



1. Introduction

1.1 In Hong Kong, the agriculture and fisheries sector contributed to less than 0.1% of Gross Domestic Product ("GDP") and engaged 0.5% of the total workforce in 2018.¹ Despite its small scale, the sector plays an important role in providing alternative sources of fresh and quality food supply to local consumers. Over the years, the Government has provided financial assistance through various low-interest loan schemes and development fund schemes as part of the support measures to help the sector cope with the challenging business environment and promote its sustainable development.

1.2 Likewise, many overseas economies have sought to promote the competitiveness and sustainable development of their local agriculture and fisheries sectors through various subsidy or financial assistance measures such as payments, loans, grants and/or other support measures under their respective agricultural and fisheries policies. Nonetheless, there are mixed views on the implementation of subsidy measures in these places. While some types of measures such as research and development grants have been considered to be beneficial to the development of the sector, certain measures such as market support or price subsidies have been controversial. The latter may reduce incentives to improve production efficiency and lead to unfair food trading in the international markets.

1.3 At the request of Hon Steven HO Chun-yin, the Research Office has prepared this information note to study the subsidy measures introduced in selected places for enhancing the sustainability and competitiveness of the local agriculture and fisheries sector. The information note will first study the subsidy measures adopted in Hong Kong, and then review the common subsidy measures adopted in overseas places with specific focus on their intended benefits and issues of concern. This is followed by a detailed study on the

¹ See Census and Statistics Department (2020).

implementation experiences of the relevant subsidy measures introduced in Taiwan and Singapore with special reference to their policy objectives, outcomes and issues of concern. Taiwan and Singapore are selected as they are comparable to Hong Kong in terms of the size of the agriculture and fisheries sector² and the scale of operation of individual establishments.³ The salient features of the subsidy measures adopted in the places studied and their outcomes are summarized in the **Appendix**.

2. Hong Kong

2.1 In Hong Kong, the local agriculture supplied some HK\$1,034 million worth of produce in 2018 with crop, livestock and poultry production each contributing to about one-third of the total production value. Local fisheries production valued at some HK\$2,902 million in 2018, of which 95% was contributed by capture fisheries and 5% by aquaculture fisheries. The agriculture and fisheries sector as a whole engaged some 17 900 workers in 2018,⁴ accounting for 0.5% of the total workforce.⁵ Though the agriculture and fisheries sector represents less than 0.1% of GDP in Hong Kong, it has been an important supplementary source of fresh food supply for local consumers. In 2018, the sector supplied 2% of fresh vegetables, 8% of live pigs, 100% of live poultry, 18% of marine fish and 4% of freshwater fish consumed locally.⁶

2.2 Nonetheless, the agriculture and fisheries sector has been facing challenges on multiple fronts such as limited availability of agricultural land, unwillingness of farmers to commit long-term investment in their farms due to relatively short tenancy tenures, depletion of marine resources, lack of manpower due to an ageing workforce, vulnerability to climate and

² The agriculture and fisheries sector in Taiwan accounted for 1.7% of GDP in 2018. The corresponding figures for Singapore and Hong Kong were less than 0.03% and less than 0.1% respectively. See Census and Statistics Department (2020), Department of Statistics Singapore (2019) and National Statistics, Republic of China (Taiwan) (2020).

³ The size of farms averaged at around 1.1 hectares in Taiwan and 2.8 hectares in Singapore in 2015. Comparatively, the average farm size in Hong Kong was 0.3 hectare in 2018. See Agriculture, Fisheries and Conservation Department (2019a), Liu (2018) and Singapore Food Agency (2020a).

⁴ In 2018, the local agriculture sector employed about 4 300 farmers while the local fisheries sector employed about 13 600 fishermen/fish farmers.

⁵ See Agriculture, Fisheries and Conservation Department (2020) and Information Services Department (various years).

⁶ See Agriculture, Fisheries and Conservation Department (2019b).

environmental changes, and competition from imported products.⁷ Certain segments such as vegetable production and marine fisheries have been harder hit and suffered a decline in production over the past decade.⁸ The Government has all along provided infrastructural, technical and marketing support⁹ as well as financial assistance through the Agriculture, Fisheries and Conservation Department ("AFCD") to facilitate the development of the agriculture and fisheries sector.

2.3 With regard to financial assistance measures, the Government has put in place three categories of schemes to support the agriculture and fisheries sector. These include: (a) **low-interest loan schemes** for providing development and working capital to practitioners; (b) **development fund schemes** for supporting the development and adoption of modern operation practices that would enhance the productivity and competitiveness of the sector; and (c) **Emergency Relief Fund** for assisting eligible practitioners to rehabilitate their operations after natural disasters.¹⁰ As for low-interest loan schemes, AFCD currently administers seven loan funds, of which three mainly provide funding for farmers¹¹ and four assist fishermen and fish farmers.¹² In 2019, 615 loans were approved under various loan funds amounting to HK\$140.5 million. The majority of the loans were granted to fishermen or fish farmers which accounted for some 91% of the total number of loans approved.

⁷ See Food and Health Bureau and Agriculture, Fisheries and Conservation Department (2014 and 2017).

⁸ Between 2014 and 2018, local vegetable production had declined by 4% from 15 500 tonnes to 14 900 tonnes. The production of marine fish from capture fisheries had also been down by 23% from 160 789 tonnes to 124 300 tonnes over the same period. See Census and Statistics Department (2019) and Information Services Department (various years).

⁹ For example, AFCD has provided technical support to local farmers to help them convert to organic farming and sell their organic produce through the established sales channels of the Vegetable Marketing Organization. AFCD has also assisted fishermen to switch to sustainable fisheries and other related operations through provision of technical advice, training, liaison services, grants and credit facilities.

¹⁰ See Legislative Council Secretariat (2019) on details of the disaster relief measures for the agriculture and fisheries sector in Hong Kong.

¹¹ The three loan funds for assisting farmers are (a) the J. E. Joseph Trust Fund; (b) the Vegetable Marketing Organization Loan Fund; and (c) the Kadoorie Agricultural Aid Loan Fund. The last scheme also provides support for fish farmers. As at end-2019, the total accumulated capital under the three loan funds was HK\$48.7 million. See Food and Health Bureau (2020).

¹² The four loan funds for assisting fishermen or fish farmers are (a) the Fisheries Development Loan Fund; (b) the Fish Marketing Organization Loan Fund; (c) the World Refugee Year Loan Fund; and (d) the Cooperative for American Relief Everywhere Loan Fund. As at end-2019, the total accumulated capital under the four loan funds was HK\$1,289.3 million. See Food and Health Bureau (2020).

2.4 To further promote the modernization and sustainable development of the local agriculture sector, the Government has adopted the **New Agriculture Policy** ("NAP") in 2016 featuring the implementation of a series of support measures. These measures include: (a) setting up a HK\$500 million Sustainable Agricultural Development Fund ("SADF");¹³ (b) establishing an agricultural park as a base for promoting applications of new agricultural technology and practices;¹⁴ (c) identifying agricultural priority areas for long-term agricultural use; and (d) facilitating development of hydroponics¹⁵ and other agro-technology. As for SADF, most of the approved applications up to February 2020 (290 cases) were related to the acquisition of farming equipment and/or materials under the Farm Improvement Scheme,¹⁶ involving a total grant of HK\$8.5 million. Another 10 research and development projects were approved, involving funding of HK\$96.7 million (**Table 1**).¹⁷

2.5 For additional support to the local fisheries sector, AFCD established a development fund scheme – the HK\$500 million Sustainable Fisheries Development Fund ("SFDF")¹⁸ – in July 2014. Nonetheless, only 23 applications were approved under SFDF up to March 2020 involving a total funding commitment of about HK\$125.6 million (Table 1). So far, only three projects were completed benefitting around 255 fishermen.¹⁹

¹³ SADF is to support R&D, and adoption of new facilities and practices in agricultural production.

¹⁴ The Government has planned to establish an agricultural park in Kwu Tung South in two phases. Phase one of the park will be developed in a smaller scale of 11 hectares and is scheduled to be completed in stages between 2021 and 2023.

¹⁵ Hydroponics is a form of gardening that uses no soil, but instead grows plants in a solution of water and nutrients.

¹⁶ The Farm Improvement Scheme was set up under SADF to provide direct grants of up to a maximum of HK\$30,000 each to eligible farmers for acquiring modernized and mechanized farming equipment and facilities.

¹⁷ See Food and Health Bureau (2020).

¹⁸ SFDF is to help the local fishing community move towards sustainable or high value-added operations so that the trade can enhance its overall competitiveness and cope with new challenges.

¹⁹ See Food and Health Bureau (2020).

Table 1 – Applications under the development fund schemes since inception

	Number of applications received	Number of applications approved	Grant approved (HK\$ million)
Sustainable Agricultural Development Fund⁽¹⁾			
Farm Improvement Scheme ⁽²⁾	302	290	8.5
Other research and development projects	37	10	96.7
Total	339	300	105.2
Sustainable Fisheries Development Fund⁽³⁾			
Equipment Improvement Project ⁽⁴⁾	9	8	50.5
Projects on aquaculture	28	11	66.3
Projects on capture fisheries	2	1	0.8
Projects on recreational fisheries	5	2	4.7
Others	6	1	3.4
Total	50	23	125.6

Notes: (1) Figures are between December 2016 and February 2020.

(2) The Farm Improvement Scheme was set up under SADF to provide direct grants of up to a maximum of HK\$30,000 each to eligible farmers for acquiring modernized and mechanized farming equipment and facilities.

(3) Figures are between July 2014 and March 2020.

(4) The Equipment Improvement Project was set up under SFDF in December 2017 to provide direct grants to eligible applicants to acquire mechanized fishery equipment and/or materials for improving their production.

Sources: Agriculture, Fisheries and Conservation Department (2020) and Food and Health Bureau (2020).

2.6 The stakeholders have generally welcomed the financial assistance measures implemented by the Government, since these measures help fund the operations and related improvement efforts of the practitioners and enhance the sustainable development of the sector. Nonetheless, some practitioners have encountered difficulties in preparing and filing applications for the development fund schemes and expressed concerns about the long application processing time.²⁰ In 2019, the Audit Commission published the *Director of Audit's Report No. 72* revealing the long processing

²⁰ See Minutes of Meeting of the Panel on Food Safety and Environmental Hygiene of the Legislative Council (2016 and 2017).

time issue²¹ and the fairly high rejection rate for SFDF applications²² as well as the decrease in the number of fund applications over the years.²³ In response, AFCD has accepted the recommendations of the Director of Audit's report and committed to taking measures to encourage and facilitate more applications under the two development funds.²⁴

3. Global developments of subsidy measures for supporting the agriculture and fisheries sector

3.1 It has been common for many economies around the world to implement subsidy measures to support the development of their local agriculture and fisheries sector. According to the Organisation for Economic Co-operation and Development ("OECD"), major categories of subsidy/support measures provided generally include: (a) **market price support measures** such as setting minimum prices or production quotas for certain products, and imposing tariffs or other trade restrictions;²⁵ (b) **payments provided to individual farmers or fishers** to increase their incomes or reduce their operating costs;²⁶ and (c) **general services support measures** such as supporting research and development ("R&D"), marketing and promotion, and infrastructure improvement efforts.²⁷ The application of the major categories of subsidy measures for the agriculture and fisheries sector and the related benefits and issues are highlighted below.

²¹ The SFDF Secretariat processed 23 SFDF applications during 2014-2018, whereas the SADF Secretariat processed 11 applications during 2016-2018. The Audit Commission found that the longest time taken for SFDF applications was 35 months and that for SADF applications was 15 months. See Audit Commission (2019).

²² As at 31 December 2018, 41% of SFDF applications and 12% of SADF applications were rejected for various reasons such as failure in meeting the fund objectives. See Audit Commission (2019).

²³ According to Audit Commission (2019), the number of SFDF applications decreased from 15 in 2014 to 3 in 2018. The number of SADF applications decreased from 20 in 2017 to 13 in 2018.

²⁴ Indeed, AFCD has conducted a review of SFDF and SADF in late 2018. AFCD has committed to implementing the recommendations of that review, as well as recommendations of the Director of Audit's report, by stages to address the administrative issues of SFDF and SADF so identified. See Audit Commission (2019).

²⁵ Other trade restrictions include import or export quotas, import or export bans, and export subsidies.

²⁶ Payments may be based on outputs, variable inputs such as fertilizers or fuel, fixed inputs such as investment in farm building or vessel construction, or incomes of farmers or fishers.

²⁷ See Organisation for Economic Co-operation and Development (2017b and 2019a).

Subsidy measures for the agriculture sector

3.2 Between 2016 and 2018, the total expenditure on support provided to the agriculture sector in OECD member countries, including various types of subsidies and government support/investment, was estimated at an annual average of US\$325 billion (HK\$2,548 billion). Within the total, 72% was provided through market price support measures and payments to individual producers. In comparison, the corresponding figures for the period between 2000 and 2002 were US\$290 billion (HK\$2,260 billion) and 79% respectively.

3.3 Subsidies on market price support measures and payments based on production of specific agricultural commodities have been identified by OECD as having higher negative impacts on agricultural production and trade.²⁸ These kinds of subsidies accounted for a decreasing share of the total expenditure on support measures from 52% in 2000-2002 to 34% in 2016-2018. The corresponding share for less distorting forms of payments, such as non-commodity or non-production linked payments,²⁹ increased from 6% to 16% over the same period. As for general services support which is considered to be beneficial to the long-term development of the agriculture sector, its share of total expenditure on support measures maintained at around 13% in 2000-2002 and 2016-2018 respectively.³⁰

3.4 OECD has recommended (a) reducing and eventually eliminating distorting types of support measures; and (b) redirecting support to improve general services such as R&D for benefiting the sustainable development of the agriculture.³¹ Likewise, members of the World Trade Organization ("WTO") have to abide by the Agreement on Agriculture³² which came into force in 1995 to establish a fairer trading system for agricultural products by addressing

²⁸ According to OECD, market price support measures and some of the payment measures (e.g. those based on outputs or variable inputs) may distort the pricing of agricultural products, foster unfair international food trading, reduce the incentive to improve operation efficiency and pose pressure on the environment due to over-use of inputs. See Organisation for Economic Co-operation and Development (2019a).

²⁹ These included payments that are tied with adoption of specific agricultural practices such as environmentally-friendly practices, or tailored to specific policy objectives such as supporting agricultural development in specific areas or among targeted groups of farms.

³⁰ See Organisation for Economic Co-operation and Development (2019a).

³¹ Ibid.

³² The Agreement stipulates the legally binding commitments to reforming (a) market access through reduction of tariffs and control on other import protection measures; (b) domestic support measures such as price and income support that have an impact on trade; and (c) export subsidies.

issues about subsidies and trade barriers that distort agricultural trade.³³ In 2015, members of WTO further adopted the decision to abolish agricultural export subsidies and set rules for controlling other export support measures.

Subsidy measures for the fisheries sector

3.5 The provision of subsidies for the fisheries sector has been a controversial issue as some of the subsidy measures have induced overfishing, leading to depletion of the fishery stock and harming the sustainable development of the sector. Research studies of OECD have indicated that subsidies or support based on variable inputs such as fuel, bait and gear are most likely to increase illegal, unreported and unregulated ("IUU")³⁴ fishing effort and lead to stock depletion. In contrast, subsidy mechanisms that help provide working capital for operations, enhance the business or operational skills of fishers, or improve fishers' incomes are more beneficial to the development of the fisheries sector and pose relatively lower pressure on the fishery stock.³⁵

3.6 According to OECD's latest data collected from 33 countries,³⁶ total expenditure on subsidies provided to individual fishers and general services support³⁷ for capture fisheries was estimated at around US\$13 billion (HK\$101 billion) in 2015, of which 46% was on subsidies provided to individual fishers and 54% on subsidies or support on general services.³⁸ Indeed, the

³³ The WTO negotiations have introduced (a) general rules applicable to all Members; and (b) specific commitments made by individual member governments listed in their individual "schedules of concessions". Commitments relating to agricultural products such as maximum tariff levels, tariff rate quotas and limits on export subsidies, are covered under individual WTO members' goods schedules. Amendments to the schedules may be made to reflect changes such as new concessions resulting from agreements among WTO members, rectifications of errors and renegotiations of concessions. A member proposing a modification of the schedule has to submit the proposal for review by all other members. The proposal will be approved if there is no objection from any member.

³⁴ IUU fishing refers to fishing activities that are conducted contradictory to legal conservation and management measures currently in place around the world.

³⁵ See Organisation for Economic Co-operation and Development (2017b and 2018).

³⁶ The database covers 26 OECD member countries and seven non-OECD member countries.

³⁷ The expenditure on market price support measures was not covered due to difficulties in establishing world reference prices for fisheries commodities for ascertaining the level of market price support provided. See Organisation for Economic Co-operation and Development (2017b).

³⁸ The proportion split would be 92% on subsidies or support on general services and 8% on subsidies or support provided to individual fishers if the data of China was excluded as it had provided a large amount of fuel subsidy to fishers. See Organisation for Economic Co-operation and Development (2017a).

amount and share of expenditure on general services support such as R&D, management of fisheries resources, and provision of infrastructure had been increasing since 2009.

3.7 International organizations such as OECD and WTO have been calling for more transparency and understanding of the impact of fisheries subsidy measures.³⁹ Members of WTO began negotiations to clarify and improve disciplines on fisheries subsidies in 2002 and agreed in 2015 to work towards Target 14.6 of the United Nations Sustainable Development Goals to prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing. Nonetheless, members of WTO have not yet agreed on the approaches to achieve the target and have committed to concluding their negotiations by 2020.

4. Taiwan

4.1 In Taiwan, the agriculture and fisheries sector took up 1.7% of GDP⁴⁰ and 4.9% (561 000 workers) of the total workforce in 2018.⁴¹ The total value of agricultural and fisheries production amounted to NT\$550 billion (HK\$144.7 billion),⁴² of which 52.3% was from crop production,⁴³ 30.3% from livestock, and 17.4% from fisheries production.⁴⁴ Local production in 2018 contributed to a food self-sufficiency ratio of 34.6%⁴⁵ as measured by calories.⁴⁶ Taiwan also exported fruits, vegetables, flowers and fisheries products, valuing at NT\$162.9 billion (HK\$42.8 billion) in 2018.

³⁹ Fishery and aquaculture products are not included in the WTO Agreement on Agriculture which came into force in 1995, and fisheries subsidies are not governed by related rules covering agricultural subsidies.

⁴⁰ The entire agricultural food chain in Taiwan, including primary production and food manufacturing and services, accounted for 7.4% of GDP in 2018. See 行政院農業委員會：《農業及農食鏈統計(107年)》，2019年。

⁴¹ See 行政院農業委員會：《農業及農食鏈統計(107年)》，2019年。

⁴² See 行政院農業委員會：《農委會年報》，2019年。

⁴³ The major crops produced were rice, fruits and vegetables.

⁴⁴ Fisheries production was mainly contributed by distant water fisheries, inland water aquaculture and offshore fisheries.

⁴⁵ See 行政院農業委員會：《農業統計年報(107年)》，2019年。

⁴⁶ The food self-sufficiency ratio in terms of calories produced is measured in: calories produced/(production + imports – exports).

Agricultural and fisheries policies

4.2 The Council of Agriculture ("COA"), established in 1984, is the competent authority under the Executive Yuan entrusted with administering agricultural, forestry, fishery, animal husbandry and food related affairs in Taiwan. COA has adjusted its agricultural and fisheries policies over the years to cope with challenges in the operating environment, including risks posed by natural disasters, ageing of the practitioners, changing food consumption patterns, and tighter restrictions on use of subsidy mechanisms and increased competition following Taiwan's accession into WTO in 2002.⁴⁷ In the latest agricultural and fisheries plan for the period between 2017 and 2020, COA sets out a number of policy goals including: (a) strengthening the distinctive advantages and competitiveness of the sector; (b) building a livable and stable agricultural and fisheries community; (c) improving capability to cope with climate changes and maintaining sustainability of the ecological environment; and (d) improving food security level and ensuring food safety.

Major subsidy measures

4.3 COA has implemented a series of policy initiatives,⁴⁸ complemented with various subsidy measures, to help deliver the policy goals of the latest agricultural and fisheries plan. The major subsidy measures implemented under the respective policy goals and their salient features are summarized below.

⁴⁷ See Liu (2018).

⁴⁸ Major policy initiatives implemented by COA include: (a) encouraging farmers to form cooperatives to enhance production and marketing of their products, and to set up production zones specializing in selected products; (b) attracting and training younger farmers to join the agriculture sector; (c) expanding the biotechnology park which integrates R&D in agricultural production; and (d) enhancing the traceability system and quality certification system for agricultural products.

Measures to strengthen competitiveness of the sector

4.4 COA has been providing **low-interest loans** through the funds managed by the Bureau of Agricultural Finance⁴⁹ (農業金融局) to support practitioners on policy-related development projects. These projects include development of leisure farms,⁵⁰ establishment of new farms among young farmers, efforts to enhance marketing and sales operations; and projects on new technology and innovation.⁵¹ The Agricultural Credit Guarantee Fund (財團法人農業信用保證基金)⁵² has also provided **loan guarantee** to financial institutions for loans granted to practitioners to support their regular operations or implementation of policy-related development projects. In addition, **research grants** are provided under the budget of the respective departments of COA to academic institutions, research bodies, and agricultural and fisheries bodies to conduct research projects that contribute to specific areas of development of the sector such as management and commercialization of agricultural technology, application of information technology, and management of fisheries resources.

Measures to enhance practitioners' financial security

4.5 COA has also put in place a range of subsidy measures to help increase practitioners' income or reduce their operating costs with a view to enhancing their financial security and building a livable agricultural and fisheries community. These measures include:

⁴⁹ The Bureau of Agricultural Finance was established under COA in 2004 tasked with supervising agricultural financial institutions, and planning and administering loans to support policy-related development projects.

⁵⁰ Leisure farms are farms that transform their traditional farm resources into tourism-related activities. For example, tourists can meet farm owners, pick fruits directly from the trees, feed the sheep and milk the cows among other things.

⁵¹ The terms of loan agreement such as the loan amount granted and repayment periods vary by the types of project. For example, the loan amount is capped at NT\$30 million (HK\$7.8 million) for projects related to leisure farm, and NT\$10 million (HK\$2.6 million) for eligible young farmers to set up new farms.

⁵² The Agricultural Credit Guarantee Fund was established in 1983 with contributions from the government, financial institutions in the sector, and agricultural and fisheries organizations.

- (a) subsidies for purchasing agricultural machinery (補助農友購買小型及大型農機) – subsidies are granted to eligible farmers to cover one-third of the costs of specific small or large scale agricultural machinery capped at a specified limit to ease labour shortage and increase productivity;⁵³
- (b) fuel subsidy – fuel for agricultural or fishery use is exempted from business tax;⁵⁴ and subsidy on the fuel used by fishing boats is provided at a rate of 14% of fuel prices.⁵⁵ The latter subsidy is subject to a limit on the volume of fuel used which is set according to criteria such as the types of fishing boat and hours of operation;
- (c) fertilizer subsidy – subsidies for suppliers to reduce their prices of chemical fertilizers at a rate of NT\$20 (HK\$5) per 40 kg, and providing subsidies for purchase of organic fertilizers to encourage organic farming;
- (d) payments and low-interest loans in relief of natural disasters (農業天然災害救助) – supporting eligible practitioners to rehabilitate their operations after natural disasters;⁵⁶
- (e) allowance for elderly farmers and fishers (老年農民福利津貼) – granted to eligible elderly farmers and fishers aged 65 and above who are not receiving any pension payments under other social insurance programmes. Eligible recipients are provided with a monthly allowance of about NT\$7,550 (HK\$1,963) to cater for their retirement living; and

⁵³ The limit of subsidy for small scale machinery ranges from NT\$3,000 (HK\$780) to NT\$80,000 (HK\$20,800) per machine and that for large scale machinery ranges from NT\$200,000 (HK\$52,000) to NT\$2.13 million (HK\$553,800) per machine.

⁵⁴ All local sales of goods and services, or import of goods into Taiwan, are subject to non-value-added or value-added business tax. Non-value-added business tax is imposed on financial institutions, certain restaurants and specified types of small businesses. Value-added business tax at a rate of 5% is imposed on other goods and services.

⁵⁵ The fuel subsidy rate will be reduced to 5% from 2021.

⁵⁶ The payment rate and the maximum amount of low-interest loan granted vary by types of agricultural and fisheries products. For example, the maximum amount of loan granted per hectare is NT\$150,000 (HK\$39,000) for rice production, NT\$375,000 (HK\$97,500) for vegetable production, and NT\$750,000 (HK\$195,000) for fruit production.

- (f) scholarships for children of low-income farmers and fishers (農漁民子女就學獎助學金) – children of eligible low-income farmers or fishers attending senior secondary schools or post-secondary institutions are provided with scholarships if they meet specified criteria.⁵⁷

Market price support measures

4.6 In order to protect the local agriculture and fisheries sector from competition of imported products, the Taiwanese government has imposed **tariffs** on a range of imported agricultural and fisheries products in compliance with the WTO requirements.⁵⁸ For example, the average nominal tariff rate for agricultural products imported from the United States was about 15.12% in 2018.⁵⁹ Besides, the Taiwanese government is allowed to temporarily increase its import tariffs on 15 categories of agricultural products⁶⁰ in case of import surges or price falls under the **special safeguard mechanism** (特別防衛措施) provided by WTO. Another major market price support measure is the **public procurement scheme** (公糧保價收購) launched in 1974, whereby the government procures agricultural outputs, particularly rice outputs,⁶¹ from local farmers at guaranteed price level to support their incomes and ensure food security.⁶² The measure has helped sustain the market prices of agricultural products even in over-supply situation.

⁵⁷ The amount of subsidy offered ranges from NT\$4,000 (HK\$1,040) to NT\$13,000 (HK\$3,380) depending on the education level and types of school attended.

⁵⁸ The tariff rates to be imposed vary by products and their origins. In accordance with the relevant WTO agreements, Taiwan set the average maximum tariff level at 16.1% for imported animal products and 21.8% for imported fruits, vegetables and plants.

⁵⁹ See U.S. Department of Commerce (2019).

⁶⁰ These agricultural products include rice, peanuts, chicken meat, red beans and milk.

⁶¹ COA has also procured other agricultural products such as pigs and cabbage (高麗菜) at times of over-supply of the respective products, but the scale of procurement is much smaller than that of rice outputs. For example, in late 2019, COA procured pigs from farmers at a price of NT\$55 (HK\$14.1) to NT\$65 (HK\$16.6) per kg for pigs that reached a specified weight.

⁶² In 2018, about 537 000 tonnes of rice outputs were procured by COA at NT\$12,601 million (HK\$3,314 million).

Measures to enhance sustainability of the sector

4.7 As the public procurement scheme has the negative side-effects of encouraging overproduction and overcultivation of farmland, COA has implemented a **direct payment scheme** for rice farmers (稻作直接給付) since 2016 as an alternative to the public procurement scheme. Farmers opting for direct payments⁶³ are encouraged to cultivate higher quality rice products for sale in the open market and are not required to sell their outputs to the government. In 2018, COA has integrated the direct payment scheme with other incentive schemes which encourage green agricultural practices under a new payment plan (對地綠色環境給付計劃). Under the new payment plan, incentive payments are offered to rice farmers who switch to cultivate other specified crops such as crops with export potential or adopt measures to rehabilitate their farmland.

4.8 COA has also implemented a subsidy scheme to encourage adoption of organic farming or environmentally-friendly agricultural practices (有機及友善環境耕作補貼計劃) in 2017. Under the scheme, organic farmers or those adopting environmentally-friendly agricultural practices are provided with (a) incentive payments; (b) subsidies on organic certification and inspection expenses, purchase of organic fertilizers and organic farming facilities, and establishment of organic farmers' markets; (c) low-interest loans; and/or (d) rental subsidy and long tenancy period of 10 to 20 years for farmers renting public farmland.

Observed outcomes

4.9 The Taiwanese government has invested a lot of financial resources in supporting the development of the local agriculture and fisheries sector. This features the provision of various subsidy schemes to enable many practitioners to obtain the necessary capital for regular operations or new project development, secure their incomes, and/or change to more environmentally-friendly agricultural practices. **Table 2** lists the number of beneficiaries/cases involved and financial provisions for the major subsidy measures in 2018.

⁶³ The direct payment rate is NT\$13,500 (HK\$3,510) per hectare for the first harvest and NT\$10,000 (HK\$2,600) per hectare for the second harvest in a year. Additional payment of NT\$3,000 (HK\$780) per hectare is paid to farmers who grow higher quality rice products.

Table 2 – Provisions for the major subsidy measures in 2018⁽¹⁾

	Number of beneficiaries/cases	Provisions	
		NT\$ million	HK\$ million equivalents
Measures to strengthen competitiveness of the sector			
Low-interest loans	45 000	28,800	7,574
Loan guarantee	31 393	24,302 ⁽²⁾	6,391
Measures to enhance practitioners' financial security			
Fuel tax concession	n.a. ⁽³⁾	107	28
Fuel subsidy for the fisheries	12 906 ⁽⁴⁾	1,503	395
Subsidy on organic fertilizers	n.a.	338	89
Disaster relief payments	56 908	2,056	541
Disaster relief loans	509	639	168
Allowance for elderly farmers and fishers	634 225	52,654	13,848
Scholarships for children of low-income farmers and fishers	95 480 ⁽⁵⁾	809	213
Market price support measures			
Public procurement of rice outputs	n.a.	12,601	3,314
Measures to enhance sustainability of the sector			
Direct payments to rice farmers under the payment plan to encourage green agricultural practices (對地綠色環境給付計劃)	n.a.	661	174

Notes: (1) Only subsidy measures with financial provision figures available are covered.

(2) The figure refers to the total amount of loans guaranteed.

(3) "n.a." refers to information not available.

(4) The figure refers to the number of fishing boats provided with fuel subsidy.

(5) The figure refers to the number of approved applications.

Sources: 行政院農業委員會：《農委會年報》，2019 年 and 行政院農業委員會：《行政院農業委員會 109 年度單位預算評估報告》，2019 年。

4.10 Subsidy schemes for promoting sustainable or green agricultural practices have also contributed to gradual changes in farmers' practices. Under the payment plan to encourage green agricultural practices (對地綠色環境給付計劃), about 138 000 hectares (or 18.5%) of farmland were converted to cultivation of specified crops in 2018, up by 3.3% from 2017. Another 77 000 hectares (10.3%) of farmland were rehabilitated under the scheme in 2018.⁶⁴ Under the subsidy scheme to encourage organic farming or environmentally-friendly agricultural practices (有機及友善環境耕作補貼計劃), the total area of farmland engaged in organic or environmentally-friendly farming amounted to 13 511 hectares (or 1.7% of total area of farmland) as at end-2019, up by 16% from end-2018.⁶⁵ COA's target is to increase the area of such farmland by 20% per year.

Issues of concern

4.11 In Taiwan, there have been strong criticisms against the public procurement scheme. The government's procurement of surplus rice outputs at guaranteed prices has reportedly distorted the market pricing of agricultural outputs, induced overproduction and brought damages to the agricultural environment.⁶⁶ Besides, the provision of fertilizer subsidies further encourages overproduction. According to the Control Yuan,⁶⁷ COA had spent around NT\$80 billion (HK\$21 billion) on procuring agricultural products from farmers in the 10-year period between 2009 and 2018. Overproduction of rice products per year amounted to some 200 000 tonnes on average. Though COA has introduced the direct payment scheme as an alternative to the public procurement scheme, the effectiveness of the new scheme has been undermined by the arrangement that allows farmers to switch back to the old scheme at harvest time. As such, there have been views proposing to phase out the public procurement scheme and strengthen the efforts to promote sustainable agricultural practices.

⁶⁴ See 行政院農業委員會：《農委會年報》，2019年。

⁶⁵ See 行政院農業委員會：《農業政策》，2020年。

⁶⁶ See 自由時報(2019年)and 民報(2019年)。

⁶⁷ See 監察院(2020年)。

5. Singapore

5.1 Compared with the case of Taiwan, Singapore's agriculture and fisheries sector took up a relatively much smaller share of GDP (less than 0.03%) and the total workforce (less than 1%) in 2018.⁶⁸ Nevertheless, there were 227 licensed food farms in Singapore as at 31 March 2019, of which 49% were coastal food-fish farms,⁶⁹ 37% vegetable farms and 5% land-based food-fish farms. Agricultural and fisheries outputs are mainly for local consumption. They accounted for about 24% of eggs, 13% of leafy vegetables and 9% of fish consumed locally in 2018.⁷⁰ Besides, Singapore produces orchids and ornamental fish for export.

Agricultural and fisheries policies

5.2 According to the Singaporean government, Singapore has imported over 90% of its food supply and this results in the country being exposed to the volatilities of the global food market such as impacts of climate changes and export bans.⁷¹ In February 2019, the government set the target of meeting **30% of Singapore's nutritional needs** with locally produced food by 2030 (i.e. the "30 by 30" vision). Currently, densely populated Singapore produces only about 10% of its nutritional needs. Specifically, achievement of the 30% target requires local production of more vegetables and fruits to meet 20% of nutritional needs of Singaporeans, and of more protein sources such as poultry and fish to meet 10% of nutritional needs.

5.3 In Singapore, the Singapore Food Agency ("SFA")⁷² serves as the national authority established under the Ministry of the Environment and Water Resources to oversee food safety and food security. It has laid down four key strategies for achieving the ambitious "30 by 30" vision, namely (a) using technology to boost the productivity and sustainability of the agriculture and fisheries sector; (b) unlocking more farm space for long-term

⁶⁸ See Department of Statistics Singapore (2019).

⁶⁹ The fisheries sector in Singapore is dominated by aquaculture and only limited production is from capture fisheries.

⁷⁰ See Agri-Food & Veterinary Authority of Singapore (2019).

⁷¹ See Ministry of the Environment and Water Resources (2019).

⁷² SFA was established in April 2019 by merging the food-related functions carried out by the former Agri-Food & Veterinary Authority of Singapore, the National Environment Agency and the Health Sciences Authority.

leasing to practitioners⁷³ and exploring alternative space for food production such as vacant government buildings or rooftops; (c) developing local talents' knowledge and expertise in urban farming and agricultural technology; and (d) encouraging consumers to support local produce through public education and marketing initiatives highlighting the freshness and quality of local produce as competitive edges over imported produce.⁷⁴

Major subsidy measures

5.4 In order to achieve the "30 by 30" vision, SFA has identified R&D as the key success driver. By leveraging on science, technology and innovation, SFA aims to improve the resilience of the agriculture and fisheries sector against climate changes, attain high food yields on limited land in a resource-efficient and sustainable manner, and maximize the value to be captured throughout the food supply chain. Apart from fulfilling the "30 by 30" vision, SFA also targets to build Singapore into an agriculture and food innovation hub that exports sustainable agricultural solutions.

5.5 Against the above, the Singaporean government has devised three subsidy programmes, namely the **Agriculture Productivity Fund ("APF") programme**, **"30 x 30 Express" grant scheme** and **Singapore Food Story R&D Programme**. The first two are to support practitioners to develop and adopt new agricultural solutions, and the third is for funding new R&D projects to raise production capability and productivity of local food producers.

Agriculture Productivity Fund programme

5.6 The APF programme was set up in October 2014 with a funding of S\$63 million (HK\$385.6 million) to replace the then Food Fund programme⁷⁵ for supporting local farms in their capability development and drive towards higher productivity. The programme comprises the following three schemes:

⁷³ New public farmland is leased on a term of 20 years, being allocated through a tendering process. Tender proposals are evaluated on criteria that emphasize on bidders' ability to achieve high productivity and adopt innovative and sustainable agricultural practices.

⁷⁴ These initiatives include organizing farmers' markets and conducting promotion activities at large retail outlets. See Agri-Food & Veterinary Authority of Singapore (2019).

⁷⁵ The Food Fund was introduced in 2009 to support practitioners' efforts in food diversification and enhancement of production capability. Between 2009 and 2014, 310 projects had been approved with a funding commitment of S\$30.9 million (HK\$189 million).

- (a) Basic Capability Upgrading Scheme which supports eligible farm licensees to purchase equipment that would help increase productivity in terms of production increase, manpower savings, or other types of resource savings;⁷⁶
- (b) Productivity Enhancement Scheme which supports eligible farm licensees to purchase automated, advanced and integrated farming systems that help achieve quantum leap in productivity, or develop and test the feasibility of new farming technologies or systems;⁷⁷ and
- (c) Cash Advancement Scheme which provides all APF projects with approved funding of S\$30,000 (HK\$166,800) and above with up to 30% cash advancement to help ease participants' cash flow.

"30 x 30 Express" grant scheme

5.7 The "30 x 30 Express" grant scheme was introduced in April 2020 to complement the APF programme amid the COVID-19 pandemic. According to SFA, the current COVID-19 situation underscores the importance of local food production, as part of Singapore's strategies to ensure food security. Under the scheme, SFA has allocated S\$30 million (HK\$167 million) to support farms producing eggs, leafy vegetables and fish to accelerate the adoption of highly-productive farming systems for increasing their production over the next six to 24 months.⁷⁸

⁷⁶ SFA co-funds 50% of the qualifying equipment costs capped at (a) S\$50,000 (HK\$278,000) per farm per project for major food categories such as hen eggs, leafy vegetables and food fish; and (b) S\$20,000 (HK\$111,200) for other food categories such as mushroom, cattle, goat and frog.

⁷⁷ SFA co-funds 70% of the qualifying farming system costs, capped at S\$700,000 (HK\$3.9 million) per farm per project for major food categories such as hen eggs, leafy vegetables and food fish. It co-funds 30% for other food categories such as mushroom, cattle, goat and frog, capped at S\$100,000 (HK\$556,000) per farm per project.

⁷⁸ Under the scheme, SFA will co-fund up to 85% of the total project qualifying costs including purchase of equipment and installation of productivity-enhancing technology and farming systems. No limit is set on the amount of funding granted. Eligible farms are required to meet the specified high production and productivity criteria.

Singapore Food Story R&D Grant Programme

5.8 In 2019, SFA and the Agency for Science, Technology and Research ("A*STAR")⁷⁹ have jointly launched the Singapore Food Story R&D programme with a provision of S\$144 million (HK\$827 million) to build a strong base of R&D capabilities in local research institutions in partnership with stakeholders in the sector. SFA and A*STAR have laid down (a) three R&D themes – Sustainable Urban Food Production, Future Foods: Alternative Proteins, and Food Safety Science and Innovation; and (b) the respective desired outcomes to guide the allocation of research grant for achieving technological breakthrough.

5.9 SFA and A*STAR have launched grant calls for R&D in "Sustainable Urban Food Production" and "Future Foods: Alternative Proteins" respectively. The first grant call encourages researchers, technology providers and potential adopters to co-develop innovative solutions for increasing productivity of the tropical aquaculture and urban agriculture industry beyond what is achievable by current best-in-class technologies. Under the second grant call, research is called for to foster knowledge creation and catalyze early-stage innovation in areas such as microbial protein and cultured meat.

Observed outcomes

5.10 Between October 2014 and March 2019, 307 projects had been approved under the APF programme involving a funding commitment of S\$22.2 million (HK\$127.4 million). Of these approved projects, 116 had been completed as at end-March 2019. According to SFA, practitioners supported under the programme had cumulatively (a) cut manpower by 207 185 man-hours; (b) increased production of food-fish by 406 tonnes; (c) increased production of leafy vegetables by 1 124 tonnes; and (d) increased production of hen eggs by 46 million pieces.⁸⁰ An example of successful projects funded by the programme is the development of a closed containment floating aquaculture system which can reduce the fish's vulnerability to external sea water conditions while ensuring that used water is treated before being returned to the sea. The innovative system enables more fish to be produced in a more sustainable manner compared to traditional coastal aquaculture farms which

⁷⁹ A*STAR is a statutory board established under the Ministry of Trade and Industry to support R&D that is aligned to areas of competitive advantage and national needs for Singapore.

⁸⁰ See Agri-Food & Veterinary Authority of Singapore (2019).

employ open net cage farming systems.⁸¹ The outcomes for the other two subsidy programmes, i.e. the Singapore Food Story R&D programme and the "30 x 30 Express" grant scheme, have yet to be seen as they were recently launched in 2019 and 2020 respectively.

Issues of concern

5.11 The subsidy provided by SFA has supported local farms in adopting new equipment and/or technology so as to raise their productivity. However, some smaller farms producing niche products, such as frog farms,⁸² might still have difficulties in applying new technology to their operations due to the high costs involved in customizing the technology to their farms and the high operating costs incurred.⁸³

6. Concluding remarks

6.1 Many economies around the world have implemented subsidy measures as part of their efforts to support the development of the local agriculture and fisheries sector. International organizations such as OECD support the adoption of subsidy measures that promote sustainable agricultural and fisheries development, particularly general services support measures and payments that incentivize sustainable agricultural and fisheries practices.

6.2 Meanwhile, OECD considers certain types of subsidy measures, such as market price support measures and payments that are based on outputs or variable inputs, having negative impacts on the development of the agriculture and fisheries sector. These subsidy measures might encourage overcultivation or overfishing, distort market pricing of outputs and reinforce unfair international food trading. Indeed, the adoption of market price support measures for the agriculture sector is disciplined by the relevant WTO agreement i.e. the Agreement on Agriculture that came into force in 1995. Members of WTO have yet to agree on the approach to control the adoption of fisheries subsidies.

⁸¹ See Ministry of the Environment and Water Resources (2020).

⁸² In Singapore, frog farms supply frog meat and hashima for human consumption.

⁸³ See The Straits Times (2017).

6.3 Hong Kong has made use of low-interest loans and development fund schemes to provide working capital to practitioners, help them develop and adopt new agricultural practices, and support related R&D efforts. These measures are in general welcomed by the stakeholders. However, issues related to the administration of the development fund schemes, such as long application processing time and fairly high rejection rate, might have deterred application for funding and undermined effectiveness of the schemes.

6.4 Singapore has adopted a subsidy mechanism similar to that of Hong Kong in supporting its agriculture and fisheries sector. Yet, it differs in its heavy emphasis on the development and adoption of innovative agricultural and fisheries solutions and new technology to maximize the capacity and productivity of local farms for meeting the ambitious "30 by 30" vision. In order to support the vision, the subsidy measures are oriented towards providing funding for local farmers to upgrade their production equipment/facilities and develop and test advanced production systems.

6.5 Singapore has sought to further fast-track the technological upgrade of the agriculture and fisheries sector with the launch of the "30 x 30 Express" grant scheme in April 2020, in view of the renewed importance of local food production after the COVID-19 outbreak. In addition, R&D grant is provided to encourage research institutions to work with other stakeholders in the sector to develop innovative solutions and achieve technological breakthrough in the areas of urban farming, future food development and food safety science. As to the competition from imported food products, the Singaporean government assists practitioners with marketing and promotion efforts that encourage local consumers to support local produce. These efforts focus on promoting quality and freshness of local produce over imported ones.

6.6 Taiwan has introduced a wider range of subsidy measures to support the development of its agriculture and fisheries sector, which is relatively larger in size than that of Hong Kong and Singapore. In addition to loan and grant schemes commonly adopted in Hong Kong and Singapore, Taiwan has also made heavy financial commitments in providing a range of payments to enhance the financial security of the practitioners, including subsidies granted for fuel and fertilizers used by farmers and fishers, and livelihood allowance granted for the elderly practitioners. To protect the local sector from competition of imported produce, Taiwan has implemented import tariffs and the controversial public procurement scheme. The public procurement

scheme has been criticized as it causes overproduction and damages to the agricultural environment. Against this, the Taiwanese government has introduced new subsidy schemes in the past few years to encourage sustainable agricultural practices such as crop diversification, rehabilitation of farmland and adoption of organic farming. Positive progress has been achieved for these new schemes in terms of increased area of farmland engaged in cultivation of specified crops or organic/environmentally-friendly farming.

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15 July 2020
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Subsidy mechanisms for the agriculture and fisheries in selected places

	Hong Kong	Taiwan	Singapore
A. Background information			
Production value of the agriculture and fisheries sector ⁽¹⁾	<ul style="list-style-type: none"> • Agriculture: HK\$1,034 million • Fisheries: HK\$2,902 million 	<ul style="list-style-type: none"> • NT\$550 billion (HK\$144.7 billion) 	<ul style="list-style-type: none"> • Information not available
Sectoral contribution to GDP ⁽¹⁾	<ul style="list-style-type: none"> • Less than 0.1% 	<ul style="list-style-type: none"> • 1.7% 	<ul style="list-style-type: none"> • Less than 0.03%
Employment in the sector ⁽¹⁾	<ul style="list-style-type: none"> • 17 900 workers 	<ul style="list-style-type: none"> • 561 000 workers 	<ul style="list-style-type: none"> • Information not available
Sectoral share of total employment ⁽¹⁾	<ul style="list-style-type: none"> • 0.5% 	<ul style="list-style-type: none"> • 4.9% 	<ul style="list-style-type: none"> • Less than 1%
Sectoral contribution to local food supply ⁽¹⁾	<ul style="list-style-type: none"> • % of food consumed locally: <ul style="list-style-type: none"> - 2% of fresh vegetables - 8% of live pigs - 100% of live poultry - 18% of marine fish - 4% of freshwater fish 	<ul style="list-style-type: none"> • Contributing to a food self-sufficiency ratio of 34.6% in terms of calories produced 	<ul style="list-style-type: none"> • % of food consumed locally <ul style="list-style-type: none"> - 24% of eggs - 13% of leafy vegetables - 9% of fish
Role of the agriculture and fisheries sector	<ul style="list-style-type: none"> • Providing alternative sources of fresh and quality food supply to local consumers 	<ul style="list-style-type: none"> • Contributing to food security, and development and ecological conservation of the rural areas 	<ul style="list-style-type: none"> • Providing fresh produce for local consumption for ensuring food security

Note: (1) 2018 figures.

Subsidy mechanisms for the agriculture and fisheries in selected places

	Hong Kong	Taiwan	Singapore
B. Major subsidy measures for the agriculture and fisheries sector			
Objectives of implementing subsidy measures	<ul style="list-style-type: none"> Providing financial assistance to support practitioners' operations and enhance the competitiveness and sustainability of the sector 	<ul style="list-style-type: none"> Providing a host of subsidy measures to support various policy goals, including promoting the competitiveness and sustainability of the sector, enhancing practitioners' financial security, and protecting the sector from import competition 	<ul style="list-style-type: none"> Providing funding support for R&D efforts and adoption of innovative solutions to boost production capability and productivity so as to achieve the "30 by 30" vision
Measures for enhancing competitiveness and sustainability of the sector	<ul style="list-style-type: none"> Low-interest loan schemes for providing development and working capital to practitioners Development fund schemes for supporting the development and adoption of modern operation practices 	<ul style="list-style-type: none"> Low-interest loan scheme and loan guarantee scheme for providing development and working capital to practitioners Grants for supporting R&D projects Subsidies and incentive payments to encourage cultivation of higher quality products, product diversification, and/or adoption of sustainable agricultural practices (對地綠色環境給付計劃) Subsidy scheme for encouraging adoption of organic farming or environmentally-friendly agricultural practices 	<ul style="list-style-type: none"> The Agriculture Productivity Fund ("APF") programme and the "30 x 30 Express" grant scheme for supporting the development and adoption of new agricultural solutions The Singapore Food Story R&D Programme for funding R&D projects that provide innovative solutions and technological breakthroughs

Subsidy mechanisms for the agriculture and fisheries in selected places

	Hong Kong	Taiwan	Singapore
B. Major subsidy measures for the agriculture and fisheries sector (cont'd)			
Measures for enhancing financial security of practitioners	<ul style="list-style-type: none"> Emergency Relief Fund for assisting eligible practitioners to rehabilitate their operations after natural disasters 	<ul style="list-style-type: none"> Subsidies for purchasing agricultural machinery Fuel tax concession or subsidy Fertilizer subsidy Payments and low-interest loans in relief of natural disasters Allowance for elderly farmers and fishers Scholarships for children of low-income farmers and fishers 	<ul style="list-style-type: none"> Nil
Market price support measures for protecting the sector against competition of imported products and supporting practitioners' incomes	<ul style="list-style-type: none"> Nil 	<ul style="list-style-type: none"> Imposing tariffs on imported agricultural and fisheries products Procuring agricultural outputs from local farmers at guaranteed price levels (公糧保價收購) 	<ul style="list-style-type: none"> Nil
Observed outcomes	<ul style="list-style-type: none"> 615 loans issued under various loan funds in 2019, amounting to HK\$140.5 million Some 323 applications involving HK\$230.8 million approved under the two development fund schemes since inception 92% of the 323 applications related to equipment or facilities improvement projects 	<ul style="list-style-type: none"> Availability of necessary capital for regular operations or new project development, and/or helping secure the incomes of many practitioners Gradual increase in total area of farmland engaged in organic or environmentally-friendly farming 	<ul style="list-style-type: none"> 307 projects approved under the APF programme between October 2014 and March 2019, involving a funding commitment of S\$22.2 million (HK\$127.4 million) Improvement in productivity in terms of manpower savings and rise in production observed among the beneficiaries

Subsidy mechanisms for the agriculture and fisheries in selected places

	Hong Kong	Taiwan	Singapore
B. Major subsidy measures for the agriculture and fisheries sector (cont'd)			
Issues of concern	<ul style="list-style-type: none"> Concerns over administrative issues of the development fund schemes such as long application processing time and a fairly high rejection rate undermining effectiveness of the schemes 	<ul style="list-style-type: none"> Strong criticisms against the public procurement scheme for distorting market pricing of agricultural outputs, inducing overproduction and bringing damages to the agricultural environment 	<ul style="list-style-type: none"> Some small farms producing niche products being unable to benefit from the APF programme due to the high costs required to customize innovative solutions and operate the systems

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