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PER CAPITA CONSUMPTION LEVEL OF
BASIC FOOD IN TAIWAN

By
Sing-min Yeh



TAIPEI, TAIWAN, CHINA

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Rural & Land Economics Division

(H. S. Tang, Chief)



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FOREWORD

For the purpose of ascertaining the actual consumption of basic foodstuffs in Taiwan thereby to assess the accuracy of their supply and to make economic studies of many related problems, an investigation of per capita consumption level of basic food was initiated in 1956 by the Joint Commission on Rural Reconstruction with the Taiwan Provincial College of Agriculture as the sponsor of the project. Two visits were made in January and July, 1956 to 800 sample farm and non-farm households selected from all hsien and cities excluding Penghu in the province. Available data and information regarding the supply and distribution of major basic food were also collected from public and private agencies concerned.

The field work and statistical tabulation were undertaken by the Department of Agricultural Economics of the College under the supervision of Professors M. N. Soong, Y. T. Su and M. S. Chen with technical advice from the former Rural Economics Division, JCRR. Comments and suggestions were received from Mr. R. N. Gleason, the then Chief of the former Food and Fertilizer Division, JCRR.

The following report was prepared by Mr. S. M. Yeh, specialist of the Rural and Land Economics Division, JCRR. Mr. T. S. Kuo, the then Sr. Administrative Assistant of the Division helped the editing of the report. The secondary statistical data were mostly compiled and tabulated by Messrs. Y. C. Hsu and M. K. Su, assistants of the Department and the Division.

This report is expected to furnish the food and agricultural authorities with basic data and information concerning consumption and distribution of basic foodstuff which would be useful for planning better food consumption and distribution programs as well as overall food and agricultural policies in Taiwan.



Hui-sun Tang

Chief

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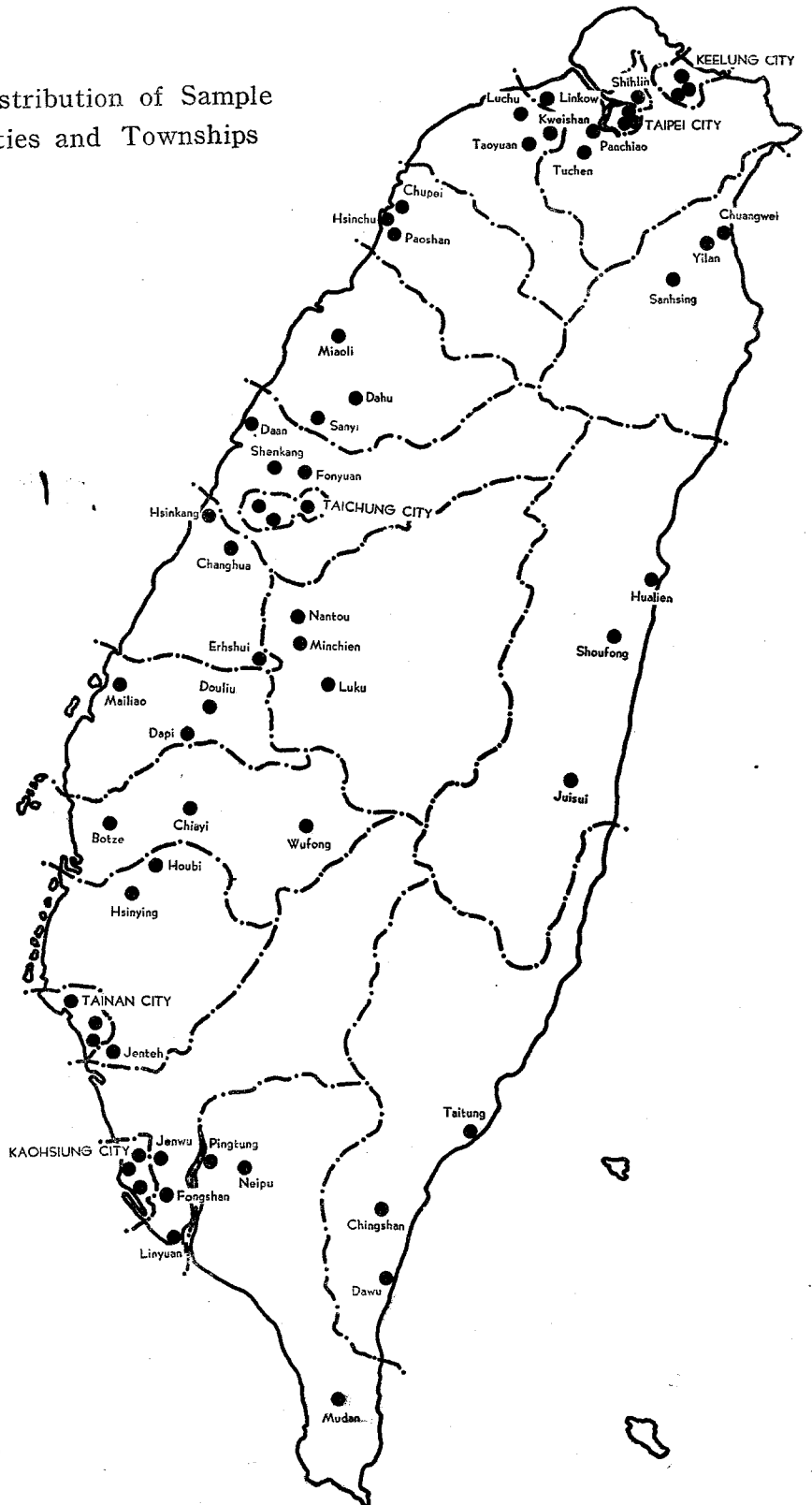
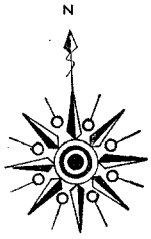
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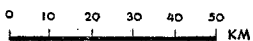
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Distribution of Sample Cities and Townships



SCALE



Per Capita Consumption Level of Basic Food in Taiwan

I. Introduction

The basic food of most people in Taiwan consists mainly of rice and sweet potato and a small quantity of wheat flour and millet. During the World War II, local people were compelled to take more sweet potato because of the strict control over food distribution by the colonial government. Following Taiwan's restoration to China in 1945, however, there has been a general increase in rice consumption as its supply has been abundant and its price low. The influx of more than one million mainlanders and importation of large amounts of wheat and wheat flour also have exerted considerable influence in the change of local food habit. In the past, there was little knowledge about the actual consumption level of basic food in Taiwan. The per capita consumption of rice has been estimated at 150.75 kg. by the Provincial Food Bureau since 1953, but this estimation is generally considered too conservative because it was adjusted from the total rice ration made during the last few years of Japanese occupation. No estimates were ever made in the per capita annual consumption of wheat flour and sweet potato.

With a view to finding out the actual consumption of basic foodstuffs in Taiwan, thereby to assess the adequacy of their supply and to make economic studies of a number of related problems, an investigation of per capita consumption level of basic food was initiated by the Joint Commission on Rural Reconstruction in January 1956 in collaboration with the Provincial College of Agriculture and was completed in June 1957. The major objectives of this investigation were set as follows:

1. To ascertain the average per capita daily consumption of rice, wheat flour and sweet potato.
2. To find out the seasonal variations of the consumption of various basic foodstuffs.
3. To discuss the difference in their consumption level among different

groups of households and different geographic areas.

4. To estimate the total annual consumption of these basic foodstuffs.

5. To make an economic appraisal of the adequacy of local basic food supplies.

II. Methodology

To collect pertinent data and information for the study, a total of 800 sample households were selected for interview in all prefectures excluding Penghu according to their size of population (Appendix 1). The selection of samples was made in the following ways:

1. In each hsien, the city or chen where the hsien government is located was chosen to represent the urban area. Two hsiang were selected at random to represent the rural area.

2. In each city, two districts were selected at random from incorporated areas and one district from unincorporated areas.

3. The sample households in each city, chen, hsiang and district were randomly selected in pairs from their household lists. In case a selected household refused to cooperate, its nearest neighbor was selected for substitution.

4. The population statistics compiled by the Provincial Department of Civil Affairs and the agricultural population statistics compiled by the Provincial Department of Agriculture and Forestry were used in allocating the size of sample households of farm families, rural non-farm families and urban dwellers in different hsien and cities.

Cooperation from the sample households was obtained through wide publicity on local newspapers and assistance from local agencies including Farmers' Associations and Township Offices. To dispel any suspicion about the investigation, explanation was made to the sample households regarding the actual purpose of this investigation which was not connected with any government food control or other regulatory measures.

Each selected household was visited twice by the same investigator; the first visit was made in January and the second in July. Each visit covered

a whole day, from the lunch of the first day to the breakfast of the next day. The quantitative data on consumption of various basic foodstuffs were obtained through precise weighing before cooking, after cooking and after serving for each meal. During the visit, refuse and waste and misuse of rice were also investigated so as to check the validity of the data obtained (Appendix 2). For undertaking the field work of these investigations, thirty six senior students and five professors and instructors of the Department of Agricultural Economics of the Provincial College of Agriculture were recruited to serve respectively as investigators and supervisors. A three-day training conference was held for them in which there were discussions on the problems and methodology of the investigation, sampling method and ways and means to win the cooperation of the households visited. The statistical work was done by 10 senior students of the same Department. For the successful implementation of the investigation, a professor of the Department was assigned to take charge of this project with the technical assistance from the responsible personnel of the former Rural Economics Division of JCRR.

III. Per Capita Consumption of Basic Food of Sample Households

1. Average Daily Consumption of Basic Food by Household Members

The result of the investigation shows that the average per capita daily consumption of basic food of household members amounted to 526 grams, consisting of 401 grams of polished rice, 119 grams of sweet potato and 6 grams of wheat flour. It can be seen that rice is the most important basic food for the local populace.

The consumption levels of rice and sweet potato of average farm families reached respectively 443 grams and 211 grams, compared with 356 grams and 20 grams of non-farm families. On the other hand, the daily consumption of wheat flour of farm families averaged only 1 gram and that of non-farm families averaged 11 grams. For individual hsien and cities, while the consumption level of rice was higher in Yangminshan Administration and Hualien, Kaohsiung and Yilan hsien and lower in Tainan city and Yunlin, Chiayi and Tainan hsien, the situation was reversed in the consumption of sweet potato. The consumption level of wheat flour was rather high in Keelung city but quite low in other hsien and cities particularly in

Taichung and Kaohsiung cities and Hsinchu, Miaoli, Taichung and Chiayi hsien (Table 1).

There were noticeable seasonal variations in the consumption of various foodstuffs. In the January visit, the per capita daily consumption of basic food included 432 grams of rice, 146 grams of sweet potato and 4 grams of wheat flour, but in the July visit it was lowered to 370 grams of rice, 92 grams of sweet potato, and 8 grams of wheat flour. These seasonal variations were witnessed in both farm and non-farm families (Tables 2 and 3).

The consumption pattern of basic food is determined primarily by the availability of food items, their relative prices and local food habit and preference. Most sample households took more rice, particularly in rural areas as it was abundant and cheap in 1956. Because of its relative indigestion and sweetish taste, the non-farm families in general did not include sweet potato in their daily diet, but most farm families did because it was produced on their farms. Although the supply of wheat flour had been increased, most people were still reluctant to take it as basic food in regular meals due mainly to local food habit and preference. Farm families consumed more basic food than non-farm families as they generally did more muscular work. The diet of non-farm families is more diversified and therefore they require less staple grains. The seasonal variations in the consumption of basic food were attributive largely to the low temperature in January and high temperature in July, thus resulting in a considerable difference in calorie requirement. The cropping system also had much influence on the inclusion of sweet potato in daily diet in different hsien and cities. Farm families in Tainan, Yunlin and Chiayi hsien consumed much more sweet potato than those in other hsien and cities because most farmers there grow a sweet potato crop every year.

From the average per capita daily consumption of 526 grams of all basic food, a total of 1,581 calories were derived, of which 91.4 per cent was from rice, 7.2 per cent from sweet potato and 1.4 per cent from wheat flour. The calorie intake from basic food in January visit totalled 1,713 calories, while that in July visit only 1,450 calories (Tables 4, 5 and 6). The average per capita daily intake of 1,581 calories would furnish about 70-80 per cent of the minimum calorie requirement of the members of house-

holds, since the average per capita daily calorie requirement for Taiwan people was figured at 2,030 calories by the former Food and Fertilizer Division of JCRR, based on the age and sex group distribution of the total population in 1952 in accordance with the formulae recommended by the Committee on Calorie Requirement, Food and Agriculture Organization, United Nations ^{1/}.

Of all sample households, only 6 did not include rice in their regular meals in both visits. The number of households consuming sweet potato as basic food reached 219 in January visit and 157 in July visit, while that consuming wheat flour as basic food was 40 in the first visit, 60 in the second. Those households who did not eat rice were mostly found in the hsien of Tainan, Yunlin and Chiayi. Much less households in the hsien and cities of northern and eastern areas consumed sweet potato than those in southern area. The number of households taking wheat flour in regular meals was quite few in all hsien and cities except Taipei and Keelung cities and Taipei and Miaoli hsien (Tables 7-9).

Most sample farm families used to eat rice at a milling rate of 93-94 per cent, but a number of non-farm families consumed rice of a much lower extraction rate. Wheat flour consumed by sample households was in general of the extraction rate of about 75 per cent. The sample households preferred fresh sweet potato to the chips and the sweet potato consumed was mostly of white or nearly white meated varieties.

Rice as basic food in regular meals of sample households was prepared in the forms of cooked rice, rice gruel, either cooked alone or cooked with sweet potatoes as mostly found in rural areas. Most sample households washed rice thoroughly with plenty of water before it was cooked and the excess water was usually discarded as animal feed. In the Tainan Food District (including Tainan city and Tainan, Yunlin, Chiayi hsien) sweet potatoes were cooked alone in a number of sample households. Wheat flour was consumed for the most part in the form of noodles; only a few sample households prepared steamed bread, baked cakes, etc. for regular meals.

2. Average Daily Consumption of Basic Food by Consumers

^{1/} See Taiwan Food Balances 1935 - 1954, published by JCRR in June 1956.

According to this investigation, the average per capita daily consumption of basic food of sample households by consumers was 445 grams of polished rice, 132 grams of sweet potato and 7 grams of wheat flour. This is substantially higher than the average per capita daily consumption of basic food by household members because there were in a number of sample households some babies and invalids, who did not share basic foodstuffs in regular meals. In the January visit, 475 grams of polished rice, 163 grams of sweet potato and 4 grams of wheat flour were consumed per capita per day but in the July visit, only 415 grams of polished rice, 100 grams of sweet potato, 9 grams of wheat flour were included in the daily diet (Tables 10-12). The total energy value derived from various basic foodstuffs was 1,882 calories for January visit and 1,623 calories for July visit averaging to 1,755 calories (Tables 13-15).

The frequency distribution of the average per capita daily calorie intake from basic food of consumers shows that most sample households fell within the class intervals of 1300-1599, 1600-1899 and 1900-2199 in both visits. Most farm families fell in the lower classes from the class interval 1600-1899, and most non-farm families in the upper classes from the same class interval (Tables 16-17). If two polygons are plotted from the frequency distribution of per capita intake from basic food in January and July, they are similar to each other and all approximately symmetrical (Charts 1-2).

IV. Estimated Total Consumption and Disposals of Various Basic Foodstuffs in 1956

Based on the results of this investigation, it is estimated that in 1956 the civilian consumption of various basic foodstuffs totalled 1,463,397 m/t of brown rice equivalent, 407,918 m/t of sweet potato and 20,565 m/t of wheat flour or 27,420 m/t of wheat equivalent. The consumption of basic food per capita per year was 155.84 kg. of brown rice equipment, 43.44 kg. of sweet potato and 2.19 kg. of wheat flour (Table 18). These figures are for the consumption of basic food in regular meals only. If the portion of wheat flour consumed for snacks and between meals was included, the per capita civilian consumption of wheat flour would reach 11.68 kg. in 1956 (Table 19).

The per capita consumption of basic food by military personnel is much higher than by the civilian, because the former are mostly adult males and do more muscular work. The present food ration to military personnel includes 575 grams of brown rice, 200 grams of sweet potato and 144 grams of wheat flour per person per day. When the civilian consumption of basic food is weighted with the basic food rationed to military personnel according to their size of population, the per capita annual consumption of basic food would be raised from 155.84 kg. to 159.44 kg. of brown rice, 43.44 kg. to 45.41 kg. of sweet potato and 11.68 kg. to 14.40 kg. of wheat flour including that for snacks and between meals (Table 19).

In addition to 1,463,397 m/t of brown rice for civilian consumption in 1956, there were about 140,520 m/t for ration to military personnel, 3,000 m/t for shipments to offshore islands, 12,000 m/t for making wine, 32,827 m/t for seeds and 95,666 m/t for export, derived from the pertinent data furnished by the PFB. According to the "Taiwan Food Balances 1935-1954", the quantities of rice for animal feeds and waste were estimated at respectively 4 per cent and 2 per cent of the production. In the case of 1956, the rice for animal feed would amount to 71,593 m/t and that for waste 35,796 m/t. Adding together the foregoing figures, the various rice disposals in 1956 totalled 1,854,799 m/t, about 64,970 m/t or 3.6 per cent over the rice production of the year (Table 20). This might be due either to the under-reporting of rice production or to the difference between actual and estimated rice disposals.

Based on the findings of another JCRR research project "A Study on the Supply and Demand of Sweet Potato and Cassava", it was roughly estimated that in 1956 about 1,258,370 m/t of sweet potato were used as animal feeds 513,620 m/t for industrial use, 256,810 m/t for flour extraction and 128,405 m/t for waste. Adding together these disposals with the quantities of sweet potato for human consumption (407,918 m/t for civilian consumption as basic food and 48,910 m/t for ration to military personnel), the total quantity disposed in 1956 was about 2,614,033 m/t or 1.8 per cent over the production in the year (Table 21). It can be seen that the use of this starchy root as animal feed is of more significance than for human consumption.

In 1956, wheat imports plus local wheat production totalled about 228,460

m/t producing 171,345 m/t of wheat flour. Adding together the imported wheat & flour of about 7,500 m/t of wheat flour equivalent donated by the people of the United States for relief purpose, the total wheat flour supply in 1956 was about 178,845 m/t. Of the total, 20,565 m/t were for civilian consumption as basic food in regular meals, 35,215 m/t for ration to military personnel, 32,975 m/t for flavoring essence and starch industries and the remaining 90,090 m/t are believed to have been consumed as snacks and between meals in the forms of noodles, bread, cakes, biscuits and the like (Table 22). It is interesting to note that the consumption of wheat flour as snacks and between meals exceeded that in regular meals by more than four times. Another important finding deserving notice is that the wheat flour used as raw material for flavoring essence and starch industries occupied almost 19 per cent of its total supply.

V. Evaluation

1. The investigation of per capita consumption level of basic food undertaken in 1956 was the first of its kind ever made in Taiwan, the purposes of which were to ascertain the actual per capita daily consumption of rice, wheat flour and sweet potato in different seasons, different groups of households and different geographic areas to make an economic appraisal of the adequacy of their supplies. This investigation is useful in recommending better food consumption and over-all agricultural policies.

2. The results of this investigation are believed to be highly representative because: (a) all sample households were carefully selected by the space random method; (b) the quantitative data on basic food consumption were obtained through precise weighing; (c) the ratio of the total household member of sample farm families to that of sample non-farm families (51.2 : 48.8) was very close to the ratio of total agricultural population to total non-agricultural population in 1956 (52.4 : 47.8); (d) the curve of age and sex distribution of all household members covered in this investigation is quite similar to that of total civilian population in 1956 (Appendices 1-4).

3. As rice is the most important basic food in Taiwan, we have gone further to find out the true mean of per capita daily consumption of it by all samples through the computation of standard deviation, standard error and probability of the arithmetic mean. By using the equation $M = M \pm 3\sigma_m$,

it was found that the true mean of per capita daily rice consumption of all samples was between 452.99 and 416.27 grams for January visit and between 405.84 and 366.92 grams for July visit (Appendix 5).

4. Under a given degree of reliability 3, the required sample size was figured at 799.798 for January visit and 799.637 for July visit by applying the equation $N = \frac{t^2 r^2}{e_r^2}$. It can be seen that the set size of 800 is considered adequate (Appendix 6).

5. From the nutritional point of view, the per capita civilian consumption level of basic food in Taiwan in 1956 was considerably high, especially that of rice. However, it was not too high if compared with the consumption level in Asian countries, such as Japan and Thailand. So far as we know, in most rice eating countries, people usually include in their diet a much greater portion of foodstuffs rich in carbohydrate content because they consume limited amount of animal food.

6. The per capita daily intake of some 1,600 calories from basic food for civilian population might have furnished the people over 70 per cent of their minimum requirement. In FAO Second World Food Survey^{1/}, it is stated that when cereals, starchy roots and sugar furnish over two-thirds of the total calorie supply, clear evidence is afforded of nutritional unbalances. In order to improve national nutrition, more efforts are needed to increase the availability of protective food, such as meat, fish, eggs, milk, fruits, pulses, soybean and leafy green and yellow vegetables.

7. It is deplorable that most non-farm families particularly in urban areas consumed highly milled rice, because its low extraction has lost much of its thiamine content during the polishing processing. Moreover, the practices of thorough washing of rice before cooking and discarding of the excess water in cooking rice caused further loss of this essential nutrient, which is not good for the health and well-being of the people. With a view to increasing the thiamine intake for better health, the government have started the undermilled rice of 93-94 per cent and germ rice programs. The former has made little progress but the latter is very promising. The promotion of better rice washing and cooking practices is also being carried out jointly by the health, education and agricultural extension organizations.

^{1/} See Second World Food Survey published by FAO in 1952.

8. The high portion of sweet potato consumed in the rural areas of Tainan, Yunlin, Chiayi and Pingtung hsien might be detrimental to health and growth because of its lower protein content. Moreover, sweet potato consumed were mostly white or nearly white meated varieties, containing much less vitamin A. To improve national nutrition, the government has tried to promote the extension of such new dark yellow meated sweet potato varieties as Tai-lung Nos. 54, 55 and 57 which are crosses between the original Tai-lung Nos. 44 and 27 and Porto Rico and Nancy Hall introduced from the United States. These new improved varieties are comparable to the unit yield and chip making rate of most improved varieties and have the merit of an early maturity. The only defect is that they are a little less tolerable to drought. However, most farmers have not started to grow these new improved varieties because they are not familiar with them and the needed seedlings are not available in most townships. It is, therefore, felt that efforts should be made to the strengthening of the extension of these new improved varieties through the establishment of more demonstration and extension seedling farms and the teaching of know-how of growing these new improved varieties to farmers especially in Southern Taiwan, where is the major sweet potato production area in the province.

9. As rice and wheat flour have almost the same calorie content, it would be interesting to find out whether they have been used as substitutes for each other. To our knowledge, the inclusion of wheat flour in the food rations to armed forces in the past did release the same amount of rice as they consumed it as basic food in regular meals. On the civilian side, the consumption of more wheat flour in recent years, however, resulted in the increase of total calorie intake rather than the substitution for rice, because it was consumed mostly as snacks and between meals.

10. In addition to rice and wheat flour, there was in Taiwan in 1956 some supply of millet, corn, barn-yard millet, sorghum and barley, which could all be included in the diet as basic food. Of these coarse grains, barley was imported under the U.S. Farm Surplus Program, the rest were locally produced. Due to local food habit, economic factors, and availability of these minor cereals, millet, corn and barn-yard millet have been consumed almost all by the aborigines, sorghum is merely used for distilling the famous Kaoliang wine and barley is taken by only a small group of house-

holds. Therefore, the consumption of these minor cereals as basic food could not be traced from the records of sample households taken for this investigation.

11. Owing to the difference in race, education, and economic conditions, the consumption of basic food of aborigines is different from that of both Taiwanese and mainlanders. But, as they occupy only a very small fraction of the total population (about 2 per cent), the quantitative data of their basic food consumption could not be obtained from the results of the investigation. To find out the general pattern of basic food consumption of this specific group of population, questionnaires were sent to all of the so-called aboriginal townships and spot checks were also made. From these questionnaires and spot-checks, it can be concluded that the common basic foodstuffs consumed by aborigines are sweet potato, rice, millet, corn and taro, of which sweet potato is the most outstanding and that these basic foodstuffs constitute a much larger portion in the daily diet of aborigines than that of both Taiwanese and mainlanders as their supplementary food is even more limited in amount.

12. The present supply of basic food is considered adequate to meet the requirement for both civilian and military consumption except wheat flour which depends largely on the imports under the U.S. aid program. In case such wheat imports are cut, the decrease of some 120,000-150,000 m/t of wheat flour supply could be met by the decrease of rice export, the inclusion of more sweet potato in the diet and the consumption of less wheat flour products as snacks and between meals. But one thing we should bear in mind is that the population in Taiwan is increasing at the rate of about 3.5 per cent which would impose an additional requirement of some 56,000 m/t of brown rice equivalent per year. The pressure of the rapidly growing population on the requirement of basic food is so great that ways and means must be found to further increase the production of major food crops.

TABLE 1.

Average Per Capita Daily Consumption of Basic Food by
Household Members of Sample Households

Unit: gm.

Prefecture	Farm Families			Non-farm Families			All Families		
	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour
Yilan hsien	565	13	—	318	—	10	456	8	4
Taipei hsien	506	43	6	378	2	15	433	19	11
Taoyuan hsien	464	123	2	335	13	2	406	74	2
Hsinchu hsien	422	117	—	356	48	3	389	83	1
Miaoli hsien	458	47	1	402	—	—	440	32	1
Taichung hsien	457	72	1	376	8	3	430	50	1
Changhua hsien	478	145	1	365	1	5	447	106	2
Nantou hsien	468	3	5	395	—	—	450	2	4
Yunlin hsien	297	544	—	317	93	6	302	431	2
Chiayi hsien	292	574	—	349	—	3	313	364	1
Tainan hsien	335	486	1	325	191	11	332	423	3
Kaohsiung hsien	522	82	5	373	16	—	469	59	3
Pingtung hsien	507	312	—	296	119	7	425	236	3
Taitung hsien	443	291	—	287	23	—	378	186	—
Hualien hsien	561	37	—	328	—	41	494	27	12
Taipei city	474	—	—	363	—	7	367	—	7
Keelung city	—	—	—	401	—	136	401	—	136
Taichung city	484	17	—	318	23	—	368	21	—
Tainan city	396	34	7	339	2	5	348	7	5
Kaohsiung city	496	236	—	361	7	2	385	48	1
Yangminshan Adm.	541	—	—	437	13	7	476	9	4
Weighted average	443	211	1	356	20	11	401	119	6

Notes: (1) Average of the results of January and July visits.

(2) The sample size of farm family was 382 and that of non-farm family 418.

TABLE 2.

Per Capita Daily Consumption of Basic Food by Household
Members of Sample Households, January Visit

Unit: gm.

Prefecture	Farm Families			Non-farm Families			All Families		
	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour
Yilan hsien	571	—	—	340	—	12	467	—	5
Taipei hsien	533	86	—	423	4	13	469	38	8
Taoyuan hsien	471	245	3	351	26	2	417	147	3
Hsinchu hsien	483	206	—	373	70	—	429	139	—
Miaoli hsien	513	94	1	466	—	—	498	64	1
Taichung hsien	516	131	—	413	16	—	481	92	—
Changhua hsien	556	273	1	399	—	—	513	199	1
Nantou hsien	544	5	—	391	—	—	506	4	—
Yunlin hsien	339	641	—	334	129	—	338	516	—
Chiayi hsien	341	539	—	362	—	2	348	341	1
Tainan hsien	375	427	—	348	227	3	369	385	1
Kaohsiung hsien	558	92	9	371	11	—	492	63	6
Pingtung hsien	498	395	—	318	109	8	426	281	3
Taitung hsien	462	367	—	344	17	—	419	240	—
Hualien hsien	565	74	—	319	—	68	497	54	19
Taipei city	533	—	—	400	—	8	404	—	8
Keelung city	—	—	—	435	—	32	435	—	32
Taichung city	475	34	—	329	28	—	368	30	—
Tainan city	429	—	—	355	—	7	369	—	6
Kaohsiung city	544	472	—	387	5	—	415	88	—
Yangminshan Adm.	478	—	—	436	26	13	449	18	8
Weighted average	480	262	1	383	23	7	432	146	4

Note: The household members of 800 sample households in January visit totalled 6,224 of which 3,195 were of farm families and 3,029 of non-farm families.

TABLE 3.

Per Capita Daily Consumption of Basic Food by Household
Members of Sample Households, July Visit

Unit: gm.

Prefecture	Farm Families			Non-farm Families			All Families		
	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour
Yilan hsien	559	26	—	297	—	7	449	15	3
Taipei hsien	479	—	12	333	—	16	398	—	14
Taoyuan hsien	456	—	—	320	—	2	396	—	1
Hsinchu hsien	360	27	—	339	26	5	349	27	2
Miaoli hsien	403	—	—	338	—	—	383	—	—
Taichung hsien	397	12	1	339	—	5	379	8	2
Changhua hsien	400	17	1	330	2	9	381	13	3
Nantou hsien	392	—	10	398	—	—	393	—	8
Yunlin hsien	255	446	—	300	56	12	266	345	3
Chiayi hsien	243	608	—	337	—	4	277	386	1
Tainan hsien	294	544	1	301	154	19	295	461	5
Kaohsiung hsien	486	72	—	375	20	—	447	54	—
Pingtung hsien	516	228	—	273	128	5	424	190	2
Taitung hsien	425	215	—	229	29	—	338	132	—
Hualien hsien	557	—	—	337	—	14	492	—	4
Taipei city	415	—	—	327	—	5	329	—	5
Keelung city	—	—	—	368	—	239	368	—	239
Taichung city ^a	492	—	—	307	18	—	368	12	—
Tainan city	362	67	13	322	4	2	328	14	4
Kaohsiung city	448	—	—	335	8	3	355	7	2
Yangminshan Adm.	605	—	—	438	—	—	503	—	—
Weighted average	407	160	2	329	16	15	370	92	8

Note: The household members of 800 sample households in July visit totalled 6,206, of which 3,174 were of farm families and 3,032 of non-farm families.

TABLE 4.

Energy Value Derived from Average Per Capita Daily Consumption
of Basic Food by Household Members of Sample Households

Unit: calorie

Prefecture	Farm Families				Non-farm Families				All Families			
	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total
Yilan hsien	2,034	13	—	2,047	1,146	—	35	1,181	1,648	8	14	1,670
Taipei hsien	1,821	42	21	1,884	1,361	2	53	1,416	1,560	18	39	1,617
Taoyuan hsien	1,669	119	7	1,795	1,207	13	7	1,227	1,463	72	7	1,542
Hsinchu hsien	1,518	113	—	1,631	1,281	47	11	1,339	1,402	81	4	1,487
Miaoli hsien	1,648	46	4	1,698	1,446	—	—	1,446	1,585	31	4	1,620
Taichung hsien	1,645	70	4	1,719	1,354	8	11	1,373	1,549	49	4	1,602
Changhua hsien	1,721	141	4	1,866	1,313	1	18	1,332	1,610	103	7	1,720
Nantou hsien	1,684	3	18	1,705	1,421	—	—	1,421	1,619	2	14	1,635
Yunlin hsien	1,069	528	—	1,597	1,142	90	21	1,253	1,088	418	7	1,513
Chiayi hsien	1,050	557	—	1,607	1,257	—	11	1,268	1,126	353	4	1,483
Tainan hsien	1,204	471	4	1,679	1,168	185	39	1,392	1,195	410	11	1,616
Kaohsiung hsien	1,880	80	18	1,978	1,341	16	—	1,357	1,690	57	11	1,758
Pingtung hsien	1,823	303	—	2,126	1,064	115	25	1,204	1,530	229	11	1,770
Taitung hsien	1,596	282	—	1,878	1,032	22	—	1,054	1,362	180	—	1,542
Hualien hsien	2,018	36	—	2,054	1,183	—	144	1,327	1,780	26	42	1,848
Taipei city	1,706	—	—	1,706	1,308	—	25	1,333	1,320	—	25	1,345
Keelung city	—	—	—	—	1,445	—	476	1,921	1,445	—	476	1,921
Taichung city	1,741	16	—	1,757	1,146	22	—	1,168	1,326	20	—	1,346
Tainan city	1,424	33	25	1,482	1,219	2	18	1,239	1,254	7	18	1,279
Kaohsiung city	1,786	229	—	2,015	1,298	7	7	1,312	1,385	47	4	1,436
Yangminshan Adm.	1,948	—	—	1,948	1,574	13	25	1,612	1,714	9	14	1,737
Weighted average	1,596	205	4	1,805	1,282	19	39	1,340	1,445	115	21	1,581

Notes: (1) Computed from Table 1.

(2) The calorie content of basic food per 100 grams is figured at 360 for polished rice, 97 for sweet potato and 350 for wheat flour.

TABLE 5.

Energy Value Derived from Per Capita Daily Consumption of Basic Food by Household Members of Sample Households, January Visit

Unit: calorie

Prefecture	Farm Families				Non-farm Families				All Families			
	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total
Yilan hsien	2,056	—	—	2,056	1,224	—	42	1,266	1,682	—	18	1,700
Taipei hsien	1,919	83	—	2,002	1,524	4	46	1,574	1,688	37	28	1,753
Taoyuan hsien	1,696	238	11	1,945	1,262	25	7	1,294	1,502	143	11	1,656
Hsinchu hsien	1,740	200	—	1,940	1,344	68	—	1,412	1,546	135	—	1,681
Miaoli hsien	1,846	91	4	1,941	1,676	—	—	1,676	1,792	62	4	1,858
Taichung hsien	1,859	127	—	1,986	1,487	16	—	1,503	1,733	89	—	1,822
Changhua hsien	2,002	265	4	2,271	1,437	—	—	1,437	1,848	193	4	2,045
Nantou hsien	1,957	5	—	1,962	1,409	—	—	1,409	1,821	4	—	1,825
Yunlin hsien	1,222	622	—	1,844	1,202	125	—	1,327	1,217	501	—	1,718
Chiayi hsien	1,227	523	—	1,750	1,302	—	7	1,309	1,254	331	4	1,589
Tainan hsien	1,350	414	—	1,764	1,252	220	11	1,483	1,330	373	4	1,707
Kaohsiung hsien	2,010	89	32	2,131	1,334	11	—	1,345	1,771	61	21	1,853
Pingtung hsien	1,791	383	—	2,174	1,146	106	28	1,280	1,534	273	11	1,818
Taitung hsien	1,662	356	—	2,018	1,239	16	—	1,255	1,503	233	—	1,741
Hualien hsien	2,033	72	—	2,105	1,150	—	238	1,388	1,790	52	67	1,909
Taipei city	1,919	—	—	1,919	1,439	—	28	1,467	1,454	—	28	1,482
Keelung city	—	—	—	—	1,567	—	112	1,679	1,567	—	112	1,679
Taichung city	1,711	33	—	1,744	1,186	27	—	1,213	1,326	29	—	1,355
Tainan city	1,544	—	—	1,544	1,279	—	25	1,304	1,327	—	21	1,348
Kaohsiung city	1,959	458	—	2,417	1,392	5	—	1,397	1,493	85	—	1,578
Yangminshan Adm.	1,719	—	—	1,719	1,569	25	46	1,640	1,618	17	28	1,663
Weighted average	1,726	254	4	1,984	1,378	22	25	1,425	1,557	142	14	1,713

Notes: (1) Computed from Table 2.

(2) The calorie content of basic food per 100 grams is figured at 360 for polished rice, 97 for sweet potato and 350 for wheat flour.

TABLE 6.

Energy Value Derived from Per Capita Daily Consumption of Basic Food by Household Members of Sample Households, July Visit

Unit: calorie

Prefecture	Farm Families				Non-farm Families				All Families			
	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total
Yilan hsien	2,013	25	—	2,038	1,069	—	25	1,094	1,615	15	11	1,641
Taipei hsien	1,723	—	42	1,765	1,198	—	56	1,254	1,432	—	49	1,481
Taoyuan hsien	1,641	—	—	1,641	1,152	—	7	1,159	1,424	—	4	1,428
Hsinchu hsien	1,297	26	—	1,323	1,219	26	18	1,263	1,258	26	7	1,291
Miaoli hsien	1,450	—	—	1,450	1,216	—	—	1,216	1,377	—	—	1,377
Taichung hsien	1,430	12	4	1,446	1,222	—	18	1,240	1,366	8	7	1,381
Changhua hsien	1,441	16	4	1,461	1,189	2	32	1,223	1,373	13	11	1,397
Nantou hsien	1,410	—	35	1,445	1,434	—	—	1,434	1,416	—	28	1,444
Yunlin hsien	916	433	—	1,349	1,082	54	42	1,178	959	335	11	1,305
Chiayi hsien	874	590	—	1,464	1,212	—	14	1,226	997	374	4	1,375
Tainan hsien	1,054	528	4	1,586	1,084	149	67	1,300	1,061	447	18	1,526
Kaohsiung hsien	1,750	70	—	1,820	1,349	19	—	1,368	1,608	52	—	1,660
Pingtung hsien	1,856	221	—	2,077	982	124	18	1,124	1,526	184	7	1,717
Taitung hsien	1,530	209	—	1,739	825	28	—	853	1,216	128	—	1,344
Hualien hsien	2,004	—	—	2,004	1,215	—	49	1,264	1,770	—	14	1,784
Taipei city	1,493	—	—	1,493	1,176	—	18	1,194	1,186	—	18	1,204
Keelung city	—	—	—	—	1,324	—	837	2,161	1,324	—	837	2,161
Taichung city	1,771	—	—	1,771	1,107	17	—	1,124	1,326	12	—	1,338
Tainan city	1,304	65	46	1,415	1,158	4	7	1,169	1,182	14	14	1,210
Kaohsiung city	1,613	—	—	1,613	1,205	8	11	1,224	1,277	7	7	1,291
Yangminshan Adm.	2,176	—	—	2,176	1,578	—	—	1,578	1,810	—	—	1,810
Weighted average	1,465	155	7	1,627	1,185	16	53	1,254	1,333	89	28	1,450

Notes: (1) Computed from Table 3.

(2) The calorie content of basic food per 100 grams is figured at 360 for polished rice, 97 for sweet potato and 350 for wheat flour.

TABLE 7.
Number of Sample Households Consuming Rice

Prefecture	No. of Families Consuming Rice					
	January visit			July visit		
	Farm Families	Non-farm Families	All Families	Farm Families	Non-farm Families	All Families
Yilan hsien	14	14	28	14	14	28
Taipei hsien	20	38	58	20	38	58
Taoyuan hsien	18	18	36	18	18	36
Hsinchu hsien	14	22	36	14	22	36
Miaoli hsien	18	12	30	18	12	30
Taichung hsien	28	18	46	28	18	46
Changhua hsien	46	20	66	46	20	66
Nantou hsien	20	10	30	20	10	30
Yunlin hsien	33	12	45	34	12	46
Chiayi hsien	29	22	51	28	22	50
Tainan hsien*	42	16	58	41	16	57
Kaohsiung hsien	28	16	44	28	16	44
Pingtung hsien	27	18	45	28	18	46
Taitung hsien	8	6	14	27	16	43
Hualien hsien	12	7	19	12	8	20
Taipei city	2	74	76	2	74	76
Keelung city	—	20	20	—	20	20
Taichung city	6	16	22	6	16	22
Tainan city	4	20	24	4	20	24
Kaohsiung city	6	32	38	6	32	38
Yangminshan Adm.	2	6	8	2	6	8
Total	377	417	794	376	418	794

TABLE 8.

Number of Sample Households Consuming Sweet Potato

Prefecture	No. of Families Consuming Sweet Potato					
	January visit			July visit		
	Farm Families	Non-farm Families	All Families	Farm Families	Non-farm Families	All Families
Yilan hsien	—	—	—	2	—	2
Taipei hsien	7	1	8	—	—	—
Taoyuan hsien	14	3	17	—	—	—
Hsinchu hsien	9	5	14	4	3	7
Miaoli hsien	6	—	6	—	—	—
Taichung hsien	9	1	10	2	—	2
Changhua hsien	22	—	22	5	1	6
Nantou hsien	1	—	1	—	—	—
Yunlin hsien	28	3	31	33	5	38
Chiayi hsien	25	—	25	26	—	26
Tainan hsien	29	5	34	36	5	41
Kaohsiung hsien	13	1	14	3	1	4
Pingtung hsien	17	6	23	14	8	22
Taitung hsien	4	1	5	3	2	5
Hualien hsien	2	—	2	—	—	—
Taipei city	—	—	—	—	—	—
Keelung city	—	—	—	—	—	—
Taichung city	1	1	2	—	—	2
Tainan city	—	—	—	1	1	2
Kaohsiung city	3	1	4	—	1	1
Yangminshan Adm.	—	—	—	—	—	—
Total	190	29	219	129	28	157

TABLE 9.

Number of Sample Households Consuming Wheat Flour

Prefecture	No. of Families Consuming Wheat Flour					
	January visit			July visit		
	Farm Families	Non-farm Families	All Families	Farm Families	Non-farm Families	All Families
Yilan hsien	—	1	1	—	4	4
Taipei hsien	—	4	4	4	9	13
Taoyuan hsien	1	1	2	—	1	1
Hsinchu hsien	—	—	—	—	1	1
Miaoli hsien	1	6	7	—	—	—
Taichung hsien	—	—	—	1	1	2
Changhua hsien	1	—	1	1	2	3
Nantou hsien	—	—	—	2	—	2
Yunlin hsien	—	—	—	—	2	2
Chiayi hsien	—	1	1	—	1	1
Tainan hsien	—	1	1	1	4	5
Kaohsiung hsien	2	—	2	—	—	—
Pingtung hsien	—	2	2	—	3	3
Taitung hsien	—	—	—	—	—	—
Hualien hsien	—	2	2	—	1	1
Taipei city	—	10	10	—	13	13
Keelung city	—	4	4	—	5	5
Taichung city	—	—	—	—	—	—
Tainan city	—	2	2	2	1	3
Kaohsiung city	—	—	—	—	1	1
Yangminshan Adm.	—	1	1	—	—	—
Total	5	35	40	11	49	60

TABLE 10.
Average Per Capita Daily Consumption of Basic Food by
Consumers of Sample Households

Unit: gm.

Prefecture	Farm Families			Non-farm Families			All Families		
	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour
Yilan hsien	580	13	—	332	—	10	473	8	5
Taipei hsien	561	50	7	451	3	17	500	22	13
Taoyuan hsien	522	140	2	385	16	3	461	85	3
Hsinchu hsien	491	136	—	400	54	3	445	95	2
Miaoli hsien	546	56	1	453	—	—	516	37	1
Taichung hsien	536	83	1	454	10	3	503	59	1
Changhua hsien	523	153	1	400	1	5	490	112	3
Nantou hsien	511	3	6	423	—	—	486	2	4
Yunlin hsien	321	587	—	340	99	7	326	463	2
Chiayi hsien	309	613	—	395	—	4	339	398	2
Tainan hsien	365	519	1	353	208	12	363	454	3
Kaohsiung hsien	556	88	5	403	17	—	503	63	4
Pingtung hsien	498	348	—	344	138	8	445	273	3
Taitung hsien	489	326	—	335	28	—	428	211	—
Hualien hsien	576	39	—	364	—	47	519	29	12
Taipei city	529	—	—	394	—	7	464	—	7
Keelung city	—	—	—	404	—	135	404	—	135
Taichung city	530	20	—	403	28	—	445	25	—
Tainan city	398	34	7	351	2	5	360	7	5
Kaohsiung city	502	229	—	383	7	2	405	50	1
Yangminshan Adm.	544	—	—	487	15	1	509	10	1
Weighted average	476	232	2	412	21	12	445	132	7

Notes: (1) Average of the results of January and July visits.

(2) Actual consumers are those members taking regular meals with the family.

TABLE 11.

Per Capita Daily Consumption of Basic Food by Consumers
of Sample Households, January Visit

Unit: gm.

Prefecture	Farm Families			Non-farm Families			All Families		
	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour
Yilan hsien	592	—	—	375	—	13	498	—	6
Taipei hsien	615	99	—	492	5	15	543	44	9
Taoyuan hsien	539	280	4	416	31	3	485	170	4
Hsinchu hsien	563	240	—	412	77	—	487	158	—
Miaoli hsien	612	112	1	508	—	—	577	74	1
Taichung hsien	593	151	—	481	19	—	555	107	—
Changhua hsien	580	285	1	439	—	—	543	210	1
Nantou hsien	586	5	—	443	—	—	552	4	—
Yunlin hsien	358	676	—	359	139	—	358	647	—
Chiayi hsien	349	551	—	391	—	3	364	356	1
Tainan hsien	424	482	—	385	251	3	416	433	1
Kaohsiung hsien	585	97	10	412	12	—	526	68	7
Pingtung hsien	505	478	—	378	130	10	459	352	4
Taitung hsien	510	406	—	383	19	—	464	266	—
Hualien hsien	595	78	—	372	—	79	538	58	20
Taipei-city	629	—	—	434	—	8	440	—	8
Keelung city	—	—	—	441	—	32	441	—	32
Taichung city	551	39	—	432	37	—	467	38	—
Tainan city	433	—	—	378	—	7	388	—	6
Kaohsiung city	528	458	—	414	6	—	436	93	—
Yangminshan Adm.	534	—	—	480	29	1	497	20	1
Weighted average	526	290	1	462	25	7	475	163	4

Note: The actual consumers in 800 sample households in January visit totalled 5,603, of which 3,001 were in farm families and 2,602 in non-farm families.

TABLE 12.

Per Capita Daily Consumption of Basic Food by Consumers
of Sample Households, July Visit

Unit: gm.

Prefecture	Farm Families			Non-farm Families			All Families		
	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour	Rice	Sweet potato	Wheat flour
Yilan hsien	569	26	—	289	—	7	448	15	3
Taipei hsien	506	—	13	411	—	19	457	—	16
Taoyuan hsien	505	—	—	354	—	2	436	—	1
Hsinchu hsien	419	32	—	388	30	6	403	31	3
Miaoli hsien	480	—	—	399	—	—	455	—	—
Taichung hsien	480	15	1	390	—	5	451	10	2
Changhua hsien	465	20	1	367	2	10	437	15	4
Nantou hsien	437	—	11	402	—	—	420	—	8
Yunlin hsien	283	497	—	319	59	13	293	379	4
Chiayi hsien	269	674	—	399	—	5	314	438	2
Tainan hsien	306	556	1	322	165	20	309	475	5
Kaohsiung hsien	526	78	—	394	21	—	479	58	—
Pingtung hsien	490	217	—	310	146	6	430	193	2
Taitung hsien	468	246	—	288	36	—	392	157	—
Hualien hsien	556	—	—	356	—	14	500	—	4
Taipei city	429	—	—	355	—	6	487	—	6
Keelung city	—	—	—	367	—	238	367	—	238
Taichung city	508	—	—	373	19	—	422	12	4
Tainan city	362	67	13	325	4	2	331	14	4
Kaohsiung city	475	—	—	351	8	3	373	7	2
Yangminshan Adm.	555	—	—	495	—	—	521	—	—
Weighted average	425	174	2	362	17	17	415	100	9

Note: The actual consumers in 800 sample households in July visit totalled 5,743, of which 2,950 were in farm families and 2,793 in non-farm families.

TABLE 13.
Energy Value Derived from Average Per Capita Daily Consumption
of Basic Food by Consumers of Sample Households

Unit: Calorie

Prefecture	Farm Families				Non-farm Families				All Families			
	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total
Yilan hsien	2,088	13	—	2,101	1,195	—	35	1,230	1,703	8	18	1,729
Taipei hsien	2,020	49	25	2,094	1,624	3	60	1,687	1,800	21	46	1,867
Taoyuan hsien	1,879	136	7	2,022	1,386	16	11	1,413	1,660	82	11	1,853
Hsinchu hsien	1,768	132	—	1,900	1,440	52	11	1,503	1,602	92	7	1,701
Miaoli hsien	1,966	54	4	2,024	1,631	—	—	1,631	1,858	36	4	1,898
Taichung hsien	1,930	81	4	2,015	1,634	10	11	1,655	1,811	57	4	1,872
Changhua hsien	1,883	148	4	2,035	1,440	1	18	1,459	1,764	109	11	1,884
Nantou hsien	1,840	3	21	1,864	1,523	—	—	1,523	1,750	2	14	1,766
Yunlin hsien	1,156	569	—	1,725	1,223	96	25	1,344	1,174	449	7	1,630
Chiayi hsien	1,112	595	—	1,707	1,422	—	14	1,436	1,220	386	7	1,613
Tainan hsien	1,314	503	4	1,821	1,271	202	42	1,515	1,307	440	11	1,758
Kaohsiung hsien	2,002	85	18	2,105	1,451	16	—	1,457	1,811	61	14	1,886
Pingtung hsien	1,793	338	—	2,131	1,238	134	28	1,400	1,602	265	11	1,878
Taitung hsien	1,760	316	—	2,076	1,206	27	—	1,233	1,541	205	—	1,746
Hualien hsien	2,074	38	—	2,112	1,310	—	165	1,475	1,868	28	42	1,938
Taipei city	1,904	—	—	1,904	1,418	—	25	1,443	1,670	—	25	1,695
Keelung city	—	—	—	—	1,454	—	473	1,928	1,454	—	473	1,927
Taichung city	1,908	19	—	1,927	1,451	27	—	1,478	1,602	24	—	1,626
Tainan city	1,433	33	25	1,487	1,264	2	18	1,284	1,296	7	18	1,381
Kaohsiung city	1,807	222	—	2,029	1,379	7	7	1,393	1,458	49	4	1,511
Yangminshan Adm.	1,958	—	—	1,958	1,753	15	4	1,772	1,832	10	4	1,866
Weighted average	1,714	225	7	1,946	1,483	20	42	1,545	1,602	128	25	1,755

Notes: (1) Computed from Table 10.

(2) The caloric content of basic food per 100 grams is figured at 360 for polished rice, 97 for sweet potato and 350 for wheat flour.

TABLE 14.

Energy Value Derived from Per Capita Daily Consumption of Basic Food by Consumers of Sample Households, January Visit

Unit: Calorie

Prefecture	Farm Families			Non-farm Families			All Families					
	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total
	Yilan hsien	2,131	—	—	2,131	1,350	—	46	1,396	1,793	—	21
Taipei hsien	2,214	96	—	2,310	1,771	5	53	1,829	1,955	43	32	2,030
Taoyuan hsien	1,940	272	14	2,226	1,498	30	11	1,539	1,746	165	14	1,925
Hsinchu hsien	2,027	233	—	2,260	1,483	75	—	1,558	1,753	153	—	1,906
Miaoli hsien	2,203	109	4	2,316	1,829	—	—	1,829	2,077	72	4	2,153
Taichung hsien	2,135	146	—	2,281	1,732	18	—	1,750	1,998	104	—	2,102
Changhua hsien	2,088	276	4	2,368	1,580	—	—	1,580	1,955	204	4	2,163
Nantou hsien	2,110	5	—	2,115	1,595	—	—	1,595	1,987	4	—	1,991
Yunlin hsien	1,289	656	—	1,945	1,292	135	—	1,427	1,289	628	—	1,917
Chiayi hsien	1,256	534	—	1,790	1,408	—	11	1,419	1,310	345	4	1,659
Tainan hsien	1,526	468	—	1,994	1,386	243	—	1,640	1,498	420	4	1,922
Kaohsiung hsien	2,106	94	35	2,235	1,483	12	—	1,495	1,894	66	25	1,985
Pingtung hsien	1,818	464	—	2,282	1,361	126	35	1,522	1,652	341	14	2,007
Taitung hsien	1,836	394	—	2,230	1,379	18	—	1,397	1,670	258	—	1,928
Hualien hsien	2,142	76	—	2,218	1,339	—	277	1,616	1,937	56	70	2,063
Taipei city	2,264	—	—	2,264	1,562	—	28	1,590	1,584	—	28	1,612
Keelung city	—	—	—	—	1,588	—	112	1,700	1,588	—	112	1,700
Taichung city	1,984	38	—	2,022	1,555	36	—	1,591	1,681	37	—	1,718
Tainan city	1,559	—	—	1,559	1,361	—	25	1,386	1,397	—	21	1,418
Kaohsiung city	1,901	444	—	2,345	1,490	6	—	1,496	1,570	90	—	1,660
Yangminshan Adm.	1,922	—	—	1,922	1,728	—	4	1,760	1,789	19	—	1,812
Weighted average	1,894	281	4	2,179	1,663	24	25	1,712	1,710	158	14	1,882

Notes: (1) Computed from Table 11.

(2) The calorie content of basic food per 100 grams is figured at 360 for polished rice, 97 for sweet potato and 350 for wheat flour.

TABLE 15.
Energy Value Derived from Per Capita Daily Consumption of Basic
Food by Consumers of Sample Households, July Visit

Unit: Calorie

Prefecture	Farm Families				Non-farm Families				All Families			
	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total	Rice	Sweet potato	Wheat flour	Total
Yilan hsien	2,048	25	—	2,073	1,040	—	25	1,065	1,613	15	11	1,639
Taipei hsien	1,822	—	46	1,868	1,480	—	67	1,547	1,645	—	56	1,701
Taoyuan hsien	1,818	—	—	1,818	1,274	—	7	1,281	1,570	—	4	1,574
Hsinchu hsien	1,508	31	—	1,539	1,397	29	21	1,447	1,471	30	11	1,492
Miaoli hsien	1,728	15	—	1,728	1,436	—	—	1,436	1,638	10	—	1,638
Taichung hsien	1,728	19	4	1,747	1,404	—	8	1,412	1,624	15	7	1,641
Changhua hsien	1,674	—	4	1,697	1,321	2	35	1,358	1,573	—	14	1,602
Nantou hsien	1,573	—	39	1,612	1,447	—	—	1,447	1,512	—	28	1,540
Yunlin hsien	1,019	482	—	1,501	1,148	57	46	1,251	1,055	368	14	1,437
Chiayi hsien	968	654	—	1,622	1,436	—	28	1,454	1,130	425	7	1,562
Tainan hsien	1,102	539	4	1,645	1,159	160	70	1,389	1,112	461	18	1,591
Kaohsiung hsien	1,894	76	—	1,970	1,418	20	—	1,438	1,724	56	—	1,780
Pingtung hsien	1,764	210	—	1,974	1,116	142	21	1,279	1,548	187	7	1,742
Taitung hsien	1,685	229	—	1,914	1,037	35	—	1,072	1,411	152	—	1,563
Hualien hsien	2,005	—	—	2,005	1,282	—	49	1,331	1,800	—	14	1,814
Taipei city	1,544	—	—	1,544	1,278	—	21	1,299	1,753	—	21	1,774
Keelung city	—	—	—	—	1,321	—	833	2,154	1,321	—	833	2,154
Taichung city	1,829	—	—	1,829	1,343	18	—	1,361	1,519	12	—	1,531
Tainan city	1,303	65	46	1,414	1,170	4	7	1,181	1,191	14	14	1,219
Kaohsiung city	1,710	—	—	1,710	1,264	8	11	1,283	1,343	7	7	1,357
Yangminshan Adm.	1,998	—	—	1,998	1,782	—	—	1,782	1,876	—	—	1,876
Weighted average	1,530	169	7	1,706	1,303	16	60	1,379	1,494	97	32	1,623

Notes: (1) Computed from Table 12.

(2) The calorie content of basic food per 100 grams is figured at 360 for polished rice, 97 for sweet potato and 350 for wheat flour.

TABLE 16.

Frequency Distribution of Per Capita Daily Calorie Intake Derived from Basic Food of Consumers among Sample Households, January Visit

Class interval calories	Frequency		
	Farm Families	Non-farm Families	All Families
Under 700	—	3	3
700 - 999	2	16	18
1,000 - 1,299	6	69	75
1,300 - 1,599	43	124	167
1,600 - 1,899	87	129	216
1,900 - 2,199	97	47	144
2,200 - 2,499	61	18	79
2,500 - 2,799	32	3	35
2,800 - 3,099	28	3	31
3,100 and above	26	6	32
Total	332	418	800

TABLE 17.

Frequency Distribution of Per Capita Daily Calorie Intake Derived from Basic Food of Consumers among Sample Households, July Visit

Class interval Calories	Frequency		
	Farm Families	Non-farm Families	All Families
Under 700	—	3	3
700 - 999	9	16	25
1,000 - 1,299	39	69	108
1,300 - 1,599	94	128	222
1,600 - 1,899	106	125	231
1,900 - 2,199	66	47	113
2,200 - 2,499	30	18	48
2,500 - 2,799	14	3	17
2,800 - 3,099	15	3	18
3,100 and above	9	6	15
Total	382	418	800

TABLE 18.
Estimated Total Civilian Consumption of Basic Food in 1956

Item	Unit	Amount
A. Rice		
1. Per capita daily consumption of polished rice	gm.	401
2. Per capita annual consumption of polished rice	kg.	146.49
3. Per capita annual consumption of brown rice equivalent	kg.	155.84
4. Total civilian consumption in 1956	MT	1,463,397
B. Sweet potato		
1. Per capita daily consumption	gm.	119
2. Per capita annual consumption	kg.	43.44
3. Total civilian consumption in 1956	MT	407,918
C. Wheat flour		
1. Per capita daily consumption	gm.	6
2. Per capita annual consumption	kg.	2.19
3. Per capita annual consumption of wheat equivalent	kg.	2.92
4. Total civilian consumption in 1956	MT	20,565
5. Total civilian consumption of wheat equivalent in 1956	MT	27,420

Notes: (1) The per capita daily consumption of basic food is quoted from Table 1.

(2) The total civilian population at the end of 1956 released by Provincial Department of Civil Affairs was 9,390,381.

(3) The factor for converting rice from polished to brown is 1/0.94 or 1.0638.

(4) The factor for converting wheat flour to wheat is 1/0.75 or 1.3334.

TABLE 19.
Weighted Average of Per Capita Civilian Consumption and
Military Ration of Basic Food, 1956

Item	Unit	Civilian consumption	Military ration	Weighted average ^{1/}
1. Rice				
a) Daily	gm/polished	401	541 ^{2/}	410
b) Annual	kg/brown	155.84	209.88	159.44
2. Sweet potato				
a) Daily	gm.	119	200	124
b) Annual	kg.	43.44	73	45.41
3. Wheat flour				
a) Daily (A)	gm.	6	144	15
b) Daily (B)	gm.	32 ^{3/}	144	39.46
c) Annual (A)	kg.	2.19	52.56	5.54
d) Annual (B)	kg.	11.68 ^{4/}	52.56	14.40
4. Daily calorie intake from basic food				
a) Total (A)	Calorie	1,581	2,646	1,652
b) Total (B)	Calorie	1,672 ^{5/}	2,646	1,737

Notes: ^{1/} The total civilian population in 1956 was 9,390,381 and the military population in the same year was estimated at 670,000.

^{2/} Converted to polished rice by using the factor 0.94.

^{3/4,5/} Including the consumption of flour for snacks and between meals.

TABLE 20.
Estimated Rice Disposals in Taiwan, 1956

Item	Amount (MT/brown rice)
1. Civilian consumption	1,463,397
2. Ration to military personnel	140,520
3. Shipment to offshore islands	3,000
4. Wine making	12,000
5. Seeds	32,827
6. Exports	95,666
7. Animal feeds	71,593
8. Waste	35,796
Total	1,854,799

Notes: (1) Item 1 was quoted from Table 18.

(2) Item 2 was estimated by RLED, JCRR based on the daily ration of 575 gm. of rice to military personnel.

(3) Items 3-5 were estimated by RLED, JCRR based on materials furnished by the PFB.

(4) Item 6 was furnished by the PFB.

(5) Items 7-8 were estimated by RLED, JCRR based on the percentages of rice for animal feeds and waste of the Production.

(6) The total rice production in 1956 was 1,789,829 M/T of brown rice.

(7) The carry-over of rice production in 1956 was assumed about the same as that in 1955.

TABLE 21.
Estimated Sweet Potato Disposals in Taiwan, 1956

Item	Amount (MT)
1. Civilian consumption as basic food	407,918
2. Ration to military personnel	48,910
3. Animal feeds	1,258,370
4. Industrial uses	513,620
5. Flour extraction	256,810
6. Waste	128,405
Total	2,614,033

Notes: (1) Item 1 was quoted from Table 18.

(2) Item 2 was estimated by RLED, JCRR based on the daily ration of 200 gm. of sweet potato to military personnel.

(3) Items 3-6 were estimated by RLED, JCRR based on the results of the "A Study on Supply and Demand of Sweet Potato and Cassava in Taiwan" undertaken by JCRR in 1956.

(4) The total production of sweet potato in 1956 was 2,568,104 MT.

(5) The carry-over of sweet potato production in 1956 was assumed about the same as that in 1955.

TABLE 22.
Estimated Wheat Flour Disposals in Taiwan, 1956

Item	Amount (MT)
1. Civilian consumption as basic food	20,565
2. Ration to military personnel	35,215
3. Flavoring essence and starch industries	32,975
4. Wheat flour consumed as snacks and between meals	90,090
Total	178,845

Notes: (1) Item 1 was quoted from Table 18.

(2) Item 2 was estimated by RLED, JCRR based on the daily ration of 144 gm. of wheat flour to military personnel.

(3) Item 3 was estimated by RLED, JCRR based on the reports of the Provincial Association of Flavoring Essence Industry that the output of flavor essence in 1956 totalled 780 MT which needed 32,975 MT of wheat flour to produce 3,705 MT of dry gluten as raw material.

(4) Item 4 was worked out by subtracting the sum of items 1-3 from the total wheat flour supply in 1956.

(5) Total wheat supply in 1956 was estimated at 228,460 MT comprising of 210,768 MT of imported wheat and 17,692 MT of local wheat, from which a total of 171,345 MT of flour would have been extracted. Adding together the imported wheat and flour of about 7,500 MT of wheat flour equivalent donated by the people of the U.S.A. for relief purpose, the total wheat flour supply in 1956 was about 178,845 MT.

(6) The carry-over of wheat flour production in 1956 was assumed about the same as that in 1955.

Chart I.
 Frequency Distribution of Per Capita Calorie Intake from Basic
 Food by Consumers of Sample Households, January Visit

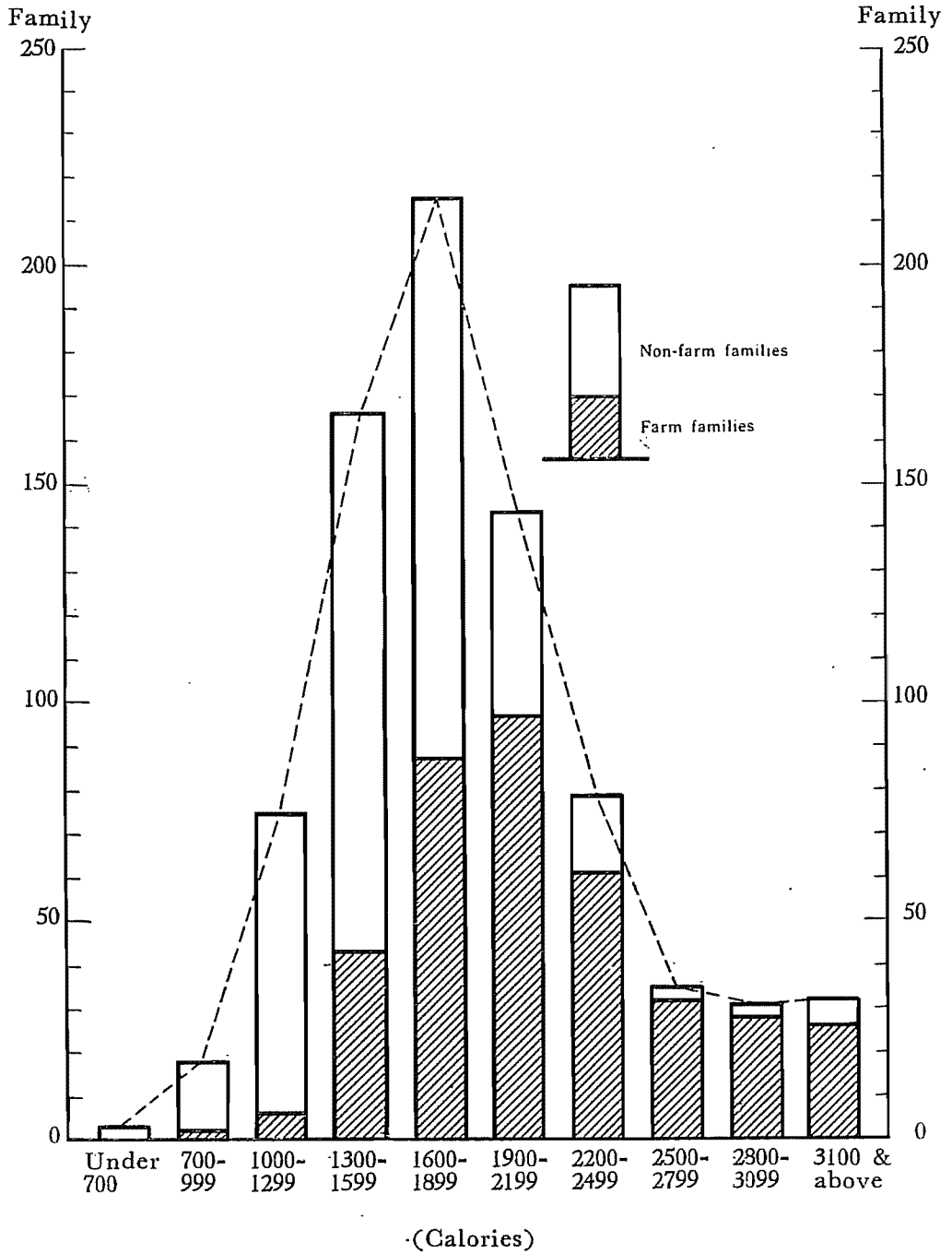
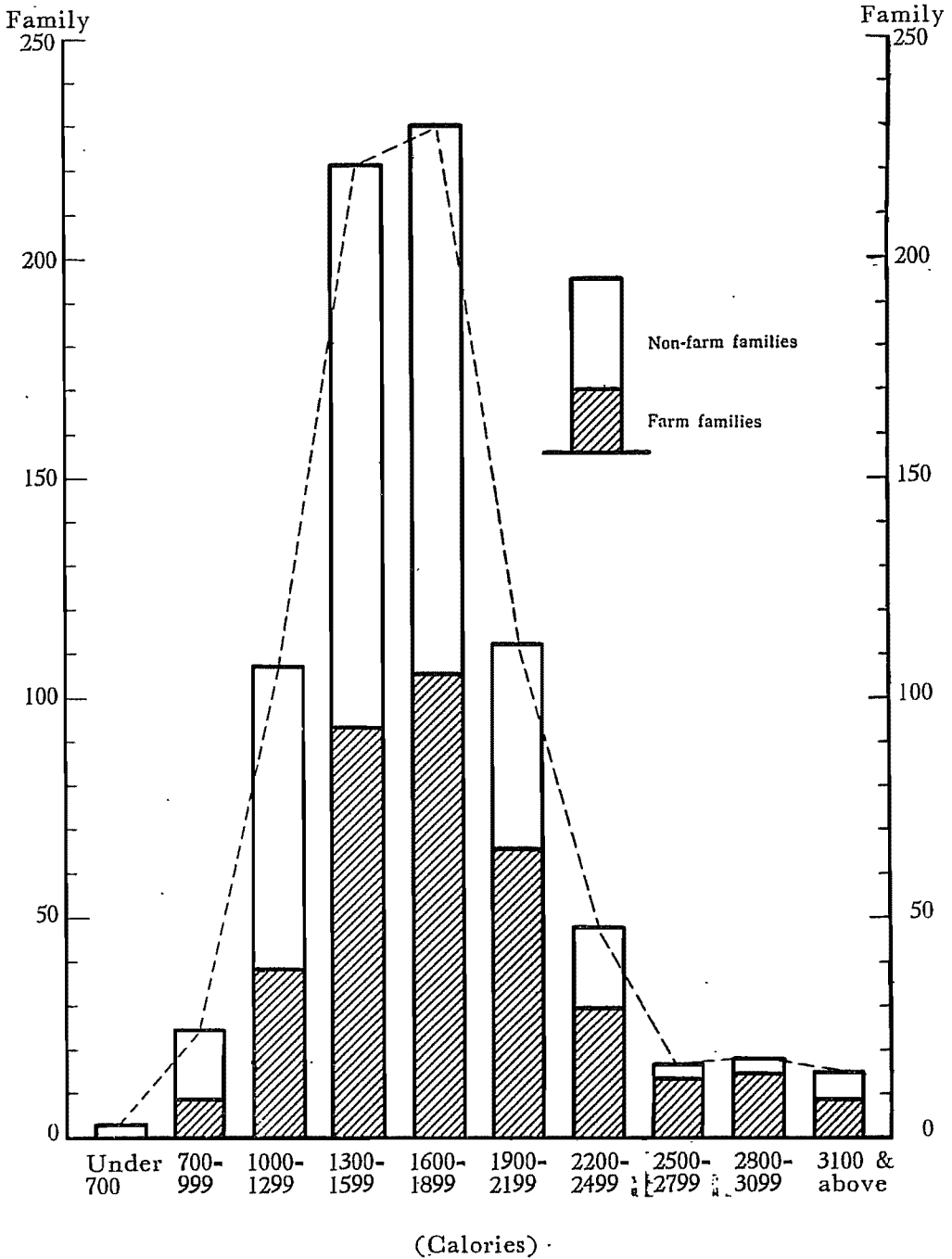


Chart II.
 Frequency Distribution of Per Capita Calorie Intake from Basic
 Food by Consumers of Sample Households, July Visit



Appendices

1. Allocation of Sample Households in Different Hsien and Cities

Prefecture	Township, district, city	Farm Families	Non-farm Families	All Families
Yilan hsien	Yilan	4	10	14
	Chuangwei	4	2	6
	Sanhsin	6	2	8
	Total	14	14	28
Taipei hsien	Panchiao	8	26	34
	Linkow	6	6	12
	Tuchen	6	6	12
	Total	20	38	58
Taoyuan hsien	Taoyuan	6	10	16
	Kweishan	6	4	10
	Luchu	6	4	10
	Total	18	18	36
Hsinchu hsien	Hsinchu	6	16	22
	Chupei	4	2	6
	Paoshan	4	4	8
	Total	14	22	36
Miaoli hsien	Miaoli	8	8	16
	Dahu	6	2	8
	Sanyi	4	2	6
	Total	18	12	30
Taichung hsien	Foonyuan	10	10	20
	Daan	10	4	14
	Shenkong	8	4	12
	Total	28	18	46
Changhua hsien	Changhua	16	14	30
	Ershui	14	4	18
	Hsinkang	16	2	18
	Total	46	20	66
Nantou hsien	Nantou	10	6	16
	Luku	4	2	6
	Minchien	6	2	8
	Total	20	10	30
Yunlin hsien	Doulu	12	8	20
	Mailiao	10	2	12
	Dapi	14	2	16
	Total	36	12	48
Chiayi hsien	Chiayi	6	16	22
	Botze	18	4	22
	Wufong	6	2	8
	Total	30	22	52

Tainan hsien	Hsinyin	12	8	20
	Jenteh	14	4	18
	Houpi	16	4	20
	Total	42	16	58
Kaohsiung hsien	Fongshan	8	8	16
	Jenwu	6	2	8
	Linyuan	14	6	20
	Total	28	16	44
Pingtung hsien	Pingtung	4	12	16
	Neipu	20	6	26
	Mudan	4	—	4
	Total	28	18	46
Taitung hsien	Taitung	2	4	6
	Dawu	2	—	2
	Chinshan	4	2	6
	Total	8	6	14
Hualien hsien	Hualien	4	6	10
	Shoufong	4	2	6
	Juisui	4	—	4
	Total	12	8	20
Taipei City	Kutin	—	34	34
	Datoon	—	22	22
	Chungshan	2	18	20
	Total	2	74	76
Keelung City	Hsinyi	—	6	6
	Chungshan	—	10	10
	Chitu	—	4	4
	Total	—	20	20
Taichung City	Tunchu	2	6	8
	Peichu	—	8	8
	Hsichu	4	2	6
	Total	6	16	22
Tainan City	Hsichu	—	8	8
	Nanchu	4	4	8
	Chungchu	—	8	8
	Total	4	20	24
Kaohsiung City	Linya	2	8	10
	Kushan	2	2	4
	Tsoyin	2	12	14
	Total	6	22	28
Yangminshan Adm.	Shihlin	2	6	8
	Total	2	6	8
Grand total	61	382	418	800

2. Schedule Form

Schedule Number: _____

January (July), 1957

Joint Commission on Rural Reconstruction
in Cooperation with
Provincial College of Agriculture

Investigation of Per Capita Basic Food Consumption

I. Name and Address of Sample Household

- | | |
|----------------------------------|--|
| 1. Prefecture (City)_____ | 6. Name of Household Head_____ |
| 2. Hsiang (Cheng, District)_____ | 7. Native Place of Household Head_____ |
| 3. Li (Village)_____ | 8. Original Residence_____ |
| 4. Address_____ | 9. Date of Investigation_____ |
| 5. Type of Household_____ | 10. Investigator_____ |

II. Family and Household

Members of household by relation to the head	Sex		Age	Occupation, if any	Status of taking meals at home			
	Male	Female			All time	Almost always	Occasion- ally	Always meals out
1. Head								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

Total: _____ persons (Male _____ Female _____)

Total visitors mealing in: _____ persons

III. Food Habits and Preparation Methods

1. What variety of rice do you prefer?
Ponlai _____ Chailai _____
2. What is the general milling rate of rice for your home consumption?
_____ %
3. How do you cook rice?
With little water _____ with plenty of water _____
4. If you cook rice with plenty water, how do you use the excess water?
For human consumption _____ For feeding stocks _____ Thrown away _____
5. Is there any scorched rice that adheres to the pan?
Often _____, Occasionally _____, None _____
6. If there is some scorched rice, how do you make use of it?
Consumed as snacks _____, Cooked with gruel _____, Used for stock feed _____, Thrown away _____
7. Do you have any left-over cooked rice everyday?
Often _____, Occasionally _____, None _____, Very much _____, Not much _____, Only a little _____
8. How do you make use of the left-over cooked rice?
Consumed in next meal _____, Used for stock feed _____, Thrown away _____, Other _____
9. What kind of sweet potato do you eat?
Fresh root _____, Chips _____
10. What variety of sweet potato do you eat?
White _____, Dark yellow _____, A little pale _____
11. How do you prepare sweet potato?
Cooked with rice _____, Cooked alone _____, For supplementary food _____
12. What has been the remarkable change in the consumption of basic food in your family in recent years?
No change _____, Beginning to eat more wheat flour _____, Beginning to eat more sweet potato, _____, Others _____

IV. Description of Meals and Quantities of Basic Foodstuffs Consumed

Meal & menu	Raw ingredients as purchased		Total in-edible refuse	Raw ingredient E. P. (gm.)	Weight of empty pan & cooked food (gm.)	Weight of empty pan (gm.)	Weight of cooked food (gm.)	No. of persons taking meals			
	Kind	Weight (gm)						Purchased	Home produced	Total household members	Household members sharing meals including packed lunch
1	2	3	5	(3-5) 6	8	7	(8-7) 9	10	11	12	(11+12) 13
Lunch											
1.											
2.											
3.											
4.											
Supper											
1.											
2.											
3.											
4.											
Breakfast											
1.											
2.											
3.											
4.											

Utilization of left-over cooked food (17+18+19+20+21+22+23) = 15 (gm)									
Refuse & waste of cooked food at table (gm.)	Left over (gm.)	Total cooked food actually eaten (gm.)	Fed to stock			Other uses			
			Hogs	Poultry	Dogs				
14	15	9 - (14+15) 16	17	18	19	20	21	22	23

V. Preliminary Calculation Sheet

Meal	Raw ingredient		Cooked food		Ratio of raw ingredient to cooked food (3÷5) 6	No. of consumers including visitors	Total household members	Left-over cooked food (gm.)	Refuse & waste of cooked food (gm.)	Cooked food actually consumed (gm.) 5-(9+10) 11	converted to raw ingredient (11×6) 12	Remarks
	Kind	Weight (gm.)	Name	Weight (gm.)								
1	2	3	4	5		7	8	9	10			

Total of household member: All eaters (No. of eaters in all meals ÷ No. of meals)

Total basic food consumed (raw ingredient, E. P.): Rice gm, wheat flour gm, sweet potato gm.

Per capita daily consumption:

By all household members: Rice gm, wheat flour gm, sweet potato gm

By all eaters: Rice gm, wheat flour gm, sweet potato gm

3. Civilian Population and Household Members of all Samples, 1956

A Civilian population in December, 1956

1. Agricultural population	4,920,970	52.4%
2. Non-agricultural population	4,469,411	47.6%
3. Total Population	9,390,381	100.0%

B. Total of household members of 800 sample households, July 1956

1. Farm families	3,174	51.2%
2. Non-farm families	3,032	48.8%
3. All families	6,206	100.0%

4. Age and Sex Distribution of Civilian Population and Household Members of All Samples

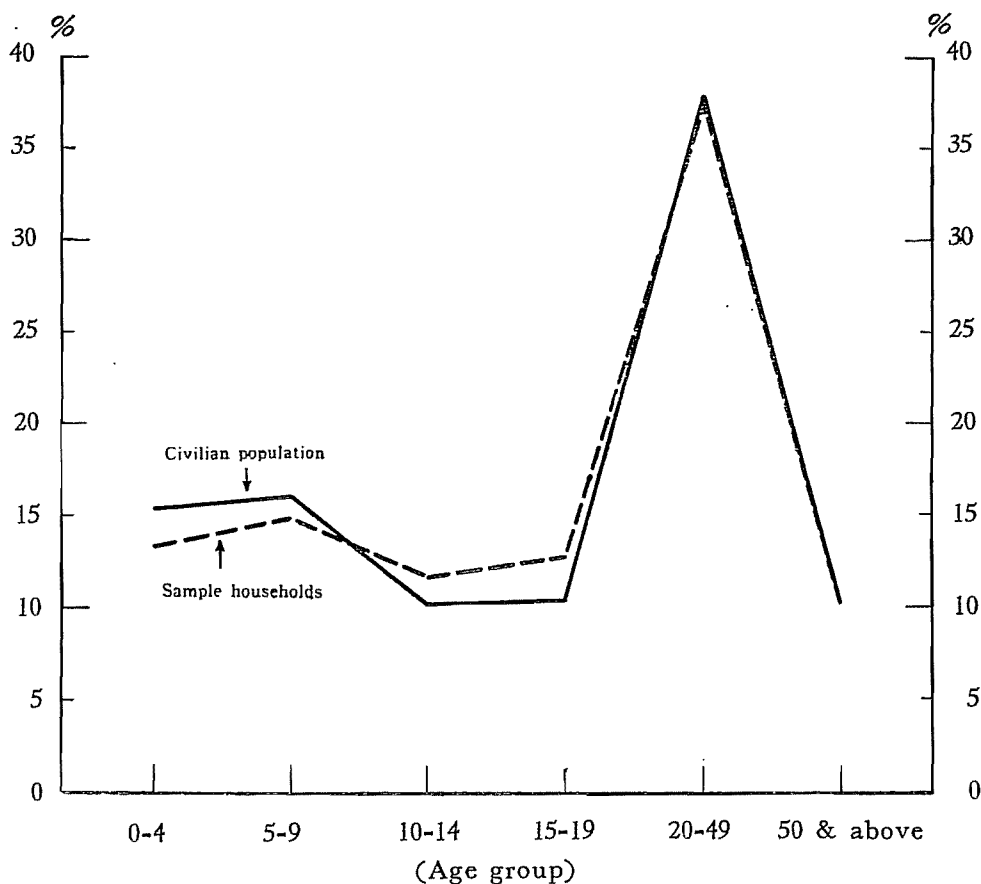
A. Civilian Population, December 31, 1956

Age group	Male		Female		Total	
	No. of persons	%	No. of persons	%	No. of persons	%
0- 4	755,301	8.0	720,366	7.7	1,475,667	15.7
5- 9	771,821	8.2	731,279	7.8	1,503,100	16.0
10-14	489,093	5.2	459,230	4.9	948,323	10.1
15-19	496,138	5.3	469,513	5.0	965,651	10.3
20-49	1,818,174	19.4	1,732,750	18.4	3,550,924	37.8
50 & above	465,668	5.0	481,048	5.1	946,716	10.1
Total	4,796,195	51.1	4,594,186	48.9	9,390,381	100.0

B. Household Members of 800 Samples, July, 1956

Age group	Male		Female		Total	
	No. of persons	%	No. of persons	%	No. of persons	%
0- 4	439	7.0	391	6.3	830	13.3
5- 9	477	7.7	445	7.2	922	14.9
10-14	369	6.0	346	5.6	715	11.6
15-19	424	6.8	358	5.8	782	12.6
20-49	1,191	19.2	1,139	18.3	2,330	37.5
50 & above	308	5.0	319	5.1	627	10.1
Total	3,208	51.7	2,998	48.3	6,206	100.0

C. Curves plotted from A & B.



5. Computation of Standard Error of the Arithmetic Mean of Per Capita Daily Rice Consumption of Sample Households

A. January Visit

Frequency Distribution of Per Capita Daily Rice Consumption of Sample Households

Class interval (gram)	Mid-point of the class M	Frequency f	Class deviation d	d ²	fd ²
0- 99	50	17	- 334.63	147,940.24	2,514,984.08
100- 199	150	36	- 284.63	81,014.24	2,916,512.64
200- 299	250	98	- 184.63	34,088.24	3,340,647.52
300- 399	350	208	- 84.63	7,162.24	1,489,745.92
400- 499	450	197	15.37	236.24	46,539.28
500- 599	550	133	115.37	13,310.24	1,770,261.92
600- 699	650	54	215.37	46,384.24	2,504,748.96
700- 799	750	29	315.37	99,458.24	2,884,288.96
800- 899	850	15	415.37	172,532.24	2,587,983.60
900- 999	950	9	515.37	265,606.24	2,390,456.16
1,000-1,099	1,050	4	615.37	378,680.24	1,514,720.96
Total		800			23,960,890.00

$$M \text{ (Arithmetic mean)} = 434.63$$

$$\sigma \text{ (standard deviation)} = \sqrt{\frac{fd^2}{N}} = \sqrt{\frac{23,960,890}{800}} = 173.06$$

$$\sigma_m \text{ (standard error)} = \sqrt{\frac{\sigma}{N}} = \sqrt{\frac{173.06}{800}} = 6.120$$

$$434.63 + 3\sigma_m = 434.63 + 3 \times 6.120 = 452.99 \text{ grams}$$

$$434.63 - 3\sigma_m = 434.63 - 3 \times 6.120 = 416.27 \text{ grams}$$

B. July Visit

Frequency Distribution of Per Capita Daily Rice Consumption
of Sample Households

Class interval (gram)	Mid-point of the class M	Frequency f	Class deviation d	d ²	fd ²
0- 99	50	25	- 336.38	113,151.50	2,828,787.50
100- 199	150	60	- 236.38	55,875.50	3,352,530.00
200- 299	250	166	- 136.38	18,599.50	3,087,517.00
300- 399	350	236	- 36.38	1,323.50	312,346.00
400- 499	450	153	63.62	4,047.50	619,267.50
500- 599	550	82	163.62	26,771.50	2,195,263.00
600- 699	650	37	263.62	69,495.50	2,571,333.50
700- 799	750	20	363.62	132,219.50	2,644,339.00
800- 899	850	5	463.62	214,943.50	1,074,717.50
900- 999	950	5	563.62	317,667.50	1,588,337.50
1,000-1,099	1,050	3	663.62	440,391.50	1,321,174.50
1,100-1,199	1,150	4	763.62	583,115.50	2,332,462.00
1,200-1,299	1,250	4	863.62	745,839.50	2,983,358.00
Total		800			26,911,433.00

$$M \text{ (Arithmetic mean)} = 386.38$$

$$\sigma \text{ (Standard deviation)} = \sqrt{\frac{fd^2}{N}} = \sqrt{\frac{26,911,433}{800}} = 183.41$$

$$\sigma_m \text{ (Standard error)} = \sqrt{\frac{\sigma}{N}} = \sqrt{\frac{183.41}{800}} = 6.486$$

$$386.38 + 3\sigma_m = 386.38 + 3 \times 6.486 = 405.84 \text{ grams}$$

$$386.38 - 3\sigma_m = 386.38 - 3 \times 6.486 = 366.92 \text{ grams}$$

6. Computation of Required Size of Sample within a given Degree of Reliability

A. January visit

$$N \text{ (Required size)} = \frac{t^2 r^2}{e r^2}$$

Assuming $t = 3$

$$N = \frac{3^2 \times \left(\frac{\sigma}{M}\right)^2}{\left(\frac{3 \sigma_m}{M}\right)^2} = \frac{9 \times \left(\frac{173.06}{434.63}\right)^2}{\left(\frac{3 \times 6.120}{434.63}\right)^2} = 799.798$$

B. July visit

$$N \text{ (Required size)} = \frac{t^2 r^2}{e r^2}$$

Assuming $t = 3$

$$N = \frac{3^2 \times \left(\frac{\sigma}{M}\right)^2}{\left(\frac{3 \sigma_m}{M}\right)^2} = \frac{9 \times \left(\frac{183.41}{386.38}\right)^2}{\left(\frac{3 \times 6.486}{386.38}\right)^2} = 799.637$$

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