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**STUDIES OF LAND AND AGRICULTURAL
PROBLEMS IN TAIWAN:
AN ANNOTATED BIBLIOGRAPHY**

by

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STUDIES OF LAND AND AGRICULTURAL PROBLEMS IN TAIWAN: AN ANNOTATED BIBLIOGRAPHY

by

Tze-Wei Chen*

INTRODUCTION

In 1981, the China Research Institute of Land Economics in Taipei published *The Studies of Land and Agricultural Problems in Taiwan*. The series is written in Chinese and consists of eighty articles arranged into fifty volumes.

Articles in this series explore issues related to land and agriculture in Taiwan between the 1950s and 1970s. Since an English translation of the entire series is not available, this report is designed to highlight the content of the articles and provide as much information as possible for individuals who are not familiar with Chinese but want to become more fully acquainted with the literature on agriculture in Taiwan. Terminology used is as conventional as possible. For translation of terms only used in Taiwan, the *Dictionary of Land Economics*, published by the China Research Institute of Land Economics, is followed. For those terms only used in Taiwan but not included in the *Dictionary*, the most general expression is selected, and their specific meanings are explained in the text.

Some unexpected problems occurred during the translation process. The most serious one is the translation of authors' names. There are different rules to follow for spelling the names of Chinese in Taiwan, Mainland China, Hong Kong and Southeast Asia. It is common that individuals spell their names in a way they prefer. Christina Jen of Wason Collection, Olin Library at Cornell University, provided valuable assistance in translating names. However, any errors or misspellings are the sole responsibility of the author.

Another problem is that most articles have no published date. For these articles, possible published dates are estimated by examining data and references. Date of publication for any article is generally assumed to be one to three years after the latest reference.

Finally, some articles are copies of hand-written manuscripts. This occurrence is noted in the bibliography. Just as with any language, hand-written Chinese is sometimes not easy to read. For these articles, only readable portions could be annotated, and the bibliographies of some hand-written articles are much shorter than others.

* Graduate student, Department of Agricultural Economics, Cornell University. Nelson L. Bills and Carol Peters made helpful comments on an earlier draft of this report.

BACKGROUND

This bibliography was prepared with the belief that the more people know about each other, the better people's lives will be. The intent is to facilitate access to literature and empirical analyses which increase understanding of Taiwan.

The land area discussed in this series includes a group of islands off the southeast coast of mainland China, the center of which is crossed by the Tropic of Cancer. The largest island is also called Taiwan and accounts for more than 98 percent of the islands' collective land area and population. The largest city is Taipei, located at the north end of the island. According to the 1989 Yearbook of the Republic of China, Taiwan has one of the highest population densities in the world. Presently, its population is over 20 million and is settled on only 36,000 square kilometers, or 13,899 square miles, of land. For perspective, this land area is about one-quarter the size of the State of Michigan. About 30 percent of the island has a level topography and is suited to a variety of land uses; the rest is mountainous. Most of the flat land is on the west coast, which contains most of the population as well as the main agricultural and industrial activities. Agricultural and industrial areas are geographically jointed along the west coast. A large portion of agricultural activities are located at the southern half, while industrial zones are found along the coast line, except for several coastal areas.

Agricultural activities are different between south and north because of different climatic conditions. Among them, rice and sugar have been the two most important crops for several decades, but the situation is changing to a more diversified cropping pattern. The average farm size per household is about one hectare (*The Republic of China Yearbook, 1989*); however, despite small farm units, mechanized farming is commonly observed in Taiwan. In fact, significant economic growth and development has occurred over the past forty years. The average annual GNP growth rate between 1952 and 1988 is 8.94 (*The Republic of China Yearbook, 1989*).

The collection of theses and published articles on various topics of land and agricultural development of Taiwan presented in this report deals with these socioeconomic features. The collection is arranged into the following groups:

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Volume 1. Two Articles:

(1) Ing, Jang-fu. *The Land-to-the-Tiller Policy in Taiwan. 1959.*

This is a review of laws relevant to agricultural land use and tenancy in Taiwan. The author examines chronologically the efficacies of each land reform policy and reports the transaction of farm land ownership between landlords and tenants. The author advocates the complete abolition of tenancy based upon the results of a survey which shows abolishing tenancy can increase farm productivity. He elaborates the implications of agricultural land use regulations and illustrates the important points with cases. This is a hand-written manuscript.

(2) Chen, Yu-feng. *On the Equalization of Land Rights in Cities and Towns between 1956 and 1977. 1980.*

This article evaluates the performance of land value tax policy in Taiwan. The goal of Taiwan's land value tax system is to redistribute equally among the society all benefits from increased land value because higher land value is believed to be a by-product of the development of the entire society. The Equalization of Land Right system was gradually carried out at 59 urban areas. The author begins with theoretical introduction and evaluates the system with cases. The evaluation is based on the following criteria: land value assessment, government purchase at declared value, taxes based on reported value, nationalization of land value increment and land use. Problems are categorized into three groups: legislative, implemental and noninstitutional. This article contains a large amount of statistical data.

Volume 2. Two Articles:

(1) Liu, Kan-yun. *A Survey of Land Ownership in Kao-hsuing County. No Date.*

This is the first survey of land ownership in Kao-hsuing County completed in the early 1970s. This report not only provides survey results showing patterns of land

ownership but also demographic data and land use. This is a hand-written manuscript written in the early 1970s.

- (2) **Chen, Kuo-tung.** *A Study of Farm Tenancy and Its Change in Hsin-chu County.* No Date.

This is a policy analysis. The timeframe of this article is between 1948 and 1970. The author examines the results of three major land reform policies: the 37.5 percent rent limitation, the privatization of public land and the land-to-the-tiller reform. After a survey of 273 ownership transfer records from three towns and villages of 1968 and 1970, interviews with 12 buyers and 12 sellers are conducted for supplementary information. The author concludes that the three major types of ownership change are purchase, inheritance and gift.

Volume 3.

- Tu, I-kuang.** *A Comparative Study of Land Expropriation.* 1972.

This thesis is divided into six chapters with a total of 170,000 words. The first two chapters cover the presentation of theories and procedures of expropriations. Chapter three focuses on domestic laws and regulations. Chapters four and five concentrate on the laws and regulations employed in other countries. The last chapter presents conclusions and suggestions.

Volume 4.

- Chao, Ta-wen.** *Land Expropriation and the Principles of Compensation.* No Date.

This article explores the importance and applicability of land expropriation and compensation from a theoretical viewpoint. Relevant laws and regulations are given their theoretical explanations. Case studies are made to reinforce suggestions the author makes. The author proposes that steps must be taken to avoid unnecessary land expropriation and to protect property rights. This article was written in the early 1970s.

Volume 5.

- Huang, Chih-wei.** *Public Facility Reserves in City Planning.* No Date.

"Public facility reserves" in this article refers to lands designated for public facilities such as parks and schools, etc. The author expresses that his concerns are the shortage of public facility reserves in city planning. After a description of the current situation, the author looks at relative regulations and cases of the United

States, U.K., France and Italy to search for possible solutions. Domestic policies, such as land expropriation and urban land consolidation, are discussed to lead to the suggestion that the private sector should be allowed to participate in the policy-making process. The author concludes that the shortage of public facility reserves is the result of inappropriate regulations and the lack of government funding. This article was written in early 1970s.

Volume 6.

Chin, Hsiang-chuan. *A Study of Dispute Cases after the 37.5 Percent Rent Limitation in Tai-chung County.* No Date.

Starting with a chronological discussion of land development in Taiwan since the 6th century, the author illustrates the historical points of view on the tenancy system. Reasons for 517 dispute cases and their resolutions between 1949 and 1951 after the 37.5 percent rent limitation of 1949 in Tai-chung County are analyzed in detail. Most disputes are cleared in an average of 45 days. Improvements of regulations and mediation organizations are suggested at the end. This is a hand-written manuscript completed in the late 1960s.

Volume 7. Two Articles:

(1) **Wang, Hsing-chuan.** *Land Value and Tax Issues in Tao-yuan County.* No Date.

The author categorizes the land of Tao-yuan County by location and use. Urban land use and its value were studied. A principle conclusion was found that there is a tendency to underestimate land value for tax purposes. Agricultural land, mainly rice paddies, is examined to decide its real value. It is found that the average market price increase of agricultural land was about 20 percent over the period between 1953 and 1955. This article is hand-written. It was completed in the late 1950s.

(2) **Chiang, Tao.** *A Study of the Land Value Changes in Tai-chung City, 1949 - 1959.* No Date.

This article compares the price changes of different land use areas and analyzes the changes of each land use area for a ten-year period. The author concludes that there are four reasons for price changes. They are political, economic, psychological and speculative reasons. The average land price has nearly doubled over the period and is higher in commercial zones. The author concludes that the increase is the result of land speculation. Land value tax is recommended to solve the problem. This article is hand-written in the 1960s.

Volume 8. Two Articles:

- (1) **Hou, Chun.** *Factors of Land Price Changes in Taiwan Province, 1953-1955.* No Date.

Based on data for fifteen counties, six factors are analyzed in this article. (Taiwan province has sixteen counties.) Pearson's correlation coefficients are calculated for the relationship between land price and productivity, diseases, product price, interest rate, farm household income, and farm size. The author concludes that since it is impossible to have more land for agricultural purpose, agricultural population must be transferred into the industrial sector. This is a hand-written manuscript from the late 1950s.

- (2) **Chen, Tsung-chou.** *Regulatory Farm Land Price.* No Date.

This article advocates the necessity of regulating farm land prices to achieve equitable and efficient tax policies. The author compares land value tax with farm land tax (in-kind) to show the necessity of abolishing farm land tax. There is also a list of methods designed by the author to be employed in regulating land prices. Theoretical analysis is provided for most methods. Shortcomings of the existing system are criticized and solutions are developed. This article was written in the early 1970s.

Volume 9. Two Articles:

- (1) **Shih, Hsing-laing.** *Farm and Land Prices in Miao-li and Yun-lin County.* No Date.

This article explores the farm and land price difference in two counties and tries to explain the outcomes. Land price is found to be much higher in Miao-li County. The author interprets this as a result of three major forces: high population growth, the fast-growing industrial sector and land speculation. This is a hand-written manuscript from the late 1950s.

- (2) **Yang, Yin-hwa.** *Farm Land Price in Taipei County.* No Date.

This article looks at farm land price changes in Taipei County during the mid-1950s. Land prices rise very fast, especially because of the growing industrial sector. Another factor is the increasing demand of residential needs for the industrial work force because most of them are immigrants from other counties. Pearson's correlation coefficients are calculated between farm land price and population density, interest rate, and agricultural product prices. This is a hand-written manuscript from the late 1950s.

Volume 10. Two Articles:**(1) Lin, Chung-sheng. *Land Value in Taipei City*. 1968.**

The author begins with a review of land value under existing zoning rules. A prediction of zoning change is made according to the price changes. The author also forecasts a rapid expansion of the urban area. He observes speculation in many occasions and urges immediate government interference. An ordinary least-square regression is employed to estimate the land price for the following ten years. The regression results suggest a 500 percent price increase in ten years. (Most of the author's forecasts turned out to be very close to reality.)

(2) Wu, Tsun. *Current Declared Land Value in Taipei City*. No Date.

This article focuses on identifying the gap between the land value assessed by the government and market price. The author uses 1974 as a case study to evaluate the current assessed values of the entire city and realizes that there is a significant difference between market value and assessed value. He concludes that the major reason is the inappropriate estimation method. Finally, he proposes a new system to replace the current one. This article was written in the mid-1970s.

Volume 11.**Wang, Shao-hsien. *Regulatory Urban Land Price in Taiwan Province*. No Date.**

This article was written during the mid-1960s. It is a report to evaluate the policy effect of regulatory urban land prices between 1956 and 1965. "Urban" in this article refers to 112 cities and towns included in the 1964 *Amendatory Guidelines of the Equalization of Urban Land Ownership*. One principle of the regulatory land price system in Taiwan is to prevent land speculation. Land prices reported by land owners are compared with the government assessed prices. If the owner's price is higher, additional tax will be levied. If the owner's price is lower than certain thresholds, the government will purchase that parcel of land at the owner's price. The author begins with a list of tasks that should be done (and some should have been done) before carrying out this regulation. He discusses possible policy designs for preventing land owners from over- or under-reporting land prices. The policy efficacy is analyzed by counties. Suggestions for improvement are made in the last two chapters. The results show that about 65 percent of all cases reported are 80 percent of the regulatory price. Thirty percent are above the regulatory price.

Volume 12. Two Articles:

- (1) **Cheng, Hung-nan.** *Land Value Tax and Increment Tax on Land Value.* No Date.

This article begins with a comparison of land value taxes before and after the implementation of *Equalization of Urban Land Ownership* in 1956. Land value tax came into effect first in 1949. Fluctuations are observed among the annual tax revenues between 1949 and 1967. According to the author, the changes of tax rates in 1958 and 1966 are the major reasons. The increment tax on land value is collected when the land ownership is transferred. Tax revenue is designated to be used for public facilities. The author explains the sharp decrease of tax revenue because of the tax reform in 1964. This article was written in the late 1960s.

- (2) **Liang, I-wen.** *Farm Tax in Taiwan.* No Date.

This paper was written in the late 1960s when farm tax was one of the few taxes collected in-kind. Government collected a certain amount of crops from every parcel of farm land as tax revenue. The author begins with a history of farm tax since the 17th century and points out that the farm tax system in Taiwan is actually a legacy from the Japanese-occupied period. He explains in detail the farm tax system, including the process to set tax rates and the procedure to collect them. The author argues that farm tax should be replaced by land value tax. (The farm tax was abolished in the 1970s.)

Volume 13.

- Chan, Kuang-I.** *A Proposal to Replace Farm Tax with Land Value Tax.* No Date.

This article advocates the abolition of farm tax based on reasons of inconvenience and inequity. The author also argues that the farm tax was an important tool in stabilizing the food supply in the early 1960s. However, the author claims it is no longer necessary because of the development of the economy. Tax revenues of farm tax and land value tax are compared under three tax rates of 0.7 percent, 1 percent and 1.5 percent. The author estimates the land value tax to have better performance regarding both equity and convenience. He also recommends a progressive land value tax to prevent land speculation in the future. This article was written in the early 1970s.

Volume 14.

- Lin, Chao-chia.** *The Taxation of Unused Space in Taipei City.* No Date.

This paper was written in the early 1970s. It covers the period between 1967 and 1971. "Unused space" in this article specifically refers to the unused parcels of

private land that violate the construction regulation of city development plans. The purpose of this tax is to preclude land speculation. In addition to land value tax, the city is entitled to levy a tax on the unused space at the amount of two to five times its land value tax. Based on his investigation of demographic changes and the land use situation, the author claims that the existing tax on open space cannot stop speculation, and he suggests a higher tax rate. The author evaluates the effect of the tax and lists the problems and shortcomings. Suggestions to improve existing policies are made in the last chapter.

Volume 15.

Lin, Tsu-yu. *Theory and Practice of Special Assessment*. No Date.

Special assessment refers to the charge government levies on the beneficiaries of the improvement of, or increase in, certain public facilities. This research is divided into eight chapters. The first four chapters are the theoretical analysis. The author surveys theories to build the groundwork of his arguments. Chapters five through eight illustrate the implementation of the policy. The author argues that the hardest part of the policy implementation is to identify the beneficiaries. Another problem is the distribution of the benefit. Several theories are applied and recommendations are made. The author confirms the merits of special assessment of being economically equitable and efficient. A few defects of existing regulations are identified and solutions are suggested. This article was written in the early 1970s.

Volume 16. Two Articles:

(1) Huang, Yung-chang. *A Study of Increment Tax on Land Value*. No Date.

Before writing this article in the late 1970s, the author was an employee at the bureau of land administration in Taipei County. This article explores the implementation of the tax policy in great detail. He first explains how to file the tax report then introduces the situations in which tax returns should be expected. He observes that the increment tax on land increases as cities grow. For example, tax revenue in Taipei County doubled between 1973 and 1975 because of the fast growth of urban areas. An interesting part of the article is that the author reports on several tax evasion cases (those not discovered by government) and provides solutions. At the end, the author advocates a progressive tax with high rates to prevent speculation and improve the equity of urban land use.

(2) Hung, Chung-yu. *The Taxation of Farm Households in Kao-hsuing County*. No Date.

This is a survey of taxation of more than 20,000 farm households. The results are broken down into towns and villages. The tax structures and their performance are

discussed and recommendations are made. This article was written in the 1950s, and the version in this collection is hand-written.

Volume 17. Two Articles:

- (1) **Chi, Wei.** *An Evaluation of the Function of the Land Bank of Taiwan.* No Date.

The Land Bank of Taiwan is government-owned and has a specific assignment to finance land and farm development projects. (As of 1991, it had the fifth largest assets among all enterprises in Taiwan.) This paper focuses on the shortcomings in three major functions of the bank and evaluates them. In financing farm land development, the author recommends the bank extend its services to other sectors of the economy in order that farm land can be converted into industrial areas as the economy grows. For farm credit service, the author argues that farmers are, in general, financially self-sufficient, but they need credits for long-term development projects. The bank is advised to improve its service in that matter. For financing housing projects, the author recommends adopting the two systems used in France and Sweden to meet the growing demand of housing. This article was written in the mid-1970s.

- (2) **Chen, Chin-chen.** *On Real Estate Mortgage.* 1974.

The author begins with the theories of real estate mortgage. He then uses the Bank of Taiwan, a large province-owned commercial bank, as a case study to examine the situation of the real estate mortgage market. The author concludes that most banks were too conservative in real estate mortgages between 1969 and 1973. As the economy of Taiwan grows rapidly, the author suggests that banks extend their real estate mortgage services. At the end, recommendations of appraisals are made for different cases.

Volume 18. Two Articles:

- (1) **Li, Yu-chih.** *Farm Credit Service in Taiwan.* No Date.

The author first shows that the demand for farm credit is growing over the years, especially from farmers with farm size less than 1 hectare. He secondly introduces the farm credit system in Taiwan and argues that farm credit institutes do not have the ability to meet the demand. In the third part, the author explains problems of the system and suggests lower interest rates. He also looks at the relationship between farm credit policies and agriculture development and urges incorporation of product marketing into the system. This article was written in the early 1970s.

(2) **Hu, Kuang-hsing. *Land Bond in Taiwan*. No Date.**

Land bonds were issued twice during the 1950s to finance land reforms; yet, they were both in small amounts. This article investigates the pros and cons of issuing new land bonds. The author first compares the difference among land bonds and other government bonds as well as stocks. He argues that land bonds are the least risky but least profitable. The author concludes that the biggest problem with land bonds is the low interest rate. If this can be improved, land bonds will be a good source of government revenue. This paper was written in the early 1970s.

Volume 19. Two Articles:

(1) **Yu, Chung-ching. *Farm Credit in Taiwan*. 1960.**

This article focuses on introducing farm credit institutes. It also analyzes the performance of different institutes between 1955 and 1959. The author argues that agricultural development is slower than other sectors because of the fast growth of the agricultural population. Since land is limited, he therefore proposes to improve productivity by investing more capital. The author concludes that there should be two farm credit systems to serve different groups of farmers. The Land Bank of Taiwan should focus on long-term financing. Local farmers' associations, on the other hand, should concentrate on short-term cases. This article in this collection is hand-written.

(2) **Wu, Fu-yung. *On Farm Insurance*. No Date.**

The author compares the difference between farm insurance in the United States and Japan to estimate the possibility of crop insurance in Taiwan. Tentative procedures and coverages are proposed. Livestock insurance in Taiwan started in 1963, and the results are evaluated. The importance of government support is emphasized. This article was written in the early 1970s.

Volume 20. Two Articles:

(1) **Lin, Ching-huang. *Farm Size and Optimal Labor*. No Date.**

The major conclusions of this article are: (1) average farm size is decreasing due to the increase of agricultural population; (2) extra agricultural labor is having difficulties moving to the industrial sector; (3) agricultural policy should prevent the decrease of farm size; (4) the economy is growing in a way that the extra work force must be moved into the industrial sector; (5) to maintain the productivity of the agricultural sector with less labor, the solution is to improve the production efficiency of existing farms; and (6) given limited crop land, the livestock industry is the best alternative for efficient labor use. This article was written in the early 1970s.

(2) **Hsio, Fu-tao. *Farm Size and Mechanization*. 1977.**

Farmers in Taiwan usually do not own all of the farming machines they need. Due to the small farm size, these machines are usually owned by local farmers' associations or agricultural schools. Association members usually operate different machines and help each other. Some machine owners work by contracts and others organize production groups among farmers. This article presents case studies of three production groups and one agricultural school. The author confirms the efficiency of the organizations and contractors. He also investigates farmers' willingness to enlarge farm sizes. The survey of three villages shows that 52 percent are willing to enlarge farm size while 34 percent are not. The main reason for not being willing to increase farm size is the low revenue of farming compared to working part-time in local factories. The average farm size of the survey is about 1.05 hectares. The average optimal farm size chosen by interviewees is 3 hectares. (As of 1988, more than 90 percent of farming activities are mechanized.)

Volume 21. Two Articles:

(1) **Chang, Le-chun. *Joint Farming in Taiwan*. No Date.**

Because of small farm size, agricultural production in Taiwan is hard to mechanize effectively. Therefore, organizing a group of small farms for joint production and joint promotion becomes a popular solution. This article looks at the performance of production groups and promotion groups of rice and sugar (the two most important crops of Taiwan) to evaluate the strategy. Joint production groups of pig farms and other minor crops are also discussed briefly. Rice joint production increased revenue per hectare by 25 percent, on average, between 1964 and 1969. Sugar production was raised by 27 percent, on average. 245 questionnaires were sent to investigate participants' evaluation of rice joint production. The author suggests more government subsidy for introducing new technology. This article was written in the mid-1970s.

(2) **Wu, Hsiao-huei. *The Problems of Deformed Farm Land*. No Date.**

There are four major problems of deformed farm land. First, deformed farm land means the average farm land per household is too small (0.913 hectare). Secondly, farmers tend to divide their land into pieces for different crops. Thirdly, parcels of land owned by the same farmer are often disjointed. Finally, transactions of ownership tend to make farm lands smaller. The author points out that the major reason is that farmers always divide their lands among heirs. She suggests the government regulate the minimum farm size and consolidate all smaller parcels. This article was written in the 1960s. The version in this collection is hand-written.

Volume 22. Two Articles:

- (1) **Lee, Po-hsing. *Farmers' Willingness to Enlarge Farm Size*. No Date.**

The author claims that inefficient farming can be improved by enlarging farm size. A survey was conducted to measure farmers' willingness to increase farm size (the samples are 812 households from different counties). The results show that 51 percent are willing to do so while 40 percent are not. Most objections come from farmers with small farm lands. The major reasons of objection are lack of labor and money. This article also tries to identify farmers' favorite ways to enlarge farm size. The top choice is to purchase. Eighty-six percent of them think that government should help them with financing. As for consolidation, 60 percent of them do not agree to let the government consolidate farms smaller than 0.3 hectare. Sixty-six percent would object if the upper limit of land to be consolidated is 0.49 hectare. Eighty-two percent of them want to stay in farming, while only 15 percent agree to move to other jobs. The author in the end suggests that the government improve the tenancy system to help small farmers. He also argues that this is no longer a problem of the agricultural sector alone but a problem of the entire economy. This article was written in the late 1970s.

- (2) **Chang, Wen-shiu. *On Enlarging Farm Size*. No Date.**

This article focuses on possible ways to enlarge farm size. Difficulties are first discussed and solutions are provided. The author advocates the following approaches: joint group farming, cooperative farms, custom farming and specialized areas. He recommends the optimal farm size to be three hectares per household. This article was written in late 1970s.

Volume 23. Two Articles:

- (1) **Lee, Wen-te. *Agricultural Development and Mechanization*. 1969.**

There are five chapters in this report. The first chapter is the introduction. The second chapter emphasizes the importance of farming mechanization. The third chapter raises the problems of mechanization between 1959 and 1969. Chapter four provides solutions. The last chapter is a short conclusion. The author argues that joint group farming is the best strategy to adopt mechanization.

- (2) **Chen, Ming-fu. *Farming Mechanization and Rural Development*. No Date.**

This article is a general analysis of these two topics. It provides a large amount of statistical data. However, not much analysis is done. The author argues that rural development is at a bottleneck situation and can be improved by farming mechanization because 64 percent of the total farm land is suitable for mechanization. He also urges the government to help rural areas in financing mechanization. This article was written in the early 1970s.

Volume 24.

Lin, Chu-shan. *Farmer's Associations in Agricultural Development.* No Date.

Farmers' associations in Taiwan are different from those in other countries. They are not only credit unions or extension stations. They are usually all-purpose organizations. Sometimes they are also politically active. This article looks at the development of farmers' associations and emphasizes their importance in agricultural development. The author first presents a brief history of farmers' associations. He then focuses on how the associations can cooperate with government policies. A chapter is devoted to organizational and policy shortcomings. Suggestions to improve the functions of farmers' associations are made in the last chapter. This article was written in the early 1970s.

Volume 25. Two Articles:

(1) **Huang, Sheng-chung.** *Income of Farm Households at Mu-Cha Village.* No Date.

Written in late 1950s, this is a hand-written version of a survey of Mu-cha village farm households. Items included in the survey are: population, labor force, land use, farming activities in 1955, revenue from major crops, revenue from livestock, revenue from other farming activities, nonfarming revenue, expenses of different crops, farm management expenses, living expenses and tax burdens. The author concludes that average farm size is too small and average revenue from agricultural activities is not enough for basic needs. Farmers usually obtain extra income from nonfarming activities. He suggests the government transfer part of the labor force into the industrial sector and consolidate farm lands.

(2) **Chen, Shan-sheng.** *On the Problem of Low Farm Household Income.* No Date.

This article analyzes the reason for low farm household income from a different point of view. Some reasons are: unstable agricultural product prices, high cost of fertilizers and pesticides, unreasonable distribution of access to water, population growth, small farm size and pollution. The author recommends the following to improve the situation: stabilization of prices, cooperative marketing, custom farming and government supports. This article was written in the 1970s.

Volume 26. Two Articles:

(1) **Chang, Hsin-ching.** *Economic Activities of Farm Households at Peng-hu County.* 1968.

Peng-hu County (Pescadores) is a group of 64 small islands at the middle of Taiwan Strait. Only 20 islands are occupied. By systematic sampling the author

surveyed 50 farm households on their revenues and expenses. The author concludes that average farm size is smaller than in Taiwan but ownerships are less concentrated. Population is growing, and the male/female ratio is smaller than 1. The average number of working days per household per year is 373.77 -- among these, 54.03 are spent in farming and 266.47 in fishing. The average revenue is lower than in Taiwan.

- (2) **Hsu, Ming-nung.** *Economic Activities of Farm Households at Shin-tien Reservoir Area.* 1967.

This area has become a suburban industrial area of Taipei city. Farming can now only be found in some remote countrysides. According to the article, farming activities in this area during the 1960s were very prosperous. Because it is close to the city, even average farm size is small, and vegetable and livestock production still create a large amount of income. Product marketing is well implemented, and nonagricultural income is high. The major sources of nonagricultural income come from part-time jobs in factories and the increase of land value.

Volume 27. Two Articles:

- (1) **Chao, Kang-sheng.** *Utilization of Marginal Land between Forest and Cropland.* 1964.

The government conducted a land classification in 1953. The total area classified as marginal land for forest and cropland was 1,497,885 hectares, about 41 percent of the entire island. Until 1964, 32.2 percent of marginal land had been cultivated; 50.8 percent was covered by forest. The author recognizes the potential of marginal land and recommends fully utilizing marginal land. This article in this series is hand-written.

- (2) **Chiu, Pien-chau.** *The Problem of Idled Farm Land.* No Date.

Idled farm land here especially refers to lands that could be used for agricultural activities, but for some reason, no agricultural activities are conducted. A survey in 1965 showed that the total unused land was about 43,219.51 hectares. Several reasons are listed as the cause of the problem: the high cost of agricultural production, the higher average age of farmers, the decreasing male labor force, urbanization and land speculation, farm tenancy, industrialization and environmental factors. The author suggests the following to improve the situation: improving farming revenue, land consolidation and custom farming. This article was written in the mid-1970s.

Volume 28. Two Articles:

- (1) **Cheng, Tien-chang.** *Utilization of Tideland.* No Date.

Taiwan has about 54,000 hectares of tideland which is still increasing. The author reports in detail the development of major tideland areas and urges the government to establish large farms in these areas to improve efficiency. Three major problems are raised: technology, funding and policy. This article was written in the early 1970s.

- (2) **Wu, Chang-ming.** *Utilization of Slope Land.* No Date.

Total slope land of Taiwan is about 2,516,400 hectares. Among them, about 50 percent is classified as marginal land between forest and cropland. This article provides a brief historical review of the development of slope land since the Japanese-occupied period. According to the author, the most serious problem of slope land today is illegal farming. Around 120,000 hectares of slope land are illegally farmed. This results in serious soil erosion and deforestation. The author in the end calls for slope land conservation. This article was written in the early 1970s.

Volume 29. Two Articles:

- (1) **Chen, Li-hung.** *On Farm Land Use Conversion.* No Date.

Completed in the mid-1970s, this article presents a chronological record of farm land use conversion during the 1960s and early 1970s. The author argues that the reasons for decreasing farm land are: population growth, industrialization, inappropriate regulation and low return of farming. She suggests the adoption of policies such as establishment of specialized farming zones, utilization of tideland and slope land, land consolidation and reduction of tax burdens of farmers.

- (2) **Han, Chien.** *Land Classification and Efficient Farm Land Use.* 1966.

This article focuses on the study of soil types and farming activities in Chang-hua County. The author first investigates the soil types then provides suggestions on crop selection, farming landscape, irrigation and soil conservation. Actual farming activities are evaluated using the criteria mentioned above.

Volume 30. Two Articles:

- (1) **Chang, Fen-fen.** *Farming at Coastal Areas of Yun-lin County.* 1973.

Four villages along the coast line of Yun-lin County are among the lowest income areas of Taiwan. The author conducted a survey of the area on environmental factors and farming activities. She concludes that the environment is the major factor of poverty because this area is very windy and the soil is too salty. Other reasons, such as small farm size and lack of irrigation, are also identified. As for improvement, the author recommends building a new pier, preventing wind erosion, increasing irrigation and using fertilizers. Seafood culture such as oyster and clam production are also recommended.

- (2) **Peng, Chieh-shih.** *Rice Production and Rice Price after the Land Reform.* No Date.

Land reform in this article refers to three events: the 37.5 percent rent reduction in 1949, the privatization of public land between 1948 and 1953, and the land-to-the-tiller reform in 1953. This article confirms the effects of land reform. Rice production increased almost 80 percent after land reform. The author argues that this is because of higher incentives and larger farm size. Rice prices increased over the 1950s but were lower than the general price index. The author explains this is a result of policy control. This article in this series is hand-written and completed in the late 1950s.

Volume 31. Two Articles:

- (1) **Chen, Chiang.** *Economic Impact Assessment of Shin-fu Irrigation Project at Tao-yuan County.* 1968.

This is one part of the Shin-fu irrigation project. This project covers 780 hectares of farm land. Cost-benefit analysis is employed, and the benefit-cost ratio is calculated to be 1.47. One part of this report is a discussion of government loan and farmers' ability to repay. Tables are presented showing the repayment abilities under various interest rates and different percentages of government subsidies.

- (2) **Wu, Chang-ming.** *Human Resources and Economic Development: A Case of Ta-hu Village.* 1976.

This article investigates the importance of human resources in agricultural and community development using Ta-hu village as a case. Each chapter covers a different topic. As usual, chapter one is an introduction. Chapter two is for farm size and family labor. Decrease of the agricultural labor force is discussed in this chapter. Chapter three is about farm labor and mechanization. The fourth chapter is a discussion on the topic of community development. The last chapter is the conclusion.

Volume 32. Two Articles:

- (1) **Chi, Tsung-chieh.** *Planned Industrial Estate in Farming Areas.* No Date.

As the industrial sector grew over the 1970s, the agricultural sector stopped growing and was declining. One of the policies to maintain agricultural development was to set up factories in farming areas. Most of these factories are designed to process local agricultural products to create higher revenues for farmers. This article investigates four such factories. Among them, one factory specializes in bamboo products and the others are processing agricultural products from their surrounding areas. The author concludes that all four industrial zones are too small and three of them do not have the potential to grow because they are located in remote areas. In the end, the author suggests criteria for selecting industrial sites in the future. This article was written in the mid-1970s.

- (2) **Lin, Su-sheng.** *The Influence of Chu-san Industrial Site on the Change of Farm Management in Its Neighborhood.* 1978.

Chu-san industrial site was established in 1973 to absorb part of the outflow of the agricultural labor force and to hasten the development of the town of Chu-san. The main factory in this site produces products made of bamboo grown around the town. The author observes the negative effects on the agricultural sector. The factory attracted more labor than it was designed to take from the agricultural sector and thus worsened the labor shortage in that sector. Besides, the farm size decreased because lands were being assigned for industrial use. The author also observes the poor cooperation between bamboo farmers and the factories.

Volume 33.

- Liang, Fang-nan.** *Community Development in Rural Area.* No Date.

This article investigates the issue of community development throughout Taiwan except Taipei City. After a short introduction, the author illustrates the history of community development in Taiwan by explaining the situations in each county. The author then discusses, in detail, several important issues in community development including policies, funding, institutions and cooperation among government agents and organizations. This article was written in the early 1970s.

Volume 34.

- Hsu, Sung.** *Housing Problem in Taiwan.* No Date.

This article provides a general discussion of the housing problem in Taiwan. The author explores the following topics: current housing situation, housing supply, finance for housing, supply of land, demand and supply of construction materials,

prices of construction materials, housing regulations, government agents and the problem of illegal buildings. Recommendations are made in the last chapter. This article was written in the early 1970s.

Volume 35.

Huang, Yung-feng. *The Development of Public Housing*. No Date.

This article investigates the development of public housing in Taiwan, emphasizing theoretical approaches. The author looks at the situations and similar problems in other countries. He discusses in detail the problems of current housing policies. In the end, the author suggests the key issue of future development is government policy. This article was written in the early 1970s.

Volume 36. Two Articles:

(1) **Huang, Yung-tsun. *Land Use Classification in Taiwan*. No Date.**

This article is a summary of land use plans in Taiwan. The author first provides a preview of relevant regulations; then he describes the procedure of land classification. A large part of the article is an analysis of the current situation of land use. Ten problems concerning land classification are discussed in the last part of the article. This article was completed in the mid-1970s.

(2) **Chen, Chia-su. *Housing Problems and Housing Policies*. No Date.**

This is a comparative study of housing problems and policies. The first half of this article summarizes the situations in Japan, (West) Germany, the United States, U.K., New Zealand and other countries. The second half focuses on the situations in Taiwan. The author urges the government to realize the importance of population control as the government deals with housing problems. This article was written in the 1960s.

Volume 37.

Hung, Tsai-li. *Urban Land Consolidation in Taiwan*. 1978.

The author argues that urban land consolidation is an effective method in the urban development process, especially in obtaining lands for public facilities. This article first illustrates the history of urban land consolidation then raises problems in urban development. The author then summarizes recommendations and critiques on the topic. Before the conclusion, the author devotes one chapter to specific problems such as methods of appraisal and detailed plans of consolidation.

Volume 38. Two Articles:

- (1) **Wei, Hsien-chun.** *The Importance of Urban Renewal -- A Long Term Analysis of Human-Land Relationship.* No Date.

This article analyzes the problem of urban renewal from a demographic point of view. Using Taipei City as an example, the author shows that the situations in many cities in Taiwan must be renewed. After looking at cases from other countries, an urban renewal proposal is presented. This article was written in the late 1960s.

- (2) **Wu, Ching-ling.** *Detailed Plans of Urban Land Consolidation.* No Date.

This article is an evaluation of several detailed urban land consolidation plans. Two cases are employed to show that detailed plans are not well-designed because planners' ideas are often out of date. Relevant regulations are also discussed, especially on land value appraisal, institutional factors and ownership redistribution. This article was completed in the early 1970s.

Volume 39.

Chang, Tai-huang. *A Land Use Survey of Taipei City.* 1972.

This is a very detailed survey of the land use of Taipei City. The author claims that every building in the city is included in the survey. The author begins with explaining land use classification and survey method. A very detailed land use report is then presented.

Volume 40.

Huang, Cheng-I. *Community Development in Taipei City.* No Date.

By examining four newly developed communities and fifteen old ones, this article tries to analyze the community development of Taipei City. The area covered in this report exceeds 60 percent of the entire city. In the end the author argues that old communities must be rebuilt in future development. This article was written in the early 1970s.

Volume 41.

Yang, Pan-tsung. *Residential Renewal and Land Consolidation in Agricultural Communities.* 1978.

This article is a combination of literature reviews and case studies. In the literature review section, the author describes the current housing in agricultural communities. He also emphasizes the importance of zoning for future development. Two case studies are presented to illustrate the arguments from the first section. A proposal for carrying out residential land consolidation is presented in the last section.

Volume 42.

Chiang, Chi-hsun. *A Case Study of Integrated Rural Development -- Li-kang Village of Ping-tung County.* No Date.

Integrated rural development is one of the approaches in agricultural development that highlights reorganizing existing social organizations and rebuilding coordination among them. The author first looks at the criteria of evaluating integrated rural development. The case of Li-kang village is then presented. A discussion of the case leads to the conclusion that labor outflow is the major problem of rural development. This article was written in the late 1970s.

Volume 43. Two Articles:

(1) **Tsu, Ming-tien.** *Planned Industrial Districts in Taiwan.* No Date.

This is an article about the development of planned industrial districts. The author first reviews the development process of planned industrial districts from a theoretical viewpoint. He then applies theories in the land issue of development. He urges that the land be kept from speculators. The management of planned industrial districts is another topic. The author emphasizes the importance of public facilities in this matter. Policy analysis is another important part of this article. The author advocates the coordination of adjoined areas. Finally, the author concludes that sites of planned industrial districts must lead to regional development. This article was written in the late 1970s.

(2) **Sung, Ching-chung.** *An Analysis of Industrial Zones in Taiwan.* No Date.

This article is a collection of cases from many countries. The author compares these cases with the situation of industrial zones in Taiwan. Land acquisition, funding, regional planning and management are topics raised in the discussion. Two Taiwanese cases are presented. This article was written in the early 1970s.

Volume 44.**Chang, Chun-tang. *Utilization of Tourist Resources in Taiwan*. No Date.**

This article covers many issues about tourism in Taiwan. These issues can be categorized into the following topics: existing resources, evaluation of the development of tourist resources, the outcome of tourist resources development and a proposal for future development. This article was completed in the 1970s.

Volume 45. Two Articles:**(1) Chen, Chih-hsi. *Land Registration in Taiwan*. No Date.**

This is a summary of relevant regulations of land registration in Taiwan. In the introduction, the author looks at land registration systems around the world and compares them with the system in Taiwan. Two issues are addressed in the article. The first one is the general registration of land, and the second is the registration of changes in land rights. Related regulations of both issues are explained and evaluated in detail. For a better land registration system, the author suggests simplifying the process, improving the service of related agencies and shortening processing time. This article was written in the 1960s.

(2) Liu, Chin-piao. *Registration of Changes in Land Rights in Taiwan*. No Date.

This article reviews the existing regulations of the registration of changes in land rights and focuses on processes. The author examines each step of registration in great detail. Processes such as preparing required documents and fees, issuing certificates of ownership, etc. are included. This article was written in the 1970s.

Volume 46. Two Articles:**(1) Hsieh, Fu-lai. *Simplification of Land Registration in Taiwan*. No Date.**

This report focuses on the problem of how to simplify the process of land registration in Taiwan. The author explores the question from several vantage points: regulations, structure of local land administration offices, process, and the system representative of land registration. Suggestions are made according to the four subjects. This article was written in the 1970s.

(2) Wang, Jui-tung. *Unregistered Land in Taiwan*. No Date.

The author first explains the reasons for having unregistered land; then he presents the problems that unregistered land creates. He reviews the current survey of unregistered land and provides tentative procedures for different cases. Twelve

suggestions for improving land registration are made at the end. This article was written in the 1970s.

Volume 47.

Wu, Ming-hung. *Land Registration and Legal Enforcement*. No Date.

It is a common case that a court orders the involved parties in a land dispute to restrain or give up their ownership of certain real estate. This article explores the legal status of land registration when land is involved in law suits and other legal actions, such as sequestration of properties including real estates. The author examines the process of land ownership transfer from a legal viewpoint and discusses the actions that should be taken by the government agencies during the process. This article was completed in the 1970s.

Volume 48.

Wu, Hou-kun. *Public Land Management in Taiwan*. No Date.

Taiwan has about 3,600,000 hectares of land, 56 percent of which is public land. This article investigates five issues about public land. The first one is the arrangement of cadastration. The second is the acquisition of public land including purchase, expropriation, consolidation, etc. The third issue is land use, and the fourth is about government policy of public land. The last is a discussion of maintaining an updated inventory record of public land. This article was written in the 1970s.

Volume 49. Two Articles:

(1) **Yang, Tsu-hsien. *On the Structure of Land Administration System in Taiwan*. No Date.**

The author begins this article by arguing that the structure of the land administration system in Taiwan is out of date, given the fast-changing society. A detailed review of the current structure constitutes the first part of the article. The author starts from the central government level, then moves on to provincial, then to city and county levels. In each level, problems are raised and suggested solutions are provided. Problems found in each level are similar. The author recommends increasing the size of land administration offices at city and county levels and adjusting jurisdictions at the provincial level. This article was written in the mid-1970s.

(2) **Chang, Yuan-hsun.** *Cadastration System in Taiwan.* No Date.

This article covers several conceptual and operational problems of the cadastration system. One of the topics is the registration system. The author explores this issue from a conceptual point of view and discusses the principals of the system. Another topic concerns the technical issues of land survey and the operational issues of cadastration management. The author recommends a system of professional representatives to improve the efficiency of the land cadastration system. This article was written in the mid-1970s.

Volume 50. Two Articles:

(1) **Chen, Ying-ying.** *Building Registration in Taiwan.* No Date.

"Building" in this article refers to all artificial objects with roofs and/or walls constructed for certain usage. This article deals with many topics concerning registration and the survey of buildings. After the introduction and a brief historical review of this topic, the author elaborates on the technical issues of building survey procedures. Other topics are building registration, registration of ownership transfer and change of usage. One chapter is devoted to the registration of skyscrapers. This article was completed in the 1970s.

(2) **Hsieh, Chi-ching.** *Real Estate Related Services in Taiwan.* No Date.

This is a comparative study of real estate related services of Taiwan, Japan and the United States. The author first provides detailed information of real estate services in the three countries, such as brokerage systems, legal issues and methods of appraisal, etc. The author concludes that real estate management in Taiwan must meet the demand of the society. He urges the government to pay immediate attention to this problem. This article was written in the late 1970s.

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