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Rural China: An International Journal of History and Social Science 13 (2016) 306-343

Rural China
中国乡村研究
brill.com/rchs

Transformation and Tradition in Taiwan's Peasant Economy, 1960–2015: A Case Study of the Dongshi Fruit Economy

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台湾小农经济的现代变迁：一个关于东势水果经济的个案研究

叶守礼

Abstract
For half a century the rapid growth of a fruit economy has been a major feature of Taiwan's countryside. However, its importance has been overlooked in the mainstream narrative of rural history, which focuses on rice. This case study of Dongshi shows that peasants quit planting rice and turned to crops with higher market value, like fruit, not necessarily because they sought higher profits, but rather because of the pressure of long-term poverty, which forced peasants to change crops to increase family income. I call this transition "making a living through commercialization." From this perspective, commercialization has helped peasants avoid proletarianization. Because of their presumption that it is difficult for a traditional peasant economy to survive in modern capitalist society, neither modernization theory nor dependency theory can adequately explain why Taiwan's peasant economy has been able to progress toward such a lively, diverse fruit economy. Combining a historical sociology perspective with ethnography, this article focuses on the historical experience of Dongshi—a famous fruit-producing area—and analyzes how cultural emotions and community factors affected peasants' economic choice of "changing to a different type of crop." This article points out that the rise of the Dongshi fruit economy is not a question of enterprization, but rather is the outcome of the interaction of familial responsibilities, grassroots social networks, and other social and cultural conditions inherent in the peasant economy.

* This article is based on my Master's thesis, 小农经济现代变迁：东势果农的商品化之路 (Modern changes in the peasant economy of Taiwan: the commercialization of the Dongshi fruit farmers), University of Tunghai, 2015. Part of the thesis has been presented at the 2015 Seminar of the Taiwanese Sociological Association.

DOI: 10.1163/22136746-01302004

Keywords
peasant economy, fruit economy, change to a different type of crop, familial responsibilities, grassroots social networks

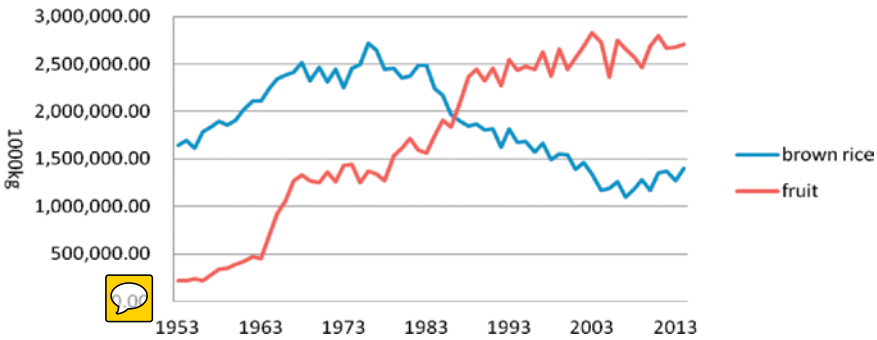
摘要
水果经济的高速扩张，是台湾农村近半世纪以来的显着特征，然而在以稻农为叙事中心的主流农村史中，果农的重要性被严重低估了。由于预设传统的小农经济难以适应资本主义变迁，无论是现代化理论还是依赖理论，都无法妥善解释为何台湾的小农经济能够催生出活泼的多样性水果经济。本文希望结合历史社会学视野和田野民族志研究，聚焦台湾知名水果产区东势的历史经验，探究文化情感和社区等因素如何左右了农民“转作”的经济经济选择。东势的经验显示，农民放弃稻米而转作市场价格更高的水果，不一定是为了追逐更高的利润，也可能是在农村贫穷化的长期趋势下，被迫以商品化的手段提高家庭收入。我称这个过程为“谋生型商品化”。就这个层次而言，农村商品化程度的提高反而避免了农村的无产化。本文希望指出，东势水果经济的崛起不是某种农村企业化的转化，而是小农经济在家庭责任、草根人情网络等农村固有的社会文化条件交互作用的产物。

关键字
小农经济、转作、家庭责任、水果经济、草根人情网络

Narratives of rural history in postwar Taiwan rarely take the question of the peasant economy seriously. This does not mean Taiwan's scholars do not care about the countryside. The problem is that most academic debates overemphasize defining the relationship between the state and agriculture, arguing over whether state policies, under the influence of industrialization, should be blamed for rural poverty. In Taiwan, there are two major relevant theoretical orientations: modernization theory and dependency theory. The first believes that the peasant economy will inevitably be replaced by large-scale industrial production, which follows the rules of the market economy as well as the long-term objectives of the developmental state. Dependency theory, on the other hand, suggests that Taiwan's industrial development in fact has led the countryside into an underdevelopment trap (see more below). The right and the left have engaged in many spirited debates over "developmentalism," "supporting industry with agriculture," and other, related policies. The right maintains that the peasant economy should be eliminated by the market economy; the left believes that the state should be responsible for the countryside.

Even though modernization theory and dependency theory stand in opposition to each other in many ways, they share a common presumption that it is difficult, if not virtually impossible, for a traditional peasant economy to survive in a modern capitalist society. But this assertion overlooks the essence of the peasant economy and reduces it to no more than a mode of production, a kind of small-scale family farming, in contrast to American-style enterprise management involving large-scale mechanized agriculture. Historical, social, and cultural factors are considered irrelevant. In addition, the right and the left often ignore the

Figure 1. Output of brown rice and fruit in Taiwan, 1953–2014.



Source: Statistics from the Council of Agriculture, Executive Yuan (n.d.), Agricultural Production Statistics, Agricultural Output Statistics Database, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

characteristics of the peasant economy and its historical changes as they argue over the role the state should play.

I do not intend to join that debate. However, I would like to point out a basic fact: for half a century, even though the impact of industrialization has led to the collapse of Taiwan's rice-sugarcane economic system (see more below), Taiwan's peasant economy is not only still alive but has developed many new and innovative aspects. We undoubtedly will see the countryside in decline if we look at only the changes in rice output, output value, and sown acreage; however, when taking other agricultural products into consideration, what we see is a completely different picture—an improvement in agriculture.

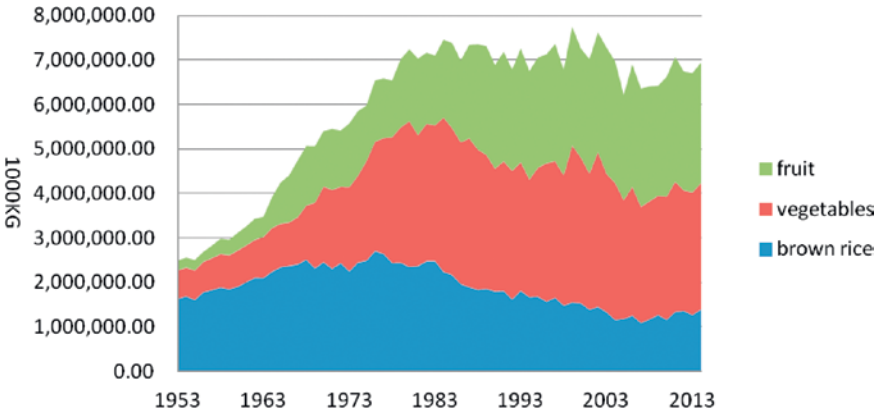
To begin with fruit production: in 1960 the country produced only 392,807 tons of fruit; but in 2010, fruit production had increased to 2,690,364 tons, with an output value 101.56 times higher (see Figure 1).[1] This is probably due mainly to the number of types of fruits cultivated. In 1960, only bananas, pineapples, tangerines, and a few others were commercially cultivated. But today there are over 50 different types of commercial fruits, with a multitude of other, minor types.[2] Taiwan, indeed, is worthy of the name "the fruit kingdom." This high growth of fruit output and output value and the great diversity of types are built on the small peasant economy. Large-scale enterprise management is rare.

Taiwan's fruit economy has created an alternative opportunity for the peasant economy. It should be noted that the rise of Taiwan's fruit industry is a relatively recent phenomenon. Figure 2, showing the tremendous change in the output structure of crop production over the past 50 years, illustrates this. In 1960,

[1] Council of Agriculture, Executive Yuan (n.d.), Agricultural Production Statistics, Taiwan Council of Agriculture Agricultural Statistics, http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

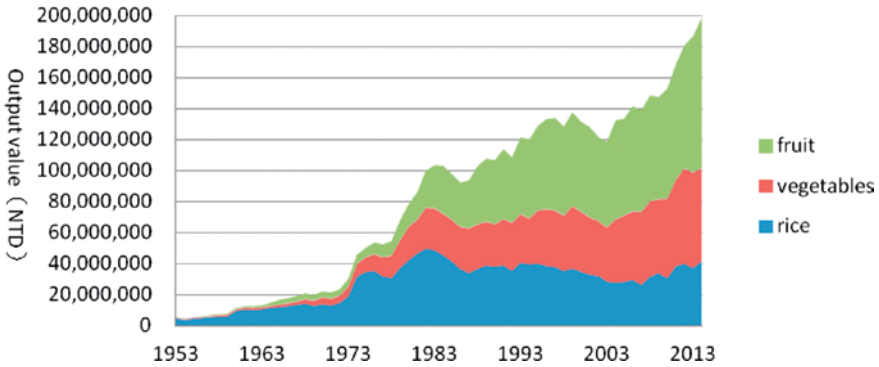
[2] Statistics on fruit prices are provided by the Online Agricultural Statistics from Taiwan's Council of Agriculture.

Figure 2. Changes in the output of fruits, vegetables, and brown rice in Taiwan, 1953–2014.



Source: Same as Figure 1.

Figure 3. Changes in crop output value in Taiwan, 1953–2013.



Source: Same as Figure 1.

the output ratio of rice, vegetables, and fruits was 61 percent, 26 percent, and 13 percent respectively, but in 2010, the output ratio was reversed: 18 percent, 41 percent, and 41 percent.[3]

Even though both fruit output and output value (Figure 3) have already exceeded those of rice, making fruit the most important crop in Taiwan, the importance of the fruit economy has been seriously underestimated in the mainstream narrative of rural history, which focuses on rice. Many writers influenced by the

[3] Percentages have been calculated by the author. The original statistics come from the Council of Agriculture, Executive Yuan (n.d.), Agricultural Production Statistics, Agricultural Statistics Database, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

mainstream understanding of "the disadvantaged peasant" and looking at rice alone, have contended that rural Taiwan has declined. Some scholars even maintain that the high growth of Taiwan's fruit economy is the outcome of capitalistic enterprises in Taiwan's countryside.

Because of Taiwan's "rural crisis" during 1960–1990 and Western social science theoretical paradigms that have created blind spots, for half a century both the right and left have thought of the peasant economy as traditional, passive, and vulnerable. As a result, scholars have shifted their attention to the state. The right maintains that the state's farmland protection policies have hindered the urbanization of the countryside while the left insists that peasants have fallen victim to industrialization.

Taiwan's peasant economy, in the mainstream understanding, is a remnant from the premodern era when the highly anticipated American-style "modern agriculture" has been proved impossible in Taiwan. Taiwan's countryside accordingly appears to have been stuck in a situation where "it hasn't collapsed yet"—another instance of "the end of history." If one restricts one's intellectual horizon in this way, then it becomes difficult to address a whole series of fundamental questions: What are the historical characteristics of rural Taiwan? What are the particularities of Taiwan's peasant economy? What is its relationship with capitalism? What are the similarities and differences between China's villages and Taiwan's? How can we conceive of the possibility of "alternative development"?

The reality is that even though Taiwan's peasants are still among the segment of the population with the lowest income, this does not mean that the countryside is "stagnant" and unchanging. Viewed from the perspective of practice and historical change, Taiwan's peasants have striven to find their way out and have experimented with new techniques (or, as Marx put it, "Men make their own history"). While some peasants have failed, others have made unexpected breakthroughs in cultivation. After the collapse of the rice-sugarcane economic system in the 1970s, state control weakened. This led to diverse and divergent developments in rural Taiwan. Some areas found their own way out while others did not. Bound by the existing historical narratives and theoretical paradigms, many scholars have failed to see the accomplishments of Taiwan's peasants and so have overlooked what has really happened in the countryside.

The fruit economy is a good starting point for understanding the contemporary changes in Taiwan's peasant economy. Taiwan's fruit-growing peasants are marked by many paradoxes. Instead of moving toward enterprized agriculture, peasants have been able to maintain small-scale family farming by turning to the commercial cultivation of fruit. They are productive and innovative, but their mode of production is still household agriculture. This article analyzes why the driving force behind the high productivity and diversity in Taiwan's fruit economy has not been enterprization 企业化, but the pressure of poverty, and how the Dongshi peasant economy has been able to overcome the difficulties involved in switching to different crops. The answer to these questions should give us a better understanding of why Taiwan's peasant economy has survived to this day.

The Long-Term Impoverishment of the Countryside

My field research in Dongshi,[4] Taichung, from 2014 to 2015 revealed that the peasants there had been able to create a lively fruit economy after abandoning the cultivation of rice in the late 1960s. Today Dongshi is one of the most important cash-crop-producing areas in Taiwan and has earned the nickname "the fruit kingdom." Peasants in Dongshi have been able to adopt advanced cultivation techniques, to frequently change to crops with higher market values, and to successfully cultivate new crops that had never been seen in Taiwan before. Looking simply at the shift to fruit production, the advanced cultivation techniques, and sensitivity to market prices, one might conclude that all this is the result of enterprization. Yet, my field research has revealed that Dongshi's economy is still characterized by the old type of household agriculture which relies on family members working a small piece of land in order to sustain the household. According to local peasants, there are no farms run by enterprises; at most, the peasants only hire temporary workers during the busy season.

While there is no question that the current fruit economy in Dongshi is built on the peasant economy, it is not at all obvious how this came to pass. Why and how did peasants who cultivated rice for generations change to other crops? How did they bring about the rapid growth in the fruit economy? And how have they been able create so many very successful fruit products, so-called "star products"?

The Limits of Current Perspectives

The two dominant rural historical perspectives on "supporting industry with agriculture" in Taiwan—modernization theory and dependency theory—share an identical understanding: it is difficult for a traditional peasant economy to survive in modern capitalist society.

Modernization theory contends it is inevitable that the peasant economy dwindle in the age of industrialization due to comparative advantage. In 1953, government technocrats concocted an economic policy involving "cultivating industry with agriculture, and developing agriculture with industry" 以农业培养工业，以工业发展农业 with an eye toward boosting agricultural land productivity. They claimed that as the state actively moved the surplus in the agricultural sector to the industrial sector, agriculture would benefit from industrial development through a tickle-down effect (Shen, 1976; Huang Junjie, 1984; Li and Chen, 1987; Liao et al., 1993). The agricultural sector and the industrial sector, in short, could support each other. Collaborating with technocrats, most modernization theorists have focused on the modernization of agriculture. They have also investigated population, labor force, land productivity, earnings rates, and marketing patterns

[4] Initially it was "Dongshi Township," Taichung. In 2010, when Taichung County was upgraded to Taichung Special Municipality, it was upgraded to Dongshi District. Dongshi is located in eastern Taichung and has a population of about 50,000, mostly Hakka 客家人. It is one of the most important fruit-producing areas of Taiwan.

in rural Taiwan through the lens of agricultural economics (Zhang Hanyu, 1974; Yu, 1975; Myers, 1979; Lee Teng-hui, 1980; Mao, 1994).

As modernization in the Taiwanese countryside failed, poverty worsened. This proved the ineffectiveness of the tickle-down effect. Modernization of agriculture was defined, in earlier work, as the input of modern factors of production such as insecticides, fertilizer, and machines—namely, the green revolution. However, with the development of industrialization in Taiwan, peasants with highly productive land were still stuck in poverty. Technocrats, as a consequence, came to believe that the only way out for agriculture was through enterprization (Wang, 1990; Zhang Yantian, 1980). Land and labor were also core issues. At first, scholars and state technocrats thought modern private property rights could lead to increased productivity. But the fact that farmland was divided into many small fields made the formation of capitalist large-scale farms difficult (Wang and Lee, 1970; Chen Wuxiong, 2004). In addition, compared with managers of American-style large-scale mechanized farms, peasants in Taiwan were unable to lower labor costs as the average wage was increasing. Even less were they able to increase their international competitiveness. They could not even make the smallest profit (Huang Shuren, 2002; Chen Yuxiang, 2005; Chen Xihuang, 2014). Taiwan's agriculture, which could not rid itself of the peasant economy, became a sunset industry, with many young people moving to the cities for better jobs.

Dependency theory has been used to illustrate that the poverty in rural Taiwan was the result of exploitation by both the state and capitalism. When Taiwan was a Japanese colony, the government had exploited the peasants' surplus, propelling rural Taiwan into capitalism (Tu, 1999; Yanaihara, 2002; Ke, 2006). The Nationalists adopted the same approach, only even more vigorously (Liu Jinqing, 1992; Liu and Ke, 2002). Dependency theory, in line with the theories of Marx and Lenin, proposed that rural poverty was not a consequence of industrialization, but a prerequisite. In Britain, for instance, the enclosure movement expelled and proletarianized peasants who had no alternative but to become workers in factories. In Taiwan, the state apparatus extorted the agricultural surplus via state policies, impoverishing the villages in a process of primitive accumulation. Cheap labor was compulsorily transferred from agriculture to industry as a consequence (Ke, 1988; Chen Yuxi, 1995; Sumiya et al., 1995).

In fact, Taiwan's peasant economy has not collapsed, but it is facing its last gasp, with the commodity economy dominating. Although the government implemented a "guaranteed purchase price for rice" 稻米保价收购 in 1974, marking an end to the unbalanced treatment of agriculture, peasants still had not broken free and were subsequently exploited by the production-marketing economic structure (Luo, 2008). Since the Taiwan government signed the U.S.-Taiwan Rice Agreement in 1984 and acceded to the WTO in 2002, Taiwan has been swallowed up by the capitalist world system. This means that Taiwan has had to open its market to foreign agricultural goods, make cuts in agricultural subsidies, and regulate domestic agricultural production; these policies have dealt Taiwan's agriculture a heavy blow

(Wu, 2007; Cai, 2009). The competitiveness of the free market had also differentiated Taiwan's peasants (Ke and Weng, 1993). Since the government abandoned agriculture and turned to developing industry at full throttle, rural Taiwan has been suffering from pollution, water shortages, and a concentration of land ownership (Zhang Subin, 2014). As a result, the peasant economy seemed to be on the verge of collapsing from the combined oppression of the state and capitalism.

Taiwan's academics, however, have been too quick to jump to the conclusion that the peasant economy cannot survive the assault from capitalism, and they have overlooked the reasons why the peasant economy is still alive after the rural crisis. Although the rise of Taiwan's fruit economy has been of great historical significance,[5] scholars have tended to consider the emergence of cash crops—fruits, vegetables, and flowers—as a secondary, indirect outcome. Some even contend that it is the result of rural enterprization.

Although the high growth in fruit production has been well documented, it has not been given sufficient attention nor has it been adequately explained. Wu Tianquan (1993: 379–80) found that from 1954 to 1967, "the average growth of fruits was 14.5 percent, the highest among all produce." Yet, he said no more about this issue and in fact described the years after 1967 as the "declining" of the countryside. Liao Zhenghong and his coauthors (1993: 26–27) also noted that "agricultural production has been becoming more diverse," but merely went on to state that "fruit and livestock production are becoming increasingly more important due to higher living standards and greater domestic and foreign demand." Cai Peihui (2009: 212–13) asked, "How do we explain the growing number of fruit-cultivating households? If one knows that betel nut is categorized as a fruit in Taiwan, the growing number of such households becomes totally comprehensible." She asserted that "based on the results, this is a failed attempt to change to a different type of crop."

In dealing with the skyrocketing growth in fruit production, many researchers go no further than to accept the old understanding and vaguely assert that the high growth is the outcome of rural enterprization. Sumiya Mikio (1995: 58) believes that the "rice-sugarcane system has dwindled and many peasants have turned to horticulture—vegetables, fruits. . . . Nowadays, enterprise management has taken over the agricultural system." Huang Shuren (2002: 278–79) pointed out that "aquaculture and the cultivation of cash crops enable farmers to [maximize] use of their finite lands through capital-intensive, technology-intensive, and high-profit management" and that "they have already done away with the traditional peasant economy consciousness and become fully profit oriented." Other scholars believe that it is difficult for peasants to escape from poverty by changing to fruit cultivation. Xiao Guohe (1987: 47) claimed that the painful fact is that horticulture

[5] In the recent publications, followers of modernization theory and dependency theory still claim that only large-scale mechanized farms with hired labor can survive in a capitalist economy (see Huang Shuren, 2002; and Cai, 2009).

and aquaculture are not profitable. Chen Yuxi (1995: 124) took an identical view: "Cash crops require capital investment and special technology and have to follow the quota restrictions set by the government. They are particularly vulnerable to market manipulation by middlemen and the effects of overproduction." In short, modernization theory and dependency theory have explained rural crises from two different angles (see below), yet both of them have failed to provide a clear explanation as to what happens after a crisis. They both view the countryside from a narrow perspective, and hence can only assume that a peasant economy cannot live in harmony with capitalism. "Commercialized small-scale household agriculture" appears to be a paradox, clashing with existing interpretations of rural history.

Furthermore, researchers have been inclined to make three questionable assumptions in researching the rural economy. First, their understanding is based on an evolutionary pattern of history: tradition and modernization; natural economy and market economy; feudalism and capitalism. They reject the possibility of a peasant economy surviving in today's society. Second, they divide Taiwan's rural history into periods based on government policies and statistics, making it seem that peasants' choices are based solely on those policies. In doing so, they give too much weight to the government's ability to implement its policies and too little weight to what is actually happening in the rural areas. Third, researchers unconsciously regard the peasant as an isolated, rational economic animal. Thus, in analyzing rural development, they use merely a few theoretical models without considering family, community, and neighborhood factors that permeate history, culture, and space.

Because of misguided theoretical assumptions, many complicated, indirect, and subtle social elements are overlooked. The importance of the fruit economy has not been recognized by many scholars who are pessimistic about the future of the peasant economy. As Philip Huang (Huang Zongzhi, 1990) suggests, in dealing with the history of Taiwan's villages, "substantivism" should replace "economic formalism." Only when we analyze peasants' economic activities by connecting the study of history, society, culture, and environment with practical field studies, can we disentangle how peasants' collective changing to different types of crops took place.

The Rural Crisis and the Collapse of the Rice-Sugarcane Economic System

In my fieldwork in Dongshi, I interviewed many peasants and focused on the local history of agriculture and the biography of the peasants. What I found was that, in the late 1960s, the capitalist spirit of pursuing higher profits was not the main reason peasants changed to different types of crops; rather, it was the overwhelming pressure of poverty, which drove them to find a way out in order to support their family. As Fei Xiaotong (1994: 254) put it, "They have tried everything they could to explore possible ways of earning a living. Peasants would call it 'to die or to find a way out.'" I term it "poverty-driven change." My interviews revealed that we cannot fully understand the rise of the fruit economy if we fail to recognize the long-term impoverishment in the countryside. In other words, understanding

Table 1. Historical Periods of Dongshi's Peasant Economy

	Rice-sugarcane economic system	Population density	State intervention	Crops	Intensity of technology
Qing dynasty	Embryonic	High	None	Rice	Low
Japanese colonization	Established	High	Active	Rice	Medium
Before 1970s	Prime	High	Active	Rice	Medium
After 1970s	Deconstructed	Low	Passive	Fruit	High

rural development in Taiwan since the Qing dynasty is helpful in comprehending Taiwan's peasant economy, with the rural-state relationship and rural development itself as the focus. (See Table 1 for key characteristics of each historical period discussed below.)

By the early Qing dynasty, rice and sugarcane had become the major crops in Taiwan (Wu, 1993). Because of the high pressure of population and poverty, the Han living along the southeast China coast at that time had little choice but to migrate to Taiwan, with its large plain and small population (Myers, 1979; Chen Shaoxin, 1979; Wu, 1993). As time went by, the population in Taiwan increased, and by the mid-eighteenth century the peasant economy had been formed (Chen Qi'nan, 1989). Essentially, Taiwan's countryside inherited the features of the South China countryside: the family engaged in intensive farming with livestock as a sideline—in most cases—when there was a very large population on little land. What was unique to Taiwan's peasant economy was that peasants traded with the mainland through middlemen, who imported daily commodities such as fabric, for which Taiwan lacked the necessary craftsmanship (Chen Kongli, 1996). This was why ever since Han settlement began, Taiwan was deeply embedded in long-distance overseas trade (Lin Yuru, 2004; Huang Fusan, 2009). After Taiwan began trading with the West after the mid-nineteenth century, it became closely connected with the world trading system, becoming a major tea, sugar, and camphor exporter. The amount of money on a per capita basis gained from trade was higher than on the mainland (Lin Manhong, 1978: 2; 2011). As the population grew, peasants figured out which crops were of the most benefit for the family. Rice was an essential food crop that everyone needed and could be sold if necessary. Sugarcane sold for a higher price, but its price fluctuated.

Japanese colonization did not fundamentally change the peasant economy. Instead, the Japanese set up an economic institution that would deprive peasants of their economic surplus: the rice-sugarcane economic system. The major feature of the institution was that, over the vast majority of peasants were large charted cooperatives which were granted monopolies by the powerful state apparatus so that a great deal of produce could be exported overseas (Yanaihara, 2002; Tu, 1999;

Ke, 2006). Although peasants in the Qing dynasty had already started to export a fair amount of rice and sugarcane, there was no harsh state apparatus at that time. The Japanese government-general step by step created a system that could be used to exploit Taiwan's peasants, as well as a monopoly on the export of rice and sugar. Yet, the colonial government did not make fundamental changes to the peasant economy; instead, it took advantage of it (Ke, 2006). In addition, thanks to the state's actions, peasants were able to use the new and extensive irrigation infrastructure. Advanced agricultural techniques and new types of crops spread across the countryside. The acquisition of new techniques, the capability to absorb knowledge, and the willingness to try new crops (Myers, 1979) led to a tremendous increase in agricultural productivity. Peasant associations were established as intermediary organizations to vertically connect the peasants and the government. Nonetheless, peasants still had a hard time. Most of them, especially the poorer families, had to sell most of the rice they raised—which was then exported to Japan—and lived on sweet potatoes (Zhang Hanyu, 1974; Zhou, 1980; Ke, 2006). The expression that best describes their circumstances would be "sell the good, consume the bad" 粢精粢粗 (Cai Hongjin, 2013).

It should be noted that as small as the scale was, Taiwan's first commercialized fruit cultivation emerged in the 1930s when the Japanese promoted cultivating bananas, pineapples, and tangerines in some areas (Wu, 1993; Lai, 2001; Wang Zhenxun, 2012; Zeng, 2013).

After World War II, the Nationalists took over the rice-sugarcane system, and also implemented a comprehensive land reform. Even as the land reform turned many sharecroppers into landowners, the pressure from the state only heightened: the Nationalists' plan was to exploit the peasants' surplus and invest it in industry, so-called "supporting industry with agriculture" (Lee Teng-hui, 1980; Ke, 1988; Liu Jinqing, 1992). At the same time, Taiwan experienced a postwar baby boom, quickly creating a very heavy population pressure in the countryside. Peasants then encountered the predicament that Philip Huang (Huang Zongzhi, 1994) has called "involution": a decrease in the marginal returns to labor accompanied by chronic unemployment, leading to widespread poverty.

To some degree, the Nationalists' policy was effective. Peasants capable of intensive farming succeeded in substantially increasing agricultural productivity with the help of the Joint Commission on Rural Reconstruction. In the 1950s, there were many breakthroughs in agricultural output and exports, which together formed a solid foundation for industrialization (Shen, 1976; Huang Junjie, 1984; Liao et al., 1993). Yet, by the 1960s, rural poverty far exceeded the government's predictions.

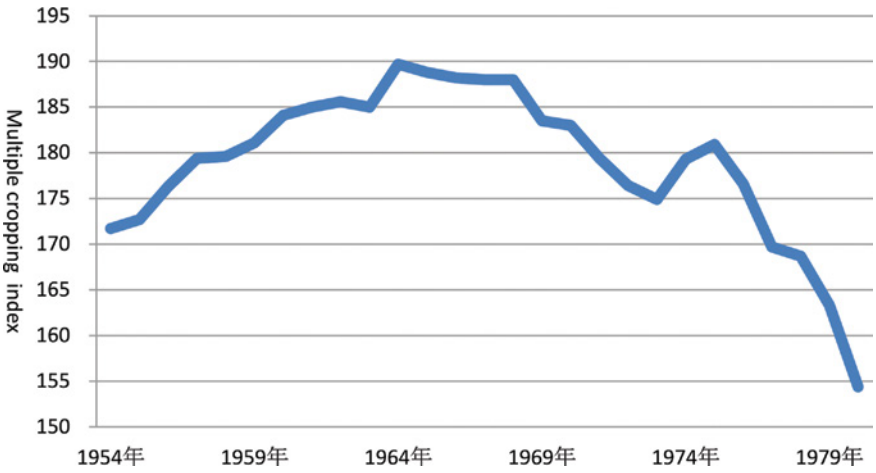
In the mid-1960, a severe rural crisis broke out. The rice-sugarcane economy collapsed, poverty spread in the villages, and labor drained out of the countryside. According to Lee Teng-hui, who was then an agricultural economist, industrialization in the cities had led to an increasingly severe income inequality. In 1959 the average income of peasant households was 98 percent of that of non-peasant households; by 1968 it was only 71 percent (1980: 237, 239). In 1961, the peasant

household surplus was 21.47 percent of peasant household income; but in 1969, it had fallen to only 11.50 percent. Lee warned that "there is a relative and absolute tendency toward a decline in peasant households' income and surplus in Taiwan" (1980: 251).

At the same time, industrialization created many job opportunities. Large numbers of young people moved to the cities in search of work, forming the biggest migration ever in Taiwan's history. The population engaged in agriculture as a percentage of the total working population dropped from 45.01 percent to 26.71 percent between 1966 and 1976. In 1960, 49.3 percent of peasant households were engaged in agricultural work full-time; by 1980, such households had plummeted to only 9 percent (Gao et al., 1996: 31). The decline in the rural population also contributed to the gradual collapse of the rice-sugarcane system, which was built on intensive farming. The whole process was similar to the "de-involution" described by Philip Huang (Huang Zongzhi, 1994).[6] Even though the loss of population provided some relief for the countryside, it could not directly solve the long-term problem of poverty.

The rural crisis was a crucial event in Taiwan's social history and also a dividing line in its rural history. The agricultural historian Wu Tianquan maintained that the year 1968, when the multiple cropping index began to decline (see Figure 4), marked the start of the "period of the deterioration" of Taiwan's agricultural sector (1993: 383). One social commentary pointed out the urgency of the crisis: "On

Figure 4. Multiple cropping index, ~~1939~~–1981.



Source: Statistics are from Gao et al., 1996: 51–53.

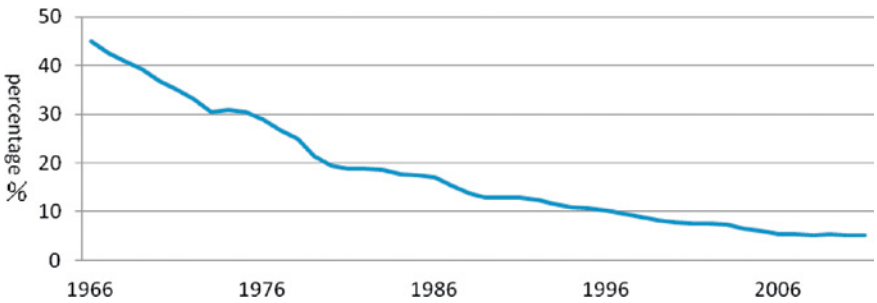
[6] Huang points out that surplus rural labor was absorbed by township enterprises and rural industry. In Taiwan, however, many peasants migrated to the cities. Moreover, since Taiwan, unlike the mainland, has no household registration system that limits migration, many of the peasant migrants permanently took up residence in the cities.

average, a peasant household of six people with one *jia* 甲 of land cannot earn more than NTD79 per capita every month. The monthly income of six people from growing rice is barely more than a single worker's weekly income. This is the main reason why a tremendous amount of rural labor is moving to the cities. . . . The unavoidable fact is that the villages are declining, which has caused a series of social issues. . . . Saving the rural areas should be the priority" (Xu Xinliang, 1995 [1970]: 26, 147).

As the peasant economy deteriorated, the government finally came to the realization that action was necessary. It repealed "mandatory purchasing," "fertilizer for grain," and other extorting polices and turned to policies such as "guaranteed purchase prices for rice," marking an end to the rice-sugarcane economic system. In 1982, at the urging of some scholars and government officials, there was "a second land reform," which was predicated on the assumption that the way out for peasants was through modernization: increasing average farmland per peasant, promoting mechanized farming, and developing agriculture enterprises (Wang and Lee, 1970). In time, however, this policy proved to be a failure. Since then, the state has been passive, not carrying out any major agriculture programs.

Since the 1960s, large-scale movement away from agriculture 离农, poverty, and part-time farming have been the major features of Taiwan's countryside. By the year 2010, only 5.24 of Taiwan's working population engaged in agriculture (see Figure 5). The average income of peasant households was only 78 percent of the national average, the agricultural net income was only 21 percent of total income, and 79 percent of peasant households were part-time farmers.[7] It was under these dire circumstances that peasants decided to change to different types of crops.

Figure 5. Agricultural population to total population, Taiwan.



Source: Statistics from the Council of Agriculture, Executive Yuan (n.d.) agricultural production statistics. Labor Statistics, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

[7] Council of Agriculture, Executive Yuan (n.d.), Labor Statistics; Family Income Statistics; Peasant Household Statistics; Agricultural Statistics Database, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

The Rise of Dongshi's Fruit Economy

In the late 1960s there was a great wave of switching to the cultivation of fruit among the peasants on the fluvial terrace in Dongshi. They quit planting rice, abandoning a crop that had been planted for generations and, one by one, started to plant fruit tree seedlings on the rice paddies. The landscape in Dongshi changed as a consequence. And the peasants' future became clouded in uncertainty. The change to different types of crops cannot be simplified as merely a rational investment. It can only be fully understood when one considers emotions, community, and social networks in the context of history, society, and culture.

Dongshi Peasants: Collective Changing

Dongshi, located on the eastern side of the Taichung Basin, comprises two geographical zones: the fluvial terrace of the Dajia River and the hilly area. Every regime in Taiwan's history used Dongshi as a base for logging in the nearby hills. The camphor industry was also well developed. The floodplain, with easy access to irrigation, was filled with rice paddies. Even though Dongshi has an environment favorable for cultivating fruit—a suitable altitude, moderate weather, fertile soil, and a favorable temperature difference between day and night—no one noticed this before the 1960s. "Fruit? Who can I sell fruit to?" a peasant recalled. At a time when Taiwan's economy was not yet highly developed, few people would have thought that cultivating fruit was a rational choice.

In the late 1950s, as the semi-official Fruit Marketing Cooperative encouraged peasants to cultivate bananas, banana trees spread wider and wider, covering Wufeng and the hillsides of Dongshi.[8] At that time, as banana exports to Japan reached their peak, the Fruit Marketing Cooperative provided banana tree seedlings and set up product shipping points with purchase guarantees—although the price was not guaranteed. This reduced the financial burden on peasants, since they only needed to be concerned with cultivation. In view of the increasingly harsh living condition on the plains, many young peasants turned to the hillsides to set up banana gardens. The banana industry in Dongshi at this point was a large-scale monocultivated export-oriented industry supported by the state.

It should be noted that before the mid-1960s, peasants on the plain were not willing to change to bananas even though they were far more profitable than paddy rice. This was because of the characteristics of bananas and peasants' risk management. Since rice was a staple food, any peasant household that gave up raising rice and switched to bananas would have faced the daunting prospect of going hungry if the price of bananas fell drastically or the crop failed. Furthermore,

[8] The Fruit Marketing Cooperative can be traced back to the Japanese colonial era. It was formally called the Central Taiwan Fruit Distribution Association 中部台湾青果物輸出同业组合. Although it was cooperative in name, it gradually became a big dealer controlled by a few people with close ties to the state, which protected it with the law. Thus it can be described as semi-official.

bananas can be harvested only once a year. All in all, abandoning rice for bananas alone appeared to be too risky.

What made switching to fruit thinkable was peasants' religious beliefs. To ward off natural disasters, people in Dongshi staged the so-called Jiao ceremony 建醮, which involved, among other things, praying for good weather.[9] Many peasants even cleaned up their paddy rice fields to make room for the construction of Jiao altars. The scale of the ceremony was impressive.

How the Jiao Ceremony altered peasants' way of thinking cannot be known. The key is that "the interaction among people during the ceremony was unprecedentedly extensive" (Liu Longlin, 2010: 9). Even more important was that as peasants were pulled together, and as they frequently chatted with relatives, neighbors, and friends, a passionate collective mentality was consolidated. Many new commercialized fruits that only a few brave peasants dared to cultivate, such as temperate pears in Lishan, grapes in Xinshe, and loquats in Zhuolan, suddenly became well-known. Information about their prices, cultivation methods, and pros and cons also spread swiftly. Peasants also began to look closely at one another's fields, learned from one another, and explored various possibilities. At a time when the pressure of poverty was intense, they were determined to find a way out, with everyone making a contribution. A trend of "changing to a different type of crop" raged through Dongshi, and within a decade, almost all the rice paddies on the plain were turned into fruit orchards. The centuries-old rice field landscape no longer existed.

Changing to a different type of crop, however, was certainly not easy. Peasants had to spend a great deal of time familiarizing themselves with the new crops and the ways they are cultivated. Also, different production-marketing methods and a new market ecology had to be tackled. For three to five years, peasants would not earn so much as a penny from fruit since it took that long for seedlings to mature. In short, the "changing" meant a whole new and extremely unpredictable future.

Despite the uncertainties, it was apparent that fruit was more profitable than paddy rice. The lively grassroots social network helped peasants gain confidence, as well as indispensable information. Although the grassroots social network played the dominant role, the importance of a collective mentality cannot be underestimated. No economy has ever been simply economic: economies always exist in combination with social and cultural factors.

In the 1970s Dongshi's fruit economy became diverse as peasants adopted various new varieties. Although banana exports were ruined by a political scandal,[10]

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[9] The Jiao 醮 is a Daoist ritual ceremony, the purpose of which is to pray for the living and bid farewell to the dead. The ceremony requires a large altar. According to custom, a "Colossal Altar" 大醮 can only be held every twenty or thirty years. Until now, Dongshi has held only three "Colossal Altars," with the 1962 Jiao Ceremony being the second and the biggest.

[10] The notorious "banana extortion case" 剥蕉案, or "golden rice bowl scandal" 金饭碗事件, mainly involved the Fruit Cooperative, which monopolized banana exports to Japan, making a huge profit. The cooperative also drove down the purchase price and was involved in conflicts with peasants. In 1969 the director was reported to have bribed government officials with a "golden bowl" and

new crops—Hengshan pears, persimmons, tangerines, grapes, plums, peaches, lemons, and loquats—popped up here and there. Each household selected the fruit it would cultivate based on the quality of the soil, neighbors' experiences, recommendations from fertilizer distributors, the availability of family labor, or personal preferences, all of which contributed to diversity.

Frequent changing of crops is characteristic of Dongshi's fruit economy. Peasants overcome technical problems encountered when cultivating new crops by exchanging experiences with relatives and friends. Since the Japanese colonial era, they have been equipped with strong learning skills under the guidance of peasant associations, a fact many observers have overlooked. Peasants usually cultivate two or three types of fruit; by doing so, they are able to divide up the busy season and reduce the impact of fluctuations in market prices. Therefore, most peasants have cultivated a large number of different types of fruits in their life. This process of selecting what to raise often takes years. Fortunately, Dongshi's advantageous geography and the good climate are of great help. There are few other areas with such a diversity of fruit as Dongshi. "I can grow anything!" a peasant proudly declared. The diversity of fruit in each season also has led to a demand for a unique delivery and transportation system; trucks carrying fruit from Dongshi to markets throughout Taiwan are a common scene all year long.

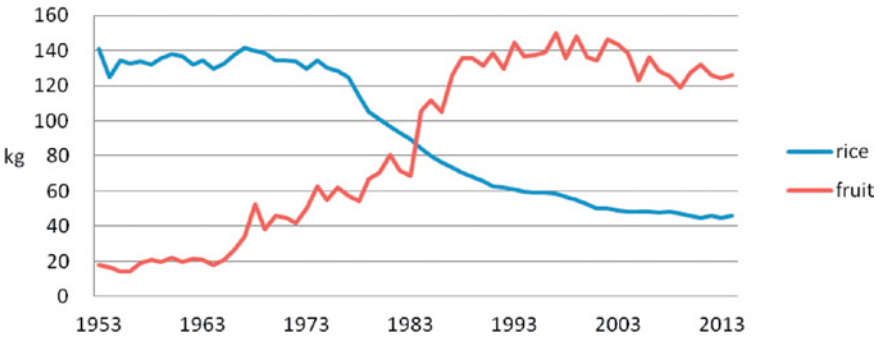
However, how to support the family is still the main concern. There is a consensus that the reason peasants shifted to fruit was due to the low prices of rice. Fruit could lift a family up from poverty. A peasant recalled, "I needed money. I worked hard to find it, on my land." Another peasant added poignantly that if he had not turned to raising fruit "my wife and I wouldn't be alive now." On top of that, fruit required less labor and less concentrated application of labor compared to paddy rice, so the men could engage in other jobs, leaving the running of the fruit farms to women during the off season. It is noteworthy that in the 1960s, much "changing" was carried out by households with sidelines, at least in Dongshi.

Even though the government did encourage peasants to change to fruit, it failed to understand peasant's real needs and it failed to recognize that the situation on the ground was complicated. Many technocrats were still stuck in the unrealistic thinking that agriculture should be modernized and enterprized. Peasants were once encouraged by the local government to cultivate grapes with guaranteed purchase prices under contract to state-owned wineries. Nonetheless, it turned out that grapes cultivated in Dongshi were not suitable for making wine. Smart peasants, who had acquired the core techniques of viticulture, thus changed to table grapes, which had a good market, competing with grape-growing peasants in other regions.

More importantly, industrialization and urbanization, which increased the domestic demand for fruit, provided an indispensable basis for the success of

was arrested. The scandal was actually a political fight. After the scandal broke out, banana exports were immediately suspended, which gave bananas from Southeast Asia an opportunity to take over the Japanese market. Taiwan's banana exports were devastated.

Figure 6. Taiwan's per capita food supply: comparison of rice and fruits, 1953–2014.



Source: Statistics from the Council of Agriculture, Executive Yuan (n.d.), agricultural production statistics. Annual Crop Output Per Capita, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.
Note: This figure is intended merely to show the change in the proportion of rice and fruit. Since the figure excludes wheat, vegetables, meat, milk, and others, it does not reflect the many other changes in the diet in Taiwan.

Dongshi's fruit economy. Taiwan's yearly consumption of fruit per capita rose from 22.07 kg in 1960 to 45.83 kg in 1970 (see Figure 6). It leveled off at 150.06 kg in 1997, probably because of a slowdown in the economy. From 2000 to 2010, the yearly average was 132.62 kg.[11]

In this way, when fruits such as bananas, pineapples, tangerines, and others that had once been exported on a large scale faced a shrinking foreign market, there were still opportunities for peasants. They turned to the expanding domestic market. Other fruits not suitable for large-scale export were also directed to the domestic market. Compared to the foreign market, the domestic market did not require long-distance transportation, long-term storage, uniform specifications, and centralized trading and marketing; instead, it required a wide variety of different types of fruit, all as fresh as possible. Fruits in different parts of the hierarchy were targeted at different consumers. This is an instance of what Philip Huang (Huang Zongzhi, 2010) has described as a "hidden agricultural revolution," involving a decrease in the rural population, an increase in and transformation of urban demand, and a shift to cash crops with higher market value. All these together helped raise the per capita value of agricultural output. In the 1980s, as peasants continued to innovate, high-priced "star crops" such as annual grafting pears, sweet persimmons, and murcotts were successfully cultivated, increasing family income considerably. As a result, Dongshi became one of the most influential

[11] Calculated from statistics from the Council of Agriculture, Executive Yuan (n.d.), Agricultural Production Statistics, Annual Crops Yield Per Capita, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

cash-crop-producing areas in Taiwan. The local people take pride in that, believing it is the money made on these star products, which padded their accounts with the Dongshi Peasant Association, that made the association at one time the wealthiest in Taiwan.

Nonetheless, Dongshi's fruit economy is not problem-free. Overproduction and price collapses have led to cyclical decreases in peasants' income. The fruit economy lacks a macroscopic scheme for production, and since the domestic demand is not big enough to absorb all the production, the result is periodic overproduction. The resulting price collapses have led peasants to change to different types of crops, over and over again, as a way to reduce the risk of overproduction. As peasants see it, the solution is diversification.[12] This perspective reveals both the strengths and the weaknesses of the peasant economy. Even though peasants are excellent at cultivating, they do not deal with marketing, which is monopolized by middlemen. This is a subject for a separate study.

Family Responsibilities and Making a Living through Commercialization

Some scholars have described these peasants who cultivate highly commercialized crops as purely profit-orientated enterprisers (Sumiya et al., 1995; Huang Shuren, 2002). However, viewing these peasant farms as micro-enterprises is inappropriate and does not help in understanding the rise of Dongshi's fruit economy.

The family has always been the backbone of the peasant economy. Yet, peasants do not reject profit-making, and the household logic and the profit logic can coexist in harmony—peasants do not tend to accept the one and reject the other. To be precise, when peasants make a profit, they do so on the basis of the existing familial economic functions. The family also plays a crucial role in one's social and cultural position, which sets it apart from enterprises. A family can never simply seek profits since it must be concerned with many intricate emotions and needs—and these in turn influence peasant households' economic choices.

While not succumbing to determinism, I would point out that, as far as Weber's concept of "life conduct" is concerned, some deep-rooted values do have an influence on peasants' economic choices. Based on this, one can speak of an ideal type of "familial responsibilities" by which one can identity what is influencing and what is limiting peasants' economic activities, which together stimulated the rise of the fruit economy in Dongshi.

To begin with, the notion of "responsibility for inherited land" has strongly attached peasants to the land. In the countryside, land is more than a means of production. It is a patrimony that, in most circumstances, cannot be sold.[13] If

[12] The fruit processing industry is not well developed in Dongshi. Fruits are sold in the form of "fresh food."

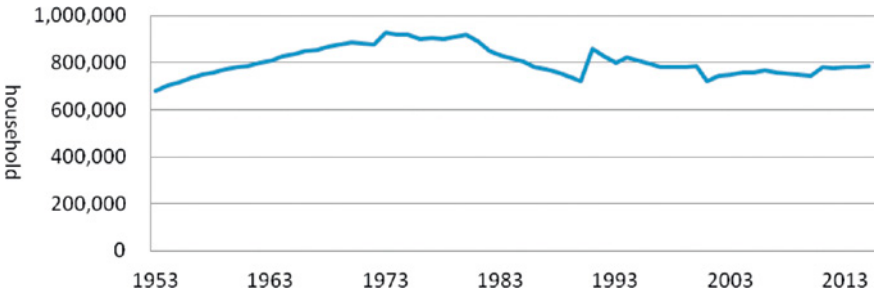
[13] In Taiwan, property is owned by the individual and can be freely alienated. But in designated areas, the government has rules limiting the use of land. For instance, factories cannot be built in residential and agricultural areas. It is noteworthy that some scholars have contended that agricultural land is too expensive in Taiwan and the interest rate on loans to purchase land is even higher than the

landowners sell land just for greed, they will be bombarded with reproaches for being unfilial. Unlike mainland China, Taiwan has never experienced a drastic land revolution, which means that its peasants have been able to maintain an intimate tie to their land through the right to private property. As Fei Xiaotong argued (2014: 163), "Land has a special value for people not only in a general sense, but also because it is inherited. . . . If one sells land inherited from one's father, one would violate ethics." Of course, this rule is not absolute, but it does exert a moral pressure. Selling land without a compelling and convincing reason will spark family quarrels. In short, there is a strong moral pressure to keep land intact if possible.

We can better understand the "responsibility for inherited land" notion by looking at the life experiences of four peasants. Mr. Liu, the youngest son, was born when his father was already 60. Since his brothers and sisters had left home, he had to help his father with exhausting work at a young age. When he turned 16, he did not continue his education after junior high school; neither did he go to the city to find a job. Instead, he decided to work on the farm full-time. Mr. Xu's case is different. After graduation, he moved to Taipei to work in a medium-sized bank with good pay. Unfortunately, in 1979, when he was almost 40, his father became seriously ill. The conclusion of a discussion with his brothers was that he, the oldest brother, would return home to look after the father and the land. He had to start from zero. After some calculations, he discovered that he could barely provide for his family by continuing to operate the farm as his father had done. After much thought, he found a way out and eventually became the first peasant in Taiwan to successfully cultivate murcotts (a subject discussed in detail later in the article). Mr. Zhang, a vocational school graduate, also moved to the city to work. He once also worked as a cadre in China. In the early 1990s, his father amassed a big debt due to bad management and his older sister was hospitalized for a long time. He realized that if this situation dragged on, his family might end up having to sell its inherited land. To save the family, Mr. Zhang decided to go back to his father's fruit farm where he had spent his childhood. However, owing to a lack of experience, he had a hard time in the beginning, and was unable to afford health insurance for the children. He even harvested pears himself in order to avoid having to pay for temporary workers. In the fourth and final case, Mr. Ye, when still in high school, unexpectedly inherited the family farm because his father died suddenly. Yet, because of his young age, he had to resort to turning the farming over to a long-term hired hand. Even though he did not go back to the farm after graduating from college with a B.A. in physics, he never forgot where he had come from. He knew for certain he would return sometime in the future. He was 37 when he went back. From then on, he devoted himself to growing annual grafting pears, which were just becoming a "star product." These cases illustrate that the bonds with inherited land are very real. In a capitalist market, people are free to seek the highest returns and can sell their land if and when they want, but in the real world decision making is also

profit margin from agriculture, so it is difficult to transfer land, hindering the development of large-scale mechanized agriculture (Sumiya Mikio et al., 1995; Huang Shuren, 2002).

Figure 7. Number of peasant households in Taiwan, 1952–2014.



Source: Statistics come from the Council of Agriculture, Executive Yuan (n.d.), Agricultural Production Statistics, Peasant Household Statistics, Council of Agriculture, Executive Yuan: http://agrstat.coa.gov.tw/sdweb/public/indicator/Indicator.aspx.

guided by complicated non-economic concerns. One can never understand why the peasant economy has persisted to this day without understanding these vital non-economic factors.

In spite of the small profits, peasant households still ensure that there is sufficient family labor to take care of the land.[14] In many circumstances, if the elders become incapacitated, the sons, who have long worked in the cities, usually will be called back to take over. Typically, a peasant household has one to three hectares of arable land. According to my interviewees, a couple are able to deal with this amount of land without having to work it full-time. This also explains why for half a century the number of peasant households has remained more or less the same (see Figure 7). The number of peasant households with land did not shrink even though the rural crisis forced many to move away.[15]

Furthermore, public opinion on land management abilities has also pressured peasants to take care of the land.[16] People shared the notion that once a son inherited a piece of land, he, as the new householder, had an opportunity to show

[14] Tax on uncultivated land might have an influence as well. Uncultivated land can be subject to a surtax (See Article 26-1 of the Equalization of Land Rights Act). However, according to the peasants I spoke with, this provision is seldom implemented.

[15] Another reason the number of peasant households remained stable was the attraction of peasant insurance 农民保险, which requires peasants to pay an insurance premium of NTD1000 annually. The insurance covers births, illness, injuries, and funerals, and includes a peasant pension 老农年金, which provides land-owning peasants over 65 with a monthly stipend of from NTD3500 to NTD7000, the exact amount based on how long the individual has paid into the insurance plan. But without a basic income from land and moral and cultural support, these policies are not enough to convince peasants to maintain their peasant identity.

[16] Leasing is not popular in Taiwan. In 1953 the Nationalists implemented a land to the tiller 耕者有其田 act, forcing landlords to sell their land to tenants at a low price. The government paid for tenants first, and later the tenants reimbursed the government—with payments in tangible forms, rice in most cases. This is why even today most landowners are unwilling to rent to strangers. Therefore, if no one in the household can work, the land is usually distributed to relatives or close friends. It is noteworthy that since the year 2000 land leases have become popular again due to population aging in the countryside.

his ability by turning the land into a flourishing farm. "People have only a little control over land productivity," Fei Xiaotong noted. "But it is this little control that provides a measure of their skills. Fame, ambition, enthusiasm, social acclaim, are thus linked together. . . . Villagers evaluate an individual according to how diligently he works. . . . This incentive is even mightier than the fear of starvation" (Fei Xiaotong, 2012: 162). That is to say, peasants can obtain sufficient income and possibly become wealthy, as well as earn the respect of their family and neighbors, by managing the land well. If they do not, they may trigger gossip. Income from the land thus has become a simple yet precise yardstick for determining the most capable and the laziest. Thus the world of morality and the commodity economy are linked together.

Land management is not simply a responsibility but also an honor. Even after the rural crisis beginning in the mid-1960s, peasants in Dongshi still considered land management meaningful. In everyday life, peasants talk about the difficulties encountered in cultivation and exchange skills, and skilled peasants usually gain the respect of others. Although many peasants in Dongshi have sidelines, they still retain their identity as peasants.[17] In fact, they work as hard as full-time peasants. That peasants have sidelines has usually been taken as evidence that the countryside is in decline, but it turns out that this overlooks a crucial fact: peasants with sidelines are actually productive and innovative; they, along with full-time peasants, created the rapid growth in Dongshi's fruit economy since the 1960s.

Finally, the obligation to support the family has motivated Dongshi's peasants to increase family income by using every little piece of land thoroughly. If a family's annual income fails to meet its basic needs, the family may break apart; young people may have to move out to work; debts may accumulate; and inherited land may be sold. Indeed, people today can earn more if they work in industry, but in poor villages one may still find it hard to meet the family's basic needs even by having multiple jobs. Long under the pressure of poverty, all the peasants in Dongshi, both those with and those without sidelines, have tried their best to increase income from the land. Only in this context can we understand why Dongshi's peasants en masse changed to different types of crops—forced by poverty, they had to find a way to increase family income if they were to remain on the land. Apart from sidelines, changing to the cultivation of fruit was a feasible solution.

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[17] There are two kinds of part-time peasants. The first are those who have no stable job except in agriculture. An interviewee claimed, "I've done everything". Peasants often take advantage of the off season to do part-time jobs or some hard work to increase their income. They would have to spend more time doing part-time jobs if their income from farming falls. Doing part-time jobs isn't pleasant but the income is more than what one could get by growing rice. The second kind consists of those who have a stable job. For example, one interviewee runs a business that installs window and doors. He works everywhere. But if you talk about pears with him, he would appear to be a genuine peasant. In Dongshi, the difference between full-time peasants and part-time peasants lies in the size of the land, which includes both land that is owned and land that is leased. People need at least three to five hectares of fruit orchards to have a moderately comfortable income. The reason is simple: if the income from the farm is insufficient, people would have to take part-time jobs to make a living, and almost every peasant attempts to find some side jobs.

Compared with capitalist agriculture, the peasant economy entails familial responsibilities that have exerted a vital influence on peasants' life choices: the land peasants own is fixed and cannot be sold; owing to cultural strictures, peasants are willing to continue farming despite the low income; peasants are not required to pay family members but they cannot be fired either; and even if peasants lose money, they cannot declare bankruptcy, for what follows may be the collapse of the family. On the other hand, the logic of capitalism is to maximize profits. Land is merely a means of production and can be sold at any time for a reasonable profit. Besides, an enterprise is not required to stick to agriculture. For the Dongshi peasants, however, inherited land is a symbol of dignity and respect and it must be kept, whatever it takes. Consequently, as the rural crisis unfolded, Dongshi's peasants were pinned to the ground by the responsibility to hold onto inherited land, to work that land, and to support the family. They had no alternative but to struggle against the long-term impoverishment in the countryside.

It should be emphasized that in the first place the peasants did not know the potential of fruit cultivation—they simply wanted to increase the family income. Government officials' attitudes, too, were very conservative. Their ideal model entailed peasants cultivating fruits for which there might be a large foreign market with the close assistance of the government (like the way the Fruit Marketing Cooperative assisted in banana cultivation). Against this background, it is clear that the diversity in Dongshi's fruit economy since the late 1960s was not the result of a carefully drawn plan; rather, it was an unexpected consequence. Shifting to fruits with a higher market value was simply a way of increasing one's income. The success that followed, however, was beyond anyone's imagination. No one could foresee that Dongshi would be transformed into an important cash-crop-producing area within a decade when there was a large urban-rural income disparity, widespread deagriculturalization, and a high rate of part-time farming. What propelled the rise of Dongshi's fruit economy was neither the state nor capitalist enterprises, but numerous, ordinary peasants who responded with startling flexibility and tenacity.

I call this process "making a living through commercialization" 谋生型商品化:[18] peasants, bound to the land by a sense of familial responsibility and reacting to long-term poverty, increased their income by commercializing their output. The transformation was poverty-driven and unrelated to enterprization—in other words, the peasant household logic is still the core of Dongshi's fruit economy. Even if the fruit economy is deeply embedded in a commodity economy, "making a living" is still the backbone of the peasant economy because the top priority for the peasant household is always to avoid the ruin of the family.

From the peasant's perspective, commercialization equals "trying everything possible to make a living," or as Fei Xiaotong put it, "either to die, or to find a way

[18] The inspiration for this idea comes from Philip Huang's notion of "involution" (Huang Zongzhi, 1994), but the meaning has been adjusted here because it does not apply to the changes in Dongshi as the pressure of the rural population had been relieved by the industrialization after the 1960s.

out." Unlike subsistence, "making a living" does not necessarily have to meet the standard of what some sociologists imagine to be self-sufficiency. Yet, as a concept it is capable of conveying the real conditions of the peasant economy, which are different from the concerns of capitalist enterprises. In the face of long-term impoverishment, Dongshi's peasants successfully avoided proletarianization and passed through the rural crisis by increasing the family's income via shifting to fruit. This means that a higher degree of commercialization has in fact buttressed the peasant economy; the commercialization did not transform that economy, nor did it destroy it. In short, what happened in Dongshi is a case of "commercialization without enterprization."

We can better understand the characteristics of Taiwan's peasant economy by comparing the theories of Alexander Chayanov (1996) and Theodore Schultz (2006). Chayanov argued that a peasant household has two faces simultaneously: it is both a producer and a consumer. It must increase its total income to meet the basic consumption needs of the family, which means that the producer might need to strengthen the degree of self-exploitation, until the maximum tolerable. Schultz regards peasants as rational, self-interested economic actors. As long as they have convenient access to inexpensive, modern factors of production, they, galvanized by the market, will naturally transform traditional agriculture and create profits.

However, neither of these theories fully applies to Taiwan's peasant economy. Unlike the "subsistence peasant" in Chayanov's theory, peasants in Dongshi, who are deeply imbedded in a commodity economy, were able to enhance their cultivation technology and change to other fruits frequently. On the other hand, Schultz's notion of "rational peasants" does not take into account the culture-related emotions unique to the peasant economy nor the distinct logic of the household economy. The concept of "making a living through commercialization," however, can account for the two faces of Taiwan's peasant economy: peasants increase their income to satisfy the family's consumption needs by taking a more commercialized approach. In other words, in addition to increasing the intensity of labor and self-exploitation, peasants may also change to other crops or innovate new cultivation techniques to respond to higher market prices. The concept of making a living through commercialization does not exclude the possibility that, after satisfying the family's fundamental consumption needs, some peasants will still want to pursue a higher income. Furthermore, we also need to position peasants' numerous economic choices in the complicated context of the rural moral world (for instance, the pressure of familial responsibilities) if we want to better understand the peasant economy in Taiwan.

Innovation in Fruit Cultivation Technology

Peasants have been traditionally stereotyped as helpless, passive, and lacking sophisticated technology. This stereotype, however, does not apply to Dongshi's peasants since they not only possess excellent cultivation skills but also the ability

to make technological innovations. Under the pressure of making a living, peasants wandering through orchards all day are continuously adjusting cultivation techniques in order to increase the quality of the fruit and hence its market value. Cultivation techniques, accordingly, determine both the income of the peasant household and the prestige and reputation of the peasant cultivator. When it comes to cultivation techniques, every peasant talks endlessly.

The ability to change from raising one fruit to another and the innovation of fruit cultivation techniques were important prerequisites for the rapid growth of Dongshi's fruit economy. In this section, we further explore peasants' biographies in order to uncover the relationship between technology and society. We will find that the relevant government authorities responded only belatedly and thus played only a minor role in the Dongshi economy. The development of the Dongshi fruit economy was mostly the result of the action of preexisting rural social networks.

Three Star Products

Not until the peasants changed to fruits did they realize that Dongshi's climate is special. Dongshi is suitable for growing a wide variety of fruits, yet the prices for its fruit are higher than those from other regions. If a particular fruit is cultivated in several different regions, there is a chance of overproduction, leading to a plunge in prices. But peasants cannot rely on cultivating any particular fruit simply because it is easy to grow—such fruits are usually cheap. Peasants, as a consequence, shift from one fruit to another to still another and so on, in response to demand.

It should be noted that there is a hierarchy among the fruits produced in Taiwan. At the top are the so-called star products, whose most obvious distinctive feature is that their unit price is much higher than that of other fruits. If the taste of the fruit is favored by consumers, the fruit can even be branded, making the peasant rich. During the 1970s and the 1980s, Dongshi's peasants successfully cultivated many fruits, one after another, that had never before been seen in Taiwan. This success was because the fruit growers possessed excellent and innovative cultivation techniques. These previously unseen fruits have helped peasants to rise out of poverty. We can get a better feeling for Taiwan's peasant economy by tracking the birth of Dongshi's star products: annual grafting pears, sweet persimmons, and murcotts.

Annual Grafting Pears: The Research Team of the Retired Teacher Zhang Rongsheng

The annual grafting pear 寄接梨 has been cultivated through trial and error solely by Dongshi's peasants.[19] The birth of this fruit can be attributed to the constant

[19] In Dongshi, it is called the high-grafted pear 高接梨, a name coined by the introducer, Zhang Rongsheng. "Annual grafting" 寄接 technically is not a horticultural term. The difference between "high-grafted" and "annual grafting" is that in the former the graft becomes part of the rootstock and is able to produce nutrition—because it contains leaves—while the latter cannot produce nutrition

effort of a few peasants, one of whom has occupied center stage, Zhang Rongsheng 张榕生, a retired elementary school teacher.

In the 1960s, when many peasants shifted to subtropical pears 横山梨, which were more profitable than rice, Zhang retired from teaching and went back to the family farm to manage the pear cultivation and attend to his sick father. Yet, good times did not last long. In the 1970s, temperate pears were successfully cultivated at appropriately named Lishan 梨山 (Pear Mountain), which is situated at a high altitude. Before long, the crunchy and sweet taste of temperate pears led to a decline in the demand for subtropical pears. The peasants I interviewed said that subtropical pears sold for only NTD20 per catty (1 catty = 0.6 kg) whereas temperate pears could go for over NTD100. Peasants growing subtropical pears at low altitudes were in a quandary since temperate pears did not thrive at low altitudes.

Zhang Rongsheng thought that if temperate pear buds were grafted onto the branches of subtropical pear trees, the issue of geography could be overcome. Hence, he gathered a dozen friends and met with them regularly to discuss and experiment with the grafting techniques, forced flowering, pollination, fruit thinning, fruit bagging, fertilization, and pesticide use. They also kept detailed records of the growth of the fruit and flew to Japan to purchase different flower buds for experiments. However, their endeavor was not encouraged by the institutional environment.[20] Government agricultural experts also denied that forced flowering had any commercial value. Moreover, during this experimental phase they all ran a deficit due to the unstable quantity and quality of the fruit. The only thing in sight was more difficulty, not to mention the fact that they were merely a group of peasants, fertilizer dealers, teachers, blacksmiths, and so on, who received no pay for their efforts and little outside guidance.

Despite all the difficulties, Zhang, along with the others, managed to succeed. They successfully cultivated annual grafting pears in the mid-1970s and generously shared the key techniques with other peasants. Many peasants changed to annual grafting pears because of their high market value and they became wealthy. After 1985 almost all subtropical pear orchards were replaced by annual grafting pear orchards. Subtropical pears had simply lost their market. Peasants cultivating other fruits also gradually changed to annual grafting pears (see Figure 8). From then on, annual grafting pears became a "star product," symbolizing Dongshi's success.

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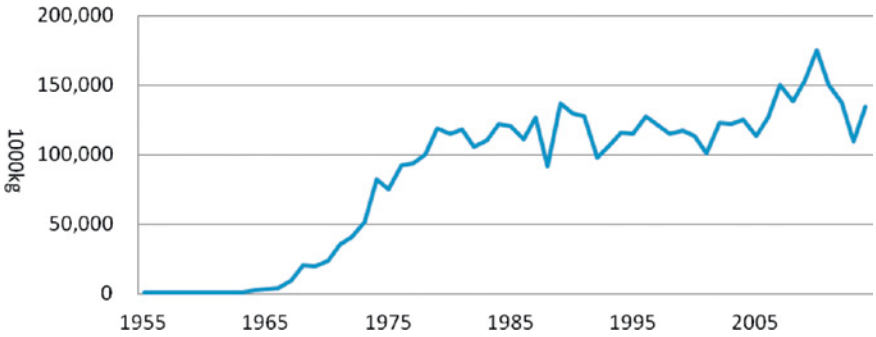
since it has no leaves. It can produce only fruit, which is like a surrogate, so it must be re-grafted each year.

[20] Since, according to martial law, it was prohibited to hold a gathering of more than three without permission from the local police, this complicated collective experimentation. They were also stopped at customs and questioned when importing buds from Japan, which originally were imported as "flower materials," but were subsequently banned and destroyed.

Figure 8. Pear output in Taiwan, 1955–2014.



Source: Same as Figure 1.

Note: The output of annual grafting pear is unavailable; thus what is presented here is the output of the general category "pear." But since the traditional subtropical pear was replaced by the annual grafting pear in the 1980s, the output of "pears" in the figure is basically that of the annual grafting pear.

Since annual re-grafting is required, growing the annual grafting pear takes much more labor than growing most other fruits.[21] Yet, peasants were drawn to the annual grafting pear since they could earn three to five times as much they did raising subtropical pears. As long as the prices were high enough to ensure that the family's annual income was sufficient to meet its basic consumption needs, peasants were still willing to continue cultivating it even when the real profits decreased considerably (or even became negative) after calculating their own wages. In the peasant economy, peasants do not subtract their wages from "profit"; the economic logic of working without pay is another feature that is different from capitalist enterprises.

The annual grafting pear came into its prime in the 1990s. Its very high price created a craze among peasant growers. "Old houses were restored and turned into Western-style mansions. . . . Peasants were driving imported cars. From 1978 to

[21] A good subtropical pear should come from a rootstock. A tent needs to be put up to cover the branches 压枝 to protect the tree from being damaged by the wind and to enhance the effectiveness of grafting. Extra care is required when trimming (correct angles and lengths are very important) so that nutrition can be distributed to the strongest branches and so that there is enough room for the temperate pear flower to be grafted on. The pear buds should be refrigerated since they need cold to enlarge the fruit. Before grafting, peasants need to trim off all the spikes and seal the undercut buds with a special wax to prevent the loss of water. Next, peasants need to graft the trimmed spikes onto pear trees and attach them with tape before the final bagging process. After the snow white pear flowers bloom (there would be no flowers if something goes wrong during grafting), peasants need to artificially pollinate each of the flowers (to make the fruits look better), and thin flowers and fruits (to concentrate the nutrition). When the tree fruits, the growers bag the fruits with kraft paper bags to avoid sunburn and bug bites. Fertilizers and pesticides need to be used cautiously because they can affect the taste of the fruit. These processes need to be repeated thousands of times at the right time of the year, or the harvest can be seriously affected.

1986, families that cultivated annual grafting pears definitely became high-income households" (Xie et al., 2000: 69). Zhang Rongsheng and other team members had cooperated for ten years before finally finding a way to cultivate the annual grafting pear. Their hard work gave rise to a new industry and increased the income of many peasants. Zhang, who passed away in 1992, is regarded as a legend by the locals.

After the year 2000, annual grafting pears were overproduced and prices declined at the same time that production costs were on the rise. In a word, the annual grafting pear was no longer a star product. Peasants, again, started to think about what product would be good substitute.

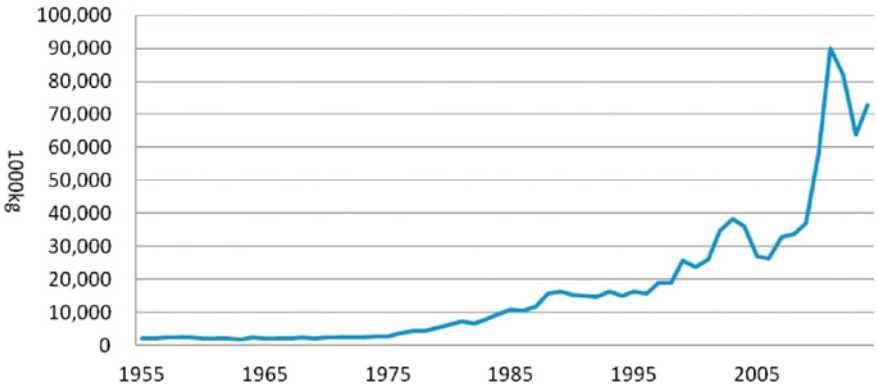
Sweet Persimmons: Huang Qinghai's Experiments and Promotional Work

The sweet persimmon 甜柿 was introduced to Taiwan from Japan by peasant associations, but it was not until years of experiments conducted by Huang Qinghai and other peasants that a way to raise the fruit was found. Because consumers were unfamiliar with the sweet persimmon, the price was very close to that of the astringent persimmon, with which people were well acquainted. After years of promotion, the sweet persimmon eventually became a respectable cash crop and even showed signs of replacing annual grafting pears in regions at mid-high altitudes.

Originally, Taiwan only had astringent persimmons. In 1974, the Peasant Association of Heping Township 和平鄉 introduced sweet persimmons from Japan only to find that the result of plant growth experiments was disappointing. The biggest problem then was the difference in the climate. Peasants at first could not find a way of successfully growing sweet persimmons. Some agronomists consulted Japanese documents and attempted to cultivate sweet persimmon by the book, but to no avail. Knowledge of the fruit was so scarce that it was not even known when it should be harvested.

Huang Qinghai was an ordinary peasant who initially cultivated subtropical pears. After the 1970s, when subtropical pears lost their market, he began searching for an alternative. One day, he obtained a few sweet persimmon seedlings by chance. He tried to grow the seedlings in a corner of his farm. As years passed, he discovered that "peeling in circles" 环状剥皮 could make trees set fruit and that frequent flower thinning could enlarge the fruits. Delighted, he expanded his sweet persimmon orchard little by little. After that, he tried to figure out the proper management methods and tackled the serious problem of sweet persimmon drop. He also found that harvesting the fruits when they were eighty percent ripe was the most appropriate timing. Step by step, he figured out how to cultivate sweet persimmons in Dongshi's climate. After ten years, Huang's sweet persimmon trees grew taller and taller, and his reputation spread. Every time peasants who thought sweet persimmons had a bright future came to visit, Huang would always generously pass on his cultivation techniques to them. The cultivation of the sweet persimmon thus started to expand around the mid-1980s (see Figure 9).

Figure 9. Persimmon output in Taiwan, 1955–2014.



Source: Same as Figure 1.

In 1987 Huang Qinghai established the first sweet persimmon cultivation-marketing class and claimed that the cultivation techniques required were about to exceed the threshold for commercial mass production,[22] yet, in fact, there were two major challenges ahead. The cultivation techniques were not yet perfected and the sweet persimmon was of limited popularity. To solve the few technical issues, the class consulted Japanese experts and improved techniques and management step by step. They also invited Japanese experts on sweet persimmons to give demonstrations, which drew crowds of peasants to observe and learn (Huang Qinghai, 2004). Supported by the local government, they went to Taipei several times to promote sweet persimmons and gained a toehold in the market. Because of their efforts, the sweet persimmon came to be considered a high-class fruit and it commanded a high purchase price, NTD200 per catty. Some peasants even quit growing annual grafting pears and switched to sweet persimmons.[23]

[22] Based on the Agriculture Production and Marketing Groups Assistance Approach 农业产销组织辅导办法, in order to "combine peasants whose farms border with others' or those who manage the same crops into agriculture production and marketing groups to expand the scale of production," the government has provided resources to help establish "production and marketing classes." These can be established when two conditions are met: the farms in question are contiguous and they cultivate the same crops. The production and marketing groups across Taiwan differ, but in general, expanding the scale of production has failed in most cases due to peasants' deep-rooted custom of family farming. Joint distribution and transportation, on the other hand, have been relatively successful.

[23] Because Taiwan's consumers were not acquainted with sweet persimmons, the price was less than NTD20 per catty, only NTD2 higher than astringent persimmons (Huang Qinghai, 2004: 281). To make a breakthrough, the production-marketing class led by Huang Qinghai went to Taipei and other urban areas with the help of the local government to promote the fruit. They held a display and sale event and made it a rule for agents in the class to go to supermarkets to give away samples. They also drank while selling to counter the public's notion that persimmons do not go with alcohol and seafood and at the same time told people that the fruit could be eaten without being peeled.

It took nearly 20 years for the sweet persimmon, which initially was not acclimatized, to become one of the most important cash crops in Dongshi. Only those who were unwilling to or could not leave the land, like Huang Qinghai, were able to invest more than ten years and to persevere in figuring out how to raise the sweet persimmon in Taiwan. Their advantage was their intimate knowledge of the land and their desperate desire to improve family living conditions. Their success owed virtually nothing to scholars or profit-seeking enterprises.

After the year 2000, the cultivation of the sweet persimmon became so widespread that overproduction reared its head. An epidemic of new diseases and pest insects also played havoc with production. Aside from introducing new types of sweet persimmons and improving cultivation techniques, peasants could do nothing to rectify these problems.

Murcotts: Returned Peasant Xu Bobang's Big Gamble

The murcott 茂谷柑, a hybrid created by American researchers, did not do well in a plant growth experiment in Taiwan, so researchers there did not promote it. Years later, a returned peasant, Xu Bobang 许博邦, volunteered to cultivate the murcott on a large scale. The result was promising and the murcott found a market. This stirred up a wave of enthusiasm among growers across Dongshi, who shifted to cultivating the murcott. The murcott thus was transformed into a new "star product."

Xu, like most other rural youngsters, moved to Taipei to work after he graduated from high school. As discussed earlier, he eventually got a job in a bank. In 1979, his father suddenly became seriously ill, and Xu, after talking with his four brothers, decided to return home and take care of his father and the land. He figured that to have a comfortable life, he would have to net NTD600,000 from the farm. Since the cost of running the farm was NTD400,000 annually, his gross income would have to be at least NTD1,000,000. It was impossible to reach that goal if he continued running the farm as his father had done. He also assessed the market prospects and concluded that the domestic market was small and that mainstream fruits were subject to overproduction. He realized that unless he could explore new types of fruits, it would be hard for him to survive in the merciless market. Tangerines, which are easy to cultivate, might have been a good choice since they were popular. Xu tried a dozen new types, but none met the requirements of commercialized cultivation.

Xu learned by chance via a friend working in a distribution company that Professor Lin Pu 林朴 in the Department of Horticulture, National Taiwan University, had a type of rare hybrid, called the murcott, which was created through the speciation of the clementine 宽皮橙 and the sweet orange 甜橙. It was introduced to Taiwan in the 1970s, but at that time there were no successful examples of large-scale cultivation in Asia (Tainan Agricultural Research and Extension

Once consumers were convinced that this new type of persimmon was different from the traditional astringent persimmon, the price rose to NTD150 to NTD200 a catty, and the best of the fruit could even command up to NTD300 a catty.

Station, 2009). The murcott is sensitive to cold and requires a certain temperature differential between day and night for the fruit to mature. Xu thought Dongshi's environment was very suitable for its growth and he wanted to introduce it into Dongshi. Even though Lin Pu was not optimistic, he was moved by Xu's enthusiasm, and thus assisted in Xu's experiments.

In 1983 Xu took a gamble: "He bought two hundred murcott seedlings and divided them up among five plots of his land."[24] He experimented, hoping to find the most suitable method of cultivation. It turned out that the experiment was very successful and Taiwan now had one more type of tangerine. Lin Pu named the fruit the *maogugan*, a homonym of "murcott," literally meaning "flourishing throughout the valley."

The challenge that remained was whether a market could be found for this new fruit. Early in 1985 Xu Bobang took six boxes of murcotts to a fruit market. When the price for ordinary citrus was only NTD10 a catty, Xu asked for NTD60. Traders were standing around, only watching, except for one from Taipei, who bought the murcotts for NTD45 a catty. The next day, Xu received a phone call from the trader in Taipei saying the murcotts turned out to be popular and he would be sending someone to Dongshi to buy all that Xu could provide at NTD50 a catty. Murcotts became a sensation as the price continued to skyrocket, along with Xu's reputation. "The price rose to around 60 in the second year," Xu proudly says, "90 in the third, and 120 in the fourth. The whole village went crazy!" That his murcotts rose as high as NTD200 a catty in the unpredictable Taipei fruit auction market became a legend.

In response to the high price, the murcott spread to Zhuolan 卓兰, Houli 后里, Shigang 石冈, and Fengyuan 丰原, areas neighboring Dongshi. Murcotts grown in Gukeng, Yunlin 云林古坑, also became popular and by the year 2000 almost as much the land in Yunlin was devoted to murcotts as in Taichung (see Figure 10). Xu, who knew Taiwan's market was very small, became worried about overproduction: "On average, star products last only eight years," he said. In order to minimize the risk, he reduced the land on which he grew murcotts to one hectare, and devoted the other two hectares to March peaches 三月桃, Satsuma mandarins 温州蜜柑, and pokans 椪柑, and also proceeded to explore new types of fruits. After 2000, the purchase price of murcotts indeed fell by half.

By the middle of the year 2000, the murcott had lost its status as a "new product." Prices plunged. Some peasants responded by cutting down the fruit trees. But in 2010, some Chinese traders purchased murcotts, and thereafter the price recovered somewhat. Thus it seems as if the murcott will have a market a little while longer.

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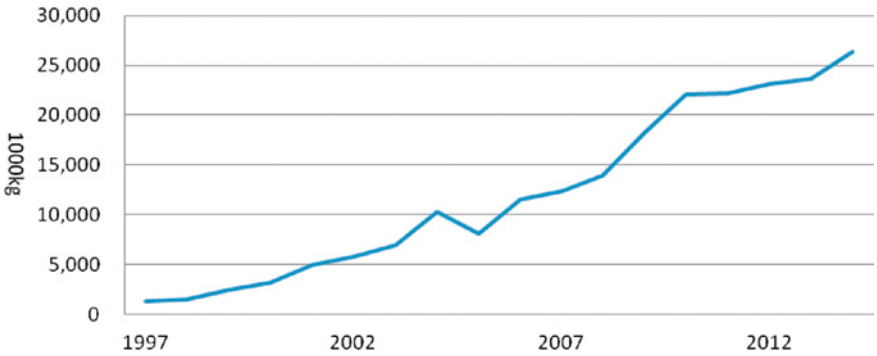
[24] The quotation is from "Shibikeng's Introducer Xu Bobang and His Murcotts" (石壁坑引入茂谷柑的起始人) in the *Old Peasant's Biography* 老农立传, published by Shi Zhaoxiang and other community workers. See the blog *Humans, Cultivation, and Food Community* 人・耕・食共同体, http://cultivator.pixnet.net/blog.

Figure 10. Murcott output in Taiwan, 1997–2014.



Source: Same as Figure 1.

Grassroots Social Networks

The technical breakthroughs in the creation of star products in the 1980s were closely connected with the inherent social conditions in the peasant economy.

After Dongshi's peasants changed to raising fruit, the Dongshi Peasant Association and the authorities concerned were no longer able to respond to the numerous and complicated requests for technical guidance. Fortunately, most of the time peasants could still surmount the obstacles they encountered, even though it was difficult. Because they were familiar with the principles of cultivation, as long as they picked up the key points, they could little by little figure out the growth habits of new crops and could even invent their own cultivation approaches.

A peasant once told me that a fruit farm is like a school: peasants may be smart or dumb, diligent or lazy, but as learners who spend years exploring, contemplating, and practicing, they usually can address most problems on their own and push land productivity to the limit—forced by the obligation to support the family, they have to do so. The question is, if they are not able to solve a specific problem, is there anyone who can help? In fact, although the family is the peasants' production unit, they are not isolated from one another. They live all together in an intricate grassroots social network 草根人情网络 of historical continuity, a complex interpersonal structure consisting of clans, families, neighbors, and friends. Most knowledge necessary for farming is learned via these networks. In Dongshi, peasants spend a great deal of time together discussing how to overcome technical issues regarding cultivation; very often, it is through these kinds of conversations that new agricultural techniques are rapidly spread.

This does not mean that Dongshi is a closed community in which members only help each other; the reality is far from that. Grassroots social networks are personal relationships that emphasize ethics and closeness. This is close to what Fei Xiaotong terms a "society of acquaintances" and a "differential mode of

association" (2012). One feature of social networks is that they do not encompass every single peasant. A person who keeps to himself or does not have many friends will find it hard to get sufficient assistance and help. Such people will also be slow in acquiring new information. "A differential mode of sharing techniques" may be one way to describe this situation. That is, people tend to share agricultural cultivation tips with relatives and friends. From this perspective, grassroots social networks are not as united as the moral economy described by Scott (2001). By the same token, Dongshi's peasants are not completely self-interested and rational in the sense that Popkin (1979) uses the terms. In any case, grassroots social networks propel the innovation and spread of agricultural techniques, which is an important social basis on which Dongshi's peasants have been able to change to different types of crops frequently.

Basically, Dongshi's peasants have three ways to address the technical problems encountered in cultivation. First, they can consult with relatives, friends, or neighbors. This is the most important and natural way to receive information. Peasants very often exchange their experiences in private or even boast about their accomplishments or compete with each other. Many agricultural techniques are spread on informal occasions such as tea breaks or dinnertime. Although inaccurate and unverified information may be passed on, unrealistic techniques are selected out naturally or modified in the exchange. Peasants do not really teach everything they know to everybody, yet it is difficult for peasants to turn down directly an acquaintance's request, not only because of the relationship, but also because it is agricultural techniques that determine their abilities and reputation. A moderate degree of sharing is necessary.

In addition, consulting with agricultural supply shops 农业资材行 (shops selling seedlings, fertilizer, pesticides, etc.) also plays an important role.[25] When peasants purchase materials, they ask about how they should be used. To attract customers, small shopkeepers will do whatever they can to analyze the climate, soil, fruit trees, and so on, to satisfy the special needs of each customer. Peasants then will determine whether they will continue to do business with the shop based on the results. If things go smoothly, peasants usually will establish a long-term relationship with shopkeepers and consult them about almost anything. Although Dongshi is a small town, it has a high concentration of agricultural supply shops—there are around fifty of them. Each of these shops represents layers and layers of elementary commercial exchange with the grassroots social networks.

Peasants can also seek assistance from the various agricultural authorities (peasant associations, agricultural research and extension stations, agricultural experiment centers, or departments of agriculture in universities). But the truth is

[25] The knowledge available at supply shops is comprehensive and systematic. In order to sell, shopkeepers have to master farm management. They gain important knowledge from upstream manufacturers, journals, radio programs, books, and even academic papers. Many researchers have noted the important role agricultural supply shops play in disseminating fruit cultivation techniques (Chen Xianming, 2002; Xie, 2002; Yang, 2014).

that only a few peasants will actively participate in classes, forums, or seminars. This is because peasants have little trust in unfamiliar activities and would rather rely on the grassroots social networks than spend extra time and money on alternatives. Furthermore, peasants cannot handle the terminology, and the addiction to scholarship in universities is not suited to practical agricultural management. Also, there is a shortage of agricultural researchers. For instance, there are only five fruit tree experts in the Taichung Agricultural Research and Extension Station. It is impossible for them to handle the complicated and diverse needs of Taichung's peasants. The agricultural research stations or experiment centers do play an indispensable role in introducing and innovating agricultural techniques, yet they are less successful when it comes to helping fruit farms, where experience matters more than scholarly research results. New agricultural techniques still have to go through grassroots social networks and get sorted out, adjusted, and translated, before they can have any real influence (Yang, 2014).

Here, "what constitutes real knowledge?" is not an abstract question. We ought to regard scholarly knowledge and the practical knowledge of peasants as two different forms of knowledge. Practical knowledge is similar to Geertz's "local knowledge" (Geertz, 2002). Although there is a wide gap between the rigorous research methods and terminology of scholarly knowledge and the peasant's structure of feeling, way of thinking, and mode of expression, this does not mean that practical knowledge is not useful. The peasant economy may appear traditional and outdated, but in fact it is very productive. Most of the time, peasants are more familiar with the principles of cultivation than experts and scholars and are able to make the best use of scarce resources.

Scholarly knowledge and local knowledge, however, are not opposites. As long as there is good translation from one to the other, they can reinforce each other. A small number of highly skilled peasants and agricultural supply shopkeepers play a vital role. They bridge the gap between scholarly knowledge and local knowledge and enhance communication. Some leaders in the grassroots social networks who have remarkable achievements are able to communicate with scholars and technocrats and at the same time master practical management. Standing in the center of the social networks, they are the leaders who are always involved in Taiwan's agricultural breakthroughs. In a nutshell, Dongshi's skilled peasants are capable of high productivity, innovation, and dissemination of cultivation techniques with the help of social networks when guidance from the state is lacking.

If there were no support from the grassroots social networks, Dongshi's fruit economy would be inelastic and inflexible. Peasants would not be able to solve a wide variety of complicated technical issues and consequently would not be able to change to different types of crops frequently in response to the market. Dongshi's peasants, in general, do not think the technical guidance provided by the peasant association and the authorities is of much help. Peasants themselves, as mentioned above, have the capacity to innovate; they are more or less continuously experimenting with their own cultivation approaches. In the words of Yang

Hongren (2014: 118), "Many techniques are discovered first by peasants even when they are not looking for anything." For peasants, the assistance from social networks is fast, reliable, and effective; the authorities concerned work at a snail's pace and do not understand peasants' real needs.

Familial responsibilities and social networks are the two major forces behind the rise of Dongshi's fruit economy—with the former pressuring peasants to increase their income and the latter providing the basis for innovation. To escape from poverty, some peasants who took up new types of fruit were willing to run the risk and to accept that they might lose money, something a capitalist enterprise could not possibly accept. Only by taking into consideration the family and the community can we understand why, after half a century of industrialization in Taiwan, not only has the output of fruit and its value increased, but the number of types and varieties have been on the rise as well.

The success of Dongshi's fruit economy is not a product of capitalism. Rather, it is the result of the peasant economy, based on existing social and cultural advantages, finding a solution to the rural crisis and a substitute for the rice-sugarcane system. While I do not want to exaggerate the Dongshi experience, it is clear that a lively grassroots community or cooperative organizations can help ensure that a peasant economy maintains vitality and elasticity in the face of the challenge posed by a commodity economy.

Conclusion

Viewing the peasant economy as involving no more than small-scale family farming as the mode of production is one-sided and misleading. The peasant economy is not purely economic. We should ask: What are the features of this peasant economy? What is its social and cultural significance? To get a clearer picture of the real circumstances of peasants' lives, one must look into the long-term history of interaction between economy, society, culture, and politics.

Shaped by its geographical circumstances and history, Taiwan's peasant economy is remarkably distinctive. It is both similar to and different from China's. In the light of social history, there were no great discontinuities in Taiwan's peasant economy, particularly since Taiwan experienced neither a drastic agrarian reform nor rural collectivization. Even though Taiwan's peasant economy did experience different regimes, it has lasted from the Qing dynasty until today. This is not to say that there have been no changes. Rather, Taiwan's peasant economy has continually been adjusting—gradually or rapidly—to the times. Whatever the changes may have been, some of the peasant economy's key features—good or bad—have remained relatively constant, such as deep-rooted familial values, peasants' intimate connection with the land, the centrality of family farming, the highly commercialized approach to cultivation, and so on.

The rural crisis and the collapse of the rice-sugarcane economic system in the 1960s did not lead to widespread peasant bankruptcy and proletarianization. On

the contrary, peasants survived by adopting a strategy of repeatedly switching to crops that had a high market value. In the mainstream narrative on rural Taiwan, the presumption that it is difficult for a peasant economy to survive in modern capitalist society has made it impossible for both modernization theory and dependency theory to fully account for the rise of the fruit economy. Those theories also fail to recognize that a peasant economy can be both productive and innovative.

This case study of Dongshi has shown that the force propelling the development of Taiwan's diverse fruit economy since the 1960s did not originate from rural enterprization, but from the pressure of long-term poverty. It was family farms—not capitalist enterprises—that made the rapid spread of commercialized products happen. Drawing on field research on the macro history of Taiwan's villages, the history of agriculture in Dongshi, and peasants' life biographies, this article reveals that although many non-agricultural jobs were available in the cities, many peasants were bound to the land by familial responsibilities; they had no alternative but to commercialize new products to increase family income, which, in aggregate, prevented rural proletarianization. I call this transition "making a living through commercialization": in this process, peasants continually changed to cash crops of higher market value, not because of some capitalist search for profits, but because of the pressure to support the family.

The rapid growth in the domestic market also provided an economic incentive for peasants. Although the industrial development in urban areas did not lead to rural enterprization, it transformed consumption habits in cites, which in turn presented a new market for peasant growers. Grassroots social networks, in addition, reduced the cost of innovating and disseminating fruit cultivation techniques.

Aside from the well-known features of the peasant economy—e.g., high labor intensity, self-exploitation, and high productivity—the history of agriculture in Dongshi over the past half-century has demonstrated that the peasant economy also enjoys a powerful capacity to innovate cultivation techniques. With the existing social and cultural factors in rural areas such as familial responsibilities and grassroots social networks, the peasant economy is likely to survive in a risky, low-profit environment and peasants are even likely to make a good income when enterprises find that difficult.

Acknowledgments

Special thanks for their assistance and advice to Chao-hsiang Shih 施朝祥, Lung-lin Liu 刘龙麟, Tzu-tu Wu 吴子钰, and those who are engaged in the agricultural movement. I also thank Professors Cheng-shu Kao 高承恕, Philip Huang 黄宗智, Kang Chao 赵刚, Tsung-sheng Wu 吴宗昇, Hsuan-yuan Chiu 邱炫元, and the anonymous referees for their valuable critiques. The English version has been jointly translated with my brother, Shou-en Yeh, and a professional editor Mr. Richard Gunde; I am very grateful to them. Of course, I am responsible for errors that may remain.

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