1991 HOUSEHOLD

INCOME AND EXPENDITURES

SURVEY

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Preface

The report for the 1991 Household Income and Expenditures Survey (HIES) of the Republic of Palau was written by L.J. Gorenflo, Office of Territorial and International Affairs (OTIA), U.S. Department of the Interior; Michael J. Levin, Population Division (PD), U.S. Bureau of the Census; and Huan F. Hosei, Office of Planning and Statistics (OPS), Republic of Palau. The report consists of a main analytical section followed by four appendixes: Appendix 1 (questionnaire forms), Appendix 2 (diary forms), Appendix 3 (detailed data tables), and Appendix 4 (data collection manuals and forms). The main part of the report includes summary tables, figures, and interpretations of HIES results. Appendices 1 and 2 contain the main survey instruments used for data collection. The more detailed tables in Appendix 3 supplement the information contained in the report, enabling government officials and researchers to explore facets of the survey data not examined in the report itself. Finally, Appendix 4 contains the documents which provided instructions for the data collection and compilation phases of the survey, including a general project introduction, instructions for completing project questionnaires and diaries, and guidelines for coding and keypunching the data collected.

As often is the case with such projects, the HIES would not have been possible without the efforts of many individuals and government agencies. Koichi L. Wong, National Planner of the Republic of Palau and Director of the OPS, was involved in all phases of the project, from its initial conception and planning through data collection and analysis. Alonso Joseph (OPS) and Francesca Sukuma (OPS) served as assistant supervisors in the data collection phase of the project; Selistino Otong (OPS) helped in early phases of the HIES design both in Washington and in Palau. Odessa Mitchell and Darla Knoblock (OTIA) arranged for funding of the survey and made possible the participation of all three authors of the report. Phil Fulton (PD) and Enrique Gomez (International Statistical Programs Center, U.S. Bureau of the Census [ISPC]) provided the administrative support necessary for Michael J. Levin's work on the project. Emily Lennon (PD) helped sort through project paperwork and communication requirements between the U.S. and Palau, providing necessary supplemental data as necessary. Michelle Koncilja (ISPC) assisted in certain phases of data processing. Enumerators, consisting of OPS staff as well as individuals hired especially for the HIES, collected all HIES data. Students from the Micronesian Occupational College in Koror coded the data collected in the survey, and staff from the Office of Vital Statistics, Department of Public Health, Republic of Palau keyed the coded data. Last, but by no means least, the individuals included in the 587 households covered by the HIES graciously agreed to answer questionnaires and complete diaries, providing the information upon which the entire study is based.

Each author of this report had different responsibilities in the HIES. Levin designed the project and supervised staff training, data collection, and preliminary data analysis; in addition, he produced most of the detailed tables in Appendix 3 and drafted the majority of the documents in Appendix 4. Hosei contributed to all phases of the project, assisting in project design and the supervision of data collection, and providing key insights during the analysis of HIES data. Gorenflo analyzed the HIES data and organized and drafted the final report. This project was funded in part through OTIA grant PAL91-45.

1. INTRODUCTION

Between June and August 1991, the government of the Republic of Palau conducted its first Household Income and Expenditures Survey (HIES). This project was a coordinated effort of the Office of Planning and Statistics (OPS) and other government offices and agencies in the Republic of Palau; the Office of Territorial and International Affairs, U.S. Department of the Interior; and the Population Division (PD) and International Statistical Programs Center (ISPC), U.S. Bureau of the Census.

The aims of the HIES were to provide data on income and spending patterns in Palau. In particular, the survey attempted to collect data which provide insights on the following topics:

- the distribution and level of household income in Palau;
- the pattern and level of income and wealth transfer through the Palauan kinship network;
- the pattern and level of household expenditures in Palau; and
- the pattern and level of subsistence consumption by households in Palau.

Reliable information on income and expenditures is critical for the calculation of national and state accounts, thus playing an important role in producing national and state development plans. In addition to these specific uses, the survey provides government and private planners with a wealth of economic data previously unavailable for this part of Oceania.

Development of the HIES began in June 1991 with the design of survey instruments and the training of project personnel. Enumerators collected data from most households included in the survey during July and August of the same year. A few households were not enumerated until September and October 1991, the delay due to household inaccessibility, assorted enumerator or respondent problems, or (in the case of outlying areas) transportation difficulties.

2. BACKGROUND

The Republic of Palau consists of six island units in the western Pacific Ocean (Shinn, 1984:341-342). Located at the western extreme of the Caroline archipelago, the roughly 200 individual islands that comprise the republic lie along a northeast-southwest axis nearly 700 kilometers in length. The main island unit in the republic, called the *Palau Islands*, contains most of Palau's 461 square kilometers of land area as well as the majority of its population. The remainder of Palau consists of *outer islands* -- small island units lying southwest of the Palau Islands.

The northern portion of the Palau Islands are volcanic in origin, characterized by deep dendritic drainage patterns, and rounded hills (U.S. Department of Agriculture, 1983:1-2). Included among these volcanic islands is Babeldaob, the largest island in the republic, as well as Arakabesang, Koror, and Malakal islands. The south-central portion of the Palau Islands are raised coral limestone islands, known collectively as the "Rock Islands." Finally, the southern portion of the main island unit consists of the low coral and limestone islands of Angaur and Peleliu. Soil quality, coupled with Palau's tropical climate of high humidity and relatively uniform year-round temperature patterns, produce dense vegetation over most islands in the north and south-central Palau Islands and provide a natural setting conducive to agriculture. In contrast, the remaining island units in the republic are low coralline islands and atolls characterized by limited land areas and poor soil. Vegetation on the coral island units generally is sparse and the agricultural productivity potential more limited than on the Palau Islands (Useem, 1946:61).

Although people from the Philippines or Indonesia settled most of Palau sometime in the second or third millennium B.C., the islands presently comprising the republic remained isolated from non-Oceanic cultures until 1522 when the Spaniard Espinosa sighted the Sonsorol Islands (Hezel, 1983:3-4). Explorers sighted other islands in the republic over the course of the ensuing decades, but little contact with natives occurred. Eventually the islands were all but forgotten until their *rediscovery* in the late eighteenth century (Office of the Chief of Naval Operations, 1944:22-23). A succession of explorers, whalers, missionaries, and traders, mostly from England, began visiting Palau in the late 1700s and 1800s, initiating a period of cultural disruption that has continued to the present.

Spain, which claimed Micronesia by virtue of first discovery, eventually attempted to exercise its sovereignty during the 1880s in response to increased trading competition from other nations. But Spanish efforts to establish a presence in the region were limited. In 1899, after its defeat in the Spanish-American War, Spain sold its possessions in the Caroline and Northern Mariana Islands (including Palau) to Germany (Brown, 1977). Throughout the twentieth century, Palau has experienced successive periods of foreign rule. Germany controlled the Carolines and Northern Marianas from 1899 until 1914, when it became involved in World War I. With German attention and military resources occupied elsewhere, Japan occupied Germany's Micronesian possessions in 1914, controlling the region until its defeat in World War II in 1945 (Peattie, 1988:34ff). Immediately following World War II, the U.S. Navy administered the Micronesian island groups previously ruled by Japan. In 1947, the United Nations placed Japan's former Micronesian possessions in a strategic trust, with the United States named as the *administering authority* (Shinn, 1984:303). This Trust Territory of the Pacific Islands (TTPI) continued until the late 1970s, by which time most former members had elected independence in the form of U.S. commonwealths (the Commonwealth of the Northern Mariana Islands [CNMI]) or independent nations (the Federated States of Micronesia [FSM] and the Republic of the Marshall Islands). As of mid-1992, only the Republic of Palau remains in the TTPI, as its citizens debate various political courses for the future of their nation.

Currently the Republic of Palau contains sixteen states. Table 1 lists the names of these states, together with their 1990 population and housing counts. The demographic history of the republic is similar to that of other island groups in Micronesia -- an initial period of depopulation following the onset of contact with Europeans, caused mainly by diseases introduced from outside the region, followed by population growth throughout most of the twentieth century (Gorenflo and Levin, 1992). As is obvious from this table, the state of Koror -- which contains the republic's capital and largest community (also called Koror) -- has come to dominate the population and housing in Palau.

Table 1. Population and Housing Units, by State: 1990

State	Population		Housing Units	
	Number	Percent	Number	Percent
Total	15,122	100.0	3,312	100.0
Aimeliik	439	2.9	100	3.0
Airai	1,234	8.2	283	8.5
Angaur	206	1.4	63	1.9
Hatohobei	22	0.1	16	0.5
Kayangel	137	0.9	42	1.3
Koror	10,501	69.4	2,096	63.3
Melekeok	244	1.6	71	2.1
Ngaraard	310	2.0	108	3.3
Ngardmau	149	1.0	34	1.0
Ngaremlengui	281	1.9	64	1.9
Ngatpang	62	0.4	21	0.6
Ngchesar	287	1.9	81	2.4
Ngerchelong	354	2.3	100	3.0
Ngiwal	234	1.5	59	1.8
Peleliu	601	4.0	156	4.7
Sonsorol	61	0.4	18	0.5

Source: U.S. Bureau of the Census, 1992, Table 99.

The indigenous population of Palau is growing slowly, partly because of decreased mortality and fertility in recent years (see Levin and Retherford, 1986) and partly because of emigration to Guam, the CNMI, and the U.S. Despite this emigration, the total population of Palau continued to increase in recent years. Most of this growth is the result of increased *immigration* -- particularly from the Philippines, but also from Korea, Japan, and Taiwan. Nearly all population growth in Palau during the 1980s was due to increased immigration from southeast Asia.

Both subsistence and market economies currently exist in Palau. A subsistence economy is the traditional way of life, as Palauans exploit the abundant vegetation and marine life of their natural

surroundings to obtain food and shelter. The market economy, in contrast, was introduced to Palau from outside Micronesia. Although the roots of market activities lie in trading activities begun by Europeans in Palau as early as the 1780s (see Hezel, 1983:66-74), this economic sector developed primarily during the present century -- in part during the German period, but particularly during the Japanese and U.S. administrations. The market economy in Palau currently depends heavily on financial aid from overseas, primarily from the U.S., providing the funds which fuel most of this type of economic activity.

As is the case with most island groups in Micronesia, Palau has a limited statistical database. The German administration collected some data, including population estimates for most of the republic (see Useem, 1946:64). But the first population censuses of the entire republic date to the Japanese administration -- in 1920, 1925, 1930, and 1935 (see Nan'yo-cho, 1927, 1931, 1937). The Japanese also compiled vital statistics and basic economic data for the republic, summarized in annual reports to the League of Nations. Following World War II, population censuses were conducted by the TTPI Office of the High Commissioner of the TTPI in 1958 (Office of the High Commissioner, TTPI, 1959); the U.S. Peace Corps, in collaboration with the University of Hawaii School of Public Health in 1967 (School of Public Health, n.d.); the U.S. Bureau of the Census in 1970, 1980, and 1990 (U.S. Bureau of the Census, 1972, 1983, 1992); the TTPI Office of Census Coordinator in 1973 (Office of Census Coordinator, TTPI, 1975); the Palau Community Action Agency in 1979 (Palau Community Action Agency, n.d.); and the OPS in 1986 (OPS, 1987). In addition to these population censuses, the TTPI conducted a survey of skills between 1977 and 1978 (see Office of Planning and Statistics, TTPI, 1979) and an agriculture census between 1978 and 1979 (Van Den, 1991). More recently, the Palau Department of Agriculture conducted a partial agriculture census in 1989 (Department of Agriculture, Republic of Palau, n.d.). But detailed information on income in Palau is not plentiful -- the small amount of data available from the aforementioned censuses and surveys inadequate for most planning and development purposes. Data on expenditures, in contrast, are non-existent. The 1991 HIES therefore fills an important gap in the statistical database for the Republic of Palau, providing for the first time detailed information on patterns of income and expenditures at the level of individuals and households.

3. SURVEY DESIGN

Because the 1991 HIES was the first such study conducted in Palau, and because of the central role that resulting data would play in planning efforts, survey design was absolutely crucial to the success of the project. Senior HIES personnel considered several goals when designing the data collection phase of the project. The survey had to provide data which would enable comparisons between Palau and other nations as well as between the various states in the republic. The survey also had to provide a broad range of economic and demographic baseline data which would enable comparisons with future income and expenditures surveys. The HIES had to provide planners with data which would allow them to assess the ramifications of various development programs and measure how successful various programs have been. Finally, the survey had to provide data

necessary to evaluate economic trends in the republic, for national and state accounts and for the forthcoming development plan.

The 1991 HIES used the geographic divisions employed in the 1990 Census of Population and Housing. The project began by selecting at random a house in each of the 14 states covered by the survey, using maps employed in the 1990 census, and subsequently selected every fourth house for inclusion in the HIES. Through this method, the OPS chose 706 households for the 1-in-4 sample and 353 households for the 1-in-8 diary sample. The actual numbers of households included in the HIES were slightly less than these targets (587 and 304, respectively), due to vacant units discovered too late for replacement in the study and assorted other enumeration problems. Enumerators visited every house in the sample, obtaining demographic, social, and economic information as well as data on major and regular expenditures. In addition, enumerators distributed two-week diaries to every eighth household, designed to collect data on short-term expenditures.

Project personnel did not stratify the sample used in the 1991 HIES, both because the census mapping was quite accurate and because of the small sample size in many of the states examined. Despite the small numbers, the data collected are sufficient to permit an analysis for the republic as a whole and for most individual states. Although some changes in housing occurred between the 1990 census and the 1991 HIES, the changes were minimal and thus not incorporated in the sampling frame. Because of transportation problems, the survey did not include Sonsorol (1990 population 61 in 11 occupied housing units) or Hatohobei (1990 population 22 in 4 occupied housing units) states (see U.S. Bureau of the Census, 1992:Table 99); the survey did include individuals from these states living elsewhere in Palau, as the survey was based on *usual residence*.

4. SURVEY OPERATIONS AND METHODOLOGY

The development of the HIES began during the first week of June 1991. At this time, Michael Levin (PD), Alonso Joseph (OPS), and Francesca Sukuma (OPS) designed questionnaires, manuals, and training materials, selected sample houses to include in the survey, and prepared lists of householders. Project staff photocopied all enumeration materials during June and July, to provide each enumerator with the forms and maps necessary for the HIES. The main survey instruments consisted of a household questionnaire, which enumerators used to record information on demographic, social, and economic characteristics, as well as major and regular expenditures; and Daily Expenditures Diaries, which subjects used to record daily purchases and subsistence consumption over a two-week period. Each selected diary household completed diaries for two consecutive weeks in July 1991.

HIES personnel included two groups of enumerators -- one trained for Koror and Airai states (the most densely populated states in Palau) and one for the remaining states included in the survey (all states on Babeldaob Island north of Airai, and Kayangel, Peleliu, and Angaur states). After a three-day training period, each enumerator received a workload of 10 to 15 households. Before working

on the HIES all enumerators swore an oath of *strict confidentiality* before the Chief Justice of the Palau Supreme Court, ensuring that they would not disclose any matter learned through their employment on the project.

The 1991 HIES employed the following schedule:

- July 1 - 3 Training of enumerators
- July 4 - August 15 Collection of income information, and annual and major expenditures
- July 10-13 Distribution of Week 1 diaries
- July 15-21 Week 1 survey period for household expenditures
- July 19-20 Distribution of Week 2 diaries
- July 22-23 Collection of Week 1 diaries, checking them
- July 22-28 Week 2 survey period for household expenditures
- July 28-29 Collection of Week 2 diaries, checking them
- August 23 Main period of data collection ends
- October 15 Period of supplemental data collection ends

Staff from the OPS acted as supervisors on this project and were responsible for all enumerators. In addition to helping enumerators locate and gain the cooperation of selected households, supervisors also checked the work of enumerators during the survey period. Senior project personnel trained supervisors before the survey started, to ensure that they understood all concepts.

Enumerators conducted most HIES interviews in Palauan, to increase respondent cooperation and understanding. Enumerators similarly instructed selected households in the completion of Daily Expenditures Diaries in Palauan. Senior project personnel trained the enumerators in English.

Most of the coding occurred in October and November 1991. The Micronesian Occupational College (MOC) provided eight coders as part of a work-study program for a period of two weeks. The MOC personnel coded results from both the general questionnaire and the diaries, with the exception of industry and occupation responses which OPS supervisors coded. Senior project personnel developed most of the code lists -- relationship to householder, place of birth, etc. -- for the 1991 HIES of Palau. The occupation and industry codes, in contrast, were the same as those used for the 1990 census of Palau, to ensure comparability. Similarly, the food and non-food diary expenditures codes were the same as those used in the U.S. for its expenditures surveys. Project personnel developed about twenty additional codes for items that appear in Palau but not in the U.S., such as aus (lime), betelnut, and fruit bat. Appendix 4 of this report contains all codes employed in the HIES.

Data checks occurred at several stages in the collection and compilation process to help minimize errors. Interviewers checked their own work, supervisors checked the work of interviewers in their

charge, and project personnel checked data during coding and data entry. All computer processing of the HIES data used the Integrated Microcomputer Processing System (IMPS), developed by the ISPC. Rigorous editing of the computerized database, to minimize interviewing, coding, and data entry error, employed the IMPS program CONCOR. Project personnel resolved queries in the data by examining the original documents and contacting enumerators and respondents.

5. DEFINITIONS

Many of the concepts and terms used in the HIES have obvious definitions -- such as state of current residence, location of primary school, gross pay, etc. -- removing the need to repeat all concepts and their definitions here. However, the survey did include certain concepts whose meanings are not obvious, requiring that this report present necessary definitions.

The most important concept employed in the HIES is the *household*. For purposes of this survey, a household comprised a group of persons who eat and sleep together -- the same definition as used in the 1990 census of Palau. A household thus included all usual residents, but excluded short-term visitors. Some households consisted of more than one dwelling unit; conversely, sometimes a single dwelling unit contained more than one household. Senior project personnel made every effort to define other terms in the same manner as those used in the 1990 census. The HIES included no special places (such as hotels, hospitals, and prisons) or no group quarters (worker dormitories, military barracks, etc.). But the survey did include non-Palauans, whether living in a Palauan household or composing a household of their own. The *head of household* signified that one member of a household who household members recognized as the social-residential unit's main point of reference.

Income in the HIES signified any benefit gained by a household, through the capital or labor investment of its members, that could be used for the household's maintenance and survival. Income usually consisted of wages and associated types of compensation (e.g., tips) in the form of money, measured in gross terms. It also included subsistence items, consisting of food products (fish, other marine animals, fruit, vegetables, and terrestrial animals) acquired from the local environment rather than purchased. Moreover, income included *in-kind pay* -- that is, compensation with items other than money or access to particular objects or activities (e.g., the right to use someone's vehicle). Finally, the HIES treated gifts received by a household as income. Where possible, subject households estimated the amount and value of these non-monetary types of income. Interviewers or supervisors provided estimates on the basis of market rates when the respondents would not or could not assess values of subsistence goods or other types of non-money income.

Expenditures, in turn, signified any payment by a household. As with income, expenditures included both monetary and non-monetary expenditures -- the latter comprising labor and gifts given. The HIES recorded expenditures on an acquisition basis rather than a payments basis; that

is, subjects reported expenditures on goods and services when they acquired these items even if payment was not made at that time. The aim of this approach was to measure as closely as possible the value of consumption rather than the timing of payment.

As a final comment on definitions, note that the HIES also included income and expenditures associated with traditional Palauan customs. Thus the survey treated obligations of another household in terms of providing money, labor, or tribute (e.g., food items) to a subject household as income, their values estimated accordingly. Similarly, the HIES treated money, goods, or services flowing from a subject household to another household as expenditures. The survey treated remittances as income or expenditures, depending on the direction they flowed.

6. SURVEY INSTRUMENTS

6.1 Questionnaire

Design of the HIES questionnaire drew upon discussions with OPS staff and other agencies in Palau. The design process also examined questionnaires previously developed for surveys of the U.S. and other Pacific nations. Appendix 1 contains the questionnaire used for this project.

The HIES questionnaire collected demographic, social, and economic data, information on income sources, levels, and transfers, and both regular and major (infrequent) expenditures data. The HIES collected demographic data from all persons included in the survey; social and economic data, in turn, were collected only from individuals aged 15 years and over. The survey collected all other income and expenditures data on a household basis.

6.2 Diary

In addition to the questionnaire described above, the 1991 HIES employed a seven-day diary to record daily purchases and the daily consumption of subsistence products. Since the project collected diary information over a two-week period, enumerators distributed two diary booklets. Appendix 2 contains the one-week diary used for this survey.

The diary employed in the 1991 HIES collected detailed data on daily expenditures. Each diary page enabled a subject to distinguish between items bought and those produced at home. The diary enabled a subject to record the type of item purchased or home-produced, the quantity purchased or home-produced, and the amount spent (distinguishing between cash and credit payment) or the estimated value (for home-produced items).

7. LIMITATIONS

The HIES incorporated certain limitations which one should consider when using the results. First,

because the project obtained data through the use of a survey rather than a census, there was sampling error. This report examines sampling error in greater detail below, as well as various means to measure it. Second, the project contained a certain amount of *non-sampling error*. Sources of non-sampling error included survey methodology, interviewer error, processing error, and analysis error.

Various potential sources of non-sampling error existed in the 1991 HIES. For various reasons, project personnel had available less than the desired amount of time for project design, data collection, data processing, and analysis. From the standpoint of training project personnel, this time constraint meant less opportunity for training. The enumerators and staff who worked on the HIES had limited experience in survey work. However, many project personnel were teachers or had worked on the 1990 census -- providing valuable background in explaining instructions and collecting similar types of data. The time constraint also meant that the survey instruments and data entry system received less than the desired level of testing.

Selected subjects maintained diaries over a two-week period, with each week beginning on a Monday and ending on a Sunday. Senior project personnel chose this diary schedule in the hope of ameliorating the effects of weekend buying, placing the weekend at the end of the data collection period. Collecting diary information over two weeks rather than one (as used in the recent FSM survey, for example), helped to smooth irregularities and provided more data -- positive results offset in part by the additional demands placed on respondents and interviewers. Results of the diary responses indicate that the use of a two-week period was appropriate, with little evidence of interviewer or respondent fatigue.

Some potential limitations of this study relate to the use of two languages on the project. Senior personnel wrote the survey instruments and manuals for the HIES in English. But enumerators conducted most interviews in Palauan, to ensure accurate answers, though this introduced the possibility of errors in translation. Due to the use of two languages in the HIES, supervisors monitored enumerator progress to ensure the use of appropriate definitions.

Culturally, Palauans often are reluctant to disclose information and generally are wary of government agencies and new development. In an attempt to overcome these problems, the HIES recruited staff and enumerators from the areas in which they were to conduct interviews. Although no formal radio or written communications announced the survey, the project generally was well-accepted since Palauans tend to be both literate and knowledgeable about the relationship between statistical information and subsequent government funding.

Respondents estimated the value of most items not purchased with money. One consequence of this approach is that different households may have assigned different values to the same items. Although this possible inconsistency presents a potential problem for comparisons, in practice respondents tended to be quite aware of market values even when much of their consumption never

passed through the market system.

Faced with constraints which included an inexperienced staff and a public traditionally reluctant to disclose information, in addition to the usual problems of logistics, timing, and financial limitations, the HIES presented an enormous challenge. Overall, the staff and enumerators tackled their tasks with enthusiasm and expertise, and the government and public strongly supported the survey. The HIES featured certain limitations and errors the HIES, as does any survey, and these should be kept in mind when examining the results. But the impressions developed during data compilation and editing, as well as during analysis, are that the survey results are highly reliable.

8. SAMPLING ERROR

Since the basis of estimates in this report is information obtained from occupants of a sample of dwellings, they are subject to sampling variability. In other words, estimates obtained from the HIES may differ from measures of all households in Palau. The *mean*, or *average*, is one measure used to indicate a typical situation; mean household size, for example, is the total of all people in all households divided by the total number of households. As the HIES only collected information from a sample of households, one can only estimate (by calculating the *sample mean*) what the mean for all households could be. Statistical theory provides us with a way of predicting how close this estimate is likely to be to the mean of all households -- the *population mean*. One measure of the likely difference is given by the *standard error* or *standard deviation*, which measures the extent to which an estimate might have varied by chance because the HIES considered only a sample of dwellings. There is about a 67 percent chance that a sample mean will differ by less than one standard error from the population mean, and about a 95 percent that the differences will be less than two standard errors.

The size of the standard error relative to the estimate is important in assessing the reliability of an estimate. The smaller the standard error is relative to an estimate, the more confidently one can use the estimate. The relative standard error reflects this measure of confidence. It is not advisable to rely too heavily on estimates with relative standard errors greater than 30 percent of the mean, and one should be particularly cautious when relative standard errors exceed 50 percent of the mean. As an example from the HIES, the mean size of respondent households was 5.4 with a standard error of 2.9. This suggests that one exercise caution when extrapolating from the sample to Palau as a whole -- at least in the case of household size.

9. INTERPRETING SURVEY RESULTS

Some statistical terminology is unavoidable when examining the results of a sample survey. Means, medians, relative standard errors, and relative distributions comprise the statistical terms used in presenting survey results in this report.

Measures of central tendency indicate the typical situation in a collection of data, providing a single figure that is representative of several values. The mean and median are measures of central tendency. A definition of the mean appears in the previous section. For example, the mean income of households is the sum of the incomes from all households divided by the total number of households. The *median*, in turn, is the value below which half of the values of a particular data category fall. For example, if the median income for households was $100, 50 percent of all households would have incomes less than $100 and 50 percent would have incomes greater than $100. The relative standard error, also defined above, defines the degree of statistical variability around a mean.

This report often focuses on the *relative distribution* of the results -- primarily through the use of *percentages* -- both between data categories and between different geographic portions of Palau. The use of percentages provides a quick, easily understood means of assessing the importance of a particular source of income, a particular type of expenditure, or a particular state or area. Tables presented in the following pages generally present both the data themselves and the percentages calculated from the data; in cases where space precludes presentation of data and percentages, a table will contain sufficient information to construct the missing information.

As a final point, because the HIES considers only a sample of households in Palau, and occasionally (e.g., the diaries) considers only part of the year, in selected tables below we extrapolate survey results for the entire republic for an entire 12-month period. Of course, this introduces the possibility of introducing further error into the study -- in essence magnifying the sampling and non-sampling errors incorporated in the survey. However, it provides a method of assessing income and expenditures for the republic as a whole, ultimately the desire of the HIES, or over an entire year.

10. RESULTS

10.1 Demographic and Social Characteristics

Age and Sex. The 587 households enumerated in the HIES contained 3,150 persons (Table 2), an average of nearly 5.4 persons per household. The sample contained slightly more males than females -- about 103.5 males per 100 females.

Table 2. Population by Five-year Age Group and Sex: 1991

	Number			Percent		
Age Group	Total	Males	Females	Total	Males	Females
Total.....	3,150	1,602	1,548	100.0	100.0	100.0
Less than 5 years...	312	151	161	9.9	9.4	10.4

5 to 9 years.....	345	181	164	11.0	11.3	10.6
10 to 14 years.....	345	165	180	11.0	10.3	11.6
15 to 19 years.....	387	207	180	12.3	12.9	11.6
20 to 24 years.....	242	131	111	7.7	8.2	7.2
25 to 29 years.....	238	119	119	7.6	7.4	7.7
30 to 34 years.....	217	121	96	6.9	7.6	6.2
35 to 39 years.....	219	117	102	7.0	7.3	6.6
40 to 44 years.....	196	101	95	6.2	6.3	6.1
45 to 49 years.....	129	62	67	4.1	3.9	4.3
50 to 54 years.....	97	45	52	3.1	2.8	3.4
55 to 59 years.....	97	46	51	3.1	2.9	3.3
60 to 64 years.....	104	50	54	3.3	3.1	3.5
65 years and over...	222	106	116	7.0	6.6	7.5
Median.....	23.8	23.7	24.0	...	...	...
Dependency ratio....	73	69	77	...	...	...

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

The age distribution of the HIES sample is less pyramidal in shape than the distributions for most developing countries, with relatively fewer young persons (aged nine years and less) and relatively more persons aged 15 to 24 years than one usually finds in such settings. Part of this age distribution is the result of immigration that has greatly affected Palau's demographic composition over the past decade (OPS, 1993). The median age of the enumerated sample was 23.8 years, with females slightly older than males. This median age is relatively high by modern Micronesian standards, a consequence of recent immigration by working age individuals coupled with Palau's decreasing fertility rate.

The dependency ratios calculated from the sample data are fairly low. A dependency ratio of 73, the measure calculated for all survey respondents, indicates that for every 73 persons aged less than 15 or greater than 59 years there were 100 persons aged 15 to 59 years -- the potential workers to provide and care for younger and older dependents. As discussed later in this report, although many of the enumerated individuals aged 15 through 59 years did not work for pay most were engaged in some sort of subsistence, so the dependency ratio has some meaning in the HIES. The ratios by sex have little meaning for Palau; the data imply that of the two sexes there is greater dependency among females (that is, females relying on other females), though this is partially due to the greater longevity of women.

Migration. In addition to obtaining information on income and expenditures, the 1991 HIES also collected data which provide insights on migration, both within Palau and to and from places outside the republic. This report explores migration from several different perspectives, due to the important role played by migrants in the Palau economy. Throughout the 1980s, many individuals immigrated from other countries (primarily southeast Asia) in search of employment, as noted earlier affecting the age and sex distribution in the republic (see also OPS, 1993: Chapter 8). The

geographic distribution of population and workforce among the various states of Palau similarly is a consequence of immigration motivated largely by economic reasons. For instance, the majority of working age migrants tend to reside in Airai and (especially) Koror states, the two jurisdictions most developed economically and with the greatest number of jobs.

Questions in the HIES that provided insights on migration included the following:

- residence one year before the survey,
- residence five years before the survey,
- own birthplace,
- father's birthplace,
- mother's birthplace,
- place of primary school,
- place of secondary school,
- place of college, and
- destination, reason, and duration of stay for persons who left Palau.

Responses to the first two questions -- residence one year before the survey and residence five years before the survey -- measure *short term* migration. The information on own birthplace measures long term, or *lifetime*, migration. Information on father's birthplace and mother's birthplace measures *generational* migration. Finally, responses to questions about the location of primary and secondary school and college, and the destination, reasons, and duration of stay for persons who left Palau, provide insights on particular instances of migration, focusing on the movement of individuals prior to their settlement in the location where they resided at the time of the survey. Of course responses were not available for every individual covered by the HIES. For example, questions concerning prior residence or place of schools attended were not appropriate for persons less than one year old at the time of the survey. Nevertheless, the data collected provide insights on the short and long term migration history of most HIES respondents.

Table 3 contains the basic information on migration collected by the survey. The column on residence in 1991 shows the geographical distribution of survey respondents at the time of the study, explaining the lack of information for Hatohobei or Sonsorol states as well as for any foreign places. Comparisons with data on residence in 1990 and 1986 suggest a relative increase in the demographic roles of certain states, notably Airai and Koror, at the expense of other states -- probably due in part to immigration from other parts of Palau to Airai and Koror and in part to the tendency of immigrants from foreign places to reside in one of these two states. Data on foreign residence in 1986 and 1990 indicate a strong role for Asia, probably dominated by the Philippines, China, Korea, and Taiwan. Data on birthplace similarly suggest movement to the two most populated Palau states. Such mobility is evident *within* the respondents' generation and *between* generations. For example, although more than 60 percent of the HIES respondents resided in Koror State in 1991, less than 52 percent were born there -- with less

Table 3. Population by Place of Residence, Birth, and School: 1991

Place	Residence			Birthplace			Place of School	
	1991	1990	1986	Own	Father	Mother	Primary	Secondary
Total	3,150	3,101	2,838	3,150	3,150	3,150	2,663	1,512
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Palau	100.0	92.3	87.8	90.5	89.0	91.4	92.2	80.6
Aimeliik	2.6	2.4	2.7	3.1	4.7	4.7	2.4	0.1
Airai	7.5	5.4	5.6	1.9	5.7	4.7	4.7	1.0
Angaur	1.0	1.1	1.0	2.3	3.3	3.4	2.3	-
Hatohobei	...	0.2	0.2	0.3	1.4	0.8	0.5	-
Kayangel	1.2	1.1	0.9	1.5	1.8	2.4	1.5	-
Koror	60.1	57.2	52.6	51.6	23.6	26.8	45.9	73.3
Melekeok	2.9	2.7	2.7	3.4	4.3	5.2	4.6	-
Ngaraard	4.5	3.9	3.3	4.1	9.9	8.2	6.2	3.2
Ngardmau	0.8	0.7	0.7	1.0	1.5	1.5	1.1	0.1
Ngaremlengui	2.7	2.5	2.6	3.0	3.4	3.8	3.1	0.1
Ngatpang	1.8	1.9	1.9	0.3	1.1	0.9	1.0	2.2
Ngchesar	3.2	2.0	1.9	3.5	5.7	5.8	4.2	-
Ngerchelong	3.0	2.6	2.9	4.0	7.2	7.1	4.4	0.2
Ngiwal	2.5	2.5	2.7	3.2	3.5	4.3	2.7	-
Peleliu	6.4	6.1	5.9	7.0	10.8	10.8	7.2	0.3
Sonsorol	...	0.1	0.1	0.3	1.1	1.0	0.5	-
Guam	...	1.0	1.1	0.8	0.4	0.1	0.5	3.2
CNMI	...	0.6	0.7	1.1	0.3	0.4	0.2	2.4
FSM	...	0.4	1.0	1.9	1.6	1.9	1.4	

```
3.3
    Other Pacific....    ...      -       -       0.2      0.1      0.2        0.1
0.1
    United States....    ...    0.9     1.6       0.8      0.9      0.4        0.3
2.0
    Asia.............    ...    1.8     4.3       4.7      6.7      4.7        5.1
8.0
    Elsewhere........    ...    3.0     3.4       0.1      1.0      0.8        0.3
0.5
    ------------------------------------------------------------------------------
-
    Source: 1991 Household Income and Expenditures Survey, Republic of Palau.
```

than 24 percent of the fathers and 27 percent of the mothers claiming Koror as their state of birth. The proportion of fathers and mothers born in different places varies, with some places providing more of the former and other places providing more of the latter. Finally, information on place of school suggests these same general mobility patterns -- though data on secondary school are skewed in part by the absence of these institutions in certain parts of Palau.

Much of the recent migration in Palau has occurred within the republic, a trend partially obscured in Table 3 due to the inclusion of places outside Palau. Table 4 focuses solely on states in the republic. Trends in residence for 1986, 1990, and 1991 indicate only slight variability between these three years, with minor fluctuations particularly evident for Airai and Koror states. The decline in the relative importance of Koror State between 1990 and 1991 indicates the key role that recent movement from foreign places has played in the demographic composition of this state. Data on birthplace once again provide evidence for migration from other parts of Palau to Airai and Koror states. Although nearly 8 percent and more than 60 percent of the 1991 population resided in Airai and Koror, respectively, the percentage of individuals born in these two states was less (about 2 and 57 percent). Evidence of generational migration is even more pronounced for Koror State, with only 27 percent of fathers and 29 percent of mothers born in this jurisdiction. Data on school location provide additional evidence of movement to the two urban states, the evidence skewed once again due to the absence of secondary schools throughout the republic.

Table 4. Population by Residence, Birthplace, and School, for States in Palau: 1991

	Residence			Birthplace			Place of School	
Place	1991	1990	1986	Own	Father	Mother	Primary	Secondary
Palau.....	3,150	2,863	2,493	2,850	2,804	2,880	2,456	1,218
Percent...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Aimeliik.....	2.6	2.5	3.0	3.4	5.3	5.1	2.6	0.2
Airai.....	7.5	5.8	6.4	2.1	6.4	5.1	5.0	1.2

Angaur.....	1.0	1.2	1.1	2.5	3.7	3.8	2.5	-
Hatohobei.....	...	0.2	0.3	0.4	1.5	0.9	0.6	-
Kayangel.....	1.2	1.2	1.0	1.6	2.0	2.7	1.6	-
Koror.....	60.1	62.0	59.9	57.0	26.5	29.3	49.8	91.1
Melekeok.....	2.9	2.9	3.1	3.7	4.9	5.7	5.0	-
Ngaraard.....	4.5	4.2	3.8	4.6	11.1	8.9	6.7	4.0
Ngardmau.....	0.8	0.7	0.8	1.1	1.7	1.7	1.2	0.1
Ngaremlengui...	2.7	2.7	3.0	3.3	3.9	4.2	3.3	0.1
Ngatpang.....	1.8	2.0	2.2	0.4	1.2	1.0	1.1	2.8
Ngchesar.....	3.2	2.1	2.1	3.9	6.4	6.4	4.6	-
Ngerchelong....	3.0	2.9	3.2	4.4	8.1	7.8	4.8	0.2
Ngiwal.....	2.5	2.8	3.1	3.5	3.9	4.7	3.0	-
Peleliu.....	6.4	6.6	6.7	7.7	12.1	11.8	7.8	0.3
Sonsorol.....	...	0.1	0.2	0.3	1.3	1.0	0.5	-

Source: 1991 Household Income and Expenditures Survey, Republic of Palau.

Differences often exist in the sex composition of migrant populations. For all of Palau, males have tended to dominate both immigrants and emigrants in recent years (see OPS, 1993:Chapter 8). This trend is not evident in the data collected by this survey; despite having enumerated more males than females in the overall sample, the survey counted more females than males born in foreign places (Table 5). Similarly, the HIES recorded more male Palau-born individuals than females. These characteristics of the survey database suggest that the HIES may have missed an important sector of the Palau population -- the many foreign-born males who probably resided in group quarters.

Table 5. Population by Birthplace and Sex: 1991

	Number			Percent		
Birthplace	Total	Males	Females	Total	Males	Females
Total.....	3,150	1,602	1,548	100.0	100.0	100.0
Palau.....	2,850	1,455	1,395	90.5	90.8	90.1
Guam.....	24	14	10	0.8	0.9	0.6
CNMI.....	36	13	23	1.1	0.8	1.5
FSM.....	59	33	26	1.9	2.1	1.7
Other Pacific.....	5	2	3	0.2	0.1	0.2
United States.....	24	12	12	0.8	0.7	0.8
Asia.....	149	71	78	4.7	4.4	5.0
Elsewhere.....	3	2	1	0.1	0.1	0.1

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Data on citizenship often differ slightly from those on birthplace, in part due to legal considerations and in part due to an individual's *interpretation* of his or her citizenship. This slight difference

appears in the HIES data (Table 6). For example, the higher percentage of Palauan citizens compared to persons born in the republic can be attributed to children born to Palauan parents on Guam or in the U.S. and subsequently returning to Palau; despite a birthplace outside the republic, the parents may consider the children Palauan citizens. The trends for male and female immigrants discussed in the previous paragraph hold for citizenship as well. Data on citizenship isolate the Philippines from other countries in Asia, showing their dominance among the immigrant component of the HIES.

The HIES asked a series of questions to persons who left Palau and later returned. The aim of these questions was to collect information on individuals who lived outside the republic for several years before returning to Palau to live and work. Unfortunately, pre-testing revealed that respondents understood these questions to mean whether they left the republic all, even for a vacation. As a result, enumerators were unable to differentiate between short term and long term stays. This report presents and examines responses to questions concerning departure from Palau for the sake of completeness, but one should avoid drawing strong conclusions from the data collected.

Table 6. Population by Citizenship and Sex: 1991

	Number			Percent		
Citizenship	Total	Males	Females	Total	Males	Females
Total.....	3,150	1,602	1,548	100.0	100.0	100.0
Palau.....	2,915	1,486	1,429	92.5	92.8	92.3
United States.....	29	15	14	0.9	0.9	0.9
Philippines.....	140	64	76	4.4	4.0	4.9
Korea.....	4	2	2	0.1	0.1	0.1
Other Asia.....	4	3	1	0.1	0.2	0.1
FSM-Marshalls.....	30	18	12	1.0	1.1	0.8
Elsewhere.....	28	14	14	0.9	0.9	0.9

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Nearly 1,300 persons, about 40 percent of individuals included in the HIES, had lived away from Palau at some time in the past (Table 7). As one might expect, persons residing in the predominantly urban states of Koror and Airai were more likely to have traveled abroad than individuals residing in rural states. However, one also can attribute some of the greater mobility of urban residents to the large number of foreigners who reside in these two states (primarily foreign workers); persons with connections to places outside Palau understandably are more prone to visit those places.

Table 7. Population by Destination When Left Palau and Residence: 1991

Place Went	Total	Urban			Rural
		Total	Koror	Airai	
Total	3,150	2,127	1,892	235	1,023
Never left Palau	1,867	1,207	993	214	660
Percent	59.3	56.7	52.5	91.1	64.5
Left Palau	1,283	920	899	21	363
Percent	100.0	100.0	100.0	100.0	100.0
Guam	35.2	35.2	35.3	33.3	35.3
CNMI	18.8	18.3	18.4	14.3	20.1
FSM	8.0	7.6	7.7	4.8	9.1
Yap	5.2	4.5	4.4	4.8	7.2
Chuuk	0.5	0.4	0.4	-	0.6
Pohnpei	2.1	2.4	2.4	-	1.4
Kosrae	0.2	0.2	0.2	-	-
United States	19.2	20.5	20.5	23.8	15.7
Asia	12.9	13.2	12.9	23.8	12.1
Philippines	8.8	9.3	9.3	9.5	7.4
Elsewhere	5.9	5.2	5.3	-	7.7

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Guam was the favorite destination for survey respondents who left Palau. About 35 percent of those who left Palau went to Guam, with the percentage coming from urban and rural states in Palau about the same. The second most popular destination was the U.S., followed closely by the CNMI. However, although more persons who traveled to the former destination came from Airai or Koror states, more persons who traveled to the latter came from a rural part of Palau. The difference between the origins of individuals who returned from the U.S. and the CNMI *may* shed some light on the impetus for leaving -- with private or government business concerns a likely reason for individuals traveling to the U.S. and employment a likely reason for persons traveling to the CNMI -- though the differences recorded probably are not significant statistically. Nearly 13 percent of the HIES respondents had traveled to Asia, primarily to the Philippines. Individuals visiting Asia in general and the Philippines in particular tended to come from one of the two urban states in Palau, probably due to the relatively large Asian immigrant populations in Airai and Koror.

Of the reasons for leaving Palau that the HIES considered, most respondents cited vacation (Table 8). Although persons from urban areas were more likely to leave the republic on vacation than those from rural areas, the most frequent reason that rural residents gave to account for travel outside Palau was "visiting" -- in many cases a reason probably similar to going on vacation. The response most rural residents gave for leaving Palau was "other," a category which includes employment. The percentages who left Palau to acquire education or medical attention were similar for rural and urban residents -- the latter slightly dominant in both cases.

Table 8. Persons who Left Palau, by Reason for Leaving and Residence: 1991

Reason for Leaving	Total	Urban			Rural
		Total	Koror	Airai	
Total	1,283	920	899	21	363
Percent	100.0	100.0	100.0	100.0	100.0
Vacation	32.7	36.1	35.7	52.4	24.2
Studying	14.7	15.3	15.4	14.3	13.2
Medical	4.4	4.6	4.3	14.3	4.1
Visiting	18.4	14.2	14.2	14.3	28.9
Other reason	29.7	29.8	30.4	4.8	29.5

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Because most individuals included in the HIES who left Palau did so for purposes of visiting or vacationing, the average length of stay away from the republic was less than one year (Table 9). The percentages of individuals who left Palau for longer periods of time generally were similar for all durations considered. Urban residents tended to be away from Palau for longer periods of time than rural residents.

As a final indicator of migration histories, the HIES collected data on the location of colleges attended by survey respondents. The present analysis examines this topic separately from places

Table 9. Persons Who Left Palau by Duration and Residence: 1991

How Long Away	Total	Urban			Rural
		Total	Koror	Airai	
Total	1,283	920	899	21	363
Percent	100.0	100.0	100.0	100.0	100.0
Less than 1 year	77.7	77.1	76.8	90.5	79.3
1 year	4.9	4.5	4.4	4.8	6.1
2 years	5.4	4.9	5.0	-	6.6
3 or 4 years	4.5	4.8	4.8	4.8	3.9
5 to 9 years	3.7	4.2	4.3	-	2.5
10 or more years	3.7	4.6	4.7	-	1.7

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

of primary and secondary education because relatively few of the individuals covered in this project attended college -- thus providing only a partial picture of migration trends. Of the roughly 450 persons in the survey who recorded a place of college enrollment, more than 38 percent

attended college in the U.S. (Table 10). Most of the remainder (about 30 percent) attended college in Palau, mainly at the MOC. More than 26 percent went to college on Guam (most likely the University of Guam or Guam Community College) or in Asia. With the major exception of individuals who attended college in Asia, most of the survey respondents with a college or university background were male.

Table 10. Persons Who Attended College by Place of College and Sex: 1991

Place of College	Numbers			Percent		
	Total	Males	Females	Total	Males	Females
Total.....	454	252	202	100.0	100.0	100.0
Palau.....	135	67	68	29.7	26.6	33.7
Guam.....	69	43	26	15.2	17.1	12.9
CNMI.....	3	1	2	0.7	0.4	1.0
FSM.....	12	9	3	2.6	3.6	1.5
Other Pacific.....	4	3	1	0.9	1.2	0.5
United States.....	174	105	69	38.3	41.7	34.2
Asia.....	50	19	31	11.0	7.5	15.3
Elsewhere.....	7	5	2	1.5	2.0	1.0

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Educational Attainment. As is the case with migration, data on levels of educational attainment often provide important insights to socioeconomic composition -- in particular helping to evaluate a population's economic *potential* in a world that increasingly demands formal education. Data discussed in the previous section address certain aspects of educational attainment in the context of migration, with pertinent information presented in Tables 3, 4, and 10.

Table 11 summarizes the data on educational attainment acquired from the HIES sample for individuals aged 25 years or more. As is evident, most individuals had some formal education, with nearly 54 percent of the total having attended at least 12 years of school. Of the 741 males in the age group examined, about 45 percent were high school graduates and nearly 5 percent had at least a Bachelor's degree. Although a smaller percentage of females respondents aged 25 years or more were high school graduates (about 38 percent), a larger percentage had Bachelor's degrees (more than 6 percent). Graduate degrees were rare for both sexes.

Table 11. Educational Attainment for Persons 25 Years and Over, by Sex: 1991

Educational Attainment	Number		Cumulative Percent	
	Males	Females	Males	Females

Total.....	741	726	...	...
Less than 8 years.....	201	259	100.0	100.0
9 to 11 years.....	112	108	72.9	64.3
12 years, no diploma.....	92	85	57.8	49.4
High school diploma.....	121	120	45.3	37.7
Some college.....	150	90	29.0	21.2
Associate degree.....	29	19	8.8	8.8
Bachelor's degree.....	28	43	4.9	6.2
Master's or PhD degree...	7	2	1.1	0.3
Professional degree.....	1	-	0.1	-

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

10.2 Economic Characteristics

Labor Force Status the Week Before the Survey. Data on work during the week preceding the HIES provide insights on the occupations of respondents at the time of the survey. The HIES collected economic data only from individuals aged 15 years or more, while tabulations of this information focused on individuals aged 16 years and older (hereafter referred to as *adults*) -- thus excluding young persons who frequently were not employed in wage labor or subsistence and of limited interest in the economic portion of this study.

About 45 percent of the adult HIES respondents worked for pay the week before the survey (Table 12). More than 7 percent of those engaged in wage labor also conducted some type of subsistence activity during the same week. The remaining 55 percent of the sample did not work for pay during the week preceding data collection -- though more than 13 percent of these individuals (and more than 7 percent of the total) were engaged in subsistence activity.

Differences appear in the employment patterns of males and females covered by the HIES. Many more males than females worked for pay during the week preceding the survey. Similarly, more males than females augmented their wage labor with subsistence activities. In contrast, females engaged in wage labor were as likely as males similarly engaged to work 35

Table 12. Labor Force Status in Week Before Survey for Persons Aged 16 Years and Over, by Sex: 1991

	Total	Males	Females
Total, 16 + yrs.....	2,032	1,043	989
Working.....	920	553	367
Percent.....	45.3	53.0	37.1
Also did subsistence...	69	46	23
Percent.....	7.5	8.3	6.3

35 or more hours.....	856	515	341
Percent.....	93.0	93.1	92.9
1 to 34 hours.....	64	38	26
Not working.....	1,112	490	622
Did subsistence.....	149	58	91
Percent.....	13.4	11.8	14.6

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

hours or more per week -- the U.S. Census Bureau's definition of full-time employment. More females than males worked solely at subsistence.

Occupation the Week Before the Survey. Of the adults included in the HIES, about 26 percent reported employment in a managerial-professional position the week before the survey (Table 13). Relatively large proportions also claimed technical-sales-administrative support or service occupations. As above, differences between the occupations of adult males and females are evident. Compared to females, relatively few males categorized their occupation the week preceding the survey as technical-sales-administrative support or service. In contrast, a greater proportion of males cited farming-forestry-fishing, precision production-crafts-repair, or operators-fabricators-laborers as their occupation during the same time period.

Table 13. Occupation of Persons Employed the Week Before Survey and Aged 16 Years and Over, by Sex: 1991

Occupation	Total	Males	Females
Employed, 16 + years.....	920	553	367
Percent.....	100.0	100.0	100.0
Managerial and professional.....	26.4	25.0	28.6
Technical, sales, and admin support....	25.5	16.3	39.5
Service.....	19.3	15.6	25.1
Farming, forestry, fishing.....	6.7	10.3	1.4
Precision production, crafts, repair...	10.9	17.0	1.6
Operators, fabricators, laborers.....	8.7	13.4	1.6
Not stated.....	2.4	2.5	2.2

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Survey data also indicate contrasting trends in occupation between urban and rural residence. The occupations of employed adults residing in urban states consisted of relatively large percentages of technical-sales-administrative support, managerial-professional, and service jobs (Table 14). The greatest percentage of employed adults living in rural states, in contrast, claimed managerial-professional jobs, with technical-sales-administrative support and farming-forestry-fishing jobs employing much smaller proportions of the rural workforce.

Table 14. Occupation of Persons Employed the Week Before Survey and Aged 16 Years and Over, by Urban-Rural Residence: 1991

Occupation	Total	Urban	Rural
Employed persons 16 + years.....	920	717	203
Percent.....	100.0	100.0	100.0
Managerial and professional.....	26.4	24.4	33.5
Technical, sales, admin. support.....	25.5	27.9	17.2
Service.....	19.3	22.0	9.9
Farming, forestry, fishing.....	6.7	3.9	16.7
Precision production, crafts, repair...	10.9	11.0	10.3
Operators, fabricators, laborers.....	8.7	7.9	11.3
Not stated.....	2.4	2.8	1.0

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: For purposes of this study, the urban population comprises residents of Airai and Koror states.

Industry of Employment the Week Before the Survey. The dominance of professional and administrative employment persists in data on the industry of employment the week preceding the HIES (Table 15). Similarly, the distinction between sexes continues in these data. Forestry-fishing, transportation-communication, and public administration industries dominated male employment during the time period of interest. Conversely, more females claimed employment in retail trade, personal services, and professional-related industries the week before the survey.

Slight differences emerged in the sample when contrasting the industries employing urban and rural residents (Table 16). Both types of residents featured relatively large percentages of individuals employed in construction, professional and related activities, and public administration. But relatively large numbers of individuals residing in urban states identified the industry in which they worked as personal services, an industry poorly represented among rural residents in the HIES. In contrast, relatively large numbers of adult rural participants in the survey cited agriculture and forestry-fishing as the industries of their employment -- both understandably found in much smaller percentages among urban residents.

Class of Worker the Week Before the Survey. A persisting problem in Palau and throughout other parts of the former TTPI is the large number of individuals working for a government agency as opposed to the private sector. This situation is evident in data collected by the HIES; more than 40 percent of adults included in the survey worked for the national government, a

Table 15. Industry of Persons Employed the Week Before Survey and Aged 16 Years and Over, by Sex: 1991

Industry	Total	Males	Females
Employed persons 16 + years...	920	553	367
Percent.....	100.0	100.0	100.0
Agriculture.....	3.2	2.9	3.5
Business services.....	1.3	1.6	0.8
Construction.....	12.4	19.3	1.9
Entertainment and recreation.....	0.5	0.9	-
Finance, insurance, real estate....	2.2	1.4	3.3
Forestry and fishing.....	4.5	6.7	1.1
Manufacturing.....	2.5	2.5	2.5
Mining.....	0.1	-	0.3
Personal services.....	12.1	6.7	20.2
Professional and related.....	23.4	17.4	32.4
Public administration.....	18.5	22.1	13.1
Repair services.....	0.8	1.3	-
Retail trade.....	8.2	5.1	12.8
Transportation, communications.....	6.4	8.0	4.1
Wholesale trade.....	2.3	2.4	2.2
Not stated.....	1.8	1.8	1.9

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

close second to private industry among employed survey respondents, with another 10 percent

Table 16. Industry of Persons Employed the Week Before Survey and Aged 16 Years and Over, by Urban-Rural Residence: 1991

Industry	Total	Urban	Rural
Employed persons 16 + years....	920	717	203
Percent.....	100.0	100.0	100.0
Agriculture.....	3.2	1.4	9.4
Forestry and fishing.....	4.5	3.5	7.9
Mining.....	0.1	0.1	-
Construction.....	12.4	11.7	14.8
Manufacturing.....	2.5	2.4	3.0
Transportation, communication.....	6.4	7.0	4.4
Wholesale trade.....	2.3	2.6	1.0
Retail trade.....	8.2	8.8	5.9
Finance, insurance, real estate...	2.2	2.6	0.5
Business services.....	1.3	1.3	1.5
Repair services.....	0.8	1.0	-
Personal services.....	12.1	14.6	3.0

Entertainment and recreation.....	0.5	0.7	-
Professional and related.....	23.4	23.0	24.6
Public administration.....	18.5	17.2	23.2
Not stated.....	1.8	2.1	1.0

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: For purposes of this study, the urban population comprises residents of Airai and Koror states.

working for a state or local government (Table 17). Differences once again occurred between male and female respondents. In particular, relatively more females worked in private industry or for the national government, while relatively more males worked for a state or local government or were self-employed.

Table 17. Class of Worker of Persons Employed the Week Before Survey and Aged 16 Years and Over, by Sex: 1991

Class of Worker	Total	Males	Females
Total.....	920	553	367
Percent.....	100.0	100.0	100.0
Private industry.....	42.4	39.6	46.6
National government.....	40.2	38.7	42.5
State or local government.....	9.7	13.4	4.1
Self-employed.....	6.3	7.2	4.9
Working without pay for family.....	0.5	0.4	0.8
Not stated.....	0.9	0.7	1.1

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

The vast majority of adult urban participants in the HIES worked in private industry or the national government the week preceding the survey (Table 18). The employment of adult rural respondents, in contrast, were more evenly divided between state and local government, national government, private industry, and self-employment -- with more than 58 percent employed by some branch of government.

Table 18. Class of Worker of Persons Employed the Week Before Survey and Aged 16 Years and Over, by Urban-Rural Residence: 1991

Class of Worker	Total	Urban	Rural
Employed persons 16 + years.....	920	717	203
Percent.....	100.0	100.0	100.0
Private industry.....	42.4	48.4	21.2
National government.....	40.2	43.8	27.6
State and local government.....	9.7	3.8	30.5

Self-employed.....	6.3	2.5	19.7
Working without pay for family.....	0.5	0.4	1.0
Not stated.....	0.9	1.1	-

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: For purposes of this study, the urban population comprises residents of Airai and Koror states.

Work Status in 1990. In addition to asking about work the week preceding the HIES, the survey questionnaire also inquired about work in all of 1990. The questions about work status in 1990 paralleled those asked in the 1990 Census of Population and Housing. As shown in Table 19, about 42 percent of the adult respondents had worked for pay at some point in 1990. Employment trends differed between sexes: roughly half of the males and about 35 percent of the females had worked at some time in 1990.

Table 19. Work Status in 1990 of Persons Aged 16 Years and Over, by Sex: 1991

Work Status in 1990	Total	Males	Females
Persons 16 + years.....	2,032	1,043	989
Worked in 1990.....	859	512	347
Percent.....	42.3	49.1	35.1
50 to 52 weeks.....	647	390	257
Percent.....	75.3	76.2	74.1
40 to 49 weeks.....	81	48	33
27 to 39 weeks.....	34	13	21
14 to 26 weeks.....	45	25	20
1 to 13 weeks.....	52	36	16
Usually worked 35 + hours per week...	789	480	309
Percent of employed in 1990.....	91.9	93.8	89.0
50 to 52 weeks.....	625	381	244
40 to 49 weeks.....	74	44	30
27 to 39 weeks.....	21	9	12
14 to 26 weeks.....	30	18	12
1 to 13 weeks.....	39	28	11
Usually worked 15-34 hrs per week....	42	19	23
Percent of employed in 1990.....	4.9	3.7	6.6
Did not work in 1990.....	1,173	531	642
Percent of persons aged 16 + yrs.	57.7	50.9	64.9

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Of the individuals employed for pay in 1990, slightly more than 75 percent worked the entire year (50 to 52 weeks). Similarly, nearly 92 percent of those who worked at some time for pay worked 35 or more hours per week -- as above signifying full-time employment. Males were slightly more

likely than females to work the entire year and 35 hours or more per week.

Home-Based Economic Activities for Individuals in 1990. Many individuals included in the HIES noted their involvement in home-based economic activities during the year preceding the survey (Table 20). Of the more than 1,100 persons who reported such activities -- which included fishing, agriculture, and the production of handicrafts -- more than 45 percent *intended* to sell the items they produced. Another 41 percent planned to consume the items they produced within the same household, and the remaining 14 percent planned to give the items away.

Table 20. Economic Activities for Individuals, by Intent of Activity and State of Residence: 1990

State	Total Persons	For Sale			For Consumption			To Give Away		
		Fish	Crops/ Animals	Handicrafts	Fish	Crops/ Animals	Handicrafts	Fish	Crops/ Animals	Handicrafts
Total....	1,131	19.0	21.7	5.1	20.3	17.8	2.4	7.8	5.3	0.6
Aimeliik....	10	-	10.0	-	70.0	-	-	-	20.0	-
Airai.....	41	17.1	36.6	-	19.5	19.5	-	2.4	4.9	-
Angaur.....	11	18.2	9.1	9.1	45.5	18.2	-	-	-	-
Kayangel....	18	-	16.7	16.7	22.2	38.9	-	5.6	-	-
Koror.....	383	22.2	23.5	5.0	20.4	15.4	0.8	8.4	3.9	0.5
Melekeok....	75	8.0	13.3	1.3	18.7	36.0	1.3	9.3	12.0	-
Ngaraard....	101	25.7	24.8	5.0	21.8	8.9	2.0	5.9	5.9	-
Ngardmau....	23	26.1	13.0	4.3	39.1	8.7	8.7	-	-	-
Ngaremlengui	77	24.7	39.0	2.6	10.4	15.6	-	3.9	3.9	-
Ngatpang....	21	23.8	19.0	-	28.6	9.5	-	14.3	4.8	-
Ngchesar....	80	16.3	25.0	3.8	22.5	15.0	2.5	12.5	2.5	-
Ngerchelong.	87	10.3	6.9	3.4	18.4	28.7	14.9	9.2	8.0	-
Ngiwal.....	63	27.0	25.4	4.8	12.7	22.2	1.6	-	6.3	-
Peleliu.....	141	14.2	14.9	12.1	19.1	15.6	2.1	12.1	6.4	3.5

Source: 1991 Household Income and Expenditures Survey, Republic of Palau.

When examining home-production at the level of individual states, one of the first characteristics of the HIES data that emerges is the relatively few respondents living in Airai and Koror states who conducted such activities. This weak representation of home-production in urban states probably reflects constraints such as limited land and poor docking facilities for small boats. Although considerable variability existed between states, households in rural jurisdictions tended to consume most of the items they produced -- usually on the order of 50 percent or more. Households in urban states, in turn, produced more items for sale than for household consumption. Great contrasts between urban and rural places are not evident in the home-produced items given away.

Business Activities for Individuals in 1990. Despite the large proportion of full-time employees among the HIES respondents, heavy reliance on government employment tends to weaken an economy -- though the direct and indirect effects of spending relatively high government wages help compensate for reduced production. The poor representation of private sector employment becomes increasingly evident when examines respondents who were entrepreneurs -- that is, individuals who owned some sort of business or owned a boat or taxi in which they carried passengers. Of 2,168 individuals aged 15 years or more, only 46 were entrepreneurs of some sort

(Table 21). The majority of these individuals, both business owners and boat or taxi owners, resided in Koror State, with the remainder scattered about rural states in the republic.

Table 21. Business Activities for Individuals Over the Year Preceding the Survey (1990), by State of Residence: 1991

State	Number			Percent		
	Total	Owned Business	Boat or Taxi	Total	Owned Business	Boat or Taxi
Total.....	46	30	16	100.0	100.0	100.0
Aimeliik.....	1	1	-	2.2	3.3	-
Airai.....	-	-	-	-	-	-
Angaur.....	-	-	-	-	-	-
Kayangel.....	-	-	-	-	-	-
Koror.....	33	23	10	71.7	76.7	62.5
Melekeok.....	2	2	-	4.3	6.7	-
Ngaraard.....	2	1	1	4.3	3.3	6.3
Ngardmau.....	-	-	-	-	-	-
Ngaremlengui..	-	-	-	-	-	-
Ngatpang.....	-	-	-	-	-	-
Ngchesar.....	1	-	1	2.2	-	6.3
Ngerchelong...	-	-	-	-	-	-
Ngiwal.....	-	-	-	-	-	-
Peleliu.....	7	3	4	15.2	10.0	25.0

Source: 1991 Household Income and Expenditures Survey, Republic of Palau.

Personal Income in 1990. Table 22 presents data on personal income of HIES respondents in 1990 by type of income and residence, noting both the number of persons receiving income from a particular source and the mean amount received. Of the more than 1,200 survey participants who had some sort of income in 1990, the most frequently cited and most lucrative source was earnings. The second most prevalent source was "other income," which included dividends, interest, pensions, insurance claims, alimony, child support, social security, and any form of welfare. Remittances and rental income involved much smaller numbers of survey participants, though the mean amount of money generated from rental property was second only to earnings.

Earnings dominated the sources of income in all states in Palau, both in terms of the total individuals involved and in terms of mean income generated. Koror and Peleliu states contained the majority of individuals who received income from rent or remittances, with "other income" distributed more evenly throughout the republic (though dominated, once again, by Koror State). The mean personal income in Airai, Koror, and Ngaremlengui states was greater than that for the republic as a whole.

Table 22. Personal Income Over the Year Preceding the Survey (1990), by Type of Income and State of Residence: 1991

State	Total		Earnings		Rental Income		Remittances		Other Income	
	Persons	Mean Income	Persons	Mean Income	Persons	Mean Income	Persons	Mean Income	Persons	Mean Income
Total.....	1,240	$4,910	1,053	$5,479	121	$2,475	167	$719	241	$1,533
Aimeliik.....	25	$3,343	22	$3,787	2	$101	2	$1,000	9	$1,622
Airai.....	62	$5,276	52	$6,259	1	$5,000	2	$500	12	$178
Angaur.....	11	$3,976	9	$4,229	-	-	-	-	2	$2,839
Kayangel.....	9	$2,397	9	$5,479	-	-	-	-	-	-
Koror.....	753	$5,709	635	$6,350	74	$3,709	80	$928	133	$1,770
Melekeok.....	45	$3,335	43	$3,478	19	$586	19	$459	4	$1,598
Ngaraard.....	52	$1,925	46	$2,152	2	$418	4	$113	12	$329
Ngardmau.....	12	$2,739	10	$3,090	1	$720	-	-	2	$830
Ngaremlengui...	35	$7,653	30	$8,867	2	$240	10	$318	2	$255
Ngatpang.....	17	$3,994	16	$4,242	-	-	-	-	1	$20
Ngchesar.....	53	$2,369	48	$2,592	-	-	14	$354	10	$360
Ngerchelong....	28	$3,158	21	$3,272	-	-	1	$50	23	$2,574
Ngiwal.....	29	$2,181	27	$2,288	-	-	-	-	9	$1,365
Peleliu.....	109	$3,831	85	$6,350	20	$334	35	$727	22	$1,091

Source: 1991 Household Income and Expenditures Survey, Republic of Palau.
Note: Total persons may not equal sum of those recorded under individual income categories, as an individual may have more than one source of income.

Household Income in 1990. The median income for households included in the HIES was nearly $8,000 in 1990, while the mean was about $12,400 (Table 23). Household income varied dramatically between states in Palau. The median household incomes (the best indicator of central tendency for small samples sizes with relatively high variance) suggest a general distinction between Koror State and the remainder of the republic, with Melekeok the only rural state with a median household income greater than that for the republic as a whole. The mean household incomes varied widely between states, Koror State once more dominant and serving to increase the mean for the entire republic.

Household Income From Home-Produced Items in the Month Before the Survey. A large amount of income for the respondent households came from home-produced items. The greatest number of households participating in this economic sector fished, with nearly as many growing crops (Table 24). Handicraft production and animal husbandry involved substantially fewer households, though the former yielded the greatest average income of all home-production activities *for those households engaged in these activities.* About half the total household income from home-produced items came from fish, with nearly 36 percent generated by crops. The estimated annual

total household income for all home-produced items in Palau exceeded $18 million in 1990.

Table 23. Number of Households, and Mean and Median Household Income Over the Year Preceding the Survey (1990), by State: 1991

Residence	Households	Median Income	Mean Income
Palau	587	$7,964	$12,393
Aimeliik	16	$5,000	$6,508
Airai	52	$5,833	$6,510
Angaur	10	$3,667	$4,885
Kayangel	7	$2,750	$3,256
Koror	328	$11,212	$15,427
Melekeok	16	$12,500	$13,046
Ngaraard	28	$2,667	$4,278
Ngardmau	6	$4,000	$5,602
Ngaremlengui	16	$2,000	$17,199
Ngatpang	11	$4,500	$7,145
Ngchesar	22	$5,500	$8,807
Ngerchelong	21	$4,375	$7,193
Ngiwal	12	$5,000	$6,132
Peleliu	42	$5,000	$13,467

Source: 1991 Palau Household Income and Expenditures Survey

The greatest proportion of urban households in the HIES that received income through the sale of home-produced items earned this money through fishing; crops once again ranked second (Table 25). The value of the fish sold comprised more than 68 percent of the total home-produced income for these households, with crops accounting for only about 18 percent of the total. The earnings per household (for *all households*) was much less among the urban respondents than among HIES respondents as a whole (Figure 1). This difference probably reflects the relative difficulty of conducting home-production activities in urban parts of the republic, coupled with the greater likelihood that urban households earn money through some form of wage labor.

Table 24. Earnings From Home-Produced Items for All Households, by Item Produced: Month Preceding Survey

Item	Households		Amount			Estimated Annual Tot., All Palau
	Number	Percent	Number	Percent	per HH	
Total	587	100.0	$305,366	100.0	...	$18,010,487
Fish	185	31.5	$152,834	50.0	$826	$9,014,149
Crops	134	22.8	$109,151	35.7	$815	$6,437,726
Animals	15	2.6	$4,624	1.5	$308	$272,724
Handicrafts	25	4.3	$38,757	12.7	$1,550	$2,285,888

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Note: Totals under households refer to total households included in the HIES; figures under amount refer only to those households that sold a specified home-produced item.

Table 25. Earnings From Home-Produced Items for Urban Households, by Item Produced: Month Preceding Survey

Item	Households		Amount		
	Number	Percent	Number	Percent	per HH
Total	380	100.0	$77,781	100.0	...
Fish	76	20.0	$53,076	68.2	$698
Crops	52	13.7	$14,607	18.8	$281
Animals	3	0.8	$164	0.2	$55
Handicrafts	5	1.3	$9,934	12.8	$1,987

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total urban households included in the HIES; figures under amount refer only to those households that sold a specified home-produced item.

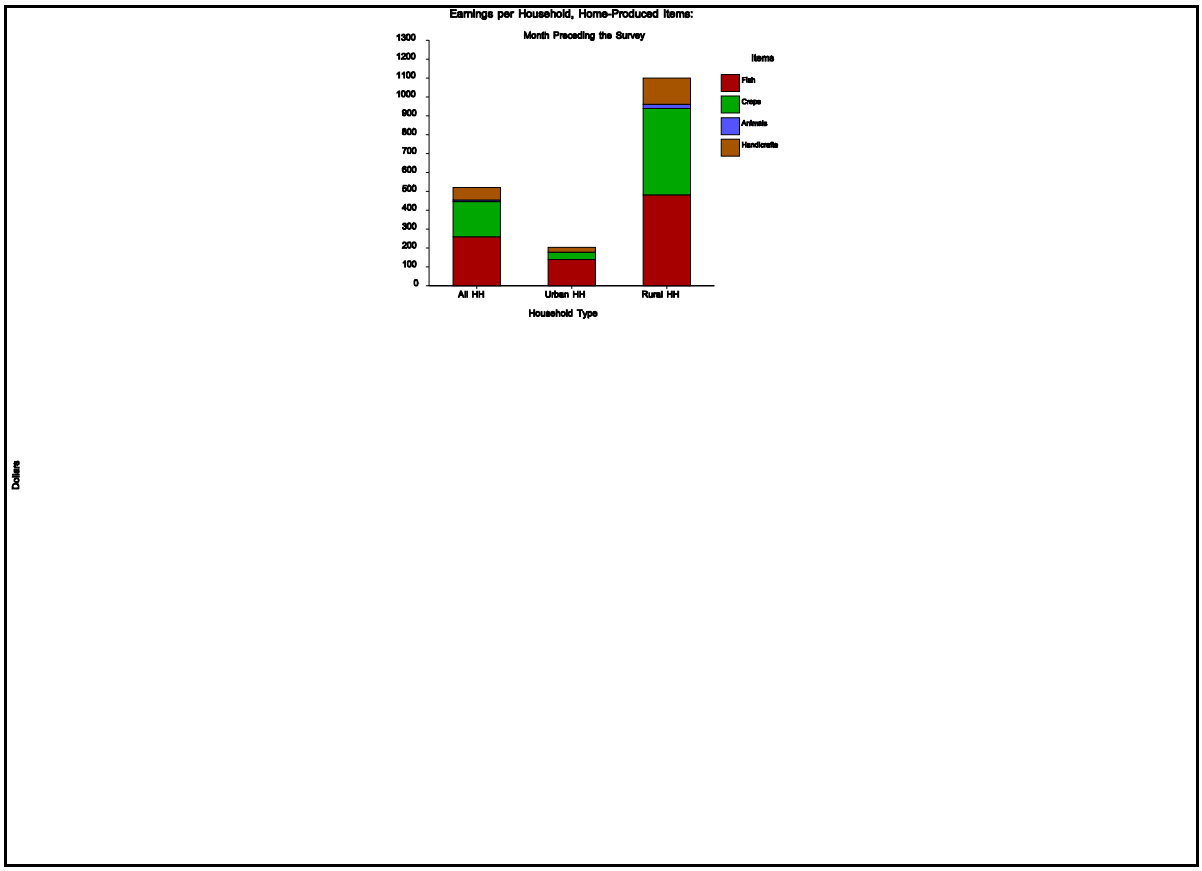

Figure 1. Earnings per Household, Home-Produced Items

The basic distribution of home-production activities among rural households is similar to that found among urban households (Table 26). However, rural households participated in these activities much more frequently, with the value of their productivity substantially greater than that of their urban counterparts both in total and per household. The earnings generated to rural households from home-produced crops were nearly as great as those associated with fish.

Table 26. Earnings From Home-Produced Items for Rural Households, by Item Produced: Month Preceding Survey

Item	Households		Amount		
	Number	Percent	Number	Percent	per HH
Total.....	207	100.0	$227,585	100.0	...
Fish.....	109	52.7	$99,758	43.8	$915
Crops.....	82	39.6	$94,544	41.5	$1,153
Animals.....	12	5.8	$4,460	2.0	$372
Handicrafts.....	20	9.7	$28,823	12.7	$1,441

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total rural households included in the HIES; figures under amount refer only to those households that sold a specified home-produced item.

Home-Produced Items Consumed or Given Away in the Month Preceding the Survey. Many households enumerated in the HIES consumed or gave away home-produced items in the month preceding the survey (Table 27). Of the households that reported this activity, fish was the item that the greatest number consumed or gave away -- a tendency consistent with the earnings from home-produced items discussed immediately above. The total value of fish in this context similarly exceeded the value associated with other categories of home-produced items, comprising 48 percent of the total. In contrast, the value of handicrafts exceeded that of other home-produced items for each household involved in their production. In total, over the year

Table 27. Home-Produced Items Consumed or Given Away for All Households, by

Item Produced: Month Preceding Survey

Item	Households: Number	Households: Percent	Amount: Number	Amount: Percent	Amount: per HH	Estimated Annual Tot., All Palau
Total.....	587	100.0	$688,494	100.0	...	$40,607,376
Fish.....	149	25.4	$330,592	48.0	$2,219	$19,498,316
Crops.....	115	19.6	$203,139	29.5	$1,766	$11,981,138
Animals.....	48	8.2	$37,997	5.5	$792	$2,241,063
Handicrafts.....	51	8.7	$116,766	17.0	$2,290	$6,886,859

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total households included in the HIES; figures under amount refer only to those households that consumed or gave away a specified item.

preceding the survey households in Palau consumed or gave away home-produced items with an *estimated* value of more than $40 million.

Compared to all households surveyed, relatively few urban households consumed or gave away home-produced items in the month preceding the HIES -- due in part to their reduced participation in home-production activities in general (Table 28). The largest percentage consumed or gave away fish, the home produced item with the greatest value both in terms of total consumption and in terms of consumption per household. The value of home-produced crops consumed or given away, though once again second to fish, was increasingly important. As noted above for all households, for those participating in home-production activities the value per urban household of handicrafts consumed or given away was greater than for any other home-produced item. Urban households consumed less home-produced items per unit than did all households in the HIES, though the consumption of crops per household was comparable in the two settings (Figure 2).

Table 28. Home-Produced Items Consumed or Given Away for Urban Households, by Item Produced: Month Preceding Survey

Item	Households		Amount		
	Number	Percent	Number	Percent	per HH
Total.....	380	100.0	$305,685	100.0	...
Fish.....	68	17.9	$140,788	46.1	$2,070
Crops.....	57	15.0	$116,313	38.0	$2,041
Animals.....	15	3.9	$1,678	0.5	$112
Handicrafts.....	16	4.2	$46,906	15.3	$2,932

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total urban households included in the HIES; figures under amount refer only to those households that consumed or gave away a specified item.

In comparison to urban households, more rural households consumed or gave away home-produced items in the month preceding the HIES -- in both relative and absolute terms (Table 29). Furthermore, the value of items consumed or given away was greater in rural households. Fish comprised nearly half the total value of home-produced items consumed or given away in rural households, with crops and handicrafts valued at much less. Similarly, the value of fish consumed or given away was greater per household engaged in home-production than any other main category considered -- in contrast to the trends identified above for total and urban households.

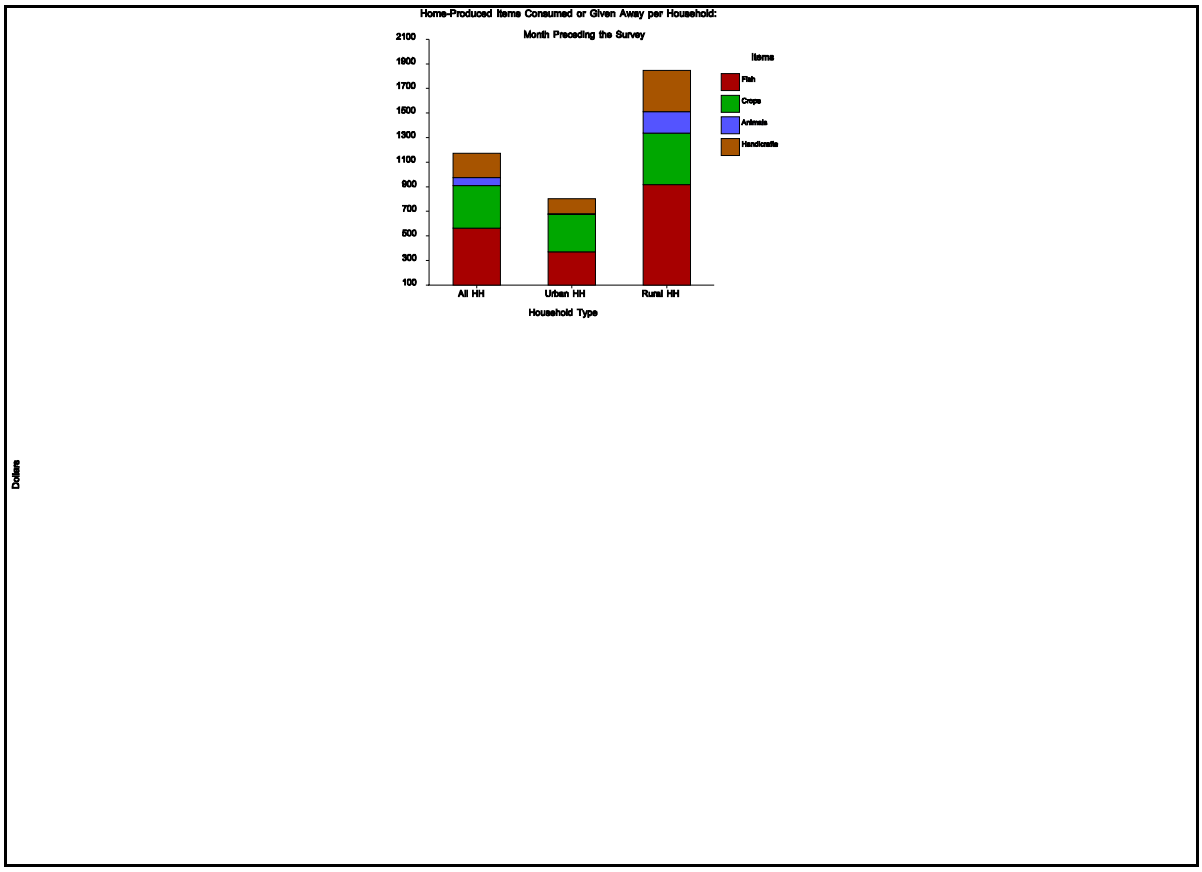

Figure 2. Home-Produced Items Consumed or Given Away per Household

Table 29. Home-Produced Items Consumed or Given Away for Rural Households, by Item Produced: Month Preceding Survey

Item	Households Number	Households Percent	Amount Number	Amount Percent	Amount per HH
Total.....	207	100.0	$382,809	100.0	...
Fish.....	81	39.1	$189,804	49.6	$2,343
Crops.....	58	28.0	$86,826	22.7	

$1,497				
Animals.....	33	15.9	$36,319	9.5
$1,101				
Handicrafts.....	35	16.9	$69,860	18.2
$1,996				

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total rural households included in the HIES; figures under amount refer only to those households that consumed or gave away a specified item.

Regular Expenditures, 1990. The 1991 HIES of Palau collected information on household expenditures both with a survey questionnaire and with a Daily Expenditures Diary. Data acquired with the questionnaire included regular and major expenditures -- the latter typically costing more but occurring less frequently than the former.

Regular expenditures data indicate that although more than 96 percent of all survey households reported regular expenditures, the number claiming particular categories of expense varied widely (Table 30). For instance, nearly all households examined noted regular utility expenditures and almost 54 percent noted school-related expenditures of some type. In contrast, only 19 percent reported regular medical or life insurance expenditures and less than 8 percent recorded membership fees as a regular expenditure. Given the prevalence of regular utility costs, the dominance of this expenditure category in the total amount spent is understandable. In contrast, although only 39 percent of the households surveyed claimed regular housing expenditures and 35 percent noted regular loan repayments, these two categories accounted for roughly 22 and 20 percent of the total amount spent per year, respectively.

Table 30. Regular Expenditures by Type of Expense Over the Year Preceding the Survey (1990), All Households: 1991

	Households		Amount			Estimated Annual Tot.,
Expenditure	Number	Percent	Number	Percent	per HH	All Palau
Total.....	566	96.4	$1,988,220	100.0	$3,513	$9,772,101
Housing.....	228	38.8	$433,030	21.8	$1,899	$2,128,342
Vehicles.....	266	45.3	$200,850	10.1	$755	$987,178
Utilities.....	546	93.0	$510,999	25.7	$936	$2,511,560
Membership fees.....	44	7.5	$34,211	1.7	$778	$168,147
School.....	314	53.5	$270,575	13.6	$862	$1,329,876
Loan repayments.....	203	34.6	$387,211	19.5	$1,907	$1,903,142
Church donations.....	247	42.1	$47,254	2.4	$191	$232,253
Medical, life insur...	112	19.1	$89,190	4.5	$796	$438,369
Other.....	8	1.4	$14,900	0.7	$1,863	$73,234

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Notes: Total households counts each household that made a regular expenditure in 1991 only once; percent of total households refers to percent of all households included in the HIES.

Compared to the total households examined in the HIES, a greater percentage of urban households claimed regular expenditures (Table 31). In addition, each respondent household in the urban part of Palau spent more per unit on each type of regular expenditures than did the entire sample (Figure 3) -- with the exception of expenditures categorized as "other." The relative importance of various expenditure categories among urban households generally was similar to the role

documented for all households examined.

Table 31. Regular Expenditures by Type of Expense Over the Year Preceding the Survey (1990), Urban Households: 1991

Expenditure	Households		Amount		
	Number	Percent	Number	Percent	per HH
Total.....	374	98.4	$1,692,433	100.0	$4,525
Housing.....	183	48.2	$369,580	21.8	$2,020
Vehicles.....	199	52.4	$179,265	10.6	$901
Utilities.....	369	97.1	$443,835	26.2	$1,203
Membership fees.....	41	10.8	$33,456	2.0	$816
School.....	219	57.6	$215,242	12.7	$983
Loan repayments.....	155	40.8	$323,109	19.1	$2,085
Church donations.....	151	39.7	$35,139	2.1	$233
Medical, life insur.....	93	24.5	$77,907	4.6	$838
Other.....	8	2.1	$14,900	0.9	$1,863

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Notes: Total households counts each household that made a regular expenditure in 1991 only once; percent of total households refers to percent of all urban households included in the HIES.

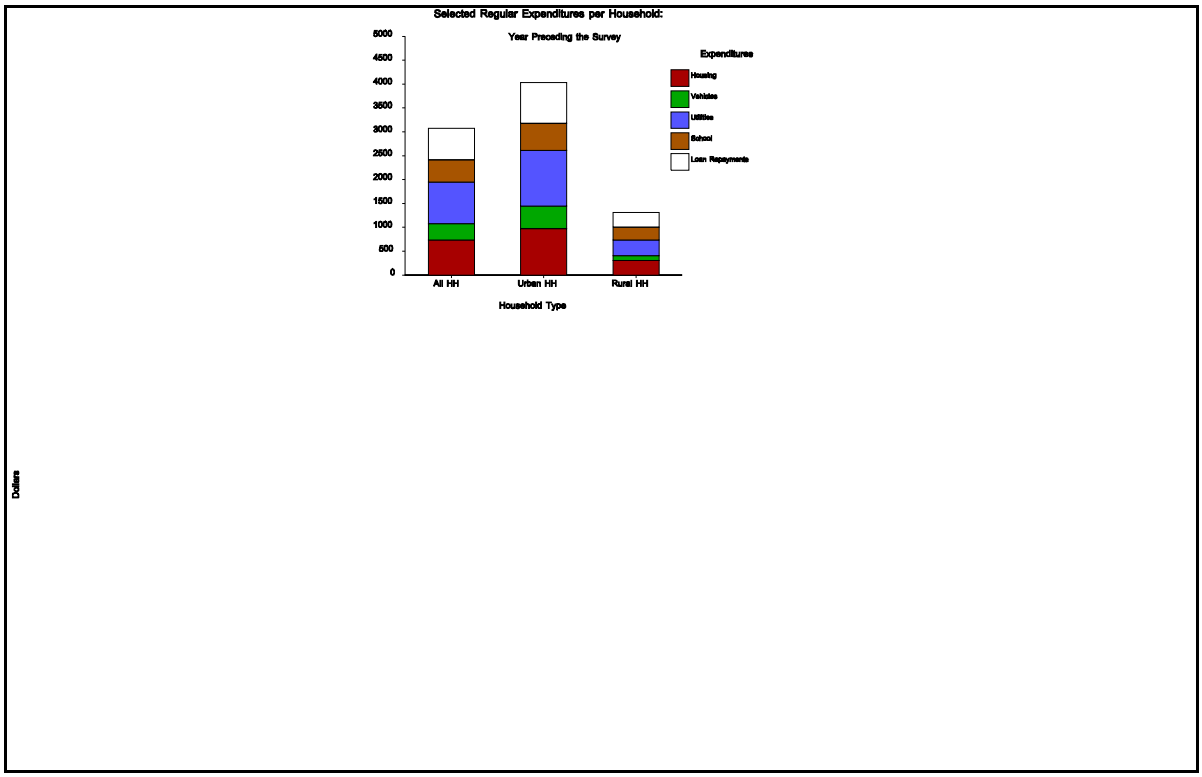

Figure 3. Selected Regular Expenditures per Household

The regular expenditures among rural households in the HIES were less than those associated with urban households (Table 32). The distribution of expenditures differed from the urban pattern, with few exceptions involving a smaller percentage of the rural households enumerated. The average amount spent per household was less in rural states for each major category of regular expenditure.

Table 32. Regular Expenditures by Type of Expense Over the Year Preceding the Survey (1990), Rural Households: 1991

Expenditure	Households Number	Households Percent	Amount Number	Amount Percent	Amount per HH
Total.....	192	92.8	$295,787	100.0	$1,541
Housing.....	45	21.7	$63,450	21.5	$1,410
Vehicles.....	67	32.4	$21,585	7.3	$322
Utilities.....	177	85.5	$67,164	22.7	$379
Membership fees.....	3	1.4	$755	0.3	$252
School.....	95	45.9	$55,333	18.7	$582
Loan repayments.....	48	23.2	$64,102	21.7	$1,335
Church donations.....	96	46.4	$12,115	4.1	$126
Medical, life insur.....	19	9.2	$11,283	3.8	$594
Other.....	-	-	-	-	-

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Notes: Total households counts each household that made a regular expenditure in 1991 only once; percent of total households refers to percent of all rural households included in the HIES.

Major Expenditures. More than 94 percent of the 587 households included in the HIES claimed some type of major expenditure over the year preceding the survey (Table 33). The percentage of

households that reported particular major expenditures varied widely, from about 19 percent to nearly 69 percent. Three categories of major expenditures were particularly important, with major home repairs, vehicles, and gifts each accounting for more than 21 percent of the total amount spent on such purchases.

The results of comparing the major expenditure pattern for urban households with that for all respondent households are similar to the comparison made above for regular expenditures: urban households featured a larger percentage claiming major expenditures and a tendency to spend more per household for all categories (except "other major items") (Table 34). Major home repairs, gifts, and vehicles once again dominated the amount spent (Figure 4).

Table 33. Major Expenditures by Type of Expense Over the Year Preceding the Survey (1990), All Households: 1991

Expenditure	Households: Number	Households: Percent	Amount: Number	Amount: Percent	Amount: per HH	Estimated Annual Tot., All Palau
Total.....	555	94.5	$3,125,492	100.0	$5,632	$15,361,793
Vehicles.....	166	28.3	$712,686	22.8	$4,293	$3,502,852
Elec. appliances.....	307	52.3	$272,728	8.7	$888	$1,340,458
Clothing and footwear..	402	68.5	$208,729	6.7	$519	$1,025,903
Household equipment....	320	54.5	$98,867	3.2	$309	$485,931
Major home repairs.....	151	25.7	$743,757	23.8	$4,926	$3,655,566
Other major items.....	107	18.2	$173,266	5.5	$1,619	$851,602
Overseas travel.....	121	20.6	$234,006	7.5	$1,934	$1,150,139
Gifts.....	322	54.9	$681,453	21.8	$2,116	$3,349,341

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Notes: Total households counts each household that made a major expenditure in 1991 only once; percent of households refers to percent of all households included in HIES.

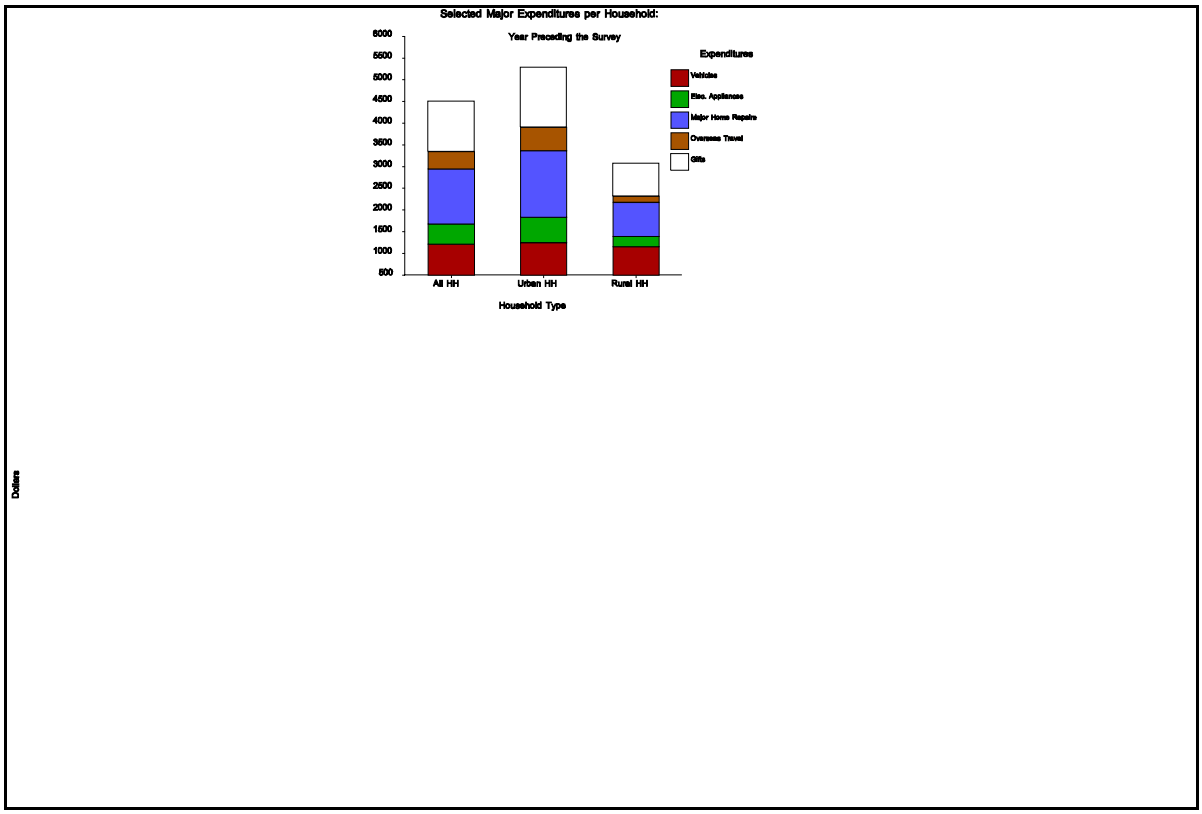

Figure 4. Selected Major Expenditures per Household

Table 34. Major Expenditures by Type of Expense Over the Year Preceding the Survey (1990), Urban Households: 1991

Expenditure	Households: Number	Households: Percent	Amount: Number	Amount: Percent	Amount: per HH
Total	365	96.1	$2,351,571	100.0	$6,443
Vehicles	107	28.2	$473,934	20.2	$4,429
Elec. appliances	216	56.8	$223,150	9.5	$1,033
Clothing and footware	285	75.0	$163,839	7.0	$575

Household equipment.....	213	56.1	$72,321	3.1	$340
Major home repairs.....	101	26.6	$581,774	24.7	$5,760
Other major items.....	70	18.4	$107,041	4.6	$1,529
Overseas travel.....	100	26.3	$204,674	8.7	$2,047
Gifts.....	208	54.7	$524,838	22.3	$2,523

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Notes: Total households counts each household that made a major expenditure in 1991 only once; percent of households refers to percent of all urban households included in HIES.

About 92 percent of the rural households surveyed claimed a major expenditure over the year preceding the HIES (Table 35). The same three main categories dominated the amount spent, with vehicle expenditures comprising nearly 31 percent of the estimated annual total. In comparison to urban households covered by the survey, rural households tended to spend less on major expenditures for all main categories considered *except* "other major items," where on average rural households spent slightly more.

Table 35. Major Expenditures by Type of Expense Over the Year Preceding the Survey (1990), Rural Households: 1991

	Households		Amount		
Expenditure	Number	Percent	Number	Percent	per HH
Total.....	190	91.8	$773,921	100.0	$4,073
Vehicles.....	59	28.5	$238,752	30.8	$4,047
Elec. appliances.....	91	44.0	$49,578	6.4	$545
Clothing and footware...	117	56.5	$44,890	5.8	$384
Household equipment.....	107	51.7	$26,546	3.4	$248

Major home repairs.....	50	24.2	$161,983	20.9	$3,240
Other major items.....	37	17.9	$66,225	8.6	$1,790
Overseas travel.....	21	10.1	$29,332	3.8	$1,397
Gifts.....	114	55.1	$156,615	20.2	$1,374

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Notes: Total households counts each household that made a major expenditure in 1991 only once; percent of households refers to percent of all urban households included in HIES.

Food Items Purchased During Survey Weeks, 1991 (Diary Data). The Daily Expenditures Diaries employed in the HIES collected detailed information on the daily expenditures of individual households over a two-week period. Due to limitations of space in this portion of the report, much of the data collected with diaries appears in Appendix 3. The following discussion focuses on major food and non-food categories, distinguishing between all households, urban households, and rural households.

Of the 304 households included in the diary portion of the HIES, more than 90 percent purchased some type of meat, cereal and bakery products, and non-alcoholic beverages (Table 36). These three food categories, along with fruit and vegetables, accounted for nearly 77 percent of the money spent on food items over the two-week diary period, though the amount spent on meat was more than double that spent on any other food category. Similarly, diary households spent more money per household on meat than on other foods. Extrapolating from the diary data, Palauans spent more than $11 million dollars on food over the year preceding the survey.

Table 36. Food Items Purchased by All Households During Survey Weeks, by Major Food Category: 1991

	Households		Amount			Estimated Annual Tot.,
Food Category	Number	Percent	Number	Percent	per HH	All Palau
Total.....	304	100.0	$45,346	100.0	...	$11,188,672
All meat.....	298	98.0	$14,659	32.3	$49	$3,616,962
Dairy.....	259	85.2	$3,231	7.1	$12	$797,217
Fruit and vegetables.....	269	88.5	$5,744	12.7	$21	$1,417,275
Cereal and bakery Prods...	296	97.4	$7,514	16.6	$25	$1,854,004
Sugar and sweets.....	253	83.2	$1,626	3.6	$6	$401,199
Condiments and spices.....	200	65.8	$1,061	2.3	$5	$261,791

Fats and oils.....	207	68.1	$1,623	3.6	$8	$400,459
Non-alcoholic beverages...	274	90.1	$6,951	15.3	$25	$1,715,090
Other food.....	192	63.2	$2,937	6.5	$15	$724,675

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total households that completed diaries; figures under amount refer only to those households that purchased a particular item.

Diary-documented food expenditures for urban households were similar to the pattern outlined immediately above for all households (Table 37). High percentages of the urban households that completed diaries purchased each type of listed food over the two-week diary period. Expenditure levels per household also were similar to the levels documented for all households (Figure 5). Urban households spent the greatest amount of money on meat, averaging nearly $50 per household over the two-week diary period. Cereal and bakery products and non-alcoholic beverages once more were important in terms of per household expenditures, each recorded at $24 or more for those households making such purchases over the two-week survey period.

Table 37. Food Items Purchased by Urban Households During Survey Weeks, by Major Food Category: 1991

Food Category	Households		Amount		
	Number	Percent	Number	Percent	per HH
Total.....	198	100.0	$28,743	100.0	...
All meat.....	194	98.0	$9,223	32.1	$48
Dairy.....	174	87.9	$2,436	8.5	$14
Fruit and vegetables.....	174	87.9	$3,186	11.1	$18
Cereal and bakery prods...	194	98.0	$4,601	16.0	$24
Sugar and sweets.....	155	78.3	$909	3.2	$6
Condiments and spices.....	132	66.7	$750	2.6	$6
Fats and oils.....	141	71.2	$1,054	3.7	$7
Non-alcoholic beverages...	177	89.4	$4,833	16.8	

Other food.....	131	66.2	$1,751	6.1

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total urban households that completed diaries; figures under amount refer only to those households that purchased a specified item.

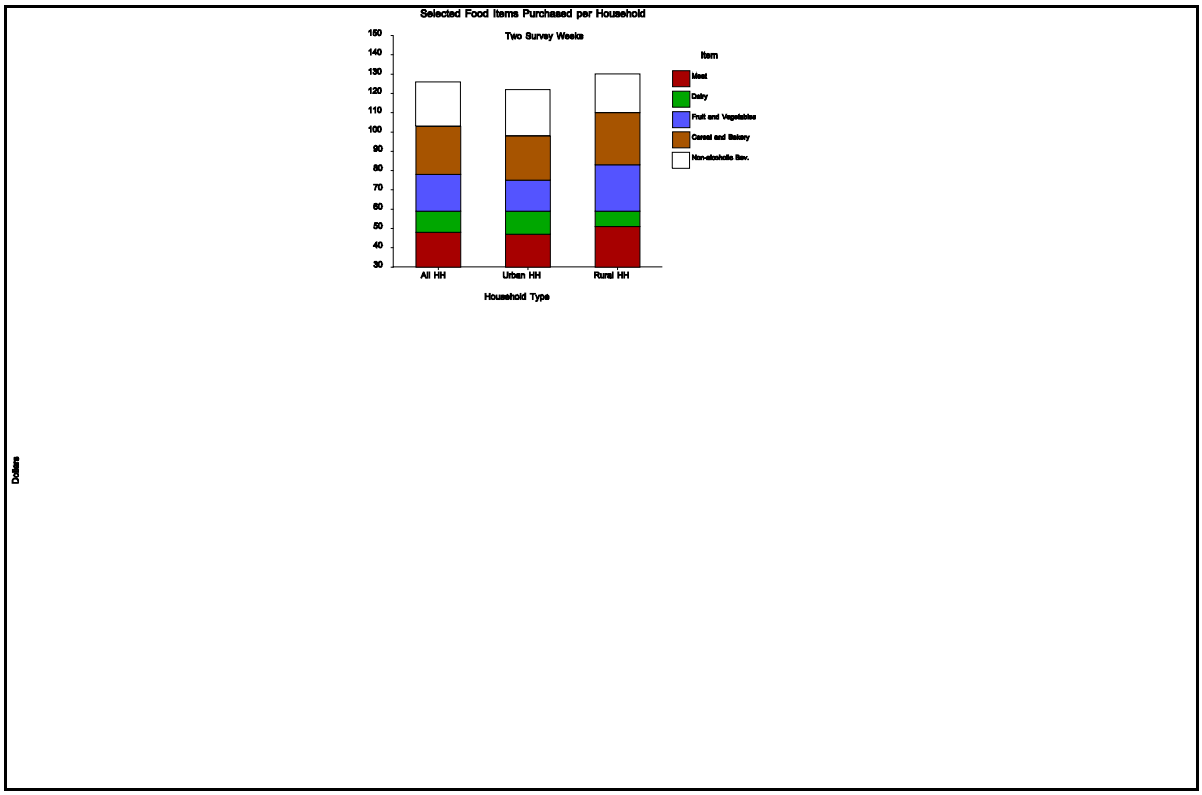

Figure 5. Selected Food Items Purchased per Household

The general pattern of food purchases in rural households was similar to that documented both for all households and for urban households: high percentages of the rural households that completed diaries purchased food in each main category considered; the greatest expenditure over the two-week survey period was for meat, with expenditures for non-alcoholic beverages and cereal and bakery products ranked a distant second and third, respectively (Table 38). Ironically, in a portion of Palau where one would anticipate greater reliance on home-produced food the amount of money spent per household for several types of food was greater in rural households than their

urban counterparts -- including meat, fruit and vegetables, cereal and bakery products, and "other food." Total expenditures, in turn, were substantially less for food than in either of the other two settings, owing to the relatively few rural households compared to urban and total households.

Table 38. Food Items Purchased by Rural Households During Survey Weeks, by Major Food Category: 1991

Food Category	Households Number	Households Percent	Amount Number	Amount Percent	Amount per HH
Total.....	106	100.0	$16,603	100.0	...
All meat.....	104	98.1	$5,436	32.7	$52
Dairy.....	85	80.2	$796	4.8	$9
Fruit and vegetables....	95	89.6	$2,558	15.4	$27
Cereal and bakery prods.	102	96.2	$2,912	17.5	$29
Sugar and sweets.....	98	92.5	$717	4.3	$7
Condiments and spices...	68	64.2	$312	1.9	$5
Fats and oils.....	66	62.3	$569	3.4	$9
Non-alcoholic beverages.	97	91.5	$2,118	12.8	$22
Other food.....	61	57.5	$1,185	7.1	$19

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Note: Totals under households refer to total rural households that completed diaries; figures under amount refer only to those households that purchased a specified item.

Non-Food Items Purchased During Survey Weeks, 1991 (Diary Data). Expenditures for non-food items reveal great variability in the proportion of households that purchased particular items (Table 39). More than half the households examined spent money on tobacco products, Palau-

oriented goods (betelnut, kebui, aus, etc.), and transportation; the proportion of total households that purchased the other items ranged from 10 to 42 percent. The greatest amount of money spent on any major non-food expenditure was on Palau-oriented items, followed by transportation. Based on the diary sample, Palauans spent an *estimated* $7 million on non-food items in 1991.

Non-food items expenditures among urban households similarly varied widely, depending on the category considered (Table 40). In comparison to all households, urban households were more likely to purchase each of the non-food items examined except tobacco products.

Table 39. Non-food Items Purchased by All Households During Survey Weeks, by Major Category: 1991

Non-food Category	Households		Amount			Estimated Annual Tot.,
	Number	Percent	Number	Percent	per HH	All Palau
Total	304	100.0	$28,295	100.0	...	$6,981,508
Clothing	127	41.8	$4,050	14.3	$32	$999,297
Transportation	162	53.3	$5,843	20.7	$36	$1,441,702
Alcoholic beverages	98	32.2	$2,715	9.6	$28	$669,899
Tobacco products	256	84.2	$4,695	16.6	$18	$1,158,444
Entertainment	32	10.5	$883	3.1	$28	$217,871
Services	31	10.2	$411	1.5	$13	$101,410
Miscellaneous	99	32.6	$2,118	7.5	$21	$522,595
Palau-oriented purchases	194	63.8	$7,580	26.8	$39	$1,870,289

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Notes: Totals under households refer to total households that completed diaries; figures under amount refer only to those households that purchased a specified item.

"Miscellaneous" includes stationary supplies, medicine, fishing equipment, and assorted regular expenses (utility bills, school tuition, etc.); "Palau-oriented Purchases" consist of items specific to Palau (and some other Pacific Islands), such as betelnut, kebui, and so on.

Expenditures per household also varied, depending on the category of item purchased. The purchase of Palau-oriented items played an even more important role in this subset of households, with transportation representing a distant second (Figure 6).

Table 40. Non-food Items Purchased by Urban Households During Survey Weeks, by Major Category: 1991

	Households	Amount

Non-food Category	Number	Percent	Number	Percent	per HH
Total.....	198	100.0	$19,608	100.0	...
Clothing.....	89	44.9	$3,004	15.3	$34
Transportation.....	113	57.1	$4,035	20.6	$36
Alcoholic beverages.....	75	37.9	$1,522	7.8	$20
Tobacco products.....	158	79.8	$2,468	12.6	$16
Entertainment.....	24	12.1	$675	3.4	$28
Services.....	26	13.1	$360	1.8	$14
Miscellaneous.....	75	37.9	$1,534	7.8	$20
Palau-oriented purchases	133	67.2	$6,010	30.7	$45

Source: 1991 Household Income and Expenditures Survey, Republic of Palau

Notes: Totals under households refer to total urban households that completed diaries; figures under amount refer only to those households that purchased a specified item.

"Miscellaneous" includes stationary supplies, medicine, fishing equipment, and assorted regular expenses (utility bills, school tuition, etc.); "Palau-oriented Purchases" consist of items specific to Palau (and some other Pacific Islands), such as betelnut and kebui.

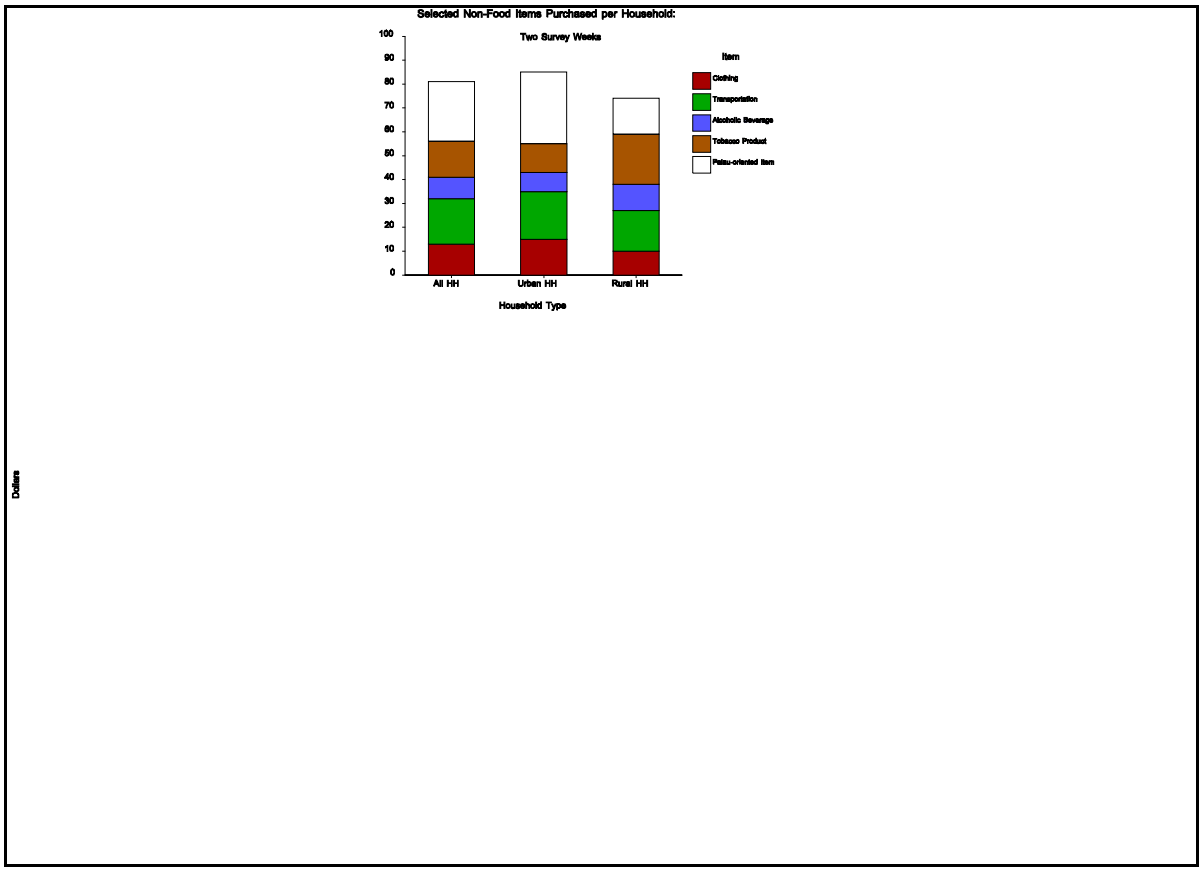

Figure 6. Selected Non-Food Items Purchased per Household

As with the other two household categories examined, the percentage of rural households that purchased a particular non-food item varied substantially over the two-week diary period (Table 41). Tobacco purchases involved the greatest percentage of rural households that made non-food purchases. In comparison to urban households, the rural sample spent much more of their total non-food expenditures on alcoholic beverages and tobacco products, and much less on Palau-oriented purchases. Nevertheless, non-food expenditures per household were only slightly less for the rural part of Palau than they were for the two urban states.

11. CONCLUSIONS

In the absence of comparable data from prior, similar studies of the Palau economy, the conclusions that one can draw from the preceding pages are limited to the period covered by the HIES. Subsequent surveys of income and expenditures in the republic will remove this

Table 41. Non-food Items Purchased by Rural Households During Survey

Weeks, by Major Category: 1991

Non-food Category	Households Number	Households Percent	Amount Number	Amount Percent	Amount per HH
Total.....	106	100.0	$8,685	100.0	...
Clothing.....	38	35.8	$1,045	12.0	$28
Transportation.....	49	46.2	$1,808	20.8	$37
Alcoholic beverages.....	23	21.7	$1,193	13.7	$52
Tobacco products.....	98	92.5	$2,226	25.6	$23
Entertainment.....	8	7.5	$208	2.4	$26
Services.....	5	4.7	$51	0.6	$10
Miscellaneous.....	24	22.6	$584	6.7	$24
Palau-oriented purchases	61	57.5	$1,570	18.1	$26

Source: 1991 Household Income and Expenditures Survey, Republic of Palau
Notes: Totals under households refer to total rural households that completed diaries; figures under amount refer only to those households that purchased a specified item.
"Miscellaneous" includes stationary supplies, medicine, fishing equipment, and assorted regular expenses (utility bills, school tuition, etc.); "Palau-oriented Purchases" consist of items specific to Palau (and some other Pacific Islands), such as betelnut, kebui, and so on.

constraint, enabling comparisons over time and the identification of income and expenditure trends. But for the present, conclusions must adopt a synchronic perspective -- focusing on the demographic composition and economic characteristics of Palau as a whole, or upon comparisons between different parts of the republic.

Many of the insights gained from the examination of demographic data collected during the HIES

generally reflect trends documented in the most recent decennial census (U.S. Bureau of the Census, 1992) and revealed in the analysis of this census (OPS, 1993). A survey sample consisting of fewer young individuals contrasts with what one would expect from most of Micronesia. However, given the relatively low fertility in Palau and the current international migration trends such an age structure is not unexpected. One possible weakness of the HIES was that it apparently missed many migrants, especially males, who probably resided in group quarters in Airai and (especially) Koror states. Because over the past decade non-Palauans have come to play an increasingly important role in the republic's economy, HIES results may be incorrectly skewed in favor of Palauan households.

Geographical comparisons of the data resulting from the HIES constantly encountered the dominant presence of Koror State, as do analyses of virtually any information collected from individual states in Palau. Nevertheless, the tendency for Koror and (to a lesser extent) Airai states to feature *more modern* economic patterns often persists when compared to the remaining states considered in the HIES -- for instance, in the presence of particular business activities (see Table 21) or patterns of personal income (see Table 22). One should expect such trends given the more urban character of these two jurisdictions, with Koror City long the most economically developed settlement in the republic and Airai the fastest growing state in Palau during the 1980s (see U.S. Bureau of the Census, 1992).

Many comparisons in the above study contrast urban (Airai and Koror states) and rural characteristics. Differences emerge in most of these comparisons, once again preserving general expectations about the greater expense and income associated with urban life compared to rural life. But contrasting these two components of Palau and Palau society also present certain surprises -- both in their similarities (e.g., housing and utility costs composing roughly equivalent proportions of regular expenditures in both rural and urban settings; see Tables 28 and 29) and in their differences (e.g., much more money spent per household food, tobacco, and alcohol in rural households than urban households; see Tables 40 and 41). The data presented in Appendix 3 of this report enable many more comparisons, both between rural and urban areas and between individual states or combinations of states.

The preceding analysis focused on central topics documented by the survey data, with the goal of producing a document that is useful to individuals planning the future of Palau. Forthcoming surveys of the republic should provide insights on how Palau income and expenditures vary over time, to augment information currently available on how these phenomena vary over space. It is likely only through examining income and expenditures data across time and space that a complete understanding of the Palau economy at the level of individuals and households will be possible.

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Appendix 1: Questionnaire Forms

REPUBLIC OF PALAU
1991 HOUSEHOLD INCOME AND EXPENDITURES SURVEY
HOUSEHOLD CONTROL SHEET

State: _____ ED: ____|____
Village/Hamlet:_____ Household: ____|____|____
Name of Interviewer: _____

Name of Head of Household: _____
(From Interviewer Contact Sheet. If person No. 1 is not the same person, explain: _____)

1. Please tell me the names of all the usual members of your household, starting with the Head of Household. Your household includes all people who usually eat and sleep in the household regardless of whether or not they are directly related to the Head. Record the Head first, then the Head's family, then other people.

Person Number	Name
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

2. Are there any visitors staying in your household? NO ⌐¬ YES ⌐¬ If YES, ask each visitor whether He/She will be staying here for the next 3 weeks. If yes, add the name to the list above, and fill an Individual Form for each visitor. Show Relationship as "Visitor."

3. Is there anyone else? If yes, add name to list above. If more than 10 people in the household, continue on another Household Control Sheet. Write "CONTINUATION" at the top of the new Household Control Sheet.

4. What is the total number of people living in this household? ____

(FORM C)

1991 REPUBLIC OF PALAU HOUSEHOLD INCOME AND EXPENDITURES SURVEY - INDIVIDUAL RECORD

State | Village/Hamlet | Household | Person Number

NAME | Sex: | Date of birth: / / 19

Relationship to head (e.g, head, spouse, child, parent,etc)
Father's birthplace (Ham/vil, island)
Mother's birthplace (Ham/vil, island)
Highest level of education
Place of:
Primary school
Secondary school
College/University

Birthplace: (Ham/vil,state,country)
Citizenship:
If born outside, year came to Palau to stay
Where you lived 1 year ago
Where you lived 5 years ago
If you ever left Palau:
Where did you go last time
What were you doing
How long did you stay
What year did you come back

THE REST OF THE QUESTIONS ARE FOR PEOPLE 15 YEARS AND OVER **ONLY**: (BOTH SIDES OF FORM!!)

Work you did last week: Print either (1) Paid employment, (2) Paid and subsistence, (3) Subsistence, or (4) Did not work
If (1) or (2) [Worked for pay], hours you worked last week for pay:
If worked, what kind of business or industry was it (for example, retail trade, Department of Education, construction, etc.)
If worked, what was your job/occupation (e.g., teacher, secretary)
If worked, were you working for: (1) Private industry, (2) National government, (3) Local/State govt, (4) Self-employed, (4) Working without pay for family
Did you work for pay at any time during 1990?
If yes, how many weeks?
If yes, how many hours per week, on average?

INCOME. In 1990 how much did you:
Earn from wages, salary, commissions, bonuses or tips? $
Earn from your own farm or from fishing (after business expenses)? $
Earn from any non-farm/non-fishing business? $
Receive in Rental income from ownership of land.....$
Rental income from ownership of buildings.$
Dividend income from ownership of capital.$
Interest income.....$ Total $
Receive in Remittances from customs payments.....$
Remittances from relatives overseas.....$ Total $
Receive from any other source?
Pensions (retirement, disability, separation).....$ Total $

Insurance claims.....$			
Alimony or child support.....$			
Social security or other welfare or OTHER.....$			
What is the total from all sources?	GRAND TOTAL ==>>>>>$		

(FORM D1)

1. What was your gross pay (including Social Security, taxes, etc.) during your LAST PAY PERIOD? $ _____

   What was the time period of pay (e.g, bi-weekly, monthly, etc.) _____

   During THAT pay period, how much was DEDUCTED for:

   - Social security payment ..... $ _____
   - Tax ..... $ _____
   - Life Insurance ..... $ _____
   - Other (specify) ..... $ _____

   NET income in time period (GROSS - deductions) ..... $ _____

   Did you receive wages/salary in-kind (e.g., free housing or food)?

   ☐ No ☐ Yes If YES, specify and estimate value in time period: _____ $ _____

For 2, 3, and 4, PRINT "YES" or "NO"

2. Did you catch fish at any time last month either for sale or for own consumption? 2. _____
3. Did you grow crops or raise chickens, pigs or any other animals either for sale or own-consumption, at any time last month? 3. _____
4. Did you do any manufacturing or processing activity, e.g. weave mats/baskets, carve story boards, sew clothes, etc., either for sale or for own-consumption, at any time last month? 4. _____

IF YOU ANSWERED "YES" FOR 2 OR 3 OR 4, GIVE DETAILS BELOW FOR LAST MONTH:

Type of Produce	Sold or Bartered			Quantity Consumed		Quantity Given Away	
	Quantity		Value				
	Number	Unit	$XX.XX	Number	Unit	Number	Unit

Do you own a boat? ☐

If yes, what year did you buy the boat? (Year) _____

If yes, how much did it cost? $ _____

If yes, how much did you spend last month for gas? $ _____

Do you operate a taxi or boat to carry passengers? ☐

If yes, what were your gross receipts last month? $ _____

pay for driver's wages to household member $ _____

pay for driver's wages to other people? $ _____

spend for gas, oil, repairs, tires, etc.? $ _____

pay for repayment of loans, if any? $ _____

LAST MONTH, were you an operator in wholesale or retail trade, services,

construction, real estate, or any other business activity?		
If yes, type of PRIMARY business:	Gross receipts or sales last month.... $	
	Wages/salaries paid to household member	$
	Wages/salaries paid to other people...	$
	Other operating expenses.....	$

(FORM D2)

REPUBLIC OF PALAU
1991 HOUSEHOLD INCOME AND EXPENDITURES SURVEY
REGULAR EXPENDITURES

ED
HH

This part of the questionnaire is a summary of regular items of expenditure. Exclude all expenses relating to a business. Check the YES or NO Box for each item to show whether members of the household spent money on any of the following items during the period shown and show the amount spent. If more than one of the particular items was obtained, state the total cost. If no time period is shown, or the period shown is wrong, insert an appropriate time period and the amount spent in that time.

ITEM	Check Yes	Check No	Reference Period	Amount in Dollars	Annual Equivalent	Office Code
HOUSING:						
- Rent (Government).....			Month			3112
- Rent (Private).....			Month			3111
- Mortgage/loan payment.....						3113
- Insurance.....						3114
- Land lease.....			Year			3115
- Building permit.....			Year			3116
- Other (specify).....						
VEHICLES:						
- Loan repayments (car).....						4116
- Vehicle registration.....			Year			4115
- Auto insurance.....			Year			4114
- Driver's license.....			Year			4113
UTILITIES AND OTHER:						
- Electricity.....			Month			3211
- Water.....			Month			3212
- Sewer.....			Month			
- Telephone.....			Month			3213
- Cable TV.....			Month			
- Butane gas.....			Month			
- Wages of household help.....						3116
MEMBERSHIP FEES:						
- Sports/Clubs.....			Year			5821
- Credit cards.....			Year			
- Other (specify).....			Year			
SCHOOL:						
- Fees/Tuition.....			Year			5911
- Books/Uniforms.....			Year			5914

CHURCH DONATIONS.....			Year			5915
MEDICAL AND LIFE INSURANCE.....						5114
LOAN REPAYMENTS:						
- Customs (Traditional).....						8111
- Other (Specify).....						
ANY OTHER REGULAR EXPENDITURE..						

(FORM E1)

REPUBLIC OF PALAU
1991 HOUSEHOLD INCOME AND EXPENDITURES SURVEY

ED
HH

MAJOR HOUSEHOLD PURCHASES AND EXPENSES DURING PAST 12 MONTHS

Check the YES or NO box for each item to indicate whether members of the household spent money on any of the following items during the last 12 months. If YES, indicate the total amount spent.

ITEM	Check Yes	Check No	Description of each item purchased	Amount in last 12 month	Office Code
VEHICLES:					
- Car, Pick-up or Van.....					4111
- Motorcycle.....					4112
- Boat.....					4121
- Other (Specify).....					3114
ELECTRICAL APPLIANCES:					
- Television set.....					5611
- Video cassette player.....					5612
- Radio/Cassette player.....					5613
- Refrigerator.....					3311
- Deep freeze.....					3312
- Washing machine.....					3313
- Clothes dryer.....					3314
- Dishwasher.....					3315
- Stove/Range/Microwave oven...					3317
- Air conditioner.....					3316
- Sewing machine.....					3318
- Other (Specify).....					3213
CLOTHING AND FOOTWEAR.....					2101
HOUSEHOLD EQUIPMENT:					
- Stove (Kerosene).....					3613
- Furniture.....					3401
- Kitchen utensils.....					3612
- Other (Specify).....					
MAJOR HOME REPAIRS OR EXTENSION (Total cost of all work done)					
OTHER MAJOR ITEMS:					
- Outboard motor.....					4132
- Lawn mower/Trimmer.....					3615
- Other (Specify).....					

OVERSEAS TRAVEL.....					5700
GIFTS:					
- Remittances overseas.....					8212
- Customs payments in Palau....					8101

(FORM E2)

Appendix 2: Diary Forms

REPUBLIC OF PALAU
1991 HOUSEHOLD INCOME AND EXPENDITURES SURVEY
DAILY EXPENDITURES DIARY

State: _____ ED: ____/_____

Village/Hamlet:_____ Household: _____/_____/_____

Name of interviewer: _____

ONE WEEK DIARY

Week starting: _____ Ending:_____

CONFIDENTIAL

The information you provide in this book is confidential; it will not be revealed to anyone except the interviewer and the people who are working for the Office of Planning and Statistics. When the survey is completed, the results will be printed in the form of totals only and no information about individual households will be disclosed.

Office of Planning and Statistics
P.O. Box 100
Koror, Republic of Palau 96940

(FORM G)

Monday

ITEMS BOUGHT

Mark this box if you did not buy anything on this day ☐

Item Description (Brand/Type)	Quantity		Cash	Credit	Office Use
	Number	Unit	$XX.XX	$XX.XX	

HOME PRODUCED CONSUMPTION (vegetables, fruits, eggs, fish, handicrafts, etc.)

Item Description (Brand/Type)	Quantity		Estimated Local Retail Value $XX.XX	Office Use
	Number	Unit		

(Form H1)

If you do not have enough space for one day and/or you want to write down some more details, write them below:

Day	Item Description (Brand)	Quantity		Cash	Credit	Office Use
		Number	Unit	$XX.XX	$XX.XX	

(Form H8)

GIFTS GIVEN

1. During the 7 days you kept this diary, did you or members of your household give any of the following gifts to people outside your household?

Mark yes or no box for each item. If yes, record the item given and the value of the gift.

				Office Use
Cash?	NO ☐	YES ☐	Amount given $	
Purchased goods? ITEMS:	NO ☐	YES ☐	if yes, specify item and value	
			Estimated value $	
			Estimated value $	
Home produce? ITEMS:	NO ☐	YES ☐	if yes, specify item and value	
			Estimated value $	
			Estimated value $	

Note: Home produce includes mats and baskets produced by your household, fruits and vegetables you have grown, fish you have caught, and pigs and poultry you have raised.

(Form I)

GIFTS RECEIVED

1. During the 7 days you kept this diary, did you or members of your household receive any of the following gifts from people outside your household?

Mark yes or no box for each item. If yes, record the item given and the value of the gift.

						Office Use
Cash?	NO		YES		Amount received $	
Purchased goods?	NO		YES		if yes, specify item and value	
ITEMS:						
					Estimated value $	
					Estimated value $	
Home produce?	NO		YES		if yes, specify item and value	
ITEMS:						
					Estimated value $	
					Estimated value $	

Note: Home produce includes mats and baskets produced by your household, fruits and vegetables you have grown, fish you have caught, and pigs and poultry you have raised.

(Form J)