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## Formation of an Epistemic Community and the Process of Policy Creation around Direct Payments in Taiwanese Agriculture

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### Abstract

This study clarifies the formation process of an epistemic community in Taiwan leading up to the implementation of the concept of direct payments as a policy measure.

In addition to referring to parliamentary records and conducting research on the extant literature, interviews were carried out to find out how the Environmental Green Payment for Land Area Projects, a direct payment policy measure implemented in 2018, was conceived and adopted by the government. Further, to understand how the concept of direct payments is recognized and shared, we studied the political process through which agricultural policies are formulated in Taiwan. We also use a case study to certify that a characteristic of Taiwan's agricultural policies is the close relationship between scholars and the government. This article confirms the existence of an epistemic community in the formation of Taiwan's agricultural policies. The study also makes a significant contribution to the literature because it facilitates an enhanced understanding of the chronological process by which the direct-payment system was incorporated into agricultural policies.

**Key words:** agricultural policy; epistemic community; direct payments; Taiwan

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## Introduction

This article clarifies the formation process of an epistemic community in Taiwan leading up to the implementation of the concept of direct payments as a policy measure. “Epistemic communities are networks of knowledge-based communities with an authoritative claim to policy-relevant knowledge within their domains of expertise” (Haas 2015). “Epistemic communities must persuade decision-makers, and successfully navigate the machinery of government by insinuating themselves into bureaucratic positions, if their consensual knowledge is to inform policy choices” (Dunlop 2011). In addition to referring to parliamentary records and conducting research on the extant literature, interviews were carried out to find out how the Environmental Green Payment for Land Area Projects, a direct payment policy measure implemented in 2018, was conceived and adopted by the government in the article.<sup>1</sup>

<sup>1</sup> Officials of the COA, the Agriculture and Food Agency, the Council of Agriculture, the Agricultural Policy Research Center, and the Agricultural Technology Research Institute were interviewed in April 2017. Additional interviews were conducted in August 2019 with the Agricultural Policy Research Center and the Agricultural Technology Research Institute.

## Recognition of the concept of direct payments

To understand how the concept of direct payments is recognized and shared, one must understand the political process through which agricultural policies are formulated in Taiwan. The requirements that Taiwan reduce its aggregate measurement of support (AMS) as a member of the World Trade Organization (WTO) also exerted an extremely strong influence on the policy formation process. The process by which the concept of direct payments came to be shared in the media and in parliamentary debate must be analyzed in chronological order. This section examines these three points.

### The decision-making process involved in framing agricultural policies in Taiwan

The Council of Agriculture (COA) of the Executive Yuan is the administrative body that is responsible for Taiwan's agricultural policies. It was established in 1984. Before martial law was lifted in 1987, power was concentrated in the Chinese Nationalist Party (KMT). Thus, agricultural policies were primarily made by KMT and the COA. The Farmers' Association in Taiwan is a private organization that engages in agricultural production, distribution, mutual aid, and finance. The association is a major interest group and is said to have been in a patron-client relationship with KMT from before Taiwan was democratized (Liao 2002). The association maintained its operations by stockpiling rice and carrying out rice purchases on behalf of the government for a fee. For this reason, the association was in a collaborative relationship with the government. However, it could not influence the government's agricultural policies. Nevertheless, regional affiliates of the association provided significant support to KMT because, even though the President could not be elected directly before martial law was lifted, local elections and some elections for legislators at the Legislative Yuan (parliament) were still held. As a result, the relationship between KMT and the Farmers' Association prompted Taiwan to adopt agricultural protectionism. KMT was also involved in electing the executives of the Farmers' Association to office. It controlled the association by appointing its own members as executives. The Farmers' Association provided a large amount of loans to KMT members who ran for electoral offices. Irrigation associations also provided major



support to KMT. Most farmers belonged to both the Farmer's Association and irrigation associations.

The patron-client relationship between KMT and agricultural associations underwent changes after democratization, wherein citizens were allowed to vote directly in presidential and national parliamentary elections. In 1996, KMT's Lee Teng-hui was elected President. In 2000, Chen Shui-bian of the Democratic Progressive Party (DPP) was elected President and became the first DPP member to assume the post. However, merely because the President was a member of the DPP did not necessarily mean that the party held a majority in parliament. When it comes to agricultural governance and policy formation, the governing party (the party to which the President belongs), the COA, and legislators (farmers/the Farmers' Association) have been the major players in Taiwan after democratization. They form a tripartite power structure. The election process for the Legislative Yuan was overhauled in 1992. Although farmers may sometimes voice their opinions through the Farmers' Association, they ultimately vote for their own favorite legislators. For this reason, legislators have been expanding their influence on agricultural governance. The Farmers' Association, in many cases, continues to serve as a regional advocate for KMT in elections. This is why a DPP administration revised the laws pertaining to the Farmers' Association, designated the COA as the central governing organization for the Farmers' Association, and established rules to prevent people with criminal records from running for office. Thus, after Taiwan's democratization, the Farmers' Association cannot directly get involved in agricultural policies the way it once did during the KTM era, even though the association continues to serve as an organization that carries out the policies of the COA.

Unique initiatives taken up by COA officials played an extremely important role in the introduction of agricultural policy concepts. Veteran bureaucrats were seen as more highly esteemed than parliamentary officials. Thus, they were more likely to be chosen for positions to assist the most senior officials such as the COA minister or vice minister. At the same time, parliamentary officials of the COA were more frequently chosen from



among scholars of agriculture or agricultural economics than from among politicians, even though most senior positions in other departments were dominated by politicians. Scholars appointed to the post of COA minister, the most senior position, included Yu Yu-hsien (1988-1992), Peng Tso-kwei (1997-1999), Chen Hsi-huang (2000-2002), Lee Chin-lung (2002-2006), and Chen Chi-chung (2016-present). Parliamentary officials, on average, tend to have a longer tenure than COA ministers who are chosen from the ranks of politicians. In post-democratization elections, policy statements submitted by each party are extremely important because they serve as policy guidelines after elections. Scholars have been involved in drafting several such statements. These scholars frequently became COA ministers or COA vice ministers when their parties won. This way, their research was often reflected in the policy formation process.

Figure 1 presents the number of research projects that the planning office of Taiwan's COA has outsourced to scholars since 2002. While the number has been on the decline, about 20 projects have been assigned to external researchers in recent years on an annual basis. Nearly half these projects were assigned through universities, while the other half were assigned through the Rural Economics Society of Taiwan (REST). The remainder were assigned through other academic societies and foundations.

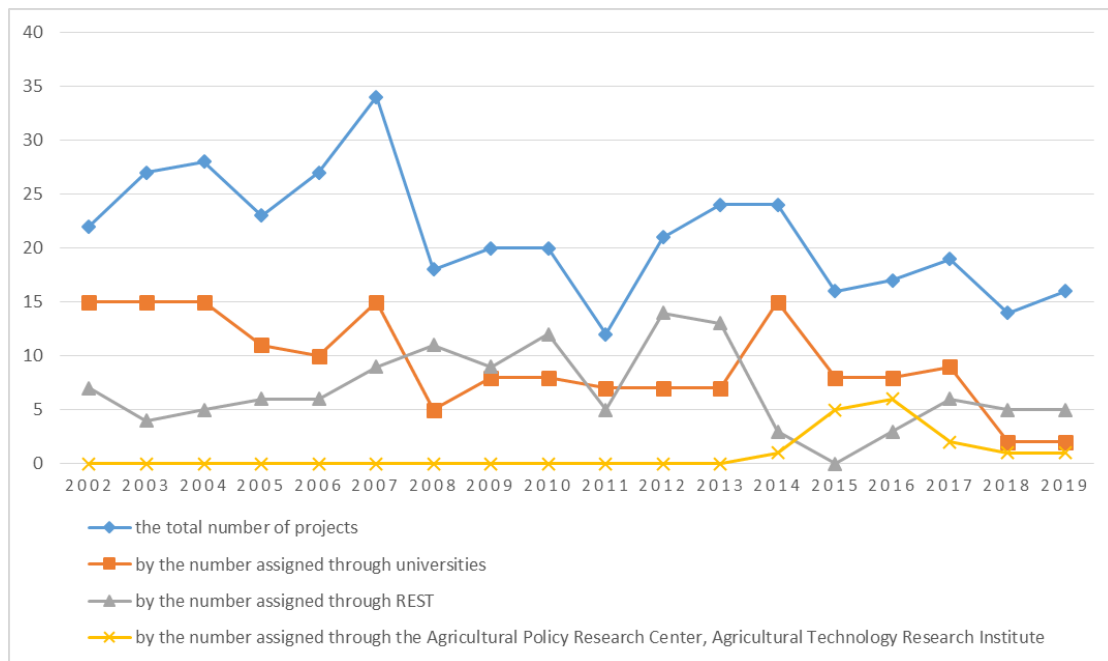


Figure 1. Research related to rural economics outsourced to researchers by the COA’s planning office

By organization : the total number of projects/the number assigned through universities/the number assigned through REST/ the number assigned through the Agricultural Policy Research Center, Agricultural Technology Research Institute(started in 2013)

Source: Created by the author based on data obtained from the COA’s website.

As explained above, COA bureaucrats tend to rely heavily on scholars while obtaining routine information. Before formulating a policy, the COA assigns related research projects to universities or scholars. Researchers come up with a theme and apply for a project. In practice, however, the COA already determines the research direction at the application stage. Based on the results and findings of these research projects, the COA determines its policy proposals and its execution departments create implementation plans. For example, the execution department for rice policies is the Agriculture and Food Agency of the Council of Agriculture at the COA. Detailed measures addressing rice policies have been created by this agency. In the planning stages, the COA holds several symposiums with scholars and representatives of regional executive organizations (prefectural governments, municipalities, and the Farmers’ Association) to explore



methods that may face the least amount of opposition. At this stage, the media and legislators also express their opinions. If farmers have any opinions on policy proposals, they convey their views through local lawmakers or legislators. Policy proposals at this stage can still be fine-tuned. The executive department compiles several opinions, considers the viability of the proposed plan, and submits it to the COA. The executive department then begins to promote the policy measure at various locations. The COA submits the policy proposal to the Executive Yuan and coordinates the proposal with other departments at the National Development Council, which operates as a forum for the most senior officials from each department of the Executive Yuan.

### **Effects of Taiwan's WTO membership**

Taiwan introduced a direct payment system after joining the WTO in 2002. In addition to rice, Taiwan has also strengthened its protection for other farm products over the past 30 years. The average nominal tariff rate for farm products reached 20.0% in 2001, before Taiwan joined the WTO. The rate was particularly high for rice, wheat, beef, pork, chicken, and chicken eggs. At the same time, 41 agricultural items were subject to import quota restrictions. However, imports of 18 items such as squid and fruits including citrus fruits, apples, and grapes were completely liberalized after Taiwan joined the WTO in 2002. Elsewhere, 22 farm items that included sugar, milk, and animal organs, began to be imported under a tariff rate quota (TRQ) system that imposed lower-tariff rates on these items. Rice began to be imported in 2002 under a “minimum access” agreement, but the mechanism was changed to a tariff system in 2003. Rice and rice-related products were restricted under a special clause with the government controlling 65% of the imports and the private sector 35%. The imported rice is sold with a markup that will be reduced in stages until all the rice is sold. There is also a mechanism under which 14 agricultural items such as soybeans, are subject to a “special safeguard” (SSG) measure designed to prevent massive imports. As trade deregulation progresses, the government is gradually moving toward a policy of adopting a direct payment system. Becoming a member of the WTO undoubtedly marked a major turning point in Taiwan's agricultural policies.





Table 1 presents the details of the domestic subsidies on which the Taiwanese government has issued notifications to the WTO. While Taiwan's AMS has been below the concession level since it joined the WTO, efforts had been made until 2010 to reduce the Amber Box. However, AMS began to trend upward again, in 2011 and thereafter. At least 60% of the domestic support classified as AMS was related to price support for rice. From 2011 until 2013, price support for rice exceeded 80% of AMS. The equivalent measurement of support (EMS) for rice is calculated by multiplying the purchase value by the price difference between government-mandated and border prices. Taiwan's EMS for rice plunged in 2004 and thereafter, because of a decline in the volume of government purchases. However, in an election year, the governing party may sometimes adjust the purchase prices in order to win the support of farmers. This was especially the case immediately before and after the 2012 presidential elections. On the other hand, spending under the category of the Green Box trended upward. Production-adjustment subsidies constitute a major portion of the Green Box. Two types of such Green Box subsidies are provided: those meant for planting trees in rice paddies as structural adjustment support for natural resources and those meant for fallowing and crop rotations as "environmental payments." Production-adjustment subsidies have been increasing significantly since 2004, after the government reduced its rice purchases. It is anticipated that the expenditure classified as "Green Box subsidies" will increase further in the future because of the impacts of the environmental green payment measure that took effect in 2018.

**Table 1. Notifications regarding Taiwan’s domestic subsidies submitted to the WTO 2002-2017**

million Taiwan dollars

	Green box	Blue box	Final Bound Total AMS	Current Total AMS	Rice AMS	(Rice AMS/ Current Total AMS)%		Non-product-specific AMS <i>de minimis</i>
2002	26,009	-	14,165	7,057	4,539	64%		1,173
2003	26,974	-	14,165	7,534	5,332	71%		510
2004	31,767	-	14,165	4,758	2,978	63%		625
2005	35,277	-	14,165	4,043	2,418	60%		1,220
2006	28,964	-	14,165	4,180	2,883	69%		2,512
2007	32,198	-	14,165	3,650	2,485	68%		3,043
2008	32,160	-	14,165	4,015	2,768	69%		8,258
2009	44,065	-	14,165	3,854	2,550	66%		9,211
2010	41,428	-	14,165	3,881	2,638	68%		6,186
2011	42,893	-	14,165	7,225	6,129	85%		7,097
2012	36,973	-	14,165	8,068	6,931	86%		6,775
2013	31,921	-	14,165	8,879	7,597	86%		5,347
2014	29,393	-	14,165	8,437	6,690	79%		3,455
2015	33,667	-	14,165	7,697	5,645	73%		3,395
2016	38,407	-	14,165	8,126	6,428	79%		2,970
2017	32,296	-	14,165	8,975	7,353	82%		1,829

Source: Created by the author based on “Notifications from Chinese Taipei” released by the WTO (for each year)

### The formation process of a direct payment system in Taiwan

The concept of direct payments spread in Taiwan because of the Uruguay Round, which took place from 1986 to 1994. The OECD defines “direct payments” as direct government subsidies to farmers. In Taiwan, however, after the Uruguay Round, direct payments began to be seen as direct payments of subsidies decoupled from production. The government makes such payments in the place of implementing price policies designed to stimulate production. Under the Uruguay Round Agreement on Agriculture, direct payments to producers became exempt from AMS reductions if, for example, payments were income-support measures unrelated to production, related to environmental measures, or provided to farmers in areas with unfavorable conditions. Scholars began to form a shared understanding of such decoupling measures and began discussions on the issue. According to a master’s thesis that Peng wrote in 1993 under the



instruction of former COA Minister Peng Tso-kwei (1997-1999), the government began to consider the introduction of a direct payment system in 1992. Kuo-Ching Lin, professor at the National Taiwan University who served as COA vice minister under a DPP administration, broadly examined the concept of direct payments and how the system should be implemented in Taiwan (Kuo-Ching Lin 1994). Lin's article cites many prior studies on decoupling. Thus, among scholars in Taiwan, the conditions for the creation of an epistemic community on direct payments may have begun in the first half of the 1990s.

Although Taiwan officially joined the WTO in 2002, direct payments were introduced in Taiwan when the issue was taken up under the General Agreement on Tariffs and Trade (GATT). Figure 2 shows the number of references made to “direct payments” in Taiwanese newspapers (the broken line) and the number of times that the issue was mentioned by legislators in the course of parliamentary debates (the solid line). As indicated in Figure 2, the policy concept of direct payments appeared in debates among legislators at a fairly early stage. In Taiwan, the creation of agricultural policies is often an administrative process that does not require legal changes. For this reason, it does not usually require parliamentary deliberations. Even so, statements by legislators are influential within the economic committee that oversees agricultural policies.

Figure 2 indicates that there were also many newspaper articles on direct payments, including those submitted by scholars in the first half of the 1990s and thereafter. Tai Chen-yao, a legislator, made the following remarks in 1993 during a question and answer session with the Executive Yuan: “Why did the government reject a COA proposal for a direct payment system? Although direct payments tied to the acreage of farmland may benefit landowners, it would free the government from the pressure of having to stockpile a massive amount of rice through a price-guarantee system.” In response, the then-head of the Executive Yuan, Hau Pei-tsun, said that the government was already providing various subsidies to farmers (Legislative Yuan Gazette, Vol. 80, the 27th term).

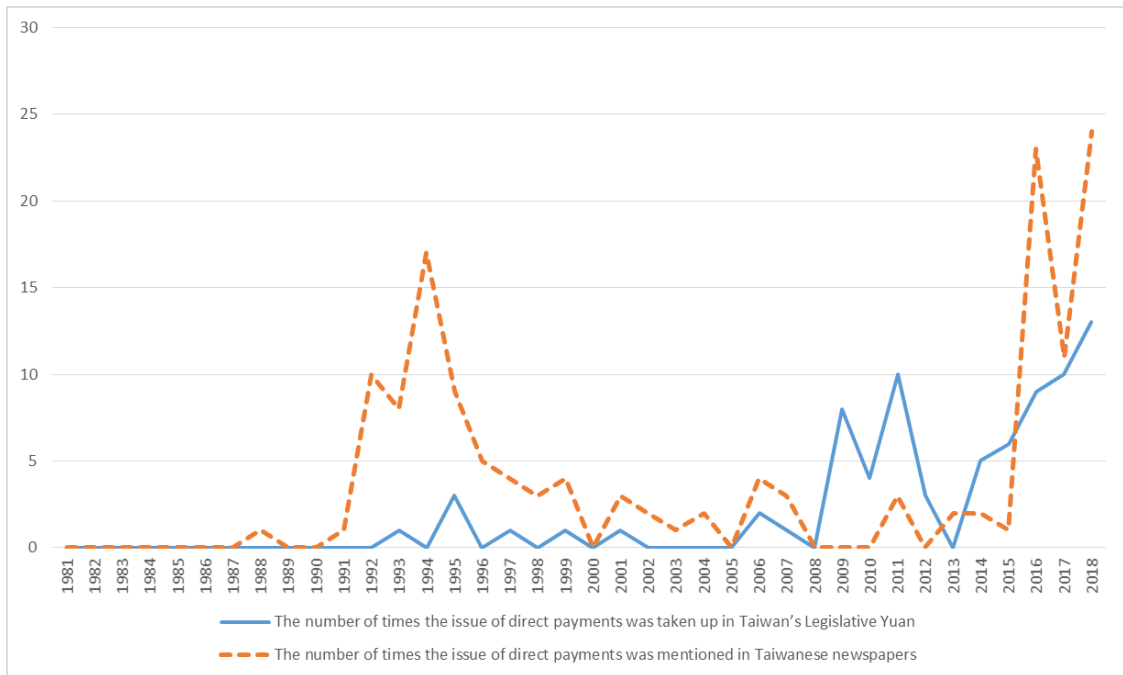


Figure 2 The number of times the issue of direct payments was taken up in Taiwan's Legislative Yuan and mentioned in Taiwanese newspapers

Note: The scope of the newspaper search was limited to the information accessible through Taiwan News Smart Web. The newspapers relied on for this research were: United Daily News, The China Times, Economic Daily News, United Evening News, Central Daily News, Min Sheng Bao, Star News (2001-2006/10), the Commercial Times (1996-), the Liberty Times (2003/2-), Apple Daily (2004/12-), Chinese Daily News (2005-), and Merit Times Daily News (2000/4-2009).

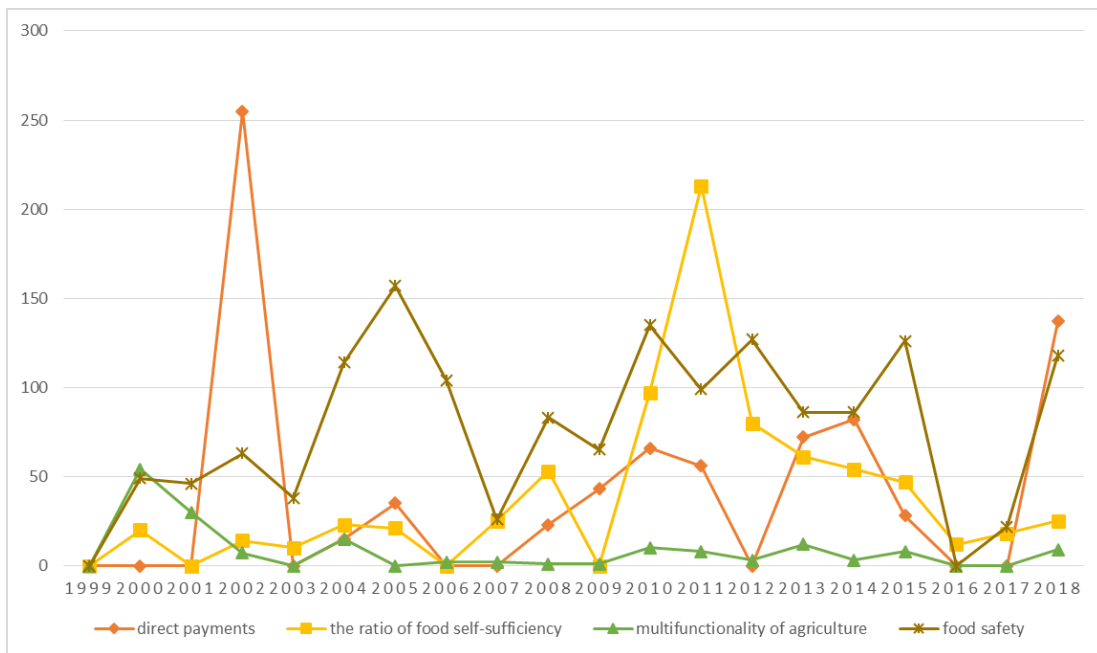


Figure 3 The number of times the keywords “direct payments,” “the ratio of food self-sufficiency,” “multifunctionality of agriculture,” and “food safety” appeared in Agriculture Policy & Review, a COA journal. Source: Created by the author using data obtained from the website of Taiwan’s COA

The COA also collects information on agriculture from overseas sources and from scholars. Figure 3 shows the number of times each keyword appeared in Agriculture Policy & Review, a monthly journal published by the COA. Agriculture Policy & Review aims to introduce agricultural policies and to provide an overview of agriculture in various countries and jurisdictions, including Taiwan. The journal also facilitates internal information exchange, with each department within the COA handling different columns. While the journal also accepts submissions from researchers, it is expected that these articles should conform to the COA’s current agricultural policies as a precondition for publication. In Figure 3, “direct payments” is compared with “the ratio of food self-sufficiency,” “multifunctionality of agriculture,” and “food safety.” The term “direct payments” was used most frequently in 2002, when Taiwan joined the WTO. The use of the term also moderately increased in 2007 and thereafter, and again in 2018, when a direct payment policy was implemented. The concept of direct payments was frequently



mentioned in 2002 because it was commonly understood as coming within the COA, starting in the first half of the 1990s when the details of the Uruguay Round agreement were solidified to the effect that the price-guarantee system would be abolished when Taiwan was to join the WTO. Thus, the COA had been collecting information before the implementation of the measure.

Figure 4 shows some of the terms contained in research projects on agricultural economics that the COA’s planning office outsourced to researchers in 2002 and thereafter. There are many research themes that contain the term “policy measures,” indicating that policy analysis conducted by scholars played an important role during a period that began with the formation of a common recognition until policy measures were actually implemented. The term “overseas situations” along with “farmland” is an important research theme with respect to the frequency of appearance in research projects that are outsourced each year. This indicates that overseas situations and developments studied by scholars are important in forming a common recognition of a policy concept. The number of outsourced research projects dealing with direct payment issues began to increase in around 2006, replacing those dealing with the WTO. There were several outsourced research projects dealing with direct payments in 2011 and 2012, before the policy was implemented.

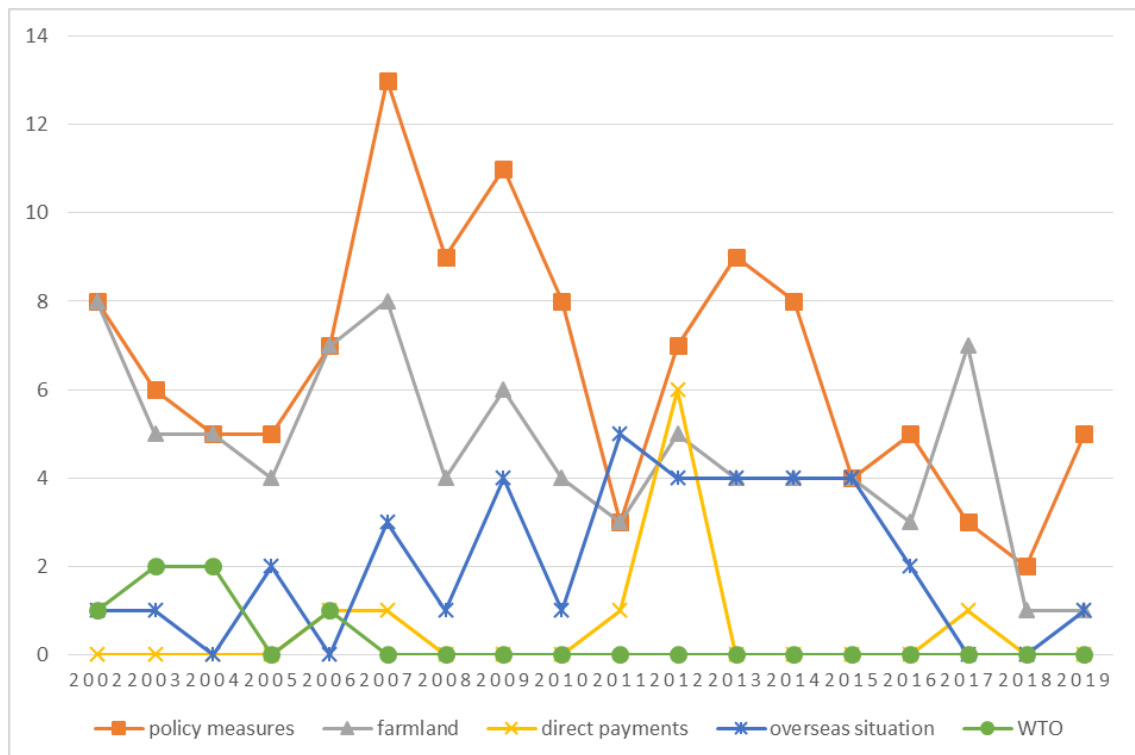


Figure 4 Projects related to agricultural economy that the COA’s planning office outsourced to researchers by research theme (i.e., whether research themes included content on terms such as policy



measures, farmland, direct payments, overseas situation, and WTO). Source: Created by the author using data obtained from the website of Taiwan's COA.



## **The introduction and the creation of the Environmental Green Payment for Land Area Projects: A direct payment measure**

To understand how the new policy is significant in the history of Taiwan's agricultural policy, it is necessary to first understand the basic direction of Taiwan's agricultural policy in the past. This section will introduce them in chronological order.

### **Taiwan's agricultural policies leading up to the introduction of following subsidies**

After World War II, Taiwan experienced food shortages because of the destruction of agricultural facilities and the influx of hundreds of thousands of immigrants from the mainland. To respond to these challenges, irrigation facilities were repaired and chemical fertilizers and farm machinery were introduced. Farmland reforms of the 1950s that followed the "375" rent reduction program of 1949 led to an increase in production incentives among those who became independent farmers. Agricultural production grew rapidly as a result. Thus, agricultural price measures from the latter half of 1940 until the latter half of 1960 were primarily aimed at providing low-priced food to stabilize wages and prices. As a result, there were no price-support measures for farm products at that time. Instead, there were policy measures that were rather exploitive of agriculture. A typical example is the rice-fertilizer barter system that was implemented in September 1948. This program was designed to impose hidden taxes on rice production and to hold down prices of agricultural products. This was carried out through a system in which the government controlled the supply of fertilizers so that rice had to be exchanged for fertilizers at relatively inflated rates.

In 1946, the Taiwanese government created a law for the collection of farmland taxes in kind and the compulsory purchase of rice in Taiwan Province. In accordance with the law, the Taiwan Provincial Finance Department, and the tax collection office of each prefecture and city, changed their tax collection methods. Instead of cash, the taxes were now collected in the form of rice (in kind) through the Taiwan Provincial Food Bureau and the food offices (subsequently, food management offices) in each district. The food



bureau collected rice each year and then made payments to the provincial finance department, prefectural governments, or municipal governments based on the official price. The food bureau managed the rice that it collected as payments in kind. The “official price” here refers not to what was commonly called the “purchase price” used by the government. Rather, it was a transaction price determined through negotiations between the food and the taxation departments within the government. Each year, a study period was designated for investigating market prices to determine an official price, while the value of taxes payable in kind, such as farmland taxes, were determined through negotiations. Tax payments from farmers were also collected in the form of rice that was priced significantly lower than the market price. This way, a surplus from the farm sector was transferred to others. This policy was maintained until 1987.

Later, as the importance of agriculture as an economic activity continued to decline, the purpose of agricultural policies shifted toward the revitalization of farming villages and the expansion of farmers’ income. For this reason, measures were implemented in 1973 to provide preferential treatment to farmers with respect to business, income, farmland, and capital gains taxes on land sales. Measures that had been considered as typical examples of exploitation for the sake of economic development, such as the grain-for-fertilizer barter system, were abolished. Then, how did the price-support system for farm products change amid the abovementioned transformations in agricultural policies? Among various agricultural measures of the 1970s, direct price-support policy had the greatest impact on the structure of agriculture. Against the backdrop of an increase in food prices worldwide, the government implemented a measure in 1974 to purchase a certain amount of rice at guaranteed prices. This remained in place until now even though the purchase method and the amount had changed. In 1978, the government began to carry out a price-support measure called a “guidance purchase” program, under which it paid prices that were higher than the market prices by 0.6-1.0 Taiwan dollars. Taiwan’s price support for rice has been carried out using this method ever since. Currently, the price of rice is about 20 dollars above or below the guidance purchase price per kilogram. In the second cultivation season of 2003, a measure called a surplus-grain purchase



program began in order to lessen the impact of liberalization of trade in rice. Under this program, the government purchased surplus rice from farmers after they removed the amount that they consumed for themselves at prices that were 1.6 Taiwan dollars below the guidance purchase price using designated import-damage relief funds. In 2011, the purchase volume and price per hectare was adjusted further, and glutinous rice was also included in the purchase program.

The government spent over 300 billion Taiwanese dollars to provide price support for rice for three decades before Taiwan joined the WTO in 2002. Whereas demand for rice fell significantly in the 1970s, the price-support measure remained in place even after the goal of increased rice production was achieved. The price support measure for rice led to a massive government stockpile of rice in the form of public grain. The stockpile significantly expanded because of the purchase program that began in 1974. To reduce the stockpile, Taiwan exported between 100,000 and 400,000 tons of rice a year to Africa, Indonesia, and the Middle East at low prices for about 10 years. However, low-price exports of public grain as a means of reducing the stockpile received criticism from the US in around 1980 because the quantity of exports significantly rose as the stockpile rose. In 1984, Taiwan signed a rice agreement with the US to keep the quantity of exports within 1.375 million tons over the following five years. The export destinations were also restricted to countries with per capita incomes of \$795 or less.

In 1996, a portion of public grain began to be exported through competitive bidding, after being sold to the private sector which exported about 100,000 tons a year mainly to Africa. In 2001, exports of public grain were completely halted as Taiwan prepared to join the WTO. All the rice was now used for international food aid. To maintain rice prices, the Taiwanese government must continue to provide price guarantees even as it reduces the farming acreage in proportion to the quantity of imports and as it raises following subsidies.

The production-adjustment mechanism for rice was launched in the 1980s, when the heavy industry and exports of electronics machinery became the driving force of the



economy and when the Taiwanese economy experienced a full-scale liberalization through market-opening measures. Rice and sugarcane, which had been important export commodities, lost some competitiveness because of the increase in production costs. The domestic demand for these products also plateaued. In response, measures were implemented to promote a shift to fruits and vegetables with higher economic value. First, the government launched a 12-year rice production and crop conversion plan in 1984 to adjust output. The government encouraged crop conversion, rather than fallowing, until 1997.

However, after the Uruguay Round Agriculture Agreement in 1993, Taiwan began to pursue agricultural policies with the aim of joining the WTO. Thus, the focus of production-adjustment measure for rice was on fallowing, which did not have the effects of stimulating output. Consequently, the government began to pay 32,000-36,000 Taiwan dollars/ha in 1997 to encourage fallowing, as opposed to paying 22,000 Taiwan dollars/ha for crop conversion. Payments for fallowing rose to as much as 45,000 Taiwan dollars/ha later. As a result, at least 50% of Taiwan's rice paddies were fallowed in 2008, and contributed to a significant reduction in rice production. This production-adjustment mechanism had the effect of supporting rice prices. However, it also led to an increase in fiscal spending. Spending related to production adjustment rose from 1.6 billion Taiwan dollars in 1984 to 9.1 billion Taiwan dollars in fiscal year 2003. The total expenditure related to production adjustment during two decades after the implementation of the measure reached 92.4 billion Taiwan dollars. The fiscal deficit caused by the government's purchase program, that is, spending related to rice-price support measure, reached 5.3 billion Taiwan dollars in 2004, with the average annual expenditure remaining at around 4 billion Taiwan dollars in recent years. Meanwhile, the total expenditure during three decades since the implementation of the measure reached 303.9 billion Taiwan dollars. In recent years, however, there have been structural changes in fiscal spending related to rice policies. Rice purchases at guaranteed prices declined, while subsidies for fallowing rose. This may indicate a policy shift toward reducing protectionist measures that would interfere with prices, including those of rice, as Taiwan



responds to trade liberalization that impacts farm products.

In 2008, however, the policy again began to shift away from fallowing toward crop conversion, that is, toward “Diversification makes use of Paddy field plan”. This was intended to cope with an increase in idle farmland, in addition to the abovementioned fiscal problems. It just so happened that the international price of corn for feed was surging at that time. Thus, the government, under a new system, made contract cultivation of corn for feed eligible for production-adjustment subsidies. This policy was chosen because corn for feed was an import substitute. Meanwhile, wheat had been grown on Kinmen islands and in Taichung City’s Daya District. In recent years, the Farmers’ Association and others have been engaging in contract cultivation, with the government providing subsidies to dedicated contract farmers for their equipment purchases. Corn and wheat were chosen because they would put a stop to farmland abandonment and serve as import substitutes. The government supported rice farmers’ efforts to switch to crops for which sales routes would be easily secured, and to crops such as landscape and energy ones, as well as green manure. The government also asked them to create a field-management plan to maintain the farmland environment. In 2013, a farming-adjustment and farmland utilization plan was implemented. Under this plan, the frequency of subsidy payments for fallowing rice paddies was reduced to once from twice a year. Subsidies would be paid on the condition that the farmer shifts to another crop for one term out of the year. Thus, a farmer who wished to use farmland for that particular term had to either produce rice and sell it in the market or shift to another crop to generate sales and receive subsidies. If a farmer did not want to re-cultivate idle farmland, leasing it to another farmer would be a realistic option. Farmland that produced rice in the reference year would be eligible for subsidies provided that it was converted for a designated crop and that the production of this new crop was being maintained. Farmland that did not produce rice in the reference year would not be eligible even if it was converted for another crop. In other words, the fundamental aim of this policy was to promote the reduction of rice production.

## Details of the Environmental Green Payment for Land Area Projects

The price-support measure for rice had the effect of maintaining rice production and stabilizing food prices in Taiwan. However, this measure required that the government spend almost 5 billion Taiwan dollars on official grain purchases. Such a price-support measure goes against the WTO's objective of reducing support measures that stimulate production. According to notifications that the Taiwanese government submitted to the WTO, at least 60% of the domestic support classified as the Amber Box, which the government is obliged to slash, comes from price support for rice. At the same time, the general public in Taiwan came to recognize that price-support measures tend to distort the market, create negative externalities as a result of overproduction, and exert a negative impact on the environment.

The Environmental Green Payment for Land Area Projects was launched in January 2018. It is a policy measure that combines price support for rice and production adjustment. The project has three objectives: protecting farmers' income, preserving farmland, and improving the quality of rice. The implementation period is from 2018 until December 2021. The annual budget for the project is large: about 20 billion Taiwan dollars a year. This measure allows farmers to choose the option that benefits them, thus increasing the government's fiscal burden further. Fiscal spending may also increase after price support for rice is converted to a direct payment system because the government will likely see a decline in profits from rice sales.

The key policy factors are as follows. First, basic subsidies will be provided if farmland is used for farming purposes. This is based on the belief that not abandoning farmland would have positive externalities on the environment. Farmers will then choose whether to have the government purchase rice at the mandated prices or receive direct payments, and direct payments are the direction the government would prefer. The government also provides larger direct payments for import substitutes, and farmers would be able to receive multiple payments if they meet certain conditions. Subsidies are paid as direct payments for the acreage dedicated to rice cultivation in the reference year.

This is the same method used in the EU. Under the WTO agreement, such subsidies fall under Green Box payments. Thus, this method is globally applicable.

The basic idea behind this measure is to encourage farmers to participate in the endeavor by giving them – through a direct payment method – the money equivalent to the difference between profits that they can earn under the price-supporting system and the average market price. The payments are 12,500 Taiwan dollars/1ha for the first cultivation term of a year, and 9,000 Taiwan dollars/1ha for the second cultivation term. The introduction of a direct payment system means that the subsidies from the government will increase in the short run for farmers who produce high-quality rice and sell it at prices higher than the average market price because the amount of public grain that they sell to the government is small. The government also adds 1,500 Taiwan dollars/1h in direct payments to contract producers in an effort to promote economies of scale by encouraging collective production. Parties to contract cultivation may include rice merchants and large-scale farmers. Contract cultivation allows farmers to estimate the sales volume and prices at the time of planting. In many cases, parties to contract cultivation have secured sales routes. Thus, the government has been promoting contract cultivation in recent years. Operators of contract cultivation are eligible for other subsidies. The government also provides more subsidies for alternative crops than the amount provided as part of the production-adjustment program since 2013. This is aimed at reducing rice production and increasing the number of other crops produced under the contract.

Details of the Environmental Green Payment for Land Area Projects are shown in Table 2. First, rice farmers can choose between having the government purchase their public grain or receive direct payments for rice. If they decide to grow crops with export potential or that can replace imports, they can receive subsidies carried over from the farming-adjustment and farmland utilization plan. However, the government eliminated the term “fallowing” and adopted the term “protection for the production environment.” According to the COA, this is because farmlands have an important function of





maintaining soil fertility in addition to production. The government also provides an additional 1,000 Taiwan dollars/1ha in environmental direct payments if farmers adopt a production method that considers the multifunctionality of agriculture, such as environmentally friendly agriculture or organic farming. Fiscal spending is expected to increase as a result. However, the COA believes that such spending is necessary as the government transitions to a direct payment system. At the same time, the government will also introduce subsidies for organic and environmentally friendly farming. Under this plan, farmers who transition to organic farming will receive as much as 90,000 Taiwan dollars/1ha as demand for organic farm products rises.

This policy measure targets 350,000 ha land per year. In the Environmental Green Payment for Land Area Project, the reference period for subsidies for import substitutes and export-oriented crops and for subsidies for organic and environmentally friendly farming extends from 1994 until 2003. The reference period for direct payments is between 2013 and 2015. This measure targets farmland that reported public grain for the reference period.



Table 2 Environmental Green Payment for Land Area Project for 2018

Unit: Taiwan dollar/ha

Crop item		Direct payment value		Environmental payment
Rice	Public grain	None (Only purchase price for public grain)		Subsidies for organic and environmentally friendly farming  1. If an environmentally friendly production method is incorporated into the conventional farming method, 30,000/ha will be added
	Direct payments	1st term 3,500 + direct payments 10,000 2nd term direct payments 10,000		
	Direct payments (Contract cultivation)	1st term 5,000 + direct payments 10,000 2nd term 1.5 million + direct payments 10,000		
	Alternative crops	<b>Conventional farmers</b>	<b>Large-scale dedicated farmers</b>	
<b>(Contract cultivation) Import substitution</b>	(1) Hard corn, non-GM soybeans	60,000	70,000	2. Transitional period to organic cultivation  a. Rice and Vegetables: additional 60,000/ha  b. Other crops: additional 80,000/ha  3. Organic cultivation: additional 30,000/ha  4. For 2 and 3 above, 10,000/ha will be added if "collective organic cultivation" is carried out
	(2) Pasture grass, corn for feed	45,000	55,000	
	(3) Short-term commercial forest (six years)	45,000	55,000	
	(4) Raw-material sugar cane	35,000	45,000	
	(5) Wheat, buckwheat, sesame, adlay, Chinese mesona	30,000	40,000	
	(6) Sorghum for liquor Sweet potatoes for feed	30,000	40,000	
	(7) Oil tea, black tea	1-6 terms 45,000 7-8 terms 22,500	1-6 terms 55,000 7-8 terms 32,500	
<b>(Contract cultivation) Export-oriented crop</b>		40,000	50,000	
Priority crop (regional specialty)	40 items chosen by the central government (note)	25,000	35,000	
	Local governments can add up to five items (The central government shoulders all the costs)			
Production environment maintenance (Fallowing)	Green manure	34,000-45,000	45,000	
	Landscape crop Plowing Water storage	(once a year)	(one a year; only green manure)	

(Note) The 40 items are: peanuts, corn for consumption, sweet potatoes, pumpkins, alfalfa, short-term green onions, onions, tomato for consumption, watermelon, alfalfa sprouts, cantaloupes, scallions, white bamboo shoots, bonito, onions, melon, bitter gourds, cilantro, green onions, pepper, celeries, lettuce, flat bud, bamboo shoots, Korean grass, pineapples, beans, potatoes, cowpeas, sugarcane for consumption, sweet (green) peppers,



eggplants, strawberry, and long beans.

Source: Compiled by the author based on data from the COA

This measure was officially implemented on January 1, 2018. However, it was also carried out on an experimental basis in some locations during 2016 and 2017. The results of this experimental implementation are shown in Table 3. Over 60% of the participating farmers' total acreage required direct payments. However, the acreage of farmers who actually received payments was about 10% lower than the acreage of applicants. This is because those who had applied for direct payments were able to revert to the price-guarantee system later, but could not revert to direct payments once they applied for the public rice purchase program. Table 3 shows that as of 2017, about half the total acreage was eligible for the price-guarantee system. Rice prices for 2016 and 2017 largely remained unchanged from the average year. However, when the market price declines, the percentage of farmers who wish to receive price-guarantee system may rise further. Table 3 indicates that after this policy started, although the application rate reached 89% of the rice planting area in 2020, very few rice farmers actually chose direct payments for rice crops when rice price was low, for example, only 26% in 2020.

Table 3. Rice farmers' participation in a test operation and after formally implemented of the Environmental Green Payment

	Year	Number of towns and villages participating in the test operation			After formally implemented				
		2016	2017	2017	2018	2018	2019	2019	2020
	Term	2	1	2	1	2	1	2	1
Rice farmers (public rice + direct payments) (A)	Acreage (ha)	2,072	17,447	23,028	116,031	55,482	118,820	55,273	114,070
Direct payment applications(B)	Acreage (ha)	1,273	11,027	15,325	64,605	37,038	64,951	36,312	101,263
Direct payments received (C)	Acreage (ha)	999	6,802	11,727	31,742	21,579	29,227	29,510	29,731
Ratio of farmers applying for direct payments (B/A)	(%)	61	63	67	56	67	55	66	89
Ratio of farmers who received direct payments (C/A)	(%)	48	39	51	27	39	25	53	26

Source: COA data

Since many rice farmers choose to sell to public rice at guarantee price, the financial expenses have increased. As a result, starting from 2021, the Council of Agriculture provided guidance to rice farmers who want to join to Environmental Green Payment have to declare that at least one of the former three periods of rice crops must be planted with a crop other than rice, including the declaration of crop conversion.

As mentioned earlier, the farmers who would benefit from direct payments are those who produce high-quality rice that can command high market prices, or those who choose environmentally friendly farming methods. Thus, the COA must promote high-value-added farming featuring high-quality products and environmentally friendly farming methods to promote direct payments. The COA believes that this measure already includes incentives for farmers to produce environmentally friendly crops and that farmers would prefer a market mechanism if rice prices are high. However, the extent to which this measure can lead to a production adjustment (a production reduction) or a shift to other crops continues to remain uncertain. In addition, environmentally friendly production methods are positively received by the public. However, price-guarantee system which cannot be abolished due to political factors, still exists, so the policy cannot reduce farmers' dependence on subsidies. Besides, the measure may also lead to an

increase in fiscal spending, make the system more complex, and ignore regional characteristics. This implies that it has room for improvement. The chairman of the farm production cooperative pointed out that even though the environmental payment portion appeared generous, no criteria had been established for the payment and that farmers' participation was unclear, according to a report by William Kung (2017). In particular, existing millets are limited in variety. Neither have any particular organic methods been established, nor were suitable varieties listed. Another problem is that this measure relies on external certification agencies and organizations in determining whether environmentally friendly farming methods are being practiced. The quantity of agricultural chemicals and fertilizers is not specified, either. Whereas the government emphasizes strongly on crop conversion than following when it comes to rice policies, rice farmers often lack knowledge of millets. Thus, there are few people who take the risk of switching to millets. Furthermore, eastern areas that do not have enough sunshine are not suitable for millets. Therefore, it is more natural for people there to choose rice. Consequently, some argue that regional characteristics should be considered while providing subsidies.

Nevertheless, the implementation of this measure means that the government is departing from a mechanism to support only rice production in favor of environmentally friendly production methods. Its underlying causes deserve further exploration in the next subsection.

### **How the Environmental Green Payment for Land Area Projects was created**

One of the characteristics of Taiwan's agricultural policies is the close relationship between scholars and the government. Section 2 showed that there are many cases in which scholars become ministers in the Council of Agriculture of the Executive Yuan (COA minister). The establishment of the Environmental Green Payment for Land Area Projects was the result of the appointment of an academic to the position of a COA minister. Chen Chi-chung, who was appointed vice COA minister in 2016, became COA minister in 2018. A professor at National Chung Hsing University, Chen was involved in



the creation of a whitepaper on agricultural policies when the DPP's Tsai Ing-wen ran for President. The whitepaper served as the basis for the Tsai administration's "new agricultural policies." The Environmental Green Payment for Land Area Project was part of those policies.

In Section 1, it was explained that before the Taiwanese government implements any policy measure, including those that are not related to agriculture, it conducts related research by outsourcing the project to external researchers, including university professors. The Environmental Green Payment for Land Area Project is also a product of such outsourced research.

The concept of direct payments is strongly related to the establishment of the Common Agricultural Policy (CAP) in Europe. Scholars made great contributions to the introduction of direct payments. The introduction of a direct payment system was discussed in the 1990s because several outsourced research projects dealt with the issue. As seen in Section 2, Kuo-Ching Lin, professor at the National Taiwan University who served as COA vice minister in the previous DPP administration, conducted literature reviews on various countries with respect to direct payment systems. The concept of direct payments in the Environmental Green Payment for Land Area Projects, began in 2018. It is also related to reports that Chen Chi-chung created in 2007 and 2012 for the government under an outsourcing contract. The policy implications of his latest report titled, "The analysis of direct payment on agricultural production for environmental purpose in Taiwan" (Chen 2012), is such that some of its proposals have been adopted in the Environmental Green Payment for Land Area Projects, as seen in Table 2. He argued that when it came to providing subsidies for environmentally friendly farming, opinions of farmers should be respected. After interviewing farmers, it was shown that they were willing to accept landscape, energy, and feed crops as alternatives to rice farming. He also emphasized that subsidies for landscape crops and for environmental measures would be considered as Green Box payments even though subsidies for a shift to non-landscape crops such as feed crops were not Green Box payments under the WTO's agriculture



agreement. Furthermore, he argued that direct payment environmental subsidies would not be able to provide any incentives unless the amount exceeded 54,000-70,000 Taiwan dollars. In Table 2, item b is the largest among the add-on payments for subsidies for organic and environmentally friendly farming, at 80,000 Taiwan dollars. It turned out that this amount was in accordance with a proposal in his study. Since direct payment policies pertaining to the environment are based on a concept that emerged in OECD countries, the report cited literature from these industrialized countries. Chen's report cited a wide range of prior studies with respect to environmental payments in Europe and Costa Rica, and studies on payments to farmers in mountainous areas of Japan. It also cited Smith (2006), who reviewed methods of analysis pertaining to the establishment of direct payment systems.

Thus, a flow can be seen from industrialized countries to Taiwan when it comes to the formation of an epistemic community in academia with respect to agricultural policies. In the past, Japan's policy measures had a strong impact on Taiwan's rice-subsidy policies and production-adjustment policies as discussed in Sections 2 and 3. However, Taiwan's environment-related direct payment system was more strongly influenced by Europe's CAP. There are many other outsourced research projects related to direct payments in addition to the studies conducted by Chen. Table 4 presents a list of research projects outsourced to university professors by the COA's planning office that contain the term "direct payments" in Chinese titles. All these professors are members of the REST. Thus, common recognition is likely to be formed fairly easily. Based on the study of the imported Europe's experience and thinking, Taiwanese scholars have developed direct payment policies that are appropriate for Taiwan, and the policy directions are shared with the epistemic community of bureaucrats. This can be seen as a process of imitating, adapting and transplanting of agricultural policy.

Table 4: List of research projects outsourced by the COA since 2001 to 2017 that have “direct payments” included in the theme

Year	Professor	University	Budget (Taiwan dollars)	List of the COA’s outsourced research projects
2006	Chen, Yu-Hui	National Taiwan University	800,000	The assessment of agricultural direct payment policy
2007	Chen, Chi-chung	National Chung Hsing University	770,000	The analysis of evaluating the benefit and cost of planting environmental crops utilizing set-aside acreages and proposing a direct payment policy for environmental service
2011	Chen, Yu-Hui	National Taiwan University *	1175,000	The study on the level and feasibility of implementing agricultural direct payment policy
2012	Esher Hsu	National Taipei University *	1370,000	The Experience of Agricultural Multifunction and Directly Payment in UN and Germany and Study on the Implement Feasibility in Taiwan/ Study on Direct Payment with Multifunctional Agriculture Implemented in EU and Germany and Hold an International Symposium
2012	Chen, Yu-Hui	National Taiwan University *	790,000	Environmentally friendly direct payment policies in Taiwan and Germany
2012	Hwang, Tsorng-Chyi	National Chung Hsing University *	780,000	A Study on the Planning of Direct Payments Related to Rural Development Policies between Taiwan and Germany
2012	Wu, Rong-jie	National Taiwan University *	1,240,000	A Study of Direct Income Payment for Strategic Crops in Taiwan
2012	Chen, Yu-Hui	National Taiwan University *	1,475,000	Research on applying structural adjustment policy to enlarge farm size
2012	Chen, Chi-chung	National Chung Hsing University	1,250,000	The analysis of the direct payment for agricultural production for an environmental purpose in Taiwan
2017	Hwang, Tsorng-Chyi	National Chung Hsing University *	1,160,000	The impact of direct payment measures for rice on farmers’ production behavior and the rice industry

Note: \*Research projects assigned through the Rural Economics Society of Taiwan (REST)

Source: COA

When President Tsai assumed office, the planning office of the COA, and the Agriculture and Food Agency of the Council of Agriculture (the executive department), quickly created a policy measure for the Environmental Green Payment for Land Area Project and submitted it to the Executive Yuan. The planning office of the COA sets broad policy directions. The order of priority for this particular policy measure was as follows: the introduction of a direct payment system, a response to farmland abandonment, and





the handling of environmental issues. Taiwan had a surplus of public rice that had been accumulated through the existing price-guarantee system partly because it had to fulfill its “minimum access” import obligations of 144,000 tons of rice a year as a result of its WTO membership. To reduce price-guarantee purchases, the government adopted a system on an experimental basis in 2016 to allow farmers to choose between price guarantees and direct payments. The COA plans to address the problem of abandoned fallowed farmland next. For fallowing subsidies, the government shifted to a system in which payments are provided for only one of the two cultivating terms within a given year. There have been attempts to merge direct payments and fallowing subsidies under a single program within two or three years, in recent times. Finally, the COA has considered the special characteristics of the environment as a public good and has sought to include elements of environmental protection in the program. However, there is a perception in Taiwan that agriculture may not necessarily be good for the environment. Thus, it is important to identify the elements of environmental protection that should be included in the program and how.

Under the direction that the COA has established as explained above, the Agriculture and Food Agency of the Council of Agriculture works out details of how subsidies should be provided. The planning office of the COA manages key performance indicators (KPI), provides expert opinions, and accepts inquiries. The Agriculture and Food Agency of the Council of Agriculture sometimes receives advice from the planning office of the COA and direct instructions from the vice minister of the Council of Agriculture of the Executive Yuan (COA minister) in the process of determining the details of the subsidy program. In this sense, the Environmental Green Payment for Land Area Project was a top-down policy proposal.

In addition, policy measures created by a process in which scholars are heavily involved have clear economics research purposes or academic purposes. However, the implementation of such measures can create problems because they are often too abstract. An example is the subsidies offered for certified organic farming. Payments are huge, but





there is no mechanism for the government to certify organic farming. For this reason, farmers must join organizations for organic or environmentally friendly farming. Under such a system, certification is entrusted to private sector organizations, which also creates uncertainties around the credibility of the system. Another problem pertains to subsidies paid to farmers and landowners. In theory, payments are supposed to be paid to farmers. In practice, however, if a transfer of management rights cannot be confirmed in writing, payments are made to the landowner. Another problem pertains to the outsourcing of machinery work. The term “Cyuan Dai-Geng” refers to a practice of outsourcing all machinery work. Recently, however, another term has emerged, namely “Cyuan-Bao,” which refers to the outsourcing of all farm work including the sale of rice. However, only outsourcing of machinery work is covered by contracts. For this reason, all subsidies are given to the landowner unless the farmer in question is independently certified as a farmer. In practice, the main problem is that there is a provision that allows a farmer to change their mind with respect to their decision as to whether they should have the government purchase their rice at guaranteed prices or receive direct payments. Thus, even if they choose direct payments at the end of January, they can still choose to have the government purchase their rice at the guaranteed price during harvest if the market price turns out to be low. In reality, 2018 turned out to be a bumper-crop year. Thus, most farmers chose to have the government buy their rice at the guaranteed price, and this led to an explosive increase in the government’s stockpile of rice.

The direction of Taiwan’s farm policies had been determined through a collaborative relationship between scholars and the government. However, there was a change in 2015, when the government-led administration established the Agricultural Policy Research Center under the Agricultural Technology Research Institute, which was established by the COA in 2013. The institute has many divisions that study agricultural technology. However, this center is unique because it focuses on policy research. Until this institute came up, several policy research projects had been outsourced to scholars in the form of contract research. These projects tended to focus on academic writing, and many of the results were too abstract. Thus, it took a long time for the planning office and executive

department to create actual policy measures. The Agricultural Policy Research Center was established to quickly come up with practical and specific policy proposals. The center also handles research projects that scholars may not normally want to pursue. Therefore, its research projects encompass all aspects of agricultural economy. Figure 2 shows that there has been an increase in the number of research projects outsourced to the center in recent years. However, it operates in such a way that researchers first submit their research themes, as in the case of conventional projects outsourced to academics. The content is specified by the COA. The establishment of the center may further strengthen the collaboration between policymakers and academics. On the other hand, there are concerns that the relationship between policymaking and academic work may be altered, making academic work subservient to policymaking.

### Conclusion

This study confirms the existence of an epistemic community in the formation of Taiwan's agricultural policies. It also draws attention to the necessity for a change in the general direction of the policy led by the government, and the difficulties that may be encountered in its implementation, using the Environmental Green Payment for Land Area Projects as an example.

The chronological process by which a direct payment system was incorporated into agricultural policies as explained in this article is as follows: 1) a change in the policy paradigm as a result of the GATT and the Uruguay Round; 2) discussions among researchers in industrialized countries; 3) the introduction of policy concepts by governmental organizations and a network of researchers; 4) temporary discussions in the media and in the parliament; 5) policy innovation proposals by OECD countries; 6) the implementation of policies through activities of government organizations and a network of researchers; and 7) renewed discussions by the media and parliament.

In general, when governments face a problem and there is a need for knowledge, it is normal to seek out expert scholars. However, there are different ways in which the

opinions of scientists in different countries impact politics. Taiwan prefers that knowledge be interpreted by scientists before it affects policy makers or the establishment. Policymakers also actively attract scientists to study relevant policy topics that may develop. In the field of agricultural economics in Taiwan, scientists participate in the policy-making or implementation systems to influence decisions. As a result, although the government is under pressure to continue the price guarantee system from 1974 to support farmers, the epistemic community formed by scholars, bureaucrats and the mass media has made it possible to implement direct payments simultaneously. However, the continued implementation of the Environmental Green Payment for Land Area Projects still depends on whether the fiscal pressure changes in the future.

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