not exist to so great an extent on larger farms as it does on smaller farms.

53. An Economic Study of Land Use in Kaohsiung Hsien and City, Taiwan

高雄縣市土地利用之經濟研究

Sponsor: National Science Council
合作機關：國家科學委員會
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Accomplished Date: 1967
完成日期：民國 56 年

Purpose of Study:

1. To determine the present agricultural regions of Kao-Hsiung Hsien and City, based on land use patterns, natural features and land area per family or per person.
2. To subclassify the agricultural regions into economic land classes based on the intensity of use to which the land is adopted.
3. To make maps of agricultural regions and economic land classes for Kao-Hsiung Hsien and City.
4. To explore the factors related to the intensity of land use and analyze their inter-relationships.
5. To examine the relationships of various factors between income and other business aspects.
6. To test following relationships:
   (1) The relationship of economic land class and production costs per chiao.
   (2) The relationship of economic land class and farm income.
   (3) The relationship of size of farm and farm income.
   (4) The relationship of size of farm and yield per chiao.
7. Based upon findings of this study this author tries to make
constuctive suggestions to be adopted by agricultural extension workers as well as individual farmers in improving land use pattern and farming efficiency.

8. To make constructive suggestions to governmental policy makers that they may design a fair land-tax according to income gaining capacity of the land and type of farmers.

**Methods of Study:**

1. Determining agricultural regions:
   (1) Printing maps to show village boundaries in Kao-Hsiung Hsien and City to be used in recording the available data.
   (2) Studying natural features, land use patterns and land area per person or per family to determine agricultural regions.

2. Classifying economic land classes within each agricultural region:
   (1) Collecting information concerning land use at the village level from various township offices.
   (2) Classifying preliminary economic land classes by making use of the data collected.
   (3) Using aerial photos to make interpretations of land use and to review the preliminary economic classification, and later on, making corrections on the preliminary economic land classification maps through field review.
   (4) Studying soil reports of Kao-Hsiung Hsien and City extensively and making use of information of various soil of various soil groups with respect to their chemical contents, adaptation of kinds of crops and productivity in determining economic land classes.

3. Making a farm management survey stratified by preliminary agricultural regions and economic land classes.
   (1) Selecting sample villages and sample farm households by stratified systematic random sampling.
   (2) Interviewing farmers on land use, income expenses, investment and other economic and sociological characteristics relative to the economic study of land use.
(3) Calculating and analyzing data collected from the farm management survey.
(4) Summarizing the results of the study by agricultural regions and economic land classes.

**Summary and Conclusions:**

1. Due to the broad differences in the physical characteristics and in land use pattern, the total land area in Kaohsuing Hsien and City was mapped and divided into four Agricultural Regions, namely; (1) the Rice Region, (2) the Upland Field Crop Region, (3) the Upland Tree Region and (4) the Forest Region. The differences between Agricultural Regions are mostly caused by climatic condition, elevation, topography and irrigation.

2. Within each Agricultural Region, farms grow similar kinds of crops, and are of roughly similar size. The income per farm family is the highest in the Upland Tree Region because of the high yield and favorable price of banana in 1966. This verifies the principle that Agricultural Regions do not necessarily differ in the income produced by per farm family or per person but do vary in how many persons are supported by per unit of area. The Rice Region is the most densely populated in Kaohsiung Hsien and City, followed by the Upland Field Crop Region, Upland Tree Region and Forest Region.

3. Within an Agricultural Region, land was further identified and classified into economic land classes according to the differences of intensity of land use to which it will repay. Four economic land classes are defined and used in this study. Land Class 1 is the most intensively used land and shows evidence of the highest income potential. Land Class 4 is defined as the least suited for intensive use and offering the least opportunity to the average farmer to earn income and accumulate Capital Land in the Rice Region is classified as economic land classes 1,2,3,4, and land in Upland Crop and Upland Tree Region as economic 2,3, and 4. The Forest Region has not been subclassified in this study.
4. Income per farm family varies significantly among economic land classes. Farms on the most productive land tend to have higher incomes than those on less productive land.

5. Within each economic land class, a large difference in income is related to size of farm area. Size of farm appears to be even more important than economic land class. It has been found that size of farm area is independent from economic land class as a farm characteristic.

6. The highest income is earned, usually, by farm families which operate large farm on the best land. In fact, these farms are more commercialized and they are able to accumulate more Capital. If a farm family operates less than 0.5 chia of land, the management and labor return is very low, even on the better-than-average land. Operators of small farms in economic land class 4 almost run a losing business after defraying the estimated cost of unpaid family labor from the net family farm income.

7. Farmers with small size of land area are eager to seek off-farm wages and other non-agricultural receipts. In fact they depend more on these off-farm incomes than those with larger size of farm area.

8. The total capital investment per farm is interrelated with land class and size of farm. The distribution of the capital investment among different kinds of capital is remarkably similar among Agricultural Regions. Value of land constitutes the highest percentage of the total investment; it is about 87 percent.

9. Gross farm earnings per farm and family farm expenses per farm are all related to the size of farm area. Larger farms earn the largest gross farm receipts and spend the highest family farm expenses in average than smaller ones, but the family farm expenses are not large enough to offset the advantage in gross farm earnings. The advantage of the large farm is not that it produces more, in practice, per dollar spent, instead, it has an opportunity to earn a return on a greater expenditure per farm.

10. The fertilizer expenses per chia is the highest on farms in
the Rice Region and the Upland Tree Region, and lowest on farms in the Forest Region. They are independent from land classes and size of farm area. The application of fertilizer is a managerial matter since farmers can buy as much fertilizer as they could from the local markets at a price comparable to that at which they pay for their fertilizer rations from Taiwan Food Bureau.

11. The larger the farm is, the more efficiently the labor is used. This implies that the disguised unemployment does not exist to so great an extent on larger farms as it does on smaller farms.

54. An Economic Study of Land Use in Pingtung Hsien, Taiwan from 1951-60
屏東縣土地利用之經濟研究

Sponsor: National Science Council
合作機關：國家科學委員會
Author: Shison C. Lee
作　者：李慶霖
Accomplished Date: 1969
完成日期：民國 58 年

**Purpose of Study:**

1. To determine the present agricultural regions of Pingtung Hsien, based on its natural features, land use patterns and land area per family or per person.

2. To subclassify the agricultural regions by economic land classes based on the intensity of land use and the yields of main crops.

3. To make a map of agricultural regions and economic land classes for Pingtung Hsien.

4. To explore the factors related to the intensity of land use and to analyze their inter-relationships.