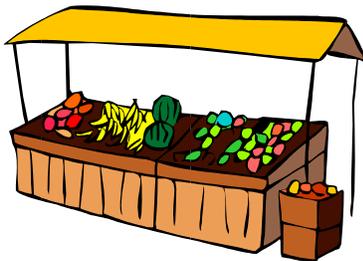


KINGDOM OF TONGA
STATISTICS DEPARTMENT

REPORT ON THE HOUSEHOLD INCOME AND EXPENDITURE SURVEY

2000/01



PREFACE

The Tonga Statistics Department has pleasure in releasing the results of the national Household Income and Expenditure Survey 2000/01. The survey was conducted in four phases over a 12-month period starting in October 2000. Very detailed information on household income and expenditure was collected from more than 1,600 households spread around the Kingdom.

Within the Statistics Department, the results are being used to revise the weighting system for the Consumer Price Index, and to provide valuable statistical information on the household sector for inclusion in the country's National Accounts. We hope that this present publication will also provide useful information for planners, policy makers and the general public.

Conducting a survey of this complexity has posed immense challenges for the department, and I am grateful to all permanent and temporary staff who participated in the survey. My thanks go to the field supervisors and interviewers who worked tirelessly to ensure that the data collected were of good quality. Within our headquarters, Soane Penitani, Principal Statistician, and Samisoni Makaafi, Senior Statistician, ably managed the field operation phase of the survey. Siosi'ana Fisi'inaua, Senior Statistician and Feleti Wolfgramm, Statistician, were responsible for the data processing phase, and demonstrated their computer skills in generating tabulations from the survey data.

The Statistics Department also wishes to acknowledge the valuable contributions made by some of our international partners. Chris Ryan and Kim Robertson of the Secretariat of the Pacific Community (SPC) provided very helpful inputs in the respective areas of sampling and database documentation. Peter Wingfield Digby, a consultant for the Asian Development Bank (ADB), assisted with the analysis of the survey data and the preparation of this report.

The most valuable contribution of all, however, came from the 1,600 households that provided the detailed information needed in this survey. Without their full cooperation, the survey would have been impossible.

The information provided in this report contains only a broad summary of the main findings of the survey. Much more detailed information, particularly in relation to expenditure on individual items, can be made available to interested users on request.

Mrs Seini Filiai
Acting Government Statistician

Statistics Department
P.O. Box 149
Nuku'alofa
Tonga
Phone: 23-300
Fax: 24-303
Email: statdept@dgl.to

TABLE OF CONTENTS

	<u>Page number</u>
List of tables	(iv)
Notes and abbreviations	(v)
Map of Tonga	(vi)
Executive summary	(vii)
1. Introduction	
1.1 Survey objectives	1
1.2 Sample design and implementation	1
1.3 Questionnaires	2
1.4 Concepts and definitions	3
1.5 Fieldwork	4
1.6 Data processing	5
2. Summary of survey results	
2.1 Sources of household income	7
2.2 Components of household expenditure	9
2.3 Cash expenditure	11
2.4 Consumption of home produce	14
2.5 Comparison of income and expenditure	15
2.6 National aggregates of income and expenditure	16
2.7 Demographic and social information	18
3. Statistical tables	19
4. Appendices	
A Questionnaires used in the survey	30
B Sample design	41
C Sampling and non-sampling errors	42

LIST OF TABLES

<u>Table no.</u>	<u>Title</u>	<u>Page number</u>
1.1	Census figures, and recent population projections	1
1.2	Interviews achieved, average household size, and weighting factors, by island division	2
1.3	Sources of income and expenditure	6
2.1	Average annual total income per household, by main source and island division	7
2.2	Percentage distribution of total annual income by main source and island division	7
2.3	Proportion of households reporting each main source of income, by island division	8
2.4	Total annual income per capita by main source and island division	9
2.5	Distribution of total annual household and per capita expenditure in Tonga, by major expenditure group	9
2.6	Average annual total expenditure per household, by major expenditure group and island division	10
2.7	Proportion of households reporting expenditure on each major expenditure group, by island division	11
2.8	Percentage distribution of cash expenditure on food, by major food group, within each island division	14
2.9	Comparison of average annual household estimates from two sources, relating to the consumption of home produce	14
2.10	Percentage distribution of households by average annual cash income and by average annual cash expenditure, by island division	15
2.11	National aggregates of cash and non-cash income, by main source of income and island division	16
2.12	National aggregates of cash and non-cash expenditure, by expenditure category and island division	17
2.13	Estimated distribution of the population by age and island division, with the island totals based on census projections	18
3.1	Average annual total income per household, by source and island division	19
3.2	Percentage distribution of cash and non-cash income by source and island division	20
3.3	Proportion of households reporting each source of income during the last 12 months, by island division	21
3.4	Total annual income per capita by source (cash and non-cash) and island division	22
3.5	Total annual national household income by source and island division	23

<u>Table no.</u>	<u>Title</u>	<u>Page number</u>
3.6	Average annual total expenditure per household, by expenditure group and island division	24
3.7	Percentage distribution of cash and non-cash expenditure, by expenditure group and island division	24
3.8	Average annual total expenditure per capita, by expenditure group & island division	25
3.9	Total annual national household expenditure, by expenditure group & island division	25
3.10	Average annual household and per capita cash expenditure, percentage distribution of expenditure within expenditure groups, and total annual national cash expenditure on different groups of items	26
4.1	Standard errors for some key expenditure aggregates	42
4.2	Standard errors for some key income aggregates	43
4.3	Relative standard errors (RSEs) for key income and expenditure aggregates for each island division	44

Notes and abbreviations

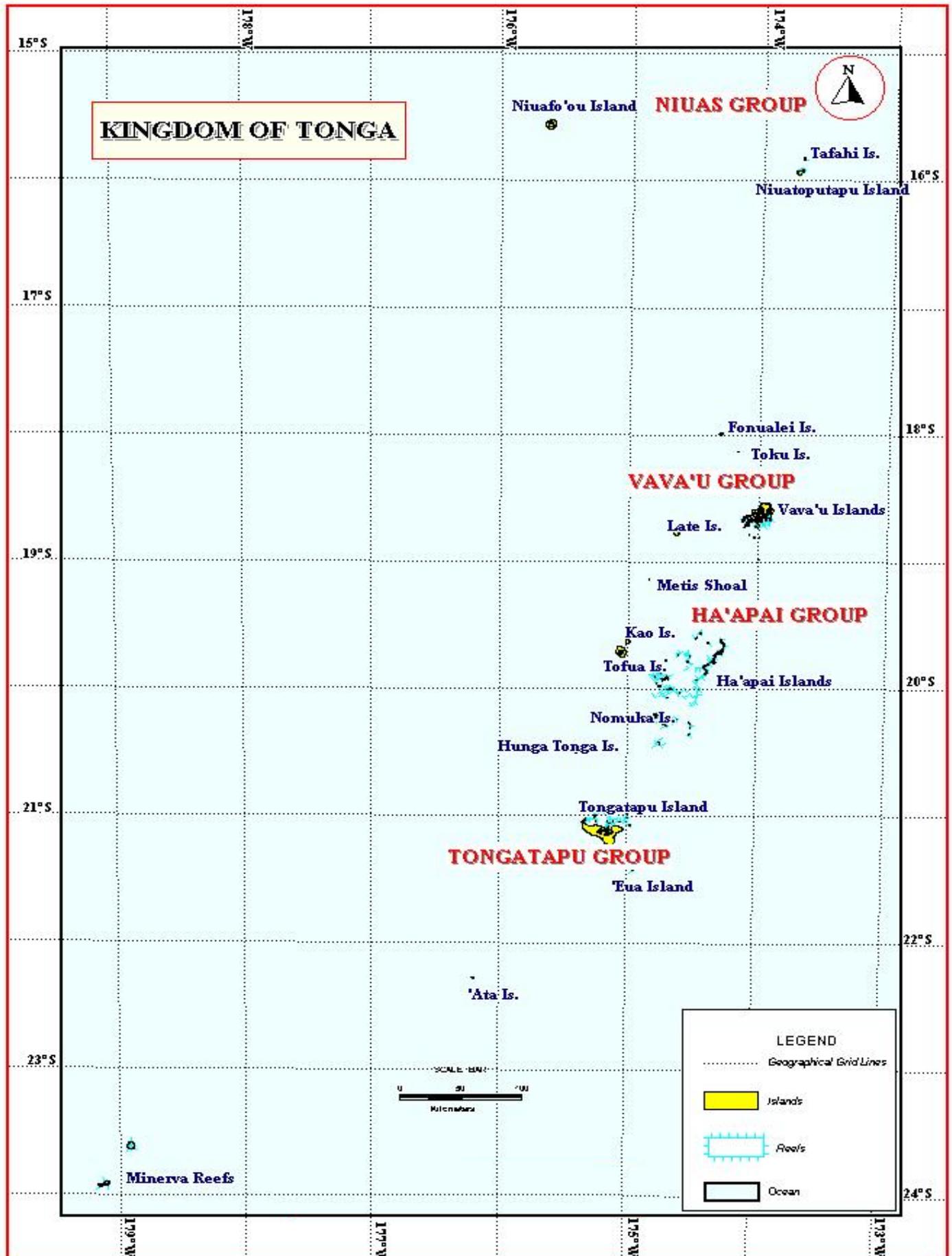
Money

All money values shown in this report are expressed in Tongan *pa'anga*, denoted by T\$. At the time of this survey the exchange rate was approximately 2.20 *pa'anga* to one US dollar.

Rounding

The sums of individual items may not always come exactly to the totals shown, because of the effects of rounding. Discrepancies of 1 or 2 in the final digit should give no cause for concern.

CPI	Consumer Price Index
HIES	Household Income and Expenditure Survey
n.e.c.	Not elsewhere classified
n.e.s.	Not elsewhere specified
n.o.c.	Not otherwise classified
n.o.d.	Not otherwise defined
RSE	Relative Standard Error
SNA	United Nations System of National Accounts



EXECUTIVE SUMMARY

The Household Income and Expenditure Survey 2000/01 (HIES) was carried out by the Tonga Statistics Department over a 12-month period, from October 2000 to September 2001. The survey collected detailed information on income and expenditure from more than 1,600 households. All adult members age 15 years and over of these households kept a detailed diary of daily expenditure over a two-week period. At the analysis stage, all data was grossed up to give annual estimates for the country as a whole, and for each island division. The main results are as follows:

- **Household income**

Average total annual household income in Tonga in 2000/01 was 18,600 pa'anga. This consisted of 12,900 pa'anga received as cash income, and 5,700 pa'anga received as non-cash income. The report provides detailed information on the sources of income. For instance, on Tongatapu 40 percent of cash income comes in the form of wages and salaries, while only 10 percent comes from the sale of own produce. In the outer islands, on the other hand, wages and salaries are much less important as a source of income, with more than 30 percent of cash income coming from the sale of own produce. In all parts of the country, remittances from overseas form an important part of cash income. For Tonga as a whole, remittances from overseas constitute 20 percent of cash income.

- **Household expenditure**

Average total annual household expenditure in Tonga in 2000/01 was 16,300 pa'anga. This consisted of 11,000 pa'anga cash expenditure, and 5,300 pa'anga non-cash expenditure. About 45 percent of cash expenditure goes on food. The survey report provides detailed information on the individual items, and groups of items, purchased by households. For instance, the most important individual food items purchased by Tongan households are mutton flaps (on which households spend an average of 600 pa'anga a year), followed by chicken pieces, white bread, and corned beef (each about 300 pa'anga a year). The patterns of food expenditure are fairly similar across the island divisions, except for the Niuaus, where lack of refrigeration means that mutton flaps and chicken are replaced by fish and canned meat. In addition to cash expenditure on food, households (particularly in the outer islands) are heavily dependent on their own gardens to supply their food needs. Indeed, in Ha'apai and the Niuaus, the average imputed value of non-cash food expenditure exceeds cash expenditure on food. Amongst the non-food cash expenditures, one notable feature is that households in Tonga make church contributions of about 650 pa'anga a year, and spend 200 pa'anga a year on feasts (*ngaahi pola*).

- **National aggregates**

Grossed up to the national level, households in Tonga received an annual cash income of 215 million pa'anga and a non-cash income of 95 million pa'anga. Cash income included an annual total of 77 million pa'anga in wages and salaries, while 43 million pa'anga was received in the form of remittances. Households in Tonga also received a net income of 33 million pa'anga from the sale of their own produce (24 million from crops, 2 million from livestock, 3 million from fish, and 5 million pa'anga from sale of handicrafts). On the non-cash side, households derived a net income of 43 million pa'anga from their consumption of items they had produced themselves.

1. INTRODUCTION

1.1 Survey objectives

This report presents the results of the Tonga Household Income and Expenditure Survey 2000/01 (HIES), undertaken by the Tonga Statistics Department during the period from 1 October 2000 to 30 September 2001. This is the fifth survey of its kind in Tonga. The last one was carried out in 1992/93, and the results were used in 1995 to rebase the Consumer Price Index (CPI). Because of a lack of resources, it was not possible to carry out a full analysis of that survey immediately after the field work, but a draft report (unpublished) was prepared in May 1999.

This present report contains a summary of the major findings of the 2000/01 HIES, which it is hoped will be useful to planners, policy makers and other interested users. The report is divided into four parts: background, summary of survey results, statistical tables, and appendices.

The survey had three main objectives:

- To provide updated information for the expenditure item weights for the CPI;
- To provide some data for the components of National Accounts; and
- To provide information on the nature and distribution of household income and expenditure for planners, policy makers, and the general public.

1.2 Sample design and implementation

In allocating the sample for this survey, account was taken of the most recent population projections for the different island divisions in Tonga, as shown in Table 1.1.

Table 1.1: Census figures, and recent population projections

Island division	1996 Census			Projections for 2001	
	Households	Population	Average household size	Households	Population
<i>Tongatapu</i>	10,796	66,979	6.2	11,058	68,955
<i>Vava'u</i>	2,728	15,715	5.8	2,794	16,180
<i>Ha'apai</i>	1,469	8,138	5.5	1,505	8,378
<i>'Eua</i>	820	4,934	6.0	840	5,081
<i>Niuas</i>	381	2,018	5.3	391	2,078
Total	16,194	97,784	6.0	16,588	100,672

Sources: Statistics Department: (a) Population Census 1996: Administrative Report and General, Tables, 1999. (b) Demographic Analysis Summary and Population Projections, 1999

Details of the sampling scheme used for this survey are given in Appendix B, while Appendix C contains further information about sampling and non-sampling errors. Approximately 10 percent of all households in Tonga were covered in the survey, with the sample allocation being broadly in proportion to the estimated number of households in each island division. In fact slightly more than 10 percent of all households were initially selected, so as to allow for some possible non-response.

As indicated in Table 1.2, the final achieved sample was 1,627 households, containing 8,967 persons. This gives an average household size of 5.5, which is lower than the corresponding figure of 6.0 derived from the 1996 Population Census. The right hand column of the table shows the weights used for grossing up the sample figures from households to obtain national estimates.

Table 1.2: Interviews achieved, average household size, and weighting factors, by island division

Island division	Households responding	Household members	Average household size	Weights used for grossing up
<i>Nuku'alofa</i>	488	2,772	5.6	11.65
<i>Rest of Tongatapu</i>	564	3,119	5.5	10.39
<i>Vava'u</i>	290	1,708	5.9	9.64
<i>Ha'apai</i>	140	675	4.8	10.75
<i>'Eua</i>	104	557	5.4	8.08
<i>Niuas</i>	41	186	4.5	9.54
Total	1,627	8,967	5.5	

Information on response rates is not provided here, for two reasons. First, it is difficult to say exactly how many households were selected for the survey. Initially 1640 households were selected, but some adjustments to the sample took place as the survey proceeded. Secondly, and more importantly, the response rate is inevitably very close to 100 percent because of the way in which the survey was carried out. The survey was conducted under the Statistics Act 1978, which obliges households to give answers to the questions contained in the survey schedule. There is therefore very little scope for refusals on the survey, though there may have been a few cases of households that could not participate for one reason or another (not at home, unavailable at the time of the survey, sickness, etc.).

The issue of confidentiality was stressed. No information collected in the survey could be passed on by the interviewer to anyone in the field apart from the person's field supervisor, and the Statistics Department itself is forbidden by law to pass on any personal information to any person or to any Government Department.

While the sample achieved in Tongatapu is extremely large, and that achieved in Vava'u is reasonably large, the samples in the other outer islands were rather small, which inevitably affects the precision of the survey results. There were also problems with the distribution of the final sample in Ha'apai, due to the fieldwork problems mentioned in Section 1.5, and this may have affected the reliability of the results for Ha'apai.

1.3 Questionnaires

Two questionnaires (see Appendix A) were used to collect the data required for this survey:

HIES-1: Household income survey. This contained a cover sheet and three sections:

Section A: Household composition and characteristics

This section collected information on the general demographic characteristics of members of the household selected for the survey, including relationship to head of household, sex, age, marital status, number of days worked last week, main activity, employment status, educational attainment, occupation and industry.

Section B: Value of output and payments for goods and services for the last 12 months

This section collected information on goods produced for sale in the local market or for export, and goods produced for home consumption. Information was collected separately for the following items: agricultural products; livestock; poultry and poultry products; fish and fish products; handicrafts; and rent for property.

Section C: Sources of household income and receipts for the last 12 months

This questionnaire collected information on the source and amount of income received by income earners, separately for cash and non-cash income.

HIES-2: Household expenditure survey. This booklet contained instructions for completing the diary, a listing of items that people might have bought, and four sections:

Section A: Daily expenditure during two weeks starting Saturday

There was a separate page for each day, and respondents were asked to give a description of each item obtained and the quantity. Alongside were three separate columns for recording the value of items that were paid for in cash, bought on credit, or where no cash was paid.

Section B: Repairs on house during these two weeks

The value of all house repairs carried out over the two-week period was to be recorded here, unless it had already been recorded elsewhere in the diary. Again, there were three columns for cash, credit, and no cash paid.

Section C: Rent for house

If not already recorded elsewhere, this section was for recording the rent paid for the house, and the frequency of payment. In cases where a person lived in their own house, the person was asked to estimate the likely rental value if they had to rent the property.

Section D: Other big payments during the last 12 months

Any large payments (T\$50 or more) made during the previous 12 months were to be recorded here. Examples were given of the types of payment to be recorded, and the layout was similar to that in Section A above.

While the questionnaires worked reasonably well in the field, some problems were experienced at the data processing stage. This is hardly surprising, since an HIES is a very complicated survey. Some of these problems may have given rise to what are known as non-sampling errors, and possible sources of non-sampling error are discussed in Appendix C.

1.4 Concepts and definitions

For the purpose of this survey, a **household** was defined as “*those persons who usually eat together and share the work of preparing the food and/or the cost of work of providing it*”. Normally household members also live and sleep in the same building, but experience has shown that this is not always so. Examples of this might be the father who works as a night watchman, or the man who goes out fishing at night-time and stays in a temporary shelter offshore. This is why the definition is based on *eating together* rather than on living or sleeping in the same building.

Value of output of the various types of goods and services listed in Section B of HIES-1 was defined as the gross value of the item produced, whether produced for sale in the local market or for export, or produced for home consumption. In considering property rentals, a distinction was made between residential and non-residential property. In the case of residential property, a further distinction was made between furnished and unfurnished property.

Net income from production was obtained by subtracting, from the gross value of output, the cost of labour as well as the cost of goods, transport, etc. used in producing that item.

Gross salaries and wages (1.1 in Section C of HIES-1) refer to the total amount of income received by the head of household or other household earner. For persons who are employed, salaries and wages would also include overtime pay, gratuities, commission, tips, and any other kind of remuneration received in relation to the employment. This would also include the cost of quarters provided by the employer, board, residence, or any other benefits relating to the employment.

Income from resale/export of handicrafts refers to all income (net of expenses) received from reselling handicrafts during the last 12 months. These handicrafts might have been bought by the person specifically for resale, or they might have been received as gifts and then sold on.

In analyzing the survey data, we need to distinguish between two types of income and expenditure. Household **cash** income and household **cash** expenditure refer to all income and expenditure received in the form of cash. In the case of income, this is money that can be spent on buying goods and services, though some of it will be paid out in the form of tax. In the case of expenditure, cash expenditure is money spent or committed during the reference period. In contrast, **total** household income and **total** household expenditure refer to all sources of household income and expenditure. They thus include both cash and non-cash items. Examples of non-cash items are the imputed value of home consumption of items produced by the household, as well as the imputed value of property owned by the household.

Household data is usually presented in the form of average annual household expenditure (or income). This is calculated as the mean. It is thus the sum of all expenditure (income) for all households, divided by the number of households. It is easy to calculate, but it is of course subject to the effects of outliers. It is definitely not the same as the household expenditure (income) of the average (median) household. Tables on income and expenditure are also sometimes shown on a **per capita** basis. Finally, as an input to the national accounts, it is useful to present estimates of **national** household income and **national** household expenditure, both for Tonga as a whole and for each island division.

1.5 Fieldwork

The fieldwork was carried out by about 25 specially selected interviewers, supported by a maximum of 10 senior staff of the Statistics Department who acted as supervisors (including the two out-based staff who work in Vava'u). The interviewers were recent school leavers who had completed Form 6 and who held a Pacific Secondary School Certificate (PSSC). There was a two-week training course for supervisors, followed by a two-week training course for interviewers (also attended by the supervisors). All field staff had to swear and sign an oath of confidentiality.

In order to take adequate account of seasonal effects, the survey was spread over four rounds throughout the 12-month period. The survey was publicized by means of TV and radio. Fieldwork for each round lasted about a month. This involved an initial week for listing households in the selected census block, selecting the required number of households for interview, and making an initial contact with the selected households to drop off the diaries. The households then had two weeks for completion of the diaries, and during this period the interviewers would call in from time to time to check that the recording of daily expenditures was proceeding satisfactorily.

They would also use the occasion of their visits to collect some of the information required for the income questionnaire. They would then make a final visit to the households to collect the diaries. After checking the questionnaires, they passed them to their supervisors.

The interviewers were employed on a part-time basis, and were released after each round of fieldwork. Inevitably this created some problems, in that some of them managed to find full-time jobs and could not return to work on subsequent rounds of the survey. An additional five school leavers had been trained initially to form a reserve pool for the survey, but this supply of reserves had been exhausted by the end of the second round. It was therefore necessary to recruit and train some more school leavers to fill in for those who left at later stages of the survey.

When designing the survey, a decision had been made to only visit the Niuas in the first and fourth rounds, because of the very high travel costs involved. Fieldwork went according to plan in all of the

island divisions with the exception of Ha'apai. The selected sample had initially been spread quite well around the Ha'apai group, but poor weather and lack of direct sea transport from Tongatapu meant that it was difficult to get to the southern islands in the group. A decision was therefore made to increase the sample on the more accessible northern islands in the group.

1.6 Data processing

All data entry, including editing, edit checks and queries, was done using the Access software package, with some technical assistance from the Secretariat of the Pacific Community (SPC). Preparation of the final tables was done using the Pivot Table facility in Excel.

When the data were being processed, it became clear that certain sections of the questionnaire gave rise to problems. Some of these problems are documented in Appendix C. One major problem related to the treatment of the third column of expenditure figures in the two-week diary, under the heading 'No cash paid'. As explained in Appendix C, this third column of the two-week diary seems to contain a mix of different items: home produced items that have been consumed by the household; gifts received; and items bartered. It is impossible to disentangle these 'no cash paid' items, because no code was used to distinguish these different types of expenditure. This gives rise to two problems. Quite apart from the different basis used for valuing home produce (the income data is based on net income values after subtracting labour, transport and other costs from farm-gate values, while the expenditure data is based on market prices) it is not possible to directly compare the figures for consumption of home produce from the two sources because of this entanglement with gifts and barter in the diary. Similarly, the gift element in the diary cannot be compared with the data on 'gifts, assistance, relief received in kind', which was collected in Section C of the income questionnaire.

Initially a scheme was devised by SPC to attempt to get round this 'gift' problem. In the case of income, the larger of the two values 'gifts received' and 'diary-no cash paid' was taken as being the gift income. In the case of expenditure, the difference between these amounts was taken if 'gifts received' was greater than 'diary-no cash paid', while a value of zero was taken for gifts if 'gifts received' was not greater than 'diary-no cash paid'. The SPC scheme also allowed for the inclusion in the expenditure aggregate of the net value of the home production consumed by the household, taken from the income questionnaire, although this category would seem to be covered already by the inclusion of the 'no cash paid' column from the diary.

In this present report we have preferred not to follow that approach. Instead, we present the data on an 'as is' basis, without making any substantial adjustments of any kind. Table 1.3 shows the way in which the income and expenditure aggregates have been constructed.

Table 1.3 Sources of income and expenditure

Total household income:

Cash	Source of data	Computer Aggregates
Wages and salaries	HIES-1, C 1.1	Income1
Pension or superannuation annuity	HIES-1, C 2.1	Income1
Interest (gross) and dividends	HIES-1, C 2.2	Income1
Business income	HIES-1, C 2.3	Income1
Handicrafts resale	HIES-1, C 2.4	Income1
Ad hoc labour (irregular)	HIES-1, C 2.5	Income1
Remittances from overseas	HIES-1, C 3.1	Income1
Gifts of money (assistance/relief)	HIES-1, C 3.2	Income1
Sale of property or other durable assets	HIES-1, C 3.3	Income1
Withdrawal from working capital	HIES-1, C 3.4	Income1
Bank loan	HIES-1, C 3.5	Income1
Other loan	HIES-1, C 3.6	Income1
Withdrawal from savings	HIES-1, C 3.7	Income1
Loaned money received back	HIES-1, C 3.8	Income1
Other income	HIES-1, C 3.9	Income1
Net income from sale of agricultural produce (crops, livestock, fish, forest products, handicrafts)	HIES-1, B 1-5 (left)	Income2
Net income from property rentals	HIES-1, B 6	Income2

Non-cash

Net value of home production consumed by the household (crops, livestock, etc.)	HIES-1, B 1-5 (right)	Income2
Imputed rent (owner occupiers)	HIES-2, C col 2	Income3_1 (diary)
Wages and salaries received in kind	HIES-1, C4.1	Income1
Ad hoc labour payments received in kind	HIES-1, C4.2	Income1
Gifts, assistance, relief received in kind	HIES-1, C4.3	Income1

Total household expenditure

Cash

Expenditure based on diary: Cash paid, bought on credit	HIES-2, A cols 1 & 2	Diary
House repairs: cash paid, bought on credit	HIES-2, B cols 1 & 2	Diary
Rent for house	HIES-2, C col 1	Diary
Other big payments: cash paid, bought on credit (also includes insurance, remittances, donations)	HIES-2, D cols 1 & 2	Diary

Non-cash

Expenditure based on diary: No cash paid	HIES-2, A col 3	Diary
House repairs: no cash paid	HIES-2, B col 3	Diary
Imputed rent (owner occupiers)	HIES-2, C col 2	Income3_1 (diary)
Other big payments: no cash paid	HIES-2, D col 3	Diary

2. SUMMARY OF SURVEY RESULTS

2.5 Sources of household income

In Tonga the average total annual household income, as measured by HIES 2000/01, was about 18,600 pa'anga. As one would expect, the highest average household income was found in Tongatapu, with just over 20,000 pa'anga per year, compared with just under 16,500 pa'anga in Vava'u and Ha'apai, 15,000 in 'Eua, and only 12,500 in the Niuas.

Table 2.1 shows the breakdown of income by main source, while Table 2.2 shows the percentage distribution of income received from the main sources. More detailed information for all sources of income is given in Tables 3.1 and 3.2. Almost 13,000 pa'anga (representing 69 percent of total income) comes in the form of cash income, while the remainder is non-cash income. Overall, a quarter of all income is derived from the household's own production activities, with an average of just over 2,000 pa'anga (11 %) being received from the sale of own produce, and about 2,600 pa'anga (14 %) representing the value of home produce consumed by the household itself.

Wages and salaries account for almost 30 percent of total income in Tongatapu, but for less than 20 percent in the other island divisions. Income received from overseas remittances, and from bank loans, are also higher in Tongatapu than elsewhere. In contrast, income from the sale of home produce is lower in Tongatapu (on average, about 1,500 pa'anga annually per household) compared with an average of about 3,000 pa'anga in the outer islands.

Table 2.1: Average annual total income per household, by main source and island division

Main source of income	T\$					
	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Cash income</u>	<u>14,421</u>	<u>11,267</u>	<u>8,753</u>	<u>9,063</u>	<u>8,177</u>	<u>12,871</u>
<i>Wages and salaries</i>	5,768	3,020	1,510	2,264	1,345	4,576
<i>Remittances from overseas</i>	3,121	1,490	1,254	1,820	1,358	2,542
<i>Sales of own produce</i>	1,452	3,506	2,762	2,978	2,954	2,066
<i>Bank loan</i>	1,410	960	567	663	578	1,189
<i>Other cash sources</i>	2,670	2,291	2,660	1,338	1,942	2,498
<u>Non-cash income</u>	<u>5,684</u>	<u>5,122</u>	<u>7,716</u>	<u>5,842</u>	<u>4,324</u>	<u>5,734</u>
<i>Consumption of own produce</i>	2,200	2,719	5,181	3,390	1,752	2,614
<i>Imputed rent</i>	2,720	2,168	1,763	2,187	1,282	2,469
<i>Other non-cash sources</i>	764	235	772	265	1,290	651
Total income (cash and non-cash)	20,105	16,389	16,469	14,905	12,500	18,605

Table 2.2: Percentage distribution of total annual income by main source and island division

Main source of income	Percentages					
	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Cash income</u>	<u>72</u>	<u>69</u>	<u>53</u>	<u>61</u>	<u>65</u>	<u>69</u>
<i>Wages and salaries</i>	29	18	9	15	11	25
<i>Remittances from overseas</i>	16	9	8	12	11	14
<i>Sales of own produce</i>	7	21	17	20	24	11
<i>Bank loan</i>	7	6	3	4	5	6
<i>Other cash sources</i>	13	15	16	10	14	13
<u>Non-cash income</u>	<u>28</u>	<u>31</u>	<u>47</u>	<u>39</u>	<u>35</u>	<u>31</u>
<i>Consumption of own produce</i>	11	17	32	23	14	14
<i>Imputed rent</i>	14	13	11	15	10	13
<i>Other non-cash sources</i>	3	1	4	1	10	4
Total income (cash and non-cash)	100	100	100	100	100	100

While the tables above provide useful information about average household income, the tables do not give any indication of how many households actually receive the different kinds of income. A significant value for one income source may be the result of many households all receiving small amounts of income from that source, or it may be due to a very small number of households receiving very substantial income from that source. Table 2.3 (and the corresponding more detailed Table 3.3) show the proportion of households reporting different sources of income.

Almost all households report receiving some cash income and virtually all households receive some non-cash income. Almost 60 percent of households receive income in the form of wages and salaries, and 50 percent receive income from the sales of home produce. Three-quarters of all households report receiving remittances from overseas in the last 12 months, and a quarter have had bank loans. Three-quarters have reported consuming their own home produce, and at least 90 percent of households are owner-occupiers of their homes, for whom an imputed rent has been calculated.

Table 2.3: Proportion of households reporting each main source of income, by island division

Main source of income	Percentages					
	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Cash income</u>	<u>96</u>	<u>97</u>	<u>100</u>	<u>99</u>	<u>100</u>	<u>97</u>
<i>Wages and salaries</i>	63	49	44	40	37	57
<i>Remittances from overseas</i>	78	66	74	72	83	75
<i>Sales of own produce</i>	38	67	78	70	88	50
<i>Bank loan</i>	27	22	29	20	51	26
<u>Non-cash income</u>	<u>99</u>	<u>100</u>	<u>100</u>	<u>99</u>	<u>100</u>	<u>100</u>
<i>Consumption of own produce</i>	74	84	91	80	88	78
<i>Imputed rent</i>	90	94	90	96	78	91
Total income (cash and non-cash)	100	100	100	100	100	100

It may sometimes be useful to combine the information in Table 2.3 with that in Table 2.1, so as to find out the average income derived from a particular source, *for those households that report that source of income*. For instance, we can see from Table 2.1 that average annual household income derived from wages and salaries is 4,576 pa'anga. This is the average across all households in Tonga, but we can see from Table 2.3 that only 57 percent of households report receiving income from wages or salaries. For those households that do receive income from wages and salaries, the average amount received per annum is therefore $4576 * 100 / 57$, which comes to just over 8,000 pa'anga.

Similarly, we note that households receive on average 2,542 pa'anga in remittances. But Table 2.3 shows that a quarter of all households did not receive remittances at all. For the 75 percent of households that did receive remittances, the average income received was $2542 * 100 / 75$, which comes to almost 3,400 pa'anga per year per household that received remittances.

Finally, Table 2.4 and the corresponding more detailed table 3.4 show the sources of income on a per capita basis. Total annual per capita income was nearly 3,400 pa'anga, made up of 2,300 pa'anga in cash income and 1,000 pa'anga in non-cash income. Annual per capita cash income is around 2,600 pa'anga in Tongatapu, but only about 1,800 pa'anga in the outer islands. Annual per capita non-cash income is around 1,000 pa'anga in all island divisions, with the exception of Ha'apai where it is as high as 1,600 pa'anga, due to the much higher consumption there of home produce.

While all these income tables provide a useful picture of the sources of income for households in Tonga, the figures need to be treated with some caution, because of the well-known difficulties involved in collecting reliable income data from households.

Table 2.4: Total annual income per capita by main source, and by island division

	T\$					
Main source of income	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Cash income</u>	<u>2,597</u>	<u>1,913</u>	<u>1,815</u>	<u>1,692</u>	<u>1,802</u>	<u>2,335</u>
<i>Wages and salaries</i>	1,039	513	313	423	297	830
<i>Remittances from overseas</i>	562	253	260	340	299	461
<i>Sales of own produce</i>	261	595	573	556	651	375
<i>Bank loan</i>	254	163	118	124	127	216
<i>Other cash sources</i>	481	389	551	249	428	453
<u>Non-cash income</u>	<u>1,024</u>	<u>870</u>	<u>1,600</u>	<u>1,091</u>	<u>953</u>	<u>1,040</u>
<i>Consumption of own produce</i>	396	462	1,075	633	386	474
<i>Imputed rent</i>	490	368	366	408	283	448
<i>Other non-cash sources</i>	138	40	159	50	284	118
Total income (cash and non-cash)	3,621	2,783	3,416	2,783	2,755	3,376

2.2 Components of household expenditure

As described earlier, HIES 2000/01 collected detailed expenditure information from all household members aged 15 and over. Most of the diary information was collected on a daily basis over a two-week period, though information was also collected on any large items purchased during the last 12 months. During the processing stage all the diary information was grossed up to give annual figures. Cash expenditure covers items bought with cash, as well as items bought on credit. Non-cash expenditure covers the estimated value of items consumed from the household's own garden, the imputed value of owner-occupied housing and the imputed value of goods received or bartered. The design of the questionnaire does not allow one to separate out the different types of imputed expenditure (except for the housing element, which was collected in a different section). Table 2.5 shows the broad results obtained for the whole of Tonga.

Table 2.5: Distribution of total annual household and per capita expenditure in Tonga, by major expenditure group

Main group	Average annual household expenditure	Percentage distribution of annual expenditure	Average annual per capita expenditure
<u>Cash expenditure</u>	<u>11,012</u>	<u>67.7</u>	<u>1,998</u>
<i>Food</i>	4,914	30.2	892
<i>Housing</i>	382	2.3	69
<i>Household operation</i>	997	6.1	181
<i>Apparel</i>	44	0.3	8
<i>Transportation</i>	1,653	10.2	300
<i>Other goods</i>	2,340	14.4	425
<i>Other services</i>	682	4.2	124
<u>Non-cash expenditure</u>	<u>5,258</u>	<u>32.3</u>	<u>954</u>
<i>Food</i>	2,189	13.5	397
<i>Housing</i>	2,506	15.4	455
<i>Household operation</i>	187	1.1	34
<i>Apparel</i>	12	0.1	2
<i>Transportation</i>	147	0.9	27
<i>Other goods</i>	202	1.2	37
<i>Other services</i>	15	0.1	3
Total expenditure	16,270	100.0	2,952

On average, total annual household expenditure was about 16,300 pa'anga. Of this amount, 11,000 pa'anga represents cash expenditure and 5,300 represents non-cash expenditure. Out of the total cash expenditure, a major part (nearly 5,000 pa'anga) goes on food, more than 1,600 pa'anga goes on transport, and 1,000 pa'anga goes on household operation. Clothing and footwear accounted for less than 50 pa'anga of cash expenditure on average per household. The remainder of cash expenditure goes on other goods (2,300 pa'anga) and other services (700 pa'anga). The next section of this report deals with cash expenditure in much greater detail.

The two main components of non-cash expenditure are the imputed value of the consumption of home-produced food (2,200 pa'anga) and the imputed value of owner-occupied housing (about 2,500 pa'anga on average per household).

In percentage terms, we can see that food accounts for 30 percent of total expenditure, and non-cash food expenditure for another 14 percent. Transport accounts for 10 percent of total household expenditure.

The final column of Table 2.5 shows the expenditure information on a per capita basis. Total expenditure is about 3,000 pa'anga per person, of which two-thirds is cash expenditure. On average, every man, woman and child spends about 900 pa'anga per year on food, and about 300 pa'anga on transport. The imputed value of food consumed from the household's garden (or received as gifts) comes to about 400 pa'anga per person in Tonga, while a slightly larger amount represents the imputed value of housing.

Table 2.6 provides a breakdown of the most important groups of cash and non-cash expenditure, across the island divisions of Tonga. There are several interesting features to this table. For instance, while Tongatapu has the highest average household cash expenditure, it also has the lowest non-cash expenditure. The contrast is particularly noticeable in the case of food, where Tongatapu households spend more on food, but consume far less food in kind (whether from their own gardens or from gifts received).

Table 2.6: Average annual total expenditure per household, by major expenditure group and island division

	T\$					
Major group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Cash expenditure</u>	<u>12,150</u>	<u>10,161</u>	<u>6,415</u>	<u>9,861</u>	<u>6,440</u>	<u>11,012</u>
<i>Food</i>	5,346	4,775	2,984	4,166	3,326	4,914
<i>Transportation</i>	1,809	1,562	1,021	1,630	499	1,653
<i>Other goods and services</i>	4,995	3,824	2,410	4,065	2,615	4,445
<u>Non-cash expenditure</u>	<u>4,790</u>	<u>6,021</u>	<u>5,631</u>	<u>6,239</u>	<u>8,106</u>	<u>5,258</u>
<i>Food</i>	1,529	3,120	3,298	3,421	5,619	2,189
<i>Housing</i>	2,752	2,243	1,789	2,190	1,289	2,506
<i>Other goods and services</i>	509	658	544	628	1,198	563
Total expenditure	16,941	16,182	12,046	16,100	14,546	16,270

More detailed tables on cash and non-cash expenditure in each island division are given in Tables 3.6, 3.7 and 3.8. The broad picture emerging from these tables is as follows. If we consider cash and non-cash expenditure together, then about 40 percent of total expenditure in Tongatapu goes on food, whereas in three of the outer island groups (Vava'u, Ha'apai and 'Eua) the proportion going on food is 50 percent, and in the Niuas it is as much as 60 percent. In contrast, the proportion spent on housing declines from around 20 percent in Tongatapu, to 15 percent in three outer island divisions and to only 10 percent in the Niuas.

The proportion going on transport is about 10 percent in every island group except the Niuas, where it is 5 percent. The balance of expenditure (25 to 30 percent) goes on other goods and services.

Table 2.7 shows the proportion of households reporting expenditure on each of the main groups of expenditure during the two week period (though a few expenditures refer to a longer time period). Virtually every household reports cash expenditure on food during the two-week survey period, and virtually every household also had some non-cash expenditure on food (whether in the form of consuming produce from their garden, eating fish that they have caught, or receiving food in kind from an outside source). A very high percentage of households in all island divisions reported cash expenditures on housing and a similar number reported some cash expenditure on household operation. But only half of all households reported spending money on clothing or footwear during a two-week period, with households in Tongatapu and Vava'u being more likely to have spent money than households in the other island divisions. Around 80 percent of households in Tongatapu, Vava'u and 'Eua reported some transportation expenditure, while the equivalent percentage was rather lower in Ha'apai and the Niuas.

On the non-cash side, it should be noted that the estimate of 23 percent of households reporting non-cash expenditure on housing refers only to those people with non-cash expenditure in the main section of the diary, and does not take account of those with imputed rents.

Table 2.7: Proportion of households reporting expenditure on each main expenditure group, by island division*

<i>Main categories of expenditure</i>	<i>Percentages</i>					
	<i>Tongatapu</i>	<i>Vava'u</i>	<i>Ha'apai</i>	<i>'Eua</i>	<i>Niuas</i>	<i>Total</i>
<u>Cash expenditure</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
<i>Food</i>	100	100	100	98	100	100
<i>Housing</i>	94	96	97	97	85	94
<i>Household operation</i>	97	97	93	92	90	96
<i>Apparel</i>	52	48	38	39	35	49
<i>Transportation</i>	84	80	68	77	56	81
<i>Other goods</i>	98	99	99	99	98	99
<i>Other services</i>	57	50	36	53	51	54
<u>Non-cash expenditure</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
<i>Food</i>	96	99	99	98	100	97
<i>Housing</i>	29	12	16	11	7	23
<i>Household operation</i>	47	46	49	30	41	46
<i>Apparel</i>	36	18	25	19	17	29
<i>Transportation</i>	38	31	26	33	10	35
<i>Other goods</i>	61	59	61	47	73	60
<i>Other services</i>	29	11	18	6	20	22
Total expenditure	100	100	100	100	100	100

Almost all the expenditures relate only to a two-week period, but rents and larger items of expenditure could be reported over a longer time period.

2.3 Cash expenditure

Table 3.10 provides a very detailed breakdown of cash expenditure by Tongan households. More than 150 different types of goods and services are listed, and the table shows the average annual household and per capita expenditure, and the percentage distribution, for each item. The final column shows the estimated annual national household expenditure (in millions of pa'anga) on each of the items in the table, and these are discussed in more detail in section 2.6. Given the fairly small sample sizes in many of the island divisions, it would not be meaningful to give a detailed breakdown

of cash expenditure for each island division, but some general comments are made later in this section.

Individual estimates should be treated with a degree of caution, for a number of reasons:

surveys of this type tend to suffer somewhat from problems of recall; and there may be certain types of expenditure (tobacco and alcohol come immediately to mind) where there is likely to be under-reporting of expenditure. Nevertheless, the data should provide a reasonable indication of the levels of cash expenditure on various categories of expenditure. The next sections highlight some of the main points of interest.

Food

On average, households spend almost 5,000 pa'anga a year on food. This is equivalent to almost 900 pa'anga per person per year. Out of every 100 pa'anga spent, 14 pa'anga goes on fruit and vegetables, 24 on meat, 7 on chicken, 10 on fish, 8 on dairy and vegetable products, 16 on cereals and cereal products, 12 on soft drinks, confectionery, etc., 3 on miscellaneous items, and 5 on take-away food and eating out. These figures are also shown in the right-hand column of Table 2.8. Looking at the more detailed listing shown in Table 3.10, it can be seen that the following six food codes account for more than half of total food expenditure: mutton (representing 13 % of total cash expenditure on food), bread (10 %), fresh vegetables (9 %), fresh or frozen chicken (7 %), fresh or frozen fish (7 %), and canned meat (6 %). Next come fresh fruits (4 %), cordials and soft drinks (4 %), confectionery (3 %) and sugar (3 %).

The information collected on food expenditure in the HIES was actually far more detailed than that shown in Table 3.10. We can in fact identify the individual items that are purchased most often by Tongan households. For instance, the four most important single items of cash expenditure are (in order): mutton flaps (with households averaging cash expenditures of around 600 pa'anga per year), and chicken pieces, white bread, and corned beef (each around 300 pa'anga per year). In terms of the coding frame of items adopted for the HIES, all other individual items of cash expenditure are well below 200 pa'anga per household per year.

Housing

Average annual cash expenditure on housing is almost 400 pa'anga per household, or about 70 pa'anga per capita. (This contrasts with non-cash (imputed) expenditure on housing of 2,500 pa'anga per household, or about 450 pa'anga per capita). At least half of all cash expenditure goes on services related to property maintenance, such as for example construction, extension or renovation of property.

Household operation

On average households spend about 1,000 pa'anga a year on household operations. This is equivalent to nearly 200 pa'anga per person. A third of this expenditure goes on unspecified household services (which include 24 percent for electricity and 8 percent for water supply). A further 13 percent goes on post office services, 11 percent on unspecified household supplies (such as toilet paper, batteries and matches), and 10 percent on items for cleaning the home. Amongst the remaining items of expenditure, domestic fuel and power (principally wood, charcoal, and kerosene) account for 7 percent of household operation costs.

Apparel

Households spend less than 50 pa'anga a year, on average, on items of clothing and footwear. About 80 percent of this expenditure goes on clothing, and the balance on footwear.

Transportation

Transportation is an important item of household expenditure, accounting on average for about 1,650 pa'anga of household expenditure (equivalent to 300 pa'anga per person). Within the transportation category, the main items of cash expenditure are fuel for road vehicles (41 percent), purchase of new road vehicles (20 percent), airfares to overseas destinations (18 percent), and land and sea transport within Tonga (12 percent).

Other goods

Households spend an average of over 2,300 pa'anga a year on other goods. This is equivalent to slightly more than 400 pa'anga per person. Within this category, unspecified goods account for just over half of the total expenditure. The major items within this group are church contributions (28 percent of the total for other goods) and contributions to feasts (*ngaahi pola*) (8 percent).

On average, each household makes church contributions of about 650 pa'anga per year, and spends almost 200 pa'anga on *ngaahi pola*. Other important items of cash expenditure are cigarettes and tobacco (18 percent of total expenditure on other goods), and alcohol and kava (9 percent). On average, households spend just over 400 pa'anga a year on cigarettes and tobacco and just over 200 pa'anga on alcohol and kava.

Other services

On average, households spend about 700 pa'anga a year on other services. This is equivalent to just over 100 pa'anga per person. The main item of expenditure in this category is financial services (43 percent), the main element being loan repayments to banks (38 percent of the total for other services). Educational fees (34 percent) are another important item. The other significant item is personal services (18 percent), most of which is accounted for by funeral costs. On average, each household pays more than 200 pa'anga a year in educational fees, and almost 100 pa'anga a year in funeral costs.

Inter-island contrasts

Some of the overall contrasts in island expenditure have already been highlighted. Here we focus on differences in cash expenditure on food (Table 2.8). For many of the food groups, relative expenditures are fairly similar across the island divisions, but one or two contrasts stand out. The broad patterns of cash expenditure are very similar in Tongatapu, Vava'u and Ha'apai, though (as expected) a higher proportion of the budget goes on meals out in Tongatapu (6 percent) and Vava'u (4 percent) than in the other island divisions (1 to 2 percent). Households on 'Eua appear to have a slightly higher proportion of their cash expenditure going on meat and chicken, and a slightly lower proportion going on fruit and vegetables. The situation in the Niua stands out as being very different from elsewhere. Because of the lack of refrigeration on these islands, fresh meat and chicken can rarely be purchased. Instead, households spend a much higher proportion of their food budget on fish. Where meat is purchased, it is usually canned meat instead of mutton flaps.

Table 2.8: Percentage distribution of cash expenditure on food, by major food group within each island division

Main food group	Percentages					
	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<i>Fruit and vegetables</i>	15	14	13	10	12	14
<i>Meat</i>	23	26	26	30	24	24
<i>Chicken</i>	8	6	6	10	1	7
<i>Fish</i>	10	11	13	11	19	10
<i>Dairy and vegetable products</i>	8	7	7	8	5	8
<i>Cereals and cereal products</i>	16	16	16	18	21	16
<i>Soft drinks, confectionary, etc.</i>	12	12	14	10	13	12
<i>Miscellaneous</i>	3	3	3	3	4	3
<i>Meals out & take-away</i>	6	4	2	2	1	5
Total	100	100	100	100	100	100

2.4 Consumption of home produce

As mentioned earlier, data on consumption of home produce is available from two sources in the questionnaires. On the income side, detailed information was collected about all goods produced by the household for self-consumption. Table 3.1, for instance, shows the net income value of various goods (crops, livestock, fish, forest products, and handicrafts) produced for self-consumption. On the expenditure side, the third column in the diary showed the imputed cost (in terms of purchase value) of various items consumed by the household but not purchased. These income and expenditure items are not directly comparable, both because the basis of valuation is different, and because the diary entries also include the value of other items (such as gifts received) in addition to the value of home produce consumed by the household. Despite all these drawbacks, it is nevertheless instructive to see a summary of the data produced from the two sources (Table 2.9).

Table 2.9: Comparison of average annual household estimates from two sources, relating to the consumption of home produce

Income source	Income questionnaire		Expenditure category	Expenditure questionnaire 'No cash paid' column
	Net income from self-consumption			
Crops	1,171		Fresh fruits	176
			Fresh vegetables	910
			Other fruit and veg.	10
Livestock	548		Pork (fresh, chilled, frozen)	120
			Chicken (fresh, chilled, frozen)	62
			Mutton (fresh, chilled, frozen)	44
			Beef (fresh, chilled, frozen)	37
			Other meat	105
Fish	110		Fish (fresh and frozen)	259
			Other fish	63
Forest products	28		?	
Handicrafts	758		Loose mats locally made (2504)	64
			Tapa cloth piece (2612)	2
			Ta'ovala (pandanus) (3318)	3
			Pandanus leaves (5786)	3
			Tapa cloth (Ngatu) (5912)	26
			Mulberry for Tapa (5916,5917)	4

The income questionnaire contained five categories for home consumption, while on the expenditure side the appropriate categories of non-cash expenditure (which includes home consumption) have been separated out from the rest. The figures for crops seem to match up well. On the expenditure side, the reported value of consumption worked out on average at 176 pa'anga a year per household for fresh fruits and 910 pa'anga for fresh vegetables, while a figure of 1,171 pa'anga is obtained on the income side. The reported value of 'non-cash' consumption of meat and chicken comes to 368 pa'anga per household, which is considerably lower than the estimate of 548 pa'anga per household on the income side. In the case of fish, the estimate on the expenditure side (322 pa'anga) is considerably higher than the estimate on the income side (110 pa'anga). It would be difficult to get an estimate for forest products on the expenditure side, because forest products cannot be identified. It is also difficult to identify handicrafts on the expenditure side, but estimates of 'non-cash' consumption of a few different items are shown in the table. Loose mats (64 pa'anga per household) and *ngatu* (26 pa'anga) appear to be the main items of home consumption of handicrafts.

2.5 Comparison of income and expenditure

Table 2.10 shows the percentage distribution of cash income and cash expenditure for each of the island divisions. On Tongatapu 22 percent of all households have an annual cash income of at least 20,000 pa'anga, while in Vava'u the corresponding percentage is 14 percent. In the other outer islands no more than 10 percent of households receive this level of cash income.

At the other extreme, a quarter of all households in Tongatapu have an annual cash income of less than 5,000 pa'anga. In the outer islands a third (and on 'Eua a half) of all households have cash incomes of less than 5,000 pa'anga.

Table 2.10: Percentage distribution of households by average annual cash income and by average annual cash expenditure, by island division*

	<i>Percentages</i>					
	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Tonga
Cash income group						
<i>Less than 5,000</i>	25	33	34	49	34	29
<i>5,000 - 9,999</i>	27	29	39	26	34	28
<i>10,000 - 14,999</i>	17	18	15	11	24	17
<i>15,000 - 19,999</i>	9	6	4	5	2	8
<i>20,000 - 24,999</i>	7	6	4	4	-	6
<i>25,000 - 29,999</i>	4	2	2	1	2	4
<i>30,000 - 34,999</i>	3	2	1	1	2	2
<i>35,000 - 39,999</i>	2	1	1	2	-	2
<i>40,000 and over</i>	6	3	1	2	-	5
	100	100	100	100	100	100
Cash expenditure group						
<i>Less than 5,000</i>	12	15	36	21	27	15
<i>5,000 - 9,999</i>	28	32	36	36	44	30
<i>10,000 - 14,999</i>	23	27	15	19	24	23
<i>15,000 - 19,999</i>	15	11	4	10	5	13
<i>20,000 - 24,999</i>	9	7	5	2	-	7
<i>25,000 - 29,999</i>	5	3	2	8	-	4
<i>30,000 - 34,999</i>	3	1	1	3	-	2
<i>35,000 - 39,999</i>	2	1	1	-	-	2
<i>40,000 and over</i>	3	1	-	2	-	3
	100	100	100	100	100	100

Note: The percentages for the outer island divisions, except Vava'u, are all based on rather small samples. The figures for Tonga as a whole are based on unweighted data, but are broadly correct.

As one might expect, the pattern of cash expenditure across the islands is very similar to that for income. Similar to the case for income, 22 percent of households on Tongatapu have annual cash expenditures in excess of 20,000 pa'anga.

In contrast, 40 percent of households on Tongatapu have annual cash expenditures of less than 10,000 pa'anga. The corresponding figure is 47 percent in Vava'u and 57 percent on 'Eua, and as much as 71 percent in the Niuas and 72 percent in Ha'apai. As noted earlier in this report, households on the outer islands are much more heavily dependent on consumption of home produce than are those on Tongatapu.

2.6 National aggregates of income and expenditure

Table 2.11 shows the main national aggregate sources of income. A similar but more detailed breakdown of sources of income is given in Table 3.5. The sources of income shown in these tables are those on which information was collected in HIES 2000/01, but it should be noted that some of these sources (such as bank loans) would not count as part of National Income, as defined under the International System of National Accounts (SNA), 1993.

Total annual national income, as derived from the HIES 2000/01 data, was 311 million pa'anga, of which 215 million pa'anga represented cash income and 95 million represented non-cash income. Among the sources of cash income, wages and salaries accounted for 77 million pa'anga and sales of own produce for another 33 million pa'anga. The high dependence on external sources of cash income is reflected in the 43 million pa'anga a year received in cash remittances from overseas, while bank loans provided another 20 million pa'anga.¹

Among the non-cash sources of income, it is notable that the estimated net value of home produce consumed by households (43 million pa'anga) exceeded the net income from sales of own produce (33 million pa'anga). The great majority of households own their own homes, and this is reflected in the high value of 41 million pa'anga, which is the imputed value for house rentals if those households had had to rent their properties.

In terms of the distribution of national income across Tonga, we find that Tongatapu (which has two-thirds of the population) has its appropriate share of non-cash income but a disproportionate three-quarter share of cash income.

Table 2.11: National aggregates of cash and non-cash income, by main source of income and island division*

	\$ (million)					
Main source of income	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Cash income</u>	<u>159</u>	<u>32</u>	<u>13</u>	<u>8</u>	<u>3</u>	<u>215</u>
<i>Wages and salaries</i>	64	8	2	2	1	77
<i>Remittances from overseas</i>	34	4	2	2	1	43
<i>Sales of own produce</i>	16	9	3	2	1	33
<i>Bank loan</i>	16	3	1	1	-	20
<i>Other cash sources</i>	29	5	3	-	-	41
<u>Non-cash income</u>	<u>63</u>	<u>14</u>	<u>12</u>	<u>5</u>	<u>2</u>	<u>95</u>
<i>Consumption of own produce</i>	24	8	8	3	1	43
<i>Imputed rent</i>	30	6	3	2	-	41
<i>Other non-cash sources</i>	9	-	1	-	1	11
Total income (cash and non-cash)	223	46	25	12	5	311

¹ The figure of 43 million pa'anga shown here for remittances is considerably lower than the figure of 110 million pa'anga for 2001 derived from balance of payments statistics.

Similar aggregates can be prepared for the expenditure side, and these are shown in Table 2.12. Based on the survey responses, total annual household cash expenditure is estimated at 183 million pa'anga a year, while non-cash expenditure is a further 87 million pa'anga. Total annual household expenditure therefore comes to 270 million pa'anga. Estimated national annual cash expenditures on different groups of items are shown in the right-hand column of Table 3.10.

Amongst food expenditures, the most notable expenditure items are mutton flaps (10 million pa'anga a year), chicken pieces (6 million), white bread (5 million), and corned beef (5 million).

For the operation of their households, reported expenditure on electricity is 4 million pa'anga per year, while 2 million pa'anga is spent on telephones and 1 million pa'anga on water.

Under transportation, households spend 9 million pa'anga a year on petrol and 2 million pa'anga on diesel.

The total of 39 million pa'anga spent on 'other goods' includes 11 million pa'anga given in church contributions, 2 million pa'anga given as pocket money to children, and 1 million in other gifts. Households also report spending 3 million pa'anga a year on feasts (*ngaahi pola*). A further 4 million pa'anga a year is spent on cigarettes and 2 million pa'anga on tobacco. However, tobacco is preferred to cigarettes in the three smallest outer island divisions. Another 2 million pa'anga a year is spent on kava roots, and 1 million pa'anga reportedly spent on alcohol. Amongst the great variety of items included in the 'other goods' category, more than 2 million pa'anga a year is spent on disposable nappy liners for babies.

Under 'other services', 4 million pa'anga a year is spent on a variety of educational fees, and 2 million pa'anga is spent on funerals. Finally, households reported repaying 4 million pa'anga in bank loans.

Table 2.12: National aggregates of cash and non-cash expenditure, by expenditure category and island division

	<i>T\$ (million)</i>					
Major group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<u>Total cash expenditure</u>	<u>134</u>	<u>28</u>	<u>10</u>	<u>8</u>	<u>2</u>	<u>183</u>
<i>Food</i>	59	13	4	4	1	82
<i>Housing</i>	6	1	-	-	-	6
<i>Household operation</i>	13	2	1	1	-	17
<i>Apparel</i>	1	-	-	-	-	1
<i>Transportation</i>	20	4	2	1	-	28
<i>Other goods</i>	27	6	2	2	1	39
<i>Other services</i>	9	1	-	-	-	11
<u>Total non-cash expenditure</u>	<u>53</u>	<u>17</u>	<u>8</u>	<u>5</u>	<u>3</u>	<u>87</u>
<i>Food</i>	17	9	5	3	2	36
<i>Housing</i>	30	6	3	2	-	42
<i>Household operation</i>	2	1	-	-	-	3
<i>Apparel</i>	-	-	-	-	-	-
<i>Transportation</i>	1	1	-	-	-	2
<i>Other goods</i>	2	1	-	-	-	3
<i>Other services</i>	-	-	-	-	-	-
Total expenditure (cash and non-cash)	187	45	18	14	6	270

Non-cash items - whether they be the consumption of produce from one's own garden or the value of gifts received and consumed - represent an important part of total expenditure. Following the same classification of items as in Table 3.10, the major item group in non-cash food is fresh vegetables (equivalent to an annual value of 15 million pa'anga). Specific items in this group are yams (valued at 4 million pa'anga), dry taro (2 million pa'anga), and giant taro, cassava, plantain, taro leaves, and swamp taro (1 million pa'anga each).

The next major item group is fresh and frozen fish (4 million pa'anga), followed by fresh fruits (3 million pa'anga). Within this group of fresh fruits, brown coconuts and breadfruit each account for about 1 million pa'anga. Other important item groups are pork (2 million pa'anga) and chicken (1 million pa'anga).

Virtually all of the 42 million pa'anga for housing represents the self-assessed annual rental value of owner-occupied property in Tonga.

2.7 Demographic and social information

As is the case with most household surveys conducted by the Statistics Department, the HIES collected some background information about each person participating in the survey. This information will be extremely useful for some analytical purposes, such as for a detailed study of household living standards, perhaps within the context of preparing a poverty profile for Tonga. But in the context of the present report, the demographic and social information is of less value, since all the main results have been presented in average and aggregate form, either for Tonga as a whole or for the separate island divisions.

The first table of this report (Table 1.1) showed the projections of the census population figures for each island division. Table 2.13 below uses the same projected figures for each island division, and shows the broad age distribution of the population, based on the information collected in the HIES. Because these estimates are based on sample data, all figures in the table have been rounded to the nearest 100.

Table 2.13: Estimated distribution of the population by age and island division, with the island totals based on census projections

Age group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
<i>Under 15</i>	25,000	6,600	3,100	1,600	800	37,200
<i>15-59</i>	37,500	8,000	4,200	2,900	900	53,500
<i>60 and over</i>	6,500	1,500	1,000	600	300	10,000
Total	69,000	16,200	8,400	5,100	2,100	100,700

3. STATISTICAL TABLES

Table 3.1: Average annual total income per household, by source and island division

		T\$				
Source of income	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
Total cash income	14,421	11,267	8,753	9,063	8,177	12,871
c1.1 <i>Wages/Salaries</i>	5,768	3,020	1,510	2,264	1,345	4,576
c2.1 <i>Pension</i>	286	221	157	231	-	253
c2.2 <i>Interest</i>	30	20	63	3	-	28
c2.3 <i>Business income</i>	512	574	223	108	739	478
c2.4 <i>Handicrafts resale</i>	83	23	350	70	732	111
c2.5 <i>Labour</i>	514	398	436	82	172	451
c3.1 <i>Overseas remittances</i>	3,121	1,490	1,254	1,820	1,358	2,542
c3.2 <i>Money gifts</i>	353	247	440	75	262	322
c3.3 <i>Sale of property</i>	97	49	82	-	-	79
c3.4 <i>Working capital</i>	122	105	100	142	24	116
c3.5 <i>Bank loan</i>	1,410	960	567	663	578	1,189
c3.6 <i>Other loan</i>	187	64	125	87	-	148
c3.7 <i>Savings withdrawal</i>	304	371	451	338	-	323
c3.8 <i>Loan repayments</i>	152	60	163	55	12	127
c3.9 <i>Other income</i>	-	2	52	-	-	5
b6.5 <i>Rental income</i>	30	156	17	145	-	58
Sale of own produce	1,452	3,506	2,762	2,978	2,954	2,066
b1.5 <i>Crops</i>	1,029	2,705	1,483	2,448	1,868	1,479
b2.5 <i>Livestock</i>	85	152	201	159	51	111
b3.5 <i>Fish</i>	144	206	306	38	-	159
b4.5 <i>Forest products</i>	6	97	29	24	-	25
b5.5 <i>Handicrafts</i>	188	345	743	309	1,034	293
Total non-cash income	5,684	5,122	7,716	5,842	4,324	5,734
Consumption of own produce	2,200	2,719	5,181	3,390	1,752	2,614
b1.9 <i>Crops</i>	922	1,300	2,032	2,209	1,065	1,171
b2.9 <i>Livestock</i>	456	610	1,196	391	644	548
b3.9 <i>Fish</i>	47	173	552	7	12	110
b4.9 <i>Forest products</i>	34	7	36	29	-	28
b5.9 <i>Handicrafts</i>	741	630	1,366	753	32	758
Other non-cash income	3,484	2,402	2,535	2,452	2,571	3,121
c4.1 <i>Gift in kind</i>	486	175	661	204	1,282	448
c4.2 <i>Regular payment in kind</i>	188	26	11	6	5	127
c4.3 <i>Ad hoc payment in kind</i>	90	34	100	55	2	77
Diary 16 <i>Imputed rent</i>	2,720	2,168	1,763	2,187	1,282	2,469
Total income (cash and non-cash)	20,105	16,389	16,469	14,905	12,500	18,605

HIES 2000/01

Table 3.2: Percentage distribution of cash and non-cash income by source and island division

		<i>Percentages</i>					
Source of income		Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
Total cash income		100.0	100.0	100.0	100.0	100.0	100.0
c1.1	<i>Wages/Salaries</i>	40.0	26.8	17.3	25.0	16.4	35.6
c2.1	<i>Pension</i>	2.0	2.0	1.8	2.5	-	2.0
c2.2	<i>Interest</i>	0.2	0.2	0.7	-	-	0.2
c2.3	<i>Business income</i>	3.6	5.1	2.5	1.2	9.0	3.7
c2.4	<i>Handicrafts resale</i>	0.6	0.2	4.0	0.8	9.0	0.9
c2.5	<i>Labour</i>	3.6	3.5	5.0	0.9	2.1	3.5
c3.1	<i>Overseas remittances</i>	21.6	13.2	14.3	20.1	16.6	19.7
c3.2	<i>Money gifts</i>	2.4	2.2	5.0	0.8	3.2	2.5
c3.3	<i>Sale of property</i>	0.7	0.4	0.9	-	-	0.6
c3.4	<i>Working capital</i>	0.8	0.9	1.1	1.6	0.3	0.9
c3.5	<i>Bank loan</i>	9.8	8.5	6.5	7.3	7.1	9.2
c3.6	<i>Other loan</i>	1.3	0.6	1.4	1.0	-	1.1
c3.7	<i>Savings withdrawal</i>	2.1	3.3	5.2	3.7	-	2.5
c3.8	<i>Loan repayments</i>	1.1	0.5	1.9	0.6	0.1	1.0
c3.9	<i>Other income</i>	-	-	0.6	-	-	-
b6.5	<i>Rental income</i>	0.2	1.4	0.2	1.6	-	0.5
Sale of own produce		10.1	31.1	31.6	32.9	36.1	16.1
b1.5	<i>Crops</i>	7.1	24.0	16.9	27.0	22.8	11.5
b2.5	<i>Livestock</i>	0.6	1.3	2.3	1.8	0.6	0.9
b3.5	<i>Fish</i>	1.0	1.8	3.5	0.4	-	1.2
b4.5	<i>Forest products</i>	-	0.9	0.3	0.3	-	0.2
b5.5	<i>Handicrafts</i>	1.3	3.1	8.5	3.4	12.6	2.3
Total non-cash income		100.0	100.0	100.0	100.0	100.0	100.0
Consumption of own produce		38.7	53.1	67.1	58.0	40.5	45.6
b1.9	<i>Crops</i>	16.2	25.4	26.3	37.8	24.6	20.4
b2.9	<i>Livestock</i>	8.0	11.9	15.5	6.7	14.9	9.6
b3.9	<i>Fish</i>	0.8	3.4	7.2	0.1	0.3	1.9
b4.9	<i>Forest products</i>	0.6	0.1	0.5	0.5	-	0.5
b5.9	<i>Handicrafts</i>	13.0	12.3	17.7	12.9	0.7	13.2
Other non-cash income		61.2	46.9	32.9	42.0	59.5	54.4
c4.1	<i>Gift in kind</i>	8.6	3.4	8.6	3.5	29.6	7.8
c4.2	<i>Regular payment in kind</i>	3.3	0.5	0.1	0.1	0.1	2.2
c4.3	<i>Ad hoc payment in kind</i>	1.6	0.7	1.3	0.9	-	1.3
diary 16	<i>Imputed rent</i>	47.9	42.3	22.8	37.4	29.6	43.1

HIES 2000/01

Table 3.3: Proportion of households reporting each source of income during the last 12 months, by island division

		Percentages					
Source of income		Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
Total cash income		96	97	100	99	100	97
c1.1	<i>Wages/Salaries</i>	63	49	44	40	37	57
c2.1	<i>Pension</i>	4	3	4	1	-	4
c2.2	<i>Interest</i>	3	8	3	3	-	4
c2.3	<i>Business income</i>	11	9	15	8	39	11
c2.4	<i>Handicrafts resale</i>	4	4	41	5	39	8
c2.5	<i>Labour</i>	25	21	52	11	37	26

c3.1	<i>Overseas remittances</i>	78	66	74	72	83	75
c3.2	<i>Money gifts</i>	20	32	56	10	29	25
c3.3	<i>Sale of property</i>	4	7	13	-	-	5
c3.4	<i>Working capital</i>	3	7	6	5	2	4
c3.5	<i>Bank loan</i>	27	22	29	20	51	26

c3.6	<i>Other loan</i>	14	7	14	2	-	12
c3.7	<i>Savings withdrawal</i>	16	29	40	11	-	20
c3.8	<i>Loan repayments</i>	10	12	17	6	5	11
c3.9	<i>Other income</i>	-	1	1	-	-	0
b6.5	<i>Rental income</i>	1	3	4	1	-	2

Sale of own produce		38	67	78	70	88	50
b1.5	<i>Crops</i>	26	44	37	58	59	33
b2.5	<i>Livestock</i>	12	23	26	23	7	16
b3.5	<i>Fish</i>	4	14	27	2	-	8
b4.5	<i>Forest products</i>	0	4	1	1	-	1
b5.5	<i>Handicrafts</i>	15	32	61	38	71	25

Total non-cash income		99	100	100	99	100	100
Consumption of own produce		74	84	91	80	88	78
b1.9	<i>Crops</i>	56	76	75	73	85	63
b2.9	<i>Livestock</i>	39	61	74	45	63	47
b3.9	<i>Fish</i>	6	21	52	2	5	13
b4.9	<i>Forest products</i>	6	1	1	2	-	4
b5.9	<i>Handicrafts</i>	50	46	71	56	5	50

Other non-cash income		95	96	99	96	98	95
c4.1	<i>Gift in kind</i>	82	94	98	96	100	87
c4.2	<i>Regular payment in kind</i>	4	6	5	2	2	4
c4.3	<i>Ad hoc payment in kind</i>	14	9	34	5	2	14
diary 16	<i>Imputed rent</i>	90	94	90	96	78	91
Total income (cash and non-cash)		100	100	100	100	100	100

HIES 2000/01

Table 3.4: Total annual income per capita by source (cash and non-cash) and island division

T\$

Source of income	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
Total cash income	2,597	1,913	1,815	1,692	1,802	2,335
c1.1 <i>Wages/Salaries</i>	1,039	513	313	423	297	830
c2.1 <i>Pension</i>	52	38	33	43	-	46
c2.2 <i>Interest</i>	5	3	13	1	-	5
c2.3 <i>Business income</i>	92	97	46	20	163	87
c2.4 <i>Handicrafts resale</i>	15	4	72	13	161	20
c2.5 <i>Labour</i>	93	68	91	15	38	82
c3.1 <i>Overseas remittances</i>	562	253	260	340	299	461
c3.2 <i>Money gifts</i>	64	42	91	14	58	58
c3.3 <i>Sale of property</i>	17	8	17	-	-	14
c3.4 <i>Working capital</i>	22	18	21	27	5	21
c3.5 <i>Bank loan</i>	254	163	118	124	127	216
c3.6 <i>Other loan</i>	34	11	26	16	-	27
c3.7 <i>Savings withdrawal</i>	55	63	94	63	-	59
c3.8 <i>Loan repayments</i>	27	10	34	10	3	23
c3.9 <i>Other income</i>	-	0	11	-	-	1
b6.5 <i>Rental income</i>	5	26	4	27	-	11
Sale of own produce	261	595	573	556	651	375
b1.5 <i>Crops</i>	185	459	308	457	412	268
b2.5 <i>Livestock</i>	15	26	42	30	11	20
b3.5 <i>Fish</i>	26	35	63	7	-	29
b4.5 <i>Forest products</i>	1	17	6	4	-	5
b5.5 <i>Handicrafts</i>	34	59	154	58	228	53
Total non-cash income	1,024	870	1,600	1,091	953	1,040
Consumption of own produce	396	462	1,075	633	386	474
b1.9 <i>Crops</i>	166	221	421	413	235	212
b2.9 <i>Livestock</i>	82	103	248	73	142	99
b3.9 <i>Fish</i>	9	29	114	1	3	20
b4.9 <i>Forest products</i>	6	1	7	5	-	5
b5.9 <i>Handicrafts</i>	133	107	283	141	7	137
Other non-cash income	627	408	526	458	567	566
c4.1 <i>Gift in kind</i>	88	30	137	38	283	81
c4.2 <i>Regular payment in kind</i>	34	4	2	1	1	23
c4.3 <i>Ad hoc payment in kind</i>	16	6	21	10	1	14
diary 16 <i>Imputed rent</i>	490	368	366	408	283	448
Total income (cash and non-cash)	3,621	2,783	3,416	2,783	2,755	3,376

HIES 2000/01

Table 3.5: Total annual national household income by source and island division

		T\$ (million)					
Source of income		Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Total
Total cash income		160	32	13	8	3	215
c1.1	<i>Wages/Salaries</i>	64	8	2	2	1	77
c2.1	<i>Pension</i>	3	1	-	-	-	4
c2.2	<i>Interest</i>	-	-	-	-	-	-
c2.3	<i>Business income</i>	6	2	-	-	-	8
c2.4	<i>Handicrafts resale</i>	1	-	-	-	-	2
c2.5	<i>Labour</i>	6	1	1	-	-	8
c3.1	<i>Overseas remittances</i>	34	4	2	2	1	43
c3.2	<i>Money gifts</i>	4	1	1	-	-	5
c3.3	<i>Sale of property</i>	1	-	-	-	-	1
c3.4	<i>Working capital</i>	1	-	-	-	-	2
c3.5	<i>Bank loan</i>	16	3	1	1	-	20
c3.6	<i>Other loan</i>	2	-	-	-	-	3
c3.7	<i>Savings withdrawal</i>	3	1	1	-	-	5
c3.8	<i>Loan repayments</i>	2	-	-	-	-	2
c3.9	<i>Other income</i>	-	-	-	-	-	-
b6.5	<i>Rental income</i>	-	-	-	-	-	1
Sale of own produce		16	10	4	2	1	33
b1.5	<i>Crops</i>	11	8	2	2	1	24
b2.5	<i>Livestock</i>	1	-	-	-	-	2
b3.5	<i>Fish</i>	2	1	-	-	-	3
b4.5	<i>Forest products</i>	-	-	-	-	-	-
b5.5	<i>Handicrafts</i>	2	1	1	-	-	5
Total non-cash income		63	14	12	5	2	95
Consumption of own produce		24	7	8	3	1	43
b1.9	<i>Crops</i>	10	4	3	2	-	19
b2.9	<i>Livestock</i>	5	2	2	-	-	9
b3.9	<i>Fish</i>	-	-	1	-	-	2
b4.9	<i>Forest products</i>	-	-	-	-	-	-
b5.9	<i>Handicrafts</i>	8	2	2	1	-	13
Other non-cash income		39	7	4	2	1	52
c4.1	<i>Gift in kind</i>	5	-	1	-	-	8
c4.2	<i>Regular payment in kind</i>	2	-	-	-	-	2
c4.3	<i>Ad hoc payment in kind</i>	1	-	-	-	-	1
diary 16	<i>Imputed rent</i>	30	6	3	2	-	41
Total income (cash and non-cash)		223	46	25	12	5	311

HIES 2000/01

Table 3.6: Average annual total expenditure per household, by expenditure group and island division

	T\$					
Major group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Tonga
Total cash expenditure	12,150	10,161	6,415	9,861	6,440	11,012
Food	5,346	4,775	2,984	4,166	3,326	4,914
Housing	501	205	37	258	76	382
Household operation	1,131	870	525	791	576	997
Apparel	55	26	22	20	6	44
Transportation	1,809	1,562	1,021	1,630	499	1,653
Other Goods	2,467	2,207	1,688	2,504	1,818	2,340
Other services	840	517	138	493	139	682
Total non-cash expenditure	4,790	6,021	5,631	6,239	8,106	5,258
Food	1,529	3,120	3,298	3,421	5,619	2,189
Housing	2,752	2,243	1,789	2,190	1,289	2,506
Household operation	183	207	182	73	424	187
Apparel	13	5	13	5	66	12
Transportation	116	212	104	385	9	147
Other Goods	179	231	224	164	617	202
Other services	17	2	20	1	83	15
Total expenditure (cash and non-cash)	16,941	16,182	12,046	16,100	14,546	16,270

HIES 2000/01

Table 3.7: Percentage distribution of cash and non-cash expenditure, by expenditure group and island division

	Percentages					
Major group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Tonga
Total cash expenditure	100.0	100.0	100.0	100.0	100.0	100.0
Food	44.0	47.0	46.5	42.2	51.6	44.6
Housing	4.1	2.0	0.6	2.6	1.2	3.5
Household operation	9.3	8.6	8.2	8.0	8.9	9.1
Apparel	0.5	0.3	0.3	0.2	0.1	0.4
Transportation	14.9	15.4	15.9	16.5	7.7	15.0
Other Goods	20.3	21.7	26.3	25.4	28.2	21.2
Other services	6.9	5.1	2.2	5.0	2.2	6.2
Total non-cash expenditure	100.0	100.0	100.0	100.0	100.0	100.0
Food	31.9	51.8	58.6	54.8	69.3	41.6
Housing	57.5	37.3	31.8	35.1	15.9	47.7
Household operation	3.8	3.4	3.2	1.2	5.2	3.6
Apparel	0.3	0.1	0.2	0.1	0.8	0.2
Transportation	2.4	3.5	1.8	6.2	0.1	2.8
Other Goods	3.7	3.8	4.0	2.6	7.6	3.8
Other services	0.4	0.0	0.4	0.0	1.0	0.3

HIES 2000/01

Table 3.8: Average annual total expenditure per capita, by expenditure group and island division

	T\$					
Major group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Tonga
Total cash expenditure	2,188	1,725	1,330	1,841	1,420	1,998
Food	963	811	619	778	733	892
Housing	90	35	8	48	17	69
Household operation	204	148	109	148	127	181
Apparel	10	4	5	4	1	8
Transportation	326	265	212	304	110	300
Other Goods	444	375	350	467	401	425
Other services	151	88	29	92	31	124
Total non-cash expenditure	863	1,022	1,168	1,165	1,787	954
Food	275	530	684	639	1,239	397
Housing	496	381	371	409	284	455
Household operation	33	35	38	14	93	34
Apparel	2	1	3	1	14	2
Transportation	21	36	22	72	2	27
Other Goods	32	39	47	31	136	37
Other services	3	0	4	0	18	3
Total expenditure (cash and non-cash)	3,051	2,748	2,498	3,006	3,206	2,952

HIES 2000/01

Table 3.9: Total annual national household expenditure, by expenditure group and island division

	T\$ (million)					
Major group	Tongatapu	Vava'u	Ha'apai	'Eua	Niuas	Tonga
Total cash expenditure	134	28	10	8	2	183
Food	59	13	4	4	1	82
Housing	6	1	-	-	-	6
Household operation	13	2	1	1	-	17
Apparel	1	-	-	-	-	1
Transportation	20	4	2	1	-	28
Other Goods	27	6	2	2	1	39
Other services	9	1	-	-	-	11
Total non-cash expenditure	53	17	8	5	3	87
Food	17	9	5	3	2	36
Housing	30	6	3	2	-	42
Household operation	2	1	-	-	-	3
Apparel	-	-	-	-	-	-
Transportation	1	1	-	-	-	2
Other Goods	2	1	-	-	-	3
Other services	-	-	-	-	-	-
Total expenditure (cash and non-cash)	187	45	18	14	6	270

HIES 2000/01

Table 3.10: Average annual household and per capita cash expenditure, percentage distribution of expenditure within expenditure groups, and total annual national cash expenditure on different groups of items

Code	Food	Average annual cash expenditure		Percent distribution (within group)	Total annual national cash expenditure
		Household T\$	Per capita T\$	%	T\$ million
0001-0049	Fresh fruits	202	37	4.1	3.4
0050-0069	Dried fruit	3	1	0.1	0.1
0070-0099	Canned, bottled and frozen	22	4	0.5	0.4
0100-0159	Fresh vegetables	447	81	9.1	7.5
0160-0179	Canned, bottled vegetables	13	2	0.3	0.2
0180-0189	Frozen vegetables	5	1	0.1	0.1
0190-0199	Dried vegetables and processed vegetable	2	0	0.0	0.0
0200-0209	Beef (fresh, chilled, frozen)	106	19	2.2	1.8
0220-0229	Mutton (fresh, chilled, frozen)	627	114	12.8	10.4
0230-0239	Lamb, hogget (fresh, chilled, frozen)	5	1	0.1	0.1
0240-0249	Pork (fresh, chilled, frozen)	48	9	1.0	0.8
0250-0259	Fresh, chilled and frozen meat n.e.s.	6	1	0.1	0.1
0260-0279	Prepared meat and small packs	86	16	1.7	1.4
0280-0289	Canned meat	295	54	6.0	4.9
0290-0299	Cooked meat	14	2	0.3	0.2
0300-0309	Chicken (fresh, frozen)	350	63	7.1	5.8
0310-0319	Other Poultry (fresh, frozen)	5	1	0.1	0.1
0320-0329	Cooked poultry	10	2	0.2	0.2
0400-0439	Fresh and frozen fish	344	62	7.0	5.7
0440-0469	Shellfish and crustaceans	37	7	0.8	0.6
0470-0489	Canned and bottled fish	130	24	2.6	2.1
0490-0499	Prepared fish n.e.s.	1	0	0.0	0.0
0500-0509	Egg	54	10	1.1	0.9
0510-0529	Milk, cream, yoghurt	124	23	2.5	2.1
0530-0539	Butter, cheese	138	25	2.8	2.3
0540-0569	Vegetable oils and fats	56	10	1.1	0.9
0600-0619	Bread	490	89	10.0	8.1
0620-0639	Cakes, buns, pastries (not take-away)	76	14	1.5	1.3
0640-0649	Flour, flour-based mixes	108	20	2.2	1.8
0650-0659	Breakfast cereals	6	1	0.1	0.1
0660-0669	Cereal pudding bases	0	0	0.0	0.0
0670-0679	Cereals	20	4	0.4	0.3
0680-0689	Pasta	86	16	1.7	1.4
0690-0699	Cereal products n.e.s	6	1	0.1	0.1
0700-0709	Sugar	164	30	3.3	2.7
0710-0719	Syrups, dessert sauces	4	1	0.1	0.1
0720-0729	Honey, jam, spreads	16	3	0.3	0.3
0730-0739	Beverages	71	13	1.4	1.2
0740-0749	Cordial, soft drinks	189	34	3.8	3.2
0750-0769	Confectionery	148	27	3.0	2.5
0800-0809	Condiments, herbs, spices	31	6	0.6	0.5
0810-0829	Sauces, gravies, essences, sweeteners	30	5	0.6	0.5
0830-0839	Dessert powders and crystals	0	0	0.0	0.0
0840-0849	Prepared soups, meals and desserts	6	1	0.1	0.1
0850-0859	Canned foodstuffs n.e.c.	6	1	0.1	0.1
0860-0879	Other food stuffs	69	12	1.4	1.1
0880-0889	Bulk groceries n.o.d.	23	4	0.5	0.4
0900-0909	Food consumed in eating places	137	25	2.8	2.3
0910-0939	Take-away foods	100	18	2.0	1.7
Total for Food		4,914	892	100.0	81.8

Table 3.10 (continued)

Code	Housing	Average annual cash expenditure		Percent distribution (within group) %	Total annual national cash expenditure T\$ million
		Household T\$	Per capita T\$		
1000-1009	Property rent	40	7	10.4	0.7
1100-1109	Purchase of dwelling	31	6	8.1	0.5
1110-1119	Sale of dwelling	0	0	0.0	0.0
1120-1129	Dwelling purchase expenses	2	0	0.6	0.0
1130-1139	Dwelling sale expenses	4	1	1.0	0.1
1200-1209	Mortgage interest payments	0	0	0.0	0.0
1210-1219	Mortgage principal repayments	0	0	0.0	0.0
1300-1399	Payments to ministry of health	0	0	0.0	0.0
1400-1409	Property insurance premiums	8	2	2.2	0.1
1500-1519	Plant, equipment and tools for property maintenance	16	3	4.3	0.3
1520-1549	Hardware and materials for property maintenance	60	11	15.6	1.0
1550-1569	Supplies for property maintenance	10	2	2.7	0.2
1570-1589	Garden supplies	11	2	3.0	0.2
1590-1599	Service costs for property maintenance goods	1	0	0.1	0.0
1600-1639	Property maintenance services	198	36	51.9	3.3
Total for Housing		382	69	100.0	6.4
Code	Household operation				
2000-2019	Domestic fuel and power	73	13	7.3	1.2
2100-2119	Large electrical appliances	39	7	3.9	0.7
2120-2139	Audio and visual appliances	18	3	1.8	0.3
2140-2159	Small electrical appliances	3	1	0.3	0.1
2160-2169	Non-electrical appliances	5	1	0.5	0.1
2170-2179	Service costs for home appliances	25	4	2.5	0.4
2200-2229	Large household equipment	4	1	0.4	0.1
2230-2239	Kitchenware	2	0	0.2	0.0
2240-2249	Cookware	0	0	0.0	0.0
2250-2269	Tableware	2	0	0.2	0.0
2270-2289	Small household equipment n.e.c.	1	0	0.1	0.0
2290-2299	Service costs for household equipment	2	0	0.2	0.0
2300-2339	Furniture	30	6	3.1	0.5
2340-2349	Service costs for furniture	6	1	0.6	0.1
2400-2419	Furnishing	0	0	0.0	0.0
2420-2429	Service costs for furnishing	0	0	0.0	0.0
2500-2519	Floor coverings	53	10	5.3	0.9
2520-2529	Service costs for floor coverings	0	0	0.0	0.0
2600-2629	Household textiles	6	1	0.6	0.1
2630-2639	Service costs for household textiles	0	0	0.0	0.0
2700-2719	Cleanser, cleaning cloths, polishes	103	19	10.3	1.7
2720-2729	Dyes, air fresheners	1	0	0.1	0.0
2730-2739	Disinfectants, insecticides,, pesticides	31	6	3.1	0.5
2740-2749	Wrappings	25	5	2.5	0.4
2750-2779	Household supplies n.e.c.	110	20	11.0	1.8
2800-2809	Post office service	130	24	13.0	2.2
2820-2829	Household insurance	2	0	0.2	0.0
2830-2859	Household service n.e.s.	327	59	32.8	5.4
Total for Household operation		997	181	100.0	16.7

Table 3.10 (continued)		Average annual cash expenditure		Percent distribution (within group)	Total annual national cash expenditure
Code	Apparel	Household T\$	Per capita T\$	%	T\$ million
3000-3029	Men's clothing	8	2	19.2	0.1
3100-3129	Women's clothing	6	1	14.5	0.1
3200-3229	Boys clothing	8	1	18.5	0.1
3230-3259	Girls clothing	3	1	6.7	0.0
3260-3279	Infants clothing	3	0	5.8	0.0
3300-3329	Clothing not otherwise classifiable	7	1	15.6	0.1
3400-3419	Sewing and knitting goods	1	0	1.3	0.0
3420-3429	Service costs for clothing	0	0	0.2	0.0
3500-3509	Men's footwear	3	1	7.8	0.1
3600-3609	Women's footwear	4	1	8.6	0.1
3700-3709	Children footwear	1	0	1.2	0.0
3800-3809	Footwear not otherwise classifiable	0	0	0.7	0.0
3900-3909	Footwear supplies and services	0	0	0.0	0.0
Total for Apparel		44	8	100.0	0.7
Code	Transportation				
4000-4029	Land and sea transport within Tonga	201	37	12.2	3.4
4030-4039	Inter-island air transport	36	7	2.2	0.6
4040-4049	Public transport cost n.e.c.	0	0	0.0	0.0
4100-4119	Air fares to overseas destinations	306	56	18.5	5.2
4120-4129	Expenditure incurred overseas	1	0	0.1	0.0
4200-4209	Purchase of new road vehicles	337	61	20.4	5.6
4210-4219	Purchase of pre-owned road vehicle	13	2	0.8	0.2
4220-4229	Credit costs for purchase of road vehicles	5	1	0.3	0.1
4300-4309	Fuel for road vehicles	675	122	40.8	11.2
4310-4319	Vehicle supplies	13	2	0.8	0.2
4320-4329	Vehicles accessories	7	1	0.4	0.1
4330-4339	Parts and equipment for vehicle repair and maintenance	22	4	1.4	0.4
4340-4349	Statutory motoring fees	1	0	0.0	0.0
4350-4359	Insurance on road vehicles	3	1	0.2	0.1
4360-4379	Vehicles repair and maintenance services	30	5	1.8	0.5
4400-4419	Private transport cost n.e.c.	2	0	0.1	0.0
Total for Transportation		1,653	300	100.0	27.5

Table 3.10 (continued)		Average annual cash expenditure		Percent distribution (within group)	Total annual national cash expenditure
Code	Other goods	Household T\$	Per capita T\$	%	T\$ million
5000-5009	Cigarettes and tobacco	414	75	17.7	6.9
5100-5109	Alcohol and kava	219	40	9.4	3.7
5200-5229	Pharmaceutical supplies	8	1	0.3	0.1
5230-5249	Medical aids	0	0	0.0	0.0
5300-5329	Toiletries	156	28	6.7	2.6
5330-5349	Cosmetics	2	0	0.1	0.0
5400-5419	Personal equipment (worn)	4	1	0.2	0.1
5420-5439	Personal equipment (carried)	1	0	0.1	0.0
5440-5469	Personal equipment (used)	6	1	0.2	0.1
5470-5489	Personal supplies	169	31	7.2	2.8
5490-5499	Service costs for personal goods	1	0	0.0	0.0
5500-5509	Purchase of pets, racehorses and livestock	21	4	0.9	0.3
5510-5529	Agricultural supplies for saving	1	0	0.1	0.0
5530-5549	Service costs for hiring agricultural machinery	50	9	2.1	0.8
5600-5619	Newspaper, magazine, books	7	1	0.3	0.1
5620-5639	Stationery	22	4	1.0	0.4
5640-5659	Office equipment for private use	4	1	0.2	0.1
5660-5669	Service costs for publications, stationery and office equipment	1	0	0.1	0.0
5700-5709	Magnifying and photographic equipment	0	0	0.0	0.0
5710-5719	Musical instruments	2	0	0.1	0.0
5720-5739	Sports goods	6	1	0.2	0.1
5740-5759	Leisure equipment	0	0	0.0	0.0
5760-5789	Leisure materials and supplies	10	2	0.4	0.2
5790-5799	Service costs for leisure and recreational goods	20	4	0.8	0.3
5800-5809	Purchase of pre-owned recreational vehicles	9	2	0.4	0.2
5820-5839	Service costs for recreational vehicles	1	0	0.0	0.0
5900-5919	Goods n.e.c.	1,205	219	51.5	20.0
	Total for Other goods	2,340	425	100.0	38.8
Code	Other services				
6000-6009	Medical practitioners fees	14	3	2.0	0.2
6010-6029	Other health practitioners fee n.o.c.	0	0	0.0	0.0
6030-6039	Hospital and nursing fees	0	0	0.1	0.0
6040-6049	Health service costs n.e.c.	16	3	2.4	0.3
6100-6109	Personal services	119	22	17.5	2.0
6200-6219	Formal educational fees	230	42	33.8	3.9
6220-6239	Tuition fees	2	0	0.3	0.0
6240-6249	Educational and tuition service costs n.e.c.	2	0	0.2	0.0
6300-6319	Accommodation service	1	0	0.2	0.0
6400-6409	Legal services	4	1	0.6	0.1
6410-6421	Financial services	292	53	42.9	4.9
	Total for Other services	682	124	100.0	11.4
Totals		11,012	1,998		183.4

HIES 2000/01

4. APPENDICES

A. Questionnaires used in the survey

CONFIDENTIAL
HIES - 1

KINGDOM OF TONGA

STATISTICS DEPARTMENT

HOUSEHOLD INCOME SURVEY 2000/2001

Survey Quarter:		CBN:		Household number:	
-----------------	--	------	--	-------------------	--

(The information is being collected under Section 8 of Statistics Act 1978 and will kept strictly confidential and used for statistical purposes only)

Name of Head of Household _____

Name of Village _____

Name of District _____

Name of Division _____

Name and Signature of interviewer: _____

Visit to the Household

Date(s)

1st visit _____

2nd visit _____

3rd visit _____

4th visit _____

5th visit _____

6th visit _____

_____ _____

Final visit _____

SECTION A: HOUSEHOLD COMPOSITION AND ITS CHARACTERISTICS

HIES-1

SURVEY QUARTER:

CBN:

HOUSEHOLD NUMBER:

Person No.	Name	Relationship to Head of Household	Sex	Age	Marital Status	No. of days worked last week	Main Activity	Employment Status	Educational Attainment	MAIN			
										OCCUPATION	C O D E	INDUSTRY	C O D E
	1	2	3	4	5	6	7	8	9	10		11	
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													

NOTES:

- (2) **RELATIONSHIP TO HEAD OF HOUSEHOLD:** (0) HEAD OF HOUSEHOLD (1) FATHER (2) MOTHER (3) HUSBAND (4) WIFE (5) SON (6) SON-IN-LAW (7) DAUGHTER (8) DAUGHTER-IN-LAW (9) GRANDSON (10) GRANDDAUGHTER (11) AUNT (12) UNCLE (13) BROTHER (14) BROTHER-IN-LAW (15) SISTER (16) SISTER-IN-LAW (17) OTHER (Please specify)
- (3) **SEX** (1) MALE (2) FEMALE
- (5) **MARITAL STATUS** (1) NEVER MARRIED (2) MARRIED (3) WIDOWED (4) DIVORCED (5) SEPARATED (6) DE FACTO
- (7) **MAIN ACTIVITY** (1) WORKING (2) SEEKING WORK (3) DOING HOUSEWORK (4) STUDENT (5) DISABLED (6) INCOME RECIPIENT (7) RETIRED (8) OTHER: (Please specify below the column)
- (8) **EMPLOYMENT STATUS** (1) EMPLOYER (2) SELF-EMPLOYED (3) UNPAID FAMILY WORKER (4) EMPLOYEE GOVERNMENT (5) EMPLOYEE QUASI-GOVERNMENT (6) EMPLOYEE PRIVATE (7) OTHER: (Please specify)
- (9) **EDUCATIONAL ATTAINMENT** (1) PRIMARY (2) SECONDARY (3) TERTIARY (4) NO SCHOOLING

**SECTION B: VALUE OF OUTPUT AND PAYMENTS FOR GOODS AND SERVICES
(LAST ONE YEAR - 12 MONTHS 2000/2001)**

SURVEY QUARTER:	CBN:	HOUSEHOLD NUMBER:	PERSON NUMBER:
------------------------	-------------	--------------------------	-----------------------

ITEM (1)	Goods produced for Sale in local market or for exports				Goods produced for self consumption				Remarks if any
	Value (2)	Payment for goods & services in cash		Net Income (2)-(3)-(4) (5)	Value (6)	Payment for goods & services in kind		Net Income (6)-(7)-(8) (9)	
		Labour (3)	Goods, transport etc. (4)			Labour (7)	Goods, transport etc. (8)		
1. Agricultural Products eg. Copra coconut, banana, vanilla, watermelon fruits, vegetables and kava tonga etc.				A1				B1	
2. Livestock, poultry and its products				A2				B2	
3. Fish and fish products				A3				B3	
4. Forest products like timber, fuel wood and herbs etc.				A4				B4	
5. Handicrafts eg. Mats, baskets, tapa cloth etc.				A5				B5	
6. Rent for Property				A6				B6	
6.1 Unfurnished residential property									
6.2 Furnished residential property									
6.3 Non-residential property									
TOTAL									

CBN:			
Household Number:		Number of Diary:	
Person Number:			

KINGDOM OF TONGA
(PULE'ANGA TONGA)

HOUSEHOLD EXPENDITURE SURVEY
(SAVEA KI HE FAKAMOLE 'A E NGA AHI FAMILI)

2000/2001

STATISTICS DEPARTMENT
NUKU'ALOFA, TONGA

(Note to reader: All the instructions were given in English and Tongan. Only the English version is shown here.)

Instructions on Expenditure

(One Person Only)

Confidential

The information collected in this Survey is essential for Government policies and development projects. What you write here will be kept secret. Your name and where you live will not be told to anyone; and you do not write them in this book. When you give this book back to the person who gave it to you he/she will send it straight to the Statistics Office and only the people doing the Survey will see the book. The things you write will be added with those that other people write and only the totals will be printed.

If you are not sure of anything, ask the person who gave you the book for help.

NAME OF INTERVIEWER:

TELEPHONE NUMBER:

Period:		to	
---------	--	----	--

HOW TO WRITE IN THIS BOOK

READ ALL THESE NOTES BEFORE YOU WRITE IN THIS BOOK

1. **THIS BOOK IS ONLY FOR WHAT YOU SPEND YOURSELF, NOT FOR WHAT ALL THE FAMILY SPENDS.** It would only have in it what you yourself spend. Do not put in it what other members of your house spend. They will have books themselves.
2. **PLEASE WRITE IN THIS BOOK EVERY DAY EVERYTHING YOU BUY, EXCHANGE OR BARTER OR AS A GIFT ON EACH DAY.** If you pay cash put the amount in **Cash Paid** column, and if you buy on credit enter the amount in **Bought on Credit** column. Should you obtain the item on exchange or barter basis or as a gift, put the estimated current value in **No Cash Paid** column.
3. **PLEASE WRITE DOWN EVERYTHING YOU BUY.** It does not matter if it is for yourself or for your wife, or for your husband, or for your children, or for anyone else; it does not matter if it is paid for out of your money, or out of money for the house, or out of money from any other place and it does not matter whether you **Pay by Cash** or **Buy on Credit** etc.
4. **THERE IS A NEW PAGE FOR EVERY DAY.** Please try to write down what you spend each day on that day or you may forget some things.
5. **HOUSEHOLD CONSUMPTION ITEMS BOUGHT** (1) on Cash Payment or (2) on Credit or (3) on Exchange or Barter or as a gift basis during 2 weeks.

PLEASE SHOW EACH ITEM ON ITS OWN, EVEN A SMALL ITEM. For example, do not write “groceries” but instead write down each of the items bought such as “butter” or “sugar”. When you have written down the items you have bought on the day then write down how much you bought either in imperial, metric or other local units and show the cost of it (in the **Cash Paid** column or the **Bought on Credit** column) as applicable. For example:

- If the item is tea, put down how many grams/ounces
- If you put down loaves of bread, say if they are standard size or otherwise
- If you write down tins or packets, write down the size of tins or packets
- If you write down fruit or vegetables or fish, try to show the size if you can

6. **IF YOU PAY DURING THESE TWO WEEKS FOR GOODS USED BEFORE THESE TWO WEEKS BEGAN** put down **Paid Account** and show the amount in **Cash Paid** column.
7. **WHEN YOU HAVE WRITTEN DOWN YOUR ITEMS FOR THE DAY, LOOK AT PAGES 27 TO 30, AND SEE IF YOU HAVE FORGOTTEN ANYTHING YOU HAVE BOUGHT.** You may have bought something and forgotten to write down.
8. **IF YOU GIVE ANY MONEY TO CHILDREN TO SPEND FOR THEMSELVES,** write down “Children’s Money” and show the amount in the **Cash Paid** column, **BUT IF YOU SEND YOUR CHILDREN TO THE STORE TO BUY SOMETHING FOR YOU, YOURSELF OR YOUR HOUSEHOLD,** write down the item bought and show the amount paid.
9. **TIME PAYMENTS.** If in any of these 2 weeks you pay any instalments (part payments) on goods which you are buying by time payments, show the item as in the following examples: “Time payment instalments on radio set”, and show the amount paid in the **Cash Paid** column.”
IF YOU STARTED BUYING ANYTHING BY TIME PAYMENTS in any of these 2 weeks, write it down on the day and show the full price and also write down how much you paid on the day. For example: “Radio set by time payment - full price T\$45.50, first time payment T\$15.25”
10. **USED ITEMS.** If you buy any used items during these 2 weeks, put “used” against that item and show the amount paid.

B. REPAIRS ON HOUSE DURING THESE TWO WEEKS

- If you had a carpenter or plumber or anybody else fix your house during these 2 weeks and you yourself paid for the work he did, put the type of work done and put the amount paid in the **Cash Paid** column. For example: **“Roof repairs - T\$25.00”**
- If you did not pay cash for the house repairs but instead gave the person who fixed your house something in return (like some vegetables you had grown yourself, etc.) then put the amount you think the work would have cost you if you had to pay cash in the **No Cash Paid** column.
- If the house repairs were provided free by the disaster Relief Organisation or any other aid organization then put down the amount the work would have cost in the **No Cash Paid** column. (But if you have already written down these house repairs somewhere else in this book, do not write them down again here.)

15

HOUSE REPAIRS IN THESE 2 WEEKS (MONOMONO FALE 'I HE UIKE UA NI)	Cash Paid (Pa'anga ne Totongi)		Bought on Credit (Fakatau Fakamo'ua)		No Cash Paid ('Ikai Totongi Pa'anga)		FOR OFFICE USE ONLY
	T\$	C	T\$	C	T\$	C	

C. RENT FOR HOUSE

If you pay rent for your house, please put down the amount of rent you pay and how often you pay it. For example: **“Rent - monthly T\$40.00”**

(But if you have already written down a payment for rent during these two weeks, then do not write it down again here.)

If you live in your own house, put down in the **Estimated Amount** column the amount of rent you would have to pay if you had to rent it.

16

RENT FOR HOUSE (TOTONGI NOFO)	HOW OFTEN PAID (VAHA'A TAIMI 'OKU TOTONGI AI)	Amount (Pa'anga Ne Totongi)		Estimated Amount (Fakafuofua Totongi Nofo)		FOR OFFICE USE ONLY
		T\$	C	T\$	C	

D. OTHER BIG PAYMENTS DURING THE LAST 12 MONTHS

If you have spent T\$50.00 or more during the last 12 months on specific items or on religious and other ceremonies, functions and festivities, etc., and have not entered such expenses elsewhere, please specify those below. For example:

- If you had repairs on your house or bought materials to fix your house or were given a new house then write that down
- If you bought a vehicle (a bicycle, motorcycle, car, horse cart) then write down what kind of vehicle
- If you had repairs to a vehicle and the repairs were worth T\$50.00 or more then write down what kind of vehicle and what kind of repairs, for example: **“Motorcycle - new tyre T\$50.00”**
- If you bought a large animal such as a cow or a horse then write down what kind of animal
- If you paid for a trip to another island then write down what island and what kind of transport, for example: **“Airplanes for 2 people from Tongatapu to Vava’u ”**
- If you yourself paid all or some of the fare for you or someone else to travel to New Zealand or another country then write that down. For example: **“Trip to New Zealand for son - paid some of the fare T\$150.00”**
- If you paid for any insurance during the last year then write what type of insurance. For example:
“Natural disaster insurance for house - T\$56.00”
- Legal expenses not related to business and industry
- Remittances to family members living away or overseas
- Donations, gifts, charities, to church, institutions or individuals

If you paid cash then please show the amount on the **Cash Paid** column

If you bought the item on time payment then please show the full cost in the **Credit** column.

If you did not pay any money but instead gave something in return (like goods that you had grown or made) then put down how much it would have cost to pay cash in the **No Cash Paid** column.

If you were given the item free by an aid organization then put down how much the item would have cost if you had to pay cash in the **No Cash Paid** column.

17

OTHER BIG PAYMENTS (T\$50.00 OR MORE) DURING THE LAST 12 MONTHS
(NGAAHI FAKAMOLE LALAHU (T\$50.00 PE LAHI ANGE) LOLOTONGA 'A E MAHINA 'E 12 KUO 'OSI)

ITEM (KOLOA)	QUANTITY (LAHI 'O E KOLOA)	Cash Paid (Pa'anga ne Totongi)		Bought on Credit (Fakatau Fakamo'ua)		No Cash Paid ('Ikai Totongi Pa'anga)		FOR OFFICE USE ONLY
		T\$	C	T\$	C	T\$	C	

(pages 27-28)

ITEMS YOU MIGHT HAVE BOUGHT

Some items you might have bought are listed below. These are for you to read to see if you have bought any of these items but have forgotten. If you find here any items which you bought but which you forgot to write down, please go back now and write them down.

FOOD:

Bread, cakes, buns, flour, doughnuts, breakfast cereals and other cereals, such as tapioca, rice, etc.
Custard powder, tinned corned beef, beef, veal, mutton, lamb, pork, poultry, sausages, bacon and ham, tinned fish, fish (fresh, dried or smoked, shell), milk (fresh, dried, condensed)
Butter, margarine, lard suet and other cooking fats, cheese, eggs, tinned spaghetti, tinned beans, tea, coffee and coffee essence, cocoa
Sugar, syrup, jam, marmalade, honey, lemon curd
Tinned vegetables
Potatoes, breadfruit, taro, yam, sweet potatoes, beans, tomatoes, cabbage, other leafy green and yellow vegetables, root vegetables, vegetables (including tinned)
Tinned fruit
Bananas, pawpaws, citrus fruits, apples, other fresh fruits
Coconuts, all other nuts, drinking nuts
Sweets, chocolate, ice cream
Various other foods such as pickles, sauces, canned soups, jellies
Food for animals or pets
Meals bought away from home
Weetbix, cabin bread

TOBACCO AND DRINKS:

Cigarettes, cigarette tobacco, cigarette papers, pipe tobacco, cigars, pipes, pouches, lighters, lighter fuel, cigarette cases
Beer, ale, stout, wine, spirits
Soft drinks (e.g. Orangeade, lemon squash, etc.)

FUEL AND LIGHT; HOUSEHOLD MATERIALS, NEWSPAPERS, BOOKS, etc.

Kerosene and other fuel oil, electricity, firewood, candles
Matches, soap, soda, cleaning powers, detergents, polishes
Books, newspapers and other reading materials, stationery, toilet paper
Medicinal and toilet goods, cosmetics, sanitary towels, razors
Photographic goods
Flowers, seeds, plants, garden sundries, animals and pets, children's toys

CLOTHING, CLOTHING MATERIALS, FOOTWEAR:

(Men's Women's, Girls', Boys')

Length of material

Trousers, shorts, shirts, singlets, underpants, pyjamas, handkerchiefs, shoes or boots, sandals, socks, shoe repairs, sandshoes, other clothing and footwear
Blouses, skirts, underwear, chemises, nightwear, shoes, sandals, other clothing and footwear

FURNITURE, FURNISHING HARDWARE, etc.

Mattresses, pillows, sheets, blankets, tablecloths, towels, curtaining
Carpet, rugs, linoleum, mats
Fires, cookers, irons, vacuum cleaners, refrigerators, wringers, sewing machines, washing machines
Dustbins, pails, bowls, kettles, saucepans, brushes, brooms, tools, chinaware, glassware
Clocks, watches, jewellery, cutlery, suitcases, handbags, sports goods

TRANSPORT:

Purchase or upkeep of motorcycles, power cycles, cycles, perambulators and cars

TRIPS

Trips to other islands or to other countries (which are not business trips)

INSURANCES

Life insurance or fire insurance or natural disaster insurance

WATER AND POWER CHARGES, etc.

Water rates charges, power charges

HOUSING COSTS:

Rent, house repairs, new house, mortgage repayments

OTHER KINDS OF EXPENDITURE:

Visits to cinemas, concerts, football, cricket, postage, telephone

Hairdressing, shoe repairs, dyeing and cleaning, domestic help

Holiday expenditure apart from fares

Children's pocket money

Contributions to pensions, etc., funds paid direct or by deduction from pay

Income tax paid direct or by deduction from pay

School fees

Giving - to church, or to any other organization

NOTES:

These pages are for you to write down anything that you are unsure about

Note to reader:

Five blank pages were provided for the person to write down any items they were not sure about

B. Sample design

In designing the sample for the survey, an initial simple allocation was made of 10 percent of all households in Tonga. This resulted in an initial sample of 1640 households, made up 1093 households for Tongatapu, 276 for Vava'u, 149 for Ha'apai, 83 for 'Eua, and 39 for the Niuas. To allow for seasonal effects, the survey was carried out over four rounds, covering a 12-month period. This meant that the sample size for each round was 410 households.¹

There were various stages to the selection process. Within each island division, the required sample was allocated to districts in proportion to their sizes. A sample of census blocks was then selected systematically within each district, using a sampling interval of 1 in 9. Within selected census blocks, the required size of sample was selected systematically from the list of all households.

Due to financial limitations, some of the small islands were not included in the survey at all, or only included in certain rounds. For example, the two main islands of the Niuas were only to be included in one round each. In the Ha'apai group, two of the islands (Foa and Ha'afeva) were only to be covered in two rounds, while three others (Ha'ano, 'Uiha and Nomuka) were only to be considered for one round.

¹ A word of caution about the sample design is appropriate at this stage. Since island division is the main geographic variable used in classifying households, it is clear that the sample design adopted for the survey (with a uniform sampling fraction used across the country) was far from optimal. More precise estimates for the smaller island divisions could have been obtained by increasing the sample sizes in those island divisions, while a corresponding reduction in the large sample allocated to Tongatapu would have resulted in only a small loss of precision for that island division. It would also have been more efficient from a fieldwork point of view if interviewers could have been given fixed quotas in the census blocks they visited. This could have been most easily achieved by selecting census blocks with probability proportional to size (PPS), and then using a fixed 'take' (say six households) in each selected block.

C. Sampling and non-sampling errors

This Appendix is intended to provide further background information about sampling and non-sampling errors. Sampling errors refer to those errors that are implicit in any sample survey, where only a portion of the population is covered. Non-sampling errors refer to all other types of error. These can arise at any stage of the survey process. Examples of activities that are likely to increase the level of non-sampling error are: failing to select a proper sample, poor questionnaire design, weak field supervision, inaccurate data entry, insufficient data editing, or failure to analyze or report on the data correctly. If a census of all the households in Tonga were carried out, there would be no sampling error (but probably increased non-sampling error).

Sampling errors ²

Because of the complex nature of the sample design, it is only possible to calculate approximate standard errors. These were calculated using the split-halves variance estimation procedure. Some of the survey estimates given here (taken from the report by Ryan ²) may not exactly match the corresponding figures given in the main text of this present report, because some further adjustments to the dataset have been made since the time his report was prepared, but the sampling errors shown here will nevertheless provide a good picture of the effects of the sampling design on the survey estimates.

Table 4.1 shows the annual estimates for a variety of key expenditure aggregates, together with their standard errors. The right hand column shows the relative standard error, obtained by dividing the standard error for each aggregate by its corresponding estimate. It can be seen that the RSEs are generally quite low. The overall RSE for expenditure is only 1.5. The only exception is the category 'Total Other', but this category (comprising regular payments in kind, ad hoc payments in kind, and non-monetary gifts) accounts for less than 2 percent of total expenditure.

Table 4.1: Standard errors for some key expenditure aggregates

ALL of TONGA

	Std.Error	Estimate	RSE
Diary Total	4,072,259	270,856,972	1.5
Food	1,886,227	117,854,462	1.6
Housing	1,739,391	48,359,953	3.6
Household Operation	406,336	19,843,359	2.0
Apparel	71,205	943,763	7.5
Transportation	1,314,794	30,001,691	4.4
Other Goods	809,681	42,205,698	1.9
Other Services	984,407	11,648,047	8.5
Home Produce	965,734	40,468,215	2.4
Total Other	1,468,144	5,171,589	28.4
Total Expenditure	4,806,701	316,496,776	1.5

HIES 2000/01

Source: Report by Chris Ryan (see footnote)

Table 4.2 shows corresponding information for the income aggregates. It can be seen that, although the overall RSE (1.5) is still low, some of the RSEs are much more variable. Where an RSE is relatively high, it is generally due to the fact that the item of interest does not occur very often in Tonga. It is therefore difficult to get reliable estimates from a relatively small national sample. This is likely to be the case with the high values for property sales, other income, sales of own forest products, and regular payments in kind. On the other hand, items which occur frequently, such as

² This section draws heavily on an internal report prepared for the Tonga Statistics Department by Chris Ryan of the Secretariat of the Pacific Community (SPC). His report (*Assessment of Tonga 2000/2001 HIES*, June 2002) discusses the sample design for the survey, and gives detailed estimates of sampling errors for key variables. It also discusses some of the non-sampling errors arising from the sample design.

wages and salaries, remittances, sales of handicrafts, and consumption of crops and livestock, all have fairly low RSEs.

Using these standard error tables, the 95 percent confidence interval for wages and salaries is (78.45 +/- 2 * 1.75 million pa'anga). Using the actual value of 77 million shown in Table 2.11 gives a conservative 95 percent interval stretching from about 73 to 81 million pa'anga.

Table 4.2: Standard errors for some key income aggregates

ALL of TONGA

	Std.Error	Estimate	RSE
Total Cash Income	4,513,748	214,031,294	2.1
Wages & Salaries	1,752,755	78,451,850	2.2
Pension/Superannuation	680,879	3,404,437	20.0
Interest & Dividends	89,186	488,489	18.3
Business Income	1,396,246	8,045,884	17.4
Handicraft exports	201,373	1,882,055	10.7
Ad-hoc Labourer	426,863	7,608,092	5.6
Remittances	1,251,987	42,461,210	2.9
Gifts of Money	841,658	5,255,038	16.0
Property Sale	512,727	1,345,416	38.1
Working Capital	375,180	1,936,408	19.4
Bank Loan	1,673,200	19,989,937	8.4
Other Loan	450,046	2,410,850	18.7
Savings Withdrawal	260,465	5,398,209	4.8
Loan Repayments	273,237	2,158,756	12.7
Other Income	5,108	6,533	78.2
Rental Income	327,447	903,952	36.2
Sales of own products	1,623,191	32,284,177	5.0
Crops	2,026,853	23,015,633	8.8
Livestock	127,888	1,650,189	7.7
Fish	662,051	2,655,569	24.9
Forest Products	189,714	399,330	47.5
Handicrafts	241,921	4,563,456	5.3
Total Non-cash Income	2,739,684	133,768,072	2.0
Consumption of own products	630,295	40,468,215	1.6
Crops	748,769	18,393,019	4.1
Livestock	391,054	7,984,400	4.9
Fish	127,905	1,635,645	7.8
Forest Products	126,168	473,184	26.7
Handicrafts	545,452	11,981,968	4.6
Gift Income	1,603,237	48,499,962	3.3
Regular Payment in kind	1,656,158	2,193,875	75.5
Ad-hoc Payment in kind	248,792	1,299,875	19.1
Imputed Rent	865,094	41,306,145	2.1
Total Income	5,378,410	347,799,366	1.5

HIES 2000/01

Source: Report by Chris Ryan (see footnote on previous page)

Table 4.3 provides a summary of the RSEs for each of the island divisions. As is perhaps to be expected, given the larger sample sizes in Tongatapu and Vava'u, the RSEs for total income and total expenditure are lower in these island divisions than in the other three. The RSEs for total income and total expenditure are highest in the Niuaus, where the sample size was very small.

Table 4.3: Relative Standard Errors (RSEs) for key income and expenditure aggregates for each island division

	Tongatapu	Vava'u	Ha'apai	'Eua	Niuaus
<u>Total expenditure</u>	<u>1.9</u>	<u>3.8</u>	<u>4.4</u>	<u>5.3</u>	<u>8.5</u>
Diary total	1.8	4.0	5.4	7.2	9.7
Food	2.3	1.2	3.9	5.1	8.0
Housing	4.6	5.7	8.3	6.8	9.7
Household operation	1.9	9.0	4.3	7.6	24.4
Apparel	9.0	7.1	25.5	27.0	51.4
Transportation	4.5	10.2	30.9	28.2	21.5
Other goods	1.6	8.2	6.2	13.1	13.0
Other services	9.9	20.0	14.1	17.4	46.8
Home produce	3.1	7.6	3.6	8.0	12.3
Total other	33.5	38.8	10.4	56.7	37.1
<u>Total income</u>	<u>2.4</u>	<u>1.3</u>	<u>5.9</u>	<u>6.7</u>	<u>8.5</u>
Total cash income	3.0	3.0	6.9	13.3	12.2
Wages & salaries	2.6	10.5	21.9	17.6	36.8
Pension/superann.	26.3	27.9	100.0	100.0	0.0
Interest & dividends	23.0	52.1	41.7	97.2	0.0
Business income	19.9	27.7	18.0	60.9	24.9
Handicraft exports	11.6	20.7	19.4	58.2	29.0
Ad hoc labour	8.7	25.5	5.9	55.1	24.0
Remittances	3.3	10.3	16.8	11.6	21.9
Gifts of money	18.1	24.0	15.8	34.6	38.9
Property sale	43.9	36.0	21.3	0.0	0.0
Working capital	31.1	27.4	55.4	59.5	100.0
Bank loan	8.6	24.0	16.5	33.9	25.4
Other loan	21.7	41.5	27.4	82.7	0.0
Savings withdrawal	9.4	21.2	15.2	27.8	0.0
Loan repayments	18.2	24.4	32.8	70.5	78.5
Other income	0.0	78.2	0.0	0.0	0.0
Rental income	54.0	70.4	42.7	100.0	0.0
Sales of own produce	5.6	15.7	17.7	16.7	21.2
Crops	6.7	22.4	30.1	21.0	31.0
Livestock	11.4	23.7	34.1	18.0	69.1
Fish	28.0	36.7	18.8	77.5	0.0
Forest products	100.0	49.4	100.0	100.0	0.0
Handicrafts	6.5	14.5	2.8	20.4	12.7
Total non-cash income	3.6	3.5	9.5	4.2	11.9
Consumption of own produce	4.4	7.8	10.0	9.2	19.4
Crops	5.2	10.7	12.3	13.3	23.2
Livestock	9.5	10.0	13.5	7.6	19.8
Fish	19.5	21.4	10.0	40.8	78.5
Forest products	23.6	57.8	100.0	68.3	0.0
Handicrafts	5.2	18.1	8.0	16.3	92.6
Gift income in kind	4.4	4.2	12.5	6.6	15.3
Regular payment in kind	78.8	25.2	43.1	92.7	100.0
Ad hoc payment in kind	78.8	38.3	15.5	67.5	100.0
Imputed rent	20.8	7.7	14.5	3.7	15.8

HIES 2000/01

Source: Report by Chris Ryan (see earlier footnote)

Non-sampling errors ³

Some of the non-sampling errors arising from the sampling process have already been discussed in Appendix B. Here we look at other kinds of non-sampling error, focusing particularly on possible errors arising from the questionnaire design.

Quantity measures

The main element of Section A of the diary (HIES-2) was the recording of daily cash expenditures, but households were also expected to record the quantity of each item that had been purchased. Households were requested (in instruction 5) that “when you have written down the items you have bought on the day, then write down how much you bought either in imperial, metric or other local units and show the cost of it.....”. Some examples were provided: “If the item is tea, put down how many grams/ounces. If you put down loaves of bread, say if they are standard size or otherwise. If you write down tins or packets, write down the size of the tins or packets. If you write down fruit or vegetables or fish, try to show the size if you can.”

Quite apart from its value in any study of household nutrition, this quantity information is extremely useful during the processing stage of the survey, since it allows one to check whether the expenditure quoted falls within a reasonable range. This is done by the method of ‘unit’ pricing, where expenditure on an item is divided by the quantity, and the result compared with values obtained from other households. Steps can then be taken to correct (or ignore) outliers. Unfortunately in this survey the quantity data was not entered consistently, and it was therefore not possible to use the method of ‘unit’ pricing for checking the quality of data.

Items bought on credit

There was a special column in Section A of the diary for recording items bought on credit, but there seems some risk of double counting. This is because respondents were also requested (in instruction 6) to record in the Cash Paid column all items acquired earlier which were paid for during the two-week period. Respondents were supposed to write down “Paid Account”, but it is unclear whether this in fact was done and how such payments were treated. They should not have been included in total expenditure for this two-week period.

No cash paid

This is final column in Section A of the diary, and it is the category that is likely to have caused respondents most difficulty. Instruction 13 in the diary informed the respondent that this column was for “items which you consume or use but don’t pay cash for”. Specific reference was made to four categories:

- *Vegetables, fruit and eggs:*
“If you use in the house some of the food grown by yourself show what you use each day and in the ‘No cash paid’ column put down how much you think you would have paid for it if you had to buy it”.
- *Fish:*
Similar instructions were given in the case of fish caught by the household, but respondents were also requested to include “fish given to you for use in your house”.
- *Gifts, assistance and relief in kind:*
“If you have used/consumed during these two weeks items received as gift, assistance and relief in kind and also as a part of or supplement to wages and salaries, enter each such item with quantity and its estimated current value in ‘no cash paid’ column, if you were to buy it.”

³ This section draws partly on an internal report prepared for the Tonga Statistics Department by Kim Robertson of the Secretariat of the Pacific Community (SPC). Her report (*Tonga HIES Database Documentation*, March 2002) provides useful background information on computer editing procedures, and highlights particular aspects of the questionnaire design that caused problems at the processing stage.

- *Goods exchanged/bartered/gift:*
 “If you exchange or barter anything during these two weeks please write the item down and enter in the ‘no cash paid’ column how much the item exchanged or bartered as a gift was worth.

The column would therefore seem to consist of three distinct types of transaction: home produced items that have been consumed by the household; gifts received; and items bartered. Home consumption items are an important part of household expenditure, but they also should feature as part of household income. Gifts received should probably form part of income, although they do not increase the wealth of the country (unless the gifts are received from abroad). They do not form part of expenditure, but if they are food items, they may be of interest in a nutrition study. Goods that are bartered or exchanged may be of intrinsic interest from a cultural point of view, but they do not increase the wealth of the country, and should not be counted as part of income or expenditure. It is probably fair to assume that consumption of home produce represents by far the most important element (in terms of expenditure value) out of the three.

Rent

Section C of the diary asked respondents to provide information about rents paid. If the person had already recorded a rental payment in the two-week diary section, they did not have to record a rent here again. Otherwise they were expected to record the purpose of the payment (e.g. rent for house), how often the payment was made, and the amount of the payment. In the case where a person lived in their own house, they were asked to estimate the amount they would have to pay if they had to rent the property, and record this in a different column. This imputed rent is important, because it forms one element of total household income and total household expenditure. It appears, however, that the rental data was not entered consistently. Also, some rental payments were entered in Section D of the diary, which was intended for other big payments during the last 12 months. Since the time period covered by the payment was not known, it was assumed that the figure shown was the annual rental paid.

Other big payments during the last 12 months

Section D of HIES-2 was for recording any expenditures of T\$50 or more during the last 12 months on specific items or on religious or other ceremonies, functions and festivities, that had not been entered elsewhere. Examples given were repairs to the house, purchase or repairs of a private vehicle, purchase of a cow or horse, and trips to other islands or abroad. Other examples were legal expenses, remittances to family members, and donations or gifts to churches, institutions or individuals. The same three columns were used, as in Section A. Again, there seems to be a problem with the ‘no cash paid’ column, which includes different types of transaction. It is also surprising to note the final instruction: “If you were given the item free by an aid organization then put down how much the item would have cost if you had to pay cash, in the ‘no cash paid’ column.” This last item would seem to represent gifts received, not gifts given.

There is also a special problem with some items that are included in both Section A and Section D, which gives a risk of double counting. This is particularly so when food items are recorded in Section D. There were also a few instances where households had recorded large expenditures (e.g. for bus or lorry hire) but where it seems that these related to some business run by the household, rather than to the household’s own expenditure.

Household composition and characteristics

Section A of HIES-1 had collected information from all household members. There was a particular problem with the questions about the main economic activity, in that people who said they were doing housework were coded as part of the labour force and given occupation codes of paid housekeeper when in fact they were not being paid at all. Technically such people are not in the labour force, and this error has been corrected.

Wages and salaries

Section C of HIES-1 was intended to collect information on total wages and salaries over a full 12 months. But the interviewer instructions said that “since salaries and wage payments are made in the Kingdom on weekly, fortnightly, half-monthly, or monthly basis, you should enter the amount in the relevant column applicable to each earner.” It was perhaps not sufficiently emphasized that the figures recorded here must be covering the full 12 months.

Printed by: STATISTICS DEPARTMENT
Nuku'alofa, TONGA
December 2002