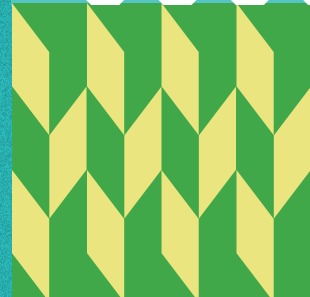
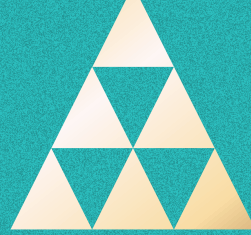
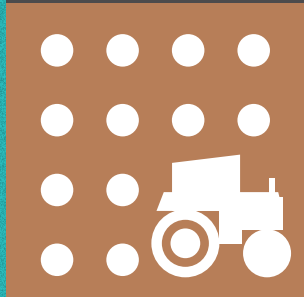
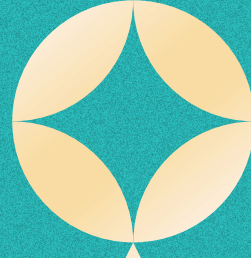
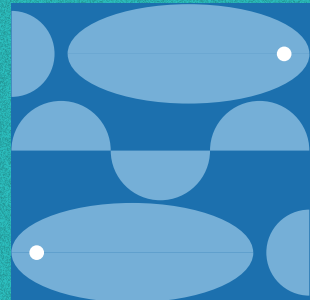
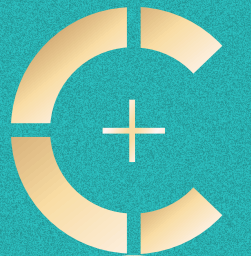


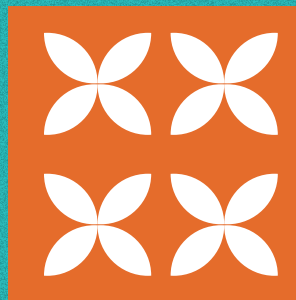


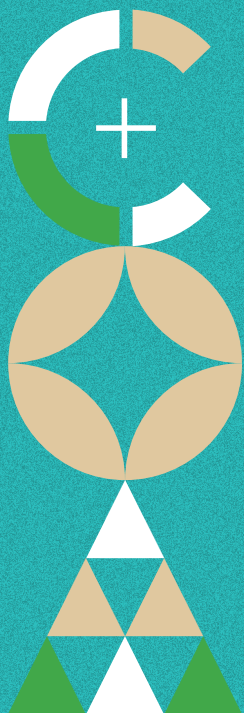
2022

**COUNCIL OF
AGRICULTURE,
EXECUTIVE YUAN**
Annual Report



**Council of
Agriculture,
Executive Yuan**



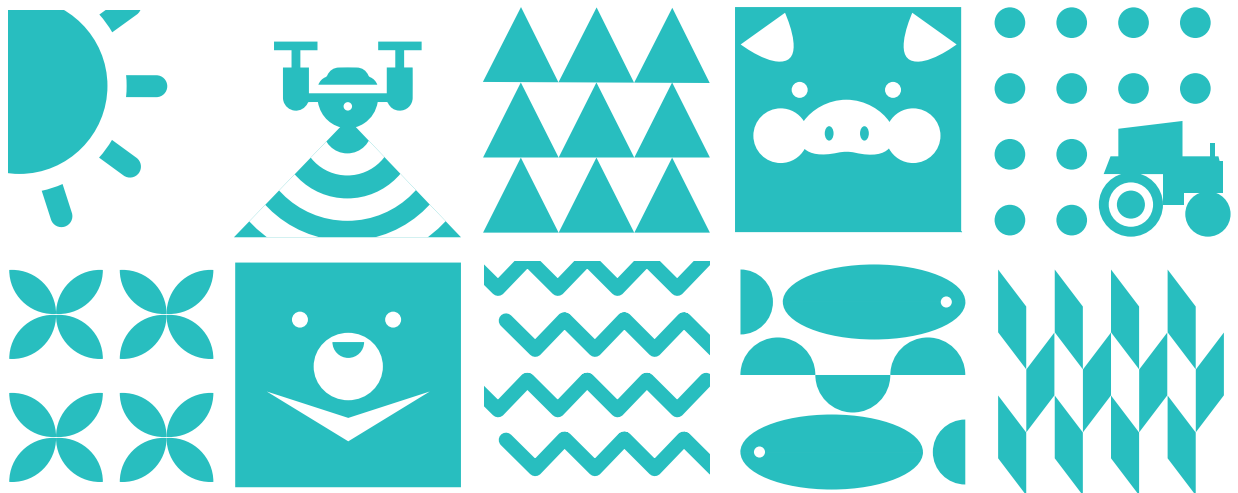


**Council of
Agriculture,
Executive Yuan**



2022

Council of Agriculture, Executive Yuan
Annual Report





Preface

In 2022 Taiwan faced a number of adverse impacts on agricultural production and food security caused by climate change, the COVID-19 pandemic, the Russian war on Ukraine, and inflation, which all affected global supply chains. Its agriculture was also buffeted by market risks including major international animal diseases and the failure of some agricultural products to meet international specifications. In response, the Council of Agriculture (COA) carefully dealt with and sought solutions to the front-line problems of farmers in order to ensure that they could operate in a stable and favorable environment.

In 2022, thanks to the collective efforts of all stakeholders, the COA implemented many major policies and measures, including: maintaining Taiwan's status as a zone free of African swine fever and halting immunizations for classical swine fever (hog cholera), refining the transformation and upgrading of the rice production structure, expanding the area covered by irrigation services, proactively developing and diversifying international markets for exports of agricultural products in order to reduce the risk of dependence on a single market, overseeing large scale growth in the area of land farmed by organic or eco-friendly methods or covered by the Traceable Agricultural Products system, building of a traceability management system for domestically produced tea, passing of the "Food and Agricultural Education Act," and comprehensive promotion of "green care" and zero-hunger policies. The COA took diversified steps to raise industrial competitiveness while also taking into account the sustainable development of agriculture. Important achievements included the following:

Enhancing farmers' welfare

In 2022, the COA continued to refine the "three forms of insurance and one pension program" farmers' welfare system. To encourage young people discharged from the military to take up farming as



an occupation, starting from January 25, 2022 it became possible for discharged young farmers to join the farmers' health insurance (FHI) program. While premiums for FHI remained unchanged, the monthly insured amount for FHI was doubled, while maternity benefits and funeral allowances were increased in order to comprehensively upgrade farmers' rights. Farmers' occupational-injury insurance (FOII) incorporated "occupational diseases" into the scope of coverage, and more than 310,000 people have taken out FOII for a coverage rate of 58.9% of all eligible individuals. Under the farmers' pension program, launched on January 1, 2021, individual pension accounts are set up, and as of the end of 2022 there were 94,000 people making payments into such accounts, accounting for 25.4% of all eligible individuals. In coordination with overall agricultural policy, the COA also expanded promotion of policy-oriented insurance, adding new types of insurance in 2022 including policies for wet paddy rice and sorghum income insurance as well as red beans and Kaohsiung wax apples. Thus far insurance has been developed for 27 items with 42 types of policies and a coverage rate of 51.8%. In addition, the COA provided farmers and fishermen with 19 types of low-interest loans, lending NT\$27.6 billion to over 26,000 households, in order to reduce the obstacles to accessing operating capital for agriculture.

Also, in 2022 the COA comprehensively promoted the "green care" program and implemented the zero-hunger policy with three main strategies of "expanding services," "wise food consumption," and "public-private cooperation." Thus far the COA has guided the establishment of 189 green care stations and 100 green care communities, while 160 farmers' and fishermen's associations have set up special areas for wise food consumption to provide domestically produced food at affordable prices. In addition, the law was amended to expand eligibility for applying for food assistance. Enterprises also participated in

showing concern for the disadvantaged as all stakeholders worked together to build a sustainable and resilient food system.

Improving agricultural infrastructure

In response to the worsening of climate change and the wide gap in rainfall between rainy and dry periods, in 2022 the COA improved farmland irrigation and drainage facilities. Subsidies have been provided of up to NT\$400,000 per person per year, and as of 2022 the area served by irrigation was expanded by over 32,000 hectares with about 40,000 farmers benefiting. The COA also implemented the transformation of the rice industrial structure while taking into account diversified environmental values and adopted a "stacked value-added" approach to expand promotion of direct payments on farmland (also known as "green environmental payments" because they include incentives for eco-friendly farming), completely eliminating the base year limitations. Moreover, we increased payments for endangered species and habitat protection, successfully creating 427 habitat areas covering more than 800 hectares.

The COA in 2022 also worked to prevent major animal diseases. Tasks included proactively preventing the entry of African swine fever into Taiwan and laying the foundations for the future cessation of inoculations for classical swine fever and sheep pox and for application to the World Organisation for Animal Health for Taiwan to be recognized as a country free of hog diseases and sheep pox. Worldwide there were 7,500 incidents of highly pathogenic avian influenza (HPAI), of which H5N1 accounted for 95.8%. Thus far Taiwan has had outbreaks on 78 farms (about 0.9%), so in comparison with the figure for Japan and Korea (about 3%) the HPAI situation in Taiwan is stable and under control. The COA continued to implement various monitoring programs to prevent the entry of avian influenza viruses and minimize economic losses.

The COA also continued to promote the policy for reducing chemical agro-pesticide usage by 50% over ten years as well as strengthened the veterinarian and plant doctor systems, creating integrated pest management models and operational guidelines for 13 types of crops and combining these with subsidies for environmentally friendly materials. This policy was expanded to 25,000 hectares of land, an increase of 56% compared with 2021. In January of 2022 the ID-based registration system for agro-pesticide purchasing came into effect along with phased completion of the mechanism for removing highly hazardous toxic agro-pesticides from the market. We also hired 100 plant doctor trainees to serve in farmers' associations and plant teaching hospitals to provide immediate customized diagnosis services. Meanwhile, the Legislative Yuan completed review of the draft of the "Plant Doctor Act" on November 24, 2022 and voted to send the bill to the floor for the second reading. The COA also comprehensively promoted a pet management system, and in 2022 amended the "Animal Protection Act" to strengthen graded management of pets and animal protection. The COA also founded a Pet Administration Section to plan strategies for management of pet matters and draft relevant laws and regulations. The government has continued to work with civil society to build a pet industry that promotes animal well-being.

Upgrading industrial competitiveness

In 2022 the COA promoted the upgrading of the rice industrial structure through three major complementary policies: allowing farmers to select three crop seasons out of four starting from the base year for cultivating rice, regional rotation of allocation of irrigation water resources, and wet paddy rice income insurance. At the same time, we encouraged farmers to switch over to growing domestically produced mixed staple crops in order to raise the self-sufficiency rate for such crops. The COA also continued to build a national cold-chain logistics system for farm, fisheries, and animal husbandry products, and the country's first export-oriented International Freshness Logistics Center was formally opened in

Pingtung in September of 2022. The COA has already assisted 217 farmers' organizations, 20 district fishermen's associations, and 146 farms producing poultry and livestock meat, dairy products, or eggs to upgrade their cold-chain facilities.

The COA has also established an NT\$10 billion fund to assist in transforming and upgrading the pig-raising industry, including construction of new-type integrated pig buildings, automated labor-saving equipment, and promotion of various pig-rearing models based on different locations and ages of the pigs. Subsidies of up to NT\$10 million per farm were provided for transformation and upgrading of the poultry industry, and the COA adopted a medium- and long-term program to stabilize the balance of supply and demand for eggs. We assisted in increasing (restoring) poultry-rearing and strengthened the autonomous disease prevention capabilities of poultry buildings while promoting circular reuse of chicken excreta in order to enhance the production efficiency of poultry farms and reduce farmers' losses. The COA also strengthened fisheries industry infrastructure, improving fishing ports and the environment of aquaculture households, including renovation of the deep-water docks at Qian-Zhen Fishing Port and improvement of infrastructure at various fishing ports including Nanfang'ao Fishing Port. The goal of all these measures was to promote industrial development.

The COA also promoted modernization of agricultural labor-saving machinery and equipment in order to upgrade agricultural efficiency and cope with the rural labor shortage. In all NT\$4.8 billion was invested to subsidize the purchase of 183,000 agricultural labor-saving machines and mechanized services were provided on 700,000 hectares of land, thereby saving 800,000 man-days of agricultural labor. Also, since 2021 exports of Taiwan agriproducts to China have been restricted, so to diversify the risk of overconcentration on a single market, the COA proactively worked to develop overseas markets for products including sugar apples, citrus fruits, and grouper, whose exports to other countries in 2022 increased by 156%, 11%, and 441%, respectively, showing clear increases in export value.

Net-zero and carbon reduction policies to promote the environmental sustainability of agriculture

The “Food and Agricultural Education Act” was promulgated on May 4, 2022, and was promoted based on six major principles. Also, an integrated platform for food and agricultural education information was built, bringing together data on 105 local specialty agriproducts, 209 teaching plans, 515 sets of teaching materials, and 100 venues, which attracted 264,000 hits. The COA expanded the promotion of food and agricultural (fisheries) education, with more than 50,000 people participating in promotional activities for rice, organic agriproducts, and mixed staple crops. To ensure the safety of agriproducts, we also continued to promote organic and eco-friendly farming as well as the Traceable Agricultural Products (TAP) system. As of 2022 a total of 19,000 hectares of land was being cultivated with organic or eco-friendly methods, the highest figure among all neighboring countries in the Asia-Pacific region, while TAP agriproducts were being grown on a total of 79,000 hectares with production value of about NT\$28.8 billion and an increase of 38% in TAP certified farmland area. The COA also carried on with sustainable management of forest resources and guidance of diversification of forest-based industries, adjusting the incentive policy for afforestation and promoting under-forest economy products including indigenous wild tea, forest beekeeping products, shiitake mushrooms and wood ear fungus grown on logs, and Taiwan jewel orchids, with annual production value reaching over NT\$30 million.

Under the main policy axis of “agriculture in the main, green energy as value-added,” the COA gave priority to the installation of solar power cells on the rooftops of agricultural facilities, while steadily developing the ground-level combination of green energy with aquaculture, and by the end of 2022 solar power cells on agricultural facilities had an installed capacity of 2,749 megawatts. In coordination with international promotion of net-zero emissions, the COA set up a Climate Change Program Office to implement 59 measures within 19 strategies under the four main axes of reducing emissions volume,

increasing sequestration, circularity, and green trends, as well as to promote the circular reuse of residual agricultural resources, enhance natural carbon sequestration effectiveness, and implement agricultural carbon offsets. We took the initiative to inquire into the willingness of enterprises to cooperate and laid out a nine-category agricultural sustainable ESG program in three main areas including net-zero sustainability, environmental protection, and heartwarming rural communities. Through public-private collaboration a mutually beneficial situation has been created, and it is anticipated that the agricultural sector will reach the goal of net-zero emissions ahead of schedule in 2040.

The COA has continued to proactively undertake the administration of all kinds of agricultural policies and act in accord with the policy concept enunciated by Premier Chien-jen Chen to “build a warmhearted and resilient Taiwan.” We have comprehensively promoted green care and the policy of showing concern for the rural elderly; improved irrigation systems, livestock and poultry buildings, and rural community and fishing harbor infrastructure; modernized facilities and equipment; and dealt with revitalization in the wake of the COVID-19 pandemic. In 2023 the COA will comprehensively launch measures for net-zero emissions in agriculture, accelerate the promotion of agricultural insurance, implement farmers’ welfare policies, look after actual cultivators of the land, complete the setting up of cold-chain logistics, accelerate upgrading of the poultry industry, develop diversified export markets, and endeavor to supply citizens with sufficient and safe food as we build a resilient agricultural sector that will comfort farmers, strengthen rural communities, and invigorate agriculture.



Chi-chung Chen
Minister
Council of Agriculture
June, 2022

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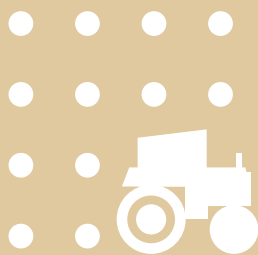
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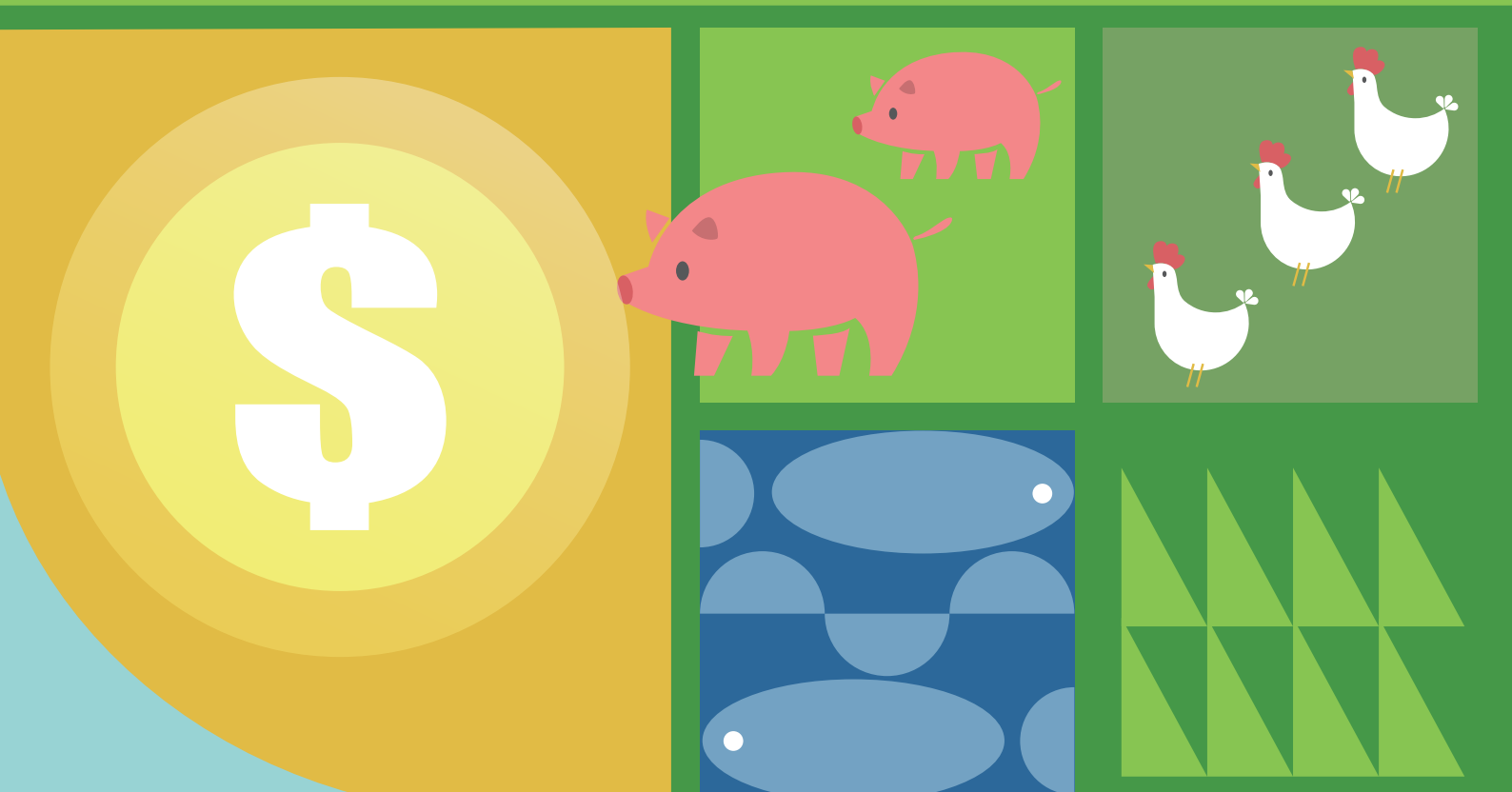
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01



The International and Domestic Agricultural Situations and Major Policy Goals for 2022





The International and Domestic Agricultural Situations and Major Policy Goals for 2022



1. The International Agricultural Situation

In 2022, as the global COVID-19 pandemic showed signs of easing, the Russia-Ukraine war caused sharp rises in the prices of fertilizer, wheat, and energy and also disrupted food supply chains as the global economy was impacted by parallel crises of inflation and food insecurity.

As the US-China rivalry continued, the US promoted the “Indo-Pacific Economic Framework for Prosperity” (IPEF). Also, in order to strengthen the US-Taiwan trade partnership, on August 18, 2022 Taiwan and the US announced the formal launch of negotiations under the “US-Taiwan Initiative on 21st-Century Trade.” In addition, following applications in 2021 from the UK, mainland China, Taiwan, and Ecuador to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), in 2022 Costa Rica applied to join. Moreover, the 12th Ministerial Conference (MC12) of the World Trade Organization, held from June 12 to 17, 2022 in Geneva, Switzerland, approved the “Geneva Package” in response to changes in the international economic and trade situation in order to maintain stable international economic and trade growth while taking into account core problems for sustainable development including food insecurity and conservation of the ocean’s environmental resources.

2. The Domestic Agricultural Situation

Preliminary estimates put the total value of agricultural production for 2022 at NT\$548.6 billion, an increase of 2.91% compared to 2021. Farming, forestry, fisheries, and animal husbandry accounted for 49.05%, 0.06%, 13.82%, and 37.07% of the total production value, respectively. Preliminary estimates put the agricultural production index for 2022 at 99.87 (with 2016 being the base year), with production volume declining by 2.09% compared to 2021. Production volume fell by 1.37% for farm crops, 10.65% for fisheries products, and 0.84% for animal husbandry products.

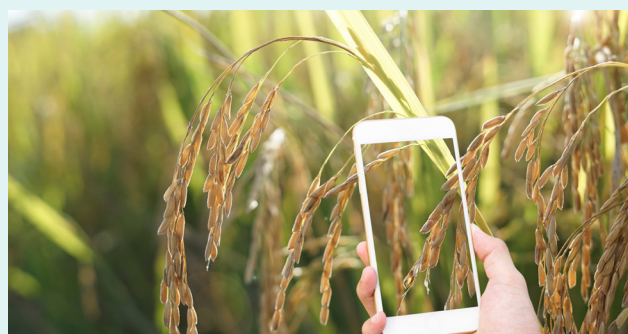
In terms of agricultural prices, with 2016 as the base year, the 2022 average wholesale price index for farm, forestry, fisheries, and animal husbandry products was 113.71, an increase of 11.89 compared to 2021. The index rose by 11.25 points for farm products, 10.58 for animal husbandry products, 8.96 for forestry products, and 15.97 for fisheries products.

In terms of agricultural trade, in 2022 the total value of agricultural imports was US\$20.417 billion, an increase of 13.52% compared to 2021. Major imported products included bulk grains (oil seeds, soybeans, and corn) and beef. The total value of agricultural exports was US\$5.228 billion, a decline of 7.76% compared to 2021. Leading export products were squid, bonito, tuna, cowhide, and Phalaenopsis orchids.



Major Policy Goals for 2022

- Comprehensively promote the agricultural insurance system and increase the insured coverage rate; refine farmers' health insurance and farmers' occupational-injury insurance, strengthen the premium payment and insurance payout systems; promote the farmers' pension system; widely establish green care stations and improve care services for the rural elderly; complete the farmers' welfare system.
- Strengthen animal and plant health inspection and quarantine functions, prevent the spread of diseases and insect pests into Taiwan, maintain Taiwan's status as a zone free of African swine fever and foot and mouth disease; introduce modernized animal husbandry management systems, strengthen management of slaughterhouse hygiene and safety, strategically expand export sales of Taiwan pork; implement animal protection, strengthen controls to reduce the number of stray dogs.
- Promote the green environmental payment program and transformation of the cultivation system; strengthen irrigation infrastructure, promote suitable crops for each area and expand irrigation services, raise the efficiency of water use; strengthen guidance of young farmers, provide a reassuring and sound environment for careers in agriculture; utilize smart technology and the Internet of Things, advance the digital transformation of agriculture to increase profits.
- Improve the agricultural production early warning system, strengthen adaptation to climate change, ensure a sufficient supply of food; comprehensively upgrade agricultural product safety management and certification systems; strengthen



“local production, local consumption”; expand food and agricultural education and enhance consumer support for domestically produced agriproducts; strengthen international marketing of agriproducts and develop emerging markets.

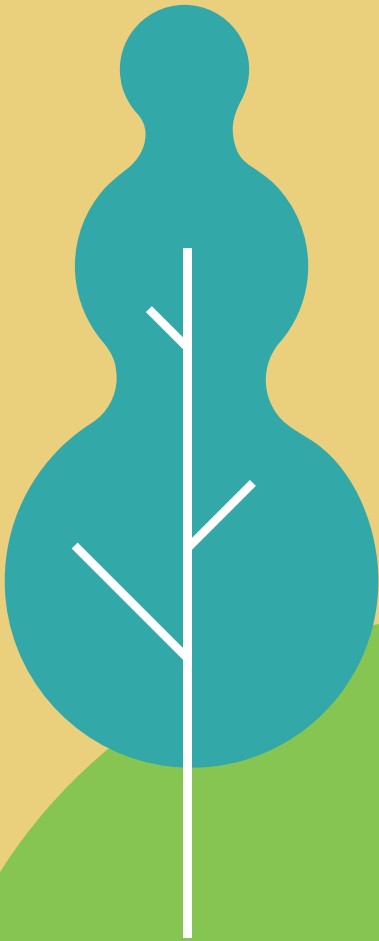
- Strengthen resource management for the fisheries industry, implement responsible fishing; proactively participate in international organizations and consultations, uphold the operating rights of the fisheries industry; strengthen protection of the rights of foreign crew working on Taiwanese vessels, get in line with international standards; promote aquaculture production zones; construct fully functional fishing harbors and develop the special local characteristics of fishing communities; ensure sustainable development of the fisheries industry.
- Optimize rural tourism services, develop and expand the market for rural tourism by domestic and foreign visitors; use Rural Regeneration to drive industrial development and build rural communities where daily life, agriculture, and tourism are all convenient; build up the national green network for environmental and land protection, maintain biodiversity; implement opening up of mountain forests, provide activity-friendly venues.

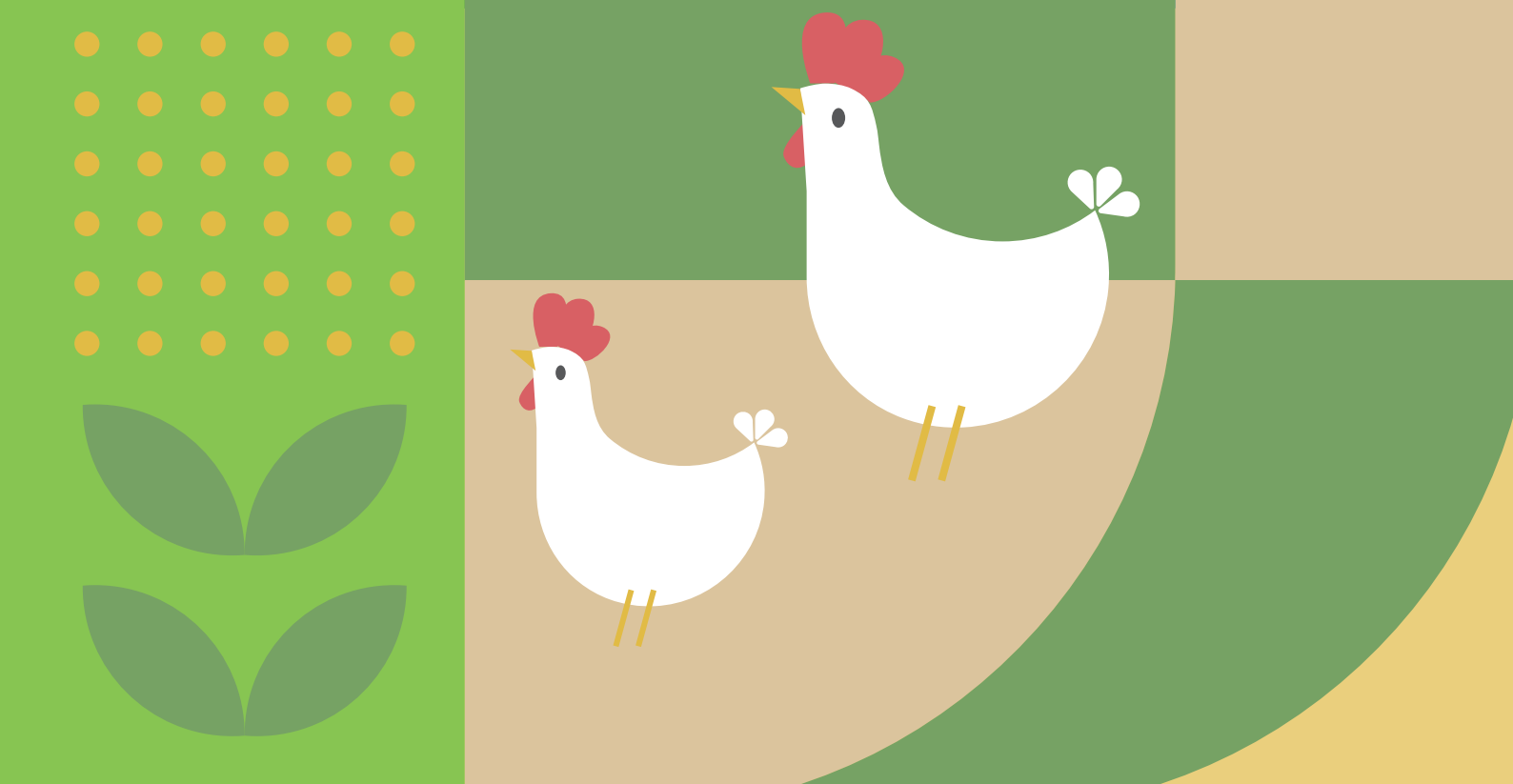


02



Enhancing Farmers' Welfare







Chapter 02

Enhancing Farmers' Welfare



1. Promotion of Farmers' Occupational Accident Insurance

In order to advance farmers' occupational safety and create a comprehensive farmers' social insurance system, the Council of Agriculture (COA), acting in accord with amendments to the "Farmer Health Insurance Act" promulgated on June 13, 2018, began offering farmers' occupational-injury insurance (FOII) on a trial basis on November 1, 2018. During the initial trial period for FOII the COA adopted a policy of "first injuries, later disease," giving priority to "occupational injuries," with "occupational diseases" incorporated into the scope of Farmers' Occupational Accident Insurance (FOAI) payments on September 10, 2021.

At present, farmers voluntarily apply to join FOAI, and after making a basic premium payment, farmers enjoy basic occupational accident compensation. Premiums are partially subsidized by the government, with farmers' premiums starting at NT\$15 per month. This entitles participating farmers to four types of insurance payments: injury and disease payments, medical care allowances, disability payments, and funeral and interment allowances. As of the end of 2022, more than 310,000 people were enrolled in FOAI; there were a total of 15,274 cases of payments totaling over NT\$260 million.

In order to ensure that farmers can enjoy comprehensive occupational social insurance protection, the COA will take into account methods for compulsory enrolment in various other kinds of occupational social insurance and will plan adjustments to the enrolment system for FOAI. The adjustments will switch the existing voluntary enrolment system into one in which new applications by farmers for participation in farmers' health insurance will simultaneously include the completion of applications for enrolment in FOII.

農民職業災害保險
保障看這裡

月繳保費15元起，安心務農有保障

適用對象
 農保被保險人
 全民健保第三類被保險人 (軍公教勞退休人員、陸配、外配)
 區域性從事農業零工

每月保費
 政府補助40%
 農民自繳60%
 一般15元
 增給20元

申辦很簡單，趕緊來辦！
 1.攜帶國民身分證
 2.向戶籍地農會申請

行政院農業委員會
Council of Agriculture, Executive Yuan

農民職業災害保險
保障看這裡

傷病給付 收入減少之補償
 因實際從事農務不能工作治療中
 ●自不能工作第4日起
 ●最高可領2年
 一般傷病給付 (保費15元/月)
 第1年每天33元
 第2年每天17元
 農保 無
 增給傷病給付 (保費20元/月)
 第1年每天47元
 第2年每天34元
 每月保費5元
 每月增給5元
 每月全額增給

身故津貼 喪葬期間慰問金
 農保 無
 增給 無
 因從農之職業疾病而致死
 ●306,000元
 較農保 增給100%

申請給付自己來，快速又簡單！
 看 要申請哪種給付 填 申請書 交 申請書及應備文件至投保農會

行政院農業委員會
Council of Agriculture, Executive Yuan

The COA has continued to promote the Farmers' Occupational Accident Insurance (FOAI) system to enable farmers actually involved in agricultural work to enroll in FOAI to increase the compensation they can receive in the event of occupational accidents.

2. Refinement of the Farmers' Health Insurance System

To coordinate with amendments to the “Farmer Health Insurance Act” that added conditions for young people who have been discharged from military service and take up agricultural work to enroll in farmers' health insurance (FHI) and protect the insurance enrolment rights of farmers who have interrupted cultivation of their land as a result of policy-based suspension of irrigation water supply, on January 22, 2022 the COA amended the “Regulations About Standards for Determination of the Farmers Engaged in Agricultural Works Applying for Joining in Farmers' Health Insurance Programs and Examination of Their Qualifications.” The main points were as follows:

- With reference to the “Operation Directions for the Identification of the Actual Cultivator Engaged in Agricultural Production,” the amendments stipulate that for young farmers who have been discharged from the military and have already received the military personnel insurance retirement payment to participate in FHI, except those applying with the qualification of “beekeeping farmer,” the criteria for enabling them to enroll should conform to any of the following requirements: the individual sells NT\$250,000 in agriproducts over the course of a year, the individual invests NT\$150,000 in agricultural production materials over the course of a year, or the amount of land used for agricultural operations reaches the standard for identification of actual cultivators.
- When young farmers discharged from the military use their own or inherited land to apply to enroll in FHI, the relevant farmers' association shall meet with the applicant and the local government of the township (city, district) where the land is located as well as the relevant COA District Agricultural Research and Extension Station or the Livestock Research Institute or Fisheries Research Institute (whichever has jurisdiction) to conduct an on-site inspection,

in order to check whether the attached certificate matches the amount of land used for agricultural operations and whether the individual is in fact engaged in agricultural work. In addition, young farmers discharged from the military shall be supplied with professional technical training and industrial consultation services. As of the end of 2022, more than 100 young farmers discharged from the military have enrolled in FHI.

- Farmers who receive certification documentation issued by a management office of the COA's Irrigation Agency that their agricultural land conforms to the irrigation suspension compensation criteria for the current crop season and who have objective certification that they actually engaged in agricultural production in the preceding crop season can apply to enroll in FHI, thereby protecting the right to enroll in FHI for those acting in accord with the Irrigation Agency's irrigation suspension policy for the current crop season.

退伍青年	短役期	實際務農
<p>首次加保 50歲以下</p> <p>未領俸之退伍 平均年齡27歲 以\$5-1規定加 保者，退保後 須於5年內申請 加保</p>	<p>未具領取 退休俸資格</p> <p>排除服役滿20年， 得按月給予退休俸 終身者</p>	<p>經營規模 達實耕者 標準</p> <p>• 銷售農產品25萬元 • 投入資材15萬元 • 面積達實耕者標準</p>
<p>以農保條例\$5-1加保者始得參加農退</p>		

Starting from January 25, 2022, when persons discharged after a short term of military service meet specific criteria, they can apply to enroll in farmers' health insurance and make payments into a farmers' pension account, thereby ensuring that young people discharged from the military who have the ability and desire to take up farming as an occupation will enjoy the protections to which they are entitled.

3. Establishment of a Farmers' Pension System

The COA has promoted the farmers' pension system based on the “Farmer Pension Act” which was promulgated on June 10, 2020



and came into effect on January 1, 2021. This echoes President Ing-wen Tsai's policy vision of "making agriculture into a profession that people can do until they retire with peace of mind." Under the system, individual pension accounts are set up for farmers and they and the government jointly deposit money into these special accounts each month. Farmers can collect the money when they reach 65 years of age or meet specific criteria. The welfare allowance for elderly farmers (see below) and pensions together form a system to guarantee the economic security of elderly farmers.

In addition, to encourage young people who have completed a short term of military service to take up farming as a profession, on December 22, 2021 the President promulgated the newly added Article 3-1 of the "Farmer Pension Act." This permits young people who have been discharged after a short term of military service to participate in the farmers' pension system despite having already received retirement payments under military insurance. (They can also participate in farmers' health insurance.)

The farmers' pension system enables elderly farmers to maintain appropriate standards of living, and is very helpful in terms of encouraging young people to devote themselves to agricultural production, adjusting the agricultural labor structure, and indirectly enabling elderly farmers to retire with peace of mind while revitalizing the use of their farmland. As of the end of December of 2022, about 90,000 people had opened pension accounts.



The COA has continued to encourage farmers to participate in the farmers' pension system to enhance economic guarantees for farmers after they retire from agriculture.

4. Improvement of the Well-being of Farmers

(1) The welfare allowance for elderly farmers

To ensure the quality of life of elderly farmers, the government has long been issuing a welfare allowance to elderly farmers aged 65 and over who meet the legal criteria to participate. Starting January 1 of 2020, the COA began issuing NT\$7,550 per person per month. Total payments in 2022 reached NT\$49.997 billion, benefiting a total of 581,614 elderly farmers.

Also, to facilitate funerals for elderly farmers who have participated in farmers' health insurance (FHI) for a long period of time, in cases of farmers at least 65 years old who participated in FHI for 25 years who are unable for some reason to apply for the FHI funeral subsidy, the COA has issued "funeral condolence funds" of NT\$102,000. In 2022 there were 1,800 beneficiaries of this policy, with total payments of NT\$183.6 million.

(2) Educational grants for farmers and fishermen whose children study at high schools or colleges

In order to ensure that the children of farmers and fishermen do not, for economic reasons, miss out on the chance to get high-school and college educations in Taiwan, the COA began offering scholarships (today known as grants) to the children of farmers and fishermen in September of 2003. In 2022 a total of NT\$979.89 million was paid out, benefiting 90,776 children of farmers and fishermen.

(3) Promoting the "demonstration program for green care for the elderly in farming and fishing communities"

The COA in 2022 continued to guide farmers' and fishermen's associations to organize "green care demonstration stations," bringing together local green elements (including agricultural resources and the natural environment) to realize the vision of healthy aging for the elderly in these communities. In 2022 we guided 92 farmers' and fishermen's associations to set up green care demonstration stations (including 84 at farmers' associations and eight at fishermen's associations). During 2022 services including innovative learning for the elderly, mutual aid collective dining, and concern services were provided a total of 470,000 man-times.



The rural elderly receive appropriate care at “green care stations.” Young farmers know they can pursue agricultural careers with peace of mind and agriculture can be passed along to the next generation.



The COA offers courses on local specialty products and combines these with meals to undertake food and agricultural education.

(4) Fuel subsidies for farmers and fishermen

In 2022 valid certifications for use for a total of 268,544 pieces of agricultural machinery were issued or renewed. During the year 74,315 kiloliters of fuel needed for agricultural machinery was purchased, with an exemption from the 5% business tax saving about NT\$100 million. Also, the COA guided the purchase of about 500,938 kiloliters of diesel fuel for 6,103 fishing vessels, with subsidies totaling NT\$1.396 billion. In addition, we provided subsidies of NT\$115.39 million for 6,582 gasoline powered fishing vessels.

(5) Stabilization of supply and demand for fertilizers

As a result of the impact of the COVID-19 pandemic and the Russia-Ukraine war, the international price of fertilizer raw materials rose sharply in 2022. In order to stabilize domestic supply and demand for fertilizers, on January 10, 2022 the COA began implementing subsidy measures to cover the increased cost of raw materials for chemical fertilizers. The COA provided subsidies to cover a 50% rise in the international price of raw materials for manufacturing fertilizer, or NT\$20 to NT\$215 per bag of straight fertilizers and NT\$150 to NT\$260 per bag of compound fertilizers (each bag holding 40 kilograms). This has stabilized supply and demand for fertilizers and reduced fertilizer expenses for farmers by about NT\$1.85 billion.



On January 7, 2022 the COA held a press conference on the subject: “The government is proactively stabilizing fertilizer supply and demand, farmers can purchase fertilizer with peace of mind.”



The COA held lectures on operating the fertilizer purchasing system to strengthen the skills of dealers and stores using the system.

(6) Subsidies for big and small agricultural machinery

The COA guided farmers to purchase 16,541 pieces of small agricultural machinery including power cultivators and small agricultural transporters, as well as developed 57 types of new agricultural machinery, thereby raising work efficiency and encouraging a high level of energy in domestic R&D. We also subsidized the purchase of 312 big agricultural machines including tractors and combine harvesters as well as 31 corn planters and harvesting machines, to help mitigate the agricultural labor shortage and assist with emergency harvesting at flood season.



The COA imported “laser land levelers” and held hands-on demonstrations of their use; they can help reduce water consumption on farmland.



The COA introduced new types of agricultural machinery at hands-on demonstrations (in this photo, a crawler-type wood chipper) to encourage the use of residual agricultural resources.



Currently Taiwan has 1,000 vessels engaged in deep-sea fishing operations, and 575 deep-sea fishing vessels have passed hygiene evaluations to be registered as Type B export vessels (with installed continuous temperature recorders), while subsidies have been granted to 270 vessels. Moreover in 2022 the COA subsidized fishermen to purchase 922 pieces of high-efficiency and smart aquaculture machinery, with subsidies totaling NT\$109.97 million.



A continuous temperature recorder installed on a fishing vessel.



A labor-saving device: an animal feed mixer.

(7) Natural disaster relief for agriculture

The COA has set up 176 agricultural weather stations across Taiwan and completed weather forecasting services and natural disaster early warning signals for numerous townships (298 individual stations), and moreover added an additional 55 aquaculture weather services zones, to provide farmers and fishermen with cultivation and aquaculture weather services and disaster prevention functions. Furthermore, we worked with the National Science and Technology Center for Disaster Reduction to establish a systematic agricultural disaster response mechanism, providing real-time disaster information, the scope of the area covered by warnings, types of crops affected, and disaster prevention suggestions. We also compiled the “2022 Agricultural Disaster Yearbook” to record disaster information and agricultural losses from events during the year. In addition, we made daily agricultural weather videos and additional special weather videos whenever special weather events occurred, which were broadcast via channels including the Virtual Museum of Taiwan Agriculture and the electronic bulletin boards at farmers’ and fishermen’s associations, to remind farmers and fishermen to make preparations in advance.

In order to improve efficiency in agricultural natural disaster relief operations, in 2022 the COA amended the “Agricultural Natural Disasters Relief Regulations” (hereafter Relief Regulations)

to simplify the survey process for natural disaster relief using weather parameters. In addition, based on the trend of rising production costs for various industries’ products, we redefined the relief amounts for farming, fisheries, animal husbandry, and forestry. Furthermore, the COA announced the weather parameters for application of the Relief Regulations.

In 2022 Taiwan was impacted by a number of natural disasters that caused losses to agriculture, including: rain damage in January; low temperature cold fronts from January to February; low temperatures in late February to early March; excessive rain in late February and late March; weather fronts in March; hail, rain damage, and strong winds in April; low temperatures in April and early May; excessive rain, strong winds, and torrential rain in May; excessive rain in early June; strong winds in late June; drought from July to August; strong winds and drought in August; Typhoon Hinnamnor, Typhoon Muifa, Typhoon Nesat, and rain damage in August; torrential rain and an earthquake in late September; high temperatures and drought from September to October; torrential rain in late October; and excessive rain in late November and early December. On the basis of the Relief Regulations the COA arranged NT\$2.414 billion in cash relief for 70,738 households and low-interest loans totaling NT\$176.52 million for 188 households.

(8) Fishermen’s and fishing vessel relief

The COA pays out relief funds for fishermen who are killed, missing, or disabled. Those eligible include crew members of Taiwan-registered fishing vessels during at-sea operations and fishermen with Class 1 member qualifications in a fishermen’s association engaged in coastal fishing. In 2022 funds totaling NT\$44.61 million were paid out in 41 cases in order to provide solace to fishermen’s families and reduce the impact of accidents.

In addition, on the basis of the “Directions on Succoring for Fishing Vessels in Maritime Disaster,” the COA paid out relief of NT\$675,000 for 16 vessels that were destroyed or could no longer operate as a result of damage caused by fire or force majeure during operations at sea.

(9) Strengthening the effectiveness of rural organizations

On March 22, 2022 the COA issued amendments to Articles 23, 26, and 27 of the “Regulations Governing Personnel Management of Farmers’ Associations” and on December 27 of the same year issued amendments to Article 2 of the “Regulations for the Certification of Qualified Members and Screening Procedures of Base-Level Farmers Association.” Also, we (i) completed the selection procedures for general managers of 15 farmers’ associations (whose posts were vacated mid-term); (ii) held one training session for public servants doing farmers’ association guidance in governments at various levels; (iii) held nine training sessions for employees of farmers’ associations; (iv) commissioned accountants to do financial audits of 20 farmers’ associations; (v) subsidized 91 farmers’ associations in improving their extension

and education facilities (equipment) and 13 more in promoting high-quality agricultural scenery and enhancing their farmers' association services; (vi) guided 32 farmers' associations with their economic enterprise plans; and (vii) assisted eight farmers associations with centenary celebration planning.

In response to upward adjustments of the minimum remuneration for employees for six years running and continual price rises, on December 30, 2022 the COA amended Articles 28 and 29 and Appendix 3 of Article 25 of the "Regulations on Personnel Management at Fishermen's Associations" to adjust the basic funding for staff at fishermen's associations as well as to raise the upper limit on the salary point conversion rate within total staff funding, in order to meet the practical operational needs of fishermen's associations and improve the legal system for fishermen's organizations.

(10) Innovating in agricultural financial services

- The best operational results of all time at credit departments

The COA continued to take measures to improve the operational structure of the credit departments of farmers' and fishermen's associations (hereafter F/FAs). As of the end of 2022, total deposits at all credit departments were NT\$2.2 trillion, with outstanding loans of NT\$1.316 trillion. Before-tax net profit was NT\$6.1 billion. The non-performing loan ratio was 0.26%, indicating that loan quality was quite high.

To strengthen supervision, the COA has been conducting inspection visits to the credit departments of F/FAs since 2009, and as of the end of 2022 such visits had been made to 957 such departments. The COA continued to maintain a firm grasp of the operational situation at credit departments, understand problems and offer assistance, and strengthen supervision and guidance to continue to assist these departments to ensure sound operations.

- Pro-active promotion of the "Policy-Oriented Special Agricultural Loan" program to provide capital for agricultural operations

To provide farmers and fishermen with needed operating capital, coordinate with policies like training young rural manpower and New Agriculture, and meet practical needs, the COA continued to promote the "Policy-Oriented Special Agricultural Loan" program. In 2022, we provided 26,493 farmers and fishermen with NT\$27.633 billion in loans. Since the launch of these loans, the COA has provided over 1.312 million farmers and fishermen with NT\$748.723 billion in loans. The COA will continue to coordinate with agricultural policy objectives, and will adjust the types of loans and their content in due course, in order to upgrade industries' competitiveness and promote agricultural development.

- Diversification of operations to provide rural residents with fast and convenient financial services

In order to strengthen the quality and competitiveness of services at F/FAs, the Agricultural

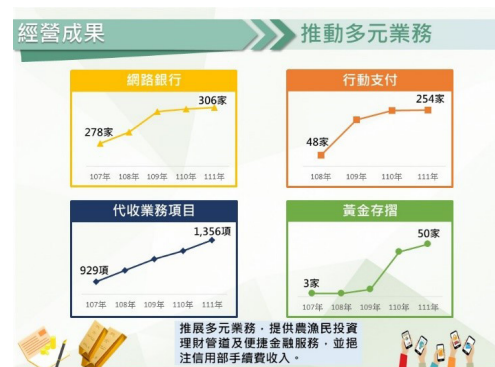
Bank of Taiwan (ABT) integrated services and channels at the credit departments of F/FAs. At present F/FA credit departments provide payment collection services covering 1,356 items. In 2022, they collected 20.82 million payments totaling NT\$64.3 billion, and since these services began they have collected a total of 208.65 million payments totaling NT\$792.4 billion, thereby providing rural residents with diversified and convenient payment services. Moreover, to satisfy demand from customers for wealth management and asset allocation services, the ABT continued to guide the credit departments of F/FAs in offering "gold passbook services"; as of the end of 2022, 50 credit departments had been authorized to provide such services. In addition, in order to increase the prevalence of the use of mobile payment tools by farmers and fishermen, by the end of 2022 the COA had approved the offering of mobile payment services by 254 F/FAs.



Accomplishments of the "Policy-Oriented Special Agricultural Loan" program in 2022.



Operating results of the credit departments of farmers' and fishermen's associations.

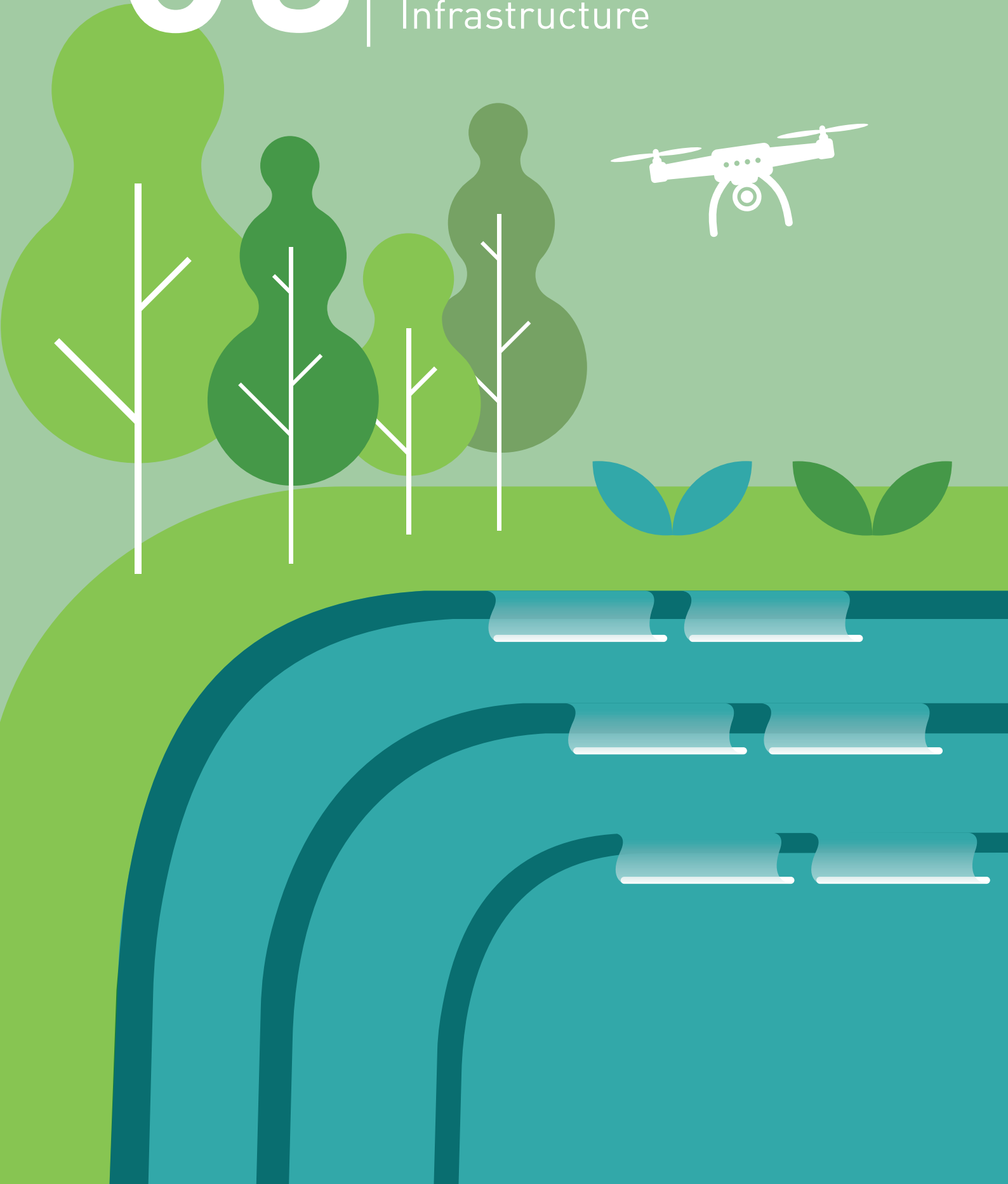


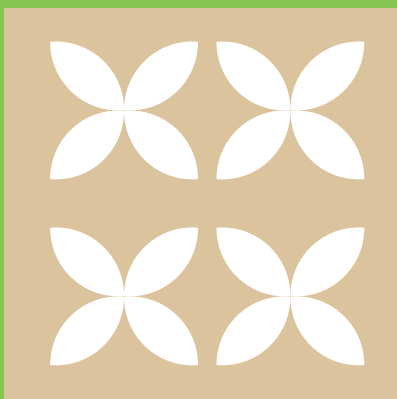
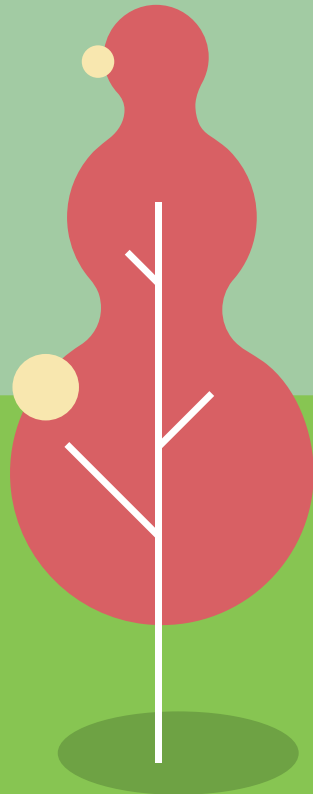
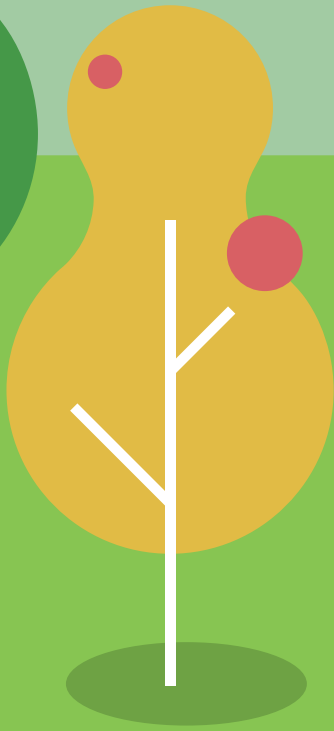
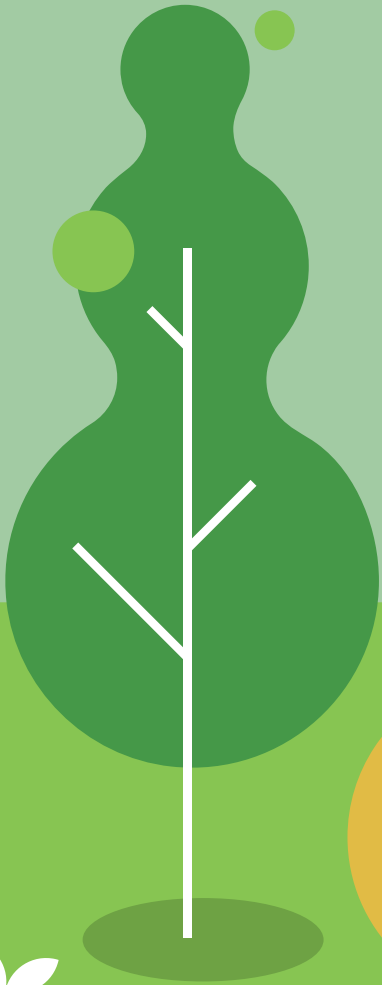
Diversification of agricultural financial services.

03



Improving Agricultural Infrastructure





Improving Agricultural Infrastructure



1. Promotion of the Green Environmental Payment Program

The COA's Agriculture and Food Agency began promoting the "Green Environmental Payment Program" in 2022. Its aim is to reduce the area cultivated with rice, guide farmers to cultivate crops suitable to their locations, maintain food security, and promote the sustainable development of agriculture. Implementation strategies included: issuing the farmland environment basic payment to maintain high-quality farmland resources; incentivizing the switch from rice cultivation to other (especially contract) crops or adoption of environmental maintenance measures to increase the supply of domestically produced food or adopt a rational cultivation model; expansion of the farmland eligible for incentives for cultivating animal-feed corn to enhance domestic production and supply; promotion of the policy to encourage farmers to choose three crop seasons out of four for cultivating rice, building a system for rotational supply of water to farmers, and promoting a balance of rice supply and demand; and coordination with the promotion of the Ministry of Economic Affairs' regional rotation system for use of water resources, in order to increase efficiency in the use and saving of water. In 2022 a total of 147,000 hectares of land were switched over from rice to other

(especially contract) crops, an increase of 9.11%, effectively increasing the supply of domestically produced food. A total of 87,100 hectares of land were used for environmental maintenance measures including (i) cultivation of green manure or scenic crops or (ii) plowing fields under, thereby establishing a stable and rational model of cultivation in one crop season and environmental maintenance in the other.

To conserve Taiwan's limited agricultural environmental resources, manifest the multi-functional values of farmland, and conform to the conclusion of the 6th National Agriculture Congress to "expand the recipients of green environmental payments by incorporating land that is suitable for agricultural production but not qualified as 'base year' of the program," the COA began to issue an "agricultural environment basic payment." Priority is given to agricultural and pasture land in ordinary agricultural zones and specified agricultural zones in non-urban areas and to support users of land for staple crop production. We thereby hope to encourage "agricultural uses for arable land" and highlight the government's multiple policy objectives for farmland maintenance. At the same time this policy will be helpful to the future designation of "agricultural development zones" in the National Spatial Plan. In 2022 the agricultural environment basic payment was given out for 219,500 hectares of land.

In order to increase capabilities to supply domestically produced animal feed, the COA

began in the second crop season of 2022 to liberalize the cultivation of forage corn and flint corn in agricultural and pasture land in ordinary agricultural zones and specified agricultural zones in non-urban areas which did not have base year qualifications for the “Green Environmental Payment Program” and permit farmers to apply for contract crop incentives. The area planted with flint corn grew to 19,000 hectares, while about 10,000 hectares were planted with fodder corn, meaning that about 29,000 hectares of land were planted with animal-feed corn.



The COA encourages rice farmers to switch over to mixed staple crops or specialty local crops: Soybeans are shown here.



The COA encourages rice farmers to switch over to mixed staple crops or specialty local crops: Yam beans are shown here.



Harvesting of flint corn.

2. Conservation of Agricultural Resources

(1) Inventory of agricultural and farmland resources and value-added usage of the data

In order to maintain a firm grasp of the situation with regard to use of farmland, the COA completed its 2022 updating of the “national agricultural and farmland resources survey” and integrated the results into the “searchable map of the results of the national agricultural and farmland resources survey” (<https://map.coa.gov.tw>). The updated results show about 2.785 million hectares (ha) of land legally defined as land for agricultural use, of which flatland accounted for 619,125 ha (22.23%) and slopeland for about 2.166 million ha (77.77%), and there were 714,423 total ha available for food production. Of land legally defined as land for agricultural use, 591,604 ha were being used for actual crop production, 44,806 for aquaculture ponds, 11,468 for animal husbandry, and 1.777 million for forestry. In addition, with respect to land for agricultural use that was being used for non-agricultural purposes, flatland accounted for 48,511 ha while slopeland accounted for 47,862 ha. In addition, in order to strengthen applications of the survey results, we plan to incorporate the spatial locations of areas where important policies (like the green energy policy) are being implemented into the map to demonstrate the achievements of policy promotion.

In terms of the application of survey data from across the years, the COA has already integrated it into policy determination in areas including demarcation of agricultural operational special zones, promotion of the “regional rotation system,” location analysis for expanding irrigation services, land use planning for expiration of plains afforestation, and regional planning for promotion of green energy policies. We also provided the data for planning for the “net-zero carbon emissions in agriculture” policy. In addition, the survey results have also been provided to other ministries and agencies to assist in their promotion of matters under their jurisdiction, including establishment of a food safety information platform, auditing for reductions or exemptions from farmland taxes, and management of state-owned land. Moreover, in coordination with the



implementation of the “Spatial Planning Act” in 2025, the COA is guiding local (municipal, city, and county) governments to commit their agricultural guidance resources into high-quality agriculture production areas. The survey results are being simultaneously provided to local governments to incorporate them into decision-making analyses for promotion of agricultural policies and farmland management mechanisms, thereby strengthening review of applications related to farmland management affairs and of applications for hooking farmland up with electricity, as well as strengthening inspection and review of illegal use of farmland. The goal is to maintain the overall agricultural production environment and implement the policy goals of the “Spatial Planning Act.”

In order to strengthen participation of all citizens in the policy of prohibiting new factory construction on farmland, the COA, acting in coordination with amendments by the Ministry of Economic Affairs to the “Factory Management Act,” incorporated the location of unregistered factories newly built since May 20, 2016 and the status of their investigation and punishment by local governments into the searchable map of the results of the national agricultural and farmland resources survey, in order to facilitate monitoring work by all citizens. In addition, in coordination with government food safety policies, sites of soil and underground water pollution identified by the Environmental Protection Administration as “announced controlled sites,” “announced clean-up sites,” “announced as sites no longer being controlled,” and “announced as sites no longer being cleaned up” have been integrated into the searchable map. Meanwhile, water quality monitoring data collected by irrigation water quality monitoring stations of the COA’s Irrigation Agency has likewise been included in the map. The goals are to make this data available to the general public to supervise and understand the

farmland use situation, implement agricultural uses for arable land, and maintain the integrity of the overall agricultural production environment.

(2) Expansion of water conservancy services

● Expansion of irrigation services

To meet the demand for water from farmers originally outside of irrigation areas, the COA has promoted a policy of expanding irrigation services. Based on the vision of “retaining water, irrigating the land,” we have adopted four main strategies to supply farmers outside of irrigation areas with irrigation water: “store water when it is abundant, use it frugally during dry periods,” “import and widely distribute water,” “smart irrigation,” and “sustainability for the common good.” In 2022 we completed preliminary surveys and planning for 27 locations with priority for promotion of this policy and began implementation. Thus far a total of 32,059 hectares of land and 40,073 farm households have benefitted from the expansion of irrigation.

● Greenways along irrigation channels

The COA’s Irrigation Agency used the limited hinterland around the Chianan irrigation network to build recreational areas and plant vegetation to greenify areas along the irrigation channels, and has built a national-level bicycle pathway that enables users to ride past and enjoy the rural scenic beauty of the area. The entire pathway runs for 88 kilometers and it was completed in February of 2022. Moreover, on Arbor Day (March 12, 2022) President Ing-wen Tsai, Premier Tseng-chang Su, ministers and other high-ranking officials, residents of local communities, local schools, and social organizations came together to participate in tree-planting activities, adding verdant greenery to the irrigation network greenway.



Part of the irrigation line greenway is a bicycle path along the north trunk line of the Chianan irrigation network. All along the path users can see beautiful agricultural scenery. This photo was taken in Shushang Township of Chiayi County.

- New methods sparked by the once-in-a-century drought

Faced with a once-in-a-century drought, the COA adopted a number of new approaches for areas where irrigation was suspended because of a severe water shortage. New methods were adopted to make applications for farmers' compensation more convenient, to utilize a reporting system, to organize review committees, and to clarify cases of possible malfeasance one by one. These methods enabled farmers who are qualified to apply for compensation to collect it before the end of the lunar year. With respect to cases of suspected malfeasance such as multiple applications from one individual, the COA proactively invited experts from various fields to organize review committees, which went on-site to hold 27 sessions to review such cases one by one. In 2022, we completed clarification of more than 5,000 cases of possible malfeasance and put into practice the goal of looking out for the interests of cultivators of the land.

- Smart irrigation

Given the increased severity of water shortages under climate change, the COA guided farmers to install facilities including pipeline irrigation, water storage adjustment controls, motorized pumping equipment, and regulation and control equipment over 2,439 hectares. The goals are to save time, reduce labor use, and increase the production volume and value of agriculture by improving dryland irrigation systems while increasing the efficiency of the use of water and land resources.

In 2022, the COA undertook renovations and improvements on automated water-testing systems in 21 locations, established 10 irrigation demonstration zones for the study and refinement of smart water distribution technology, continued to update basic farmland irrigation cartographic data, and kept a complete set of basic data. Through technology like the Internet of Things and simulation algorithms, we provided information to assist decision-making, such as strategies for remotely opening and closing water gates, suggestions for water storage in ponds, and forecasts of droughts or torrential rain. Also, through technology such as real-time imaging and visualization of operating interfaces, the COA facilitated water use management and the precision of water allocation.

- Protection of the quality of irrigation water

The COA in 2022 determined and refined a variety of operational norms for irrigation water quality, regularly tested the quality of irrigation water, and completed the process of making water quality data open to the public. At the same time, through the training of staff and upgrading of irrigation water quality testing technology, three laboratories gained accreditation from the Taiwan Accreditation Foundation, thereby increasing testing quality and international credibility. Moreover, through cross-domain cooperation at the central government level and integration of monitoring resources, the quality of irrigation water was guaranteed.



Premier Tseng-chang Su presided over this ceremony to mark the beginning of construction projects during Phase 2 of the expansion of irrigation services.



A remote watergate automatic control system is used for a flood diversion weir on the Annon River.

- The exercise of public authority

The COA established discretionary standards and a framework for non-farmland drainage, enhanced the legally mandated professional competencies of personnel handling farmland irrigation affairs, and completed an emergency response mechanism. We promoted inspection work of the water quality for non-farmland drainage in irrigation facility areas and strengthened the irrigation water quality monitoring network, to avoid pollution. Through better management of irrigation water quality and non-farmland drainage in irrigation facility areas, we facilitated the exercise of public authority.



● Constitutional Court judgment on restructuring of irrigation associations

The Taiwan Constitutional Court (TCC) announced its judgment “111-Hsien-Pan-14” of the “Case on the Constitutionality of Restructuring Irrigation Associations into an Administrative Agency” on August 12, 2022. In this judgment, the TCC upheld the constitutionality of the restructuring of irrigation associations into administrative agencies and the relevant articles of the “Irrigation Act.” The COA’s Irrigation Agency will proactively undertake strategic planning for all farmland irrigation nationwide, treat farmers within and outside of irrigation areas fairly and rationally, and maintain excellent irrigation water quality to ensure the safety of edible agriproducts for all citizens.



On March 12, 2022 President Ing-wen Tsai and Premier Tseng-chang Su participated in the opening of the irrigation line greenway as well as a tree-planting activity.



A presentation to demonstrate achievements of cross-domain cooperation in irrigation water quality affairs.

3. Watershed Management, Erosion Control, and Water Environment Infrastructure Improvement

(1) Construction of a large-scale landslide disaster prevention and mitigation system

In 2022 the COA handled numerous disaster prevention and mitigation tasks, including “refining evaluation and monitoring technology,” “constructing an integrated response and independent disaster prevention system,” “mitigating disaster occurrences and impacts,” “enhancing the effectiveness of disaster prevention and mitigation,” and “promoting soil and water conservation management in areas prone to large-scale landslides.”

On the basis of the results of determination of areas prone to large-scale landslides and in coordination with the refinement of relevant research methods and related monitoring achievements, the COA continued to implement previously stipulated disaster prevention and mitigation countermeasures in high-risk areas. Over the years we have steadily strengthened disaster response mechanisms and “independent disaster prevention communities” to minimize the adverse impact of disasters and improve the prevention and rescue mechanism for large-scale landslide disasters. In 2022 the COA conducted 27 construction projects, organized early warning and response mechanisms in 37 areas prone to disasters, upgraded the protection capabilities of 766 households, promoted the demarcation of six “large-scale landslide designated soil and water conservation areas,” and offered education and awareness-raising 27,500 man-times.

(2) Comprehensive watershed management and erosion control

Based on the concepts of overall planning and management of watersheds, and taking into account the principles of national land restoration—including respect for nature and not resisting the forces of nature—in 2022 the COA undertook (i) debris flow disaster prevention, (ii) conservation of reservoir watersheds, (iii) regional soil and water conservation, (iv) construction of green environments, and (v) disaster prevention and mitigation measures in “designated soil and water conservation areas.” These measures aimed to conserve soil and water resources, protect water sources, improve the surrounding scenery, avoid or mitigate disasters, maintain the safety of slopeland, and encourage the rational use of land. We undertook construction projects for matters including conservation management of watersheds for important reservoirs and debris-flow disaster prevention in 468 locations,

stabilizing about 6.56 million cubic meters of soil, and completed 12 watershed survey projects. In these ways we effectively reduced debris flow disasters and conserved soil and water resources.



Project 1 of Phase 2 of management of the Huyuan River (Xinhua Forest Area): The existing right-side revetment was shortened and the cross section was enlarged through masonry to resolve the long-standing problem of flooding of the forest area.



Project 2 of Phase 2 of management of the Huyuan River (Xinhua Forest Area): There was comprehensive management of the river basin with attention to flood detention and water conservation to conserve water resources and improve the forest's natural environment.



Project 3 of Phase 2 of management of the Huyuan River (Xinhua Forest Area): Work was done to preserve the mid-river island and resolve the "jacking" phenomenon in the main tributary and create habitat areas for crabs, amphibians, and birds.

In addition, the COA improved roads outside of readjusted farmland areas. Taking the roads most in need of improvement as the focus, in 2022 we undertook 483 construction projects and improved about 342 kilometers of road. These projects included strengthening soil and water conservation facilities, maintaining slope stability, and improving road drainage facilities, in order to maintain the integrity of the road bed and smoothness of traffic flow.

(3) Water environment infrastructure

In 2022 the COA worked on the "program to strengthen conservation and management of reservoir watersheds" under the "Water and Development" policy axis of the "Water Environment Infrastructure" part of the "Forward-looking Infrastructure Development Program." Work mainly involved strengthening restoration of landslide areas and prevention of debris flow disasters in reservoir watersheds, using landslide handling engineering methods to strengthen vegetation growth on bare land in order to stabilize landslide areas and reduce debris flow disasters. At the same time, with respect to changes in torrents, we adopted appropriate sediment control measures to effectively block the production and movement of soil, to reduce scouring and collapse of banks, and to reduce the flow of sediment into reservoirs, thereby extending their operating life. While managing this work, the COA also implemented the "public participation mechanism" and the "ecological screening checklist mechanism," to take into account environmental protection and build diversified ecological habitats. A total of NT\$300 million was appropriated for this program in 2022, and we stabilized 2.027 million cubic meters of soil and restored 73 hectares of landslide areas, thereby strengthening soil conservation and water storage in reservoir watersheds.

In addition, in the upstream sections of reservoir watersheds the COA accelerated handling of landslide restoration in national forest as well as torrent management (with the goal of reducing the flow of sediment into reservoirs and extending their operating life) to strengthen soil conservation and water storage in national forest in these areas. In 2022 we conducted 31 infrastructure projects, handled about 48.19 hectares of landslide land, and stabilized about 1.165 million cubic meters of soil with potential for downward movement; the total investment was NT\$300 million.

The COA also implemented the "Overall Improvement Plan of County and City Management of Rivers and Regional Drainage," which is under the policy axis of "Water and Safety" of the "Water Environment Infrastructure" part of the "Forward-looking Infrastructure Development Program." In terms of farmland water conservancy, this involved flood prevention work while also taking into



account improvement of the environment. The budget for the COA is NT\$1.24 billion, and the plan will run from 2017 through 2025. We also implemented “improvement of farmland drainage, ponds, and irrigation channels” in coordination with management of rivers and drainage by local governments (municipalities, cities, and counties). For a given watershed area, if improvement of agricultural production area drainage, ponds, and irrigation channels can help reduce flooding, consideration is given to increasing the drainage capabilities for floodwaters in that area, to maintain the smooth functioning of farmland drainage channels during flood season. Such measures can reduce flood damage to farmland and minimize flooding time as well as ensure food security for citizens and stabilize summer vegetable production. Thus far the COA has already improved 151 kilometers of drainage channels.

Moreover, with respect to rivers and regional drainage system watersheds and flood handling in upstream slopeland areas managed by local governments around Taiwan, the COA undertook management of landside areas in watershed areas and prevention and restoration work in areas with medium to high risk of debris flow. Also, with respect to torrents beyond river boundary points, we undertook conservation and management work in order to increase the stability of waterway banks and maintain river flood discharge cross sections. In 2022 NT\$625.1 million was budgeted and 718,000 cubic meters of soil were stabilized, exceeding the original target of 694,000 cubic meters for an implementation rate of 103.45%. In this way the COA has effectively mitigated flooding that can be caused by debris flow during typhoons or torrential rain.

In 2022, the government invested NT\$183 million in five local governments which supported improvement infrastructure projects at connections for local area drainage systems in 14 aquaculture areas, purchased 50 mobile pumps, and built 13 water recycling facilities. This increased the protected area by 725 hectares.

In accordance with the “Water and Environment” policy under the “Water Environment Infrastructure” part of the “Forward-looking Infrastructure Development Program,” the COA implemented a fisheries environmental construction plan. From 2017 to 2022, 29 projects by 13 local governments were approved with

budgets totaling NT\$1.805 billion. The overall implementation rate reached 98.85%, with 35 water environment bright spots, four peripheral water environment bright spots, and 49.05 hectares of water recreation space constructed, as well as 736 meters of natural seacoast restored.



Improvement project for sediment control on the Sule River: An adjustable steel pipe check dam was built to regulate the flow of sediment, with the sediment control volume increased by about 26,800 cubic meters. Its purpose is to prevent sediment disasters and ensure the safety of the lives and property of people using Provincial Highway 7 and the Sule Bridge.



Improvement project for drainage in the upstream section of the Talian Ditch in Taichung City: The revetment, which was originally limited and in disrepair, was improved to raise the effectiveness of drainage. Along with improvement of the revetment the road bed was stabilized, thereby protecting the safety of human and vehicular traffic.



Improvement project for drainage in Maobu, Yilan County: Improvements made it possible to increase the drainage effectiveness for floodwaters in the area and reduce flooding severity. Grass was planted to greenify the walkway along the levee crown, creating scenery that combines farmland with a water channel.



Improvement project for the western irrigation branch water channel in Chuanghua County (Tianwei section Phase 2): The water channel was originally made with concrete lining, but after many years of use, the water channel became cracked and damaged, causing leakage and loss of irrigation water. The improvement project enhanced the effectiveness of the channel at transporting water and reduced leakage. A fence was installed next to the channel and shrubs and trees were planted to create a green corridor to provide people with a recreational space. In addition, some ramps were installed in the water channel to give trapped wild animals a way to escape.



Connecting with the Haiwei local area drainage system announced by the Ministry of Economic Affairs: The inlet/outlet drainage modification project on the north side of the Haiwei local area drainage system at the Hanbao aquaculture zone in Changhua County was completed by the COA. There were 1,209 meters of drainage revetment rebuilt and an increase in the protected area by 32 hectares. The project added discharge cross sections and improved drainage capacity.



Connecting with the Jishuei River System announced by the Ministry of Economic Affairs: The outlet drainage modification project on the 8th medium drainage channel at the Shuangchun aquaculture zone in Tainan City was completed by the COA. There were 771 meters of drainage revetment rebuilt and an increase in the protected area by 82 hectares. The project added discharge cross sections and improved drainage capacity.



Water environment project for the Xinhu and Fuguodun fishing ports: This involved mainly renovation and green beautification of the entrance plaza to one fishing port, a construction project linking to a walkway for seaside recreation, a marine education display project, and improvement of facilities in the environment surrounding the restored areas. Environmental improvement (green beautification) was done on about 2,480 square meters of land.

(4) Dredging of torrents

In order to avoid channel fill deposit caused by earthquakes and typhoons that could lead to losses of life and property among citizens, in 2022 the COA conducted 42 torrent dredging projects, dredging up 2,432,000 cubic meters of soil and debris and restoring the torrents' capacity to drain floodwater.

With respect to torrents in national forest, the COA continued, on the basis of the strategies and

methods in the “Program to Strengthen Dredging in Rivers, Torrents, and Reservoirs,” and with equal attention to management and dredging, to manage torrents and handle landslides (i) at bottleneck sections of rivers urgently in need of attention and (ii) at important areas where infrastructure or the safety of indigenous peoples' communities can be affected. We observed the principle of “dredge in the right places, dredge at the right times” and kept a firm grasp on the progress of the work. The goal for 2022 was set at 700,000 cubic meters, but in fact the COA actually dredged 701,900 cubic meters, exceeding the original target

(5) Debris flow and large-scale landslide prevention and monitoring

The COA announced 1,729 rivers and waterways across Taiwan that have the potential for debris flow as well as 36 locations prone to large-scale landslides, and reexamined and updated the rainfall threshold value for warnings. We also supervised local governments in updating the “2022 debris flow disaster and large-scale landslide prevention and evacuation plans” for 696 communities in 159 townships in 17 counties and cities and approved and updated the “list of protected households” and “evacuation locations,” listing data on 50,318 people to be protected.

The COA completed instrument testing and operational maintenance tasks for 74 debris flow observation stations and 64 automated rainfall stations, integrated the automated rainfall stations on slopeland in Taiwan, and interfaced with the Central Weather Bureau's precipitation forecasts, in order to announce debris flow disaster and large-scale landslide warning information in a timely manner, with the goal of facilitating the launching of evacuation work for protected households in the areas covered by warnings. We also promoted the formation of “independent disaster prevention communities 2.0,” holding 195 war games and 57 actual exercises, while upgrading independent



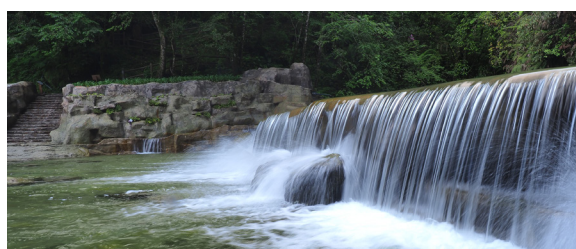
The 2022 flag presentation and awards ceremony for specialists in debris flow disaster prevention.



disaster prevention equipment in 62 locations. In addition, the COA trained 368 new specialists in debris flow natural disaster prevention, and currently there are 3,368 such specialists in Taiwan. Moreover, we assisted local governments at all levels in debris flow and large-scale landslide disaster prevention work including autonomous rainfall measurement, disaster situation reporting, and identifying protected persons who need evacuation.

(6) Watershed management and disaster prevention in national forest

In 2022 the COA conducted construction projects that took the watershed as the unit of management and were based on the results of surveys of landslides in national forest and watershed risk evaluations. They were conducted in coordination with the implementation of eco-friendly mechanisms and efforts to reduce the environmental impact of infrastructure projects as well as the comprehensive implementation of ecological review for the complete life cycle of projects. They aimed at the same time to deal with disasters caused by typhoons. With appropriations of NT\$791 million, we undertook 160 related projects to handle a total of 78.62 hectares of landslide areas, do maintenance work on forest roads and slope management over 71.73 kilometers, and stabilize about 3.025 million cubic meters of soil from shifting downward.



Conservation management project in forest compartment No. 107 in the Alishan operational district of the COA's Forestry Bureau.

(7) Management and supervision of utilization of slopland

Categorizing slopland by the limitations on its permissible use, setting norms for agricultural activities on slopland, and pragmatically reassessing the scope of slopland, in 2022 the COA completed comprehensive reassessment of the scope of slopland in Lienchiang County. This was the final step in the demarcation and

comprehensive reassessment of slopland nationwide. In addition, to reduce the risk of disasters caused by large-scale landslides, strengthen the handling and maintenance work for soil and water conservation, and minimize the potential for disasters, in 2022 the COA demarcated (approved) and announced seven “designated soil and water conservation areas,” did comprehensive reassessment of long-term soil and water conservation plans in 13 such areas, and abolished seven such areas.

The COA gave approval in 2022 to 4,998 soil and water conservation plans (including simplified soil and water conservation statements), and there were a total of 5,524 inspections. Since 2019, the frequency of satellite monitoring reports has been increased to once a month. In 2022 there were 9,325 cases of surface changes and 2,336 cases of investigation and interdiction of illegal slopland use, with administrative fines totaling NT\$129.88 million and 93 cases transferred to judicial authorities for handling. The COA also strengthened public awareness about maintaining safety in the development and utilization of slopland.



- 利用衛星影像監測山坡地現況，監測頻率於108年起提高監測頻率每個月1次，共辦理12期。
- 藉由常態性、多時效與大範圍的主動監測山坡地變化，減少人情壓力並及時遏止不法行為。

Satellite imaging is used to take the initiative to monitor changes in slopland conditions.

4. Preventive Measures against Animal and Plant Diseases and Pests

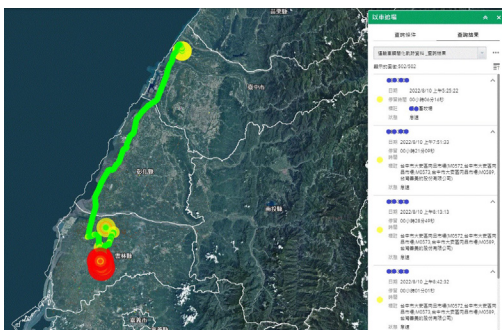
(1) Response to African swine fever

Since the reporting of the first case of African swine fever (ASF) emerged in mainland China on August 3 of 2018, by the end of 2022 there were outbreaks of ASF in 16 Asian countries. Prevention measures in Taiwan were focused on “keeping the disease outside the nation’s borders, taking

preventive measures within the nation's borders.”

In terms of “keeping the disease outside the nation's borders,” the COA coordinated with border agencies to strengthen inspection and guidance tasks for all high-risk channels for the transmission of ASF into Taiwan, including inbound travelers, goods, express delivery and postal parcels, e-commerce platforms, and fishing boats. In terms of “taking preventive measures within the nation's borders,” the “ASF Central Emergency Operation Center” was founded to coordinate with local governments in conducting simulations of situations they might face in the event of an outbreak of the disease. The COA also implemented a number of important measures, including establishing an early warning system, performing on-site visits and providing disease prevention guidance at livestock farms, promoting the use of livestock health declarations, strengthening sanitation inspections at slaughterhouses, and guiding the transformation of farms that feed pigs with swill.

In order to monitor and control the movement of pigs at livestock farms in a timely manner in the event of an outbreak of ASF, the COA required the compulsory installation of GPS on transport vehicles for live pigs and pig carcasses, viscera, and cut parts. The COA also proactively conducted checks in order to track the movements of live pigs and pork products in real time. In addition, in February of 2020, interagency cooperation achieved the interfacing of data about rendering transport vehicles in the Environmental Protection Administration's information system with the COA's integrated GPS information platform, thereby sharing rendering transport vehicle GPS data. This action completed the construction of a comprehensive GPS monitoring system for transport vehicles carrying “pigs, pig carcasses, and dead pigs.”



Search results for simplified tracking information on the “transport vehicle information system.”

(2) Eradication of classical swine fever and sheep and goat pox

To achieve the goal of eradicating classical swine fever (CSF), in 2021 the COA adopted the “Program for Eradication of Classical Swine Fever and Prevention of Major Pig Diseases,” to be implemented in three phases. In Phase 1 a variety of monitoring mechanisms were launched, covering monitoring of experimental phased cessation of CSF vaccines, sentinel pig experiments, dead pigs in rendering plants, culled sows at slaughterhouses, wild pigs, and the sperm of breeding males. No cases of CSF virus in the field were observed. This scientific evidence proves that the risk of the occurrence and transmission of CSF in Taiwan is extremely low, and the COA began communicating with industry to dispel doubts about cessation of vaccines. Relevant work was completed in 2022. Phase 2 will begin in 2023, and it will involve phased cessation of CSF vaccines. Phase 3 is scheduled to begin in June of 2024, when application will be made to the World Organisation for Animal Health (WOAH) for Taiwan to be recognized as “a country free of classical swine fever.”

In order to achieve the goal of eradicating sheep and goat pox and meet requests from sheep and goat-raising industry groups, the policy of eradicating sheep and goat pox is being implemented in three phases. Phase 1 (2022) involved comprehensive disease inspections, strengthening of self-reporting, passive monitoring, slaughterhouse sanitation inspections, environmental monitoring and control, and risk communication with industry. In Phase 2 (January 1, 2023 to June 30, 2023), the COA will continue monitoring and control and completely cease vaccinations for sheep and goat pox. In Phase 3 (starting July 1, 2023) we will organize and collate data to make a declaration to the WOAH that Taiwan is “a country free of sheep and goat pox.”



A press conference was held on December 30, 2022 to mark the eradication of classical swine fever and the cessation of vaccinations for this disease.



A press conference was held on December 23, 2022 to mark the cessation of vaccinations for sheep and goat pox.

(3) Prevention and control of avian influenza

In 2022, the global situation for highly pathogenic avian influenza (HPAI) continued to be severe, with cases reported at 5,600 farms and over 100 million poultry dying of HPAI or being culled. This was a major blow to the poultry industry. To deal with this, the COA not only continued routine monitoring work, but also launched strengthened monitoring of wild birds and domesticated poultry ahead of schedule on September 22, 2022 (the period of highest risk of HPAI outbreaks is October to March), in order to facilitate effective use of the disease early warning system. Moreover, industry associations supervised strengthened cleaning and disinfection of member poultry farms within AI hotspots, while disinfection of areas surrounding these farms was performed by vehicles belonging to local animal disease control centers. At the same time the central and local governments worked together to audit biosecurity of poultry farms, with punishments for those who did not comply with regulations, to ensure that poultry farms can meet biosecurity criteria during the rearing term. Through all of the above measures, in 2022 Taiwan had a total of 51 poultry farms with confirmed cases of HPAI, and 564,000 poultry were culled. The number of cases was slightly lower than that recorded over the years since 2015, and compared to Japan, Taiwan's HPAI situation was more under control.



Disinfection at a waterfowl farm.

(4) Implementation of monitoring, early warning, and control of pests

In 2022, the COA conducted monitoring and surveying for plant diseases and pests, including rice blast and the oriental fruit fly, in a total of 64,494 cases. Based on the monitoring results, a total of 138 early warnings and alerts were issued. Additionally, using the "Field-Side Assistance" system, 13,516 emails, 29,350 text messages, 8,235 faxes, and 140 App notifications were sent out to remind farmers to prevent outbreaks of crucial plant diseases and pests.

Also, monitoring and surveys were conducted in high-risk host crop production areas for fall armyworms, with early warnings issued based on the growth stage of crops or the density of pest populations. In 2022, in response to the expansion of the cultivation of feed corn by the COA, additional survey sites were established to strengthen the monitoring and the early warning system.

Furthermore, we held educational seminars for specialized farmers to enhance self-management skills. A total of 97 sessions were held with the participation of 7,301 individuals.

The COA moreover promoted Areawide Pest Management to control lychee



The *Anastatus japonicus* wasp: a natural enemy of the lychee giant stink bug.

giant stink bugs in agricultural areas. Measures included releasing 6.23 million *Anastatus japonicus* wasps (natural enemy of the stink bug) and holding 54 lectures and demonstrations. The COA designated synchronized control periods for four zones (Kaohsiung-Pingtung, Chiayi-Tainan, Taichung-Changhua-Nantou-Yunlin, and Miaoli), covering a total of 7,234 hectares of farmland, in which we strengthened cooperative prevention from cities to counties and worked with relevant ministries and agencies to simultaneously promote relevant measures. In 2022, overall prevention and control work was very successful, with no severe damage, thereby stabilizing the production of relevant crops.

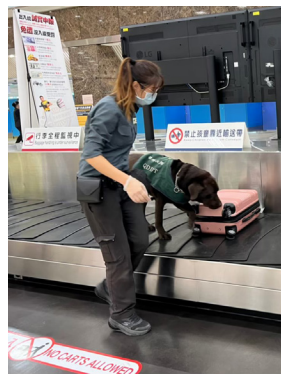
(5) Preventing invasion of major diseases and pests from abroad

The COA amended the quarantine requirements for the importation of animals, plants, and their products in response to international epidemic conditions. We conducted 212,000 quarantine inspections of imported plants and their products and 201,719 of animals and their products. Our 56 quarantine detector dog teams conducted border inspections and intercepted illegal agricultural products in 7,596 cases with total weight of over 11.8 metric tons.

In addition, in response to the COVID-19 pandemic, the COA authorized the national plant protection organizations of exporting countries to conduct quarantine treatment and on-site audits for exported agriproducts. These included cherries from Turkey; betelnuts and mangosteens from Thailand;



A quarantine detector dog inspects express delivery parcels.



A quarantine detector dog inspects passenger luggage at Kaohsiung International Airport.

and apples from countries including Australia, New Zealand, Chile, and South Africa. The COA also adopted enhanced measures for inspection and quarantine of imported agricultural products. As the pandemic eased and border controls were lifted in the second half of 2022, the COA dispatched staff to exporting countries to undertake export inspections and on-site audits. Such work was done for apples from countries including the US, Canada, France, Germany, Poland, and Italy; fresh fruits that are host to the peach fruit moth from Japan and Korea; and melons from Honduras. In addition, on-site audits were conducted for summer and winter pear scions in Japan, anthurium flower seedlings from designated production areas free from burrowing nematodes in the Netherlands, carrots from designated production areas free from burrowing nematodes in Australia, and fresh American ginseng from the US state of Wisconsin.

5. Training New Farmers and Use of Diversified Rural Labor

(1) Strengthened training of new farmers

● Strengthened training at the school side

The COA has built a cooperation mechanism with agricultural schools and in 2022 provided “agricultural career exploration” to 745 students at 10 schools. We also continued to conduct the “incentive program for high school students to go into agriculture,” with 725 high school students signing up for agricultural career exploration from September of 2021 through October of 2022 (the 2021 academic year). The COA also sponsored publicly funded classes of university students studying agriculture, and so far 427 graduates of such classes have gone into agricultural operations. For the 2022 academic year there were a total of eight sponsored classes, with 266 students, at six schools.

● Applying guidance resources at the workplace side

The COA promoted guidance of the “Top 100 Young Farmers,” helping a total of 675 people in six groups. In addition, in 2022 we guided 17 local platforms for exchanges of information among young farmers and 209 branch associations, with a total of 6,841 people participating, thereby guiding cooperative improvement among young farmers. Also, in 2022 the COA set up “training bases” in three locations: the Taiwan Agricultural Research Institute, the Hualien District Agricultural Research and Extension Station, and National Ilan University. In addition, we subsidized 12 purchases of updated agricultural production and marketing facilities (equipment) by 10 of the Top 100 Young Farmers to upgrade their operational efficiency.

● Establishment of a learning network and improvement of the management skills of young farmers

The Farmers’ Academy offered introductory, basic, advanced, and high-level training courses, training 3,136 participants in 142 sessions, as well as priority courses for different groups (including women, middle-aged farmers,



indigenous peoples, and new immigrants) that trained a total of 913 participants in 39 sessions. It also organized two sessions of courses on smart agriculture, training 299 participants, and eight sessions on e-commerce, training 210 participants.

- Expansion of the program of the “Loan for Young and Middle-Aged Adults Working in Agriculture” to provide needed capital for agricultural operations

The COA continued to provide the “Loan for Young and Middle-Aged Adults Working in Agriculture” to ordinary young farmers and the Top 100 Young Farmers, offering a maximum of five-year interest-free loans of NT\$2 million and NT\$5 million, respectively, with an interest rate of 1.165% after the relief period. In addition, to assist middle-aged farmers (aged 45 to 55) to continue to farm for a living, on August 1, 2021 they were incorporated into the list of potential loan recipients. In 2022 the COA provided NT\$4.272 billion in capital for 2,392 young farmers and NT\$453 million in capital for 388 middle-aged farmers.



The 6th presentation of the “Benchmark Awards of the Top 100 Young Farmers.”

(2) Strengthened manpower guidance resources

- The “Agricultural Elitist Training Project”
In 2022 the COA’s “Agricultural Elitist Training Project” sent 16 persons overseas (11 for study abroad, five for short-term research) to countries including the USA, Japan, the UK, and France. Research projects covered topics including coping with climate change, management of disease and insect pests, sustainable agricultural development, enhancing breeding efficiency, post-harvest handling of crops, and adjustment of the agricultural manpower structure.
- Use of overseas Chinese and foreign manpower
In conformance with the New Southbound Policy, the COA has recruited young people from New Southbound Policy partner

countries to come to Taiwan to study agriculture in universities or colleges, with agricultural career exploration combined into the curriculum. We also have made it possible for these students to do part-time agricultural work on farms outside of class or during winter or summer vacation, enabling them to learn about farm operations and management, while facilitating the recruitment of talent by agribusinesses and farms. In 2022, 169 overseas Chinese and foreign students took part in agricultural career exploration.

- Provision of “agricultural operational preparatory funds” and guidance of new farmers to stabilize their operations

To stabilize the lives of new farmers, lower operating risks, and create a positive agricultural operating environment, starting in the second half of 2020 the COA began promoting a program for “agricultural operational preparatory funds” for young farmers. These are available to new farmers who have graduated from publicly funded agricultural classes, have graduated from departments of agriculture, or have been through professional agricultural training. These farmers can receive a maximum of NT\$360,000 or NT\$720,000 in preparatory funds over two years, to help them remain in farming as a profession. As of 2022 payments had been made to a total of 515 persons.

- Grassroots agricultural lectures

To improve the organizational effectiveness of domestic Agricultural Production-and-Marketing Groups (APMGs), empower management personnel of APMGs and strengthen their competency, in 2022 the COA conducted eight sessions of grassroots agricultural lectures in areas including agriproduct marketing, e-commerce, industrial management, livestream marketing and product aesthetics. The lectures advanced APMGs’ management skill, enhanced their organizational functioning and operational effectiveness, and cultivated talent for them. In addition, to encourage female members to strengthen competency in marketing, financial affairs, and management and encourage them to participate in decision-making, the COA held two special classes for women managers of APMGs. These classes were aimed at promoting greater female participation and encouraging rural women to develop their creative and management outlooks.

(3) Use of diversified agricultural labor to deal with the agricultural labor shortage



Overseas Chinese and foreign students are allowed to participate in agricultural career exploration, using winter and summer vacations to work part-time on farms.



The COA's Agricultural and Food Agency organizes grassroots agricultural lectures.

With "increasing the supply of manpower" and "reducing the demand for manpower" as the main strategies, the COA has adopted multiple measures to diversify sources of labor. At present there are 14 cities and counties considered to be "labor shortage focal points" that have established agricultural manpower teams, using workers from Taiwan to assist with agricultural work. In 2022 a total of 55 teams (including 12 mechanized cultivation teams) with 1,931 workers were established, and they worked a total of over 300,000 man-days, providing services to 5,921 farms.

In terms of the use of foreign manpower, the COA has permitted the hiring of foreign labor to undertake work in the "Outreach Agricultural Services Program" (OASP), animal husbandry, farming (orchids, edible mushrooms, and vegetables), and aquaculture, supporting domestic agricultural labor in a supplementary fashion. As of the end of 2022, the COA approved hiring of 915 foreign workers in 164 cases under the OASP; they were assigned to farms by OASP agencies to help with agricultural work. As for industries with long-standing labor shortages, including farming (orchids, edible mushrooms, and vegetables), animal husbandry, and aquaculture, operators were allowed to independently hire foreign



Training for young Indonesian farmers who came to Taiwan for internships.

workers; in 2022 approval was given for such hiring in 2,659 cases to employ 1,803 foreign migrant workers to assist at various venues. In addition, the COA coordinated with a program under the New Southbound Policy for young foreign farmers to come to Taiwan to do internships. This program arranged for young farmers from Indonesia and the Philippines to come to Taiwan to do learn-by-doing internships at agri-food, animal husbandry, and aquaculture farms. In 2022 a total of 48 young farmers from the Philippines and 53 from Indonesia came to 64 farms in Taiwan to do internships and assist with agricultural work.

In terms of "reducing demand for manpower," the COA promoted outsourced mechanized cultivation services and agricultural services in order to promote human-machine collaboration for outsourced cultivation and thereby reduce demand for manpower. In 2022 the COA expanded the organization of outsourced mechanized cultivation teams and extended their services to industries including miscellaneous grains, vegetables, tea, carrots, fruit trees, taro, and outsourced unmanned aerial vehicle agro-pesticide spraying. In all 12 teams were formed, and they provided outsourced cultivation services on over 3,000 hectares. Moreover, an "agricultural mechanized cultivation services system" was established for the agri-food industry to promote shared agricultural machinery services. The platform provides searchable information about mechanized cultivation service providers in each locality and at present can provide access to over



An outsourced mechanized cultivation team works on a vegetable farm in Changhua.



7,000 pieces of farm machinery including tractors.

6. Use of Technology to Develop Innovative Agriculture

(1) Promotion of agricultural technology industrial clusters

In order to attract skilled agricultural personnel and technology-based agribusinesses to form industrial clusters and promote agricultural R&D and innovation, the COA integrated the Kaohsiung Customs office of the Customs Administration of the Ministry of Finance, the COA's Bureau of Animal and Plant Health Inspection and Quarantine, the COA's Animal Health Research Institute, and logistics firms into the Pingtung Agricultural Biotechnology Park (PABP). They provide services including import and export customs clearance, inspection and quarantine, warehousing, and transport. The goal is to create an optimal investment environment for an agricultural technology industrial cluster that combines R&D, production, and foreign and domestic marketing. As of the end of 2022, 115 firms had moved into the PABP, bringing investment of NT\$14.526 billion and creating over 2,600 jobs. On November 30, 2022, Virbec, the world's sixth largest veterinary pharmaceutical group, formally opened an animal vaccine research center in the PABP, and in the future it will continue to work with the Agricultural Technology Research Institute and National Pingtung University of Science and Technology to utilize Taiwan's technological comparative advantages to ensure animal health.

More than 90% of the 233 hectares of Phase 1 of the PABP was occupied by companies and within the first year since the opening of the 165 hectares of Phase 2, one-third of this land has



The Pingtung Agricultural Biotechnology Park has created over 2,600 jobs. A commercial building combining accommodations, display and sale of specialty agriproducts, and manpower training functions opened there on January 14, 2022, driving greater local prosperity.

been occupied or pre-leased. In the future the PABP will continue to upgrade its software and hardware services to promote trends including cold-chain logistics, circular agriculture, and net-zero carbon emissions.

Meanwhile, the Taiwan Orchid Technology Park (TOTP), located in Tainan, occupies 175 hectares of land, with greenhouse construction over 95 hectares. As of the end of 2022, 84 businesses had moved into the TOTP and built greenhouses, bringing cumulative investment of NT\$22.2 billion, with annual revenues in excess of NT\$3.7 billion. In order to meet the needs of long-term development and upgrade international competitiveness, on May 3, 2022 the Executive Yuan agreed to transfer control over the TOTP to the central government, and it came under the jurisdiction of the COA as of January 1, 2023.

(2) Promotion of smart agriculture

To promote the development of smart agriculture, the COA has built up "smart production"



The COA's Taiwan Orchid Technology Park held its opening ceremony on August 31, 2022.

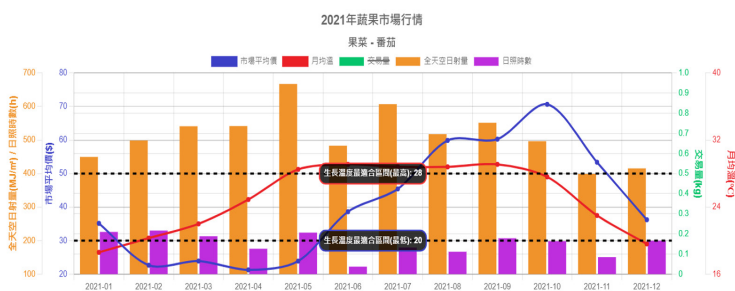
and "digital services" for ten leading industries since 2017. As of 2022 we (i) raised output value by over NT\$1.62 billion in agricultural sites where smart agriculture was introduced; (ii) encouraged industries to invest in innovative R&D through the "Industrial Technology Development Program," with a total of over NT\$678 million invested by businesses participating in the program; (iii) encouraged agribusinesses to invest in the software and hardware of smart agriculture, with total investment thus far over NT\$2 billion; and (iv) set up a total of 313 demonstration sites.

Among the major results of R&D for the ten leading industries, one was the completion of R&D for an expert system for analysis of orchid plant elements. Historical test data is provided to businesses who can compare their plants to the element standards established in the database; this analysis can serve as reference to businesses in improving cultivation management, upgrading cultivation efficiency, and stabilizing the quality

of their products. In terms of the rice industry, a smart monitoring and warning system for the brown planthopper has been set up. Farmers or outsourced cultivators can use the mobile phone App and upload images photographed during visits to rice fields to the cloud and get feedback of the hazard level indicator. The system can grasp the situation of brown planthopper hazards in the field in real time and improve the instantaneity of field hazard judgement by more than 90%.

In addition, in the leading industry of agricultural facilities, development of an “Expert Knowledge System for Greenhouse Operations and Maintenance Management” has been completed. It includes (i) greenhouse design planning (including design of the structural shape, risk and cost analysis, and environmental control design), (ii) greenhouse operations and maintenance (including overall scheduling and planning, production management, environmental monitoring and control, energy management, maintenance, and comprehensive economic analysis), and (iii) a greenhouse technology knowledge database (to assist farmers to improve their knowledge of greenhouse technology; it includes databases for design, analysis, operations, and maintenance). The system can be used for operations and maintenance for existing or future greenhouses and can conduct optimized environmental control and energy resources management to enhance the efficiency of energy use in greenhouses and reduce operating costs. It can also be used for optimizing design and restructuring of existing greenhouses for prevention of typhoon damage to enhance the service life and safety of greenhouses.

(3) Promotion of industrialization and valorization of agrotechnology R&D results



This graph shows an analysis of transaction prices and sunlight and temperature management of a crop (tomatoes) as provided by the “Expert Knowledge System for Greenhouse Operations and Maintenance Management.”

To meet the demands of industry and the public, the COA has continued to invest in the R&D of agricultural technology. For example, a product of plant-based chicken essence made from fermented soybeans was developed for vegetarians’ health. It has over ten times the branched-chain amino acids (BCAA) content of traditional chicken essence and possesses a natural umami flavor and aroma of mushroom. Another example is the development of super-transparent silk dressings for curing chronic wounds; they have anti-inflammation functions and accelerate wound healing with a proliferation of epithelial tissues and collagens without allergenicity.

In order to strengthen the durability and anti-biodegradation capabilities of domestically produced wood products, through R&D into durability technology the COA completed development of a new type of rapidly hardening natural formula tung oil coating and a phenol-formaldehyde wood preserver produced from residual forestry materials. These can extend the life cycle of domestically produced wood and create new commercial opportunities for the preservation and use of such wood.

The COA completed 337 sets of economic data for aquaculture production, transport, and marketing in the Kaohsiung and Pingtung areas, and used sequencing of the most suitable aquaculture products for each area, the optimal release volumes, and production strategy analysis to build optimal aquaculture models for grouper, East Asian fourfinger threadfin, and silver seaperch. In addition, the technical team for Pacific white shrimp aquaculture guided households raising these shrimp to establish a standard production model, under which environmental probiotics are added to the ponds to effectively control levels of ammonia nitrogen and nitrite nitrogen. Levels of vibrio bacteria were extremely low in tested water, and this production model was able to increase the size of harvests at demonstration aquaculture households.

In 2022 a significant breakthrough was achieved in R&D of cold-chain technology for agricultural products. This progress was made possible through collaboration between public and private entities, involving researchers and



transport businesses. Their collective efforts aimed to accumulate evidence concerning guava exports to the US. As a result of this collaboration, a 40-foot container filled with fresh guavas was successfully shipped to the US. Despite undergoing long-distance marine transport and low-temperature quarantine treatment, the guavas displayed high quality. Impressively, more than 90% of the guavas were suitable for sale. These high-quality guavas were efficiently distributed through supermarkets in the Los Angeles area as well as various e-commerce and group-buying platforms. The business of exporting guavas to the US is expected to witness substantial growth.



Fresh guavas from Taiwan were successfully sold in supermarkets in the US.

In 2022 there were 56 cases of intellectual property rights acquisition, including 44 patents and 12 cases of variety rights. Technology was transferred to 341 companies, earning NT\$87.07 million from R&D results during the year. In order to expand applications and diffusion of R&D results, the COA participated in organizing the “BIO Asia–Taiwan Exhibition,” the “Healthcare+ Expo,” and the “Taiwan Innotech Expo.” We also assisted the 2022 “Asia Agri-Tech Expo and Forum” to hold both in-person and online activities,

養殖環境	飼料營養	疾病防治	蝦苗品質	養殖管理
<ul style="list-style-type: none"> ● 確實整池及驗收整池成效 ● 適當的投餌(減少殘餌) ● 穩定水、底質、藻相及菌相 ● 強化益生菌及水底質改良劑的選用 ● 建立溫馴化蝦類生產技術 	<ul style="list-style-type: none"> ● 開發多樣化機能性飼料 ● 發展種蝦培育飼料 ● 發展種蝦催熟飼料 ● 發展蝦苗機能性液體飼料 ● 研發養成階段強化免疫飼料 	<ul style="list-style-type: none"> ● 種蝦生餌消毒 ● 進苗前檢疫 ● 防鳥網 ● 強化蝦病防治知識 ● 建立疾病通報網絡 ● 疾病後的養殖保養 	<ul style="list-style-type: none"> ● 建立在地化種蝦培育及蝦苗量產技術 ● 規格化蝦苗生產及檢驗指標 	<ul style="list-style-type: none"> ● 落實科學化養殖管理 ● 推廣白蝦養殖管理標準作業流程 ● 經驗傳承科學化、標準化、規格化

穩定蝦類養殖產量

The standardized production model to guide Pacific white shrimp aquaculture. (Fisheries Agency)

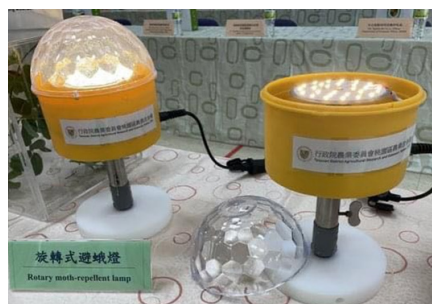
displaying a total of 82 innovative technology R&D results, promoting licensing for 31 technologies to 50 companies, and earning NT\$11.09 million in royalties, while arranging over 635 business discussions to help market outstanding technology products to the world.



Super-transparent silk dressings can be an emerging biomedical material. (Miaoli District Agriculture Research and Extension Station)



Group photo of officials at the opening ceremony for the “Agricultural Technology Pavilion” at the 2022 “BIO Asia–Taiwan Exhibition.”



This rotary moth repellent lamp won a gold medal for inventions at the “Taiwan Innotech Expo.” (Taoyuan District Agricultural Research and Extension Station)



A group photo of officials taken at the “Taiwan Agricultural Technology Pavilion” at the 2022 “Asia Agri-Tech Expo and Forum.”

(4) Improvement of facilities for basic research

Through the improvement of basic research facilities, the COA not only further upgrades agriculture's "precision" but also enhances agriculture's "resiliency" by developing stress-resistant plant varieties as well as production facilities and models. These enable animals and plants to adapt better to extreme weather and accelerate their adaptation and restoration capabilities in the face of irresistible natural disasters. These measures promote industrial transformation and upgrading of the farming, fisheries, and animal husbandry industries and increase the incomes of farmers and fishermen. In 2022 the COA's Animal Health Research Institute continued work to establish the High Biosecurity Diagnosis and Animal Experiment Center, while the Fisheries Research Institute worked on building three experimental ships with up-to-date navigational safety equipment and scientific instruments, which are expected to be completed successively starting in 2023.

In addition, with respect to the launch in 2021 of planning for the construction of breeding facilities for stress-resistant varieties, the COA is proactively handling (i) environmentally controlled breeding facilities for stress-resistant varieties at the COA's Taiwan Agricultural Research Institute, the four District Agricultural Research and Extension Stations in Taoyuan, Miaoli, Kaohsiung, and Hualien and the Taiwan Seed Improvement and Propagation Station; (ii) the National Plant Phenomics Center set up under the Taiwan Agricultural Research Institute; (iii) germplasm banks for fish, shellfish, and algae set up under the Taiwan Fisheries Research Institute; and (iv) a facility to improve resistance to climate change for pigs, cattle, sheep, and their forage set up under the Taiwan Livestock Research Institute.

(5) Provision of integrated services for agricultural digital information

● Promotion of applications of agricultural open data

To enhance the transparency of government administration, the COA has continued to collect, collate, and release information to the public, providing it for non-governmental interface applications. By the end of 2022, the COA had provided over 10 million pieces of information in 1,597 categories. We also continued to maintain 61 Open APIs including ones for animal adoption, notification of lost pets, and the poultry trading situation. In addition, we held the 2022 "agricultural open data hackathon" which drew proposals from

more than 76 teams. Ultimately 12 teams were selected to participate in a workshop and the prize-winner selection stage.

Through the "Agri Beta" platform (the "smart agriculture common information platform"), since 2017 the COA has provided traceability data for farm, fisheries, and animal husbandry products used in school lunches. Since 2021 we have also worked with the Taoyuan City Department of Public Health to provide data on ingredients suppliers for food and beverage businesses in Taoyuan City by creating the "Taoyuan Food Safety Information Platform" to enhance the effectiveness of ingredient traceability. In 2022 the Agri Beta platform provided access to over 19 million pieces of data and API services were accessed by the public for more than 13 million pieces of data.



■ The 2022 "agricultural open data hackathon."

● Construction of a cooperative platform for agricultural spatial information

The COA's "cooperative platform for agricultural spatial information" used street view surveys and on-site photographs to complete surveys of crops grown on 500,000 parcels of farmland. Then, using the farmland parcel as the unit of data, we integrated (i) reports on paddy rice and mixed staple crop cultivation from the COA's Agriculture and Food Agency, (ii) the distribution maps of rice paddy cultivation in various crop seasons over the years; (iii) data on natural disaster relief over the years, (iv) results of comprehensive county-wide surveys over the years, (v) data on crops insured under agricultural insurance, (vi) applications for agricultural natural disaster relief, (vii) results of real-time on-site surveys, and (viii) results of remote sensing interpretation by the Taiwan Agricultural Research Institute over the years, to build a national farmland crop database with 30 million entries. This is provided to the



COA for diverse operational applications including the green environmental payment on farmland, surveys of sensitive crops, underwriting of agricultural insurance, and agricultural water resources management. Moreover, survey results were used to support the development of an AI interpretation module for unmanned aerial vehicle and aerial photographs and imaging.

In addition, given the increasing frequency of natural disasters caused by extreme weather, in order to accelerate the work of on-site disaster inspections, the COA promoted the “mechanism to provide self-proof for farmers who have suffered losses from natural disasters” and developed the “agricultural natural disaster on-site survey mobile App” to be downloaded and used by farmers victimized by natural disasters. These mobile phone Apps automatically record the map coordinates and cadastral location of disaster photos and upload these to the “agricultural natural disaster relief system.” Farmers therefore no longer need to bring photographs to their local town halls to apply for disaster relief, thereby increasing the effectiveness of agricultural natural disaster relief.

The COA's Soil and Water Conservation Bureau (SWCB) established the Big Geographical Information System (BigGIS). Using satellite imagery, aerial photography, and unmanned aerial vehicle orthophotography, as well as core cartographic data for soil and water conservation affairs, the SWCB developed tools including digital satellite imaging, frequency spectrum analysis, calculations of peak floodwater volume in river basins, evaluations of categories of potential disasters in watersheds, and simplified quantified simulations of soil shifting. These tools are used to assist in disaster prevention and mitigation. In 2022 the SWCB completed its BigGIS Lite version to support simplified searches using mobile

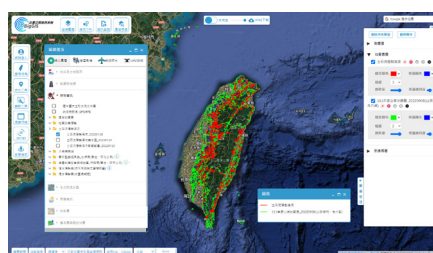


Survey work for crops on farmland parcels.

devices, assist in the implementation of on-site survey affairs, and expand use of the system for operational matters and decision-making.



The “agricultural natural disaster on-site survey mobile App.”



The BigGIS system (<http://gis.swcb.gov.tw/map/>).

● Modernization of agricultural information

To accelerate the transmission of production-and-marketing information, the “agriculture and food production-and-marketing information integrated platform” was available to access the data for “charts of the sales situation for cabbage seedling farms” (part of the COA's open data platform). Then, through the industrial alliance mechanism of the COA's Agriculture and Food Agency and social media services, early warnings about cultivation of cabbage were automatically sent out to the cabbage strategic alliance LINE group, for use as reference in determining production-and-marketing strategies by farmers, production-and-marketing groups, and farmers' associations engaged in cabbage cultivation.

The COA continued to use the multiple distribution channels of, and cell phone App for, “Field-Side Assistance” to take the initiative to send out customized agricultural information to individuals, such as the transaction prices for agriproducts, reports on the agricultural situation, and information about plant diseases; in 2022 this service was provided over 2.77 million man-times. Moreover, each day, through electronic bulletin boards we transmitted information on important agricultural policies and measures, real-time agricultural weather reports, production and marketing, and farmers' welfare to farmers' and fishermen's associations at all levels.

In order to improve the efficiency of agricultural work, the COA developed the “Farm Production Management System” fieldwork mobile management system, and proactively promoted it for use by farmers, agribusinesses, and outsourced cultivators. As of 2022 this system was being used at a total of 19,700 farms, with over 23,000 users, with the managed area of cultivated land reaching 170,000 hectares. It has effectively increased farmers’ production efficiency and competitiveness. As for the livestock industry, in order to promote informatization of operational management in pig-raising, we also developed the “Pig Farm Production Management System,” which provides services including real-time work records and reminders of irregularities, and it can also produce multiple data analysis. As of 2022 this system was being used at a total of 729 pig farms, providing Taiwan pig farm operators with a convenient and efficient management tool.



The personalized home page of the “Field-Side Assistance” App provides farmers with information on market transaction conditions, the weather, and incentives and subsidies.

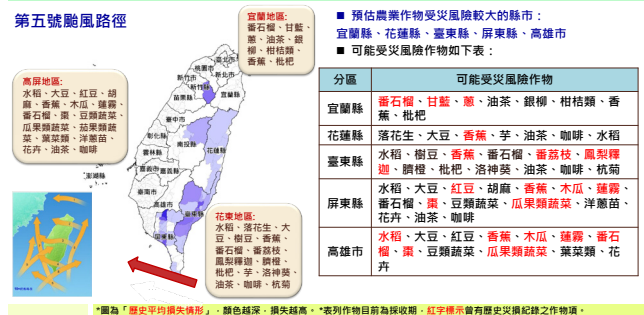
The COA continued to cooperate with the National Science and Technology Center for Disaster Reduction to establish the “Agricultural Disaster Information Platform” for the government’s disaster response information network. Through integrated agricultural and weather data, such as real-time weather and disaster information, the agricultural land use situation, crop distribution, real-time disaster damage images, vulnerability analysis, and economic impact analysis of agricultural losses, the system provides situational assessments before, during, and after disasters. The system was used during nine agricultural disaster response operations in 2022, automatically disseminating early-warning notifications and corresponding disaster prevention measures.

甘藍育苗場售出情形	
日期	111年12月
旬別	上旬
全臺推估出苗量 (A)	551.27萬株
當旬警示燈號	●
預定採收時間	2月中旬
近3年同期平均出苗量 (B)	548.3萬株
與近3年同期(平均)比較之增減百分比 (A-B)/B*100%	+1%
備註: 1.甘藍每公頃種植約3萬株。 2.每旬警示燈號：390萬株以下為綠色燈號，390-540萬株為黃色燈號，當達540-600萬株時為紅色燈號(警戒值)，600萬株以上為紫色燈號(超種)。 3.每旬依種植期、栽培期及天候狀況等因素推估全臺出苗量。	

Warning information regarding numbers of cabbage seedlings in early December, 2022 shown on the “agriculture and food production-and-marketing information integrated platform.”

10月下旬尼莎颱風農作物防災資訊

第五號颱風路徑



An early warning picture card for disaster warning areas and affected crops.

7. Putting Animal Protection into Practice

(1) Establishment of a pet industry management system

To strengthen management of the pet industry, in 2022 the COA optimized the “specified pet businesses management system” in order to help local (city and county) governments to stay up-to-date on the registration situation and flow of dogs and cats of the specified pet businesses under their jurisdiction. We simplified maintenance of the list of specified pet businesses in order to enhance law enforcement with regard to illegal pet breeding operations. In 2022 there were 9,507 inspections of pet breeding and trading businesses with punishments handed out in 183 cases. In this way we effectively put source management and flow management of the pet industry into practice. We have also completed two sets of animal welfare indicators including animal raising and care guidelines and provided



these to pet owners to offer them basic principles and suggestions for the raising and care of animals.

To monitor the health and safety of pet foods sold on the market, in 2022 the COA conducted 101 sample tests of dog and cat food sold on the open market nationwide, conducting separate tests for items including aflatoxins, T-2 toxin, melamine, salmonella, and heavy metals (lead, cadmium, mercury, arsenic). The tested products all conformed to safe permissible limits and their packaging labels all met the provisions of the “Animal Protection Act.”



An image of the “specified pet businesses management system.”

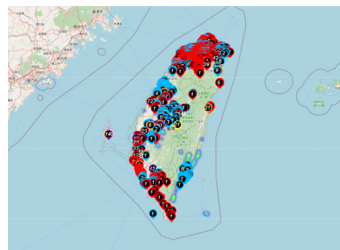
(2) Improvement of source reduction of stray animals and of shelter management

In response to problems arising from the adoption of a “No Kill” policy at animal shelters and in order to remedy manpower and resources gaps between rural and urban areas, the COA continued to refine its systematic and scientific stray animal control measures to control dog and cat populations. In 2022, we guided 19 local governments to demarcate “hot spots” (taking the village or neighborhood as the unit of demarcation). Within the hot spots, personnel visited each household, reporting on pet registration, neutering, or neutering waivers for domestic dogs. In addition, homeless dogs were caught and neutered, while dogs that posed a public safety problem were taken into public animal shelters. As of the end of 2022, the COA completed 42,320 home visits,



The Chiayi County Animal Protection and Education Park, opened on September 2, 2022.

inventoried 4,520 domestic dogs, and found 9,047 homeless dogs, thereby dealing with 91.73% of all dogs in hot spots. From 2014 to the end of 2022, we assisted local governments to construct or renovate 17 animal shelters and upgraded one shelter into an environmental education venue.



2022 map of the implementation situation in each city and county of advanced measures for management of stray dogs.

(3) Management of humane treatment of animals

In 2022 the COA supervised local governments in making inspections of animal transport and slaughtering operations on 455 occasions, and held 46 lectures for animal transport personnel and slaughtering personnel, with 880 people earning lecture-attendance certificates. Moreover, we conducted 86 inspections and guidance sessions for performing animals nationwide. In addition, the COA continued to undertake education and training related to humane management at institutions that use animals for scientific purposes and in 2022 conducted 66 supervisory inspections, while also holding three lectures on the principle of the 3Rs (reduction, replacement, and refinement), with a total of 528 attendees.



The awards presentation ceremony for the 3rd “Rural Elite Awards.”



An exhibition of results of fishing community revitalization.



A Taiwanese beach seine experiential activity.

8. Promotion of Rural Regeneration

(1) The “Social and Cultural Survey of Rural Taiwan”

The COA partnered with the Academia Sinica to continue the program to do a long-term field survey of rural Taiwan based on the four main aspects of “the environment,” “making a living,” “society,” and “culture and daily life” as well as 24 fundamental topics. Thus far records of the human ecology in 50 individual rural communities have been completed. Staff running the program have collected more than 9,438 questionnaires and conducted in-depth interviews more than 4,321 man-times. Results of the survey will contribute to concrete reform advice and serve as reference in the government’s rural policy making process.

(2) Rural manpower training and education extension programs

In order to train people with diverse skills at the local level, the COA has offered training 165,007 man-times in 2,715 communities (64% of all rural communities in Taiwan), and has approved 1,001 Rural Regeneration plans. Moreover, through grass-roots education and programs such as the “Rural Up” project for college and university students to return to rural communities, the COA has provided young people with opportunities to participate in rural communities and assisted a total of 1,013 young people to create new value with innovative operating models.

(3) The “Cross-regional Rural Industry Plan and Regional Shining Spot Plan in Rural Area”

The COA has approved 36 “Shining Regions” for themed development, combining resources of rural industries, academia, communities, and government for rural development, including 139 environmental improvement projects, 11 agricultural production technology projects, and 274 software projects.

(4) The “Counseling Program on Rural Community Enterprise”

For this program the COA has selected outstanding agricultural production or operating entities with potential and guided them to transform into the organizational forms of companies or cooperatives. We have strengthened their commercial business operations and their capacity for innovation, broadening their impact on society and the environment. The COA has increased the overall production capabilities and production value of rural industries by guiding a total of 155

outstanding rural enterprises.

(5) Activities and award ceremony for the 3rd “Rural Elite Awards”

For the 3rd “Rural Elite Awards,” the COA selected 30 award-winning rural leaders from 253 submitted names. The award winners were dedicated to discovering and expanding upon the special characteristics of their rural communities and working towards integrating resources and assisting in the sustainable development of these communities. Moreover, stories of the multiple contributions and experiences of award-winners were collected into a book, which was highly praised by the representative of the Taiwan contact office of Kochi Prefecture in Japan. In the future the COA will cooperate with Japan to deepen our international perspective.

(6) Guidance of fishing communities to implement community sustainable development

The COA commissioned universities to form guidance teams which visited 52 fishing communities to guide local revitalization, strengthen the ability of residents to take autonomous action, deepen community organizational capabilities, and give appropriate assistance depending on each community’s development situation. Moreover, we provided “main point” guidance in 19 fishing communities, implementing Rural Regeneration plans to shape fishing community tourism, training of young people, and food and fisheries education, depending on local resources, with the goals of improving fishing community economies and the quality of life of their residents and implementing sustainable development. On November 5-6, 2022 the COA held an activity entitled “Four Seasons in the Fishing Village” at which 13 fishing communities with special characteristics were invited to demonstrate the achievements of fishing community revitalization.

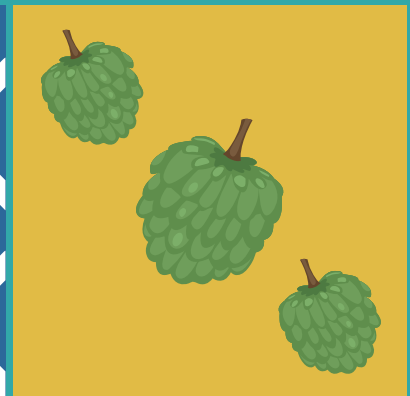
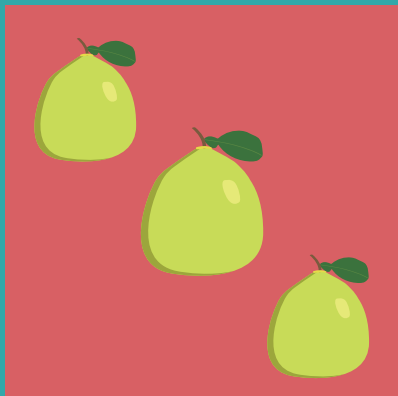


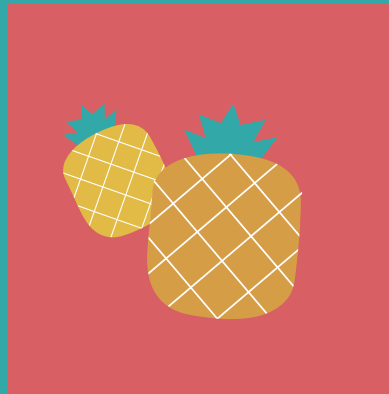
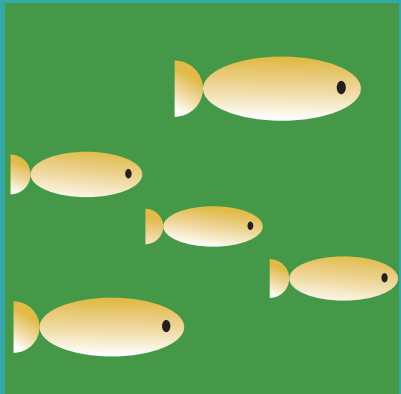
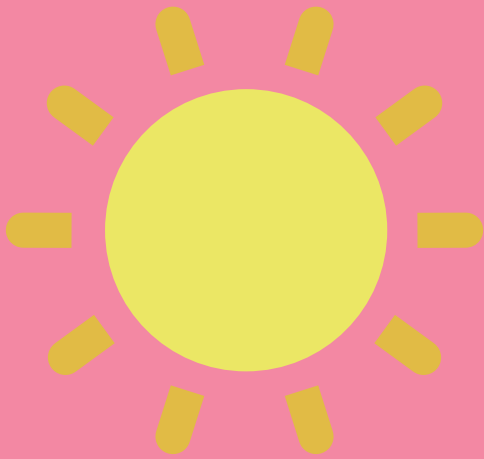
Experiential activity for food and fisheries education.

04



Upgrading Industrial Competitiveness





Upgrading Industrial Competitiveness



1. Expansion of Organic Agriculture and Eco-Friendly Farming

Faced with major environmental issues like climate change and net-zero emissions, organic agriculture will play a critical role in agricultural adaptation strategies. In accordance with the legislative intent of the “Organic Agriculture Promotion Act,” in 2022 the COA continued to offer guidance policies including incentives and subsidies for organic agriculture as well as subsidies for organic certification and testing fees, agricultural machinery and processing equipment, greenhouses and net greenhouses, and fertilizer for organic agriculture. By the end of 2022, 7,255 households benefitted from such policies. In terms of marketing and promotion, the COA guided the setting up of special areas for organic agriproducts in 205 sales outlets, the founding of organic farmers’ markets in 18 locations, and the establishment of 112 E-market platform businesses for organic agriproducts. We also incentivized the expanded use of domestic organic food ingredients in the food and beverage industry, with over 300 restaurants participating in three systems for safe food ingredients: “Organic Gourmet Restaurant,” “Green Dining Guide,” and “Traceable Agricultural Products Restaurant.” In addition, with respect to student lunches, organic ingredients were used in the lunches for 1.62

million students in 3,017 middle and primary schools in 21 cities and counties, with weekly supply volume exceeding 248 metric tons. We used diversified methods to expand consumption of organic foods and provided impetus to the growth of organic agriculture.

As of the end of 2022, Taiwan had 17 certification institutions permitted to undertake organic certification, of which four could do extraterritorial certification. In addition, there were 46 organizations reviewed and accredited by the COA to engage in promotion of eco-friendly farming. A total of 13,545 hectares (ha) of farmland had been certified as organic, with a further 5,863 ha registered as being under “eco-friendly farming,” for a total of 19,408 ha, which accounted for 2.45% of all cultivated land in Taiwan. For the year chemical fertilizer use was reduced by 23,000 metric tons and pesticide use by over 250 metric tons, while emissions of greenhouse gasses were reduced by the equivalent of 37,700 metric tons of carbon dioxide.

Taiwan has signed organic equivalency agreements with countries including New Zealand, Australia, Japan, the US, Canada, and India, indicating that organic agriculture in Taiwan is up to international standards and that Taiwan is able to promote international cooperation and exchanges on issues related to organic agriculture and trade in organic agriproducts. By the end of 2022 Taiwan had exported 60.9 metric tons of organic agriproducts.



At the 2022 “Organic Agriculture Promotion Forum,” attendees discussed how organic agriculture could contribute to the goal of net-zero emissions.



The COA held the “Fun in Organic Farm” organic farm experiential activity so that consumers could make an on-site connection with, and learn to support, organic agriculture.



On December 2, 2022, Agriculture and Food Agency Director-General Jong-I Hu introduced Taiwan organic agriproducts to Japanese sales channels and retailers at an activity to promote sales of these products held in the Yurakuchō district of Tokyo, Japan.



On August 19, 2022 the 2nd “Green Dining Guide Annual Meeting and Awards Ceremony” was held. It aimed to encourage food and beverage businesses and corporate cafeterias to join the Green Dining Guide system and expand use of organic and eco-friendly agriproducts.



At this press conference to introduce new organic agriproducts held on December 20, 2022, the Japanese company Alishan Proprietary Limited and the Taiwanese company Yuan Shun signed a letter of intent to cooperate on trade in organic agriproducts, opening up new opportunities for exports of Taiwan organic agriproducts to Japan.



An event for the media featuring organic tea, during which the top 100 types of Taiwan organic tea were promoted, was held on October 7, 2022 at the 2022 “Nantou Global Tea Expo.”



2. Promotion of Sustainable Fisheries and Improvement of Fishing Port Infrastructure

(1) Conservation of oceanic fisheries resources and management of coastal fishing fleet activities

The COA maintains a firm grasp on information related to fishing vessel operations through the Fisheries Monitoring Center. In 2022, the COA continued to strengthen overall monitoring and control functions, including: (i) alert for failure of the “Vessel Monitoring System” to report vessel location on stipulated frequencies and alert for E-logbook reporting anomalies, (ii) alert for ports, Exclusive Economic Zones, and ocean regions that pose potential problems, (iii) alert for catch quota usage, (iv) alert when fishing vessels enter designated ports, (v) detection of potential unauthorized transshipments at sea, and (vi) alert for Transshipment Notification or Landing Declaration reporting deadlines. We thereby enhanced the effectiveness of Taiwan’s fisheries management.



Students and faculty from the Bachelor Degree of Ocean Law and Policy program of the College of Ocean Law and Policy at National Taiwan Ocean University visited the Fisheries Monitoring Center of the COA’s Fisheries Agency.



The COA’s Fisheries Agency conducted inspections of crabs at various fishing ports and street vendors’ stalls.

On July 6, 2022 the COA announced amendments to the “Regulations for the Management of Coastal and Offshore Fishing Vessels Catching Crabs” to adjust the minimum shell width for which catching of the crabs *Charybdis feriatus*, *Portunus sanguinolentus*, and *Portunus pelagicus* is permitted to nine centimeters and the minimum shell width for the crab *Charybdis natator* to seven centimeters, and to extend the period for which catching of egg-carrying females is prohibited by two months (to August through December). We also added a prohibition on selling such crabs, as well as provisions for the dispatch of observers and establishment of a crab fisheries resource management consultation team.

(2) Promotion of eco-friendly fishing methods

The COA continued to promote “measures for demarcating areas where gillnet fishing is banned and for guiding transformation of the gillnet fishing industry.” So far we have guided 16 local governments (municipalities, cities, and counties) in demarcating areas (time periods) where/when gillnet fishing is banned. In addition, in 2022 we guided 493 fishing vessels (rafts) that had been engaged in gillnet fishing to switch over to line fishing or trolling; thus far 3,235 gillnet fishing vessels (rafts) have been guided to switch over to other methods.

To solve the problem of abandoned, lost, or otherwise discarded fishing gear, the COA continued to promote the ID-based gillnet marking policy which gives users responsibility for managing their gillnets. In 2022 local governments carried out inspections of gillnet fishing vessels entering, leaving, or docked at ports on 2,568 occasions. Currently all gillnet fishing vessels that actually leave port for fishing operations have complied with the gillnet marking policy.

The COA also continued to clear away abandoned fishing nets in artificial reef areas, doing strengthened clearing in “hot spots” chosen based on scientific research. In 2022 the COA subsidized two local governments and three district fishermen’s associations to clean up four artificial reef areas, in order to maintain the ecology on artificial reefs and the effectiveness of their fish aggregation functions.



Clearance of abandoned fishing nets from an artificial reef.



Removal of gillnet fishing gear and machinery to switch over to line fishing methods.



Since July 1, 2021 all fishing vessels leaving port with gillnet fishing gear must have the vessel's ID number marked on the fishing gear.



Inspection of a gillnet fishing vessel to ensure compliance with the gillnet ID-based marking policy.

(3) Upgrading of fisheries industries

To expand offshore net cage aquaculture, in 2018 the COA set up a disaster-resistant smart net cage aquaculture demonstration site in the seas off of Pingtung County. We invested in scientific R&D (introducing automated and intelligent systems), and built a positive management system (germplasm management, disease prevention, use of probiotics), and combined these with disaster-resistant submersible assemblies to effectively reduce

risk and enhance operational effectiveness. As of the end of 2022 the COA had successfully driven investment in 21 net cage sites in those seas, which are estimated to increase the production value in local fishing communities and the aquaculture industrial chain by NT\$445 million.

In order to encourage the transformation of the traditional aquaculture model, the COA has been guiding aquaculture operators to adopt a scientific aquaculture management model. In 2022 we worked through aquaculture organizations to subsidize 459 sets of demonstration smart equipment. Through real-time information in the cloud, operators can get up-to-the-minute information about their fish ponds, and through a mobile phone App can freely adjust equipment operations. This helps aquaculture operators optimize their production management processes and upgrades the efficiency of their operations.



This smart precision feeding system offers analysis of the strength of food intake by fish.



A cloud platform monitoring and control system (mobile phone version).



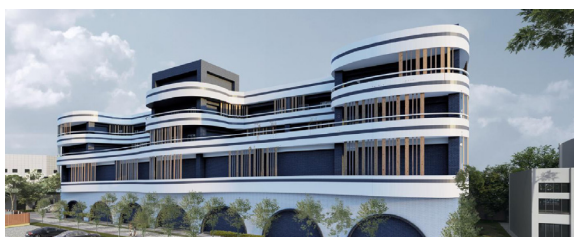
(4) Improvement of infrastructure at fishing ports

The Qian-Zhen Fishing Port in Kaohsiung, an important base for the distant-water fisheries industry, was built more than 50 years ago. In order to strengthen its wharf operations capacity, optimize space for offloading of fish, improve the operations venue for independent retailers and wholesalers, introduce hygiene and safety rules, and build a comprehensive wastewater treatment system, on December 11, 2020 the Executive Yuan approved the “medium and long-term special infrastructure program at Qian-Zhen Fishing Port” (2021-2024). The project was amended on October 4, 2021 and November 18, 2022. With funding of NT\$8.137 billion, the program is being promoted in cooperation with the Kaohsiung City Government. In 2022 various projects entered the actual construction stage, and the entire program is expected to be completed in 2023.

The Woo-Chi Fishing Port in Taichung is the most important coastal fishing base in central Taiwan, and NT\$1 billion was set aside for its improvement and beautification as well as the installation of cold-chain, processing, and other equipment. The improvement project for the seaside arts plaza within Woo-Chi Fishing Port was completed on December 10, 2020. In addition, detailed planning has been completed for a newly added auction area as well as freezer and ice-making facilities. It is expected that when work is complete the whole project will drive growth in the local economy and upgrade the value and competitiveness of seafood products.



A general view of the future Qian-Zhen Fishing Port multi-functional seafood transport and marketing center.



A general view of the multi-functional crew member center at Qian-Zhen Fishing Port

(5) Protection of fishermen’s human rights

To improve the management of fishing workers’ human rights in Taiwan, a cross-ministerial meeting drafted the “Action Plan for Fisheries and Human Rights” (2022-2025), which was approved by the Executive Yuan on May 20, 2022. Subsequently, the COA amended the “Regulations on the Authorization and Management of Overseas Employment of Foreign Crew Members” in 2022. This raised the minimum pay of crew hired overseas to US\$550; clearly stipulated the method of payment of remuneration, rest and relaxation time at work, and use of attendance records; increased the amount of insurance coverage; added qualifications and duties for recruitment agents; and mandated inflatable life jackets for deck crew on distant-water fishing vessels (with subsidies in 3,122 cases). The Fisheries Agency also (i) subsidized 25 vessels to install CCTV and incentivized 27 vessels to provide Wi-Fi access for crew members; (ii) added 10 new on-shore living facilities; (iii) limited the continuous sea time to ten months for distant-water fishing vessels; (iv) recruited 52 new labor inspectors and inspected 350 distant-water fishing vessels, 33 operators’ locations, and 41 agent locations; (v) established expedient



The Fisheries Agency invited industry stakeholders and NGOs to convene discussions on the subject of policies and regulations concerning human rights within the realm of fisheries.



The COA subsidized NGOs to organize law seminars relevant to foreign crew members and to arrange social gatherings.

working conditions for flag-of-convenience ships and a joint inspection mechanism; and (vi) held six activities to show concern for crew members, four conferences with non-governmental organizations on human rights, 68 awareness-raising sessions on the International Labour Organization's "Work in Fishing Convention," and seven activities on human rights education or corporate social responsibility.

3. Upgrading of Animal Husbandry

(1) Upgrading of the quality and safety of domestic fresh pork

- Separate track management and signage for domestic vs. imported pork

In order to safeguard the rights and interests of consumers, the COA continued to strengthen use of traceability codes on domestic pigs to indicate the source farm in order to differentiate domestic pork from imported frozen meat. In addition, in 2021 we incorporated pigs sold directly to slaughterhouses (without passing through meat wholesale markets) into traceability information. As of the end of 2022 over 91% of domestic fresh pork was traceable.

- Modernization of the transport and distribution of meat products

Japan stipulated that as of June 1, 2021 the slaughterhouses, cutting plants, and processing plants in the production process for all meat products exported to Japan must implement the "Hazard Analysis and Critical Control Point" (HACCP) food safety system. In response, the COA issued the "Operation Directions for the Implementation and Measurement of the Certification for the HACCP for Slaughterhouses" and the "Guidelines for Implementation of HACCP in Slaughterhouses" in 2020, and proactively guided slaughterhouses to acquire HACCP certification. On May 26, 2021, the Ministry of Health, Labour, and Welfare of Japan recognized Taiwan as a country implementing HACCP food safety management.

In 2022, the COA continued to guide seven meat markets in updating or installation of cold-chain facilities (equipment), four traditional markets in upgrading of electrical capacity, and 87 temperature-controlled transport vehicles as well as 261 temperature-controlled meat stalls in traditional markets in making improvements. As of the end of 2022, 16 livestock and poultry slaughterhouses had received HACCP certification. The COA will continue to assist the meat slaughtering, transport, and marketing system to improve cold-chain equipment, upgrade the quality and safety of fresh pork, ensure the competitiveness of the domestic livestock industry, and provide consumers with safe and sanitary meat products.



A veterinary meat inspector conducts a meat inspection in a slaughterhouse.



An on-site inspection of the HACCP system for a slaughterhouse.



(2) Stabilization of the supply and marketing of pigs

● Raising the survival rate of pigs

In order to encourage pig farmers to use new management models of production systems, the COA commissioned the Agricultural Technology Research Institute to produce a relevant handbook. As of the end of 2022 guidance had been provided to pig farms 1,068 times to promote batch production and target management and ensure accurate production records. Pig farmers were also guided to introduce appropriate new facilities (equipment) to effectively upgrade production efficiency. There was an increase of 4% in the number of "Marketed-pigs per Sow per Year" (MSY).

The COA's Livestock Research Institute continued to guide pig farms to raise their survival rate. In 2022 we guided 96 pig farms, with the average pig survival rate reaching 87.56%. The MSY at guided farms increased by 1.13 over 2021. Each guided pig farm increased its earnings by over NT\$1 million based on an average of 980 sows per farm and NT\$1,200 in income per pig.

● The transformation and upgrading of the pig-raising industry

In 2022 the "program for comprehensive transformation and upgrading of the pig-raising industry" employed methods including source adjustments and total volume management to keep the wholesale price of pigs within a reasonable range. For the year the average wholesale price for pigs was NT\$81.44 per kilogram. On May 1, 2021 the "Regulations Governing Mandatory Insurance and Premium Subsidy of Pig Death Insurance" came into effect, and by the end of 2022 insurance had been taken out for 12.304 million pigs for a 100% insured rate. In addition, the COA continued to develop export markets for Taiwan pork, and in 2022 Taiwan exported 3,658 metric tons of live pigs, pork, and related products with production value of NT\$864 million. We also promoted modernization of slaughterhouses, and in 2022 guided the installation of modernized equipment in 744 slaughterhouses at a cost of NT\$770 million, with excellent results.



● New-type facilities (equipment) at a pig farm.

範例：

飼場	每三隻豬場	每百頭豬場	每百頭豬場	每百頭豬場
存欄頭數	5,000	1,500	15	400
自安頭數(%)	5,000	1,650	15	140
存欄頭數(%)	4,800	1,200	15	320
保費總額	179,200	53,600	486	14,256
保費總額	129,600	38,880	486	10,368
政府補助	196,920	37,422	486	14,256
保費總額	77,760	27,216	486	10,368
保費總額	71,280	16,038	0	0
保費總額	51,840	11,664	0	0
保費總額	210,318	63,113	574	16,830
保費總額	153,000	45,900	574	12,240

投保對象：

- 領有畜牧場登記證書之畜牧場
- 領有畜商登記證之飼養場
- 19頭以下飼養戶

投保頭數：

- 畜牧場或飼養場：登記登錄之總頭數加計一成為上限、八成為下限
- 19頭以下飼養戶：飼養頭數在證文件所載頭數

保險期間：6個月為一個保險期，一年有2期

保險金額：1,200元/頭

保險費用：32.4元/頭

保險費補助(含加碼補助)：

飼養頭數	政府補助(元)	加碼補助(元)
500頭以下	32.40元(位)	0元
501-999頭	25.92元(位)	6.48元
1,000-2999頭	22.68元(位)	9.72元
3,000-4,999頭	19.44元(位)	12.96元
7000以上	16.20元(位)	16.20元

理賠金額(含加額理賠)：

- 第一級(50公斤以上死亡豬隻)：1,800元/頭，可理賠頭數為投保頭數之千分之十五
- 第二級(40-50公斤死亡豬隻)：750元/頭，可理賠頭數為投保頭數之千分之十五

應附文件：

- 身分證正反面影本
- 畜牧場登記證書或飼養場登記證影本或飼養頭數在證文件

跟誰投保：

- 要保人為農會會員：向所屬農會投保
- 要保人非農會會員：畜牧場或飼養場(戶)所在地之農會

投保的優點：

- 理賠金額可當事業再生資金
- 保障經營風險
- 保費可申請貸款2年免息

不投保的缺點：

- 無天然災害救助辦法之現金救助、補助及低利貸款
- 不享核貸政策性農業專案貸款
- 不給予主管機關相關計畫之設備(設施)補助

● An information card about compulsory pig death insurance.

(3) Measures for the reclamation of livestock and poultry excreta

The COA has worked with other government agencies including the Environmental Protection Administration and the Industrial Development Bureau (of the Ministry of Economic Affairs) to collectively promote a policy of converting waste into resources. We have adopted measures that include guiding businesses to reduce the number of washes of livestock barns, promoting the installation of water-saving and wastewater circular reuse equipment at livestock farms, and encouraging circular reuse and conversion of excreta water into resources. As of the end of 2022, there were a total of 3,045 projects nationwide to promote the use of excreta water in irrigation, with irrigation volume using such water surpassing 10.39 million metric tons for the year and the area of irrigated land reaching 3,912 hectares. In addition, we expanded promotion of the use of seed sludge from livestock farms in wastewater treatment systems for the petrochemical, optoelectronic, and dyeing and finishing industries; by the end of 2022, a total of 47,111 metric tons of seed sludge had been reused, creating a win-win situation for livestock farms and industry.

Moreover, the biogas produced during the anaerobic fermentation stage of the livestock excreta wastewater treatment process is also a resource with considerable potential. Since 2017 the COA has been promoting the reuse of livestock farm biogas for power generation. As of the end of 2022 a total of 2,749,986 pigs were involved in this program, which reduced greenhouse gas emissions by 74,000 metric tons, equivalent to the annual carbon emissions of 260,000 motorcycles or the carbon sequestration capacity of 193 Da'an Forest Parks.

The COA's Livestock Research Institute provided on-site assistance to local governments through eight livestock pollution prevention teams working across the country to oversee the program for using biogas slurry and biogas residue as fertilizer nutrient sources. We also guided local livestock farms in renovation of livestock barns, rearing management, feed nutrition, and pollution prevention, providing guidance 439 times in 2022. The COA also coordinated with local governments or industry groups to hold related explanatory meetings, lectures, and on-site hands-

on demonstrations a total of 22 times. In addition, in September of 2022 we held the two-day "2022 learning session for guidance teams for water saving, waste reduction, and waste reclamation and reuse at livestock farms" to refine the expert knowledge and skills of guidance team members.

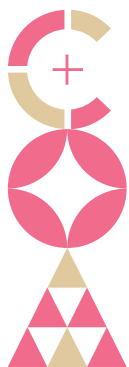


| A standardized modular closed pig building.

Moreover, the Livestock Research Institute built a standardized modular closed pig barn with a capacity of 500 pigs and held an on-site hands-on demonstration on March 16, 2022. This standardized building conforms to criteria for being modularized, intelligent, labor-saving, biosecure, water-saving, waste-reducing, and highly efficient for rearing, as well as offering circular reuse of resources. The building has six major advanced systems, including elevated floors with a negative pressure water curtain system, a feces and urine separation system with manure scraping, an automated feeding system, a microclimate adjustment system, an automated mist spray disinfection system, and an emergency ventilation system. It can effectively reduce water usage, environmental temperature, and the risk of contamination by invasive diseases and facilitate collection and treatment of air pollutants. If there is an emergency event, the operators will immediately receive an alert notification from the automated and intelligent remote monitoring system and take necessary measures. The construction of this standardized modular closed pig building will assist the industry to upgrade the rearing environment for domestic pigs.



| A hands-on demonstration of the standardized pig building.

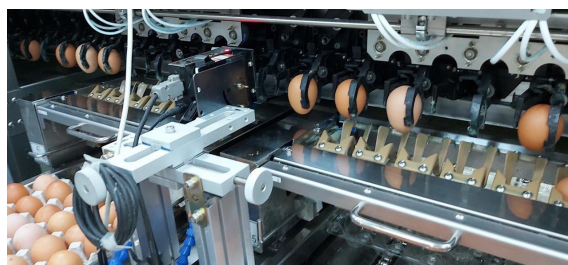


(4) A vertically integrated operating model for production and marketing in the poultry industry

Following the introduction of fast food into Taiwan, demand arose for standardization and a high level of sanitation for upstream raw materials, causing the broiler chicken industrial chain to move in the direction of vertical integration combining upstream and downstream links, with contracts used to require poultry farm operators to produce chickens that meet the specifications of slaughterhouses. These contracts can be divided into three types: outsourced rearing, guaranteed price, and market price. Outsourced rearing means that the contracted poultry farm provides materials needed in the rearing process and receives a fixed remuneration at the pre-arranged time for turning over the chickens. Guaranteed price contracts mean that the parties agree to the purchase of the chickens at a fixed price (with rearing materials provided by the poultry farm operator). Market price contracts mean that the purchase of the chickens is made at the market price at the pre-arranged transaction time. Poultry farm operators switch among different contract types depending upon factors like the trading situation or costs of production. According to industry group statistics, in 2022 over 95% of broiler farm operators and contract rearing operators signed contracts.

(5) Promotion of traceability information printed on individual eggs and the chicken egg production and marketing platform

The COA in 2022 continued to promote the policy of washing and grading chicken eggs, guiding production-and-marketing groups, cooperatives, farmers' associations, and production-and-marketing operators to continue to establish egg washing and grading venues. We also promoted the "all in/all out" rotating rest system at chicken farms,



Printing of traceability information at an egg washing and grading facility.

in order to upgrade egg production efficiency and egg quality. In addition, the COA assisted egg washing and grading businesses to improve their egg washing and grading procedures and management. We furthermore announced that washed and graded eggs are an agricultural product for which there must be registered traceability data and well as the information to be registered and labeling methods. Required information including basic information about the washing and grading operator as well as the farm of origin must be printed on individual egg shells. The goal is to increase the market share for washed and graded chicken eggs.

(6) Automation of the dairy industry

In order to increase operating efficiency in the dairy industry, the COA has proactively assisted dairy farmers to introduce automated and intelligent labor-saving equipment. In 2022 we provided subsidies to farms 117 times for equipment including colostrum pasteurizers, total mixed ration equipment, teat scrubbers, and automated loaders. In addition, the COA has been promoting the integration of separate herd rearing, diet control during the transition period, and remote monitoring and management technology, in order to effectively strengthen lactation production capacity, improve the quality of raw milk, and ensure sustainable development. In 2022 the production of raw milk increased by 3.1% over 2021 to reach 463,000 metric tons, and the aforementioned automated equipment saved 42,705 man-days of labor.



4. Sustainable Forestry Development

(1) Plantation and afforestation

In order to promote sustainable forestry operations, the COA's Forestry Bureau continued to stay up-to-date on changes in forest resources, promoted an increase in the land area covered by forest, strengthened operational management of forests as carbon sinks, and increased the use of domestic timber. It has established separate track management goals for economic forest and conservation forest, to ensure the safety of important ecological systems and their service value. In 2022 we completed afforestation on 1,083.81 hectares (ha), thinned 325.76 ha, and produced 53,800 cubic meters of timber.

The “Forestry Sustainable Multi-Guidance Incentive Program” was launched in 2019, and under it the COA has upgraded the production of timber by private forest owners and improved the effectiveness of diverse operations. We have guided 26 forestry production cooperatives or agribusinesses covering an area of 1,519 hectares.

In order to stimulate the development of the domestic bamboo materials industry, on December 8, 2022 the Executive Yuan approved the “Program for Development of the Emerging Bamboo Industry” (2022-2025), which was drafted by the COA. The program involves inter-agency simultaneous work in five major areas: production, processing, markets, technical education, and laws and regulations. The goal is to reconnect the overall bamboo industrial chain.

To enhance identification of legal domestic timber businesses, the COA set up the “Taiwan Forest Products Production Traceability System,” which has thus far certified 140 businesses, 2,121 products, and about 40,000 cubic meters of domestic timber.

(2) Protection of forest

The work of protecting forest includes three main tasks: preventing illegal logging; investigating and interdicting illegal cultivation (occupation) of land; and preparation for, prevention and mitigation of, and responses

to, forest fires. There are 1,052 forest rangers who conduct forest patrols and protection. Moreover, using modern technology, stronger inter-agency cooperation, and reassessment and amendment of the “Forestry Act,” the COA has promoted systems for production-and-marketing traceability certifications and QR Code production traceability to prevent illegal logging, with the rate of people being caught with illegal goods being 51.61%. In addition, the COA has strengthened preparations for, prevention of, and responses to, forest fires; conducted periodic exercises; introduced new science and technology; and optimized the rescue and response system, with the goal of minimizing losses of forest resources. Moreover, we have combined social resources including 93 communities located near national forest, five college and university hiking clubs, and 249 volunteer forest rangers to collectively participate in patrols of mountain forests; in 2022 there were 17,659 patrols and reports were filed on 314 cases of illegal activities.

To avoid the export of illegally harvested precious timber and related products, on November 22, 2022 the COA announced amendments to the “Directions for Issuing Approval for the Export of Specific Species of Timber and Related Products,” which went into effect on December 1. Under these Directions, the export of lumber, carved figures, or artworks above five kilograms made from *Chamaecyparis formosensis*, *Chamaecyparis obtusa* var. *formosana*, *Calocedrus macrolepis* var. *formosana*, or *Cinnamomum kanehirae* requires the approval of the COA.



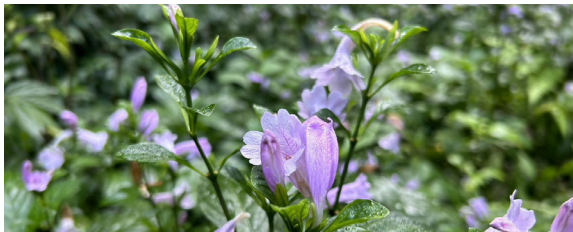
The forest fire command and response system of the COA's Forestry Bureau.



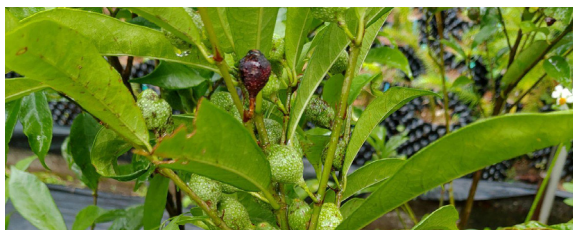
(3) Development of the under-forest economy

While taking into account forest conservation, since 2019 the COA has promoted operations of the under-forest economy on forestry land and national protected land (the area of protection forest). Permitted items include “shiitake mushrooms and wood ear fungus grown on wood logs,” “Taiwan jewel orchid,” “forest beekeeping,” and “Taiwanese indigenous tea.” Thus far these industries have created NT\$31 million in profits for mountain and indigenous communities. In January of 2023 “common conehead” and “Taiwan fig tree” were added to the list of permitted items. The goal is to share the benefits of the diverse service values of forest ecosystems and promote sustainable economic development.

In 2022 the COA’s Taiwan Forestry Research Institute completed operational directions for sustainable management of cultivation of indigenous cinnamon trees and Taiwan fig trees under forest canopy. We also developed molecular identification technology to identify indigenous wild tea and hybrids and promoted cultivation of pure-bred Taiwanese indigenous tea seedlings.



“Common conehead” is an important raw material for making of natural blue dye, and it was also one of the earliest economic crops to be exported from Taiwan.



Taiwan fig trees grow best at middle to low altitudes (below 800 meters) in dark and wet locations under broadleaf woodland or bushes. Their fruit can be harvested two years after being planted.

(4) Promotion of conformance of productive forest management with the norms of the Forest Stewardship Council (FSC)

To promote sustainable forest management that is eco-friendly, beneficial for society, and financially viable, the COA has proactively introduced the certification standards of the FSC into national forests. Thus far 270,000 hectares of forest under the administration of the Dongshih, Chiayi, and Pingtung Forest District Offices of the COA’s Forestry Bureau have been certified by the FSC. We will continue encouraging forest managers to apply for FSC certification and provide financial supplements of two-thirds of the total certification fees. In 2022 the COA provided NT\$418,424 to two businesses as a financial supplement for FSC annual evaluation fees.

(5) Promotion of environmental education

The COA’s Forestry Bureau has continued to operate Nature Centers and Ecological Education Centers as platforms for promoting the exploration of forest environmental education by the general public and cultivating pro-conservation attitudes. We also offered eco-sustainable forest wisdom courses that combined indigenous tribal culture and development. In 2022 learning opportunities were provided a total of 156,050 man-times through 530 courses and guided tours of relevant centers.

(6) Promotion of nature conservation

● The “Taiwan Ecological Network” program

The COA’s Forestry Bureau has identified key conservation areas, including terrestrial Priority Biodiversity Areas and large-scale conservation corridors. These included spatial plans for important ecosystems including shallow mountains, rivers, plains, coastline areas, and offshore islands. We also assisted other government agencies to focus on landscape spatial issues and constructed habitat networks from the forests to the coastal areas. In 2022 the COA completed 39.31 hectares of restoration of natural vegetation, established environmentally-friendly sites in 29 locations based on the spirit of the Satoyama Initiative, and created 742 hectares of wildlife-friendly farmland. We not only reconnected fragmented habitats but also achieved the goal of sustainable management which combines production, life, and ecology, while also protecting 42 protected, rare, or indicator species.

● The “Payments for Ecosystem Services for Endangered Species and Critical Habitat Promotion Program”

In order to encourage the public to take conservation into account when making their decisions on daily life and making a living, since 2021 the COA has promoted the “Payments for Ecosystem Services for Endangered Species and Critical Habitat Promotion Program” for important habitats in wet paddy fields, terraced rice fields, fish ponds, and privately owned protection forest for the leopard cat, the eastern grass owl, the otter, and the pheasant-tailed jacana. In 2022 a total of ten cities and counties participated, encouraging eco-friendly management of farmland and habitat conservation on 700 hectares, successfully building 412 habitat sites, and organizing community teams to patrol lowlands environments. In September, the Formosan black bear was added to the list of animals covered by the program and people were taught bear-friendly conservation ideas.

● Conservation action plans for endangered species

The COA conducted ecological studies and habitat restoration for 22 endangered species, as well as integrated public and private sector resources to formulate conservation action plans and population surveys for 2022. Results indicated that there was an increase in locations of distribution for the otter and the eastern grass owl. We also implemented in-the-wild population rebuilding projects for the yellow-margined box turtle and the yellow pond turtle, releasing 1,194 endangered turtles into the wild. Moreover, the COA cooperated with the Central Region Water Resources Office and the 3rd River Management Office of the Water Resources Agency of the Ministry of Economic Affairs to restore braided rivers on the south and north banks of the Dadu River to restore the habitat of the fish *Squalidus banarescui*. In addition, we produced the documentary film *The Death of a Formosan Black Bear: Life Records of 711/568* which told the story of the treatment of an injured black bear and its release in the wild on two occasions, providing food



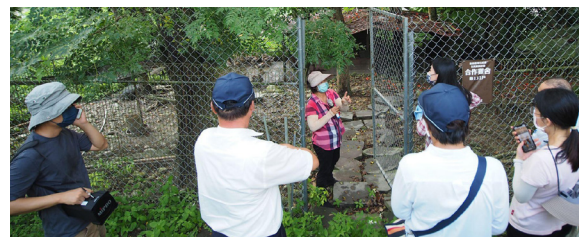
A poster for the documentary film *The Death of a Formosan Black Bear: Life Records of 711/568*.



The preservation of the Satoyama environment in the terraced rice fields of Gongliao creates space for the survival of wildlife.



Various government agencies met at the “Taiwan Ecological Network Conference” to collectively pledge to engage in cross-agency cooperation on behalf of the network.



On-site inspection of leopard cat-friendly farmland and chicken house autonomous reporting in Zhuolan Township, Miaoli County.



In September of 2022 the COA held an event to demonstrate the achievements of the “Payments for Ecosystem Services for Endangered Species and Critical Habitat Promotion Program,” and announced that the Formosan black bear would be added to the list of animals in the program.



The Taichung Wildlife Conservation Group worked with the Central Region Water Resources Office and the 3rd River Management Office of the Water Resources Agency of the Ministry of Economic Affairs to restore the braided river ecology of the Dadu River, thereby restoring the habitat of the fish *Squalidus banarescui*.



for thought on how to rationally co-exist with wild animals. Our goal is to restore populations of endangered species.

(7) Promotion of the Satoyama Initiative

By working through the Rural Regeneration program's overall community construction and industrial guidance resources, the COA has constructed an organic cultivation environment, and by combining natural resources and the human cultural environment, has put into practice the concept of combining production, living, and ecosystems. Accomplishments in 2022 included the following:

- The COA held four regional workshops for the "Taiwan Partnership for the Satoyama Initiative" (TPSI) in northern, central, southern, and eastern Taiwan. A total of 109 public and private sector actors, academic institutions, and non-governmental organizations participated. We also held 18 contact meetings for members of the "International Partnership for the Satoyama Initiative" to share information and reports on their progress.
- In December of 2022 the COA attended the "Fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity" held in Montreal, Canada. We shared our TPSI strategy and framework at peripheral meetings, and discussed our promotion of the Satoyama Initiative through a national scale program (which is rare anywhere in the world).
- The COA's Soil and Water Conservation Bureau published an illustrated book series entitled *Satoyama Initiative: Taiwanese Cases of Knowledge-Based Action* to introduce cases of Taiwan's use of the spirit of the Satoyama Initiative to promote rural community revitalization. The series won a 2022 "iF Design Award" from Germany and enabled readers home and abroad to see the vitality of Taiwan's rural communities.

(8) Prevention of foreign invasive species

With respect to invasive species, the COA integrates the expertise of various agencies, adheres to the principle of "discovery at the earliest possible moment, response at the earliest possible moment," and uses eco-friendly

methods to eradicate invasive species and rigorous monitoring to minimize damage. In 2022 we (i) eradicated 422 African sacred ibises and 39,598 green iguanas; (ii) cleared 123.4 hectares of land of the river tamarind, 1,041.5 hectares of mile-a-minute weeds, 396 hectares of the Santa Maria feverfew, and 10.7 hectares of giant sensitive trees; and (iii) eradicated a total of 57,351 invasive aquatic organisms including the Amazon sailfin catfish, American crawfish, redclaw crayfish, marbled crayfish, striped snakehead, and giant snakehead.

In terms of eradication of the river tamarind in the Hengchun Peninsula, besides eradicating this species over 112.73 hectares, the COA also did reforestation on 56.95 hectares to restore ecosystems. We cultivated multi-layered forest using a mixture of diverse local native species to restore tropical monsoon forest and create habitats suitable for wild animals, thereby enhancing biodiversity.



This is an information sheet on eradicating the invasive species the cane toad, which was provided to the public to inform them of the reporting mechanism.

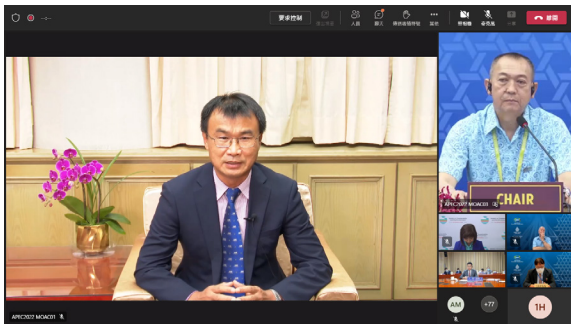


Creating suitable habitats can enhance biodiversity. The photo shows forest restoration done in the Hengchun Peninsula in the wake of eradication of the river tamarind.

5. Enhancing Food Security

(1) Promotion of APEC initiatives related to food security

The 26th annual meeting of the “Agricultural Technical Cooperation Working Group” of the Asia-Pacific Economic Cooperation (APEC) forum was held on August 19, 2022. This event and related activities were held virtually because of the COVID-19 pandemic. A total of 17 economies sent representatives to participate, and they shared ideas on strategies for sustainable agriculture under climate change and policies related to development of innovative agricultural technology, trade, and food security. On August 26 COA Minister Chi-chung Chen led a delegation to virtually attend the APEC Food Security Ministerial Meeting, and they shared Taiwan’s policies and measures to ensure food security as well as the accomplishments and future outlook in Taiwan’s role as a lead economy on the topic of reducing food losses and waste. Ministers of member economies endorsed action plans emphasizing collective work in areas including promotion of digitalization and innovation, productivity, inclusiveness, sustainability, and public-private partnerships. The goal of these efforts is to ensure food security in the Asia-Pacific region.



COA Minister Chi-chung Chen attended the APEC Food Security Ministerial Meeting to discuss how to ensure regional food security with ministers of agriculture from other member economies.

(2) Promotion of intelligent facilities agriculture

In order to (i) reduce the impact of climate change; (ii) upgrade agriproduct disaster prevention and production efficiency; (iii) produce high-quality fruits, vegetables, flowers, special crops, and seedlings; (iv) guide the upgrading of operational efficiency; and (v) stabilize market supply and demand, the COA has promoted a facilities agriculture program. We have guided

farmers to construct structurally reinforced net greenhouses, and made subsidies available for up to 50% of costs in western Taiwan and up to 60% in eastern Taiwan, offshore islands, and indigenous areas, with maximum subsidies ranging from NT\$1.2 million to NT\$9 million per hectare. The COA also has introduced smart environmental control equipment and guided farmers to undertake automated labor-saving cultivation in these facilities. We also have assisted farmers in applying for policy-oriented special agricultural loans to deal with the problem of finding investment capital for facilities.

In 2022 the COA guided the construction of reinforced net greenhouse facilities on 125 hectares of land; introduced smart environmental control and automated equipment (facilities) to optimize the net greenhouse production environment; and guided the cultivation of vegetables, fruit trees, and flowers in net greenhouses. We combined these measures with certifications of food grown in these facilities as “Taiwan Organic” or as “Traceable Agricultural Products,” in order to promote eco-friendly cultivation, reduce the use of pesticides, improve the quality of agriproducts, and stabilize their supply. The COA guided clustering and economies of scale in the facilities industry and promoted smart, labor-saving cultivation to attract young people to come back to, or remain in, their rural communities to take up farming as a profession and advance the development of rural communities.



The construction of net greenhouse facilities for fruits and vegetables can raise the quality of agriproducts.



The COA guides the introduction of smart environmental control equipment into fruit and vegetable net greenhouses in order to optimize the production environment.



(3) Promotion of the “select three crop seasons out of four for growing paddy rice” policy

To build a rational system of alternating wet and dry crop rotation and accelerate adjustment of the paddy rice industrial structure, in 2021 the COA began to promote the “select three crop seasons out of four for growing paddy rice” policy. On farmland meeting the criteria for two growing seasons in the base year, we guided farmers starting in the second crop season of 2022 to ensure that the cultivation of their land in the previous three crop seasons included at least one season of cultivating crops other than paddy rice or adopting environmental maintenance measures. Only then were they allowed to sell the rice grown in the current growing season for public rice stocks or collect the rice subsidy for big professional farmers. Considering that farmland used for eco-friendly or organic cultivation of paddy rice or that is certified as producing Traceable Agriculture Product rice is being used for environmentally friendly cultivation models, farmland that is certified as growing crops in these ways is not subject to the limitation of the new measure. We combined this measure with provision of subsidies and incentives for alternate (contract) crops or environmental maintenance under the Green Environmental Payment Program, and coordinated these with the implementation of regional rotational use of water resources in 2022 with the aims of building a rational system of wet and dry crop rotation, raising soil fertility, reducing the use of pesticides, and reducing the area of land planted with paddy rice in order to stabilize supply and demand in the market while also taking into account domestic food security.



On June 8, 2022 the COA held a seminar on paddy rice income insurance and switching over to flint corn production under the “select three crop seasons out of four for growing paddy rice” policy.

(4) Promotion of the Big Granary Project

The main mixed staple crops (MSCs) in Taiwan include soybeans, peanuts, sweet potatoes, corn, Chinese pearl barley, etc. In 2022, 80,523 hectares of land were planted with

MSCs, with production value of about NT\$12.6 billion and production volume of 529,203 metric tons. Production areas were concentrated in Changhua, Yunlin, Chiayi, Tainan, Kaohsiung, and Pingtung.

The COA has been promoting the “Big Granary Project” to reduce the area of land cultivated with wet paddy rice and to revitalize fallow land. Under this Project we have undertaken guidance in numerous areas including production, product handling and concentration/distribution, processing, marketing, and food and agricultural education. Results of its implementation in 2022 included the following:

- The COA formed an MSCs technical services team, which held lectures and hands-on demonstrations for field cultivation management, safe use of pesticides, and operation of agricultural machinery on 70 occasions. We so far have (i) guided the creation of 84 collective production zones for domestically produced MSCs, covering 8,972 hectares (ha) of land; (ii) established 17 post-harvest handling and product concentration/distribution centers; (iii) subsidized the purchase of 205 pieces of production-and-marketing equipment and built an MSCs outsourced cultivation system; (iv) guided 14,798 ha of MSCs to get Traceable Agriculture Product certification and of 10 locations to get geographical indication labels for their MSCs, to strengthen differentiation between domestic and imported products in the market; and (v) developed 94 new products made by processing domestically produced MSCs (sometimes in cooperation with well-known brands).
- The COA held competitions to name the top ten “Good” grain products (while also presenting five grain products with “honorable mention” awards) and for creative cooking using domestically produced MSCs in order to encourage R&D into innovative products. We also promoted the consumption of more than five million servings of domestic soy milk in schools. In addition, the COA guided cooperation between the MSC “national team” and sales channels, and held marketing activities including exhibition and sales events and business matchmaking meetings on 207 occasions, creating earnings of over NT\$170 million, thereby opening up market sales channels and building

a brand image of quality and safety for domestic MSCs.

- The COA guided farmers' organizations to hold 32 food and agricultural education experiential events, and held a competition to select classic experiential tourism itineraries featuring domestic MSCs that attracted over 5,000 travelers into production areas. The COA moreover set up a website for MSC food and agricultural education and published an illustrated children's book on peanuts. These measures all aimed to encourage the development of the domestic MSC industry.



The COA has subsidized the purchase of production machinery for mixed staple crops (MSCs) and has built an outsourced cultivation system.



The 8th competition to select the top ten "Good" grain products (with five products being presented with "honorable mention" awards) was held in 2022.



The 2022 awards presentation ceremony and exhibition of achievements for the top ten experiential travel itineraries featuring domestically produced MSCs.



The 2022 top ten experiential travel itineraries featuring domestic MSCs.



The COA organized MSC food and agricultural education camps for primary school students to concretely put into practice the idea of "rural communities as classrooms."



A business matchmaking meeting for purchases of traceable soy milk made using domestically produced soybeans.



An event held in January of 2022 to mark the founding of the "Taiwan Soybean Industry Alliance."



(5) Expansion of domestically produced feed corn and fodder

In response to the impact on global supply chains of extreme weather, the COVID-19 pandemic, and the Russia-Ukraine war, in 2022 the COA began to promote expansion of the cultivated area and production volume of flint (including silage) corn to raise the self-sufficiency rate for animal fodder in Taiwan. Measures include incentivizing farmers to expand contract cultivation of pasture, encouraging diversification of agricultural by-products and technology to process them, increasing the storage of fodder, and promoting regional forage/fodder demonstration farms. We also continued guidance and subsidy measures to promote automation of forage/fodder production equipment to stabilize the supply of domestic forage/fodder to replace imported fodder. In 2022, 28,997 hectares of land were cultivated with corn (including silage) and there were 6,381 hectares of pasture.



On December 16, 2022 the COA held an event to exhibit achievements for the year in the policy of using domestically produced traceable ingredients for student lunches in remote schools.

(6) Using traceable domestically produced ingredients in school lunches and non-staple foods for the military

The nutritional value of school lunches affects the health of schoolchildren. In order to achieve the goal of traceability of school food ingredients, in 2016 the COA began promoting the use of fresh traceable domestically produced food ingredients in school lunches and provided a subsidy of NT\$3.5 per person per meal in order to help schools cope with the increased cost of using such ingredients. On January 1, 2021 we launched the comprehensive use of such ingredients in school lunches to ensure that children would be fed with clearly sourced, high-quality, and safe domestic agriproducts. In 2022, in coordination with the expanded promotion of food and agricultural education under the new "Food and Agricultural Education Act," on May 1, 2022 the COA adjusted the subsidy to NT\$10 per person per meal and NT\$14 at schools in

remote areas. The goals of these measures have been to provide schoolchildren with high-quality protein and safe domestic ingredients, deepen the links between school diets and agriculture, and encourage support for local agriculture.

In 2022, 96.17% of registered lunch ingredients used in 22 cities and counties across Taiwan had "Three Labels and One QR Code" certification marks. In addition, there were 3,872 sample tests for pesticide residue in fresh fruit and vegetables used in school lunches, with 97.1% of samples being up to standards, as well as 807 sample tests for residues of veterinary pharmaceuticals in livestock and poultry products, with 99.5% being up to standards. Eggs provided to the military as non-staple foods included CAS-certified fresh eggs, Traceable Agricultural Products-certified eggs, and washed and graded fresh eggs, with labels on the packaging making it possible to trace these eggs back to the farm of origin.

To ensure the safety of food served in the military, in September of 2017 the COA began promoting the use by the military of traceable vegetables (including ones with Traceable Agricultural Product and Taiwan Organic certifications) provided by farmers' groups as non-staple foods. During the early trial period 16.08% of purchased ingredients met this criterion and this number reached 48.20% in 2022, showing concrete progress. In terms of seafood, based on the "Directions of Fishermen's Association Applying for the National Troops Fishing Product Supply Business," the COA guided the National Fishermen's Association to organize nine district fishermen's associations (including those in Keelung, Wanli, Tamsui, Chiayi, Ziguan, Linyuan, Donggang, Hualien, and Penghu) to introduce QR Code traceability management for 29 fisheries products (including tilapia, fresh squid, and whiteleg shrimp) sold to the military. In 2022 about 1,100 metric tons of seafood were sold to the military, with sales totaling about NT\$190 million.

(7) Strengthening food and agricultural education

The COA, promoting the idea of "constructing excellent agricultural production and agricultural environments" and in coordination with concepts like healthy dietary lifestyles and dietary culture, has developed systematic "food and agricultural education" (FAE). The "Food and Agricultural Education Act" was promulgated by the President on May 4, 2022, and in 2022 we expanded guidance to 145 units to develop 407 sets

of course materials for farming and fisheries education programs, and held 688 experiential activities with 62,234 participants, encouraging all citizens to make an effort to engage with FAE. In addition, in November of 2022 the COA expanded the “food and agricultural education resources platform,” where people can search for FAE-related information. We added a new “map of production areas in Taiwan” to the platform, introducing 105 types of special local agricultural, fisheries, or animal husbandry products (including neritic squid, sweet potatoes, peaches, Oriental Beauty tea, and mesona herb); as of 2022 the webpage received 1,140,194 hits.



The “food and agricultural education resources platform” offers a search function for FAE-related information.



Under the food and agricultural education (FAE) promotion program, primary school children were dressed in waterproof gear and brought to fields to harvest water caltrop. This experiential class included knowledge of culturing and making of water caltrop pork balls.

In terms of staple foods, in 2022 the COA's rice education extension program, with the main theme of “domestic rice,” promoted “rice campuses” at 47 primary schools and held 40 rice education promotional activities for middle school and high school students, with about 10,000 students participating. Also, we held the 2022 “Creative Rice Culinary Competition,” and award-winning products will go on sale in supermarkets in 2023. In addition, the COA organized FAE for mixed staple crops (MSCs), holding a total of four sessions of basic and advanced training for soybean FAE seed instructors; ten hands-on experiential activities at MSC industry venues, with

300 participants; and ten MSC FAE experiential camps with 320 participants. We also promoted organic FAE, holding 190 activities with 40 community groups or enterprises and 25 schools nationwide, with 7,151 participants. We moreover promoted FAE for “Traceable Agricultural Products” (TAP), including producing an illustrated e-book, making an educational video, and recording podcasts about the TAP system.

In terms of fisheries, in 2022 the COA organized 146 marketing activities for seafood and visits to production areas. We also held an educational performance series to promote food and fisheries culture at 30 primary schools around Taiwan, urging the wider use of premium domestic seafood for school lunches and at family dining tables. The COA moreover held two large-scale outdoor family seafood culture activities, to enable families to learn about seafood while having fun. We also held seafood culture learning activities for teachers and nutritionists in northern, central, and southern Taiwan, inviting nutritionists and school cafeteria staff to get to know and learn how to prepare domestic seafood, and introduced methods for front-line food and fisheries education; a total of 433 teachers and nutritionists participated. In addition, we guided 39 district fishermen's associations to arrange for a total of 606 classes and activities related to food and fisheries education, with 9,009 participants.

In terms of animal husbandry, to promote a correct understanding of domestic livestock and poultry products among citizens and build up a high-quality image for domestic livestock and poultry, in 2022 the COA organized 40 activities to promote consumption of “two servings of milk per day” for elementary school children to get in the habit of drinking domestic milk, five promotional and educational activities on domestic poultry products, and 63 promotional activities for “local production, local consumption” of domestic pork.



Under the FAE promotion program, children were brought on a leafy vegetable field trip where they visited leafy vegetable production areas to understand the whole production process for such vegetables from cultivation to harvesting to packaging.



Under the FAE promotion program, there was a family activity to experience propagation and beekeeping in the honeybee industry and learn about honey products.



The “rice campuses” program provides schoolchildren with a correct understanding of the nutritional benefits, food safety, and “local production, local consumption” of rice.



Primary school children were taken on an on-site experiential trip centered on mixed staple crops. The activity included mixed staple crop FAE and hands-on experiential lessons, enabling the students to become aware of the food production process from farm to table.



The Modern Women’s Foundation sponsored an activity (including the use of board games) that taught children about various aspects of the spirit of organic agriculture.



Young people were brought together with agriculture through this on-site experiential activity which took agricultural technical high school students on a visit to a mixed staple crop agribusiness.



The 2022 “Creative Rice Culinary Competition.”

廣告企劃製作

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產銷履歷
從產地到餐桌食農教育

由標準追溯產地來源，開啟消費大眾對農村生活與產地食材記憶

從田野生產歷程到桌上飲食文化，由農村體驗到溯源消費體驗，透過各式與消費者接觸到產地與消費者的關係，一張一張的產地與消費者的關係，一張一張的產地與消費者的關係，一張一張的產地與消費者的關係...

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廣告

FAE focused on the “Traceable Agricultural Products” system from farm to table.



An outdoor family event on food and fisheries culture as part of the 2022 series of activities entitled “A Real Adventure in Search of Tasty Seafood,” this one held in Kaohsiung.



The 2022 campus lecture tour for food and fisheries education.

6. Ensuring the Safety of Agricultural Products

(1) Strengthening of agro-pesticide management

In promoting the policy for reducing chemical agro-pesticide usage by 50% within ten years, the COA has adopted various strategies including strengthening integrated pest management (IPM) and encouraging eco-friendly farming. We have conducted IPM demonstration projects for 13 crops (including kidney beans, scallions, papaya, and passion fruit) and promoted low-risk plant protection products while guiding farmers to use agro-pesticides economically, rationally, and safely. The policy was implemented on about 1,900 hectares of farmland in 2022, with agro-pesticide use reduced by 36% over this area. The COA also accelerated the development of biological plant protection products and arranged subsidies for biopesticides and plant protection

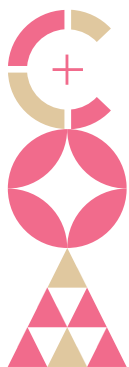
products that are exempted from registration, promoting the use of biopesticides on 7,249 hectares and plant protection products that are exempted from registration on 15,162 hectares. The goal of these measures was to upgrade domestic agricultural production technology and techniques as well as food safety, and move in the direction of sustainable agriculture. In 2022 achievements in agro-pesticide management included the following:

- Strengthening agro-pesticide flow management

In order to promote an ID-based registration system for agro-pesticide purchasing and better manage the flow of agro-pesticides, on July 1, 2021 the COA announced amendments to the “Format, Content, Frequency and Manner of Reports from the Agro-pesticide Manufacturer or Dealer Regulated by Paragraph 2 of Article 35 of Agro-pesticides Management Act” to add a requirement for registration of the ID number or Resident Certificate number for purchasers of agro-pesticides. We continued to promote the use of the point-of-sales (POS) management system for agro-pesticide sales by businesses and the implementation of the ID-based registration policy for purchases of agro-pesticides. Since January of 2022 the rate of ID number registration for purchasers of agro-pesticides has reached 100%, which assists in traceability of agro-pesticide residue in agriproducts and verification of the actual cultivators of the land, thereby facilitating the guidance of farmers in proper use of agro-pesticides.

- Promotion of an agro-pesticide spraying service provider system

Given the demand for agricultural labor and also considering that the routine application of agro-pesticides by agro-pesticide spraying service providers exposes these providers to high exposure risks, the COA has continued to promote a system under which provision of agro-pesticide spraying services is restricted to agro-pesticide application technicians with professional training. In 2022 the COA completed professional training of 2,918 agro-pesticide spraying service providers, and there were 743 registered businesses in this field. The COA held nine courses of



common training, with 902 participants, and 16 courses of professional training, with 567 participants. A total of 524 participants have received licenses to be agro-pesticide spraying service technicians.



The plant doctor trainee stationed at the Pinglin District Farmers' Association directed a tea farmer in monitoring of plant diseases and pests.

● Elimination of high-risk agro-pesticides

With reference to the categorized system of the European Union's Harmonized Risk Indicators (HRI) for agro-pesticides and incorporating Taiwan's own identification criteria for "highly hazardous agro-pesticides" (HHPs), the COA established agro-pesticide risk indicators for Taiwan. In the future, based on risk evaluations (including exposure evaluations and proposed risk reduction measures), and with continued reference to scientific evidence and administrative control measures from overseas, we will continue to reassess Taiwan's agro-pesticide management strategies on a rolling basis. Based on the aforementioned evaluations, the COA announced restrictions on chlorpyrifos, prohibiting the import or manufacture of chlorpyrifos technical concentrate on April 15, 2022 and formulated products' processing or sub-packaging on November 15, 2022. A complete ban on its export, sale, and use will go into effect on April 1, 2024. At the same time, we launched a program to eliminate chlorpyrifos already in circulation, and in 2022 completed repurchasing and safekeeping by the government of 244 metric tons of chlorpyrifos technical concentrate, thereby significantly reducing the amount of chlorpyrifos products sold on the market and reducing the risk of

agro-pesticide use.

● Refinement of the plant doctor system

In order to expand services by plant doctors, the COA has stationed 100 plant doctor trainees at farmers' associations and township (district) town halls to provide professional diagnosis services and assist in promoting integrated pest management (IPM). In 2022 they issued 9,313 customized proposals for prevention of plant disease and pests, and held 248 education and training sessions for farmers, thereby strengthening professional training and policy awareness-raising. In addition, we continued to construct a legal framework, and in April of 2022, the Executive Yuan completed its review of the plant doctor legislation, changing the name to the "Plant Doctor Act." In November of 2022, the 11th meeting of the Economics Committee of the 6th session of the 10th Legislature completed review of the provisions of the draft of the "Plant Doctor Act" and decided to submit it for a second reading in the Legislative Yuan without need for negotiation between the governing and opposition parties. Groups including the Taiwan Medical Association continued to object to the use of the term "plant doctor," and the COA will continue communicating with opposing groups to achieve consensus.

(2) Strengthening the management of veterinary drugs

In 2022, the COA held 3,343 audits of locations where veterinary drugs were manufactured, sold, or used, handing out penalties for legal violations in 76 cases with fines totaling NT\$8.56 million. In addition, we cooperated with judicial agencies in investigating and interdicting illegal veterinary drugs on three occasions and tested suspected counterfeit or banned veterinary drugs 97 times. There were 85 cases of the use of counterfeit or banned veterinary drugs sent to the judicial system for prosecution.

The COA also issued 128 licenses for the manufacture or importation of veterinary drugs; conducted 20 audits of veterinary drugs manufacturing plants; and conducted 427 sample tests of veterinary drugs as part of post-market surveillance, with 98.83% being up to standards.

Figure 1 Results of testing of *Escherichia coli* antimicrobial resistance, 2012-2021.

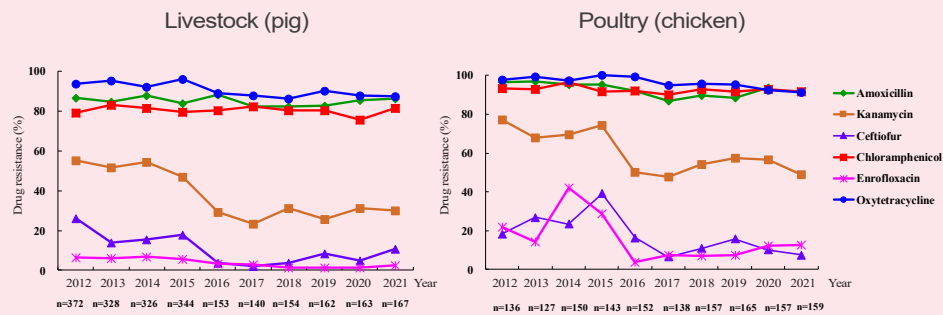
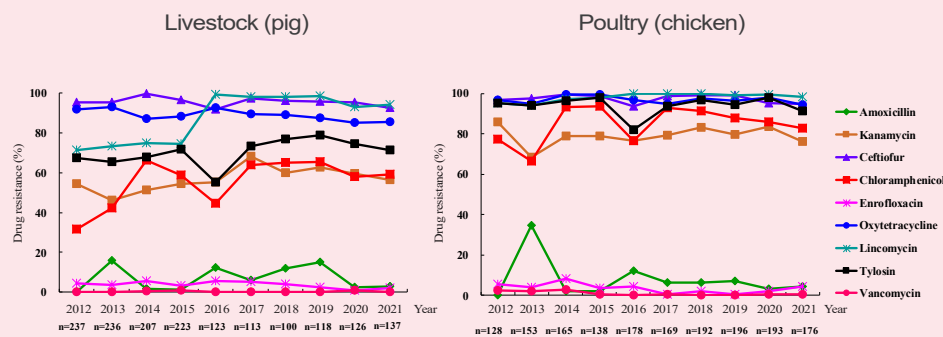


Figure 2 Results of testing of *Enterococcus* spp. antimicrobial resistance, 2012-2021.



Local governments conducted drug monitoring of samples of livestock and poultry at farms and at meat markets. There were 28,830 sample tests, with 99% being in compliance with standards. Farmers violating the “Veterinary Drugs Control Act” were fined and assisted to implement corrective action by local governments.

Based on recommendations from the World Organisation for Animal Health regarding the monitoring of antimicrobial resistance, the COA conducted antimicrobial tests of enteric indicator bacteria *Escherichia coli* and *Enterococcus* spp. from domestic livestock and poultry. The results from 2012 to 2021 showed that there was a decline in drug resistance of *Escherichia coli* to important veterinary antimicrobial agents including ceftiofur, enrofloxacin, kanamycin, and oxytetracycline, while the level stayed the same for other pharmaceuticals. (See Figure 1.) Meanwhile, there was a decline or no change in the drug resistance of *Enterococcus* spp. to amoxicillin, enrofloxacin, oxytetracycline, ceftiofur, and vancomycin. (See Figure 2.) Of these, vancomycin is a critically important antimicrobial agent for treating *Enterococcus* spp. infection in humans and is not yet approved for use on

livestock and poultry. Antimicrobial resistance of *Enterococcus* spp. isolated from poultry and livestock to vancomycin was lower than 3%.

(3) Strengthened monitoring and control of agriproduct safety and quality

The COA has adjusted, on a rolling basis, the items for and frequency of sample testing of agriproducts that are high risk, have a high rate of violations, or are the subject of widespread attention. In 2022 the COA conducted 20,717 sample tests for pesticide residues at the production end, with 97.50% being up to standards. Of these, there were 14,222 sample tests of fruits and vegetables, with 96.9% being up to standards; 3,001 sample tests of tea, with 99.5% being up to standards; 3,494 sample tests of rice, with 98.3% being up to standards; 2,149 sample tests of aquatic products that had not yet reached the market, with 99.2% being up to standards; 12,210 sample tests of aquatic products on sale in wholesale fish markets, with 99.9% being up to standards; and 918 sample tests of livestock and poultry covered by the TAP, CAS, or domestic poultry traceability systems,



with all being up to standards. In cases in which the tested products were not up to standards, local governments prevented the farmers from selling their products and did follow-up guidance in legal and safe use of pesticides, as well as investigation and punishment under the law.

In addition, in 2022 the COA conducted 546 sample tests for heavy metal content in food crops in farmland with high potential for pollution, with 95.97% being up to standards. In cases in which heavy metal content surpassed the limits stipulated in the “Act Governing Food Safety and Sanitation,” the crops were immediately eradicated to prevent them from entering the market, while the environmental authorities were notified to investigate the polluted soil and follow up to cut off the sources of the pollution. Local governments guided farmers to leave such land fallow, switch over to non-food crops, or cultivate crops (varieties) that absorb heavy metals, as well as use horticultural management methods to reduce the risk of pollution from heavy metals like lead, cadmium, and inorganic arsenic.

To upgrade the safety of agriproducts brought into wholesale markets, the COA guided fruit and vegetable markets in Taipei City, New Taipei City, Taoyuan City, Taichung City, Kaohsiung City, and Chiayi City to purchase high-precision mass spectrometers to rapidly and accurately detect pesticides that are currently widely used in Taiwan. Agriproducts that do not meet standards are destroyed on the spot and the source is traced to halt further supplies, thereby ensuring safety for consumers.



Samples of vegetables to be tested are selected at a product concentration and distribution center.



A sample is collected by slicing off a piece of fish.



The testing process.

(4) Strengthened meat inspection system

In order to ensure the safety and sanitation of domestic meat products, the COA commissioned 646 meat inspectors hired, trained, and licensed by the National Animal Industry Foundation to work under the supervision of the Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) and its branches to conduct meat inspections in 176 slaughterhouses nationwide. In 2022, over 7.93 million head of livestock and 398.83 million poultry were inspected. BAPHIQ also supervised local governments in proactively investigating and closing down illegal slaughtering operations, and conducted simultaneous interdiction of such operations across the country prior to major holidays (Lunar New Year, Dragon Boat Festival, and Mid-Autumn Festival). Staff were assigned by BAPHIQ and its branches to participate in these actions, and 1,913 investigations were conducted in 2022 in which 45 illegal slaughtering cases were uncovered and four head of livestock and 344 poultry were destroyed.

(5) Promotion of traceability information registration and labeling systems for agriproducts

In order to make it easier for consumers to distinguish domestically produced farm, fisheries, and animal husbandry products and access source information, the COA has used relevant laws and regulations as well as

information technology to promote a number of traceability information registration and labeling systems. The goal is to create an environment facilitating “local production, local consumption” and to enhance the feasibility of traceability and accountability in the hope that producers will strengthen self-management. Achievements in 2022 included the following:

- In terms of agri-food products, the COA promoted the “Traceability Agricultural and Food Products Retrospective System,” which allows consumers to search for data on agriproducts including their producer, source location, product information, and results of tests for pesticide residues. As of the end of 2022 this System covered 69,176 hectares of agriproducts.
- In terms of livestock and poultry, the COA promoted four traceability systems depending on the products covered. Of these, the coverage rate for the traceability system for domestically produced chicken eggs reached 100%, that for domestic poultry meat exceeded 87%, and that for domestic fresh pork exceeded 91%, while the ratio of removed cattle ear-tag ID numbers and the number of slaughtered cattle reached 100% under the “Taiwan Beef Traceability System.”
- The COA also promoted a traceability system for aquatic products. This system utilizes information technology and it is convenient for consumers to scan the product QR Code right at the purchasing venue and search for information on the product and the producer. We have already guided 4,000 seafood businesses to adopt QR Codes.

In order to disclose information related to slaughtering of domestically produced meat, under Paragraph 4 of Article 32 of the “Animal Industry Act” BAPHIQ requires slaughterhouses to clearly label animal carcasses and viscera which have passed inspection with a label indicating (i) that they meet the standards for a meat inspection, (ii) the identity number of the slaughterhouse, and (iii) the date of slaughtering. Only with such a label can the animal carcasses and viscera be transported out of the slaughterhouse. When a single

slaughterhouse that attaches a Type 3 label indicating that a poultry product is up to standards needs to change its packaging, or repackage cut meat, the slaughterhouse shall, according to procedures, apply to a meat inspector to confirm the changed information, after which it can, in accordance with regulations, attach such a Type 3 label. However, slaughterhouses switching over to Type 3 labels still must label the products with the earliest date of slaughtering of the batch of newly packaged product.

(6) Building dependable labeling systems

In 2022, the COA, in order to enhance consumers’ ability to differentiate safe agriproducts and in accordance with law, continued to promote Taiwan’s three certification systems: “Taiwan Organic,” “Traceable Agricultural Products,” and “Certified Agricultural Standards.” We also continued to use a variety of measures to increase consumers’ understanding and trust of these labels.

In terms of the Taiwan Organic certification system, in 2022 4,758 agricultural product operators were certified as organic, with a production area of 13,545 hectares. Working with volunteers and consumer groups, the COA has worked to educate the public about the Taiwan Organic label in order to increase consumers’ identification of and trust in organic agriproducts.

As for the Traceable Agricultural Products (TAP) certification system, in 2022 5,116 agricultural product operators had TAP certification, with a production area of 82,264 hectares (an increase in area of 38% over 2021). On December 30, 2022 the COA announced amendments to the “Mandatory and Prohibitory Items in the Contracts Between the Traceable Agricultural Product Certification Bodies and Agricultural Product Operators” to strengthen management by certification bodies of the use of labels by agriproduct operators. In addition, through farmers’ markets and family activities, we increased consumers’ knowledge about and acceptance of the TAP system.



At the Worthy Farmers Organic Farm in Yilan County, an organic agriculture drama troupe promoted organic agriproducts and the “Taiwan Organic” certification label.



The MUJI Gangshan Store promoted “Traceable Agricultural Products,” and held a Halloween event for people to decorate their own TAP pumpkins by hand.



The COA organized a market for outstanding TAP farmers at the Hope Plaza in Taipei. People in attendance enthusiastically participated in a quiz.



At an event bringing together domestically produced pork with chefs, the COA invited professional chefs to visit schools to promote “Certified Agricultural Standards” and other agriproduct certification labels.

In terms of the Certified Agricultural Standards (CAS) system, in 2022 there were 251 companies that were certified to use the CAS label, with production volume of 910,000 metric tons and production value of NT\$72.8 billion. Its purpose is to confirm that the raw materials, hygiene and safety,

quality specifications, and packaging labels of certified agriproducts and processed products comply with requirements. In 2022 the COA approved three new firms to receive CAS certification for wood products, ensuring that everything from raw materials, production processes, and product quality all were upgraded and met national standards, thereby enhancing the international competitiveness of domestically produced wood.

7. Strengthening International Agricultural Cooperation

(1) The negotiation and signing of free trade agreements

Negotiation and signing of free trade agreements is the trend of the global economic and trade development situation. The “Comprehensive and Progressive Agreement for Trans-Pacific Partnership” (CPTPP) came into effect on December 30 of 2018, and it is one of the important regional trade agreements in the world. At the end of 2022, 10 of the original 11 members had completed their national ratification and the agreement had entered into force for nine CPTPP members. Taiwan formally applied to join the CPTPP on September 22, 2021. The COA has continued to follow the progress of CPTPP negotiations for the agricultural sector, and has proactively accelerated agricultural structural transformation to upgrade agricultural competitiveness and ensure farmers’ incomes.

Meanwhile, Taiwan and the US announced the formal launch of negotiations for the “US-Taiwan Initiative on 21st-Century Trade” on August 18, 2022. The Initiative covers 11 issue areas, including trade facilitation; good regulatory practices; agriculture, trade and labor policies; and environmental and climate actions. The goal is to achieve trade agreements with high-standard commitments and economically meaningful outcomes.

(2) Active engagement in international organizations

In 2022, the COA continued to engage in cooperation with international organizations including the World Trade Organization

(WTO), the Asia-Pacific Economic Cooperation (APEC) forum, the Asian Productivity Organization (APO), the Asia-Pacific Association of Agricultural Research Institutions (APAARI), the African-Asian Rural Development Organization (AARDO), and the World Organisation for Animal Health (WOAH). We also assisted organizations based in Taiwan including the World Vegetable Center (WorldVeg), the Food and Fertilizer Technology Center for the Asian and Pacific Region (FFTC), and the International Center for Land Policy Studies and Training (ICLPST), with their operations.

In terms of fisheries cooperation, the COA participated in 121 meetings related to major regional fisheries management organizations, including the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the Inter-American Tropical Tuna Commission (IATTC), the International Commission for the Conservation of Atlantic Tuna (ICCAT), the Indian Ocean Tuna Commission (IOTC), the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), the North Pacific Fisheries Commission (NPFCC), the Southern Indian Ocean Fisheries Agreement (SIOFA), the South Pacific Regional Fisheries Management Organization (SPRFMO), and the Western and Central Pacific Fisheries Commission (WCPFC). The goal is to stay abreast of international fisheries developments and ensure the rights and interests of Taiwan's fisheries industry. In addition, in August of 2022 Chih-sheng Chang, director-general of the COA's Fisheries Agency, led a delegation to the US to attend the "Taiwan-US Fisheries Consultations" and the "Taiwan-US Bilateral Consultation on Fishery Labor Rights and Benefits." They exchanged views on issues including fisheries industry development policies, cooperation in regional fisheries management organizations, and the forced-labor products list. We also shared information about Taiwan's implementation of the "Action Plan for Fisheries and Human Rights," and the US hoped this plan would yield concrete results.

The COA also participated in the 21st and 22nd meetings of the APEC "Expert Group on Illegal Logging and Associated Trade" (EGILAT) and the "5th APEC Meeting of Ministers Responsible for Forestry," sharing

our experiences in combating illegal logging and exchanging information on promoting legal trade in timber and related products. We also attended relevant activities of other international organizations including the Committee on Sanitary and Phytosanitary Measures (SPS Committee) of the WTO, the WOAH, and the International Cargo Cooperative Biosecurity Arrangement (ICCBA).



Chih-sheng Chang, director-general of the COA's Fisheries Agency, led a delegation to the US for the "Taiwan-US Fisheries Consultations." They met with a US group headed by a deputy assistant secretary of state and the two sides discussed cooperation on issues related to international fisheries management.



A group photo at a meeting of the International Commission for the Conservation of Atlantic Tuna.



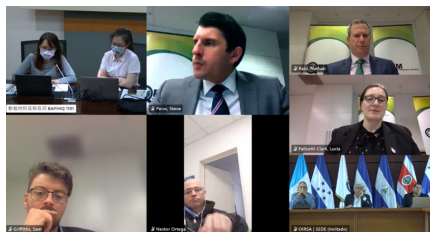
A group photo at a meeting of the Western and Central Pacific Fisheries Commission.



A group photo at a meeting of the parties to the Southern Indian Ocean Fisheries Agreement.



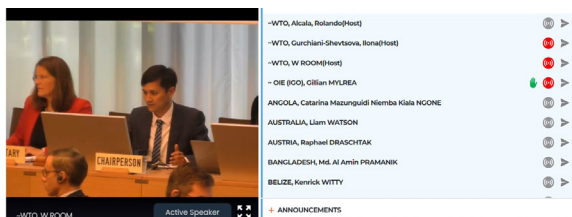
A group photo of Taiwan's representatives to the 29th Annual Meeting of the Commission for the Conservation of the Southern Bluefin Tuna (held via videoconference).



The Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) participated in the 13th "Quarantine Regulators Meeting of the International Cargo Cooperative Biosecurity Arrangement" virtual meeting.



BAPHIQ participated in the 13th "Quarantine Regulators Meeting of the International Cargo Cooperative Biosecurity Arrangement" virtual meeting.



Tang-kai Wang, assigned to Taiwan's delegation to the World Trade Organization (WTO) by BAPHIQ, was elected chairperson of the WTO's Committee on Sanitary and Phytosanitary Measures in June of 2022. It is the first time that Taiwan is serving as chair of this major committee in the WTO..



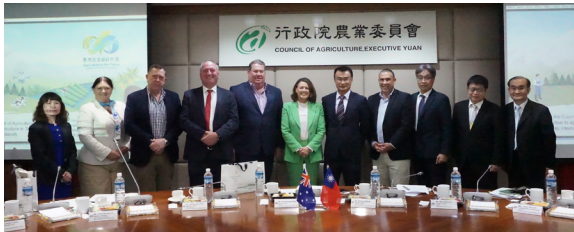
Dr. Wen-jane Tu, director-general of BAPHIQ and Taiwan's delegate to the World Organisation for Animal Health (WOAH), participated in the 89th General Session of the WOAH in 2022.

(3) Promotion of agricultural cooperation

International interactions and visits, which had been limited by the impact of the COVID-19 pandemic, gradually increased in frequency in 2022. High-level agricultural officials from allied countries including Somaliland, Kosovo, Lithuania, Belize, and Saint Lucia visited Taiwan one after another. Moreover, Taiwan and Lithuania jointly promoted the signing of a "Memorandum of Understanding on Cooperation in the Field of Agriculture."

In 2022 the COA organized or participated in 13 international meetings, including the "5th Taiwan-UK Agricultural Dialogue Meeting," the "3rd Taiwan-Poland Consultation Meeting on Agricultural Cooperation" (via videoconference), the "Taiwan-Somaliland Videoconference of Department Chiefs in Agricultural Research Institutes," and the preparatory meeting for the "14th Taiwan-South Africa Economic Consultation." We broadly exchanged views and achieved substantive progress on issues including agricultural net-zero carbon emissions policies, market access for agriproducts, and cooperation in science and technology, while also strengthening agricultural trade, investment, and technical exchanges.

Meanwhile, US-Taiwan agricultural cooperation and exchanges are based on the "Guidelines for a Cooperative Program in the Agricultural Sciences" signed in 1986. Since 2014 the Agricultural Research Service of the US Department of Agriculture and the COA have been jointly responsible for this work. The two parties hold an annual "Bilateral Cooperation Meeting on Agricultural Science and Technology," hosting it on a rotating basis. As a result of the COVID-19 pandemic, the meeting scheduled to be hosted by the US side in 2021 was postponed to 2022, when COA Deputy Minister Junne-jih Chen led a delegation to the US for the event. Chen and Simon Liu, acting administrator of the ARS, jointly presided over the meeting, at which there were discussions of research results and progress by research groups in five main areas: crop production and plant protection, animal health, animal production, natural resources and sustainable agriculture, and nutrition and food safety/quality.



COA Minister Chi-chung Chen greeted a multi-party delegation of Australian parliamentarians.



A forum on exchanges between Taiwan and the UK in the field of organic agriculture.



COA Deputy Minister Junne-jih Chen greeted a delegation of US congressmen.



Taiwan-Poland videoconference.

(4) Promotion of international marketing of agricultural products

As a result of the severe impact of the COVID-19 pandemic, in 2022 agriproduct exports totaled US\$5.23 billion, slightly lower than in 2021. The percentage of Taiwanese agriproduct exports headed to mainland China fell from 23% in 2018 to 19% in 2021 and 13% in 2022. In terms of export market structure, in 2022 the US was the largest export market for Taiwan agriproducts (US\$920 million), with Japan second (US\$860 million). As compared to 2021, exports to the United States remained steady, while those to Japan grew by 11%. Mainland China was the third largest market for agriproduct exports (US\$680 million), and there was noteworthy growth in the value of exports to existing or emerging markets including Canada, Australia, Korea, Singapore, Indonesia, Thailand, and the Philippines.



The COA held a Taiwan agriproducts marketing activity in Japan's market to promote Taiwan's pineapples.

With respect to products including pineapples, sugar apples, and wax apples from Taiwan whose import into mainland China was suspended in 2021, the COA continued promoting overseas sales including marketing incentives and overseas marketing activities. Due to the efforts of the competent authorities, in 2022 exports of pineapples from Taiwan totaled US\$27.4 million, of which exports to the Japanese market accounted for US\$24.05 million, an increase of 5.8% compared with 2021. Exports of sugar apples (including frozen sugar apples) to markets other than mainland China in 2022 totaled US\$9.56 million, an increase of 97.3% compared with 2021.

In 2022, mainland China further suspended imports of various agricultural and fisheries products from Taiwan including citrus fruit, grouper, white hairtail, and jack mackerel. The COA implemented measures including low-interest loans, marketing incentives, and subsidies for overseas marketing activities to continue to guide the sale of farm and fisheries products to existing markets in Hong Kong, the US, New Zealand, and Japan and to develop emerging markets in Korea, Canada, the European Union, and the Middle East. Following the implementation of relevant measures, in 2022 there were significant increases in exports of these products to markets other than mainland China compared to 2021. The specific export quantities included 2,940 metric tons (MT) of pomelos, 549 MT of other citrus fruits, 2,241 MT of grouper, and 2,048 MT of white hairtail and jack mackerel.



The COA held a Taiwan fruit activity in Hong Kong's market to promote sales of a variety of fruits from Taiwan.



Francis Liang, Taiwan's representative in the Taipei Representative Office in Singapore, attended a marketing activity for Taiwan pineapple and sugar apple held in Singapore.



The COA held a Taiwan agriproducts marketing activity in Brunei to promote Taiwan's mangoes.

8. Development of Primary Processing, Cold Chains, and Diversified Marketing Channels

(1) Promoting primary processing for agricultural products

In terms of farm products, under the provisions of the "Regulations Governing Primary Agricultural Products Processing Yards" and the "Specific Products and Processes Applicable to Primary Agricultural Products Processing Yards" the COA continued to supervise management of primary processing yards belonging to farmers and farmers' organizations and promoted a uniform management system for primary processing of agricultural products. Achievements in 2022 included the following:

- The COA held five explanatory meetings on regulations governing agri-food products, and held 13 sessions of education and training on processing technology and food safety and sanitation for farm products and aquatic products, with 411 attendees.

- The COA guided 20 farm product and aquatic product processing operators to complete improvements in accord with the Good Hygiene Practices standards and to apply for registration with local governments as agricultural product primary processing yards; 16 farm product and four aquatic product primary processing yards received registration certificates in 2022, making for a total of 47 yards that have received such certificates.
- The COA assisted businesses with registration certificates to market their products through sales channels at both brick-and-mortar outlets including Jian Mart, Santa Cruz, Funcom, Cotton Field Organic, Leezen, and Eslite Flavor and e-commerce channels including Country U Box, PChome, News & Market, Rakuten, momo, and Yahoo!, thereby increasing farmers' incomes.
- Each week the COA set up a special area at the Hope Plaza in Taipei for two vendors to display and sell selected processed agricultural products. In October and November of 2022, these were sold overseas (in Japan) through both brick-and-mortar and e-commerce sales channels. On October 5, the COA held a press conference to mark the first shipment of processed agricultural products to Japan.

With respect to forestry products, the COA guided six forest farmers and forestry cooperatives to prepare to set up primary processing yards. We also stipulated the necessary forms to apply for registration as a forestry industry agriproduct primary processing yard, in order to facilitate uniformity of data for review of applications.

In terms of aquatic products, the COA held four sessions to promote policies for aquatic operators and explain these to businesses, eight classes for education and training of aquatic product businesses and local governments, and 43 sessions of on-site consultations for seafood businesses, as well as guided five operators to receive registration certificates as agriproduct primary processing yards (aquatic products category).



On October 5, 2022 the COA held a press conference to mark the first shipment of farm products that had been processed in primary processing yards to Japan.



On April 25, 2022 the Sui Yuan Tea Space agriproduct primary processing yard received its registration certificate.

(2) Promotion of regional agricultural processing centers

Regional farm product processing centers

The COA has selected agricultural processing factories with a certain scale of operations and production capacity located in major crop production areas and that coordinate with policy as subjects for guidance to establish regional farm product processing centers. We have assisted them with measures such as expanding production capacity and setting up factories that conform to hygiene and food safety regulations, in order to meet demand from farmers for outsourced processing and increase the value-added of agriproducts. The COA also constructed a vertical production-and-marketing supply system to stabilize the production and sales of these agriproducts and raise their value-added. In 2022 we guided the processing plant of the Xinyi Township Farmers' Association in Nantou County to complete factory planning and construction of a plum processing plant that meets CAS standards, and arranged to sign contracts with local plum farmers to purchase their plums at a guaranteed price. There were 400 hectares of land under contract production, with annual use of about 200

metric tons of green plums as raw materials for processing. These measures make it possible for plum farmers to make a stable living and ensure a stable supply of raw materials for plum processed products.



The grounds of the plum processing plant at the Xinyi Township Farmers' Association in Nantou County.

Regional seafood processing centers

In 2022 the COA guided the Keelung District Fishermen's Association in building a processing plant. We also assisted the processing plants for fisheries (fishermen's) organizations including the district fishermen's associations in Chiayi, Xingdagang, Mituo, Ziguan, Xingang, Yung'an, Taitung, and Penghu to purchase processing and related peripheral equipment (facilities), in order to assist local fishermen to have nearby and immediate access to factories to handle their catch. Using freezer warehousing, it is possible to balance production and sales and promote diversification of sales channels and markets.



Processing equipment belonging to the Xingdagang District Fishermen's Association.



Processing equipment belonging to the Ziguan District Fishermen's Association.



(3) Creation of a system of “Agricultural Products Value-Added Prototyping Centers”

To promote a uniform management system for agriproducts from production to primary processing, COA has set up 16 “Agricultural Products Value-Added Prototyping Centers” and “Aquatic Products Value-Added Prototyping Centers” in 10 District Agricultural Research and Extension Stations and six related colleges and universities. We have also brought together local universities and prototyping centers to form four regional processing alliances, which link primary processing to high value-added industry to help farmers access new and diversified commercial opportunities. The COA also established the “Agricultural Products Processing Integrated Services Center” to provide one-stop consultation services. By the end of 2022 these institutions had provided farmers with processing consultation services 2,946 man-times, prototyping services in 1,100 cases, packaging prototyping services in 145 cases, and matchmaking to get products into sales channels in 102 cases, adding about NT\$100 million in production value to agriculture and rural economies.

(4) Upgrading the quality of agriproducts

In terms of farm products, the COA guided the establishment of large-scale fruit and vegetable product handling, concentration, and packaging venues that conform to international standards and issued the “Operating Procedures for Guidance of the Establishment of Large-Scale Fruit and Vegetable Product Handling, Concentration, and Packaging Sites.” We strengthened the cold-chain facilities (equipment) at product concentration sites as well as incorporated operating systems conforming to international inspection and quarantine rules. The COA introduced corporate-style operational scales and assisted these sites in getting international certification. In addition, with respect to demand in target markets, we (i) strengthened self-management and sample testing for pesticide residues; (ii) improved fruit orchard environments and facilities; (iii) upgraded the quality of fruit; (iv) introduced team services for various types

of fruit; and (v) guided supplier fruit orchards and product concentration and packaging venues to improve management of product safety, hygiene, and quality. As of the end of 2022 the COA guided 14 agribusinesses to establish large-scale fruit and vegetable handling, concentration, and packaging sites.

With respect to aquatic products, in order to upgrade sanitation and safety management in the production and supply chain, in 2022 the COA guided projects for renovation or reconstruction of fish markets at Dongshi, Taichung, Longfeng, and Zhengbin fishing ports. We also guided the introduction of the HACCP food sanitation and safety management system for the Donggang sakura shrimp auction venue. In addition, the COA commissioned National Chiayi University (NCYU) to do education, training, and guidance for fish markets exporting fish to the European Union, and NCYU held 10 sessions with 363 participants. Relevant fishermen’s associations were later led to install and use high-level sanitation management systems.



The floor at the Dongshi Fish Market was improved, thereby upgrading the overall environment of the market and the sanitation and safety of fresh catch.



Repair of the leakage from rusting of the gutters, pillars, and beams of the Zhengbin fish offloading site. (Above: before the improvements; below: after the improvements.)

(5) Construction of a modernized cold-chain logistics and trading system for agriproducts

In order to (i) build the cold-chain logistics infrastructure and its operational capabilities for domestic farm, fisheries, and livestock products; (ii) upgrade production-and-marketing quality and reduce losses; (iii) bring into play the ability to adjust product supply to help stabilize prices of domestic agriproducts; and (iv) increase the types of products exported and develop international markets, the COA continued to implement the medium- and long-term infrastructure program “Building an Agricultural Products Cold-chain Logistics and Quality Assurance Demonstration System.” Main aspects included building regional cold-chain logistics centers; guiding wholesale markets, farmers’ organizations, and agribusinesses to upgrade and purchase cold-chain facilities (equipment); and using smart production and new cold-chain technology at each step from production and transportation to processing and sales in order to improve the environment for supply of agriproducts and upgrade the quality of their logistics.

In terms of farm products, as of 2022 the COA guided 217 farmers’ organizations or agribusinesses in upgrading their cold-chain facilities (equipment) and built a demonstration operational model for whole-process cold chains for pineapples and mushrooms. We also guided local (city, county) governments and farmers’ organizations in building regional cold-chain logistics centers (of which two are already complete, two are under construction, and one is in the basic design phase) and guided 14 organizations to upgrade cold-chain equipment at major wholesale markets. In addition, to solve the problem of cardboard boxes collapsing under low-temperature and wet conditions and increase the efficiency of transport and sale of fruit and vegetables, the COA promoted the use of a new type of recyclable foldable plastic crates by fruit and vegetable markets in Taipei, which also reduces the amount of trash produced by such markets and lowers carbon emissions, thereby conforming to the goal of environmental sustainability.

With respect to aquatic products, the deep-sea fishing, coastal fishing, and aquaculture industries all face different cold-

chain preservation and production-and-marketing issues. Existing cold-chain equipment is outdated or inadequate, and cold-chain requirements differ in each region, while there is not enough of such equipment to handle large amounts of raw material in a timely manner. After doing a survey of equipment needs and the freezing and processing capabilities in each district, the COA continued to construct or upgrade freezing and processing systems in various fisheries industry industrial clusters. In addition, taking into account factors including the distance to production areas and land transport, the COA set out plans to build logistics centers and develop related cold-chain equipment and assisted various industrial groups to arrange for processing and frozen storage of bulk seafood, in order to stabilize production and sales. In these ways we upgraded the processing and handling capabilities for aquatic products and improved the cold-chain system for these products

In terms of animal husbandry products, the COA strengthened the cold-chain transport systems for slaughterhouses and upgraded cold chains for meat, eggs, and dairy products. We completed the planning for upgrading of the cold chain at one poultry wholesale market; completed HACCP certification for eight slaughterhouses; implemented upgrading of poultry slaughterhouse facilities and equipment as well as meat sanitation and safety management systems at 36 slaughterhouses; upgraded cold-chain facilities and equipment for livestock and poultry slaughterhouses as well as meat, dairy, and egg products in 146 locations; and improved livestock and poultry vendors’ stalls and small temperature controlled trucks in 286 cases.

In terms of flagship logistics centers, the International Freshness Logistics Center built by the COA in the Pingtung Agricultural Biotechnology Park won an “Excellence Award” in the building engineering category of the “22nd Public Construction Golden Quality Awards” held by the Public Construction Commission of the Executive Yuan. It has 1,360 pallets of cold storage space and 7,800 pallets of freezer space, conforms to HACCP food operations norms, and has processing and packaging facilities that can handle up to ten metric tons per day. It also includes spaces for accelerated



On June 12, 2022 Premier Tseng-chang Su visited the cold-chain demonstration venue for pineapples at the Pingtung County Lung-Tan Fruits and Vegetables Cooperative.



The newly constructed processing plant of the Xingang District Fishermen's Association.

ripening of agriproducts, vacuum precooling, flash freezing, and differential pressure precooling. It has a total floor area of 10,115 square meters. The Center, where operations have been taken over by the RD&D Cold Logistics Company, can provide an integrated series of cold-chain logistics services including post-harvest handling, washing and grading, cutting, processing, packaging, cold storage, and logistics (delivery). It has added new production-and-marketing equipment to enhance its low-temperature warehousing and delivery capabilities.



A hands-on demonstration event to promote cold chains for mushrooms was held at the Wan Shen Science and Technology Agriculture Company.



The flagship International Freshness Logistics Center.

(6) Development of e-commerce for agricultural products

In order to promote the development of e-commerce for agriproducts, the COA in 2017 launched a program to promote such development, under which we have undertaken tasks including pro-active training and guidance of farmers engaged in agriproduct e-commerce, online sales promotional activities, improvement of packaging for e-commerce agriproducts, and brand building. We have guided farmers to join e-commerce sales channels and assisted e-commerce platforms to access a stable supply of high-quality agriproducts, while encouraging e-commerce businesses to expand the types of these products that they sell. The goals are to drive the development of e-commerce sales of domestic agriproducts, expand domestic sales of agriproducts, and assist farmers to find new sales channels and increase their incomes.

In 2022 training was completed over 230 man-times under a “special program for training and guidance of e-commerce farmers,” while substantive guidance was provided in 20 “highlight cases.” We also drove the development of five regional integrated systems and held nine sessions of e-commerce business matchmaking to assist e-commerce farmers to get their products for sale on e-commerce platforms and promote follow-up business opportunities. In addition, we implemented the “Project to Guide Packaging and Branding of Agricultural Products for e-Commerce,” guiding ten small farmers to become managers of e-commerce brands.

The COA set up the “Taiwan Agricultural Products Celebration” e-commerce platform, integrating more than 90 e-commerce platforms and holding online sales activities. In addition, following the suspension by mainland China in June of 2022 of imports of grouper, citrus fruit, white hairtail, and jack mackerel from Taiwan, we increased exposure of these products through this platform and held activities such as discounts and prize drawings for consumers to strengthen domestic consumption of these items. In 2022 total sales through this platform exceeded NT\$1.5 billion.

At the same time, the online sales platform set up by the COA’s Agriculture and Food Agency (AFA) (www.afasales.tw) worked in cooperation with the “GoFish” and “FishGo” platforms set up by the Fisheries Agency for district fishermen’s associations, fishermen’s organizations, and young fishermen, to promote and sell premium

farm and fisheries products from Taiwan both on-site and online. Moreover, they set up special areas on their websites for group purchases in coordination with production-and-sales balancing measures to encourage citizens to buy collectively. In addition, the Forestry Bureau set up the “Taiwan Wood Network” and “Bamboo Industry Technical Consultation Center” webpages for timber and bamboo products in the “Domestic Timber” area of its website. It provides a map of the locations of “Taiwan Wood” dealers and facilitates matching up of buyers and sellers, becoming a channel for linking together the industry and building up value for the “Taiwan Wood” brand.



An activity started on February 26, 2022, brought together three online e-commerce platforms, including the GoFish, FishGo, and Agriculture and Food Agency's afasale.tw sites, to promote sales.



The “Taiwan Agricultural Products Celebration” website cooperated with 26 e-commerce platforms to hold a special activity to promote sales of wendan pomelos at Mid-Autumn Festival.



A group photo of participants in a press conference to promote sales of Taiwan grouper.



The “FishGo” platform mainly focuses on helping young fishermen in Taiwan sell their products, using direct sales from production areas and many layers of quality control to provide citizens with high-quality aquatic products.



The “GoFish” online platform specializing in sales of fisheries products works with district fishermen’s associations and fishermen’s organizations to provide citizens with premium-quality seafood.

(7) Building direct sales and multiple sales channels for agriproducts

In order to assist farmers to develop multiple sales channels, the COA continued to guide the setting up of farmers’ markets at regular intervals at two locations in the Taipei metropolitan area: the Taipei Hope Plaza and the Taipei Expo Park. This involved coordinating with local governments to assist farmers to hold exhibition and sales activities for in-season agriproducts on Saturdays in order to raise farmers’ incomes. In 2022, we organized farmers’ markets at the Taipei Hope Plaza on 45 occasions, with total sales of over NT\$230 million, and also relocated to a new site with an opening ceremony on December 24. The COA also organized 42 farmers’ markets at the Taipei Expo Park, with total sales of nearly NT\$150 million.

Since 2013 the COA has guided the setting up of “farmers’ markets” and “direct sales points for farmers” in order to provide consumers with agriproducts that are fresh, safe, eco-friendly, high quality, and are local specialty products. In 2022 we newly established or continued to guide existing rural community agriproduct sales points in 125 locations, to encourage “local production, local consumption” and energize local rural economic development. Total revenues reached NT\$1 billion.



Grand opening of the Taipei Hope Plaza 3.0 site for farmers’ markets, held on December 24, 2022.



In order to provide diversified marketing channels for domestic wood and establish a platform for matchmaking of supply and demand for such wood, the COA's Forestry Bureau set up the "Taiwan Wood" information platform. Already data has been compiled on 42 firms providing forestry operational services and 144 firms producing products made from domestic bamboo or wood. A total of 94 cases of forestry operational services matchmaking have been arranged, along with transactions involving about 21,389 cubic meters of domestic wood.



Direct sales point for farmers of the Hemei Township Farmers' Association in Chuanghua County. Farmers can set their own prices and sell what they want, providing fresh and safe agriproducts to consumers.

(8) Promotion of premium agricultural products

The COA's Soil and Water Conservation Bureau held the 8th selection activity for "Rural Good Products" to encourage rural communities to continue to innovate and develop local specialty products and raise value-added for rural industries. A total of 343 products have thus far been selected, encouraging R&D into local specialty products to increase the value-added of agriproducts and benefit rural economies.

In 2022 the COA guided 11 rural wineries to pass their evaluations, and linked them with rural leisure and tourism services to enhance their competitive advantage. Rural wineries produced 190,000 liters of wines and liqueurs in 2022. Since 2007 the COA has selected outstanding rural wineries and alcoholic beverages to participate in international competitions, and as of 2022 Taiwan won a total of 32 golds, 63 silvers, and 15 bronzes, effectively shaping a reputation for quality for rural wineries and alcoholic beverages.

In order to promote elderly-friendly food, the COA continued to hold the "Eatender Awards." In 2022 the COA selected 166 value-added elderly-friendly foods processed from premium local farm, fisheries, and animal husbandry raw materials, to meet the dietary needs of the elderly in an aged society.

The COA's Fisheries Agency (FA) guided 11 fisheries (or fishermen's) organizations (including the National Fishermen's Association, Taiwan, ROC) to develop specialty seafood products that are representative of the locality or the fishing season, and through refinement of packaging, create a reputation for quality for Taiwan seafood products. These steps made it possible to raise the price of seafood products and increased job opportunities in fishing communities and raised fishermen's incomes. Moreover, the FA set up a seafood pavilion at the "Taiwan International Food Industry Show 2022," bringing together outstanding fisheries companies to enhance the exposure and marketing of Taiwan premium aquatic products, enable citizens to come into contact with Taiwan premium seafood through more diverse channels, assist companies to meet with international buyers, and increase Taiwan's exports of seafood. In addition, the COA continued to hold activities on the theme of "mullet roe industry culture" in six major mullet roe producing areas including Hsinchu, Changhua, Yunlin, Chiayi, Tainan, and Kaohsiung, in order to continue to develop the special features of this culture and promote economic development in fishing communities

The COA's Forestry Bureau set up a pavilion with the theme "low-carbon buildings" at the 2022 "Taipei Building Show," winning an "Excellent Exhibitor Image Award" for the 6th straight year. The design for the pavilion depicted how wood and bamboo can absorb vast amounts of carbon dioxide from the growing stage to their use in building, and how woodlands and bamboo forests can give rise to carbon negative materials that will lead to net-zero carbon emissions. The pavilion also emphasized the importance of sustainable management of manmade forest and diverse uses of bamboo forest to global carbon neutrality and forest conservation. The pavilion drew the public's attention to the use of Taiwan timber in daily life and enhanced the international profile of Taiwan wood and bamboo.



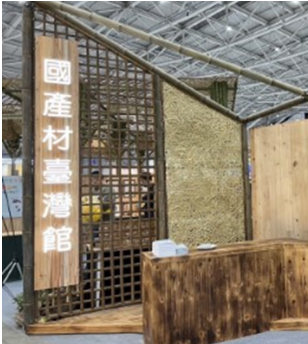
The Da'an Farmers' Association Winery's "Taro Shochu" won a gold award at the 2022 "Hong Kong International Wine and Spirit Competition."



The Cang Jiu Winery's "Turtle Island Sunrise Kumquat Wine" won a bronze award at the 2022 "Hong Kong International Wine and Spirit Competition" and a silver medal at the 2021 "Vinales Internationales" competition in Paris.



A photograph of products from the 2022 “Eatender Awards” for elderly-friendly foods.



For the 2022 “Taipei Building Show,” the COA’s Forestry Bureau set up a pavilion featuring Taiwan wood and bamboo on the theme of “low-carbon buildings.” It exhibited refinements in processing technology for surface modification, lamination, and composite material production using wood and bamboo materials.

9. Development of Leisure Agriculture and Agrotourism

(1) Agricultural tourism

The COA has encouraged localities to adopt a regional outlook to develop rural leisure and tourism. As of 2022, the COA designated a total of 104 “recreational agriculture areas,” guided 517 leisure farms in getting licenses and registration, and guided the refinement of brand management and image development at 110 “Tian Mama’s cuisine units.” (The Tian Mama Changying Seafood House and the Wang Jia Smoked Lamb restaurant were both recommended by the Michelin Guide’s “New Bib Gourmand Selection.”) Also, the COA selected and guided the production of 37 rural gift and souvenir items, thereby enriching the uniqueness of agrotourism itineraries. Meanwhile, we guided the listing of over 700 travel products and production season limited tour groups on the “Farmtour Market” electronic ticketing platform to provide travelers with convenient and diversified agrotourism options. In 2022 the agricultural leisure and tourism industry created production value of more than NT\$10.6 billion.

The COA also engaged in optimization of services for the value-added development of rural community experiential tourism. Based on the four major indicators of (i) experience environment construction, (ii) itinerary content and features, (iii) experience operational and marketing management, and (iv) social responsibility, we introduced graded guidance and precision marketing targeted at specific groups under the “Rural Quality Trip” program, molding a high-quality image for rural experiential brands. The COA assisted 62 organizations that had passed the Rural Quality Trip evaluation with



Through the “seasonal canteen” and “map of Taiwan cuisine and agrotourism through the four seasons” exhibited at the “Taiwan Agriculture Museum” at the 2022 “Taiwan Culinary Exhibition,” the COA spread information about specialty seasonal foods from all over Taiwan, local culinary delicacies, and gift and souvenir items made using processed agriproducts, as well as seasonal agrotourism itineraries.

graded guidance targeted at specific groups to enhance their hospitality services capabilities, and promoted sales or management of over 988 rural community experiential itineraries. We furthermore integrated tourism marketing resources to hold six experiential evaluations and two promotional events for employee welfare committees at enterprises. In addition, the COA participated in the 2022 “Taipei International Travel Fair” and held four mobile exhibitions in combination with the Breezy Blue train of the Taiwan Railways Administration of the Ministry of Transportation and Communications to proactively do matchmaking for the sale of tourism and travel products. In 2022 these activities drove a total of 317,000 tourist visits with production value of NT\$654 million.



The COA rewarded outstanding “Tian Mama’s cuisine units” and invited citizens to visit the Huashan Theater to try Tian Mama cuisine with authentically Taiwanese flavors. We held an awards ceremony for outstanding Tian Mama’s cuisine units to affirm their importance in promoting food and agricultural education and energizing rural economies.



The COA promoted a program to optimize services for the value-added development of rural community experiential tourism, subsidizing rural community experiential activity businesses to come out with discounted package tours.



(2) Fisheries-related leisure and tourism

In 2022 the COA guided local governments, fishing industry (fishermen's) groups, or community development associations to inventory fishing communities, fishing ports, aquaculture production areas, and seafood direct sales centers, and combined these resources with ecological and environmental assets (such as wetlands and intertidal zones) as well as fishing industry culture, arts, and crafts to organize and promote a variety of industrial culture and fisheries eco-tourism experiential activities with special local characteristics. We also participated in the 2022 "Summer Travel Expo" with a pavilion to strengthen promotion of specialty fisheries products and fishing community travel itineraries. Moreover, the COA produced an illustrated book entitled *Having Fun for Fish—Treasure Hunting in the Fishing Village* to promote Taiwan's fishing community culture and fisheries-related leisure and tourism. The COA's promotional activities led to 9.93 million visits by tourists and NT\$4.896 billion in production value.



An illustrated book on Taiwan's fishing communities: *Having Fun for Fish—Treasure Hunting in the Fishing Village*.



The 2022 "Qigu Seafood Festival": a clam digging experiential activity.



A guided ecological experiential activity at Fushan in Taitung County.



The 2022 "Pingtung BlueFin Tuna Cultural Festival."



The "Zhuwei Fishing Port Music Festival": Taiwanese beach seine experiential activity.

(3) Forest eco-tourism

To enable people to enjoy therapeutic relaxation and to promote the quality of life, the COA's Forestry Bureau continued in 2022 to upgrade the quality of tourism in Taiwan's 18 National Forest Recreation Areas (NFRAs), three Forest Parks, four Forestry Culture Parks, and the Alishan Forest Railway. We also continued to cooperate with travel businesses, mountain villages, and indigenous communities, and linked up with the network of nature trails, to come up with experiential ecosystem and cultural activities for visitors as well as themed trains, guiding people to see different woodlands ecosystems and special local cultural features. We promoted uniformity of the price of full-price e-tickets for NFRAs on working days and holidays/days off as well as discounts on parking. In addition, the COA held activities to offer incentives including prize drawings for e-tickets from July through November of 2022 and 6% rebates on tickets purchased via LINE Pay from October to December of 2022 to attract people to visit NFRAs. We also organized the pavilion "The Forests of Taiwan" at the 2022 "Taipei International Travel Fair," working with domestic tourism businesses to lay out 39 eco-tourism itineraries for NFRAs. During 2022 there were more than 7.62 million visits to forest recreation venues, while 931,000 visitors experienced the Alishan Forest Railway, as people enjoyed forests' rich and diverse scenery.



"The Forests of Taiwan" pavilion at the 2022 "Taipei International Travel Fair." President Ing-wen Tsai visited the pavilion and promoted Taiwan's beautiful mountain forest scenery to domestic and foreign travelers.

10、Strengthening Communication about Rural Policies

(1) Diversified channels of communication for major policies

In order to enhance the public's understanding and acceptance of agricultural policies, the COA uses diversified methods to inform people about significant rural policies. In 2022, besides continuing to hold press conferences and issue



The awards event for Taiwan's "Top Ten Agricultural Production and Marketing Groups" of 2021.

press releases, we also utilized various channels, including print media, television, radio, the Internet, and exhibition and sales activities. These activities were aimed at promoting three primary policy objectives: enhancing farmers' welfare, improving agricultural infrastructure, and upgrading industrial competitiveness. These activities also served to showcase the COA's successes in policy implementation.

With the rise of new media, the COA continued to engage in integrated communications about agricultural policies through various social media platforms. In 2022, we created videos covering subjects such as upgrading water resources and expanding irrigation areas, accomplishments in agricultural policies, primary processing of agricultural products, research and development of labor-saving agricultural machinery, extension services for seasonal agricultural and fisheries products, and the implementation of food and agricultural education. These videos were published on the COA's official Facebook page, YouTube channel, and electronic bulletin boards of farmers' and fishermen's associations.

Furthermore, the COA produced educational advertising spots that were broadcast on networks and local radio stations in central and southern Taiwan, while loudspeaker vehicles were utilized to play these spots in townships across northern, central, and southern Taiwan. We also released short commercial inserts to be broadcast in urban communities, in buildings, and on taxi video services. Additionally, advertising signs were created for publicly-funded privately-managed sports centers to promote seasonal fruits. All of these measures aimed to enhance citizens' understanding of rural policies and their participation in related activities, increase the effectiveness of the COA's policy information dissemination, and expand the distribution of pertinent information.

(2) New media communications platforms

The COA provides a rich variety of agriculture-related information on new media platforms such as its Facebook fans page, YouTube channel, and LINE@ group. One can find information on key agricultural policies, technology R&D, press conferences, presentations of achievements, and agricultural knowledge for farmers' livelihoods. Additionally, to facilitate citizens' understanding of major agricultural issues, we employ diversified information dissemination methods, including videos, picture cards, and direct-feed press conferences, along with interactive activities for Facebook fans. The COA also promptly responds to questions from citizens, offering immediate assistance.



An information card was posted on the COA's Facebook fans page discussing the Lunar New Year dish "long life vegetable" and highlighting the differences between northern and southern Taiwan in relation to this dish.

In 2022, the COA's Facebook fans page had over 340,000 followers, and we had approximately 120,000 LINE@ friends and nearly 8,000 subscribers to our YouTube channel. Self-produced informational materials for new media were referenced in media reports more than 140 times, and the COA conducted 41 live event broadcasts on Facebook, collectively reaching over 300,000 individuals.

(3) Disseminating information about the "Agriculture for All" policy

The COA continued to enhance policy exposure to advocate the main policy axes of "enhancing farmers' welfare, improving agricultural infrastructure, and upgrading industrial competitiveness," aiming to help citizens develop a deeper connection with agriculture. We disseminated information about the "Agriculture for All" policy and showcased the COA's tangible policy accomplishments. These accomplishments included the completion of the four major farmers' welfare systems, the launch of paddy rice income insurance, the planning and promotion of the net-zero carbon emissions action plan for agricultural agencies, the passage of the "Food and Agricultural Education Act," the establishment of the 1959 animal protection hotline, disease prevention at livestock farms, the construction of agricultural cold chains and fisheries industry infrastructure, the advancement of international trade, and the promotion of rural travel vouchers. Through these initiatives, the COA expanded the scope of policy promotion and utilized multi-media resources to enhance the effectiveness of information dissemination.

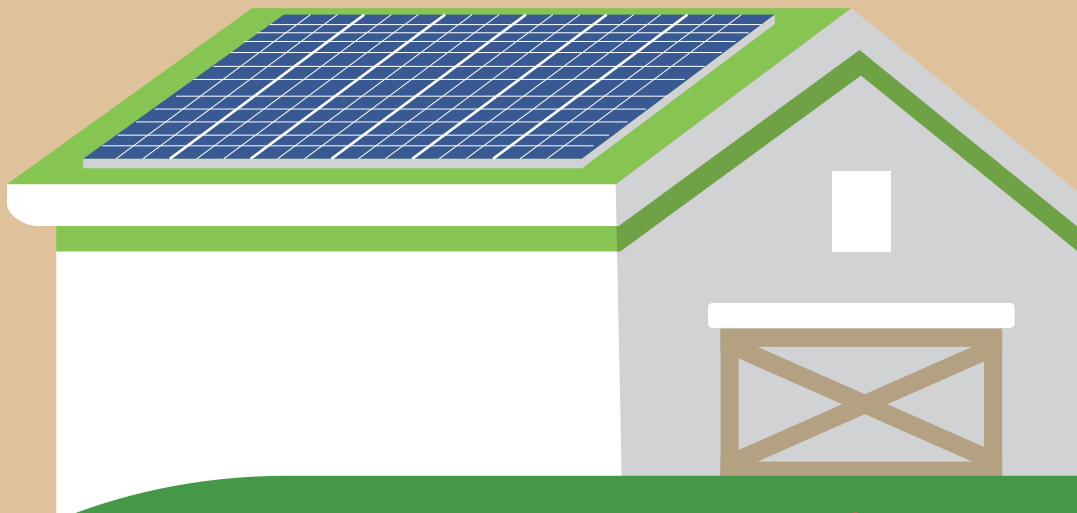


A press conference to announce the founding of the 1959 animal protection hotline.

05



Climate Change Adaptation and Net-Zero Emissions in Agriculture





Climate Change Adaptation and Net-Zero Emissions in Agriculture



1. Regulation, Storage, and the Shift to Smart Operations for Agricultural Water Resources

Under the impact of climate change, the frequency of extreme droughts has been on the rise. The COA has implemented a number of strategies for regulating irrigation water for agriculture:

(1) Continual guidance of farmers to install pipeline irrigation facilities

In order to increase the efficiency of the use of irrigation water in agriculture and raise the value and quantity of crop production, the COA has subsidized farmers to install pipeline irrigation facilities. The maximum subsidy is NT\$400,000 per person per year. In 2022, this policy was implemented over 2,439 hectares of land. Using emerging technologies in combination with pipeline irrigation-related technologies, we built one modernized greenhouse and one outdoor smart pipeline irrigation demonstration venue, and held on-site visits to enhance the willingness of farmers to install such facilities.

(2) Strengthened improvement and dredging of water diversion and storage facilities

To enhance the resilience of water resource use, in 2022, the COA built a multi-functional regulation and storage pond and arranged for water channel improvements on the Zhuo Main Canal in Yunlin County, increasing space for water storage and regulation by 38,000 cubic meters. We also managed five projects for pond or reservoir dredging, clearing away 925,400 cubic meters of debris. The COA also subsidized farmers to install regulation and storage facilities with a capacity of 78,700 cubic meters, increasing space for irrigation water regulation and storage to a total of 1.042 million cubic meters.

(3) Construction of smart irrigation systems

In 2022, the COA renovated and improved the automated hydrological monitoring system in 21 locations, completed 10 smart irrigation demonstration venues, and used sensing equipment to monitor data on weather, hydrology, and water content of soil. We also used automated precision irrigation facilities to enhance the efficiency of the use of irrigation water.



A smart irrigation demonstration venue in the Xindian District of New Taipei City.



Multi-functional water regulation and storage pond on the Zhuo Main Canal irrigation line in Yunlin County.

2. Resilience of Crops under Adverse Circumstances and Early Warnings for Natural Disasters

The COA developed a total of 21 technologies or techniques for the adaptation of crops to conditions including high temperatures, low temperatures, warm winters, drought, and heavy rains for the production of crops including paddy rice, sweet potatoes, tea, coffee, Asian pears, longans, wax apples, cabbages, garlic, and bok choy, as well as for the prevention of crop diseases and insect pests including the citrus red mite, pineapple mealybug, Asian citrus psyllid, phytophthora blight of green onion, and peanut pod rot.

The COA added three new agricultural meteorology stations in aquaculture areas and continued to maintain the original 59 such stations. In response to extreme weather events, we provided disaster early

warning information on six occasions. The COA also set up an agricultural crop disaster early warning platform and a “weather and agricultural disaster prevention App” to provide prevention and response information before, during, and after disasters. We also held 40 lectures for farmers on disaster prevention.

3. Comprehensive Promotion of Agricultural Insurance

Since 2017 the COA has promoted trial implementation of agricultural insurance (hereafter “agroinsurance”) for the farming, fisheries, and animal husbandry industries and proactively worked to ensure passage of the “Agricultural Insurance Act.” Following the coming into effect of that Act on January 1, 2021, based on the Act we established the Taiwan Agricultural Insurance Fund in the same year. The Fund is responsible for risk spreading and management mechanisms for agroinsurance. The COA further built an agroinsurance database and organizes education, promotion, and awareness-raising for such insurance. These steps all facilitate the sound development of Taiwan’s agroinsurance system.

In order to encourage farmers to take out agroinsurance policies, the COA subsidizes from one-third to one-half of the premiums for approved (announced) agroinsurance products, while local (city and county) governments can also provide subsidies. The COA also offers “agricultural insurance loans” to assist farmers and fishermen in getting the money needed for premiums, thereby reducing their financial burden and raising their willingness to take out insurance policies. As of the end of 2022 there were 27 items covered by agroinsurance and 42 types of policies available, with a total of 367,728 policies taken out, a total insured area of 362,358 hectares, and a total insured amount of NT\$72.331 billion. Following the comprehensive promotion of paddy rice income insurance in 2022, the coverage rate reached 51.83%. There has been a steady year-on-year increase in the number of policies taken out.



Moreover, to ensure the security of assets of fishermen during at-sea operations, the COA also encourages owners of motorized fishing vessels (rafts) of less than 100 metric tons to take out fishing vessel insurance and provides subsidies for premiums. In 2022, 9,251 fishing vessels (rafts) benefitted, with subsidies totaling NT\$39,015,676.

To meet the needs of industrial policy, in recent years the COA has successively come out with policy-oriented insurance, with farmers' associations acting as the insurer and assisting the government to promote sales of such insurance. In 2022, besides further developing sugar apple insurance, expanding the trial area for banana income insurance, and continuing to promote livestock insurance, we coordinated with agri-food policies and launched two new insurance products. The main points were as follows:

(1) Paddy rice income insurance

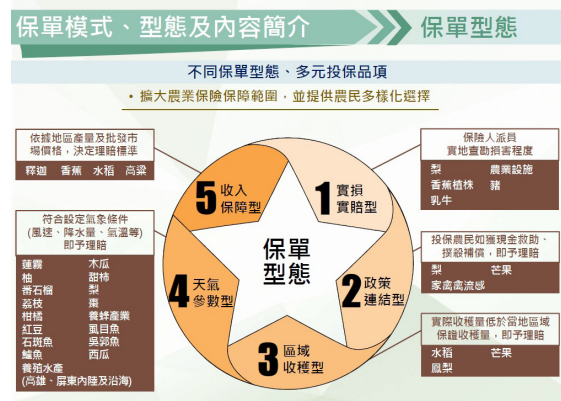
In coordination with the restructuring of the paddy rice industry, in 2022 the COA launched paddy rice income insurance, with two types on offer: basic and enhanced. "Basic" insurance is available for all legally cultivated paddy rice, and farmers can receive NT\$18,000 per hectare when production volume declines by at least 20%; the premiums are fully subsidized by the COA. "Enhanced" insurance is available (on a voluntary basis) for farmers who do not apply to sell their rice to government stocks, and is aimed at encouraging farmers to cultivate high-quality paddy rice and upgrade industrial competitiveness. This insurance product won strong support from farmers, with 257,515 policies taken out covering 220,975 hectares of land, for a coverage rate of 80.11%.

(2) Sorghum income insurance

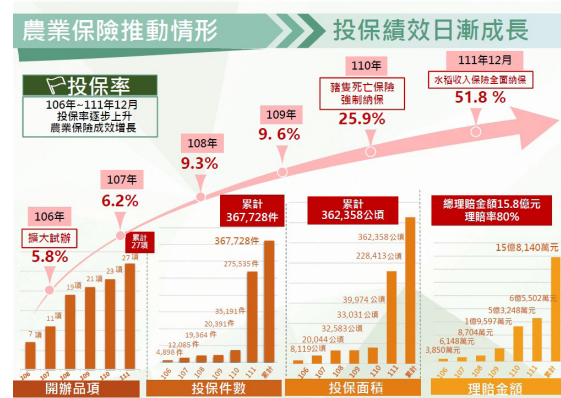
In order to moderate pressure on irrigation water, the COA has guided farmers to cultivate sorghum. Moreover, to stabilize the incomes of sorghum contract farmers, starting in the first crop season of 2022 we began offering sorghum income insurance on a trial basis in seven cities and counties on Taiwan proper. In the second crop season the program was expanded to include Kinmen County. This was the first crop insurance for a mixed staple crop (miscellaneous grain) and won strong support from farmers, with 95% taking out coverage.



An explanatory meeting on the content and procedures for taking out sorghum income insurance held on July 18, 2022.



An introduction to models, types, and contents of agricultural insurance policies.



An awareness-raising picture card for paddy rice income insurance.



The status of agricultural insurance promotion.

4. Promotion of Reuse of Residual Agricultural Resources to Develop Circular Agriculture

According to Environmental-Economic Account statistics, there are more than five million metric tons (MT) of agricultural waste each year. Over three million MT are handled locally by methods such as burial, using as mulching materials, composting, burning, and recycling. As of the end of 2022 the COA had guided the establishment of numerous venues for use of waste material, including 174 sites for reusing swine excreta, 56 for composting, eight for handling discarded mushroom bags, and one each for processing rice husks and for reusing oyster shells. These are capable of treating about two million MT of residual agricultural resources each year. Residual resource use and treatment venues that were newly created in 2022 included 10 for reusing swine excreta and two for composting. Additionally, four venues for reuse of forestry residual resources and one for use of clam shells have been planned and constructed.

In the past, for most agricultural residual resources, natural methods or collected treatment were used to return these bioresources to nature, but the circular use of these can help reduce Taiwan's overall carbon emissions. For example, biomass materials can serve as fuel to produce energy while biological polymers (such as cellulose) can be transformed into materials and substituted for plastics currently made from petrochemical raw materials. While the COA has continued to guide the establishment of venues for reuse and treatment of waste, it is possible to expand promotion of these venues by linking up with the dynamism provided by corporate ESG commitments to transform even more waste into resources, energy, or materials. This makes it possible to enhance the benefits of agricultural production and produce greater profits. In order to develop diversified and cross-domain usage models for agricultural residual resources, research institutes under the COA have already completed 12 demonstration sites, while another 34 are still in the promotion and planning stages. Each year they can use 306,000 MT of agricultural residual resources.



Biodegradable straw used as pineapple packaging (A), 3D printer filament (B), composite materials made from waste green bamboo (C), green foam made from the renewable additive lignan (D), and a renewable plug tray made with biodegradable fiber (E).



5. Enhancement of the Effectiveness of Carbon Sequestration in the Agricultural Sector

“Photosynthesis” is nature’s own carbon capture mechanism, and agricultural carbon sequestration is an important contributor towards achieving Taiwan’s goal of net-zero emissions. Of Taiwan’s 12 key strategies to achieve net-zero emissions, the COA is in charge of “carbon sinks.” The COA has determined that by 2040 Taiwan should increase agricultural carbon sequestration by 10 million metric tons by promoting forest, soil, and the ocean as the three major carbon sinks.

In terms of forest, the COA has enhanced the carbon sequestration capacity of forests by methods including increasing the area of land covered by forest through afforestation, reforestation after removing invasive species, recovery of degraded forest land, and renewing aged bamboo stand, while also strengthening the supply chain for domestically produced wood and promoting full material utilization. In terms of the soil, the COA has promoted crop varieties with carbon-negative functions as well as no-tillage and low-tillage farming or grass cultivation and application of soil microbes to increase soil organic matter. We have also established a measuring method to create a map of regional soil carbon storage capacities. In terms of the ocean, priority has been given to establishing basic data, including surveys of the carbon sequestration capacity of “aquatic organisms propagation and conservation zones” and the aquaculture industry. The COA has developed an integrated multi-trophic aquaculture system and strengthened conservation management of ocean areas and wetlands with carbon capture effects. The goal of these measures is to build a sustainable environment capable of coping with climate change and effectively contribute to Taiwan’s net-zero emissions policy.



The COA has strengthened the supply chain for domestically produced wood and promoted the “Taiwan Wood” label.



Grass cultivation in fruit orchards enhances carbon sequestration by the soil.

6. Development of green energy in agriculture

In coordination with the government’s policy of promoting renewable energy, the COA is developing agricultural green energy under the preconditions of not adversely affecting (i) the rights and interests of farmers and fishermen, (ii) the environment, or (iii) the development of the farm and fisheries sectors. With “agriculture in the main, green energy as value-added” as the main axis, we have prioritized the installation of solar power panels on the roofs of agricultural facilities, and gradually developed the ground-level combination of green energy with aquaculture. Major measures in 2022 included the following:

- Installation of solar power panels on the rooftops of agricultural facilities

The COA amended the “Regulations for Examining the Application of Structuring Farming Facilities on Agricultural Land,” permitting persons who install new green energy facilities on livestock facilities to increase the maximum area covered by the livestock facilities by 30%. Already more than 20% of livestock facilities across Taiwan have installed green energy facilities with total installed capacity of 1.4 GW. We also proactively inventoried buildings at venues including wholesale markets, public food stock warehouses, farmers’ associations, and cooperatives, with total installed capacity of 0.35 GW of solar power installed on the rooftops of agri-food manufacturing, storage, and marketing facilities. Moreover, since March 2021 the COA has promoted the “NT\$10 billion loan program for agricultural green energy” to provide farming and fisheries operators with capital needed for a production model combining the installation of renewable energy facilities (equipment) and agricultural operations. A total of 298 loans for NT\$5.81 billion have been approved.

- Continued expansion of announced special areas for co-existence of fisheries and electrical power generation

In 2021 and 2022 the COA announced a total of 6,639 hectares as “priority areas” and 8,915 hectares as “areas of concern with moderate pacing.” When added to the 4,702 hectares of priority areas announced in 2020



This indoor aquaculture facility has rooftop solar power panels.



Solar power panels have been installed on the roof of the fishing gear maintenance and repair venue at the Haishan Fishing Port in Hsinchu.



Solar power facilities have been installed at the Wushantou Reservoir in Tainan (installed capacity of 13.71 MW).

and the 649 hectares (464 MW) of seven approved projects for the co-existence of fisheries and electrical power generation in Chiayi County and Tainan City, the total area reached 20,905 hectares. To assist with the promotion of the co-existence of fisheries and power generation, with regard to cases in which land needed for shared booster stations and power storage equipment is located in an aquaculture production zone, the COA amended the “Operation Directions for the Examination for the Approval of the Change of Land Use by the Competent Authority of Agriculture” to allow applications for alteration of land use.

- The combination of green energy with agricultural water resources

The COA has completed 82 solar power sites located on irrigation infrastructure (installed capacity of 145.67 MW) and eight micro hydropower plants (installed capacity of 28.1 MW). The COA has effectively used agricultural water resources in coordination with the development of green energy.

7. Promotion of Agricultural Carbon Credits and ESG Programs at Agricultural Venues

Agriculture is a sector with low carbon emissions and high carbon-negative potential. The COA has been proactively planning incentive mechanisms



A hydropower plant in Xikou, Tainan (installed capacity of 11.52 MW).

to convert potentially reduced greenhouse gas emissions into benefits. With two existing carbon offset mechanisms, the “greenhouse gas offset program” engages in completing agricultural methodologies and investment in related areas. There are also plans to establish counseling teams and encourage agricultural groups to become verification bodies. As for the “Environmental Protection Administration (EPA) Disposal Directions for Reviewing the Offset of Greenhouse Gas Emissions from a Development Activity,” the COA has worked with the EPA to incorporate several agricultural operational items into the regulations, including electrically powered agricultural machinery, rice husk furnaces, energy-saving paddle wheels, and LED fishing lights.

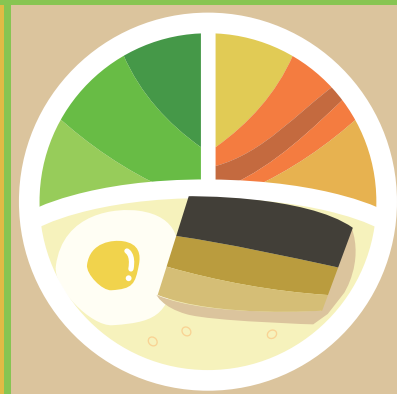
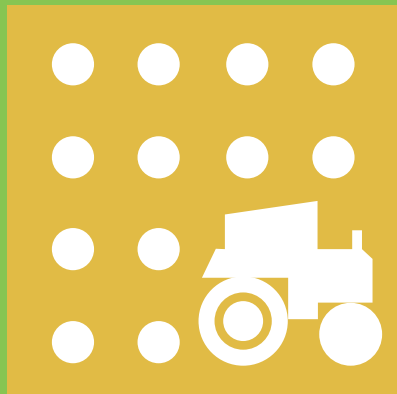
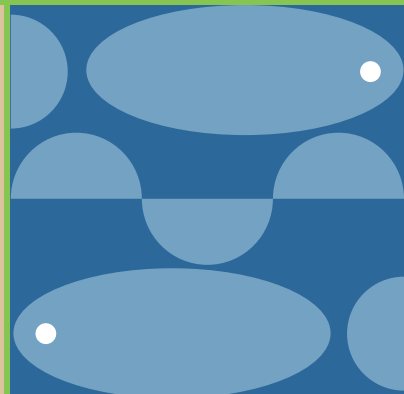
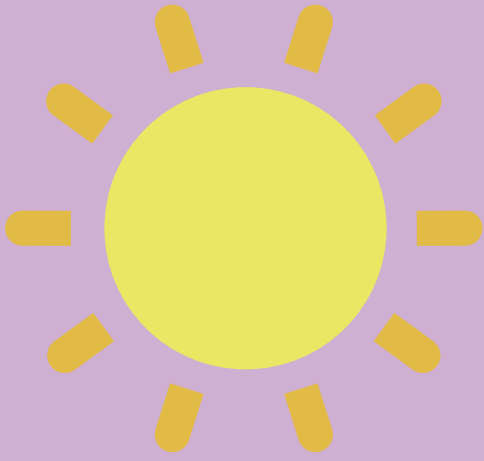
As climate change has become more severe globally, green finance and investment have become mainstream. Everyone including the Financial Supervisory Commission and multinational corporations is expanding their requirements related to indicators of sustainable operations. ESG refers to environmental, social, and corporate governance and is an important indicator of whether an enterprise can operate in a sustainable manner. Agricultural operations are based on the natural environment, which can assist corporations to meet ESG requirements. The COA took the initiative to query enterprises about their willingness to participate and laid out an “agricultural sustainable ESG program” with nine categories under the three main areas of “net-zero sustainability,” “environmental protection,” and “warmhearted rural communities.” This program will disclose information and mediate corporate investment of resources while also welcoming enterprises to make their own proposals to create more possibilities for cooperation. Through public-private collaboration, a win-win situation can be achieved.

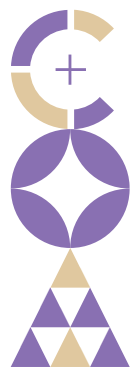
06



Major Events in 2022







Chapter 06

Major Events in 2022



An example of a shift to new specialty crops under the Green Environmental Payment Program.

1. A Look Back at Key Events in 2022

(1) The paddy rice production and marketing guidance policy

Most paddy rice production in Taiwan is carried out year-round, and fertilizer use and agro-pesticide spraying leads to a deterioration of the environment. In recent years the problem of overproduction of rice has become increasingly serious, and with supply in excess of demand market prices have been weak, affecting the incomes of rice farmers. In addition, as a result of climate change and limited water resources, the rice paddies in several reservoir irrigation areas have routinely faced water shortages and suspension of irrigation services. There has been an urgent need to use policy to transform the paddy cultivation system and reduce the area of land cultivated with paddy rice.

In 2022 the COA continued to promote rice industry guidance measures including promotion of the "select three crop seasons out of four for growing paddy rice" policy and the regional rotation system for allocation of water resources.

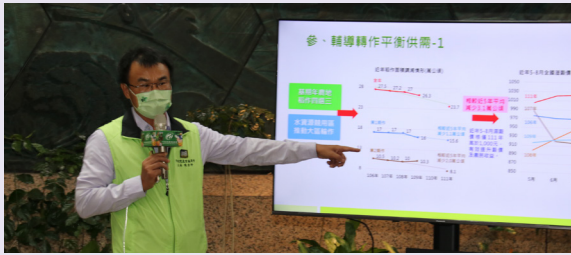
- The regional rotation system for allocation of water resources

With respect to six reservoir irrigation areas, including those of the Shimen Reservoir, the Shangping Weir of the Baoshan Reservoir, the Mingde Reservoir, the Liyutan Reservoir downstream

irrigation area, some of the irrigation area of the Shigang Dam, and the Tsengwen Wushantou Reservoir irrigation area, the COA adopted a policy of one rotation every two years. We have guided farmers whose land is in rotational irrigation areas to voluntarily participate in dry crop cultivation or production environment maintenance in the first crop season of each year, with the goals being to maintain food security and stabilize prices as well as to strengthen water-saving efficiency in dry seasons and stabilize the supply of water. For farmland in rotational irrigation areas that is used for crop rotation, we provide the basic amount of water required for cultivation of their dry crops (or green manure), while non-participating farmers are supplied with irrigation water based on the current irrigation system.

- The "select three crop seasons out of four for growing paddy rice" policy

For farmland which qualified as "base year" farmland for both crop seasons, starting in the second crop season of 2022 the COA did rolling verification to ensure that the cultivation of that land in the previous three crop seasons included at least one season of alternative (contract) crops, voluntary cultivation of crops other than paddy rice, or adoption of production environment maintenance measures. Only if such criteria were met could the land (i) be used in the current (fourth) growing



A press conference was held on August 19, 2022 on the subject of upgrading rice industrial policy and guaranteeing the incomes of paddy rice farmers.



An awareness-raising event for the "select three crop seasons out of four" policy and contract production of flint corn.

season to grow paddy rice that could be sold to the government for public stocks or (ii) be eligible for the rice-growing subsidy for big professional farmers. The purpose was to adjust the area cultivated with paddy rice and stabilize supply and demand in the market. However, for farmland for which certification was received for eco-friendly farming, organic agriculture, or Traceable Agricultural Products rice, the restrictions of the "select three crop seasons out of four" policy did not apply because these cultivation models are all environmentally friendly.

As a result of the implementation of this policy in 2022, the area cultivated with paddy rice was 238,702 hectares (ha), a decline of nearly 30,000 ha compared to the trimmed mean for the previous five years (2017-2021), effectively ameliorating the overproduction of rice. For the year, the maximum sales price of wet-grain rice surpassed NT\$1,100 per hundred Taiwanese catties (60 kilograms), the highest price over the years, effectively increasing farmers' incomes and helping to stabilize the price of rice in the market.

(2) Strengthened administrative capabilities for pet management

In recent years, with the declining birthrate and aging of the population, the proportion of

citizens with pets has increased. Taiwan's pet industry has developed rapidly and the industrial chain is increasingly complete. Besides economic activities connected to pet food, pet products, and veterinary healthcare, it includes accelerated development of extension services industries including pet beauty services, temporary kenneling, memorials, and insurance for pets.

In response to the continual growth in emerging pet-related industries, in April of 2022 the COA added a new "Pet Administration Section" to comprehensively plan and implement integrated systems for pet management and take responsibility for the mission of ensuring "comprehensive care from birth to death" of pets. The expanded scope of management includes pets that are not dogs or cats, as well as the construction of a pet industrial chain that takes into account pet welfare, professionalism, and innovation. The new section's duties include the introduction of reasonable norms for emerging pet industries, the building and promotion of a complete care and management system for the domestic pet market, and promotion of sustainable development of the pet industry and positive development of pet-related industries, while also enhancing international competitiveness. The goals are to give pets a peaceful life, enable pet owners to purchase relevant goods and services with peace of mind, and guarantee the welfare of companion animals.



President Ing-wen Tsai personally attended the press conference to formally announce the founding of the new "Pet Administration Section" under the COA.

(3) Passage of the "Food and Agricultural Education Act" and promotion of the zero-hunger program

The "Food and Agricultural Education Act" was promulgated by the President on May 4, 2022. The COA has worked with relevant government agencies and non-governmental organizations to pro-actively implement the provisions of this Act. Important tasks in 2022 included the following:



- **Public-private cooperation**

The COA formed a "food and agricultural education (FAE) promotion committee," completed five sets of subordinate legislation and administrative regulations, and guided 22 city and county governments to develop FAE systems featuring special local characteristics.
- **Stable access to food**

The COA endeavored to implement the zero-hunger program to ensure that all citizens have access to safe and nutritious food at stable prices.
- **"Local production, local consumption" labelling**

On May 1, 2022 the COA increased the subsidy for the use of domestically produced traceable agriproduct ingredients in school lunches to NT\$10 per person per meal at ordinary schools and to NT\$14 per person per meal for schools in remote areas. We also proactively encouraged government agencies (organizations) to purchase local agriproducts as well as prioritized promotion of the use of "Three Labels and One QR Code" ingredients in employee cafeterias and for group purchases (the group purchasing platform formally went on line on December 16).
- **Promotion of FAE through multiple channels**

In 2022 the COA: (i) produced an FAE instructional handbook for schools and, with respect to courses for different stages of learning, completed lesson plan handbooks and course modules needed by teachers (including primary, middle, and high schools); (ii) expanded the promotion of FAE: The COA guided 145 organizations, schools, and non-governmental organizations to develop 407 sets of course materials and held 688 experiential activities, with a total of 62,234 participants in these courses and activities. We also guided more than 2,500 home economics classes at farmers' associations and held regular class meetings to discuss how to link their work up to FAE. Moreover, the COA arranged for county-level farmers' associations to hold "food day" activities and guided rural communities to promote FAE, improve venues, design instruction materials and lesson plans, and organize experiential activities in 56 cases where there was a need for hardware or software. We also held rice, organic, and mixed staple crop FAE and seafood and fisheries



On October 27, 2022 COA Minister Chi-chung Chen gave out certificates of appreciation to communities which had effectively promoted the zero-hunger policy.

education promotional activities, with more than 50,000 participants. In 2022, based on the FAE principle of "enjoying local and seasonal food, learning through fun activities," the COA guided 55 farm operators to develop independent travel products using "food and agricultural fun vouchers" and marketed these through e-commerce platforms. (iii) completed planning for 143 items of popular-science type teaching materials on domestically produced agriproducts and put 55 such items on the market; (iv) completed training of 143 people to conduct FAE awareness-raising; and (v) constructed an integrated platform for FAE information (<https://fae.coa.gov.tw/>), which attracted 264,325 hits in 2022 (an increase of 121%).

In addition, in order to implement FAE and promote the zero-hunger policy, the COA organized meal provision services at 60 farmers' associations (35,550 meals) and four fishermen's associations (4,334 meals), and set up special areas selling low-priced "ugly foods" at farmers' association sales points. We also organized sales of low-priced boxed meals in 45 rural communities and expanded services to 105 rural communities (97,992 meals). Across Taiwan the COA established 89 stations to sell NT\$60 boxed meals, selling 281,424 such meals. We moreover worked with 116 social welfare organizations and related groups to provide 108,009 free boxed meals in 113 townships, sub-county cities, and districts in 18 cities and counties. The COA also held 45 FAE courses with 1,294 participants, delivered care to 389 households in 29 communities, and delivered 3,209 packages of food ingredients. In addition, in December we prepared 1,600 packages of food ingredients for an additional

400 households in short-term emergency need of food. The measures not only helped the rural elderly, they also assisted some disadvantaged families in rural areas and resolved the problem of meals for some schoolchildren.

(4) Response measures to mainland China's suspension of importation of agriproducts from Taiwan

Starting in March of 2021, mainland China successively suspended Taiwan's exportation of seven items of agricultural and aquatic products to that area: pineapples, sugar apples, wax apples, grouper, citrus fruit, white hairtail fish, and jack mackerel. To minimize the impact on these industries, the COA proactively adopted concrete measures including domestic marketing, international marketing, and processing, in order to ensure that farmers' incomes remained unaffected. We also brought together farmers from production areas, fishermen's groups, processing businesses, and exporters to cooperate to strengthen integrated marketing and to develop new markets. Concrete steps have included the following:



A press conference held on December 22, 2022 on an activity organized by the COA and a convenience store chain to promote sales of domestically produced atemoya and honey tangerines.



A press conference held by Japan's Kura Sushi company to publicize products made using grouper as part of Taiwan's efforts to expand Japan's consumption of Taiwan grouper.



A 2022 activity to present awards to and recognize enterprises and groups that made outstanding contributions to marketing of agriproducts.



A press conference held on August 12, 2022 to promote sales of high-quality wendan pomelos to Taiwanese.



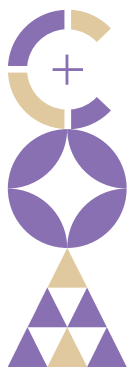
A press conference held on August 23, 2022 on the subject of corporate purchases of pomelos.

- Development of new markets and expansion of existing markets

The COA won market access through negotiations, guided certification, and improved freshness preservation for long-distance transport as well as provided incentives for developing overseas markets. We also strengthened overseas publicity and marketing activities.

- Strengthened domestic marketing and promotion

The COA launched diversified marketing activities and strengthened sales through e-commerce platforms, corporate group purchases, and use of travel vouchers to purchase affected agriproducts. We also expanded diverse processing uses and cold storage of these products. In these ways the COA expanded domestic consumer demand.



The COA has been pro-actively working to expand the import of Taiwan agriproducts by Japan. The photo shows Taiwan's representative in Japan Frank Hsieh (right) and Keiji Furuya (left), chairman of the Japan-ROC Diet Members' Consultative Council, at a promotional banquet.



A marketing activity to promote the import of Taiwan agriproducts into the Japanese market: The Taiwan pork truck activity.

At the same time, in coordination with the Executive Yuan's "Quintuple Stimulus Voucher" policy and in response to mainland China's suspension of imports of farm and fisheries products from Taiwan in August of 2022, the COA successively came out with the "Rural Travel Voucher 2.0" and "3.0" programs to guide citizens to consume more domestic agriproducts. The usage rate of vouchers for the two programs was over 95%, thereby effectively promoting business opportunities in rural communities.

In addition, the COA provided affected farmers and fishermen with loans for working capital needed for their operations, helped to stabilize production and marketing of farm and fisheries products, and continued working through formal channels for dialogue. Moreover, we also attempted to uphold Taiwan's rights and interests in WTO forums in order to restore exports of relevant farm and fisheries products to China as soon as possible.

Despite the COVID-19 pandemic and mainland China's suspension of imports of agriproducts from Taiwan, in 2021 exports of these agriproducts reached a new high of

US\$5.669 billion. Of these, exports to mainland China fell from 23.2% of the total in 2018 to 19.77% in 2021 and again to 12.98% in 2022. The US became the largest market for exports of agriproducts from Taiwan, with such exports totaling US\$917 million in 2022, while Japan was second with US\$856 million. China fell to third, with US\$678 million, indicating that agriproduct exports have steadily reduced their reliance on the Chinese market.

In terms of fresh fruit, the proportion of export value that went to mainland China peaked in 2016 at 77.8%, and fell thereafter, reaching 47.37% in 2021 and 1.62% in 2022. Exports of fresh fruit to the Japanese market accounted for 8.52% of total fresh fruit exports in 2020, rising to 26.25% in 2022, making Japan the largest current market for exports of fresh fruit from Taiwan.



An activity held at the Hope Plaza in Taipei on family dining using fresh and delicious white hairtail fish.



A sales exhibition and press conference entitled "The Fresh Fish of Formosa" held at the Hope Plaza to promote purchasing of seafood.



COA Minister Chi-chung Chen participated in this press conference to promote the purchase of six agriproducts for the Mid-Autumn Festival using the "Rural Travel Voucher 3.0" program.

(5) A mechanism for tracing domestically grown tea and distinguishing tea mixed with imported tea leaves

In order to safeguard food safety for consumers and the rights and interests of tea farmers and prevent adulteration by imported tea or false labeling of such tea as domestic, based on Paragraph 3 of Article 16 of the "Agricultural Production and Certification Act," on August 15, 2022 the COA gave public notice of a draft of "Designation of Domestic Tea as the Agricultural Product Item of Registration for Traceable Information." We collected the opinions of industry, and considering that it would be difficult to recall the labels of tea products already on the market, and with reference to the actual implementation measures for the new regulatory system for labeling of food products of the Taiwan Food and Drug Administration of the Ministry of Health and Welfare, adopted the date of manufacture of the products as the standard for implementation. On October 27, 2022 the COA announced the "Designation of Domestic Tea as the Agricultural Product Item of Registration for Traceable Information and Its Directions." This requires manufacturers of

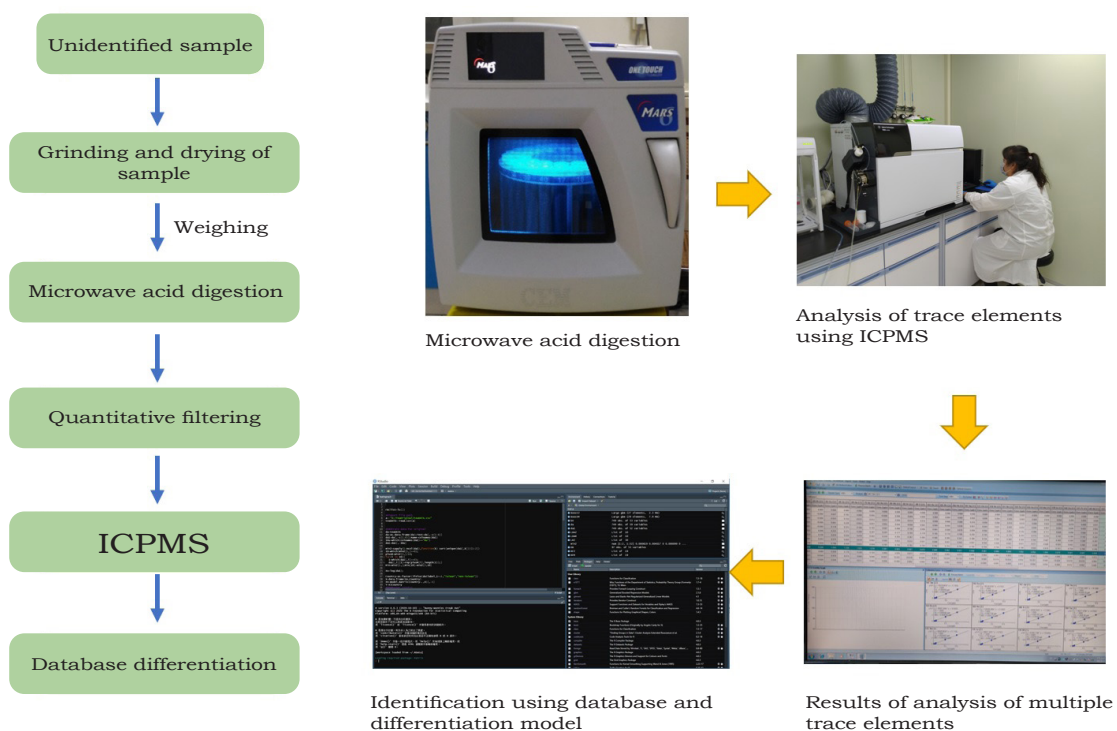
domestic tea to act, starting from January 1, 2023, on the basis of the "Information Items and Labeling Method of Traceable Agricultural Products" and register traceability information and use appropriate labeling prior to the commercial circulation or sale of tea.

As of 2023 tea manufactured domestically in Taiwan must, in accordance with the "Act Governing Food Safety and Sanitation," have a label indicating the place of production as "Taiwan" attached to the smallest unit of sale (complete packages). In addition, they must have one of the following three marks: an agriproduct traceability QR Code, a Traceable Agricultural Product certification, or a Taiwan



An explanatory meeting for promotion of the compulsory traceability system for domestically produced tea.

Procedure for analysis of multiple elements in tea



A graphic of the procedure for analysis of multiple elements in tea.



| The "Conference on Strategies for Net-zero Emissions in Agriculture," held on February 9, 2022.

Organic certification. Thereafter, domestically produced tea on the market is examined using place-of-production identification technology developed by the COA's Tea Research and Extension Station, in order to safeguard the rights and interests of consumers and tea farmers and prevent adulteration by imported tea or false labeling of such tea as domestic.

(6) Promotion of the policy of net-zero emissions in agriculture

The 6th Assessment Report (AR6) released by the United Nations' Intergovernmental Panel on Climate Change recently has pointed out that there is no doubt about the negative impact of human activity on global warming, and that the scale of the broad and rapid changes in the atmosphere, oceans, cryosphere, and biosphere as well as extreme weather disasters around the world are unprecedented over the past several thousand years. Taiwan is an island country, and not only is the rate of rise of sea levels twice the global average, but average temperature rose by 1.6°C from 1991 to 2020, and this rise is accelerating. The pattern of rainfall has also changed, and there has been a marked trend of increasing total torrential rainfall in a single day and of consecutive days without rain in the year, with both situations posing enormous challenges to agriculture in Taiwan. In order to cope with the impact of extreme weather on agriculture, the COA has not only continued to implement relevant adaptation work, it has also drafted integrated strategies to achieve net-zero emissions in agriculture in order to assist Taiwan reach its national goal of net-zero emissions by 2050.

- Holding of a nationwide series of forums and the "Conference on Strategies for Net-zero Emissions in Agriculture"

In response to climate change, the COA, besides continuing to implement existing adaptation strategies, held 27 forums nationwide from November 8 to December 29, 2021 at three levels: local participation, regional governance, and industrial focal points. Industry, government, academia, and consumers were invited to participate and more than 200 suggestions were collected to serve as the basis for the formulation of concrete net-zero emissions strategies for the agricultural sector.

Thereafter, on February 9, 2022 the COA convened the "Conference on Strategies for Net-zero Emissions in Agriculture" to achieve consensus. A total of 59 measures based on 19 strategies were set out within the four main pillars of net-zero agriculture: "reduce carbon emissions," "enhance carbon sinks," "encourage circular agriculture" and "promote green trends." These serve as the overall framework for the future promotion of net-zero emissions in the agricultural sector. The Conference also declared that the agricultural sector will achieve net-zero emissions ahead of schedule, in 2040. Goals include (i) reducing emissions of greenhouse gases in the agricultural sector by 50%; (ii) increasing sequestration by agricultural carbon sinks by 10 million metric tons; (iii) building 1,000 sustainable low-carbon circular venues for farming, forestry, fisheries, and animal husbandry and appropriately reusing more than five million metric tons

of residual agricultural resources; and (iv) constructing enough green energy facilities to satisfy 100% of demand for electricity from the agricultural sector and provide 40% of the country's green energy. All of the measures are already being implemented through interagency cooperation and we will continue to regularly communicate with industry, government, and academia and assess these measures in order to construct a sustainable environment that is adapted to the risks of climate change and contributes to Taiwan's national policy of reaching net-zero emissions by 2050.

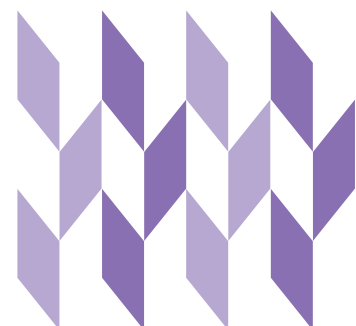
- **Communicating with society about the net-zero transition key strategy of "carbon sinks"**

On November 18, 2022 the COA invited the Ocean Affairs Council, the Ministry of Economic Affairs, and the Ministry of the Interior to jointly hold a "conference for communication with society" at the Grand Hotel in Taipei. More than 300 people from industry, government, and academia as well as interested stakeholders whose work is related to the strategy of increasing natural carbon sequestration were invited. At the event an action plan for the national natural "carbon sinks" strategy was announced and the opinions of interested stakeholders collected. The government consequently improved the contents of the "carbon sinks" strategy in order to facilitate contributions to the national reduction of total emissions of greenhouse gases by forest, soil, and ocean carbon sinks and effectively implement the national net-zero emissions strategy.

(7) Constitutional Court judgment on restructuring of irrigation associations

Irrigation associations were restructured into administrative agencies on October 1, 2020. Later, the Taiwan Constitutional Court (TCC) announced its judgment "111-Hsien-Pan-14" on August 12, 2022. In this judgment, the TCC upheld the constitutionality of the issues raised and declared that the relevant articles of the "Irrigation Act" do not violate the principle of legal certainty or the principle of legal reservation.

According to TCC judgment "111-Hsien-Pan-14," irrigation associations (legal entities of public law) were founded on the basis on legal provisions, and were not established by the people based on the freedom of association. In other words, their restructuring had nothing to do with the freedom of association as guaranteed in Article 14 of the Constitution of the Republic of China (Taiwan). Moreover, restructuring irrigation associations into administrative agencies did not violate the principle of *lex retro non agit* (principle of non-retroactivity) or the principle of legitimate expectation (*Vertrauensschutz*) enshrined in the Constitution. Furthermore, the assumption by the state of all the assets from irrigation associations after the restructuring did not infringe the right of property that Article 15 of the Constitution guarantees. From the perspective of constitutional law, the restructuring of irrigation organization types, from the "legal entities of public law" to the "government agency" model, was a matter of the concept of *rebus sic stantibus* where there has been a fundamental change of circumstances.





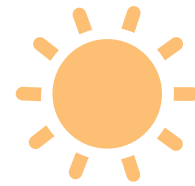
2022 Month by Month

JAN

- The COA launched "paddy rice income insurance," for which farmers could take out policies from January 1 to March 31; the aim was for this insurance to spread the risks of agricultural operations and ensure farmers' incomes.
- The provisions of the "Regulations for the Marking of Fishing Gillnets" related to reporting of lost gillnet fishing gear and related fines and punishments went into effect.
- The COA implemented the "ID-based registration for agro-pesticide purchasing" policy, requiring newly established agro-pesticide retailers to adopt point-of-sale systems or interface reporting, and strengthened the review and approval of ID-based registration of agro-pesticide purchasers.
- Implemented the policy of printing traceability information on chicken eggs.
- Ended the use of lapinized classical swine fever (hog cholera) vaccines in Taiwan to safeguard animal health and welfare and improve Taiwan's international image in the area of animal protection.
- Began to require veterinary drug dealers to report veterinary drugs sales information via the online "veterinary drugs sales information reporting platform" every half year.
- Began to accept applications for the 2022 "Green Environmental Payment Program," relaxed restrictions on the township (district) of application and cultivation schedule based on the specific circumstances of farmers, and, in coordination with crop rotation policies, strengthened the effectiveness of water-saving measures and the stability of water supplies, as well as increased farmers' incomes.
- Convened a meeting of the "African Swine Fever Central Emergency Operation Center," bringing together relevant agencies to assess control preparations and actions for the Lunar New Year, and strengthened inspection of inbound potential virus carriers and interdiction of illegal use of kitchen waste to feed pigs, thereby continuing to keep Taiwan free from African swine fever.
- In response to the rise in prices of raw materials for fertilizer manufacturing due to the COVID-19 pandemic, the COA implemented measures for the government to absorb 50% of the increased costs in order to reduce the impact on farmers and fertilizer businesses.
- Announced the deletion of recognition of Italy as a country free of African swine fever.
- Announced the following agricultural insurance products: "Regional Rice Harvest Insurance of Fubon Insurance," "MSIG Mingtai Insurance poultry avian influenza insurance," "MSIG Mingtai Insurance poultry avian influenza insurance, additional insurance for losses of income prior to restoration of operations (applicable to egg layer poultry)," and "Typhoon and Flood Insurance for Agricultural Facilities of Fubon Insurance."
- Announced the solicitation of proposals for the 2022 food and agricultural education promotion program with the hope of working through cooperation with schools and local agriculture-related groups to achieve the goal of food and agricultural education for all.
- Announced the deletion of recognition of Newfoundland and Labrador of Canada as a zone free of highly pathogenic avian influenza.
- Issued an interpretive rule pursuant to Subparagraph 2 of Article 26 of the "Agricultural Production and Certification Act" which stipulates relevant rules regarding the misleading presentation for the Traceable Agricultural Products Certification System to clarify the criteria for determination of violations and conditionally permit processed products to indicate that they use Traceable Agricultural Products ingredients.
- The "Taiwan Soybean Industry Alliance" was formally founded, with the aims of stabilizing the quality and supply chains for domestically produced soybeans and raising the import substitution rate.
- The COA announced the deletion of recognition of Indre of France as a zone free of highly pathogenic avian influenza.
- Announced the deletion of recognition of Spain as a country free of highly pathogenic avian influenza.
- Amended particle articles of the "Operation Directions of Counseling Public and Private Forest Management" to provide subjects of guidance under the "Forestry Sustainable Multi-Guidance Incentive Program" with subsidies for machinery needed for under-forest economy operations, forest recreation development programs, environmental monitoring programs, and fees for international forest certification.
- Amended the "Regulations About Standards for Determination of the Farmers Engaged in Agricultural Works Applying for Joining in Farmers' Health Insurance Programs and Examination of Their Qualifications" to stipulate the qualifying conditions and review process for applications from young farmers who have retired after short periods of military service to enroll in farmers' health insurance, to ensure that persons enrolled in farmers' health insurance and paying into farmers' pension accounts can enjoy social security protection.

FEB

- The COA announced the deletion of Nova Scotia of Canada as a zone free of highly pathogenic avian influenza.
- Coordinated with animal feed businesses to purchase in March, ahead of schedule, the amount of feed corn required in Taiwan for the next six months and expanded the area of land cultivated with feed corn in response to the sharp increase in the international futures price of grains and transportation fees as a result of the impact of the Russia-Ukraine war and the international situation.

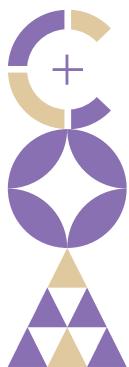


- Announced that onion growers in Pingtung County were eligible for cash relief and low-interest loans to assist farmers who were victims of disaster to resume operations as soon as possible.
- Announced the deletion of recognition of Seine-Maritime, Mayenne, Tarn, and Indre-et-Loire of France as zones free of highly pathogenic avian influenza.
- Held the "Conference on Strategies for Net-zero Emissions in Agriculture."
- Announced "MSIG Mingtai Insurance beekeeping industry insurance (parametric insurance for temperatures and rainfall)" as an insurance product in 2022.
- Announced the deletion of recognition of Indiana, Kentucky, Virginia, New York, Maine, Delaware, and Michigan of the US as zones free of highly pathogenic avian influenza.
- Announced the deletion of recognition of Botswana as a country free of highly pathogenic avian influenza.
- Amended the "Directions of Stocking Registration and Inspection for Aquaculture Industry in Taiwan" to clearly stipulate subjects of reporting in order to safeguard the rights and interests of fishermen actually engaged in aquaculture operations and keep up-to-date on the situation in the aquaculture industry.
- Issued the "Examination Directions for Structuring Recreational Agriculture Facilities on Agriculture Land" to clearly set norms for application data and procedures for permission to build recreational agricultural facilities.
- Amended partial articles of the "Directions for Purchasing the Paddy of Public Stock" to relax the requirement that farmers can only apply in the locality where their legal residence is. A new provision was also added requiring that farmland conforms to the base year for the "Green Environmental Payment Program" with respect to the crop season for which farmers apply and two previous crop seasons and must conform to the "select three crop seasons out of four for growing paddy rice" policy in order to be able to apply. In addition, in response to the elimination of direct payments on rice and the introduction of compulsory paddy rice income insurance, the amendments adjusted the cultivation measures for application.
- Held an event in Tokyo to promote the sale of new frozen atemoya products from Taiwan.
- Began accepting applications for "agricultural operational preparatory funds" for young farmers for the first half of 2022. New farmers aged 18 to 45 who have agricultural operational skills as well as venues for agricultural operations can receive a maximum of NT\$720,000 in agricultural operational preparatory funds over two years to encourage outstanding young people to take up agriculture as a profession.
- Held the presentation ceremony for the 2nd "IPM Award."
- Signed a Memorandum of Understanding with the Department of Crop Production of the Ministry of Agriculture and Rural Development of Vietnam for certification and protection of plant variety rights to accelerate the protection of plant variety rights in the two countries and assist industrial deployments.
- In response to the impact of continued severe cold weather, large temperature differentials, and disease, which combined to lower the rate of egg production of layer hens, the COA implemented guidance measures to accelerate a restoration of normal operations and stabilize supply and demand in the market, including:
 - Provided an additional NT\$5 per Taiwanese catty (0.6 kilograms) of eggs through production incentives for layer farms and the market mechanism (2+3) and subsidies to restore normal operations.
 - Coordinated with processors to manage eggs used as raw materials in processing.
 - Made special arrangements to import chicken eggs from the US, Australia, and Japan to compensate for shortfalls in eggs used as raw materials in processing.

MAR



- The COA announced the deletion of recognition of Loire-Atlantique, Maine-et-Loire, Cantal, Loir-et-Cher, Morbihan, Ille-et-Vilaine, and Lot of France as zones free of highly pathogenic avian influenza.
- Announced the deletion of recognition of Connecticut, Iowa, Missouri, Maryland, South Dakota, Illinois, Kansas, Wisconsin, Nebraska, New Hampshire, Minnesota, North Carolina, and North Dakota of the US as zones free of highly pathogenic avian influenza.
- Announced recognition of Paraguay as a country free of African swine fever.
- Announced the acceptance of applications for 2022 subsidies under the "Agricultural Digital Foundation Star Point Program" up to September 15, to provide farmers, fishermen, farmers' organizations, and micro agribusinesses with applications of cloud tool services with the aim of expanding access to digitalization.
- Set up a special area for premium quality fruit in the Taiwan Pavilion at the 47th "International Food and Beverage Exhibition" in Tokyo (FOODEX JAPAN 2022) with the aims of raising the profile of Taiwan fruit, establishing an international reputation for excellence, seizing commercial opportunities in overseas markets during the recovery following the COVID-19 pandemic, and expanding the amount and value of exports.
- Announced the following agricultural insurance products: "Fubon Insurance milkfish aquaculture insurance with precipitation volume parameter," "Fubon Insurance grouper aquaculture insurance with precipitation volume parameter," "Fubon Insurance sea bass aquaculture insurance with precipitation volume parameter," "Fubon Insurance tilapia aquaculture insurance with precipitation volume parameter," "Taiwan Fire and Marine Insurance Kaohsiung regional aquaculture insurance with precipitation volume parameter," "Fubon Insurance watermelon crop insurance with precipitation volume parameter," and "MSIG Mingtai Insurance citrus fruit insurance with wind speed parameter."

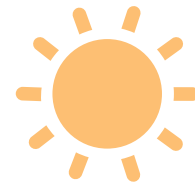


- Announced the amendment of Paragraph 4 of the "Prohibition of Delivering Cloven-hoofed Animals and Their Products from Kinmen Area to Taiwan Main Island and Other Offshore Islands" to permit the shipment from Kinmen to Taiwan of fresh, chilled, and frozen beef products from animals that have been decapitated, deboned, and eviscerated in conformance with regulations.
- Announced amendments to partial articles of the supplementary of Subparagraph 36 of Paragraph 1 under Part B of "Quarantine Requirements for the Importation of Plants or Plant Products into the Republic of China." Part B covers quarantine requirements for plants or plant products that may enter under precautionary measures, and the supplementary is entitled "Quarantine Requirements for the Importation of Lily Flower Bulbs from the Netherlands." The amendments facilitate the importation of healthy lily bulbs for cultivation and use by farmers in Taiwan.
- Held an activity to mark the opening of the Chianan irrigation "Canal Greenway" and plant trees. A group of 1,000 people led by the President, the Premier, and heads of relevant ministries and agencies simultaneously planted 10,000 trees of native Taiwan species in nine locations along the Greenway in an effort to raise consciousness of the importance of water protection and environmental sustainability.
- Amended the "Agricultural Natural Disasters Relief Regulations" to simplify weather parameters for disaster relief inspections in order to accelerate the handling of relief services.
- Held the presentation ceremony and exhibition of achievements for the 2021 awards for young entrepreneurs at tech-based agribusinesses.
- Held an exhibition of achievements of plant doctor trainees. The aim was to promote the safety of agro-pesticide use and reduce agro-pesticide residues in agricultural products through the plant doctor system.
- Held the 2022 "Taiwan International Orchid Show" to promote marketing for the Taiwan orchid industry.
- Held the awards presentation ceremony and exhibition of achievements for the 2021 "Top Ten Agricultural Production-and-Marketing Groups." Premier Tseng-chang Su personally presided over the event, extolling award-winning agricultural production-and-marketing groups (APMGs) from various fields. The awards establish benchmarks to guide domestic APMGs in learning and improving.
- Announced the deletion of recognition of Ontario of Canada as a zone free of highly pathogenic avian influenza.
- Issued the "Regulations for the Importation of Objects Subject to Animal Quarantine," which went into effect on April 29. Besides listing prohibited animal quarantine objects, the Regulations stipulate the quarantine requirements for objects subject to quarantine with the aim of preventing diseases from overseas from being transmitted into Taiwan via these objects and fully implementing the system of border inspection and quarantine measures.
- Amended the "Regulations Governing Personnel Management of Farmers' Associations" to increase the remuneration point conversion rate and payment rate for employees of farmers' associations in response to rising basic remuneration and prices in society over the years.

▶ APR



- The COA announced the deletion of recognition of Ohio, Texas, Massachusetts, Wyoming, Montana, Colorado, Pennsylvania, Idaho, and Utah of the US as zones free of highly pathogenic avian influenza.
- Announced guava insurance, banana plant insurance, aquaculture insurance, wax apple insurance, sorghum income insurance, and papaya insurance as agricultural insurance products in 2022.
- The "Pet Administration Section" was established in the COA to conduct comprehensive systemic planning and promotion of pet welfare from birth to death.
- The COA announced the deletion of recognition of Correze, Dordogne, Finistere, Vienne, Sarthe, and Aveyron of France as zones free of highly pathogenic avian influenza.
- Announced that the period of interest-free measures for the "low-interest loans of agricultural natural disasters" would be extended to December 31, 2022 to help farmers and fishermen affected by disasters to restore operations in the post-disaster period by reducing the burden of interest payments.
- Completed the national random inspections of major farmland irrigation facilities in Taiwan, strengthened capabilities for immediate disaster response and rescue during flood seasons, and enhanced the quality of management of irrigation and farmland water conservancy matters.
- Announced addition of the cane toad to the "List of Non-native Terrestrial Wildlife That Is Harmful to Ecological Environment as Well as Human and Animal Safety in Accordance with Paragraph 1 of Article 31 of Wildlife Conservation Act" effective from April 15.
- Announced the deletion of recognition of Alberta, Quebec, British Columbia, Saskatchewan, Manitoba, and New Brunswick of Canada as zones free of highly pathogenic avian influenza.
- Announced the extension of the deadline for taking out banana income insurance in 2023 to May 13, 2023 and promoted refinement measures including discounts on premiums to encourage even more farmers to enroll in this insurance and spread operational risk.
- Amended the "Regulations Governing Security Maintenance and Management of Personal Information File for Agricultural Financial Industry" so that if any non-governmental agency including the credit departments of farmers' and fishermen's associations discovers a data breach it must report the incident to the COA within 72 hours.



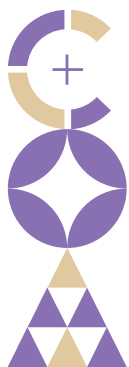
- Announced the "Regulations Governing the Ban on Chlorpyrifos" (an agro-pesticide). Its import and manufacture were banned as of April 15, 2022, and its processing or packaging will be banned as of January 1, 2024, while its export, sale, and use will be banned as of January 1, 2026.
- Announced the recognition of the Republic of Guatemala as a country free of contagious bovine pleuropneumonia.
- Announced the maps of boundary lines for slopeland in Lienchiang County, incorporating 2,296.3 hectares under the norms of the "Soil and Water Conservation Act," thereby adding the last piece of territory to complete the delineation of the scope of slopeland in all of Taiwan.
- Issued the "Regulations Governing the Trial Operation and Premium Subsidy of Sorghum Income Insurance" in coordination with the policy to promote cultivation of sorghum and provided subsidies covering one-half of the premiums for farmers.
- As of May 1, 2022 the COA increased the subsidy payment for use of traceable domestically produced ingredients in school lunches from NT\$6 to NT\$10 per person per meal at ordinary schools and from NT\$10 to NT\$14 for schools in remote areas.
- The COA announced the weather parameters under which Article 6, Paragraph 6 and Article 12, Paragraph 1, Subparagraph 3 of the "Agricultural Natural Disasters Relief Regulations" apply. The competent authorities at the local (municipality, city, and county) level should use these as the basis for filing for cash relief and low-interest loans announced by the central competent authorities.
- Issued the interim measure for the importation of day-old poultry and fertilized eggs (including fertilized eggs for research purposes) from a highly pathogenic avian influenza zone.

MAY



- The COA announced the deletion of recognition of Vermont, Alaska, Oklahoma, Oregon, Washington, and New Jersey of the US as zones free of highly pathogenic avian influenza and Charente of France as a zone free of highly pathogenic avian influenza.
- Announced "Parametric Pomelo Insurance of MSIG Mingtai Insurance for the Wind Speed" and "Parametric Sweet Persimmon Insurance of Chung Kuo Insurance for Wind Speed of Typhoon and Rainfall in Taichung City" as agricultural insurance products in 2022.
- Announced the recognition of the Republic of Lithuania as a country free of foot and mouth disease and contagious bovine pleuropneumonia.
- The President promulgated the "Food and Agricultural Education Act" to provide funding and a legal basis for the promotion of food and agricultural education in Taiwan.
- The COA issued the "Directions for Local Competent Authorities Establishing or Announcing Guidelines on the Management of Gillnet Fishery" to facilitate such management by local (municipal, city, and county) governments.
- Held a groundbreaking ceremony for Taiwan's first regional cold-chain logistics center, marking a new milestone for freshness preservation systems for domestic agriproducts.
- Amended some provision of the "Directions for Cleanup of Driftwood of Natural Disasters" to extend the cleanup period announced by local governments after natural disasters during which local citizens can freely pick up driftwood, in order to accelerate cleanups and increase opportunities for reuse of resources.
- Issued the "Fine Determination Criteria for the Violation of Subparagraph 2 of Paragraph 1 of Article 28 of Statute for Prevention and Control of Infectious Animal Diseases That Pork Products Are Sent by Post from Countries Where African Swine Fever Has Occurred," in order to block the entry into Taiwan of pork products via parcels from zones where African swine fever has occurred, which would threaten the safety of production of Taiwan's livestock industry.
- Amended the "Agricultural Natural Disasters Relief Regulations" to redefine relief amounts for farming industries, fisheries, animal husbandry, and forestry.
- The "Action Plan for Fisheries and Human Rights" was submitted to the Executive Yuan for approval, with multi-faceted approaches to systematically protect the rights and interests of foreign fishing vessel crew members.
- The COA amended the "Regulations on the Authorization and Management of Overseas Employment of Foreign Crew Members" to enhance protections of the rights and interests of foreign crew members hired overseas.
- Announced the amendment of the "Definition and Guideline of Animal-friendly Egg Production System" to guide layer poultry farms to transition to animal-friendly production.
- Amended partial articles of the "Reward Regulations for Informers or Assistants Who Discover Banned, Counterfeit or Inferior Agro-pesticides" to clarify the scope of rewards and the issuing of reward money.
- Amended the appendix of Paragraph 8 of the "Operation Directions of Counseling Public and Private Forest Management" to liberalize subsidies for forestry machinery costing less than NT\$10,000 and to add subsidies for fees for drawing up forest management plans; these amendments went into effect on May 23.





JUN

- The COA announced "Rice Income Insurance for the Second Season of 2022" and "parametric jujube insurance of Union Insurance for weather" as agricultural insurance products in 2022.
- Announced the deletion of recognition of Georgia of the US as a zone free of highly pathogenic avian influenza.
- Amended the "Regulations for Subsidy, Incentives, and Assistance of Council of Agriculture, Executive Yuan for Promoting Industry Innovation" in order to add "incentives" to measures used to assist with industry innovation activities.
- Held the 2022 training session for plant doctor trainees prior to their taking up their posts, and successfully found employment for them at 46 farmers' associations and district administrative halls to provide farmers with customized crop diagnosis and treatment services.
- Amended the "Regulations Governing Management of Imported Samples and Gifts of Veterinary Drugs" in order to simplify the documentation needed by veterinary clinics to apply for imports of pharmaceuticals so that clinical veterinarians can more easily obtain drugs needed for emergency healthcare.
- Amended the "Regulations for the Fishing Operations of Coastal and Offshore Tuna Longline Fishing Vessels" to add a list of highly migratory species, strengthen management of vessel position reporting during fishing vessel operational periods, and adjust the designated ports where tuna longline fishing vessels can land their catch.
- Amended the "Directions for Domestic Food Aid" to expand eligibility for applying for such aid to national juridical persons, incorporated foundations, or other organizations approved by the COA to undertake "green care" programs or "rural community green care" programs.
- Amended the "Regulations Governing Risk Management Ratios of the Credit Department of Farmers' and Fishermen's Associations," the "Standards Governing Credit Extension and Limitation to the Associated Members and/or Non-members for the Credit Department of Farmers' and Fishermen's Associations," the "Regulations Governing the Business Guidance, Fund Accommodations and Redeposit of Surplus Funds for the Credit Department of Farmers' and Fishermen's Associations," and the "Regulations Governing Adjustment of Business Projects and Range of the Credit Department of Farmers' and Fishermen's Associations" to appropriately raise limits on credit extended, prioritize areas for liberalized operations, strengthen the redeposit mechanism of credit departments, and rationally adjust performance review standards; the amendments went into effect on July 1

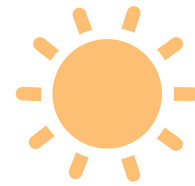
JUL

- Based on the "Format, Content, Frequency and Manner of Reports from the Agro-pesticide Manufacturer or Dealer," the COA required agro-pesticide retailers who formerly reported by uploading documents to switch to using online forms to file reports.
- The COA amended partial articles of the "Regulations for Implementation and Premium Subsidy of Rice Income Insurance" to conform to provisions preserving cash relief for rice seedlings and the rice of panicle initiation to booting stage in the "Agricultural Natural Disasters Relief Regulations."
- Announced amendments to the "Regulations for the Management of Coastal and Offshore Fishing Vessels Catching Crabs" to adjust the shell width of crabs that can be caught and add provisions for periods of prohibited fishing for egg-carrying female crabs and coordinated measures to ban sales, in order to enhance sustainable use of coastal and offshore crab resources; the amendments went into effect on August 1.
- Announced the deletion of recognition of Nevada of the US as a zone free of highly pathogenic avian influenza.
- Announced "sugar apple income insurance" as an agricultural insurance product in 2022.
- Announced the deletion of recognition of Calvados of France as a zone free of highly pathogenic avian influenza.
- Announced that "African swine fever (ASF) is listed as an infectious animal disease under Articles 12-1 and 12-2 of the Statue for Prevention and Control of Infectious Animal Diseases"; the regulation became effective as of October 15.

AUG

- The COA announced the deletion of recognition of Manche and Somme of France as zones free of highly pathogenic avian influenza.
- Announced "sorghum income insurance for the second crop season of 2022" and "azuki bean crop insurance" as agricultural insurance products.
- Held a business matchmaking meeting for purchasing of domestically produced soybeans and soy milk, to ensure the supply of Traceable Agricultural Products soy milk to schools and provide for the nutrition and health of school children.
- Amended the "Operation Directions for Designation Examination of Leisure Agricultural Areas" and necessary documentation to clarify the process for review of applications for designation as a "leisure agriculture area."
- Announced the deletion of recognition of California of the US as a zone free of highly pathogenic avian influenza.
- Worked with 26 e-commerce businesses in Taiwan to establish a special area for purchasing of wendan pomelos on the "Taiwan Agricultural Products Celebration" platform (<https://farmersbuy.cas.org.tw/#/>) and offered incentives to encourage consumers to actively buy pomelos and support domestic agriproducts with action.
- Amended Supplementary 5 of Article 12 of the "Regulations for Registration of Veterinary Drugs" to shorten the minimum period for international approval for sale on the market of ingredients in pharmaceuticals for new drugs for non-food production animals (to be used as reference information) to five years. We also added a provision to simplify





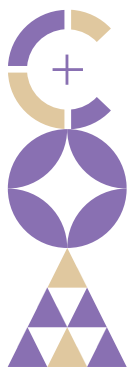
certification and registration documentation for selected infusion drugs that are already present in an animal's bodily fluids, for which the toxicity created by the active ingredients is limited, and for which there is no concern about drug residues. The aim was to give veterinarians more pharmaceutical options.

- Amended partial articles of the "Regulations Governing the Premium Subsidy of Agricultural Insurance" to add a provision regarding agricultural insurance products for whose premiums farmers are themselves responsible for paying. In addition, the COA amended partial articles of the "Regulations for Implementation and Premium Subsidy of Sugar Apple Income Insurance" to raise the subsidies for premiums under the atemoya 70% guarantee program from 50% to 70% in order to reduce the burden on farmers.
- Held the 2022 awards presentation ceremony for schools with outstanding performance in taking care of "campus dogs" (stray dogs living on campus) to encourage schools to adopt stray dogs and, through the introduction of animals into campus life and instructional curriculums, teach children proper ideas about animal protection.
- Amended the "Operation Directions of Interest Subsidy Measures on Loans for Stabilizing the Grouper Industry." The amendments, which took effect retroactively as of July 1, 2022, were made in coordination with interest subsidy measures of loans for grouper operations, under which loan institutions were asked to accept applications from qualified grouper operators from that day to October 31 for one-year interest-free preferential treatment for new or old loans, in order to reduce the burden for operators.
- Held the opening ceremony for the "Taiwan Orchid Technology Park of the Council of Agriculture, Executive Yuan." The Park was upgraded to introduce elements including the combination of agriculture with green energy, the circular economy, and smart production, with the aim of upgrading the international competitiveness of Taiwan's orchid industry.
- Announced amendments to the "Operation Directions for Grants to Farmers or Fishermen Whose Children Study in Universities or Senior High Schools." Considering that the "Civil Code" was amended to lower the age of adulthood to 18 as of January 1, 2023, the COA coordinated with this change by amending provisions in the Directions involving adulthood and simultaneously amended remaining articles to facilitate the implementation of tasks related to grant applications.
- Set up a "Taiwan Agriculture Museum" at the 2022 "Taiwan Culinary Exhibition" to recommend high quality food from all four seasons in Taiwan to domestic and foreign consumers and sales channels.
- Held the graduation ceremony and awarding of certificates to the 5th class of the "Top 100 Young Farmers." The event also exhibited guidance achievements of young farmers in recent years in hopes of passing along successful experiences and permitting sustainable development of these achievements of young farmers' guidance.

SEP



- The COA launched azuki bean insurance in the Pingtung area, selling it until October 15, to spread operational risk in response to the negative impact on production volume in the azuki bean industry in recent years resulting from worsening climate change.
- Announced amendments to the "Regulations for Releasing the Aquatic Animals at Sea" to establish standard operating procedures for release; the amended Regulations went into force from October 1.
- Announced the deletion of recognition of Côtés-d'Armor and Meuse of France as zones free of highly pathogenic avian influenza.
- Held the 2022 awards presentation ceremony for "Slopeland Conservation, Utilization and Management" with the aim of encouraging local governments to pro-actively strengthen slopeland conservation work.
- Announced the deletion of recognition of Tennessee of the US as a zone free of highly pathogenic avian influenza.
- Set up an information platform for production and sale of chicken eggs, with weekly updating of egg production information on the COA's official website, and announced egg supply volume, for businesses to use as reference in adjusting production and marketing.
- Announced "Fubon Insurance grouper aquaculture insurance with temperature parameter," "Fubon Insurance milkfish aquaculture insurance with temperature parameter," "Fubon Insurance sea bass aquaculture insurance with temperature parameter," and "Fubon Insurance tilapia aquaculture insurance with temperature parameter" as agricultural insurance products in 2022.
- Held activities to mark "World Rabies Day" to raise awareness about this day and remind people to get their dogs and cats vaccinated against rabies annually; the activities encouraged everyone to work together to prevent rabies.
- Amended the "Regulations Governing Policy-Oriented Special Agricultural Loan" and related loan directions; the amendments went into effect on October 1.
- The "Forest Fires" Public Warning System (utilizing Cell Broadcast technology) formally began operations, reminding people to use fire cautiously and work together to prevent forest fires.
- The COA began accepting applications for "agricultural operational preparatory funds" for young farmers for the second half of 2022. New farmers aged 18 to 45 who have agricultural operational skills as well as venues for agricultural operations can receive a maximum of NT\$720,000 in agricultural operational preparatory funds over two years.
- Issued the "Regulations of National Food and Agricultural Education Outstanding Contribution Awards" to provide appropriate awards to institutions, judicial persons, groups, or individuals who have made outstanding contributions to food and agricultural education.
- Held the 6th "Benchmark Awards of the Top 100 Young Farmers" with the aim of transforming young farmers who have operated with stability and developed innovative value-added operations into models to guide even more young farmers to cooperate with and assist one another or to link up industries.

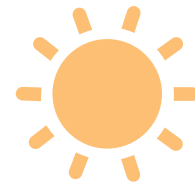


OCT

- ◆ The COA announced "Fubon Insurance Asian pear crop insurance," "Fubon Insurance Asian pear crop insurance (government disaster relief-linked insurance)," "Fubon Insurance Asian pear crop insurance, additional insurance for losses to cold of top-grafting pear scions," "Fubon Insurance Asian pear crop insurance with typhoon wind speed, precipitation volume, and temperature parameters," "Taiwan Fire & Marine Insurance Kaohsiung regional wax apple insurance with typhoon wind speed and precipitation volume parameters," and "South China Insurance lychee insurance" as agricultural insurance products in 2022.
- ◆ Announced the deletion of recognition of New Mexico, Arkansas, and Rhode Island of the US as zones free of highly pathogenic avian influenza.
- ◆ Announced the deletion of recognition of Orne, Pas-de-Calais, and Seine-et-Marne of France as zones free of highly pathogenic avian influenza.
- ◆ Amended Paragraphs 4 and 6 of the "Council of Agriculture of Executive Yuan Work Directions for Land Use Capability Classification of Slopeland" in order to accelerate classification work and reduce subjective human error.
- ◆ Amended the "Operation Directions Governing Contractual Field Corn (Dent Corn and Flint Corn) Farming" to guide farmers to put into practice field management while expanding the area of land cultivated with field corn and promoting the sound development of the field corn industry.
- ◆ Held an exhibition of achievements in technologies for the circular use of agricultural resources, with the aim of encouraging the circular use of agricultural residual resources and implementing industrial applications of innovative R&D results.
- ◆ Held the 2022 "joint land and sea forest fire prevention and rescue exercise," using war games and pre-recorded actual exercises to strengthen the collaboration among various agencies for forest fire response and rescue operations, upgrade cross-regional coordination capabilities and fire response and rescue capabilities, and reduce risks from forest fires.
- ◆ Held a press conference in California to promote sales of grouper to increase commercial opportunities for the export of grouper to the US.
- ◆ Held the awards presentation ceremony for the 2022 "Traceable Agricultural Products Masters" to recognize award-winners who have implemented the spirit of safety, transparency of information, traceability, and environmental sustainability in their agriproducts.
- ◆ Amended Article 9-2 of the "Regulations of Agro-Pesticides Application and Agro-Pesticides Residual Inspection in Agricultural Products" to clearly specify the procedure for health and agricultural competent authorities to trace the producers of agricultural products with excessive agro-pesticide residues, thereby ensuring the safety of agriproducts consumed by the public.
- ◆ Held the 2022 "war game for responding to natural disasters at water conservancy facilities" to enhance the disaster response capabilities of colleagues involved in the exercise.
- ◆ Held the opening ceremony for the national touring food and agricultural education exhibition entitled "Reading and Food Time" to provide people with substantive exposure to food and agricultural education and expand this education into a national movement.

NOV

- ◆ The COA amended Paragraphs 3, 6, and 7 of the "Administrative Directions for Management of Approved Orchid Facilities for Export Production" to strengthen weed management for Phalaenopsis orchids in growth medium to be exported to the US in approved orchid facilities in order to consolidate that export market.
- ◆ Announced the deletion of recognition of South Carolina, Mississippi, and Arizona of the US as zones free of highly pathogenic avian influenza, and banned the importation of live birds and related products into Taiwan from these zones as of the day of the announcement.
- ◆ Announced the deletion of recognition of Gard and Eure of France as zones free of highly pathogenic avian influenza.
- ◆ Announced amendments to Subparagraphs 43 and 45 of Paragraph 1 of Part B of the "Quarantine Requirements for the Importation of Plants and Plant Products into the Republic of China." Part B covers quarantine requirements for plants or plant products that may enter under precautionary measures. The amendments added Myanmar to the countries where there have been outbreaks of tomato yellow leaf curl virus and pepper chat fruit viroid. The amendments would become effective from February 1, 2023.
- ◆ Announced amendments to the "Regulations Governing the Ban on Chlorpyrifos" (an agro-pesticide) to not only shorten the time frame for its ban, but also to launch repurchasing and safekeeping by the government of chlorpyrifos technical concentrate to strengthen source management and reduce the influx of finished products into the market, thereby safeguarding the health of farmers and consumers and upholding environmental safety.
- ◆ Announced "Pineapple Insurance of Shin Kong Insurance (Regional Harvesting Insurance)" and "banana income insurance" as agricultural insurance products in 2023.
- ◆ Amended partial articles of the "Enforcement Rules of Farmer Pension Act" to add a mechanism for the review of agricultural operational methods by on-site inspections or by a meeting of a review committee, in order to strengthen oversight of qualifications for participation in the farmers' pension program.



- Amended the "Operation Directions of Reviewing Business Plans for the Establishment of Recreational Agriculture Facilities in Leisure Farms" including adding new provisions for dealing with persons who "change facilities use without authorization" and determining a process for applications in cases of "privately built access roads linking up with roads on non-urban land."
- Amended the "Regulations on the Management of the Crew of Fishing Vessels" to permit foreign crew employed under the "Employment Service Act" to participate in professional officer training for fishing vessels. After meeting certain criteria, they can serve as officers other than captains.
- Announced the landslide of Xiafenshuiling in Changle Village, Manzhou Township of Pingtung County as a "designated soil and water conservation area."
- Amended Article 7 and the appendix of Article 3 of the "Payment Standards of Farmer Health Insurance Disability Benefits" to strengthen the rights and interests of insured persons, implement gender equality, and conform to the "Enforcement Act for the Convention on the Elimination of All Forms of Discrimination against Women."
- Amended Articles 30, 33, and 40-1 of the "Regulations for Forest Protection" to increase incentives for people to report illegal forest administration and encourage them to provide information to ensure protection of forest resources.
- Announced the deletion of recognition of Ecuador as a country free of highly pathogenic avian influenza.
- Set up a "Farmtour Market Pavilion" and "Rural Travel Gift and Souvenir Items Pavilion" at the 2022 "Taipei International Travel Fair" to exhibit rural travel tours and gift and souvenir items to expand the domestic and international tourist markets and create commercial opportunities in rural communities.
- Held a "conference for communication with society" on the key strategy of "carbon sinks" for net-zero transition.
- Issued the "Operation Directions of the Subsidy for the Promotion of Food and Agricultural Education" to encourage all stakeholders to promote food and agricultural education (FAE) tasks and achieve the goal of FAE for all.
- Issued the "Directions of Merits for the Central Government, Local Governments and Government-Owned Enterprises Prioritizing Use of Locally Produced Agricultural Products" to fully implement the "Food and Agricultural Education Act" and incentivize prioritization of the use of locally produced agriproducts by all stakeholders.

▶ DEC

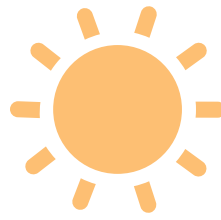


- The COA amended the name and partial articles of the "Regulations Governing the Subsidy for Financial Institutions Bearing Farm Lands, Fish Farms and Other Agricultural Facilities That Are Used as Collateral for the Loans and Totally Damaged or Lost"; the amendments went into effect on December 1.
- Issued the "Directions for Issuing Approval for the Export of Specific Species of Timber and Related Products," listing lumber, carved figures, or artworks made from *Chamaecyparis formosensis*, *Chamaecyparis obtusa* var. *formosana*, *Calocedrus macrolepis* var. *formosana*, or *Cinnamomum kanehirae* as restricted export goods; the Directions went into force on December 1.
- Amended partial articles of the "Regulations Governing Personal Information File Security Maintenance and Administration for Agro-Pesticide Dealers" to strengthen norms for information security at agro-pesticide dealers and create a mechanism for reporting and response measures in the event of a data breach.
- Announced the recognition of Switzerland as a country and Georgia of the US as a zone free of highly pathogenic avian influenza, Guatemala as a country free of foot and mouth disease, and Chile as a country free of classical swine fever.
- Announced the "Regulations Governing the Ban on Chlorpyrifos + Cypermethrin and Chlorpyrifos + MIPC" (agro-pesticides). Their manufacture, processing, packaging, and import were banned as of the date of the announcement, while their export, sale, and use will be banned as of April 1, 2024, in order to conform to the policy of banning chlorpyrifos.
- Amended specific articles of the "Regulations for the Importation of Objects Subject to Animal Quarantine" to add a provision that day-old poultry and fertilized eggs from "designated establishments" with good biosecurity may be imported following a risk assessment approved by the central competent authorities as being able to effectively prevent the introduction of infectious animal disease into Taiwan and to ensure safety in the domestic poultry and biotechnology industry supply chains.
- Announced the deletion of recognition of Peru as a country, Alabama of the US as a zone, and Saône-et-Loire and Rhône of France as zones free of highly pathogenic avian influenza.
- Amended the "Directions for the Disposition Principle of Fishing Vessels and Crews Involved in Smuggling Cases" to revise related disposition processes and raise fine levels and changed the name to the "Directions for the Disposition Principle of Fishing Vessels and Crew Conducting Non-fishery Activities of Smuggling and Stowaways."
- Announced "MSIG Mingtai Insurance poultry avian influenza insurance," "MSIG Mingtai Insurance poultry avian influenza insurance, additional insurance for losses of income prior to the resumption of operations (applicable to egg layer poultry)," "pig death insurance," "death insurance for pigs being transported," "dairy cow death insurance," "Fubon Insurance agricultural facilities typhoon and flooding insurance," "Fubon Insurance paddy rice crop insurance (regional harvesting insurance)," and "paddy rice income insurance for the first crop season" as agricultural insurance products in 2023.
- Announced that as of 2022 quail will be a designated type of poultry under the "Animal Industry Act" in order to enable the quail industry to develop under rule of law.
- Launched the national 1959 animal protection hotline to facilitate reporting and consultations in animal protection cases.





Appendix 1: Organizational Chart of the Ministry of Agriculture



**COUNCIL OF AGRICULTURE,
EXECUTIVE YUAN**



Department of Planning

Department of Animal Industry

Department of Farmers' Service

Department of Science and Technology

Department of International Affairs

Secretariat

Personnel Office

Accounting Office

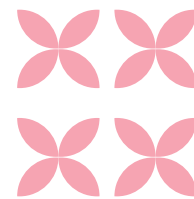
Statistics Office

Civil Service Ethics Office

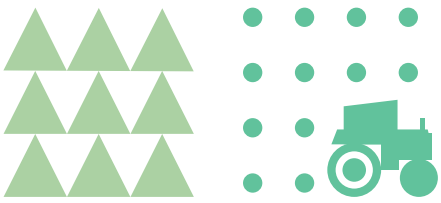
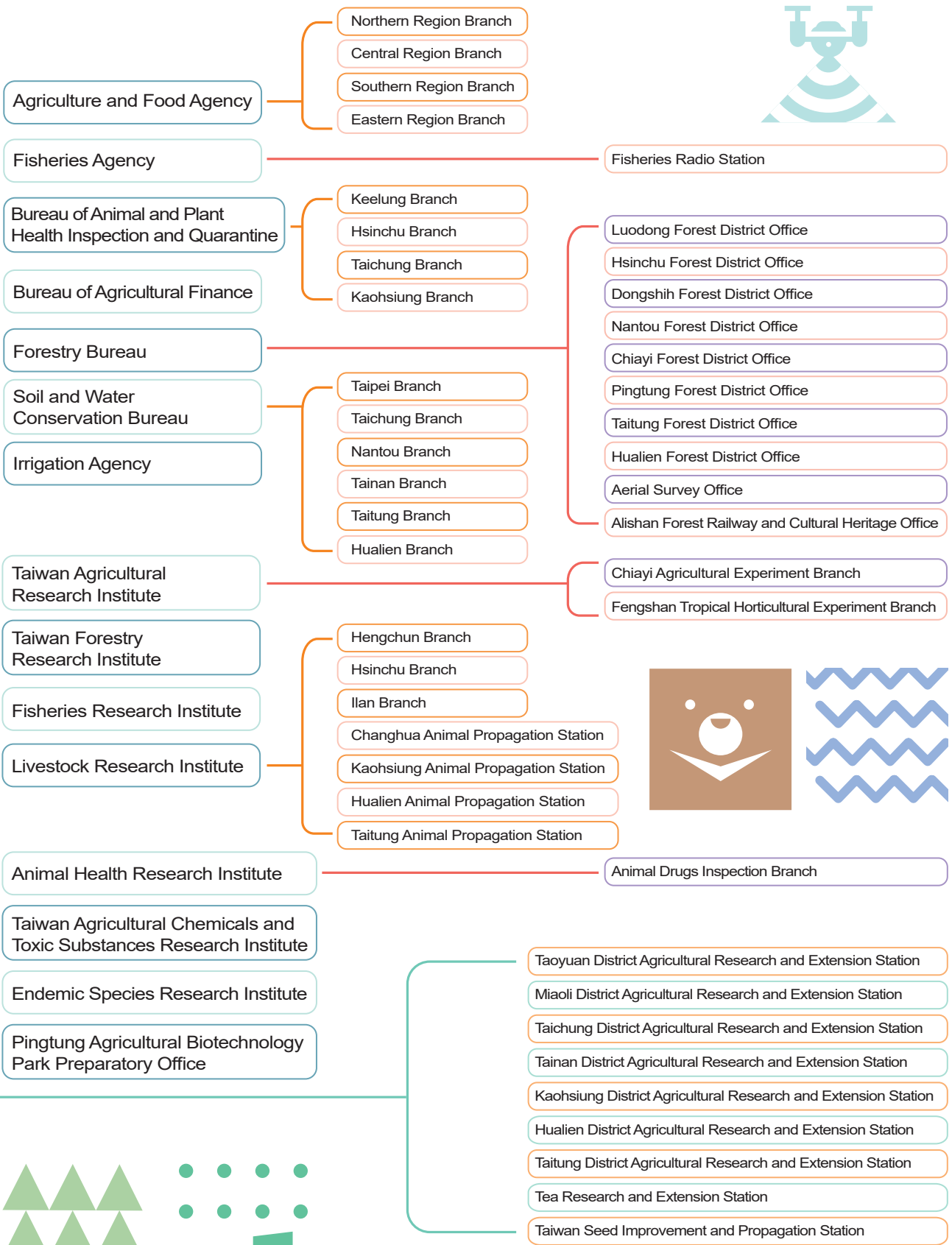
Information Management Center

Legal Affairs Committee

Petitions and Appeals Committee



Note: The budget for 2022 for the COA and all affiliated agencies provided funding for a total of 7,630 persons including 4,777 full-time staff, 164 hirees, 1,026 contract employees, 2 security personnel, 1,408 technical staff, 85 drivers, and 168 custodial workers. The offices of the COA per se (i.e. excluding affiliated agencies) accounted for 391 of these persons, including 334 full-time staff, 23 hirees, 12 contract employees, 2 security personnel, 6 technical personnel, 4 drivers, and 10 custodial workers.





Appendix 2: Budgets and Final Accounting for 2022

1. Budgets for 2022

(1) Budget for the COA and affiliated agencies: The total budget for the COA and its affiliated agencies for 2022 was NT\$147.043 billion, an increase of NT\$10.045 billion (7.33%) as compared to the 2021 figure of NT\$136.999 billion. Figures 1 and 2 show the allocations by function and agency, respectively.

Figure 1 Budget allocations by function, 2022

Unit: NT\$1 million

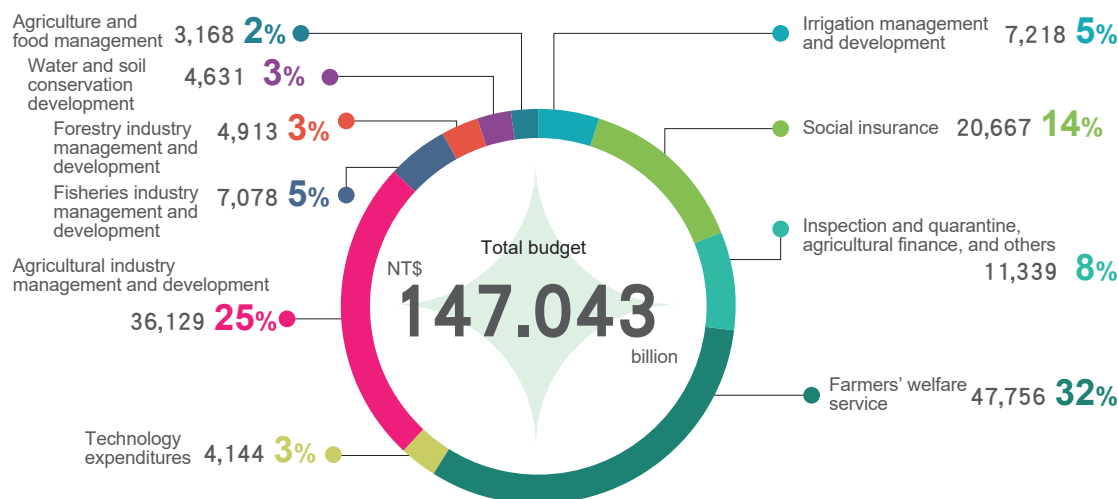
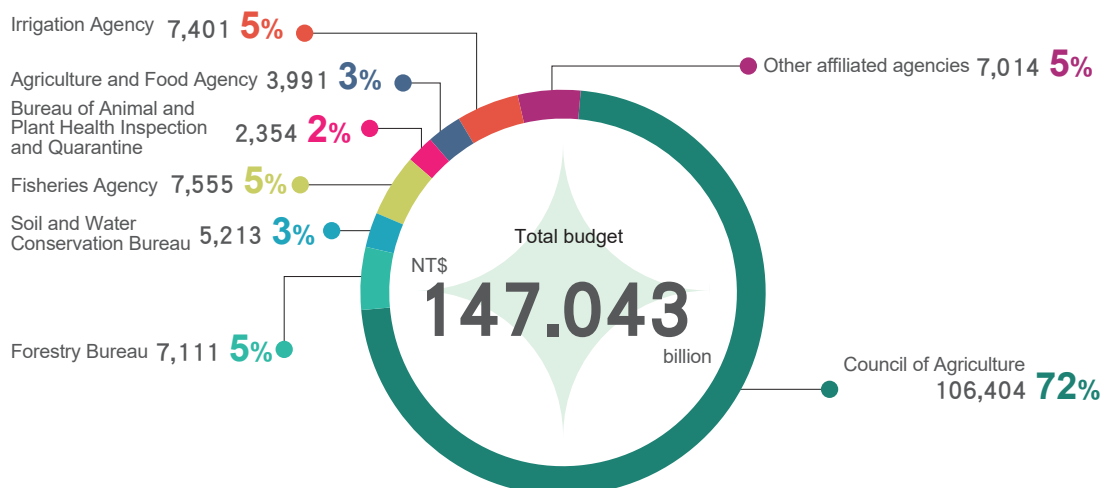


Figure 2 Budget allocations by agency, 2022

Unit: NT\$1 million





(2) Special budget for the third phase of the Forward-looking Infrastructure Development Program (2021-2022): The special budget for the third phase of the Forward-looking Infrastructure Development Program for 2021 and 2022 managed by the COA totaled NT\$6.573 billion, of which the budget for 2021 was NT\$3.197 billion and that for 2022 was NT\$3.376 billion. Figures 3 and 4 show the allocations by function and agency, respectively.

Figure 3 Special budget for the third phase of the Forward-looking Infrastructure Development Program (2021-2022), by function

Unit: NT\$1 million

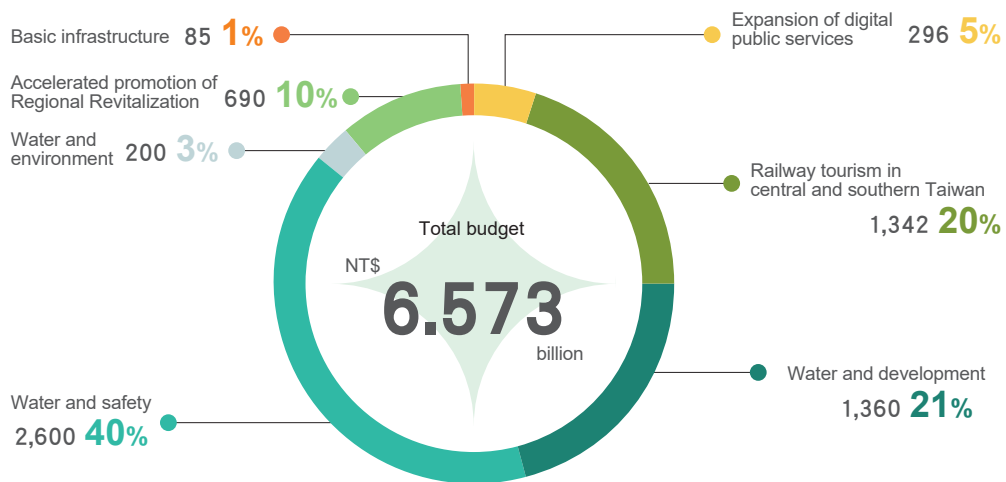
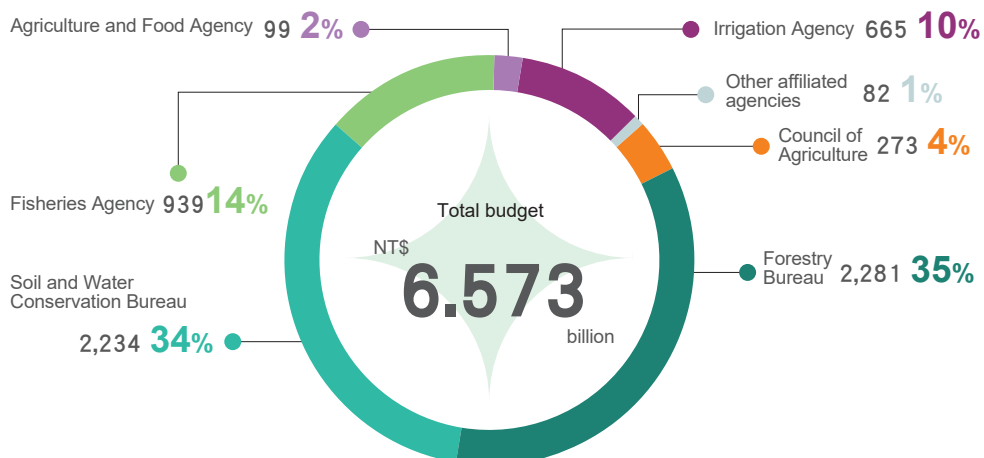


Figure 4 Special budget for the third phase of the Forward-looking Infrastructure Development Program (2021-2022), by agency

Unit: NT\$1 million





(3) The special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens (January 15, 2020 to June 30, 2023): The special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens managed by the COA totaled NT\$45.88 billion. The implementation period was originally expected to end on June 30, 2022, but with the agreement of the Legislative Yuan this date was extended to June 30, 2023. Figures 5 and 6 show the allocations of this budget by function:

Figure 5 Special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens, by function

Unit: NT\$1 million

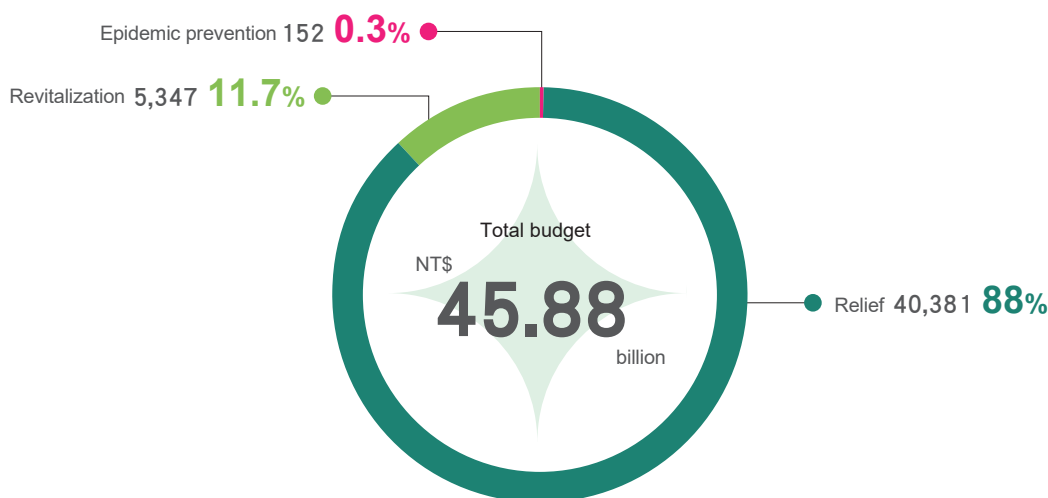
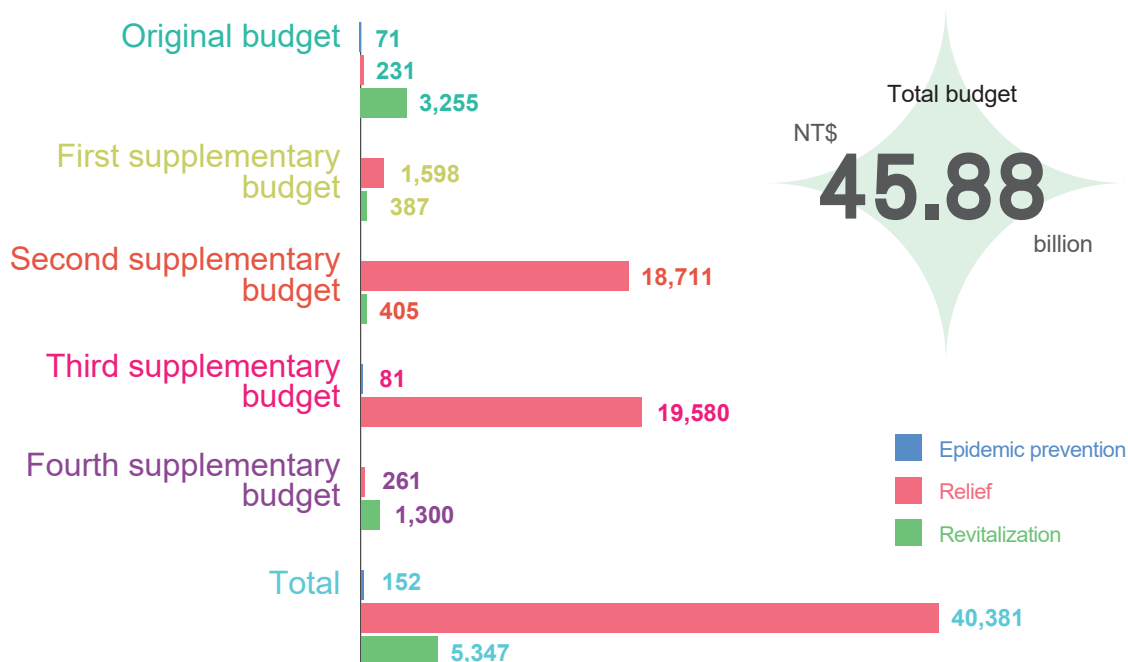


Figure 6 Allocation of the special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens

Unit: NT\$1 million

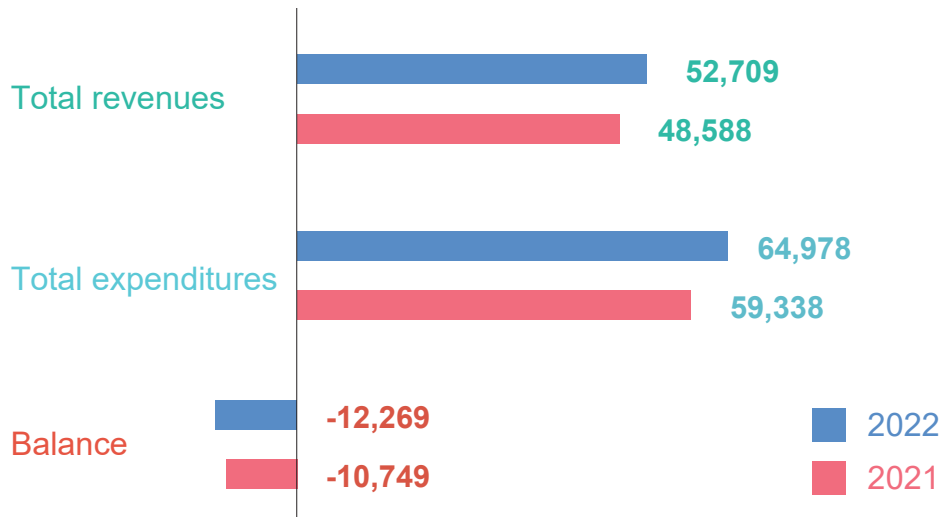




- (4) Budget for subsidiary agencies (including the Agricultural Special Revenue Fund and the Agricultural Operations Fund):
- (a) Total revenues were budgeted to be NT\$52.709 billion, an increase of NT\$4.121 billion (8.48%) as compared to the 2021 figure of NT\$48.588 billion.
 - (b) Total expenditures were budgeted to be NT\$64.978 billion, an increase of NT\$5.64 billion (9.51%) as compared to the 2021 figure of NT\$59.338 billion.
 - (c) The total balance was budgeted to be in deficit by NT\$12.269 billion. (See Figure 7.)

Figure 7 Comparison of the 2022 and 2021 budgets for subsidiary agencies

Unit: NT\$1 million



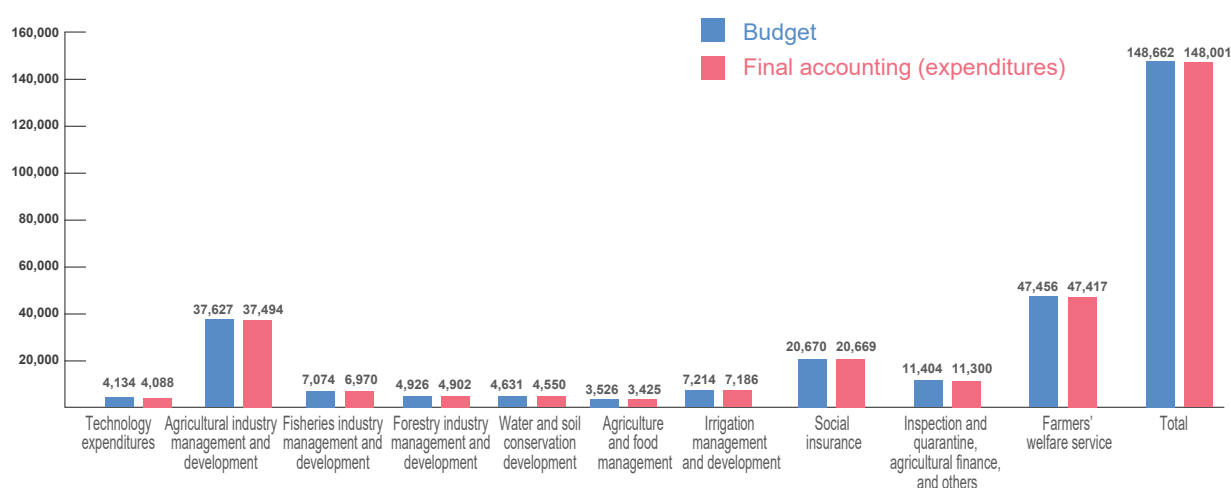


2. Final Accounting for 2022

(1) Final accounting for the COA and affiliated agencies: In 2022 the budget for the COA and its affiliated agencies was NT\$147.043 billion. In addition, NT\$1.618 billion was mobilized from the Secondary Reserve Fund, bringing the total available to NT\$148.662 billion. The final accounting showed NT\$148.011 billion spent (including NT\$143.882 billion in actual expenditures, NT\$1.835 billion payable, and NT\$2.283 billion reserved). There was a surplus of NT\$660.87 million. Actual expenditures accounted for 99.56% of budgeted funds. The functional implementation is presented in Figure 8.

Figure 8 Implementation of the COA budget, 2022

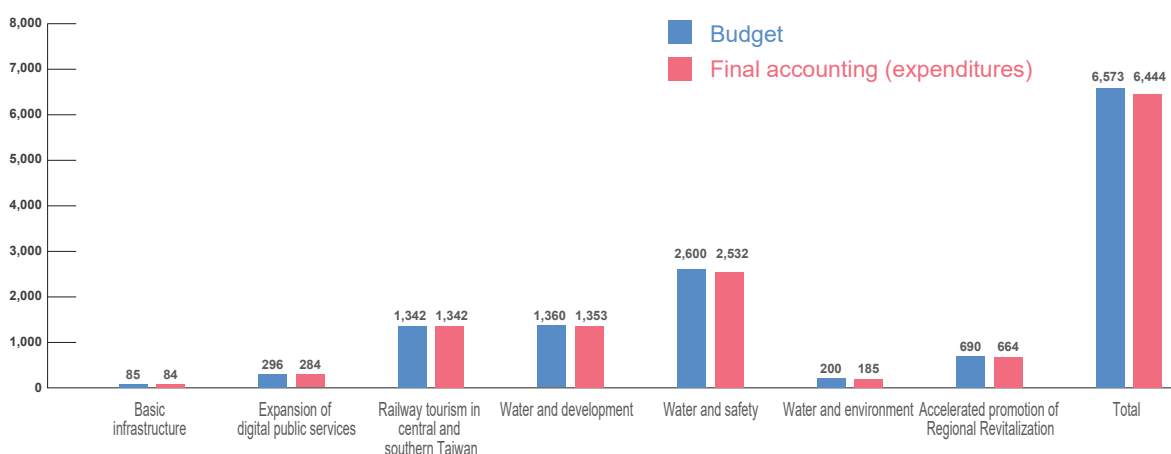
Unit: NT\$1 million



(2) Implementation of the special budget for the third phase of the Forward-looking Infrastructure Development Program (2021-2022): The special budget for the third phase of the Forward-looking Infrastructure Development Program for 2021 and 2022 managed by the COA totaled NT\$6.573 billion. The final accounting showed NT\$6.444 billion spent in 2021-2022 (including NT\$5.232 billion in actual expenditures, NT\$92.16 million payable, and NT\$1.149 billion reserved). Actual expenditures accounted for 98.04% of budgeted funds. The functional implementation is presented in Figure 9.

Figure 9 Implementation of the special budget for the third phase of the Forward-looking Infrastructure Development Program (2021-2022)

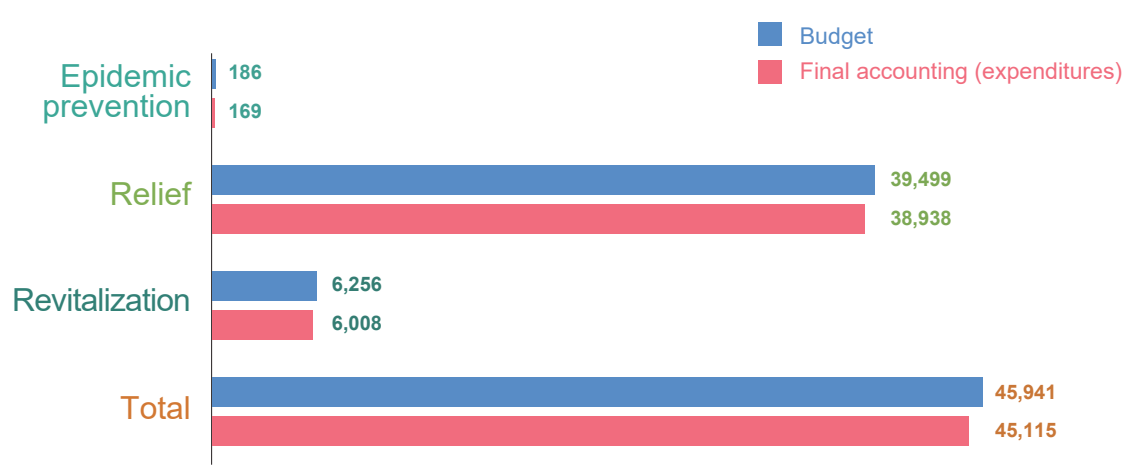
Unit: NT\$1 million





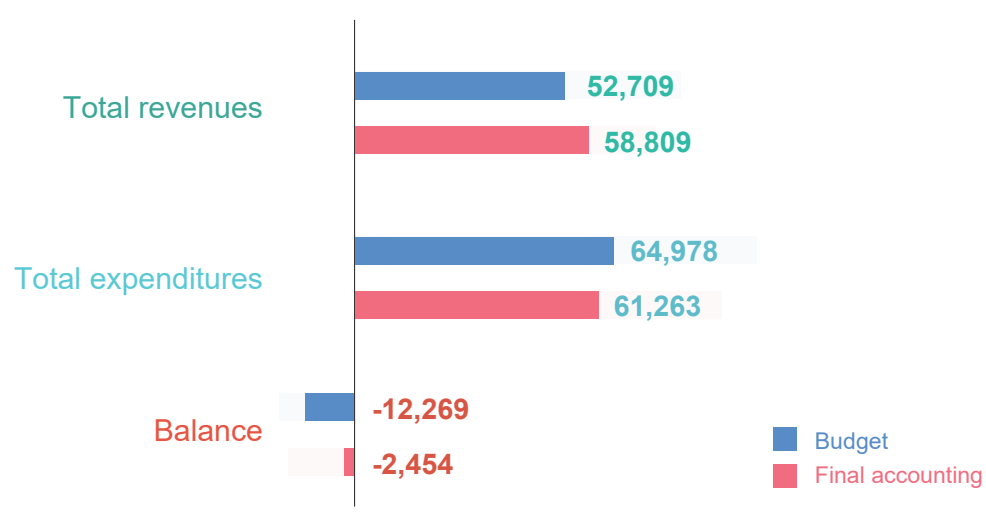
(3) Implementation of the special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens (January 15, 2020 to June 30, 2023): The special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens managed by the COA totaled NT\$45.88 billion. In addition, to meet operational needs a request was filed with and approved by the Executive Yuan for the Ministry of Economic Affairs to release NT\$61.08 million in relief and revitalization funds to the COA, making the total budget NT\$45.941 billion. As of the end of 2022, NT\$45.115 billion was spent. Actual expenditures accounted for 98.2% of budgeted funds. The functional implementation is presented in Figure 10.

Figure 10 Implementation of the special budget for Prevention, Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens Unit: NT\$1 million



(4) Final accounting for subsidiary agencies: Total budgeted revenues were NT\$52.793 billion, and the final accounting showed NT\$58.889 billion, so actual revenues were 111.57% of budgeted revenues. Total budgeted expenditures were NT\$64.978 billion, and the final accounting showed NT\$61.263 billion, so actual expenditures were 94.28% of budgeted expenditures. After comparing revenues and expenditures, the final accounting showed a deficit of NT\$2.454 billion. (See Figure 11.)

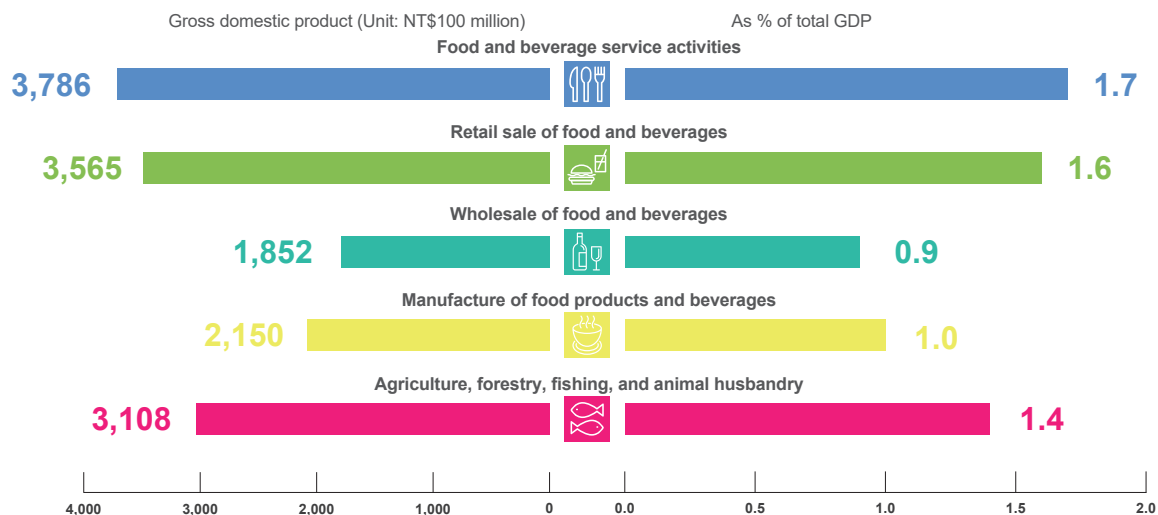
Figure 11 Comparison of the budget and final accounting for subsidiary agencies, 2022 Unit: NT\$1 million





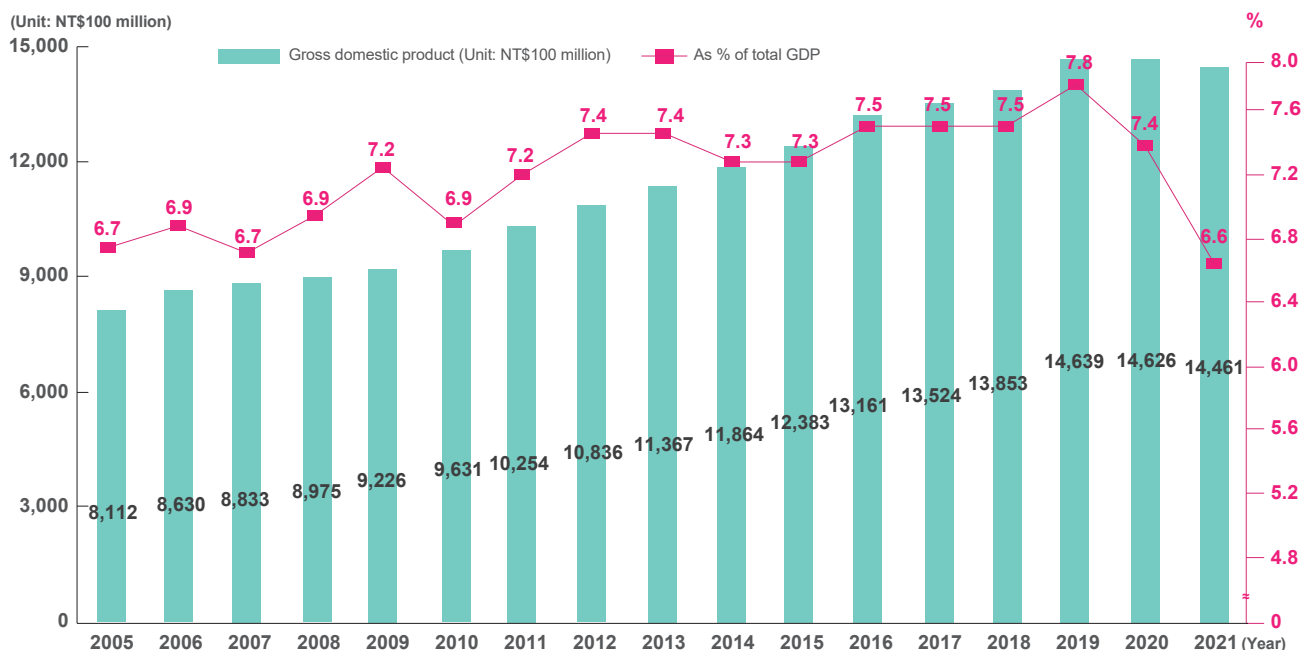
Appendix 3: Selected Agricultural Statistics

Figure 1 GDP of the agriculture and agri-food chain and its percentage of total GDP, 2021



Source: Statistics Office, COA

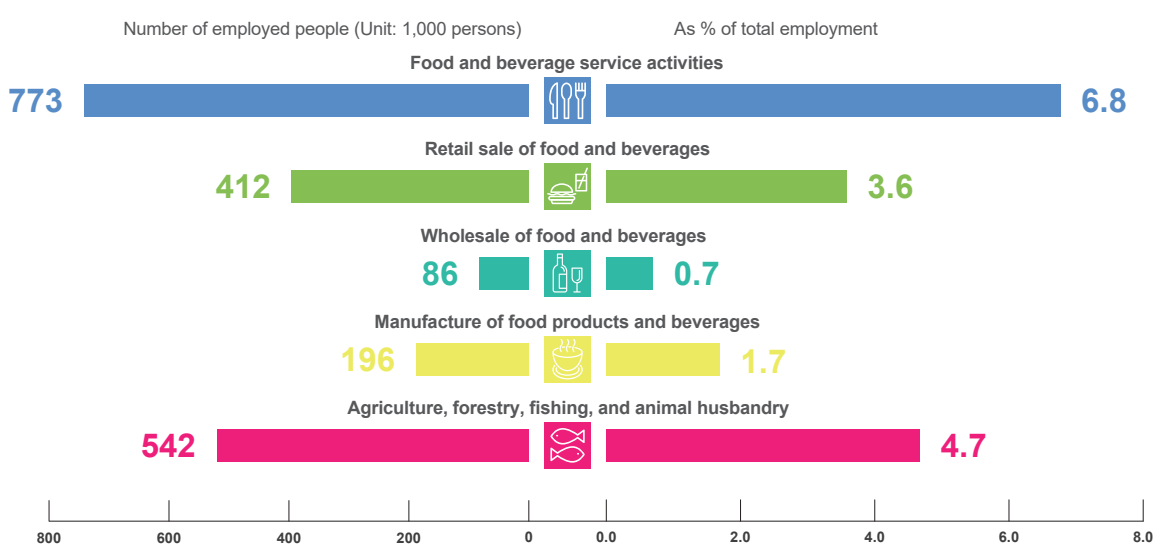
Figure 2 GDP of the agriculture and agri-food chain and its percentage of total GDP, 2005-2021



Source: Statistics Office, COA

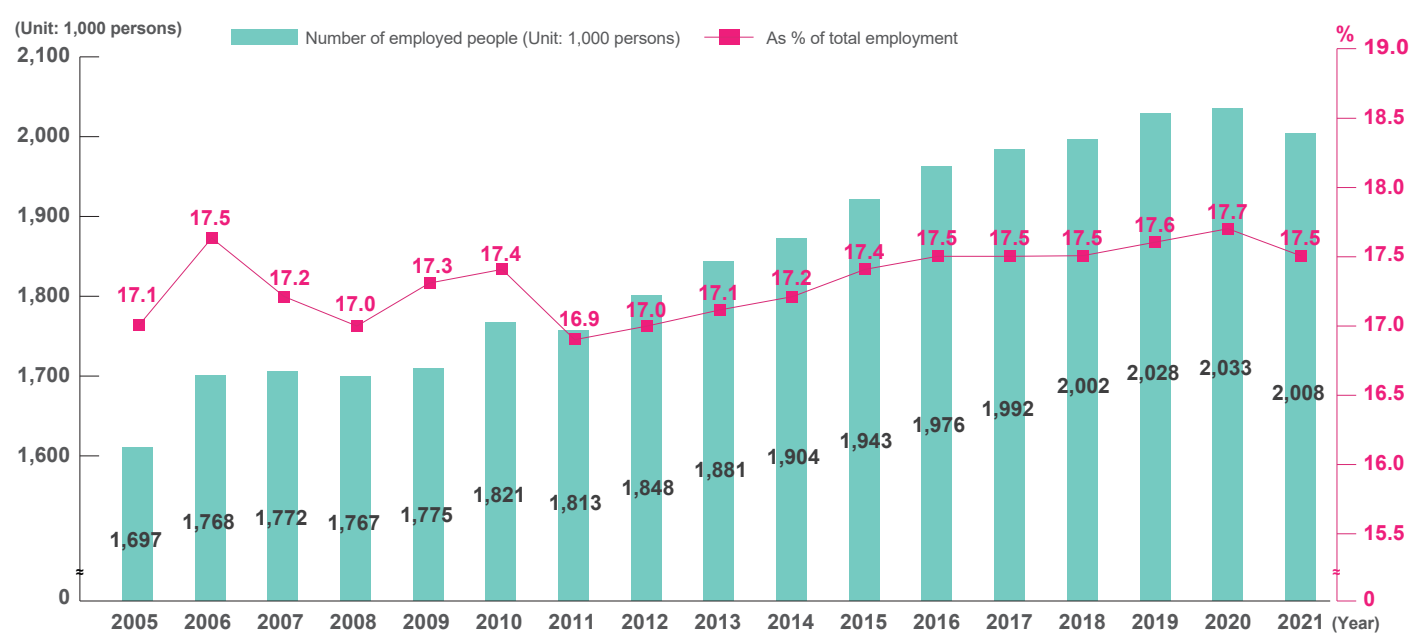


Figure 3 Employment in the agriculture and agri-food chain and its percentage of total employment, 2021



Source: Statistics Office, COA

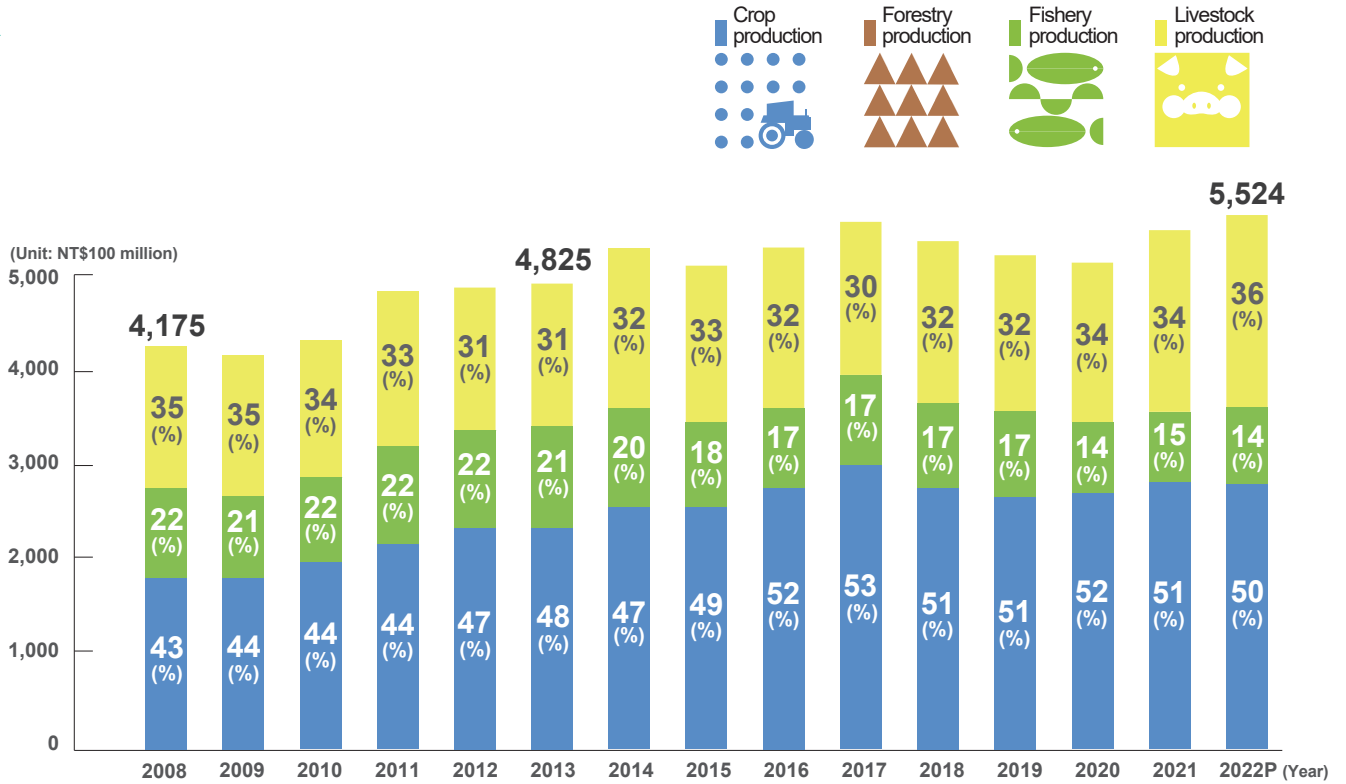
Figure 4 Employment in the agriculture and agri-food chain and its percentage of total employment, 2005-2021



Source: Statistics Office, COA

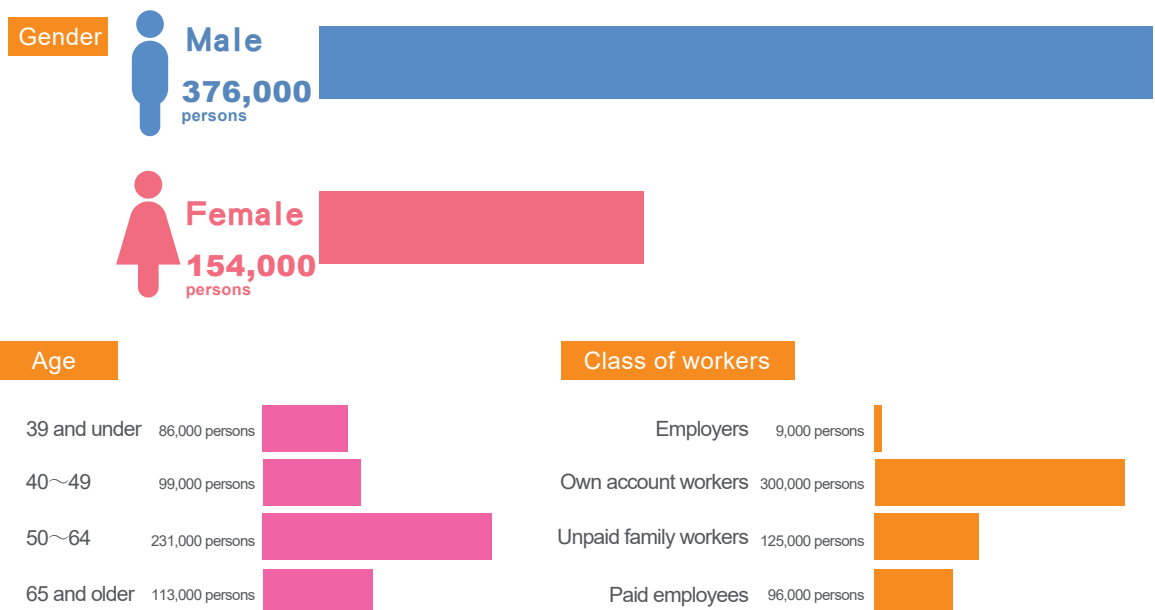


Figure 5 Value and composition of agricultural production, 2008-2022



Source: Agricultural Statistics Yearbook

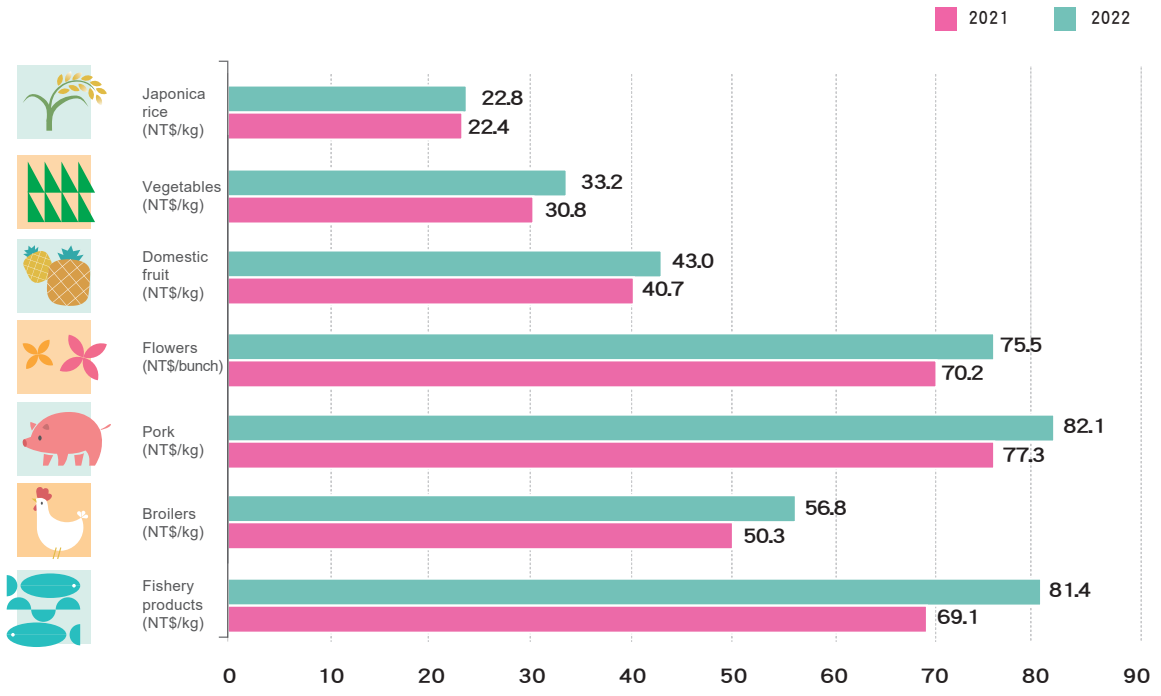
Figure 6 Demographic characteristics of persons employed in agriculture, 2022



Source: Yearbook of Manpower Survey Statistics

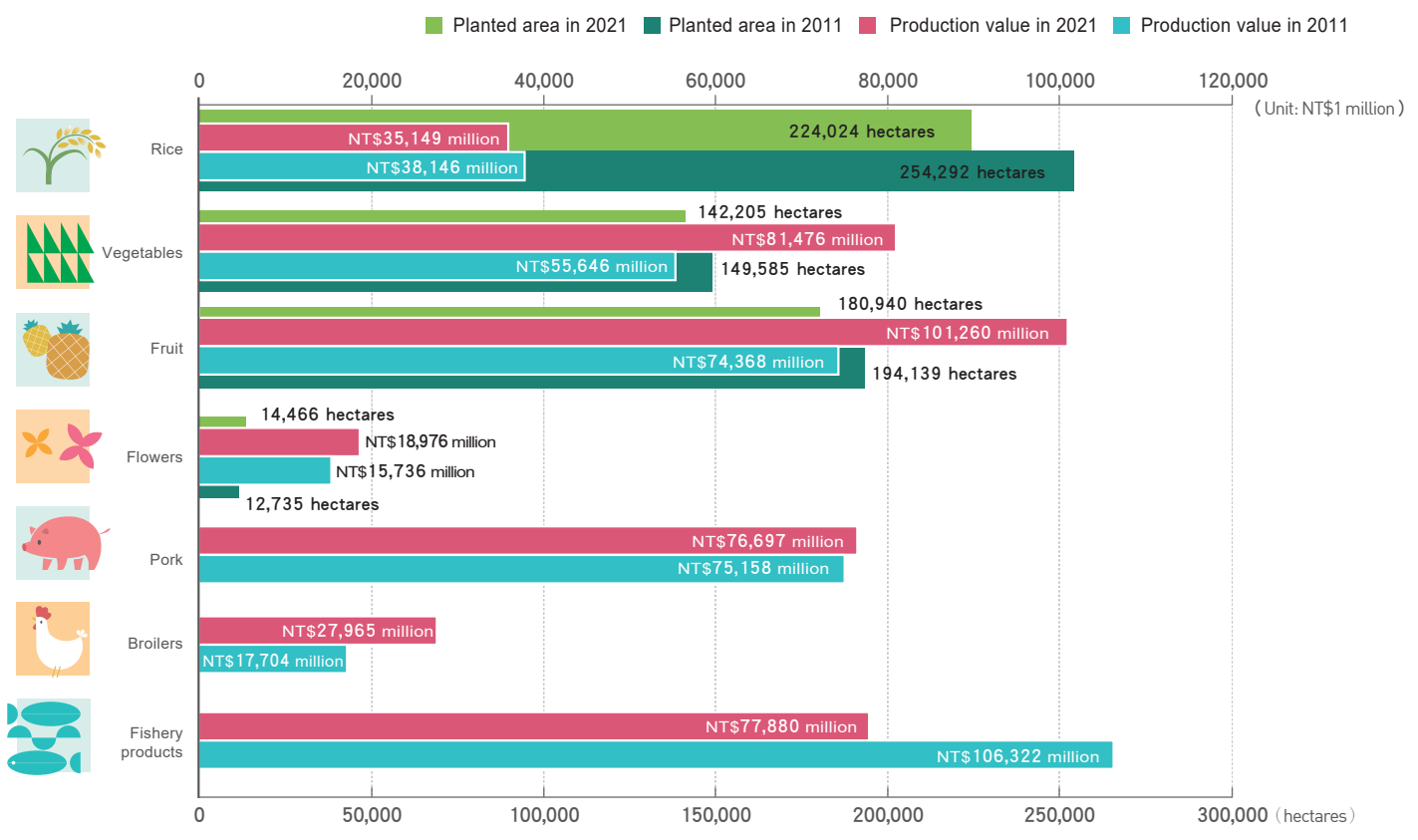


Figure 7 Wholesale or farm prices of agricultural products, 2022 as compared to 2021



Source: Agricultural Statistics Yearbook

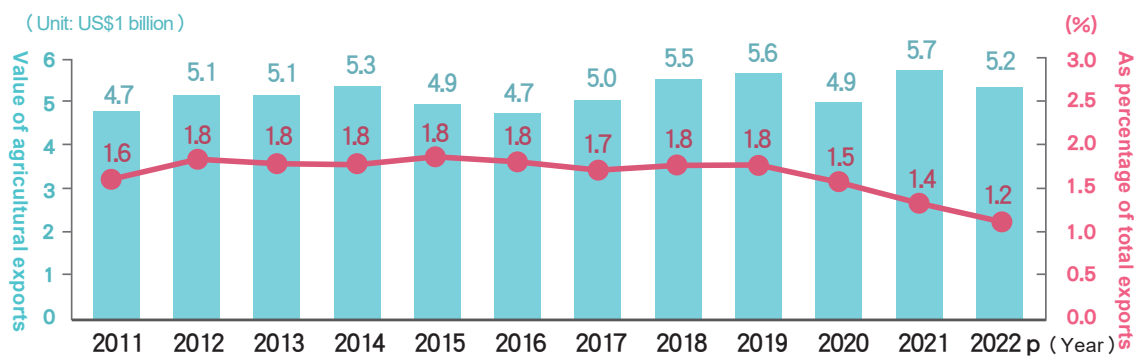
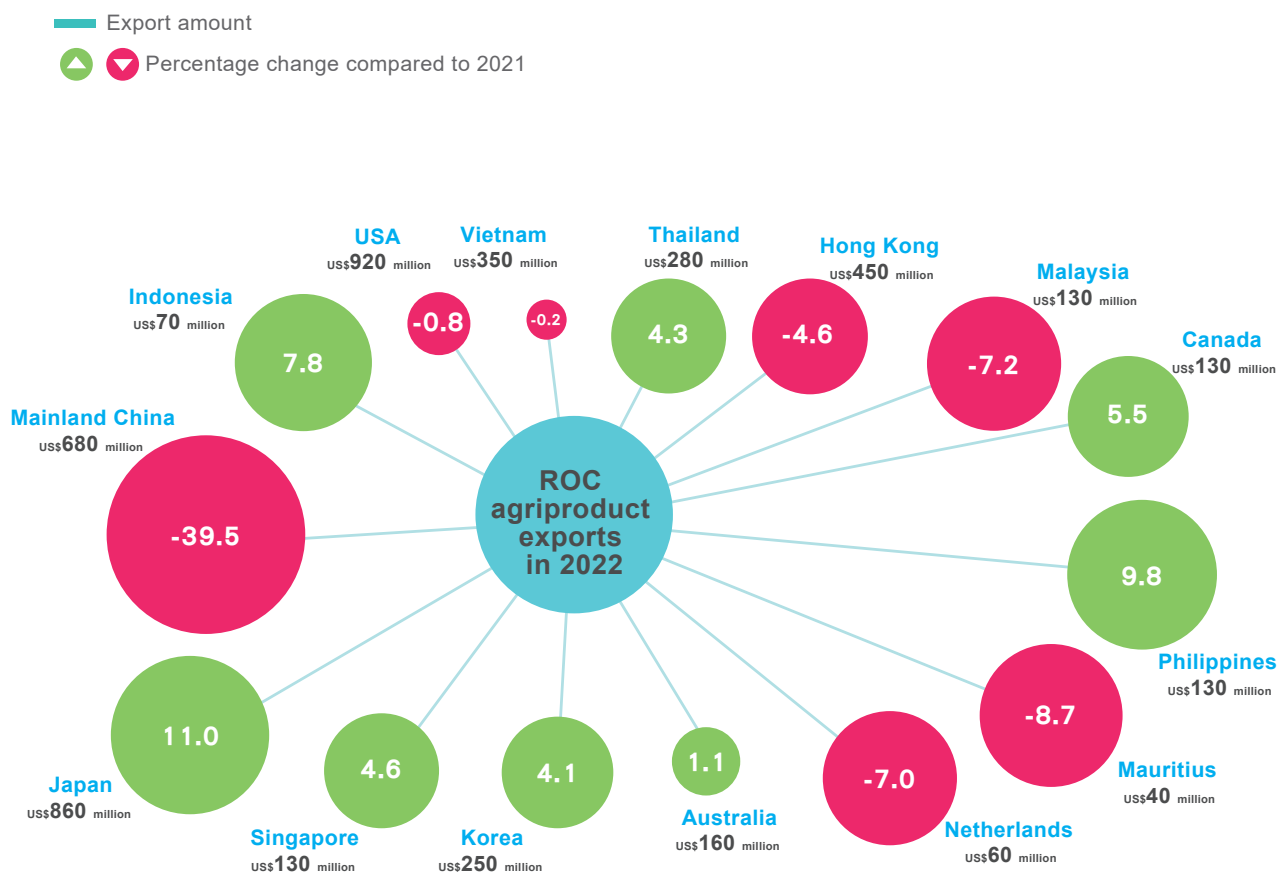
Figure 8 Production value and planted area of selected agricultural products, 2021 as compared to 2011



Source: Agricultural Statistics Yearbook



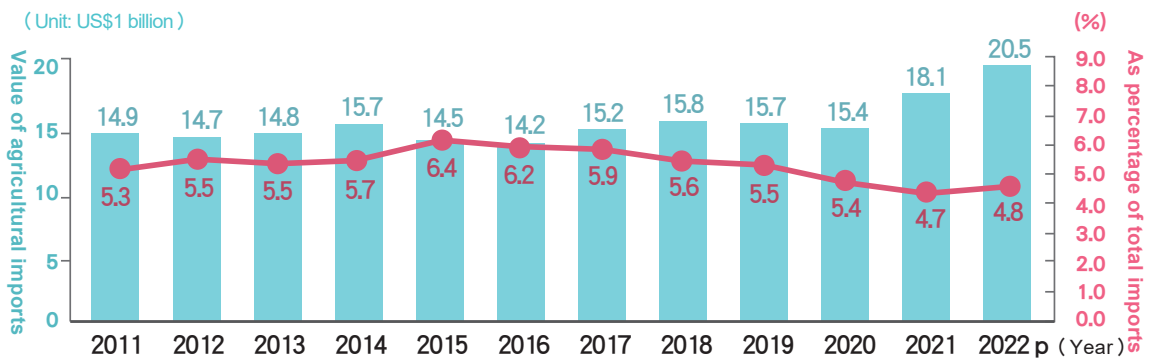
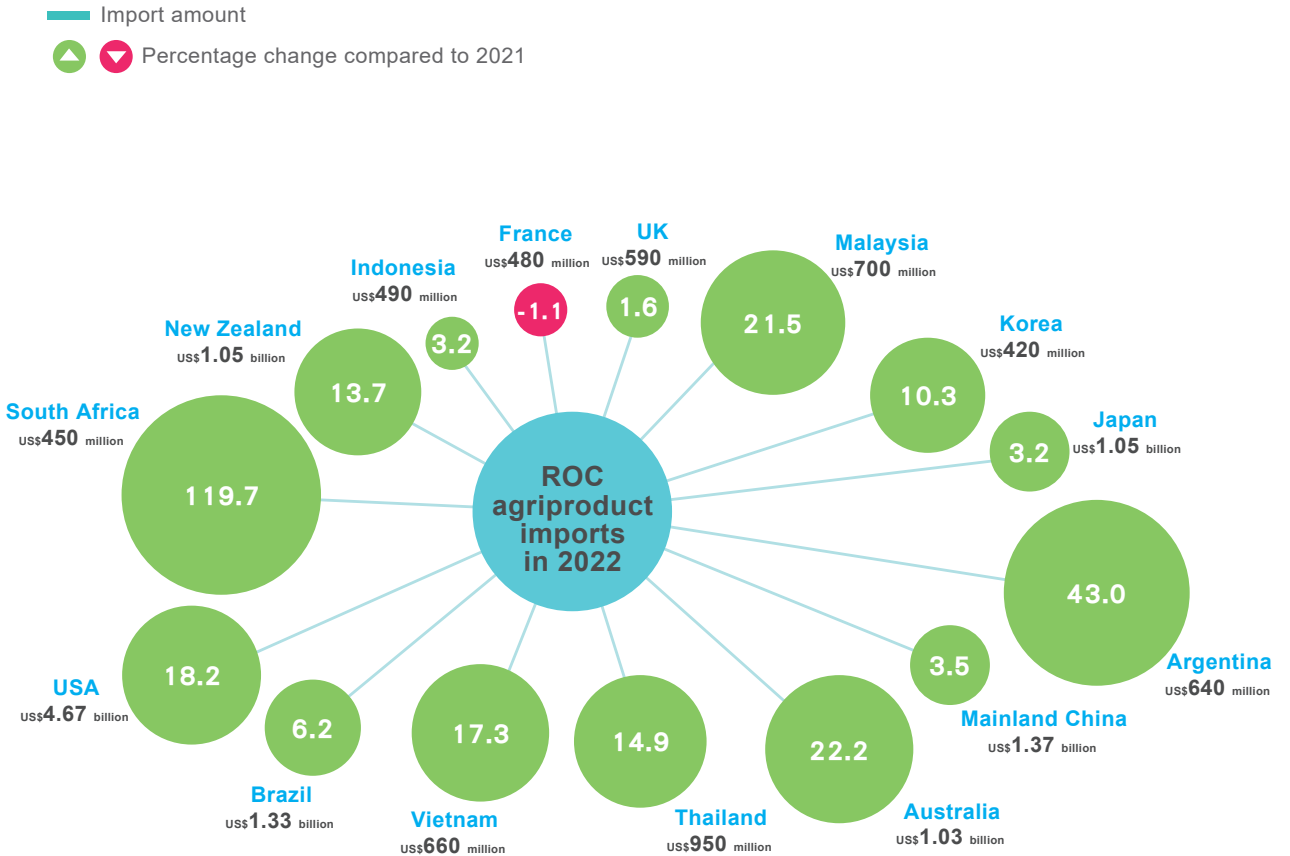
Figure 9 Exports of agricultural products, 2022



Source: Agricultural Trade Statistics of the ROC



Figure 10 Imports of agricultural products, 2022



Source: Agricultural Trade Statistics of the ROC

 **2022**
Council of Agriculture, Executive Yuan
Annual Report



Publisher Junne-jih Chen
Publishing agency Ministry of Agriculture

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Website <https://www.moa.gov.tw>

Telephone (02) 2381-2991

Layout and design WISH CREATIVE DESIGN CO., LTD

Price NT\$150

Published in English in December of 2023

GPN : 2011200024

ISSN : 1991-477-6

Available at the following bookstores

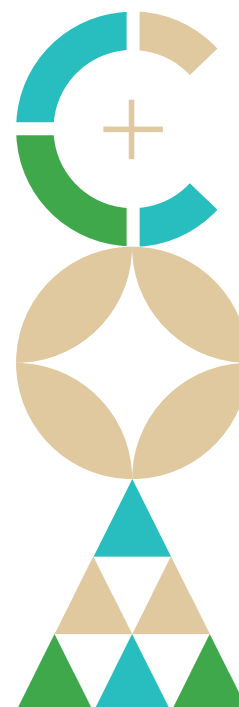
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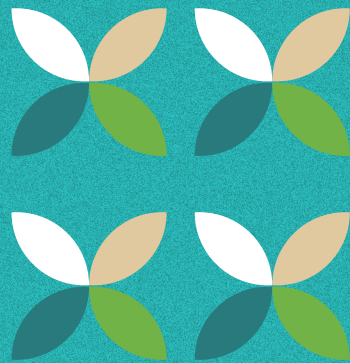
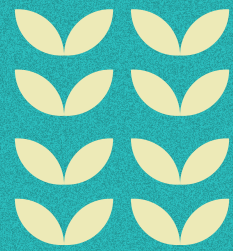
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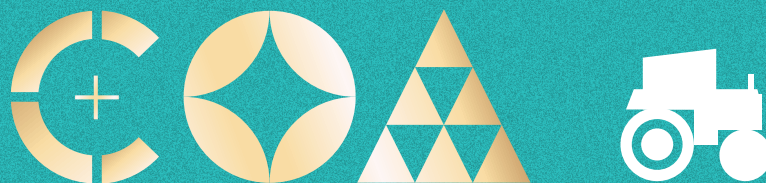
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GPN : 2011200024

ISSN 1991-477-6



PRICE NT\$ 150