

## CHAPTER 8

## CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE STUDY

The following conclusions are drawn from the preceding analysis. They are a summary of the information produced by the present study.

1. Not all of the total length of the Ban Khai-Ban Bung feeder road was studied in the present research, but the section between Ban Khai and Ban Map Pu was selected to be the study section. Ban Map Pu is a village in Amphoe Sri Racha, Changwad Chonburi, the place where the Ban Khai-Ban Bung feeder road meets the Military Highway.

2. There are two amphoes and one king amphoe that are influenced by the feeder road: Amphoe Ban Khai, Amphoe Sri Racha, and King Amphoe Pluak Daeng. These three administrative units comprise 29 villages grouped in eight tambols. The households in these 29 villages that are thought to be affected by the feeder road comprise about 7,000 households.

3. The abrupt change in the number of houses and population in Changwad Rayong that occurred in 1971 and 1972 may be attributed to the establishment of King Amphoe Pluak Daeng in 1971. This new administrative area likely attracted farmers from other parts to occupy larger farms. The growth

from 1966 to 1976 of population in Amphoe Ban Khai combined with King Amphoe Pluak Daeng was about 116 percent.

4. The number of persons per household, obtained from the interviews, ranged from 3 to 11 persons. The average household size is 6.6 persons/household.

5. The median age of all members in the interviewed households is 18 years. So, 50 percent of the sample population is less than 18 years old.

6. Substantial fractions of the heads of households and housewives finished the P-4 level, the minimum education requirement of the Thai Government at that time.

7. Traffic on the Ban Khai-Ban Bung feeder road is dominated by motorcycles which represent nearly  $2/3$  of the total volume.

8. Traffic volumes (including motorcycles) were about 2200 vehicles per day on weekdays, and about 10 percent less than that on weekend days.

9. Changwad Rayong displayed a growth in vehicle registration somewhat greater than the value of the combined seven Eastern changwads.

10. The growth factor for truck and bus registrations in Changwad Royong was much higher than for the whole Kingdom. This increased more than threefold in the seven years from 1967 to 1974.

11. Motorcycle registration had the highest growth factor (about  $3\frac{1}{2}$  times) in Changwad Chonburi of the three vehicle-type groupings (motorcycle, car and taxi, and truck and bus) during the eight-year period from 1967 to 1975.

12. The most useful vehicle, as reported by the interviewed farmers, was a truck, they said, because trucks can transport farm supplies for cultivation and, subsequently, farm products to market.

13. The most popular vehicle owned by farmers was the motorcycle, not the truck which they thought most useful. This is probably because the capital investment in a motorcycle is relatively low, as is its operating cost.

14. The farmers preferred bus service to other types of service--minibus or pick-up--because travelling by bus provides more comfort and safety than travelling by minibus or pick-up.

15. Of the interviewed farmers, 88 percent stated that the type or size of the presently used public passenger vehicles were safe for travel.

16. Two-thirds of the farmers complained that travelling on the feeder road is not safe. They recommended road improvements of various types.

17. There are seven bus service routes available in the study area. These comprise 29 medium buses and 6 composite buses.

18. The two main crops planted in the study area are cassava and sugar cane.

19. The production of sugar cane in Changwad Rayong in 1974 was about 13 times that in 1970, while the production of sugar cane in Changwad Chonburi in the period from 1969 to 1975 merely doubled.

20. Sugar cane production in the two amphoes in Changwad Rayong affected by the Ban Khai-Ban Bung feeder road (Amphoe Ban Khai and King Amphoe Pluak Daeng) increased eight-fold in the three-year period from 1971 to 1974. In Amphoe Sri Racha, Changwad Chonburi, there was no increase in sugar cane production from 1970 to 1975; the production remained constant at about 650,000 MT per year.

21. An abrupt change in the price of tapioca exported in the form of flour occurred in 1972: from 1,760  $\text{฿/MT}$  in 1972 to 2,435  $\text{฿/MT}$  in 1973; large price increments occurred in 1974 & 75

22. The total volume in metric tons of exported tapioca in the years 1961 through 1975--comprising the volume of pellets, flour, and other products,--increased year by year from 1963 to 1975; the highest rate of increase occurred in 1974.

23. Decision-making regarding what crops to be grown on farms was most commonly made by the heads of the households.

24. The average farm area of the 24 interviewed farmers was 150 rai. The average additional amount of farm area desired by the farmers interviewed was 70 rai; this represents an increase averaging 47 percent.

25. The Government's District Agricultural Offices (Kaset Amphoe) played a significant role in assistance to the farmers regarding their problems in cultivation, financial support, and the dissemination of new ideas and new techniques in farming procedures.

26. From 24 samples in the area of study, the sandy-clay type of soil was found to be the most commonly occurring. Other types of soils in the area are loose sand and sand combined with gravel.

27. About 70 percent of the hired laborers came from the Northeastern region of Thailand; the remainder came from nearby changwads in the Central region of Thailand.

28. For the transportation of crops for hauls varying up to 20 km, the cost for transporting cassava averaged  $\text{฿ } 6.70$  per 100 kg, and that for sugar cane was about  $\text{฿ } 4$  per 100 kg.

29. The average selling price of cassava reported by the interviewed households was  $\text{฿ } 497$  per MT, and the modal value was  $\text{฿ } 500$  per MT. The selling price of sugar cane was affected by the price support program of the Government,

and was constant at  $\text{฿ } 300$  per MT.

30. The average yields for the interviewed households were 2.63 MT/rai for cassava and 6.24 MT/rai for sugar cane.

31. The gross income per rai from cassava for the interviewed samples was 1,307  $\text{฿/rai}$  and the gross income from sugar cane was 1,872  $\text{฿/rai}$ .

32. Correlation analysis using different forms of equations--linear, semi-logarithmic, and exponential -- resulted in only two forms being found to be reasonable at the 20 percent level of significance; these are the linear form and the semi-logarithmic form. The accepted equations for estimating the number of trips per year are:

$$Y = 117.0 - 4.85 X_1 + 21.64 X_2 \quad (\text{I})$$

$$Y = 114.7 - 5.58 X_1 + 18.78 X_2 + 0.22 X_3 \quad (\text{II})$$

$$\ln Y = 4.37 - 0.03 X_1 + 0.17 X_2 \quad (\text{III})$$

Where

$Y$  = number of trips per year;

$X_1$  = distance from house to farm, km;

$X_2$  = household size, persons per household; and

$X_3$  = farm area, rai.

Equation (I) was analyzed by using all 19 samples, while Equations (II) and (III) did not include sample No. 4, which was thought to be a peculiar sample.



### Recommendations for Future Study

1) Sample size must be larger than that of the present study to provide a more reliable solution in the analysis. Also, the correlation analysis required more samples to predict the number of trips generated by various factors.

2) Subjective judgement in interpreting the data collected from Government offices had to be applied to complete the present research. In future research, methods of independent measurement of these variables should be sought to remove the dependence placed herein on questionable official statistics.

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