control Act was announced. Moreover, to address the deficiencies regarding the Designated Non-financial Businesses and Professions (DNFBPs) in APG's third round of mutual evaluation, competent authorities of each profession



▲ Figure 2-24 Participatory status of the Public Policy Online Participation Network Platform in 2021





▲ Figure 2-25 Ministry of Justice formulated the “Attorney and Disciplinary Resolution Query System” in 2021

available to all. Some of the information included that are available for value-added applications from the public are COVID-19 pandemic, digital terrain models, real-price property registrations, air quality, and electricity supply and more.

### 3. Open and transparent participation:

- (1) As of December 31, 2021, cumulatively 13,297 proposals have been submitted to the Public Policy Online Participation Network Platform; 267 of which have been adopted, reaching a proposal adoption rate of 47.2%.
- (2) The platform provides cross-regional cooperation model, enabling different cities and counties to jointly promote and enhance online participation in public policymaking. As of December 31, 2021, 21 counties and cities have applied to deploy the municipality/county/city version of the platform.

### 4. Emphasized an open and transparent legal system:

On January 1, 2021, the Ministry of Justice formulated the "Attorney and Disciplinary Resolution Query System", in which names, photos, contact information for his/her practicing firm are openly disclosed on the website in line with block chain verification services. This allows the public to inquire whether the qualifications of a lawyer as well as his/her professional information and disciplinary records.

### 5. Increasing the corruption conviction rate:

From January to December 31, 2021, in terms of corruption cases being investigated by all district attorney's offices, 271 of which have been indicted, 15 have been ruled to be corruption and found guilty, and 0 was found to be corruption and not guilty. The conviction rate of corruption cases being guilty has been 100%.

### 6. Implementing birth registrations:

A total of 182,692 births were received and submitted to the household registration offices in 2021. All of which were verified and documented in line with the Household Registration Act and the "Operating Guidelines on Online Reporting of Birth Information", and the birth information of the newborns were reported via the cross-departmental system, leading to 100% birth registration rate.

## GOAL 17

### Establish diversified partnerships and work together to advance the vision of sustainability

#### 1. Executed environmentally friendly technology transfer, popularization, and dissemination projects:

Of all the sustainable consumption and production and environmentally-friendly technology projects implemented in 2021, paid projects amounted to US\$196.92 million, while unpaid projects cumulatively amounted to NT\$535,892,299. For instance, the Honduras-based technical team was about to gather 74 tons of waste pine needles, break them down to 45 tons and produce approximately 12 tons of biomass fuel particle using the "Innovative R&D project to use biomass fuel technology to enhance the conversion of waste trees (leaves) into household energy". The Saint Lucia-based technical team collaborated with the largest local chain supermarket, Massy, and set up "Quality Fruits and Vegetables" section in their 13 supermarkets via the "Fruit and Vegetable Production and Sales Supply Chain Performance Enhancement Plan".

## 2. Implementation results of various medical cooperations with mostly countries with diplomatic relations:

The medical cooperation plans in 2021 included the "Medical information management performance enhancement plan (Phase 2)" in Paraguay, "Maternal and infant care function and medical technology improvement plan (Phase 2)" in Eswatini, "Maternal and infant care function and medical technology improvement plan" in Somaliland, "Metabolic syndrome prevention system reinforcement plan" at Saint Kitts and Nevis, "Maternal and infant care function and medical technology improvement plan" in Guatemala, "Medical imaging system improvement plan" in Belize, "Emergency response strengthening program" at Haiti, and the "Medical information management performance enhancement plan" in Honduras, and cumulatively, these projects have improved the competencies of 4,926 medical personnel.

## 3. Assisted developing countries to implement water-improvement and sanitation-related projects:

In 2021, the 3-year cooperation plan between the "Preparations and Technical Assistance for Honduras Water Supply and Sanitation Service Promotions Project" and the Catholic Relief Services provided technical assistance to the local water supply and sanitation services companies in remote areas in Honduras. By protecting water resources, maintaining pipelines and improving the water quality, the teams provided stable and sanitary water supply services to the local residents and reduced their risks of getting infected with COVID-19 and other diseases. It also helped to reduce the women's burdens related to drawing water. In 2021, a total of 70 water supply and sanitation companies received assistance, benefiting 35,582 households, or cumulatively, 171,808 persons. In addition, the partnership between "Haiti Earthquake Victims and Communities WASH Assistance Program" and Care Haiti also began in December 2021.

## 4. Implemented technical assistance projects for trade support:

In 2021, the total technical assistance projects for trade support organized by the International Cooperation and Development Fund reached



▲ Figure 2-26 Honduras-based technical team's "Innovative R&D project to use biomass fuel technology to enhance the conversion of waste trees (leaves) into household energy"



▲ Figure 2-27 Newborn care training class organized by the "Guatemala maternal and infant care function and medical technology improvement plan"

NT\$211,555,750. These projects facilitated countries with diplomatic ties to enhance their production technologies and expand their marketing and sales to increase revenues. The "Paraguay commercial orchid production guidance project" assisted Paraguay to form a basis in the butterfly orchid industry by introducing new species and improving their production technologies. It successfully attracted local enterprises to invest in butterfly orchid farming, and it was also mediated to purchase Taiwanese greenhouse production equipment that totaled US\$410,000, thereby creating trade opportunities for both countries. The "Paraguay small low-profit enterprise capability enhancement plan" organized competitions for SMEs throughout Paraguay, and attracted 1,206 enterprises to join and to enhance their management competencies through four themes, namely, women's empowerment, young entrepreneurs, fair trade, and

climate change. Furthermore, the "Guatemala SME startup incubation and capability enhancement plan" coached 5 incubation centers and a total of 147 enterprises by providing management consultancy and incubation consultancy and visitation services, thereby facilitating them to increase operating profits.

## GOAL 18

### Build a nuclear-free homeland

#### 1. Implemented decommissioning of nuclear power plants in line with the law; completed gas turbine equipment and plant dismantlement at First Nuclear Power Plant and stopped operation of Turbine 1 of the Second Nuclear Power Plant:

To remove the used nuclear fuel rod from the reactor and the used fuel pool at the First Nuclear Power Plant to facilitate various decommissioning and dismantling operation, TPC completed the

dismantling of gas turbine equipment and plant at First Nuclear Power Plant on November 18, 2021 so that the site could be used toward building an indoor dry storage facility. In addition, since the used fuel pool at the Second Nuclear Power Plant is full, operation was stopped ahead of schedule on July 1, 2021. Decommissioning will continue after the decommissioning permit has been granted.

#### 2. Continue to implement site selection for "final disposal facility for low-level radioactive waste" and Lanyu storage site will be relocated as soon as possible:

To enhance storage safety, all storage barrels at Lanyu low-radioactive waste storage site were repackaged on February 3, 2021 by TPC.

#### 3. Implemented legal operations of the "high-level radioactive waste final disposal facility" to assist decommissioning of nuclear plants:

TPC completed the "Initial Safety Verification Report on the Final Disposal of Used Nuclear Waste in Taiwan" (SNFD2021) and the report was submitted to the Atomic Energy Council, Executive Yuan for review.



▲ Figure 2-28 Before and after photos of gas turbine equipment and plant dismantlement at First Nuclear Power Plant (Upper-left: before dismantling the plant; Lower-left: before dismantling the equipment; Upper-right: in the process of dismantling the equipment; Lower-right: after dismantling the equipment)



▲Figure 2-29 On-site visitation of the decommissioning and dry storage facility of First Nuclear Power Plant

#### 4. Promoted communications regarding disposal of nuclear waste and reinforced promotions of Nuclear-Free Homeland:

- (1) To strengthen the public participation and social communications regarding decommissioning management, the Atomic Energy Council, Executive Yuan has been hosting "First and Second Nuclear Power Plants Decommissioning Management Public Hearing" and "Third Nuclear Power Plant Decommissioning Plan Review Public Hearing" since May 2021. Environmental parallel monitoring at Lanyu, and site inspection of the decommissioning and dry storage facility of First Nuclear Power Plant are also carried out to enhance the public understanding regarding nuclear decommissioning and dry storage controls.
- (2) The "low-level radioactive waste storage site selection communications plan" and "low-level radioactive waste handling response plan (interim temporary storage) communications plan" were executed in 2021. By utilizing online marketing channels including the "Nuclear Back-end Operations Website" and "Give Nuclear Waste a Home" Facebook page, 2.18 million persons have been reached throughout Taiwan, including Taitung, and Kinmen. In addition, promotional materials including printed ads, pamphlets, summaries, and short video clips were produced, and various visitations, public hearings, campus promotions, and seminars were also held.

## Climate Change and Net Zero Transition Task Force

### 1. "2050 Net-zero Emissions" target is included in relevant laws:

To correspond with the international trend for the pursuit of net-zero emissions, President Tsai specifically stated that "2050 Net-Zero Transition" is not only a goal throughout the world, but also our goal in Taiwan during a speech on Earth Day, April 22, 2021. While chairing the National Council for Sustainable Development meeting, Premier Su has also indicated a draft amendment to the Greenhouse Gas Reduction and Management Act, in which "2050 Net-zero Emissions" will be included in the Act. To this means, on October 21, 2021, the Environmental Protection Administration has announced that the Greenhouse Gas Reduction and Management Act will be amended into the "Climate Change Adaptation Act", and the "2050 Net-zero Emissions" will be included in the Act.

### 2. Formulated Net Zero Pathway Task Force to evaluate the carbon reduction pathways:

The Executive Yuan called on the Ministry of Economic Affairs, National Science and Technology Council, Ministry of Transportation and Communications, Council of Agriculture, and the Environmental Protection Administration to formulate the "Net Zero Pathway Task Force", which would consist of five working groups, namely, "Carbon-less Energy", "Industry and Energy Efficiency", "Green Transportation and Vehicle Electrification", "Carbon Negative Technology", and "Governance". The teams will evaluate the pathways toward achieving net-zero emissions and to plan its roadmap. In addition, the Academia Sinica and the Industrial Technology Research Institute have also been invited to provide professional opinions. The EPA and relevant departments have also engaged in inter-departmental coordination through conferences, and also engaged in numerous talks with private groups regarding issues including carbon negative technologies, carbon-less energies, net zero buildings, green transportation, low-carbon industries, economic tools, and just transition. Cumulatively, more than 100 relevant meetings

# 2050淨零路徑推動歷程

里程碑



蔡總統宣示

臺灣2050  
淨零轉型目標

目標宣示

2021/4/22

蘇院長指示

《溫管法》修法  
納入「2050  
淨零排放」目標

目標入法

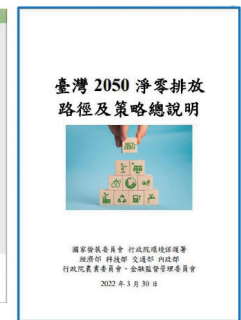
2021/8/30

我國公布

「臺灣2050  
淨零排放路徑  
及策略總說明」

路徑公布

2022/3/30



▲Figure 2-30 Promoting the Pathway to 2050 Net-zero Emissions

and conferences were held in 2021 in the hopes of encouraging everyone to commit to innovative technological R&D through diverse engagement from all parties.

### 3. Planning Taiwan's 2050 Net-zero Emissions pathway:

On March 30, 2022, the National Development Council led the Ministry of Economic Affairs, National Science and Technology Council, Ministry of Transportation and Communications, Ministry of the Interior, and the Environmental Protection Administration to formally announce the "General Explanations of Taiwan's 2050 Net-zero Emissions Pathway and Strategies". The government plans to gradually realize a sustainable society with net-zero emissions by 2050 through four major transitional strategies, which are "energy, industry, living, and society" and two governance principles of "technical

R&D" and "climate governance" in addition to 12 key strategies. The planned pathway toward 2050 Net-zero Emissions will achieve decarbonization in the total energy supply by using renewable energies that account for 60-70% of total electricity, 9-12% of hydrogen, and 20 to 27% of thermal power generation while balancing energy safety and carbon capture and storage. In terms of the decarbonization of non-electric energy, in addition of accelerating electrifications, the government will also invest in the development of innovative and clean energies, such as using hydrogen and biomass fuel in coordination with the carbon capture and storage technologies to replace petroleum fuel. At the same time, mountain, forestry, and wetland conservation will be actively planned to expand the scale of natural carbon sink, thereby achieving the long-term goal of 2050 Net-zero Emissions.



Since Taiwan's Sustainable Development Goals (SDGs) were approved in December 2018 and the SDG corresponding indicators were approved in July 2019, the NCSA has continued to promote sustainable development, and adjusted our framework in 2021 to set up 17 working groups in line with Taiwan's 17 SDGs. The Nuclear-Free Homeland Promotion Task Force and Climate Change and Net Zero Transformation Task Force have also been established, and the National Council for Sustainable Development has been asked to serve as the Secretariat to assist the CEO in handling relevant tasks.

In dealing with various challenges including pandemic prevention, global inflation, climate change, and digital transformation, the NCSA has convened 1 council meeting and 4 working conferences in 2021. We also examined our Sustainable Development Goals (SDGs). During the council meeting, we discussed reinforced adaptations to climate change, actively executed the legal proceedings to amend "Greenhouse Gas Reduction and Management Act" into "Climate Change Adaptation Act", and included the "2050 Net-zero Emissions" goal into the new Act. In terms of the working conferences, the NCSA's tasks as well as proposals on sustainable education, circular economy policy planning, low-carbon, sustainable and green transportation, the Spatial Planning Act and sustainable development, and the formulation of a digital and sustainable future were reported and resolutions were made.

In addition, all working groups and task forces promoted sustainable development in four major aspects, namely, Social Inclusion, Sustainable Economy, Spatial Resilience, and Green Environment. The social inclusion teams continue to enhance social and economic safety and care as well as to promote sustainable agriculture along with various preventive tasks against AIDS, diabetes, and other diseases. We were also committed to building diverse, lifelong learning channels, disseminating gender equality and making legal amendments to protect gender equality, to reduce

illegal cash flow, and to make public policy more transparent and enhancing its participation. The Sustainable Economy teams promoted a green industry ecosystem, enhanced the sustainability of enterprises and their financial competitiveness, promoted decommissioning of nuclear power plants, and engaged in various communications with the society regarding the disposal of nuclear waste. The Spatial Resilience teams promoted accessibility transportation and road safety, improved income distributions and eliminated discriminations at the workplace. It also engaged in spatial planning and protection of cultural and natural heritage, as well as facilitated countries with diplomatic ties to implement their own sustainability programs. The Green Environment teams executed waste management and resource cycling, promoted green consumption and sustainable production, formulated legal proceedings and competencies to adapt to climate change, and protected the marine and terrestrial ecologies.

While more than 130 countries around the globe have declared their commitment to net-zero emissions, Taiwan has proposed the national goal of "2050 Net-Zero Transition". The Executive Yuan called on the Ministry of Economic Affairs, National Science and Technology Council, Ministry of Transportation and Communications, Council of Agriculture, and the Environmental Protection Administration to formulate the "Net Zero Pathway Task Force", which would consist of five working groups, namely, "Carbon-less Energy", "Industry and Energy Efficiency", "Green Transportation and Vehicle Electrification", "Carbon Negative Technology", and "Governance" in order to engage in cross-departmental technical and policy evaluations. In addition, the Environmental Protection Administration also invited relevant institutions, experts, and scholars as well as private groups to convene and discuss key issues including carbon negative technologies, carbon-less energies, net zero buildings, green transportation, low-carbon industries, economic tools, just transition, and household energy


conservation, thereby initiating communications with the society in regards to the net-zero transitions.

2050 Net-zero Emissions is an inter-generational, interdisciplinary, and multinational large-scale transformational engineering project. As the impacts of climate change on the younger generation will be even more direct and longer lasting, in March 2022, the National Council for Sustainable Development has announced the "General Explanations of Taiwan's 2050 Net-zero Emissions Pathway and Strategies" to declare that the government will formulate two fundamental environments, namely technological R&D and climate governance, in order to achieve four major targets: safer energy transition, more competitive industry transformation, more sustainable living transition, and more resilient social transition. And in dealing with the challenges from Net-zero Emissions, on top of efforts from the public sector, we also need the support from industries and the world-ranking academic talents both from home and abroad. We can only achieve a safe, fair, just, and sustainable green homeland by having everyone committed to working toward realizing the 2050 Net-zero Emissions Goal and creating a more sustainable society.









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National Council for Sustainable Development,  
Executive Yuan