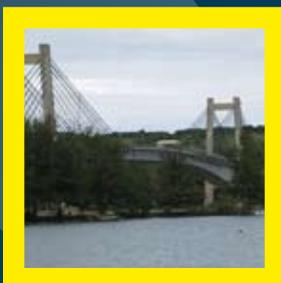# Palau

ANALYSIS OF THE 2006 HOUSEHOLD INCOME AND EXPENDITURE SURVEY

Final report on the estimation of basic needs poverty lines, and the incidence and characteristics of poverty in Palau

Palau Office of Planning and Statistics
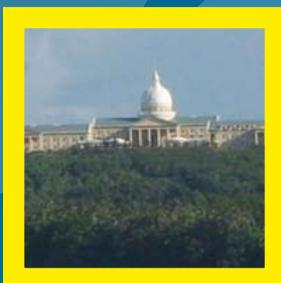and UNDP Pacific Centre, Suva, Fiji

11 July 2008

Palau

ANALYSIS OF THE 2005/06 HOUSEHOLD INCOME AND EXPENDITURE SURVEY

Final report on the estimation of basic needs poverty lines, and the incidence and characteristics of poverty in Palau
Palau Office of Planning and Statistics and UNDP Pacific Centre Suva, Fiji 11 July 2008

Acknowledgements

Foreword

Greetings to all the people in Palau!

This Poverty Analysis Report is a milestone achievement not only by the national government but also most particularly by the country as a whole. For the very first time we have undertaken an empirical examination of the scope and extent of poverty or hardship in our country, as we continually believe that the very social fabric of our unique culture has ensured that no one in our society is left behind.

The dynamics of global economy have imposed considerable challenges on our traditional, social safety net mechanisms, and many of us are now struggling to meet the very basic costs of daily survival. It thus becomes obligatory on the leadership to gain the necessary insight into the degree and level of hardship amongst its people to design appropriate intervention measures to mitigate the socio-economic challenges facing every household and citizen. This Poverty Analysis Report provides such, and I would urge all government and community leaders and citizens to fully immerse themselves in the findings of this Report so we can all collectively engage in dialogue and put forth appropriate action-oriented measures to address the common challenges we all face. The Report presents us the best available policy-informing tool to address socio-economic hardship in our country.

In presenting this Report I join my colleagues in the Ministry of Finance and the entire national government to welcome your inputs in moving forward to address the identified challenges we face as a society.

I wish to express our gratitude to the Asian Development Bank and the Office of Insular Affairs, Department of the Interior (USA) for their financial support toward the commissioning of the 2006 Household Income and Expenditure Survey (HIES), which provided the necessary data for the compilation of this Poverty Analysis Report. The Secretariat of the Pacific Community (SPC) is to be thanked for its staff's tireless commitment and technical support in completing the 2006 HIES, and we also extend our gratitude to the United Nations Development Program (UNDP) for letting us benefit from the technical wealth of Mr. David Abbott. Thank you all for your generous support in realizing this landmark achievement, as we continue to collaborate in the common fight against poverty.
Gratefully at your service,

Elbuchel Sadang
Minister of Finance

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Abbreviations

ABS	Australian Bureau of Statistics
ADB	Asian Development Bank
a.e.	adult equivalent
BNPL	Basic Needs Poverty Line
CGER	Combined Gross Enrolment Rate
CPI	Consumer Price Index
CSO	Civil Society Organisation
CVI	Composite Vulnerability Index
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FPL	Food Poverty Line
FSM	Federated States of Micronesia
GDP	Gross Domestic Product
GNP	Gross National Product
HCI	Head Count Index
HDI	Human Development Index
HDR	Human Development Report
HH	Household
HIES	Household Income and Expenditure Survey
HPI	Human Poverty Index
IMF	International Monetary Fund
IP	Incidence of Poverty
L3D	Lowest three deciles ranked by per capita adult equivalent expenditure
LFPR	Labour Force Participation Rate
MDGs	Millennium Development Goals

NCD	Non-communicable Disease
NDS	National Development Strategies
NGO	Non Government Organisation
PACER	Pacific Agreement on Closer Economic Relations
PAH	Participatory Assessment of Hardship
p.c.a.e	per capita adult equivalent
PGI	Poverty Gap Index
PHDR	Pacific Human Development Report
PIC	Pacific Island Country
PICTA	Pacific Island Countries Trade Agreement
PNG	Papua New Guinea
PPA	Participatory Poverty Assessment
PPP	Purchasing Power Parity
PPS	Probability Proportional to Size
PRS	Poverty Reduction Strategies
RMI	Republic of Marshall Islands
SDP	Strategic Development Plan
SOE	State Owned Enterprise
SPC	Secretariat of the Pacific Community
SPGI	Squared Poverty Gap Index
STI	Sexually Transmitted Infections
STR	Student Teacher Ratio
UNGA	United Nations General Assembly
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
WHO	World Health Organization
WTO	World Trade Organisation

Konrei

Galap

Babelthuap

Koror

Urukthapel

Eil Malik

Ngemelis

Ngergoi

Peleliu

Palau

Angaur
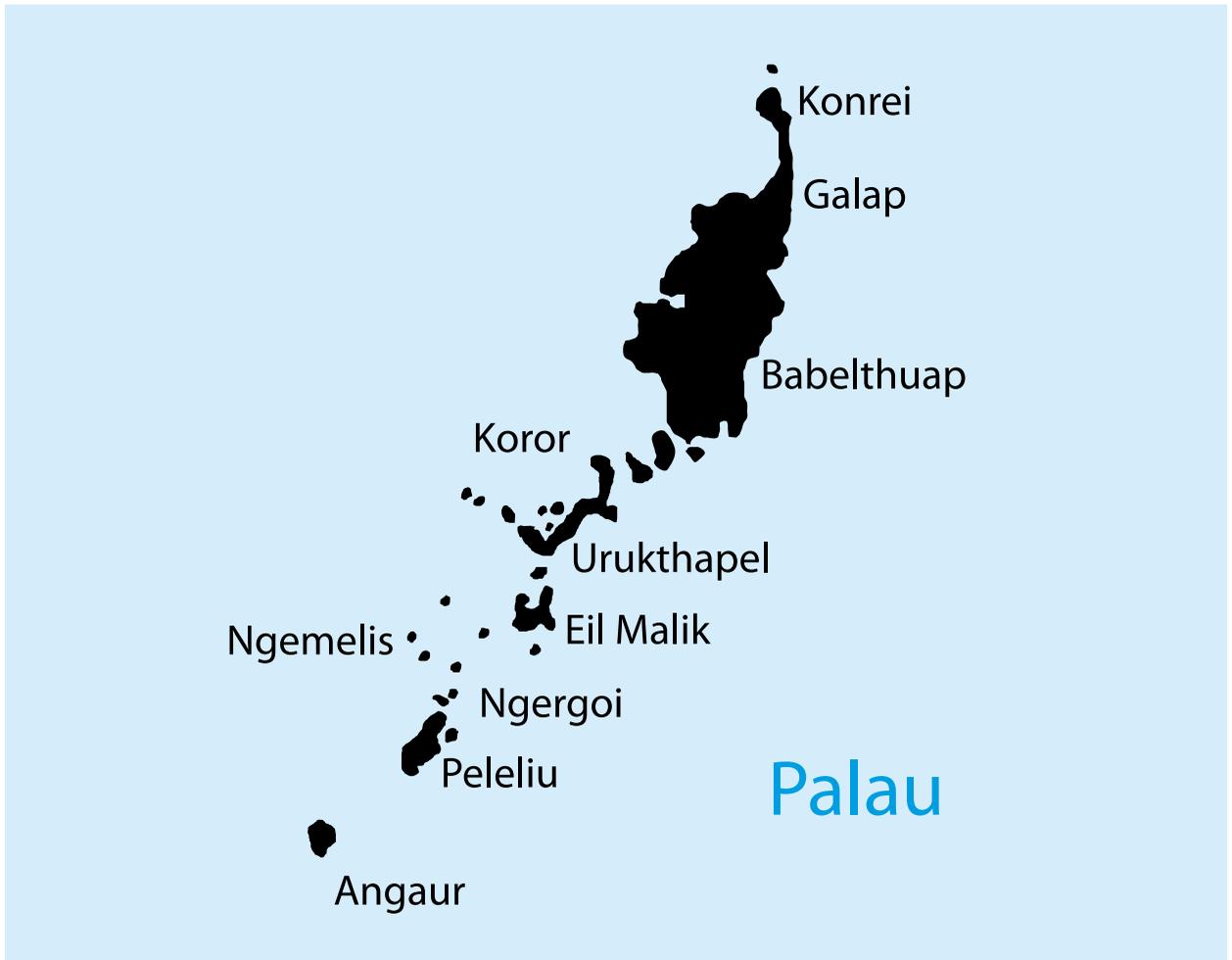
▪▪▫ Executive Summary

Introduction

1. Poverty as measured by national poverty lines is a relative measure of hardship. It assesses the basic costs of a minimum standard of living in a particular society and measures the proportion of households and/or the population that are deemed to not be able to meet these basic needs. The actual costs-of-living and basic-needs for individual households may often differ across the country between the urban and rural areas. It is therefore necessary to analyse the data from each region to provide an understanding of the relative costs and standards of living of households and people living in different parts of the country. For the purposes of this report Koror has been taken as the urban centre and the rest of the country is deemed to be "rural".

2. Poverty analysis is primarily concerned therefore with identifying within each society those households and individuals that are least well-off or most disadvantaged, where they live, and what characteristics they might have that set them apart from those that are better-off. In order to be able to develop targeted pro-poor poverty reduction or poverty alleviation strategies it is necessary to try to understand why some are poor and others are not. Is the lack of education a common characteristic? Is the age, gender, ethnicity or employment status of the head of household a common factor? By analysing household income and/or expenditure data it is possible to begin to gain a better understanding of these issues and how they might be addressed in order to reduce hardship and poverty.

3. For Palau, household income and expenditure data from the 2006 Household Income and Expenditure Survey (HIES) has been used to estimate national, urban (Koror/Airai) and rural (remainder of the country) Food and Basic Needs Poverty Lines. From these minimum standard of living benchmarks the incidence, depth and severity of poverty and hardship in Palau has been measured. Estimates have also been made of Gini coefficients on levels of inequality in levels of household and per capita expenditure. An analysis of the characteristics of the poorest 30% of households has also been undertaken.

4. Every country experiences some incidence of relative poverty and hardship, but the levels of incidence measured by national poverty lines are not directly comparable across countries. Thus two countries may have similar levels of relative poverty measured by national poverty lines but might have very different levels of absolute poverty.

5. The measurement of absolute poverty, enabling cross-country comparisons of the extent of poverty, is usually done through estimating the US$1 or US$2 per day purchasing power parity (PPP) values used in Goal 1 of the Millennium Development Goals (MDGs). Presently this measure of poverty cannot be estimated for Palau or Pacific Islands generally as the necessary PPP indices are not yet available; however estimates should be available in the near future enabling a more detailed cross country analysis to be made.

Food and Basic Needs Poverty Lines

6. The Food Poverty Lines (FPL) for urban and rural Palau households/families were calculated from the actual diary food expenditure patterns recorded for households in the lowest three-deciles of per capita adult-equivalent expenditure (p.c.a.e.)[1]. The food consumption costs so generated were then checked against the notional costs of a minimally nutritious, low-cost diet for Palau households originally developed by the SPC Nutrition Programme.

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[1] For an explanation of this and other terms used in the analysis refer to the main report.

7.   The national Food Poverty Line (FPL) in 2006 for Palau is estimated to have been US$2.37 p.c.a.e. per day or US$16.60 p.c.a.e. per week. For an urban HH the weekly food poverty line is estimated to have been US$2.42 p.c.a.e. per day or US$16.94 per p.c.a.e. per week. For rural households the corresponding food poverty line was US$2.29 p.c.a.e per day equivalent to US$16.03 p.c.a.e. per week. At the HH level for those HH in the lowest three expenditure deciles, these per capita adult equivalent amounts become US$69.96 per week nationally, or US$73.05 and US$65.50 for urban and rural Palau HH respectively.

8.   The Basic Needs Poverty Line (BNPL), which includes an allowance for essential non-food expenditure has been estimated as a national average expenditure of US$244.67 per household (US$58.05 p.c.a.e.) per week. For urban HH the corresponding weekly expenditure for HH in the lowest three deciles would be US$264.10 per week (US$61.24 p.c.a.e. per week), and for rural households US$214.39 (US$52.47 p.c.a.e.) per week.

Table ES1				
Weekly Adult Equivalent Per Capita Poverty Lines				
SBD per capita adult equivalent per week	Food Poverty Line	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH lowest three deciles a.e
	A	B	C=A+B	D
National Average	16.60	41.45	58.05	244.67
Urban	19.64	44.30	61.24	264.10
Rural Areas	16.03	36.44	52.47	214.39

9.   In Palau the ratio of food to non-food expenditure averaged almost 1:5, contrasting with the average of about 1:1 seen in most other Pacific countries. This suggests that Palau HH need much higher cash resources to meet the purchase of non-food essentials. On average the amount of home produced food (subsistence production) is also much lower in Palau than elsewhere in the region. This adds further to the need for cash to purchase store food and weakens food security; these are important issues in the context of current food and fuel price increases.

10. The weekly per capita adult equivalent poverty lines are summarised in Table ES1.

Incidence of Poverty

11. The Incidence of Poverty has been estimated by calculating: a) the proportion of households, and b) the proportion of population which reported weekly per capita adult equivalent expenditure less than the relevant food or basic needs poverty lines, see Table ES2.

Table ES2		
Incidence of Poverty		
Proportion of HH and Population with weekly Per Capita Adult Equivalent Expenditure less than the Basic Needs Poverty Line		
	Households	Population
%	Basic Needs	Basic Needs
National Average	18.4	24.9
Urban	19.2	26.2
Rural Areas	20.8	28.9

12. The average incidence of basic needs poverty, as measured by the Head Count Index (HCI) over all households, is estimated at 18.4%, accounting for 24.9% of the population. Within this national average, urban households recorded a poverty incidence of 19.2% whilst that for rural households was 20.8%. In terms of population, the incidence of basic needs poverty is estimated to have affected 26.2% of the urban population and 28.9% of the rural population.

13. These estimates of poverty incidence therefore suggest that 3737 people in urban Palau were unable to afford a basic minimum standard of living. In the rural areas the number so affected is estimated to have been around 1202. There are however many more households and individuals who have expenditure only just above the basic needs poverty line and who are therefore vulnerable. It is estimated that a further 237 rural people and 818 people in the urban areas have expenditure no more than 10% above the rural and urban BNPL respectively. With the rapidly rising prices for food and fuel these people are highly vulnerable to slipping below the poverty lines.

14. Analysis of the data for the rural areas suggests that the states with the highest proportion of poor households were Kayangel, Angaur and in West Babeldaob. For Kayangel and Angaur their remoteness from Koror is likely a major factor in their relative level of disadvantage, for those in West Babeldaob the situation is more complex. In these states there appears to be considerable movement to and from Koror with many families living in the urban centre during the week and returning to their villages at the weekends. There is anecdotal evidence to suggest that many working couples may leave children in West Babeldaob villages to be looked after by grandparents and that unrecorded gifts of food and other essentials mitigate the low expenditure recorded by these HH in the survey. This hypothesis is supported by the fact that 28.2% of rural households are headed by persons over 60 years compared to only 20.9% of households in the urban centre.

15. On average, rural Palau households provided more of their own food (33.5%) than those in the urban centres (6.7%). However on average the levels of home produced food are generally much lower than seen elsewhere in the region, especially for HH in the rural areas where between one-half and two-thirds of food is normally produced from home gardens. With the recent steep rises in the price of many imported basic food items there is considerable opportunity for greater emphasis to be given to increasing domestic agricultural production. This would help to improve food security, reduce import costs and provide opportunities for many households to earn additional income.

Depth and Severity of Poverty

16. The Poverty Gap Index (PGI), measuring the depth of poverty in Palau has been estimated at 6.6, which is similar to Tonga and Samoa and less than that estimated for Fiji or FSM. In Palau the urban PGI is estimated at 6.7 and for the rural areas 7.7, suggesting that rural poverty is slightly deeper. The Squared Poverty Gap Index (SPGI), which is a measure of the severity of poverty being experienced, is estimated at a national average of 2.6. There is little difference between the estimates of urban SPGI 2.5 and the rural index of 2.9 suggesting that poverty is in Palau is generally not severe, and is at a similar level to other regional countries.

Income Distribution and Inequality

17. Figures indicate that at the HH level inequality in Palau is relatively low. The national HH Gini Coefficient, which measures inequality in the levels of total HH expenditure, averages 0.25 (urban index 0.24 and rural 0.26). However, at the population level, comparing per capita expenditure the Gini coefficients are somewhat higher averaging 0.39 at the national level; urban population index 0.39 and rural population index 0.43.

■ ■ ■ Who are the Poor and What are their Characteristics?

Ethnicity

18. Although households headed by Palauans are predominant, comprising 79% of all households, there are large minority groups with Filipinos accounting for 14% of all households and other nationalities the remaining 7%.

19. Palauan households are however slightly over-represented in the lowest quintile with 82% of these being headed by a Palauan. Filipino households account for 11% of those in the lowest quintile and others 7%, in line with their proportion in the total. From the perspective of within-ethnicity distribution it is estimated that 20.5% of Palauans are in the lowest quintile and 29.1% in the lowest three deciles. Amongst all Filipinos, approximately 16.5% of households are in the lowest quintile and 32.1% in the lowest three deciles. It is significant, however, that amongst "other Asians" 23.3% are in the lowest quintile and 42.2% are in the lowest three deciles. Thus although this group make up only a small proportion of the population they are amongst the most disadvantaged.

Gender

20. Gender appears to play a small but important role in determining the incidence of poverty in Palau. The HIES analysis suggests that female-headed households are over-represented in the lowest three expenditure deciles particularly in the rural areas where 40% of female-headed households are in the lowest three deciles compared to an average of 24.8% of all female HH households in the rural areas a whole. In the rural areas 29.9% of female headed HH are in the L3D compared to 27.0% of female HH households overall in the urban centre.

Children in Poverty

21. Nationally it is estimated that 40.9% of children live in households in the three lowest deciles, comprising 39.3% in the urban centre and 45.4% in the rural areas. This suggests that children in the rural areas are more likely to be living in the poorest households compared to the urban centre but, as noted elsewhere, there is some evidence to suggest that children reside with grandparents while working-couple parents reside in Koror and return to the village home with unrecorded gifts at weekends. Thus although these children appear to be living in poorer households they may well be additionally supported by parents living elsewhere.

Educational Attainment

22. In comparison to many PICs the education system in Palau is very comprehensive with an average of 42% of all HH heads completing secondary school and a further 42% completing some level of post-secondary education. At the bottom end however there were still 6.4% of HH heads with no education and a further 9.5% that had completed only primary level. However, in the lowest quintile these two categories comprised 27.6% of all HH but only 11.5% in the highest quintile.

23. The link between low educational attainment and vulnerability to poverty is seen in Palau, although perhaps not as strongly as elsewhere in the region,

Economic Activity

24. The survey results suggest that a high rate of wage/salary employment runs alongside both a high rate of unemployment and a large number of guest workers in the economy. On average the data indicate that almost two-thirds of HH heads are in employment and 22% are unemployed. Even in the lowest three deciles 55.5% of HH heads reported as being in employment while a full one-third reported being unemployed. Clearly there is an issue with both the "working poor" and with those unemployed. In contrast in the top quintile 71.6% of HH heads were in employment and only 11% unemployed.

25. Urban female headed HH in the lowest three deciles reported 49.1% in employment and 31.4% as unemployed, however in the rural areas only 28.7% of female L3D HH heads were in employment while 61.1% were recorded as unemployed.

26. The high cost of living in Palau and the relatively low wages of those working in the personal services, retail and tourism sectors contribute to the high level of HH which are in receipt of a wage or salary yet are still falling below the basic need poverty line.

Energy Use

27. Energy for lighting is not an issue for Palau HH where 99% are connected to the mains. However, as elsewhere, electricity is not the preferred energy source for cooking except in the top quintile of HH. For HH in the lowest three deciles kerosene and gas are the preferred choices. Kerosene is predominant in those areas where access to gas supplies is poor, mainly in Kayangel and Angaur states, although it appears to be widely used in both urban and rural areas generally by about one-third of all HH in the lowest three deciles.

Water and Sanitation

28. Access to reticulated water supplies and good sanitation systems is widespread in Palau with an average of 81.4% of all HH having a piped water supply. Amongst HH in the lowest three deciles those which rely on water tanks account for 15.8% of HH. Only 4.3% of HH rely on other unimproved water sources.

29. Access to sanitation is also good with 43.5% having a connection to the public sewage system and a further 42% having a septic tank. Only 14.5% of HH do not have access to an improved system but of these 50% are in the lowest three deciles.

Conclusions

30. Poverty and hardship in Palau do not mean hunger or destitution, but, in a high-cost society which enjoys a comparatively high standard of living with good access to many basic services, those HH which are in the lower expenditure deciles, and where HH might be classed as "working-poor", will be struggling to meet daily/weekly living expenses. The low level of home food production and the heavy reliance on imported food and other non-food "essentials" means that having a regular cash income is vital, although clearly not always sufficient to meet the cash costs.

31. That one-in-five households and more than one-in-four of the population of Palau may be living below the national minimum cost of living or basic needs poverty line may come as a surprise to many. But in a high-cost and high-standard society there will always be those who are disadvantaged through poor education attainment, gender, age and/or inability to find suitable employment to provide sufficient income to meet basic needs costs for a family.

32. Those HH in the lower deciles will regularly have to make choices on a daily or weekly basis between the competing demands for household expenditure and the limited availability of cash income to meet that expenditure. Trade-offs will need to be made between one bill and another, food or education related costs for example, utilities or fuel.

33. Households deemed to be experiencing basic needs poverty are therefore facing hardship on a daily basis. They are likely to be struggling to pay bills and purchase suitably nutritious food – although many HH make poor

nutrition choices. They may have to borrow regularly from "loan-sharks", who charge very high interest rates, for small unsecured loans to meet family commitments and community obligations. Others will either borrow from family or friends or will constantly "roll-over" outstanding loans as they become due. Thus they may be frequently in debt or living from pay-check to pay-check with little capacity to meet unexpected expenses. The rapidly rising food and fuel prices of recent months will be impacting severely on these HH.

34. Taking steps to mitigate the impact of rising prices through strengthening food security and improving agricultural output as well as broadening the base of the economy away from its present heavy reliance on tourism (or broadening the attractions offered for tourists) are key issues for the government in the near term.

35. The paradox of high levels of unemployment, which clearly contribute a high proportion of those experiencing hardship, alongside the large number of guest workers is another issue which the government might need to consider. There are also many HH which may be classed as "working-poor" where although in employment they are still unable to afford a basic minimum standard of living.

36. This analysis seeks to provide government with clearer, evidence-based indications of the extent and nature of poverty in Palau. It discusses policy issues and possible policy options to address these. The analysis suggests, however, that there are many aspects of Palau society which are not well explained by quantitative analysis alone. It is therefore recommended that consideration be given to undertaking a Participatory Assessment of Hardship (PAH) as a means to both validate the quantitative analysis as well as to further investigate the ways in which society works to provide social-safety nets and support coping strategies for those HH reportedly falling below the poverty line.

37. The following Table ES3 summarises the key MDG1 poverty indicators derived from the HIES.

Table ES3			
Millennium Development Goal Indicators			
	National	Urban	Rural
1.1 Propotion of Population below Basic Needs Poverty Lines % (Note 1)	24.9	26.2	28.9
Proportion of Population vulnerable to falling into poverty; pcae <105 above BNPL %	5.1	4.5	4.2
1.2 Poverty Gap Ratioo (PGR) - Depth of Poverty	6.6	6.7	7.7
Squared PGR - Severity of Poverty	2.6	2.5	2.9
1.3 Share of poorest quintite (20%) in consumption by region %	10.2	10.7	10.2
Ratio of Share of poorest quintite (20%) to highest quintite	3.5	3.4	3.5
HH Gini Coefficient: (0 = perfect equality 1=perfect inequality)	0.25	0.24	0.26
1.9 Propotion of households with p.c.a.e. below the minimum level of dietary energy consumption (FPL) %	0.0	0.0	0.0
Note 1: Proportion of Population below US$1 (PPP) per day not yet available, awaiting PPP indices to be finalised			

National Poverty Lines and Estimates of the Incidence in of Poverty in Palau
■ ■ ■ 1. Purpose of Paper

1.   The purpose of this paper is to provide estimates of National Poverty Lines and the incidence of poverty for Palau based on an analysis of the household data from the national 2006 Household Income and Expenditure Survey (HIES).

2.   The HIES contains a wealth of information. This paper analyses the expenditure data to estimate the incidence of hardship and poverty through the Head Count Index (HCI)[2] by comparing food and basic needs poverty lines with recorded levels of expenditure. It also estimates indicators of the depth (Poverty Gap Index, PGI) and severity (Squared Poverty Gap Index, SPGI) of poverty in Palau and levels of income/consumption inequality through the Gini Coefficient. These are indicators of MDG1.

3.   It further provides an analysis of the broad characteristics of low-expenditure households – classed as those in the lowest three expenditure deciles (L3D) as measured by per capita adult equivalent expenditure - in terms of their socio-economic status, demographics and level of household access to basic services. Together with the poverty indicators these provide a good indication of which households are the most disadvantaged in Palau, what common characteristics they might share and why they might be in this situation of disadvantage and hardship. Such information will be useful for government to define targeted policies and interventions to assist in alleviating their poverty and hardship.

4.   Specifically the paper will:
     - Discuss the definition and context of poverty in the Pacific and Palau in particular, Section 2;
     - Outline the poverty analysis methodology used and provide an overview of some of the key household and expenditure patterns derived from the HIES, Section 3;
     - Estimate food and basic needs poverty lines for the "urban" states of Koror and Airai and the "rural" households in East and West Babeldaob, Peleliu and Kayangel/Angaur[3]; Sections 4 & 5;
     - Provide indications of the incidence, depth and severity of poverty, and estimates of the extent of inequality in expenditure between regions and households in the "urban" and "rural" areas, Section 6;
     - Outline the characteristics of poor households, defined as those in the lowest three deciles of per capita adult equivalent expenditure, Section 7; and
     - Provide a summary of key policy issues arising from the analysis, section 8.

5.   This report presents the first attempt to establish national poverty lines for Palau. It is therefore a benchmark analysis that provides a basis for both identifying policies and monitoring the impact of targeted pro-poor policies and strategies in the medium term development framework. Palau is a signatory to the Millennium Declaration and has endorsed the Millennium Development Goals (MDGs) as key development targets for achievement by 2015. In 2008 the government of Palau formally established an MDG Task Force and initiated the preparation of the county's first national MDG Report. This analysis will contribute substantially to that report and to a broader understanding of critical policy issues relating to hardship and poverty in Palau.

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[2]   The Head Count Ratio is not the same as the Poverty Indicator in Millennium Development Goal 1. The MDG 1 indicator, based on US$1 per day, is not yet available for Palau, or any other Pacific island Countries, as estimates of the Purchasing Power Parity exchange rates required to calculate the MDG indicator have not yet been finalised by SPC and the Australian Bureau of Statistics (ABS). The MDG 1 indicator, when available, will enable direct comparisons of 'absolute" poverty levels to be made between countries. National poverty lines, which are used in this analysis, enable assessments of relative poverty within countries.

[3]   The survey defined households as units "where normal family or household living arrangements are exercised"; and therefore excludes institutional housing such as schools, hospitals, workers dormitories etc.

6.   Providing support towards the achievement of the MDGs is an overarching goal of all the agencies that have contributed to this analysis. The better understanding of hardship and poverty in Palau afforded by this analysis will therefore help to integrate the core poverty reduction focus of the MDGs into national strategies. The information and data contained in the HIES and in the analysis will contribute to an improved ability to monitor progress towards the goals.

7.   This analysis of poverty and hardship in Palau is one of a series of national poverty reports being compiled cooperatively by national statistics offices, SPC, ADB and UNDP Pacific Centre based on the recent round of household surveys. These national reports benefit from a standard methodology as agreed at the SPC-coordinated Regional Heads of Planning and Heads of Statistics Meeting held in Noumea in September 2007 and a subsequent technical workshop on poverty analysis held in November[4].

■ ■ ■ 2. Introduction

2.1 Defining Hardship and Poverty in the Palau Context

8.   Traditional Palauan society, as well as Pacific societies generally, embraces caring for and sharing with family and Kebliil or clan. As a result, there is a continuing belief that poverty cannot and should not be a part of normal life in the Pacific region. The suggestion that there might be poverty in some form is not, therefore, something that many people have been prepared to readily accept. Indeed, the usual images of poverty (starving children, landless peasants, and men and women toiling with ox ploughs) do not immediately spring to mind in relation to the Pacific or Palau.

9.   While Palauans are perhaps somewhat better off in both financial or material terms compared to many PICs, the society still retains strong family and community ties and these have traditionally provided social safety nets for the most disadvantaged and vulnerable. However, the increasing monetisation of Pacific economies generally, including Palau where this process is even ore advanced than most, the impact of television and internet, and increasing rural/urban migration leading to greater urbanisation, have begun to undermine these traditional structures.

10.   As a consequence poverty and hardship, as now defined and understood in the Pacific, (see Section 2.2), are being increasingly accepted as concerns which need greater attention from governments and the development community. Some countries in the Pacific region, including Fiji Islands, Papua New Guinea (PNG), and Timor-Leste, have fully embraced the need to deal with increasing levels of hardship and poverty and their societal implications. Other countries, though perhaps not yet acknowledging hardship and poverty as serious issues, are nevertheless accepting that there are growing numbers of disadvantaged people who are being left behind as economic and social structures change in response to both external and internal developments.

11.   The impacts associated with rapidly rising food and fuel prices of recent months have brought issues of hardship and poverty into sharper focus. Governments are now urgently reviewing their food and fuel security situations and their macro- and micro-economic vulnerabilities to these external shocks. Information is urgently being sought that will inform the extent of the impacts and policy responses from governments that will safeguard the well-being of the people in their respective countries. The analysis of household surveys is therefore very timely to support these policy discussions. In these circumstances poverty and hardship must be seen as issues that are best dealt with before they become serious.

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[4] Details of the methodology used to compile the national poverty lines and indicators can be found on the SPC web-site <www.spc.int> in the papers for the referenced meetings.

12.   What does poverty mean then in the Palauan context? In so far as an internationally recognised "official" definition exists it is widely accepted as the US$1 per capita per day of Millennium Development Goal 1. But, as yet, this figure is not available for Palau (or Pacific countries generally) because the "purchasing power parity" indices on which this definition is based are still being developed for Pacific countries. Instead, for an income or expenditure based poverty indicator, we need to look at national basic-needs poverty lines – essentially a minimum cost-of-living measure.

13.   National basic needs poverty lines are estimated from the cost of a minimally-nutritious, low-cost diet which delivers a minimum of 2100 calories (Kcal) per day plus adequate additional nutrition to provide a sound and balanced, but basic, diet. To this is added an amount for essential non-food expenditure (e.g. housing, transport, education, clothing, utilities) which is required to provide an overall basic needs standard of living. Households which have per capita incomes or expenditure below the basic needs poverty line are then deemed to be living in poverty and or hardship.

14.   Poverty is therefore measured at the household level; it is not generally possible to disaggregate poverty on an intra-household basis. Thus if the average per capita expenditure/income of a household falls below the poverty line then all members of that household are deemed to be equally poor, similarly if a household has an average per capita income/expenditure above the poverty line then none of the members are considered to be poor. Culture, demographics and many other factors affect the actual distribution of wealth and access to food and resources in each HH. However such detail is not available from broad-based HIES.

15.   For PICs data for estimating national basic needs poverty lines at the household level are becoming available as more surveys and analysis are undertaken to quantify the extent of hardship and poverty in Pacific societies. From the work undertaken to date it is estimated that, on average across the Pacific region, approximately one-in-four households have per capita expenditure/incomes below what would be considered as the basic needs poverty line in their respective countries. On this measure poverty is estimated to be highest in PNG (37.5%, 1996), Fiji (34.4% in 2002/03), Funafuti, Tuvalu (27.6% 2005), Port Vila, Vanuatu (27.2%, 2006) and Honiara, Solomon Islands (32.2% 2006) compared with the lowest in Tonga (22.3%, 2001) and Samoa (20.3%, 2002). In general the proportion of the population falling below the respective national poverty lines is somewhat higher than the proportion of households falling below the poverty lines due to the higher size of poor HH.

16.   But poverty and hardship need to be defined in ways which are more easily understood in Pacific societies. Poverty means different things to different people at different times and in different places. This has given rise to much misunderstanding and confusion. Poverty can be either absolute, as in the US$1 per day situation, or it can be relative where people are disadvantaged compared to their neighbours in terms of national or localised regional poverty lines and standards of living. This means that poverty lines can be substantially different between different parts of the same country if there are significant variations in living standards and access to services – in the Pacific this is the case between the urban centres and rural or outer-island communities. The latter relative measure of hardship or poverty, is the measure being estimated in this paper. In the Pacific it is often said that everyone is poor but no-one suffers poverty. In the sense of experiencing absolute poverty and destitution this is generally true. But within every society, including Palau, there are those who are more disadvantaged and poorer than others, these are the ones highlighted in this analysis.

17.   Poverty and hardship may be temporary and widespread because of the impact of a natural disaster or the affects of conflict situations. For example in Solomon Islands these circumstances may have arisen as a result of the displacement of many people during the "tensions" of 1999-2002 and subsequent events, or during the

recent tsunami in Solomon Islands Western Province. It has also occurred in Fiji where many people have been displaced and suffered hardship as a result of the non-renewal of leases on their sugar-cane farms. Throughout the Pacific it occurs where people are involved in land disputes which mean that they are unable to access suitable land for cultivation or shelter and end up living in "squatter" type settlements. Although not necessarily widespread in Palau such situations do occur. Poverty and hardship may also be long-term, personal and chronic due to causes such as unemployment, sickness or disability – the latter two becoming increasingly important issues for many HH as a result of the growing incidence of non-communicable diseases (NCDs).

18.   Most discussions of poverty centre on its most extreme manifestations: absolute poverty and destitution. There are, however, many other ways in which people can be poor or can suffer hardship. Indeed people can be reasonably well fed and moderately healthy but still live in relative poverty and suffer varying degrees of hardship. Even in situations where their incomes might be just sufficient to meet their food and other basic needs, they might still lack access to basic services, such as water and sanitation or health and education facilities, to freedom of choice, or to socio-economic opportunities. This is often the case of those who live in "squatter" settlements, or who might be termed the "working poor", those who have jobs but still have insufficient income to meet all the family's needs. This "poverty of opportunity"[5] is just as important in defining the extent of poverty and hardship in a society as the lack of income or expenditure. In fact the conditions and circumstances that give rise to poverty of opportunity (poor access to or poor standards of service delivery, poor governance, limited employment opportunities, and social exclusion) are often the underlying causes of income/expenditure poverty.

19.   However defining poverty by level of cash income, or level of cash expenditure, alone might not be appropriate in the Pacific where most economies include high levels of subsistence production and own consumption, particularly in the rural areas. Overall in the past, data from censuses and HIES has often not been collected with poverty and hardship in mind, or has not been fully analysed for poverty indicators. There might also have been a lack of community participation in assessing poverty and hardship, and the socio-cultural aspects may have been ignored. This is now changing. There is a growing recognition of the importance of the data generated by HIES, both in terms of the information it can provide on poverty, but also the importance of accurately capturing subsistence production and consumption for national account purposes.

20.   In Palau however, although this does not appear to be the case as subsistence or home production is quite low; in such a situation the poorest households nevertheless become more vulnerable to external shocks, such as the recent food and fuel price increases which threaten their levels of food security and ability to maintain a minimum standard of living in a highly monetized environment.

2.2 Poverty = Hardship: A Pacific Definition of Poverty

21.   Recognising the importance of obtaining a "people perspective" on issues of hardship and poverty to complement and validate the quantitative statistical analyses, a series of Participatory Assessments of Hardship (PAH)[6] were conducted by ADB in ten PICs over the period 2001 – 2006. These PAH involved extensive consultations with traditional leaders, focus groups, local CSOs and individuals throughout the various countries. Through these consultations a working definition of Pacific poverty, or perhaps more correctly "Hardship", was defined in Human Development terms as:

An inadequate level of sustainable human development, manifested by:

- a lack of access to basic services such as health care, education and clean water;

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[5]   First used in the Pacific context in the UNDP 1999 Pacific Human Development Report, defined as "the inability of people to lead the kind of lives they aspire to."

[6]   RETAs 6002 , 6047 and 6157 covering FSM, Kiribati, Fiji, PNG, RMI, Samoa, Solomon Islands, Tonga ,Tuvalu and Vanuatu

- a lack of opportunities to participate fully in the socio-economic life of the community; and
- a lack of access to productive resources and income generation support systems (rural credit, capital, markets, skills) to meet the basic needs of the household, and/or customary obligations to the extended family, village community and/or the church.

22. The findings of the participatory assessments highlighted hardship and poverty as real issues in the lives of many people in both urban and rural areas, and on outer islands and atolls. The concerns of the people showed remarkable consistency not only between the urban and rural areas within each country, but also across the region. In other words, despite the wide differences in geography and resource endowments and the culture and ethnicity among the primarily atoll states of Micronesia and the high islands of Melanesia and much of Polynesia, the concerns of the people were very similar.

23. According to those most affected the causes of hardship and poverty centre around the need for income and access to economic opportunities, a reasonable standard of basic services and skills to meet opportunities and challenges as they arise. Meeting the needs as expressed by the people are the challenges which face governments and policy makers in framing national, sector and community level interventions aimed at alleviating the causes of hardship and poverty and achieving the MDGs. Progress towards addressing these issues is now being made as planners, policy makers and statisticians come to realise the importance and benefits of both sound evidence-based policy making and the engagement of communities in the policy process.

2.3 What is the Poverty Line

24. The estimation of poverty lines and the measurement of the incidence, depth and severity of poverty and hardship in society is not an exact science. There is considerable academic as well as empirical debate about the "best" methodology. Box 1 summarises the view of the World Bank, one of the leaders in the debate on global poverty, its measurement and the development of policies and strategies to alleviate the hardship experienced by those who are poor.

25. Notwithstanding the issues raised by the World Bank, the "Cost of Basic Needs" method has been used in undertaking this analysis. This method has been used on similar analyses in other Pacific Island countries[7] and elsewhere in the world, and provides a sound and well-tested methodology.

2.4 Estimating the Poverty Line for Palau

26. Following the "Cost of Basic Needs" methodology the estimation of poverty lines and, from them, the extent or Incidence of Poverty (IP) in Palau follows a four step process:
   a) calculating the Food Poverty Line (FPL);
   b) estimating a non-food basic-needs component;
   c) combining the FPL with the non-food basic needs component to give an estimate of the Basic Needs Poverty Line (BNPL) ; and finally,
   d) estimating the Incidence of Poverty against the BNPL benchmark from the HIES data on expenditure per capita adult equivalent per week to give the Head Count Index (HCI) and other poverty indicators measuring inequality and the depth and severity of poverty between households. These are the core indicators for MDG1.

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[7] ADB Regional Poverty Programme RETA6022, 6047, 6157 & 6414 undertook similar poverty analyses in Samoa, Tonga, and FSM and jointly with UNDP in Cook Islands, Fiji, Solomon Islands, Tuvalu and Vanuatu; and the World Bank/ADB made estimates of poverty in PNG and East Timor.

Box 1
The World Bank View

What makes a good poverty line?
We define a poverty line as the monetary cost of achieving a standard of living above which one is deemed to be poor. A poverty comparison assesses which of two contributions (of an agreed indicator of living standards among members of a group) has more poverty on average. The groups can be regions or sectors of a country, the same population at different dates, or the same population observed with and without a policy change. A special case of a poverty comparison is a poverty profile, in which groups of householdsdefined by some common characteristics 9such as where they live are compared at one date.
The guiding principle in making a poverty comparison to inform policy is that it should be consistent with the policy objective. When that objective is to reduce poverty by increasing people's command over basic consumption needs, any two individuals (at one date or at different dates.) with the same command over those needs should be treated identically. This requires that the poverty line should have fixed purchasing power over relevant commodities.

The cost-of-basic-needs method
The cost-of-basic-needs method bases poverty lines on purchasing power over basic consumption needs. This achives the desired consistency for the purposes of Bank Poverty Assessments. But putting this method into practice with imperfect data can be difficult. Once the "basic needs" are defined, we need to be able to measure their cost over time and location. Setting basic needs requires an inherent value judgement, which often leads to disagreements. Also price data are often inadequate

World Bank, 1994

27. The Basic Needs Poverty Line is therefore made up of two components: a) the cost of food and, b) the amount of expenditure required for essential non-food basic needs. It is therefore intended to represent the minimum expenditure per week, month or year that is required by an individual, household or family; firstly, to provide a basic, low-cost, minimally nutritious diet, (measured in terms of the minimum daily calorie intake required for basic human survival, which is internationally benchmarked at an average of around 2100 calories/day per capita[8]), termed the "Food Poverty Line" (FPL), and secondly, an additional amount which is required to meet the costs of purchasing essential non-food basic needs (e.g. housing/shelter, clothing, utilities, school fees, other education related costs, health, and transport) and to meet family/community/church obligations. Most of these non-food costs require cash payments and are often the underlying cause of the greatest financial hardship.

28. Together the FPL and the non-food component make up the benchmark "Basic Needs Poverty Line" (BNPL). The Incidence of Poverty is then measured against the FPL and BNPL by estimating the proportion of households and/or population which have an adult equivalent per capita expenditure (including subsistence) less than the either the FPL and/or BNPL values, referred to as the Head Count Index or Ratio. Households with per capita adult equivalent expenditure below the FPL are deemed to be in "severe" poverty since their expenditure is below that required to meet basic food needs. Those with expenditure below the BNPL are deemed to be in "basic-needs" poverty.

29. In the Pacific region as a whole, many households, particularly in the rural areas, are able to provide a high proportion of their daily food needs from their own subsistence production; however in Palau this does not seem to hold quite so well (Tables 5 & 6 and Chart 1) and section 3.2.2. In Palau there appears to be a very high

[8] This is the FAO/WHO recommended daily minimum adult calorie intake for a moderately active adult.

reliance on imported foods and home production does not on average comprise a very high proportion of food consumption. However as seen elsewhere HH in the rural areas do produce more of their own food than those HH in the urban centre.

30. Such a high reliance on imported foods leads to concerns around food security, the impact of rapidly increasing food prices on those on low incomes, and has implications for health as dietary patterns suggest that levels of balanced nutrition may not be very satisfactory. Indeed recent figures suggesting high levels of obesity and increasing prevalence of diabetes in Palau would tend to support these concerns about diet patterns. Further analysis of food consumption patterns, followed-up by nutrition and health awareness programmes, are recommendations for further action.

31. The depth and severity of poverty between households and population in the urban and rural areas can be estimated by using the Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI), Section 6.4. Estimates of inequality are made using the Gini Coefficients and expenditure distributions, Section 6.5.

■■■ 3. The Household Income and Expenditure Survey

3.1 Survey Methodology

32. The 2006 HIES comprised a total of 776 households made up of samples[9] of 389 Urban HH (from Koror and Airai states) and 387 rural households (from Kayangel/Angaur, East and West Babeldaob and Peleliu). These sample households represented a total of 4744 households, comprising 3609 Urban HH (10.8% sample) and 1135 rural HH (34.1% sample).

33. The survey results indicated a total estimated population of 18,431. This was made-up of 14,274 (77.4% of total) in the urban states and 4157 (22.6% of total) in the rural areas. This compares with the 2005 census population estimate of around 21,000. The difference results from the high number of temporary migrant workers in Palau who live in institutional accommodation and who were not included in the household survey.

34. Households covered by the survey comprised 3056 headed by Palauans (79.7% of HH and 86.6% of population), 557 headed by Filipinos (13.4%) and 262 headed by Other Asians and others (6.9%). Further details of ethnicity of HH by deciles are included in Appendix Tables A1 and A1a.

35. Information was collected on both household income and expenditure, and included information on the production and consumption of home produced foods and other commodities. In the survey the value of subsistence production/consumption in both urban and rural areas was valued at the price recorded in the Consumer Price Index (CPI).

36. As part of the survey information was collected on the consumption of alcohol, tobacco and betelnut. For the purposes of the analysis these are included as "non-food" items of expenditure. Although expenditure on these items is typically under-reported in household surveys, it was included to provide a full picture of the expenditure patterns of households vulnerable to poverty. Further analysis could either adjust these types of 'undesirable' expenditures to more realistic values or they could be assumed to provide a "coping strategy" whereby reductions in the consumption of these items could be substituted for more "essential" items.

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[9] A stratified probability proportional to size (PPS) sample selection methodology was used based on national enumeration areas, see details in Household Income and Expenditure Survey 2006, National Report, Palau Statistics Office.

37. The survey also collected information on household demographics, employment, education attainment, and household characteristics, including access to water and sanitation, energy utilization for cooking and lighting. The survey fieldwork was conducted during 2006. Support was provided to the conduct of the survey, data processing and editing by the SPC Statistics Programme.

38. Whether data on income or expenditure is used as the basis for the calculation of the poverty line and incidence of poverty depends primarily in the perceived accuracy and reliability of the two data sources. In most cases expenditure data is usually regarded as the more reliable, see Box 2, although the choice between income and expenditure may rest primarily on the reliability criteria.

Box 2
National Poverty Lines; Income or Consumption
The ADB Perspective

There are two basic ingredients in measuring poverty. The first is a poverty line that refers to a benchmark level of consumption (or income) that enables a person to attain a threshold standard of living. A person whose consumption is below this benchmark level does not attain the threshold standard of living and is thereby defined as poor. The poverty line is said to be absolute, as opposed to relative, when the threshold standard of living is held fixed both over time and space. Given that absolute poverty lines, and the poverty measures derived from these, are widely believed to be the appropriate bases on which to inform antipoverty policies in developing countries, the discussion focuses on these.

The second ingredient in measuring poverty is a survey that collects data on income and/or consumption levels from a sample of household's representative of a given population. The choice of income or consumption as an indicator of household welfare is often determined by the availability of data. Where choice is available, researches have normally preferred consumption to income on the basis that the former is a better indicator of permanent income and standard of living of people due to consumption smoothing through savings and insurance opportunities. It has also been argued that it is easier to collect information from respondents on consumption than on income. Once a poverty line has been set and survey data are available, it is a simple matter to determine how many households or people are poor.'

Unfortunately, the setting of poverty lines always involves some element of subjective methodological choice. The poverty line refers to a minimum level of living necessary for physical and social development of a person. A minimum level of living defined in monetary terms comprises both food and non-food components of consumption. An objective approach could, in principle, be adopted for computing minimum food expenditure, the dominant component in the total consumption bundle of the poor. However, non-food expenditure is clearly affected by social needs and the minimum on this count obviously differs from one society (or region) to another. …. it is difficult to consider even the physical component of minimum needs entirely on an objective basis. Despite such problems, recent literature has grown substantially to define the absolute poverty line on a reasonably, although not completely, objective basis.

Once the poverty line is defined, data are required on size distribution of income or consumption to compute the number and proportion of the population below the poverty line. Household income or consumption expenditure surveys are the principle source of such data….. ADB 2004b, pp 7 & 8

…. Poverty lines are defined either in terms of income or consumption. In practice, this choice is restricted by the availability of household survey data since most countries collect data on either household income or consumption. A few countries … collect data on both income and consumption. Income is a better measure of opportunity for consumption than actual consumption in the case of households that save. But consumption might be a better measure of opportunity for poor households that save little or in fact dis-save. Most practitioners also prefer to define poverty in terms of total consumption expenditure because income data collection faces a wider range of measurement problems. Consumption is less affected by short-term fluctuations due to the consumption smoothing opportunities available to a household. Hence, total consumption expenditure is thought to be a better indicator of the permanent income of a household, particularly in an agrarian economy….. ADB 2004b, p 41

39. In the Palau survey much more detail was available on expenditure and this analysis therefore uses per capita household expenditure, adjusted for adult equivalence[10] (a.e.), as the basis for the estimation of the poverty lines and incidence levels. All analysis in this paper, unless otherwise indicated, is therefore based on a household's per capita adult equivalent (p.c.a.e) weekly expenditure as recorded in the survey. Households deemed to be experiencing hardship and poverty are those that have per capita adult equivalent expenditure below the basic needs poverty line level. For the broader analysis of hardship and poverty characteristics the lowest three deciles of households (L3D), those that are deemed to be most vulnerable to current or future poverty, has been used as the basis for detailed scrutiny.

3.2 Overview of HIES Results
3.2.1 Household Size and Adult Equivalence

40. In the survey the overall national average household size was reported as 3.9 (3.3 a.e). However for poor or vulnerable, low-expenditure households (for this purpose those with expenditure in the lowest three deciles) the national average HH size was 5.2 (4.4 a.e), see Table 1. There was little difference between the urban and rural areas with both having very similar household sizes across all expenditure deciles.

Table 1						
Household Size						
Ranked by adult equivalent per capita HH expenditure	National		Urban		Rural	
	All Persons	Adult Equivalent	All Persons	Adult Equivalent	All Persons	Adult Equivalent
Average all Households	3.9	3.3	4.0	3.4	3.7	3.1
Lowest Quintile	5.2	4.4	5.4	4.5	5.2	4.3
Lowest Three Deciles	5.0	4.2	5.0	4.3	4.9	4.1
Highest Quintile	2.6	2.4	2.7	2.5	2.4	2.1

41. What is noticeable from the table is firstly, the lower overall household size, 2.6 persons (2.4 a.e.) in the top quintile of households, and secondly, the higher number of children in households in the lower-expenditure deciles. The table therefore illustrates that the size of family and the number of children per HH declines with increasing levels of expenditure/income. The relatively large size of HH in low-expenditure deciles has important implications for the incidence of hardship amongst these households at the per capita level. This is a finding that is consistent with the situation in other parts of the Pacific region. In general urban poor HH tend to be the largest and most disadvantaged, and better-off HH in all areas tend to be smaller in overall size and number of children. The characteristics of low-income/expenditure and poor households are discussed in more detail in Section 7.

3.2.2 Household Expenditure

42. Average household expenditure by locality is shown in Table 2. This table also indicates average weekly per capita adult equivalent (p.c.a.e.) expenditure as recorded by the survey. At the national level average p.c.a.e expenditure for the poorest quintile was only one-sixth of that of the

Table 2			
Weekly Household Expenditure			
US$ per week			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Average all Households	371.73	387.28	322.26
Lowest Quintile	190.10	207.46	162.64
Lowest Three Deciles	213.52	227.65	181.14
Highest Quintile	672.13	702.95	577.51
	US$ per capita a.e per week		
Average all Households	111.16	113.45	103.19
Lowest Quintile	43.41	45.70	37.79
Lowest Three Deciles	50.66	52.79	44.33
Highest Quintile	283.58	285.74	270.12
Ratio H20/L20	6.5	6.3	7.1

[10] Adult equivalents are derived from "equivalence factors" where children under the age of 15 years are counted as half an adult, thus a household with two adults and two children would be equivalent to 3 adult equivalents. This methodology has been adopted to take account of the downward bias that would otherwise occur in households with more children.

highest quintile HH. The average weekly HH expenditure for urban HH amounted to US$387.28 (US$113.45 p.c.a.e.) compared with US$322.26 (US$103.19 p.c.a.e.) in the rural areas. For HH in the lowest three deciles the corresponding figures were US$227.65 (US$52.79 p.c.a.e.) for urban HH, and US$181.14 (US$44.33 p.c.a.e.) for rural HH. The ratio of per capita adult equivalent expenditure between the lowest and highest quintiles, averaging 6.5 nationally, was somewhat lower for urban HH (6.3) compared to the 7.1 ratio of rural households. Expenditure levels for rural HH on average, and also in the lowest three deciles, are thus some 15% lower at the per capita level than for similar ranked urban HH.

43. In contrast to many other countries in the region the differences between urban and rural expenditure levels in Palau are relatively small. This reflects the higher level of GDP per capita in Palau and the higher standards of development generally. It also reflects the relatively compact geography of Palau, (Kayangel and Angaur notwithstanding), making distances shorter and access easier.

44. Food and non-food expenditure by HH and per capita a.e. are shown in Tables 3 and 4. Unlike many PICs levels of food expenditure were very similar between urban and rural HH across all expenditure deciles, although as expected the amounts spent per capita rise in the higher deciles; per capita a.e. food expenditure was five times higher in the top quintile compared to the bottom quintile.

45. The figures show that rural households average p.c.a.e. weekly food expenditure amounted to US$19.71 and for those in the lowest three deciles, US$9.60. This compared with the average p.c.a.e. weekly food expenditure for Urban HH of US$17.74, and for the lowest three urban deciles, US$9.73. The figures therefore indicate that urban HH in the highest two deciles were spending around five times as much per capita on food as those in the lowest two deciles. In the rural areas the difference was almost sixfold.

46. Although these figures might, prima facie, suggest that a high degree of food poverty could exist, the societal and geographic structure of Palau appear to significantly mitigate the wide differences in food spending, and thus impact on the level of the food poverty line and the consequent incidence (or rather absence) of food poverty. There is some anecdotal evidence to suggest that significant gifts of food between HH were inadequately recorded in the survey. This could account for wide variation in recorded per capita food expenditure between low and high decile HH. Thus although the diary expenditure records suggest that significant food poverty could exist, in reality this is not the case. This is discussed further in the next section.

47. For non-food expenditure rural households average weekly p.c.a.e. expenditure amounted to US$83.48; for those in the lowest three deciles it amounted to less than half as

Table 3			
Weekly Household Food Expenditure			
	US$ per week		
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Average all Households	60.79	60.55	61.55
Lowest Quintile	35.05	35.66	34.56
Lowest Three Deciles	40.88	41.94	39.22
Highest Quintile	95.00	96.54	93.44
	US$ per capita a.e per week		
Average all Households	18.18	17.74	19.71
Lowest Quintile	8.00	7.86	8.03
Lowest Three Deciles	9.70	9.73	9.60
Highest Quintile	40.08	39.24	43.71

Table 4			
Weekly Household Non-Food Expenditure			
	US$ per week		
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Average all Households	310.94	326.73	260.71
Lowest Quintile	155.06	171.80	128.08
Lowest Three Deciles	172.64	185.71	141.92
Highest Quintile	577.13	606.42	484.07
	US$ per capita a.e per week		
Average all Households	92.98	95.71	83.48
Lowest Quintile	35.41	37.85	29.76
Lowest Three Deciles	40.96	43.07	34.73
Highest Quintile	243.50	246.50	226.41

much, US$34.73; see Table 4. This compared with the weekly average p.c.a.e. non-food expenditure for Urban HH of US$95.71, and for the lowest three urban deciles, US$43.07. The generally observed pattern of lower non-food per capita expenditure in the rural areas therefore also holds for Palau, although the differences are not as marked as those seen in Solomon Islands and Vanuatu for example.

48.   The smaller differences between urban and rural non-food expenditure patterns in Palau again reflect the relatively compact geography and the concentration of the population on the two main islands of Koror and Babeldaob, the latter being partly urban (Airai), with the remainder being classed as rural.

49.   The patterns of food purchases and food produced for own consumption are shown in Tables 5, and 6, and in Chart 1. These tables and chart provide greater detail on the composition of household food expenditure patterns, and clearly demonstrate the importance of imported foods in the Palau diet, and thus the relatively low-level of home production in both urban and rural households. The heavy reliance on imports and low levels of domestic production highlight the vulnerable food security situation.

50.   Table 5 shows the comparison between food purchased and food produced for own consumption. For the average rural household food purchased amounted to US$13.11 p.c.a.e. per week compared to US$16.54 p.c.a.e per week purchased by the average urban HH. For those in the lowest three deciles however the amounts were US$7.43 and US$9.12 for rural and urban HH respectively.

Table 5					
Food Purchases & Home Production for Own Consumption					
US$ per capita adult equivalent per week per HH					
	National		Urban		Rural	
Ranked by adult equivalent per capita HH expenditure deciles	Purchased	Own Production	Purchased	Own Production	Purchased	Own Production
Average all Households	15.77	2.40	16.54	1.20	13.11	6.60
Lowest Quintile	7.09	0.91	7.39	0.46	6.38	1.65
Lowest Three Deciles	8.31	1.39	8.86	0.87	7.23	2.37
Highest Quintile	35.29	4.79	37.22	2.02	27.89	15.82

51.   In comparison the average urban HH produced only US$1.20 p.c.a.e per week of own production compared with US$6.60 p.c.a.e per week of own production by rural HH. In the lowest three deciles the corresponding figures were US$2.37 p.c.a.e per week of own production for rural HH and only US$0.87 p.c.a.e per week for urban HH. Interestingly the highest level of own production is seen in the top quintile of rural HH where US$15.82 p.c.a.e per week of own production is consumed. The low level of own production and the heavy reliance on purchased food in the urban areas is clear.

52.   Table 6 and Chart 1 show the proportion of own production in food consumption for urban and rural HH and the overall national average. Although less marked than in many PICs the difference in the level of the contribution of own production to food consumption between the rural and urban areas is still clear. Rural HH on average produce around one-third of their food needs compared to only one-fifteenth of needs produced by urban HH. In

Table 6			
Proportion of Own Production in Food Consumption			
% of total food consumed			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Average all Households	13.2	6.7	33.5
Lowest Quintile	11.4	5.9	20.6
Lowest Three Deciles	14.3	8.9	24.7
Highest Quintile	12.0	5.1	36.2

the lowest three deciles rural HH produced one-quarter of their food needs compared to just under one-tenth of needs produced by urban HH. In comparison rural HH in Solomon Islands and FSM (Chuuk) produce around two-thirds of their own food. Urban HH (Honiara and Pohnpei) in these two nations produce one tenth and one third of their food respectively.
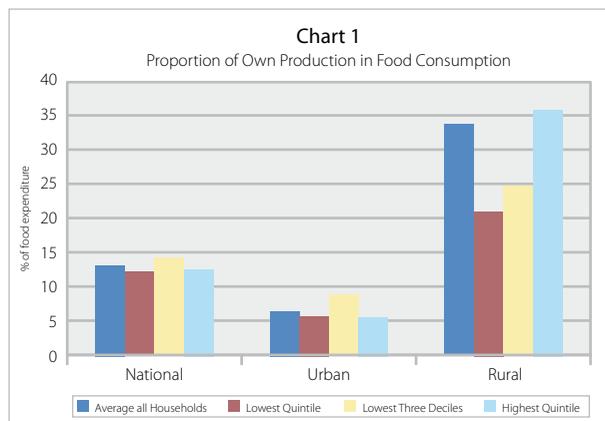
53. The relative proportions of food and non-food expenditure are shown in Table 7 and Chart 2. This illustrates the very similar pattern of food and non-food expenditure between rural and urban HH and

Chart 1
Proportion of Own Production in Food Consumption

between the differing levels of expenditure. Although HH in the highest quintile have a slightly higher non-food to food expenditure ratio the difference with HH in the other expenditure deciles is not very significant. This is in contrast with patterns seen elsewhere in the region where significant differences have been observed, especially where the rural areas are remote from urban centres.

Table 7						
Proportion of Household Food & Non-Food Expenditure						
	National		Urban		Rural	
% of total expenditure	Food	Non-Food	Food	Non-Food	Food	Non-Food
Average all Households	16.4	83.6	15.6	84.4	19.1	80.9
Lowest Quintile	18.5	81.5	17.3	82.7	21.7	78.3
Lowest Three Deciles	19.1	80.9	18.3	81.7	21.9	78.1
Highest Quintile	14.5	85.5	14.1	85.9	16.6	83.4
Food:Non-Food Ratio		4.2		4.5		3.6

54. In most parts of the Pacific region urban living, including in Palau, inevitably involves high levels of non-food expenditure; on the other hand many rural households (unlike in Palau) do not have power, water or communications bills to pay. Rural HH in other parts of the Pacific also tend to spend less on transport and on housing, the latter often being of traditional structures. Thus their need for non-food expenditure is less. Moreover, since rural cash incomes are frequently lower, the resources available for non-food expenditure are less.
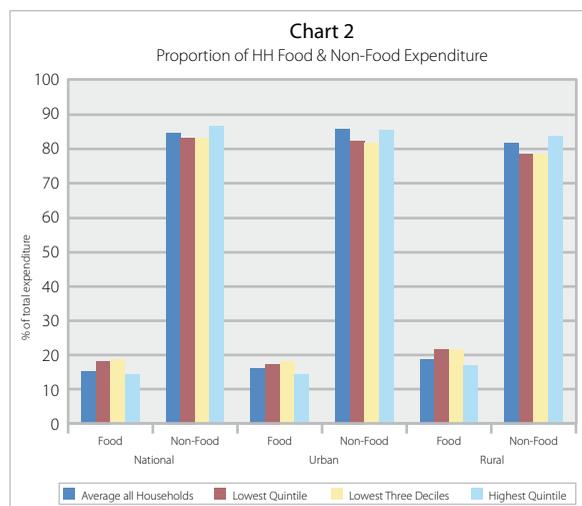
55. As a consequence in other PICs amounts spent on food and non-food are approximately equal overall but with poorer HH tending to spend more on food (ratio 55:45) compared to better-off HH spending

Chart 2
Proportion of HH Food & Non-Food Expenditure

more on non-food items (ratio 40:60). In the rural parts of many PICs the ratio for poor HH can reach 70:30 in favour of food, e.g. in Solomon Islands. In Palau the very large bias towards non-food expenditure (national average ratio 16:84) stands-out. That this ratio holds across all urban expenditure deciles is striking. Only in the rural areas amongst the lowest expenditure deciles does the ratio (at 22:78 food to non-food) move somewhat towards that seen elsewhere in the region. Palau offers a contrasting picture to that seen elsewhere amongst PICs in general reflecting the generally higher standard of living in Palau, where almost every HH has at least one vehicle, which in the absence of public transport could be regarded as a necessity.

◼◼◻ 4. The Food Poverty Line

4.1 Low-Cost Diets

56.   The first step in measuring poverty is the calculation of the Food Poverty Line (FPL). Two methods are typically used to derive food poverty lines: either using "model diets" or using actual food expenditure and consumption patterns of the lowest three decile p.c.a.e households from the daily expenditure diaries. The one method can be used to validate the results of the other since they approach the same issue, a basic diet, from different perspectives. The model diets approach from the nutrition perspective, while the other approaches from actual consumption patterns. From the FPL we need to be comfortable that actual food expenditure could meet basic nutrition needs.

57.   For Palau, the food poverty line was derived from the actual food expenditure and consumption patterns as recorded in the daily expenditure diaries of the lowest three household expenditure deciles p.c.a.e. This is the preferred approach as it gives a better reflection of local consumption preferences than the model diets. The derivation of the FPL using this method is described in detail in the following section.

58.   For comparative purposes a model diet applicable to Palau, derived from the Guam model menu developed by the SPC Nutrition Programme is given at Annex 1. Comparative analysis in other Pacific countries has shown that while there is generally little difference in using the "model menu" approach and the actual food expenditure the former tends, on average, to give a higher cost than the actual food expenditure from the household diaries. Since the model menus address not just the calorie value of the diet but broader nutritional parameters this is to be expected.

59.   The model diets or menus are "representative" baskets of items similar to the estimating technique used for calculating the CPI. Thus the menus do not necessarily represent what low-income families actually eat, (often the diets of low-income households are very poor in nutrition), but rather what such families could eat in order to stay healthy if they are only able to afford a low-level of food expenditure. The conclusion might therefore be that in reality the diets actually being consumed by HH are in fact less then optimal in their overall nutritional value.

60.   However as already noted in Section 2.4 above the FPL is anchored to a basic minimum nutrition

> **Box 3**
> **The Food Poverty Line**
>
> The food component of the poverty line is almost universally anchored to nutritional requirements for good health. This does not generate a unique monetary poverty line, since many bundles of food goods yield the same nutrition. In practice, a diet is chosen which accords with prevailing consumption patterns, about which one might expect to arrive at a consensus in most settings.
>
> Ravallion 1998

requirement of 2100 calories (Kcal) per adult per day. This nutrition benchmark has been established by WHO and is a common reference point for almost all food poverty line estimates globally[11], see Boxes 3 & 4. Referencing the nutrition benchmark to the basic energy needs of an "average adult" links to the underlying analytical approach using a "per capita adult equivalent" basis for the estimation and analysis of the poverty lines and incidence of poverty. Within the household the "average" adult equivalent benchmarks implicitly recognise that food energy needs, and other basic needs, differ from child to adult and across gender, but "average-out" over households as a whole.

Box 4
Step one: the food component

To construct a poverty line using the cost-of-basic-needs method, one begins by defining the "basic needs" food bundle. This is a normative judgment, though some judgments are more defensible than others. Nutritional requirements for good health are a widely accepted anchor for determining basic food needs. A defensible approach is to set the food component of the poverty line according to the local cost of a bundle of food goods that meet the pre-determined minimum food-energy requirements in a way that is consistent with prevailing food tastes.

How should food-energy requirements be determined? Nutritionists have estimated requirements for maintaining body weight when a person is resting, processing food, and doing various activities. The food-energy requirements needed to maintain each person's actual activity level should not be considered binding when setting poverty lines. The poorest are often underweight, which often constrains their activity levels. In such a setting, incorporating existing differences in activity levels (and indeed weights) into sub-group poverty lines will bias the poverty comparison, in that the poverty lines need not be clearly anchored to a fixed standard of living. A better practice is to use the average food-energy requirement for each age group.

World Bank, 1994

4.2 The Food Poverty Lines

61. The food expenditure from the diaries of HH in the lowest three deciles in each of the regions was analysed, Table 8 provides the national aggregate, Table 9 analyses urban HH food expenditure and Table 10 analyses rural HH food expenditure. It was observed that approximately 90% of food expenditure was accounted for by around 50 or so items in each case. The dozen items of food consumption by households in the lowest three deciles for urban and rural HH are illustrated in Charts 3 & 4.

Chart 3
Top Twelve Food Items for Urban L3D HH: % 0f Expenditure

Other 47.0
Chicken 11.3
Rice 10.5
Fizzy Drinks 5.7
Fresh & Frozen Fish 4.2
Noodles 3.8
Bread etc 2.9
Food takeaway 2.6
Other beverages n.e.c. 2.9
Tinned Tuna 2.6
Tinned Corned Beef 2.5
Egg 2.1
Fresh Milk 1.9

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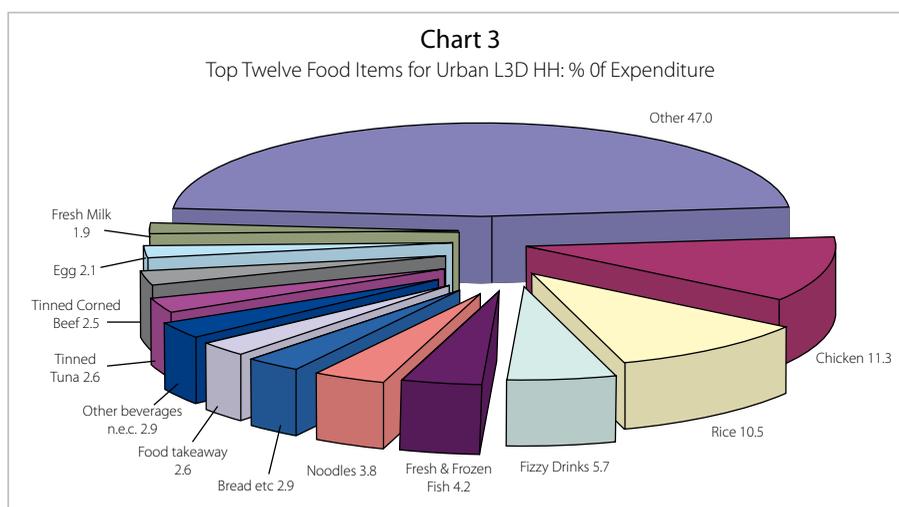
[11] The 2100 Kcal per day minimum energy intake was also used to determine the original US poverty line.

Chart 4
Top Twelve Food Items for Urban L3D Rural Households: % 0f Expenditure

Other 41.9

Tinned Tuna 2.3

Egg 2.1

Luncheon 2.4

Salad Oil 2.6

Bread etc 2.8

Taro 2.8

Tinned Corned Beef 3.4

Noodles 4.0

Fizzy Drinks 4.7

Chicken 8.6

Rice 10.4

Fresh & Frozen Fish 12.0
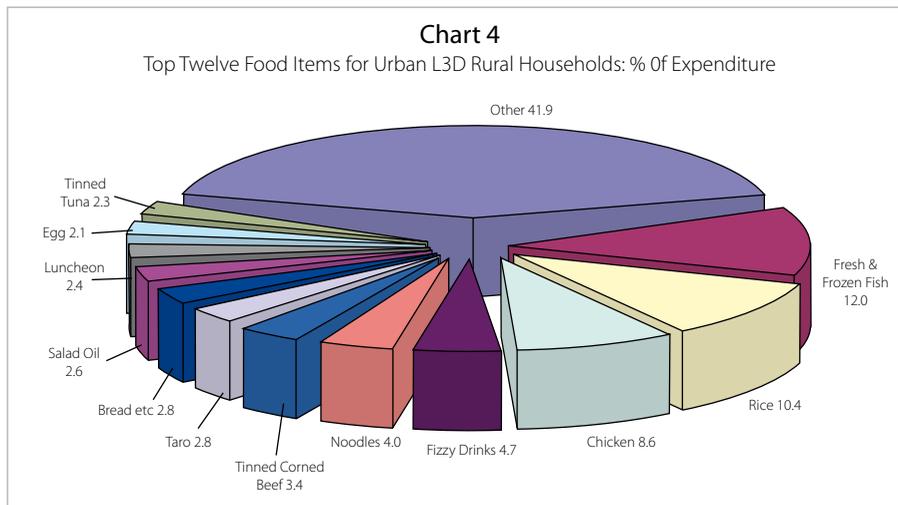
62.   These two charts highlight the vulnerability of low-expenditure HH in the face of the recent price rises for the rice and other cereal/grain based items that form the basis of the Palauan diet. The lack of local produce in the top-dozen items is also noticeable; only fresh fish features as a tope item in both urban and rural diets, while taro features only in top items of the rural diet.

63.   In Tables 8, 9 and 10 the expenditure on the top 50 or so items of food consumption as recorded in the daily diaries are listed, column A. In columns B and C the CPI price and the pricing unit are shown, and in column D the calorie value associated with each food item is indicated. To get the daily per capita a.e Kcal value and per capita a.e daily cost of these diary expenditure items as the basis for the calculation of the FPL, the following steps were taken:

  •   The notional quantity consumed of each item in CPI-units and 100g Kcal-units is estimated; columns E & F;
  •   the Kcal (energy) value from the South Pacific Food Composition Tables[12] is applied to each food item, column G;
  •   the weekly and daily Kcal values represented by each item is then calculated, columns H and I; and finally
  •   the daily Kcal value and cost of each item according to its share in the overall daily food intake is estimated, columns J and K.

64.   Summing the daily Kcal values of the three expenditure patterns (L) shows that Urban HH were notionally acquiring an average of 1,267.6 Kcal per capita a.e per day (60.4% of the required daily minimum) and rural HH 1,391.4 kcal per capita a.e per day (66.3% of the required daily minimum), with a national average of 1322.3 Kcal per day (63.0% of the required daily intake). In order to get to the minimum Kcal daily food energy intake (M) these reported values must be grossed-up to 2100 Kcal by the ratio of the recorded Kcal value to the minimum (N).

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[12]   The Pacific Islands Food Composition Tables, Second Edition, USP/FAO, 2004

Table 8										
All Households										
Estimated Food Expenditure and Daily Calorie Intake										
Item	Estimated Exp on item by L3D	CPI price	CPI Unit Kg equiv	Kcal value per 100g	Wkly Consmtn CPI units	100g Unit Equivs Consumed	Total Kcal Value	Weekly kcal p AE	Kcal pAE per day	Cost Per Day Per Cal	Cost per day
	A	B	C	D	E	F	G	H	I	J	K
					=A/B	=E*C(100g units)	=F*D	=G/AE pop	=H/7	=A/G	=J*M
Chicken	7524.10	3.84	2.268	231	1959.4	44438.5	10265284.3	1711.0	244.4	0.0007	0.18
Rice	7378.00	7.62	9.072	123	968.2	87837.4	10803998.9	1800.7	257.2	0.0007	0.18
Fresh and frozen fish	4650.57	1.8	0.454	130	2583.7	11719.2	1523502.0	253.9	36.3	0.0031	0.11
Fizzy drinks (lemonade, coke, fanta)	3895.92	0.5	0.340	165	7791.8	26507.4	4373714.9	729.0	104.1	0.0009	0.09
Noodles	2762.17	0.45	0.099	99	6138.1	6090.5	602956.9	100.5	14.4	0.0046	0.07
Bread (sliced, loaf, square, rolls, French)	2143.64	1.75	0.680	242	1224.9	8329.6	2015754.0	336.0	48.0	0.0011	0.05
Other beverages n.e.c	2016.95	0.5	0.340	165	4033.9	13723.1	2264313.4	377.4	53.9	0.0009	0.05
Tinned Corned Beef	1914.26	2.27	0.340	192	843.3	2867.2	550498.4	91.8	13.1	0.0035	0.05
Tinned Tuna	1745.06	0.82	0.198	290	2128.1	4223.2	1224726.6	204.1	29.2	0.0014	0.04
Other prepared food ready for takeaway	1539.91	3.27	0.200	375	470.9	941.8	353189.5	58.9	8.4	0.0044	0.04
Egg	1440.53	0.13	0.050	75	11081.0	5540.5	415537.5	69.3	9.9	0.0035	0.03
Fresh milk	1382.15	1.47	0.907	65	940.2	8529.7	554430.6	92.4	13.2	0.0025	0.03
Salad oil	1348.26	3.24	1.361	878	416.1	5662.6	4971761.7	828.7	118.4	0.0003	0.03
Luncheon	1227.95	2.49	0.340	192	493.2	1677.7	322114.9	53.7	7.7	0.0038	0.03
Beef fresh	1094.00	1.96	0.454	198	558.2	2531.8	501293.0	83.6	11.9	0.0022	0.03
Other Cereal and cereal Products n.e.c	1088.30	4.27	0.425	242	254.9	1083.8	262283.9	43.7	6.2	0.0041	0.03
Ice cream	1048.13	3.89	1.814	195	269.4	4888.7	953291.3	158.9	22.7	0.0011	0.02
Soya sauce	1029.42	2.34	2.240	33	439.9	9852.6	325134.2	54.2	7.7	0.0032	0.02
Pork fresh	1002.70	2.29	0.454	198	437.9	1987.9	393602.6	65.6	9.4	0.0025	0.02
Cream cracker	862.77	3.26	0.397	414	264.7	1050.4	434863.5	72.5	10.4	0.0020	0.02
Milk powder	821.12	2.94	0.400	334	279.3	1117.2	373134.7	62.2	8.9	0.0022	0.02
Other fresh/frozen meat	781.19	1.96	0.454	198	398.6	1807.9	357958.6	59.7	8.5	0.0022	0.02
Sugar	769.72	1.57	2.000	394	490.3	9805.4	3863324.8	643.9	92.0	0.0002	0.02
Cakes incl. Pastries, buns	762.15	2	0.320	439	381.1	1219.4	535334.7	89.2	12.7	0.0014	0.02
Onions and chives	757.54	0.62	0.454	30	1221.8	5542.2	166265.8	27.7	4.0	0.0046	0.02
Taro	732.04	1.00	0.454	99	732.0	3323.4	329020.6	54.8	7.8	0.0022	0.02
Condensed milk	716.85	0.84	0.340	334	853.4	2901.5	969108.2	161.5	23.1	0.0007	0.02
Coffee	696.12	1	0.227	132	696.1	1578.8	208398.0	34.7	5.0	0.0033	0.02
Tinned Mackerel	663.98	1.49	0.425	290	445.6	1895.0	549544.4	91.6	13.1	0.0012	0.02
Peanut Butter	649.17	2.37	0.510	622	273.9	1397.7	869394.0	144.9	20.7	0.0007	0.02
Hot dogs sandwich	541.97	1	0.200	263	542.0	1083.9	285074.9	47.5	6.8	0.0019	0.01
Tuna	524.85	1	0.454	204	524.9	2382.8	486096.9	81.0	11.6	0.0011	0.01
Other fresh vegetables	521.36	1.65	0.454	30	316.0	1434.5	43035.8	7.2	1.0	0.0121	0.01
Best Food	520.41	2.65	0.340	375	196.4	667.7	250383.8	41.7	6.0	0.0021	0.01
Mineral water	500.60	0.44	0.479	0	1137.7	5450.9	0.0	0.0	0.0		
Snickers	490.73	0.6	0.050	423	817.9	408.9	172983.4	28.8	4.1	0.0028	0.01
Cabin crackers	483.96	0.6	0.090	242	806.6	725.9	175677.0	29.3	4.2	0.0028	0.01
Spices (garlic, ginger, pepper, stock, turmeric etc)	477.32	1.99	0.113	30	239.9	272.0	8159.8	1.4	0.2	0.0585	0.01
Fish	469.57	1.8	0.454	130	260.9	1183.2	153829.3	25.6	3.7	0.0031	0.01
Other Foods n.e.c	435.53	1	0.200	200	435.5	871.1	174211.0	29.0	4.1	0.0025	0.01
Sausages	412.75	0.7	0.140	263	589.6	825.5	217104.8	36.2	5.2	0.0019	0.01
Coconut (drinking nut)	411.81	1	0.430	16	411.8	1770.8	28332.4	4.7	0.7	0.0145	0.01
Flour	410.26	2.04	2.268	349	201.1	4561.1	1591823.0	265.3	37.9	0.0003	0.01
Fruit Juices	391.77	0.55	0.230	34	712.3	1638.3	55703.1	9.3	1.3	0.0070	0.01
Chips	381.79	2.19	0.198	520	174.3	345.2	179493.0	29.9	4.3	0.0021	0.01
Drink mix (refresh, vita fresh)	378.52	3.6	0.454	34	105.1	477.4	16230.1	2.7	0.4	0.0233	0.01
Luku	370.24	1	0.000	30	370.2	0.4	11.1	0.0	0.0	33.3333	0.01
Sandwiches	348.93	1	0.200	282	348.9	697.9	196797.9	32.8	4.7	0.0018	0.01
Twisties, rashuns, chips (nachos)	343.42	0.39	0.038	250	880.6	334.6	83654.2	13.9	2.0	0.0041	0.01
Other milk (flavoured, zap, milk shake)	342.55	1.10	0.390	66	311.4	1214.5	80156.7	13.4	1.9	0.0043	0.01
	63203.01										

L	Kcal pcae per day from diary	1322.3	
	daily CKal minimumenergy need	2100	
M	% of minimum	63.0%	$
N	Cost per day from diary		1.49
O	Cost per day to meet minimum daily energy need		2.37
P	Weekly cost of minimum daily enrgy need = Food Poverty Line		16.60

Table 9										
Urban Households										
Estimated Food Expenditure and Daily Calorie Intake										
Item	Estimated Exp on item by L3D	CPI price	CPI Unit Kg equiv	Kcal value per 100g	Wkly Consmtn CPI units	100g Unit Equivs Consumed	Total Kcal Value	Weekly kcal p AE	Kcal pAE per day	Cost Per Day Per Cal	Cost per day
	A	B	C	D	E	F	G	H	I	J	K
					=A/B	=E*C(100g units)	=F*D	=G/AE pop	=H/7	=A/G	=J*M
Chicken	6050.47	3.84	2.268	231	1575.6	35735.0	8254785.2	1777.4	253.9	0.0007	0.19
Rice	5619.87	7.62	9.072	123	737.5	66906.3	8229470.9	1771.9	253.1	0.0007	0.17
Fizzy drinks (lemonade, coke, fanta)	3049.22	0.5	0.340	165	6098.4	20746.6	3423181.4	737.1	105.3	0.0009	0.09
Fresh and frozen fish	2254.53	1.8	0.454	130	1252.5	5681.3	738571.1	159.0	22.7	0.0031	0.07
Noodles	2032.16	0.45	0.099	99	4515.9	4480.8	443603.6	95.5	13.6	0.0046	0.06
Bread (sliced, loaf, square, rolls, French)	1565.86	1.75	0.680	242	894.8	6084.5	1472448.8	317.0	45.3	0.0011	0.05
Other beverages n.e.c	1560.72	0.5	0.340	165	3121.4	10618.9	1752123.4	377.3	53.9	0.0009	0.05
Other prepared food ready for takeaway	1407.42	3.27	0.200	375	430.4	860.8	322803.4	69.5	9.9	0.0044	0.04
Tinned Tuna	1390.62	0.82	0.198	290	1695.9	3365.4	975968.7	210.1	30.0	0.0014	0.04
Tinned Corned Beef	1321.09	2.27	0.340	192	582.0	1978.7	379916.6	81.8	11.7	0.0035	0.04
Egg	1123.71	0.13	0.050	75	8644.0	4322.0	324148.3	69.8	10.0	0.0035	0.03
Fresh milk	1032.45	1.47	0.907	65	702.3	6371.6	414153.2	89.2	12.7	0.0025	0.03
Beef fresh	1025.29	1.96	0.454	198	523.1	2372.8	469809.8	101.2	14.5	0.0022	0.03
Salad oil	884.65	3.24	1.361	878	273.0	3715.5	3262168.4	702.4	100.3	0.0003	0.03
Pork fresh	882.08	2.29	0.454	198	385.2	1748.8	346253.5	74.6	10.7	0.0025	0.03
Other fresh/frozen meat	872.99	1.96	0.454	198	445.4	2020.3	400020.8	86.1	12.3	0.0022	0.03
Luncheon	829.66	2.49	0.340	192	333.2	1133.5	217636.2	46.9	6.7	0.0038	0.03
Ice cream	826.76	3.89	1.814	195	212.5	3856.2	751951.6	161.9	23.1	0.0011	0.03
Other Cereal and cereal Products n.e.c	760.10	4.27	0.425	242	178.0	757.0	183188.1	39.4	5.6	0.0041	0.02
Cream cracker	704.76	3.26	0.397	414	216.2	858.0	355220.5	76.5	10.9	0.0020	0.02
Soya sauce	694.67	2.34	2.240	33	296.9	6648.7	219407.4	47.2	6.7	0.0032	0.02
Condensed milk	605.15	0.84	0.340	334	720.4	2449.4	818104.4	176.2	25.2	0.0007	0.02
Onions and chives	600.00	0.62	0.454	30	967.7	4389.6	131688.1	28.4	4.1	0.0046	0.02
Cakes incl. Pastries, buns	556.32	2.00	0.320	439	278.2	890.1	390759.1	84.1	12.0	0.0014	0.02
Best Food	519.93	2.65	0.340	375	196.2	667.1	250153.2	53.9	7.7	0.0021	0.02
Other fresh vegetables	488.30	1.65	0.454	30	295.9	1343.6	40307.0	8.7	1.2	0.0121	0.02
Hot dogs sandwich	472.49	1.00	0.200	263	472.5	945.0	248529.5	53.5	7.6	0.0019	0.01
Milk powder	463.15	2.94	0.400	334	157.5	630.1	210464.0	45.3	6.5	0.0022	0.01
Tinned Mackerel	453.16	1.49	0.425	290	304.1	1293.3	375061.1	80.8	11.5	0.0012	0.01
Peanut Butter	445.26	2.37	0.510	622	187.9	958.7	596313.1	128.4	18.3	0.0007	0.01
Sugar	440.73	1.57	2.000	394	280.7	5614.3	2212052.5	476.3	68.0	0.0002	0.01
Cabin crackers	428.87	0.60	0.090	242	714.8	643.3	155678.9	33.5	4.8	0.0028	0.01
Spices (garlic, ginger, pepper, stock, turmeric etc)	408.52	1.99	0.113	30	205.3	232.8	6983.7	1.5	0.2	0.0585	0.01
Snickers	399.77	0.60	0.050	423	666.3	333.1	140919.1	30.3	4.3	0.0028	0.01
Sausages	391.86	0.7	0.140	263	559.8	783.7	206117.3	44.4	6.3	0.0019	0.01
Luku	363.29	1	0.000	30	363.3	0.4	10.9	0.0	0.0	33.3333	0.01
Burgers - ground beef	355.99	5.95	1.360	225	59.8	813.7	183080.2	39.4	5.6	0.0019	0.01
Mineral water	352.45	0.44	0.479	0	801.0	3837.8	0.0	0.0	0.0	-	-
Coffee	348.07	1.00	0.227	132	348.1	789.6	104202.1	22.4	3.2	0.0033	0.01
Coconut (drinking nut)	345.92	1.00	0.430	16	345.9	1487.4	23799.1	5.1	0.7	0.0145	0.01
Other Foods n.e.c	345.55	1.00	0.200	200	345.6	691.1	138220.0	29.8	4.3	0.0025	0.01
Fruit Juices	337.32	0.55	0.230	34	613.3	1410.6	47960.8	10.3	1.5	0.0070	0.01
Sandwiches	325.93	1.00	0.200	282	325.9	651.9	183827.0	39.6	5.7	0.0018	0.01
Tuna	320.75	1.00	0.454	204	320.7	1456.2	297062.2	64.0	9.1	0.0011	0.01
Flour	308.27	2.04	2.268	349	151.1	3427.1	1196067.2	257.5	36.8	0.0003	0.01
Drink mix (refresh, vita fresh)	308.00	3.60	0.454	34	85.6	388.4	13206.5	2.8	0.4	0.0233	0.01
Chilli Sauce	280.23	2.00	0.057	111	140.1	79.9	8865.0	1.9	0.3	0.0316	0.01
Cucumber	272.52	0.75	0.454	25	363.4	1649.6	41240.7	8.9	1.3	0.0066	0.01
Fish	259.04	1.80	0.454	130	143.9	652.8	84861.2	18.3	2.6	0.0031	0.01
Garlic	252.26	3.15	0.454	20	80.1	363.6	7271.6	1.6	0.2	0.0347	0.01
Chips	250.09	2.19	0.198	520	114.2	226.1	117577.3	25.3	3.6	0.0021	0.01
Cabbage	246.41	1.65	0.454	65	149.3	678.0	44070.6	9.5	1.4	0.0056	0.01
	47834.70										

L	Kcal pcae per day from diary		1267.6
	daily Kcal minimum energy need		2100
M	% of minimum daily energy need	60.4%	$
N	Cost per day from diary		1.46
O	Cost per day to meet minimum daily energy need		2.42
P	Weekly cost of minimum daily enrgy need = Food Poverty Line		16.94

Table 10										
Rural Households										
Estimated Food Expenditure and Daily Calorie Intake										
Item	Estimated Exp on item by L3D	CPI price	CPI Unit Kg equiv	Kcal value per 100g	Wkly Consmtn CPI units	100g Unit Equivs Consumed	Total Kcal Value	Weekly kcal p AE	Kcal pAE per day	Cost Per Day Per Cal	Cost per day
	A	B	C	D	E	F	G	H	I	J	K
					=A/B	=E*C(100g units)	=F*D	=G/AE pop	=H/7	=A/G	=J*M
Fresh and frozen fish	1956.03	1.80	0.454	130	1086.7	4929.1	640784.9	462.9	66.1	0.0031	0.20
Rice	1689.32	7.62	9.072	123	221.7	20111.9	2473762.6	1787.1	255.3	0.0007	0.17
Chicken	1396.44	3.84	2.268	231	363.7	8247.6	1905191.4	1376.3	196.6	0.0007	0.14
Fizzy drinks (lemonade, coke, fanta)	759.22	0.50	0.340	165	1518.4	5165.7	852335.8	615.7	88.0	0.0009	0.08
Noodles	646.53	0.45	0.099	99	1436.7	1425.6	141132.9	102.0	14.6	0.0046	0.07
Tinned Corned Beef	552.74	2.27	0.340	192	243.5	827.9	158954.6	114.8	16.4	0.0035	0.06
Taro	454.80	1.00	0.454	99	454.8	2064.8	204414.6	147.7	21.1	0.0022	0.05
Bread (sliced, loaf, square, rolls, French)	451.75	1.75	0.680	242	258.1	1755.4	424804.4	306.9	43.8	0.0011	0.05
Salad oil	425.87	3.24	1.361	878	131.4	1788.6	1570425.1	1134.5	162.1	0.0003	0.04
Luncheon	383.16	2.49	0.340	192	153.9	523.5	100510.1	72.6	10.4	0.0038	0.04
Egg	381.34	0.13	0.050	75	2933.4	1466.7	110002.7	79.5	11.4	0.0035	0.04
Tinned Tuna	375.40	0.82	0.198	290	457.8	908.5	263465.4	190.3	27.2	0.0014	0.04
Coffee	318.48	1.00	0.227	132	318.5	722.3	95345.0	68.9	9.8	0.0033	0.03
Fresh milk	315.06	1.47	0.907	65	214.3	1944.3	126381.4	91.3	13.0	0.0025	0.03
Soya sauce	305.34	2.34	2.240	33	130.5	2922.4	96438.2	69.7	10.0	0.0032	0.03
Other Cereal and cereal Products n.e.c	295.78	4.27	0.425	242	69.3	294.6	71283.4	51.5	7.4	0.0041	0.03
Sugar	295.31	1.57	2.000	394	188.1	3761.9	1482176.8	1070.7	153.0	0.0002	0.03
Other beverages n.e.c	271.05	0.50	0.340	165	542.1	1844.2	304290.1	219.8	31.4	0.0009	0.03
Ice cream	218.85	3.89	1.814	195	56.3	1020.8	199051.6	143.8	20.5	0.0011	0.02
Tinned Mackerel	202.25	1.49	0.425	290	135.7	577.2	167395.7	120.9	17.3	0.0012	0.02
Onions and chives	191.59	0.62	0.454	30	309.0	1401.7	42049.7	30.4	4.3	0.0046	0.02
Fish	190.81	1.80	0.454	130	106.0	480.8	62509.2	45.2	6.5	0.0031	0.02
Cream cracker	188.08	3.26	0.397	414	57.7	229.0	94797.8	68.5	9.8	0.0020	0.02
Pork fresh	168.51	2.29	0.454	198	73.6	334.1	66148.6	47.8	6.8	0.0025	0.02
Tuna	155.65	1.00	0.454	204	155.7	706.7	144159.2	104.1	14.9	0.0011	0.02
Milk powder	152.12	2.94	0.400	334	51.7	207.0	69126.7	49.9	7.1	0.0022	0.02
Cakes incl. Pastries, buns	144.07	2.00	0.320	439	72.0	230.5	101196.1	73.1	10.4	0.0014	0.01
Flour	137.31	2.04	2.268	349	67.3	1526.5	532748.3	384.9	55.0	0.0003	0.01
Peanut Butter	135.06	2.37	0.510	622	57.0	290.8	180883.0	130.7	18.7	0.0007	0.01
Mineral water	112.08	0.44	0.479	0	254.7	1220.4	0.0	0.0	0.0		
Beef fresh	110.80	1.96	0.454	198	56.5	256.4	50768.8	36.7	5.2	0.0022	0.01
Other fresh/frozen meat	95.40	1.96	0.454	198	48.7	220.8	43714.2	31.6	4.5	0.0022	0.01
Spices (garlic, ginger, pepper, stock, turmeric etc)	95.11	1.99	0.113	30	47.8	54.2	1625.9	1.2	0.2	0.0585	0.01
Chips	94.64	2.19	0.198	520	43.2	85.6	44493.1	32.1	4.6	0.0021	0.01
Twisties, rashuns, chips (nachos)	93.12	0.39	0.038	250	238.8	90.7	22684.1	16.4	2.3	0.0041	0.01
Snickers	83.92	0.60	0.050	423	139.9	69.9	29582.6	21.4	3.1	0.0028	0.01
Other Foods n.e.c	82.16	1.00	0.200	200	82.2	164.3	32863.7	23.7	3.4	0.0025	0.01
Other milk (flavoured, zap, milk shake)	81.93	1.10	0.390	66	74.5	290.5	19172.0	13.8	2.0	0.0043	0.01
Condensed milk	79.16	0.84	0.340	334	94.2	320.4	107016.0	77.3	11.0	0.0007	0.01
Chilli Sauce	78.82	2.00	0.057	111	39.4	22.5	2493.6	1.8	0.3	0.0316	0.01
Tinned Sardines	74.05	1.20	0.106	290	61.7	65.4	18970.3	13.7	2.0	0.0039	0.01
Salt	73.53	1.69	0.737	0	43.5	320.7	0.0	0.0	0.0		
Sausages	72.52	0.70	0.140	263	103.6	145.0	38143.9	27.6	3.9	0.0019	0.01
Bananas	72.19	0.70	0.454	103	103.1	468.2	48224.2	34.8	5.0	0.0015	0.01
Tomato Sauce	71.98	2.19	1.020	114	32.9	335.2	38218.0	27.6	3.9	0.0019	0.01
Best Food	70.36	2.65	0.340	375	26.6	90.3	33853.3	24.5	3.5	0.0021	0.01
Butter/margarine	69.43	1.71	0.454	727	40.6	184.3	134002.8	96.8	13.8	0.0005	0.01
Hot dogs sandwich	66.97	1.00	0.200	263	67.0	133.9	35227.6	25.4	3.6	0.0019	0.01
Chicken (free range)	65.89	3.84	2.268	231	17.2	389.1	89888.3	64.9	9.3	0.0007	0.01
Fruit Juices	65.52	0.55	0.230	34	119.1	274.0	9316.0	6.7	1.0	0.0070	0.01
	14867.53										

L	Kcal pcae per day from diary	1391.4	
	daily Kcal minimum energy need	2100	
M	% of minimum daily energy need	66.3%	$
N	Cost per day from diary		1.52
O	Cost per day to meet minimum daily energy need		2.29
P	Weekly cost of minimum daily enrgy need = Food Poverty Line		16.01

65. The actual energy-equivalent consumption figures recorded in the diaries suggest that there may have been some under-reporting of food-energy intake on the part of the survey households in the lowest expenditure deciles. This is a similar situation to that found in other surveys. This could have occurred either through HH not fully recording all purchases, or more likely, through the under-reporting of food-gifts received from relatives or meals taken with relatives. In order therefore to estimate the cost of acquiring the minimum food-energy intake it is necessary to "gross-up" the recorded diary amounts to the 2100 Kcal per day figure.

66. The notional estimated daily cost of the food items (O) is then grossed up also by the factor (M). This gives the adjusted daily cost of acquiring the minimum 2100 kcal per day from the listed items.

67. Finally, the daily cost is converted to a weekly value (P). Thus the cost of acquiring a minimum adult equivalent diet in urban Palau is estimated at US$2.42 per day and US$16.94 per week. For rural HH the corresponding costs were US$2.29 per day and US$16.03 per week. The national average cost of acquiring the basic 2100 Kcal was estimated at US$2.37 per day and US$16.60 per week. These are the Food Poverty Lines used in the analysis, Table 11.

Table 11			
Weekly Adult Equivalent Per Capita Food Poverty Lines			
	Food Poverty Line		
			per HH per week a.e
US$	per capita a.e per day	per capita a.e per week	average for HH in lowest three deciles
National average	2.37	16.60	69.96
Urban	2.42	16.94	73.05
Rural Areas	2.29	16.03	65.50

68. This table indicates that HH in the lowest three deciles would need to spend US$73.05 and US$65.50 in the urban and rural areas of Palau respectively to acquire a basic minimum food intake for all adult-equivalent members of the HH. Overall the national average FPL is estimated to be US$69.96 per adult equivalent per household per week.

69. Using the model menu the FPL would have been an estimated US$3.50 p.c.a.e per day and US$24.50 p.c.a.e per week, Annex 1. Thus the cost of the model menu is approximately 50% higher than the cost of the basic diet derived directly from the diaries.

70. The national average adult equivalent HH food expenditure of US$69.96 per week translates into an average annual figure of US$3638 for food expenditure, which is consistent with the overall HIES estimate of average food expenditure per HH of US$3151 per capita (all persons) per annum.

71. As noted, the data suggest that there has been some under-recording of food consumption in the lowest three deciles analysed. The explanation for this probably lies in the redistributional aspects of Palauan society and the fact that in many households children are cared for by grandparents or other family members, and not necessarily by parents. Parents who live in Koror and whose children reside with family members and attend village schools would normally provide food and other household items to these "carer" families on a regular basis. These items have probably not been adequately captured by the recipients but have been included in the expenditure of the original purchasers, accounting for some of the wide differences between the per capita a.e. food expenditure of high and low decile households.

72. This has implications for the recorded incidence of basic needs poverty discussed in the following sections. The relatively high proportion of children recorded as living in HH with a HH head of over 55 years and in the lowest three expenditure deciles tends to support this hypothesis. This is discussed further in section 7.5.

◼◼◻◼ 5. The Basic Needs Poverty Line

5.1 Non-Food Basic Needs Expenditure

73. The FPL is the core of the BNPL calculation. However in practice, even a low-income/ low-expenditure family cannot be expected to survive on food alone; there are always other minimum costs of basic needs for survival. Therefore an allowance for non-food basic needs expenditure is added to the value of the Food Poverty Line to arrive at the "Basic Needs Poverty Line". The allowance for basic non-food expenditure is estimated from the HIES based on the non-food costs reported by households. The costs of non-food basic needs might include expenditure for housing/shelter, essential transport and communications, school fees and other education related costs, medical expenses, clothing and donations to community and religious events.

74. There are a number of generally accepted methods of calculating non-food expenditure for the poverty lines. The World Bank suggests that a "non-food factor" should be applied to the Food Poverty Line, commonly referred to as the "Engels" coefficient. This is based on the proportion of non-food expenditure actually incurred by households which have an average total income equal to or less than the Food Poverty Line, see Box 5. This is intended to represent the bare minimum additional expenditure required to meet non-food basic needs. Households whose total income is equal only to the Food Poverty Line have to choose very carefully between food and non-food items; any expenditure on non-food items can be seen as being an essential trade-off between basic food and basic non-food.

75. Alternative methods may be to calculate an absolute amount of non-food expenditure for a particular category of households. This could be for the lowest income quintile, the lowest three deciles or for any particular decile as may be chosen. The higher-up the income deciles that the reference point is chosen, so the greater will be the level of expenditure on non-food items.

76. For this analysis, and to be consistent with other analyses undertaken for Pacific Island countries, the average non-food expenditure for HH in the lowest three deciles is taken as the basis for the non-food factor. As noted above, for Palau the ratio of food:non-food expenditure (around 1:4) is very high and therefore the direct application of the Engels Coefficient would give an unrealistic level of non-food expenditure based directly on the estimated FPL. Thus the average amount of non-food expenditure for the lowest three deciles is taken as a fixed amount of expenditure on non-food basic needs.

77. Based on the recorded non-food expenditure of HH in the lowest three deciles, the estimates of non-

> **Box 5**
> **Step two: the non-food component**
>
> The next problem is making an allowance for nonfood consumption. In principle, one could proceed the same way for non-food goods--identify a normative bundle of such goods, and cost that bundle separately in each region, sector or date. However, anchoring the nonfood part of the poverty line is often difficult. There is even less agreement on the normative standard (comparable to food requirements). And comparable data on nonfood prices are rarely available.
>
> Consistency with the consumption behavior of those who are found to be "food poor" is a defensible guide. A "basic nonfood good" can be defined as one that a person wants enough to forgo a "basic food". One can thus measure the nonfood component of the poverty line as the expected value of nonfood spending by a household that is just capable of affording the food component of the poverty line. This value constitutes the minimum allowance for nonfood goods consistent with being able to afford the bundle of food goods needed to reach food-energy requirements by prevailing diets. But again, that choice is a value judgment, and in some settings a more generous allowance might be considered appropriate. The key point is that the allowance should be equally "generous" for different groups if the poverty comparison is to be of use in guiding policies for fighting absolutely poverty.
>
> World Bank, 1994

food basic-needs costs are US$44.30 p.c.a.e per week for urban HH; US$36.13 p.c.a.e per week for rural HH, with the national average for non-food basic-needs expenditure estimated at US$41.65 p.c.a.e. per week.

78.   The actual average non-food expenditure recorded by households with adult equivalent per capita expenditure in the lowest three expenditure deciles provides the essential non-food basic needs component which is added to the food poverty line to give the Basic Needs Poverty Line (BNPL). Using these non-food basic-needs estimates together with the estimates of the FPL the Basic Needs Poverty lines are shown in Table 12 and illustrated in Chart 5.

79.   The need for higher basic-needs non-food expenditure in urban centres is often an important factor in determining relative poverty. For instance, a rural household with a relatively high level of expenditure might be relatively poor with the same expenditure in an urban situation where there is a need to meet a wider range of non-food essentials, often unavailable in the rural areas. It is therefore important to note that national, and more particularly regionally based poverty lines, measure relative poverty in a specific set of local circumstances; locally derived food costs and specific, and available, non-food "essentials". Benchmark poverty lines can therefore vary depending on these circumstances.

80.   As noted elsewhere expenditure patterns in Palau offer a contrast with many other PICs. Whilst the food:non-food ratio is much higher overall the difference between the urban and rural areas is generally lower than elsewhere in the region.

Table 12				
Weekly Adult Equivalent Per Capita Basic Needs Poverty Lines				
US$ per capita adult equivalent per week	Food Poverty Line	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH in L3D a.e
		A	B	C = A+B
National average	16.60	41.45	58.05	244.67
Urban	16.94	44.30	61.24	264.10
Rural Areas	16.03	36.44	52.47	214.39

However the lower average level of expenditure in the rural areas leads to a greater vulnerability for lower expenditure HH.

5.2 Basic Needs Poverty Lines

81.   The BNPL is calculated by adding the estimated non-food basic needs expenditure to the food poverty line. It may be seen from column C of Table 12 that there is an approximate 15% difference in the p.c.a.e BNPL between the urban and rural areas. At the HH level this translates into an almost 20% difference when the varying HH sizes between urban (Koror/Airai) and rural HH, especially those in the lowest three deciles are taken into account, see final column of Table 12.

Chart 5
Palau: Food and Basic Needs Poverty Lines
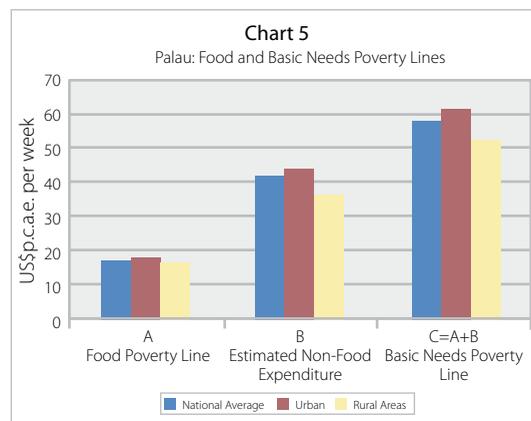
82.   Nationally from Table 12 it is seen that the estimated BNPL amounted to US$58.05 p.c.a.e. per week (equivalent to US$244.67 for the average size of L3D HH). For urban HH the weekly p.c.a.e. BNPL was US$61.24 equivalent to US$264.10 per L3D HH, and for rural HH the p.c.a.e BNPL was US$52.47, equivalent to US$214.39 for an L3D HH.

83.   Chart 6 illustrates the estimated weekly adult equivalent cost per HH of the food and basic-needs components of the national poverty lines for Palau. These suggest that each HH in the bottom three expenditure deciles with an average size of approximately 4.2 adult equivalents (or 5.0 persons including children under 15 years) would need to have an income (or access to own production) of US$12800 per annum. This compares with the average income (including own production) of US$19700 from the aggregate HIES survey data.

Chart 6
Weekly Cost of HH inLowest Three Deciles for Food and Basic Needs Poverty Lines
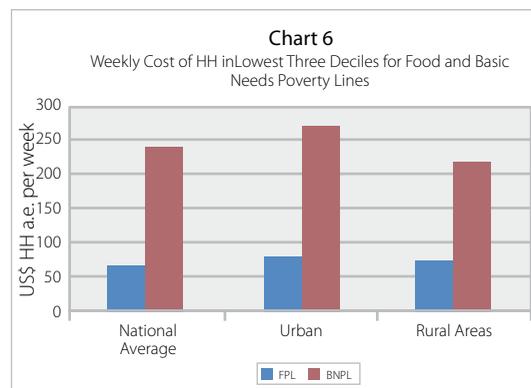
84.   Coincidentally the figure of US$12800 is approximately two-thirds of the average level of HH expenditure recorded in the HIES and is therefore in-line with the "relative" poverty measure often used in more developed, higher-income economies[13].

▪▪▪ 6. The Incidence, Depth & Severity of Poverty in Palau

6.1 Head Count Ratio

85.   On the basis of the per capita a.e. Food and Basic Needs Poverty Lines in Table 12, the incidence of poverty observed from the household per capita adult equivalent expenditure in the HIES data is discussed in the following section and summarised in Table 13: Incidence of Basic Needs Poverty for Households and Population, and illustrated in Chart 7. The incidence of poverty is measured by the "Head Count Ratio" which indicates the proportion of either households or population which had per capita adult equivalent weekly expenditure less than the Basic Needs Poverty Line.

6.2 Incidence of Food Poverty

86.   It was noted in the previous section that there appeared to have been an under-recording of food expenditure in the HH diaries. The structure of Palau society and the concentration of working HH in Koror, often with children and grandparents in the villages of Babeldaob, results in many HH receiving "gifts" of food that have not been recorded. The diary records also suggest that there has been an under-recording of food expenditure generally. The notional kcal values of food purchases recorded in HH diaries in both urban and rural areas amount to only about two-thirds of the required minimum per day, see Tables 8, 9 and 10. This might suggest therefore that many households are in food poverty; however this is clearly not the case. Recent announcements from the Department of Health indicate a high incidence of diabetes and overweight/obesity suggesting that whilst there is no food poverty there may nevertheless be a high degree of "malnutrition". That this could well be the case is supported by the main food items from the HH diaries as illustrated in charts 3 and 4 above. It is therefore concluded that food poverty in Palau is not an issue, but that poor nutrition certainly is. The survey data on food consumption should therefore be of considerable interest and value to the Department of Health in providing new information to support health and nutrition awareness campaigns.

87.   Thus as noted elsewhere in the Pacific region, those HH experiencing "food poverty" may not necessarily be going hungry. Rather, they are likely to be consuming a very poor diet with inadequate nutrition, and are thus more likely to experience health problems as a result. These health problems then translate into lowered learning abilities in children at school and subsequently their less likelihood, as adults, in getting employment; a perpetuation of the poverty cycle. The reported increases in non-communicable diseases, many of which are related to diet (diabetes,

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[13] The national basic needs poverty line for continental EU countries is equivalent to 50% of median income and for UK 60% of median income.

6.3 Incidence of Basic Needs Poverty

88. The estimated incidence of basic needs poverty is also shown in Table 13 and illustrated in Chart 7. Nationally it is estimated that 18.4% of households representing 24.9% of the population, had weekly p.c.a.e. expenditure less than the basic needs poverty line. For Urban households the proportion having p.c.a.e. expenditure below the BNPL is estimated at 19.2% (26.2% of the urban population) and for the rural areas 20.8% of HH and 28.9% of the rural population.

Table 13		
Incidence of Poverty		
Proportion of HH and Population with Weekly Per Capita a.e. Expenditure less than Basic Needs Poverty Line		
	Households	Population
%	Basic Needs	Basic Needs
National average	18.4	24.9
Urban	19.2	26.2
Rural Areas	20.8	28.9

89. The incidence of basic needs poverty in Palau is lower than the average in comparison with the rest of the Pacific region. On average the incidence of basic needs poverty at the HH level across the Pacific is estimated to be around one-in-four, and one-in-three for the population. This compares with one-in-five HH and just over one-in-four of the population in Palau.

Chart 7
Incidence of Basic Needs Poverty
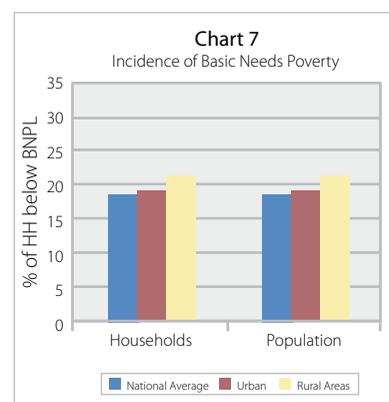
90. These estimates of poverty incidence therefore suggest that 3737 people in urban HH, including 1156 children under 15 years, were unable to afford a basic minimum standard of living. In the rural areas the number so affected is estimated to have been around 1202 of the population, of which 399 are estimated to have been children. The impact of poverty on children is discussed further in section 7.4 below.

91. With the recent rapid increases in the price of fuel and imported foods, notably rice and cereal products which feature prominently in the diets of both urban and rural Palauan HH there may be many more households and individuals who now have expenditure only just above the basic needs poverty line and who are therefore becoming increasingly vulnerable. It is estimated therefore that additionally 818 urban population (including a 168 children) and 237 people in the rural areas (including an additional 62 children) have p.c.a.e. household expenditure no more than ten percent above the urban and rural BNPL respectively. These represent 4.5% of the urban and 4.2% of the rural populations. With rising prices continuing and the threat of and/or declining incomes/expenditure in the face of possible global recession these people are highly vulnerable to slipping below the poverty lines.

92. These figures suggest that although Palau has a high GDP per capita relative to almost every other country in the region, the associated high costs of living are a major factor for those who are not engaged in the formal sectors of the economy. Although Koror is the primary location of work and employment (the Capitol at Melekeok notwithstanding, since most of those working in the Capitol live in Koror), there are many households in Koror whose expenditure cannot cover the basic-needs costs of a reasonable minimum standard of living. There are many therefore who might be classified as working poor. They may be in employment, either full or part-time, but their incomes and thus expenditure is insufficient to meet all their family's needs. A high level of aggregate income or expenditure does not necessarily provide for a reasonable standard of living when the HH size is large and thus the per-capita income/expenditure is lowered.

93.   Given the ease of transport and communication between the urban centres on Koror (and Airai) and the primary rural areas in East and West Babeldaob, there is little difference between the urban and rural incidence of basic needs poverty.

6.4 Depth and Severity of Poverty

94.   The depth and severity of poverty are measured by the Poverty Gap Index[14] (PGI) and the Squared Poverty Gap Index (SPGI)[15] respectively, Table 14. The former is a measure of the depth of poverty being experienced by each household below the basic needs poverty line. The latter, the SPGI, measures the severity of poverty by giving more weight to the poorest households whose poverty gap is greatest. The higher the indices the greater is the depth and/or severity of poverty within the population.

95.   The national PGI for Palau is calculated as an index of 6.6 which is similar to Tonga and Samoa and less than estimates for Fiji and FSM (Tonga 7.7, Samoa 6.5, Fiji 11.2, & FSM 9.8). This implies that the depth of poverty is similar to the regional average. For urban HH the PGI was estimated at 6.7 and for the rural areas at 7.7. The PGI is an important poverty indicator being Indicator 2 of Target 1, Goal 1 of the MDGs.

Table 14		
Depth and Severity of Poverty		
	Poverty Gap Index	Squared Poverty Gap
National average	6.6	2.6
Urban	6.7	2.5
Rural Areas	7.7	2.9

96.   The SPGI, measuring the severity of poverty, suggests that Palau experiences a generally lower level of poverty severity than other regional countries. The SPGI at the national level was measured at 2.6, compared with national level SPGIs of 5.1 in Fiji, 4.8 in FSM, 4.0 in Tonga and 2.6 in Samoa. For urban HH the SPGI was estimated as 2.5 and 2.9 in the rural areas.

97.   Although not significant there is nevertheless a noticeable difference in both the depth and severity of hardship being experienced between urban and rural HH suggesting that, in general, rural HH are more disadvantaged than those in the urban areas of Koror and Airai.

6.5 Income Distribution and Inequality

98.   Levels of income distribution and inequality can be illustrated in a number of ways. Table 15 summarises the Gini Coefficients (where a higher coefficient indicates greater inequality and a lower one represents less inequality). The figures indicate that at the HH level (total HH expenditure) inequality in Palau is relatively low both nationally (Gini = 0.25) and in both the urban (Gini = 0.24) and rural areas (Gini = 0.25). However analysing the data at the adult

Table 15		
Gini Coefficients of Inequality		
	HH Gini Coefficients	Pop AE Gini Coefficients
National average	0.25	0.39
Urban	0.24	0.39
Rural Areas	0.26	0.43

[14]   The Poverty Gap Index gives an indication of how poor the poor are and reflects the depth of poverty. The formula calculates the mean distance below the basic needs poverty line as a proportion of the poverty line where the mean is taken over the whole population, counting the non-poor as having zero poverty gap. The PGI is an important indicator as recognised by its inclusion as a specific indicator in MDG1.

Poverty Gap Index: $1/N*(\sum_{}^{m}(BNPL- y_i)/BNPL$

where: N = total number of households, m = number of households below basic needs poverty line; and y_i equals expenditure of each household.

[15]   Through the process of squaring the index the SPGI gives greater weight to those at the lowest consumption/income levels and thus better reflects the severity of the poverty gap. In both the PGI and SPGI the higher the index the greater the depth and severity of poverty respectively.

equivalent population level suggests that inequality is rather greater. This again reflects the impact of the larger size of HH in the lower expenditure deciles. At the per capita level the Gini for the urban population is 0.39 and for the rural population it rises to 0.43, nationally the population Gini is estimated at 0.39.

Chart 8
Distribution of HH Expenditure by Decile
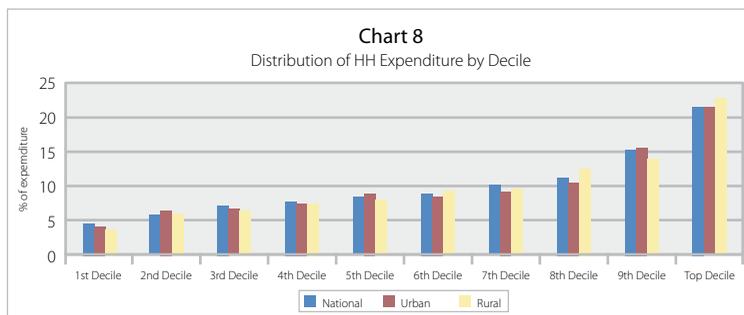
99. Chart 8 shows the share of expenditure incurred by each decile; Appendix Table A2 provides full details of the proportion of expenditure by decile. On average the poorest ten-percent of all households incurred about 4.6% of expenditure while the top decile of households incurred around 21.0% of all expenditure. There was little variation between the urban and rural areas with the lowest three deciles in the urban areas having a slightly greater share of expenditure (17.6%) compared to 16.8% in the rural areas. However the top three deciles in the urban area had 46.2% of expenditure while in the rural areas the top three deciles captured 48.1% of all expenditure. The ratio of the share of the bottom quintile to the top quintile of HH (MDG Indicator 3 of Target 1, Goal 1) was 3.5 at the national level, 3.4 for urban HH and 3.6 for rural HH. The higher ratio for the rural areas provides additional support to the conclusion that inequality is somewhat higher in the rural areas then in the urban centre.

100. Notwithstanding the higher population Gini coefficients, the foregoing analysis has illustrated that the gaps between expenditure and basic-needs poverty levels of urban and rural households are relatively low. This reflects both social and geographic conditions in Palau which support significant redistributional features. It reflects that although serious poverty is not an issue for Palau, there are, nevertheless, a significant number of households experiencing hardship and that appear to be struggling to meet the costs of basic-needs in what is undoubtedly a high cost society.

7. Who Are the Poor and What are their Characteristics?

7.1 Introduction

101. To gain a better understanding of the differences between the urban and rural areas in terms general living conditions the next section begins to analyse these issues. Although the actual incidence of poverty as measured by the BNPL above shows that only 19.2% of urban HH and 20.8% of rural HH fell below the respective poverty lines, the following analysis of characteristics looks primarily at HH in the lowest two (quintile) and three expenditure deciles in each region. This provides a broad perspective of the conditions experienced by the least well-off and most disadvantaged (in the lowest quintile), and those that are most vulnerable in the current circumstances of rapidly rising food and fuel prices, those in the third decile.

102. The following tables and charts therefore begin to analyse the characteristics of the poor in the sense of those in the lowest three deciles of adult equivalent per capita expenditure. It compares the circumstances of these households with those households deemed "non-poor".

7.2 Location of the Rural Poor

103. Table 16 and Charts 9 and 10 illustrate the location of the rural poor by household and population respectively across the states.

Table 16				
Location of Rural HH and Population in Lowest Three Deciles				
%	All Rural HH	HH in L3D	All Rural Population	Rural Population in L3D
Kayangel/Angaur	15.7	33.0	15.2	28.4
East Babeldaob	35.9	18.8	31.3	16.3
West Babeldaob	32.4	38.2	38.0	44.5
Peleliu	16.0	10.0	15.5	10.8
Total	100.0	100.0	100.0	100.0

104. The figures in Table 16 and Chart 9 suggest that HH in the states of Kayangel/Angaur and in West Babeldaob are more likely to be experiencing hardship than those in the other rural areas. Kayangel/Angaur accounts for 15.7% of all rural HH but includes 33.0% of those rural HH falling below the BNPL. In population terms Kayangel /Angaur accounted for 15.2% of the total rural population but had 28.4% of those living below the BNPL, chart 10.

105. The situation for West Babeldaob was similar. This area accounted for 32.4% of all rural HH but had 38.2% of those HH falling below the BNPL. West Babeldaob accounted for 38.0% of the rural population but had 44.5% of those falling below the BNPL.

106. Kayangel and Angaur are the most remote parts of the country and therefore have less access to employment and services and this likely impacts on the extent of poverty being experienced. As noted in the following section, there are on average significantly more elderly HH heads in the rural areas than in the urban centre. Whilst these states appear to be statistically the most disadvantaged traditional social structures and safety nets will have mitigated the extent of the hardship actually being experienced.

107. East Babeldaob and Peleliu were the places with lower shares of both HH and population falling below the BNPL. It is of course very likely that the West Babeldaob situation is impacted by the redistributional affects of those who live and work in Koror but who frequently visit their home villages bringing gifts of food, money and other items with them.

Chart 9
Location of the Rural Poor: Households

Chart 10
Location of the Rural Poor: Population

7.3 Age of Household Heads

108. Table 17 and Chart 11 indicate that a higher proportion of poor HH, those in the lowest quintile and lowest three expenditure deciles, are headed by elderly persons than would be expected from the share of elderly in the population as a whole. Nationally 22.7% of HH were headed by those aged 60+; however in the lowest

two deciles the proportion was 26.0%. In the urban centre the proportion of HH in the bottom two deciles headed by those over 60 was 27.7%, compared to only 23.3% of rural HH. For those HH in the bottom three deciles the corresponding figures were 36.6% in the urban centre and 34.3% in the rural areas.

109. Although these figures suggest that elderly headed HH are significantly disadvantaged the structure of Palauan society and its redistributional nature within the extended family will mitigate the situation. The figures therefore support the view that many elderly-headed HH are supported by younger family members working in the urban centre while elder members care for children.

110. At the other end of the age spectrum the proportion of HH heads under 25 years is very small, amounting to only 1.2% of all households. However of these few households 30% are in the bottom, poorest quintile, and a further 39.5% are in the top quintile. This suggests that youthful HH heads are as likely, on average, to be considerably better-off as they are to be worse-off.

7.4 Gender of Household Heads

111. The proportion of female-headed households is shown in Table 18 and Chart 12. This suggests that female headed households are slightly disadvantaged overall. Nationally 26.5% of all HH were headed by females, and accounted for 27% of urban HH and 24.8% of rural HH. Female headed HH were under-represented in the lowest two urban deciles, accounting for only 14.9% of HH, but were very much over-represented, 27.9% of HH, in the lowest two deciles in the rural areas. The situation was even more marked in the lowest three rural deciles where 40.1% of all HH were headed by females. In the urban centre 29.9% of HH in the lowest three deciles were headed by females suggesting that there were a considerable number of female headed HH in the third decile, and therefore amongst the most vulnerable in the present circumstances of rising prices.

Table 17			
Proportion of Household Heads Aged 60+ Years By Decile			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Average all Households	22.7	0.0	28.2
Lowest Quintile	26.0	27.7	23.3
Lowest Three Deciles	36.7	36.6	34.3
Highest Quintile	19.1	20.5	15.5

Chart 11
HH Heads Aged 60+ Years
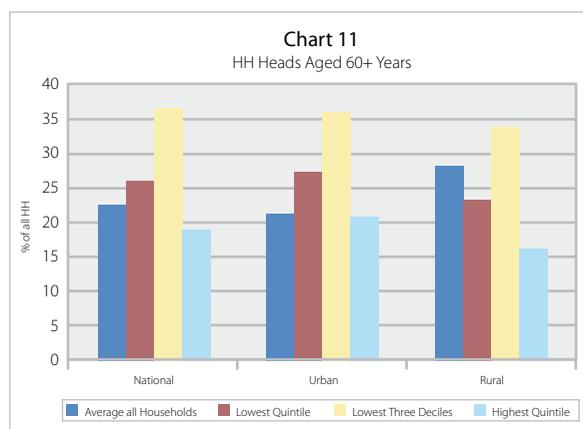
Table 18			
Proportion of Households Headed by Females By Decile			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Average all Households	26.5	27.0	24.8
Lowest Quintile	17.7	14.9	27.9
Lowest Three Deciles	31.3	29.9	40.1
Highest Quintile	21.3	20.8	17.7

Chart 12
Proportion of Female Headed Household by Aggregate Decile
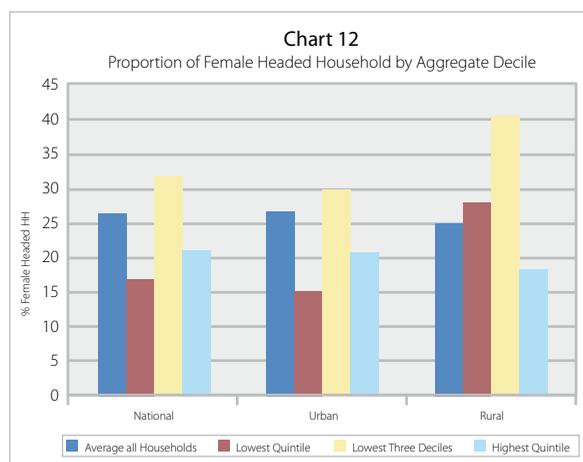
112. Chart 12 illustrates that in the rural areas female headed households are particularly over-represented in the lowest three deciles of households.

113. Table 19 and Chart 13 provide an analysis of all females by expenditure decile. Nationally females comprise 49.3% of the population, in the urban centre the proportion is 50.1% and in the rural areas only 46.4%. The figures in the table suggest that there are proportionately more females in the lower expenditure deciles.

Table 19			
Proportion of Females By Decile			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
All Households	49.3	50.1	46.3
Lowest Quintile	25.8	26.5	26.6
Lowest Three Deciles	38.0	38.1	40.8
Highest Quintile	14.9	15.3	12.8

114. In the urban areas 38.1% of females are in HH in the lowest three deciles, while in the rural areas the proportion rises to 40.8%. This contrasts with the much lower proportion of females in the highest two deciles, only 15.3% in the urban centre and 12.8% in the rural areas. Appendix Table A3 provides details of females by age group and decile in both urban and rural areas.

Chart 13
Proportion of Females by Decile
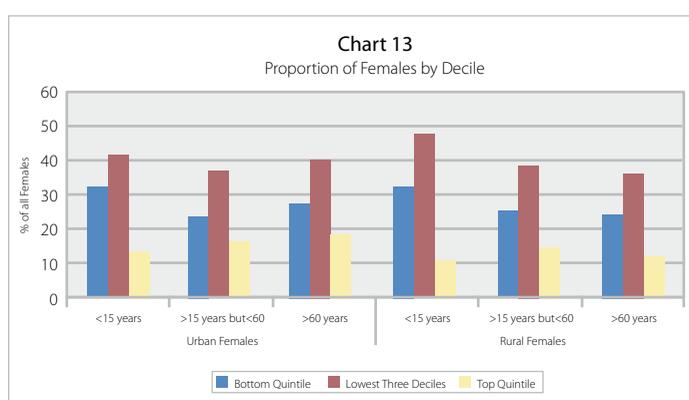
7.5 Ethnicity of Poverty

115. Although households headed by Palauans are predominant, comprising 79% of all households, there are large minority groups with Filipinos accounting for 14% of all households and other nationalities the remaining 7%; see Appendix Tables A1 and A1a.

116. Palauan households are however slightly over-represented in the lowest quintile with 82% of these being headed by a Palauan. Filipino households account for 11% of those in the lowest quintile and others 7%, in line with their proportion in the total.

117. From the perspective of within-ethnicity distribution it is estimated that 20.5% of Palauans are in the lowest quintile and 29.1% in the lowest three deciles. Amongst all Filipinos, approximately 16.5% of households are in the lowest quintile and 32.1% in the lowest three deciles. It is significant, however, that amongst "other Asians" 23.3% are in the lowest quintile and 42.2% are in the lowest three deciles. Thus although this group make up only a small proportion of the population they are amongst the most disadvantaged.

7.6 Children in Poverty

118. The survey results indicate that there were 5135 children (27.8% of total population) under the age of 15 years; (2720 boys and 2412 girls, a ratio of approximately 113 boys per 100 girls). Of these, 3905 children were to be found in the urban centre (equivalent to 27.4% of the urban population) and 1227 in the rural areas (29.5% of the rural population).

119. Overall it is estimated that 40.9% of all children live in HH in the lowest three expenditure deciles. By gender 41.1% of all girls live in HH in the lowest three deciles compared with 41.9% of boys. In comparison 21.5% of girls and 16.1% of boys live in HH in the highest three expenditure deciles, Table 20 and Chart 14. As noted in Table 1 above there are fewer children per household in the higher deciles and this is reflected in the figures in table 20

showing a much lower proportion of children overall in the highest quintile of HH.

120. Combining an analysis of children in the poorest households and those who also live in HH with elderly heads-of-household suggests that those living in such circumstances are amongst the most disadvantaged, the grandparents-as-carers and redistributional structure of Palau society notwithstanding. At the national level it is estimated that 31.1% of children live in HH with an elderly HH head (in this case aged over 55 years), however of these 57.7% of the children are in HH in the lowest three deciles. In the urban centre the corresponding figures are 30% of children living in a HH with an elderly head-of-HH, and of these 59.1% are in the lowest three deciles. It is also noted that in total 39.3% of children live in HH in the lowest three deciles. Figures for the rural areas are similar; some 50% of rural children live in elderly-headed HH in the lowest three deciles. Whilst these figures may give rise to concerns for the children living in such circumstances further on-the-ground research is needed to determine how far such children are in fact being well looked after by grandparents with active, but under-recorded support from working parents.

Table 20			
Children By Decile %			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
Lowest Quintile	30.9	31.0	31.5
Lowest Three Deciles	40.9	39.3	45.4
Highest Quintile	9.7	10.2	8.7

Chart 14
Children by Decile
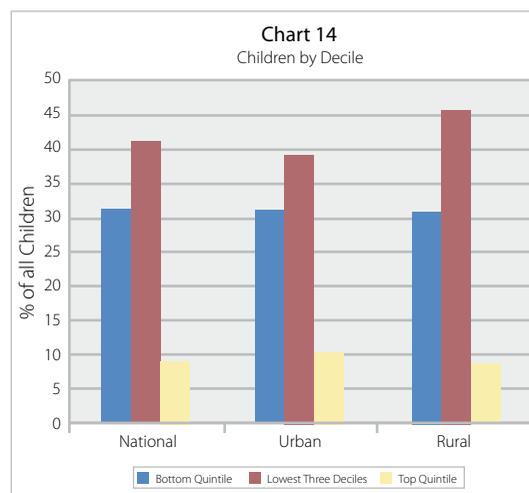
7.7 Economic Activity

121. Economic activity in Palau is dominated by employment with, on average, 65% of all heads HH being either a wage or salary earner. Own businesses and produce sales comprise only 2.9% and 1.7% respectively of the primary activity of heads of HH. Unemployment reportedly accounted for 22.1% of heads of HH, see Table 21.

122. In the lowest quintile, broadly equivalent to those below the BNPL poverty line, only 50.3% of heads of HH were in receipt of wages and salaries and 39% were recorded as unemployed. In the bottom three deciles the proportion of HH heads in employment rises to 55.5% whilst the rate of unemployment falls to 33.6%. In contrast in the highest quintile employment is the primary activity of 71.6% of all HH heads and only 11.0% reported as being unemployed.

Table 21		
Principal Activity of Head of Household		
Ranked by adult equivalent per capita HH expenditure deciles	Wages & salaries	Unemployed
Average all Households	64.8%	22.1%
Lowest Quintile	50.3%	39.0%
Lowest Three Deciles	55.5%	33.6%
Highest Quintile	71.6%	11.0%

123. Palau is unusual in the Pacific region in many ways, not least in having a large number of guest-workers in the tourism and construction related industries. These workers fill gaps in the labour force left by Palauans who have migrated either temporarily or permanently to the USA, and importantly apparently fill the overall shortage of labour to meet the demands of a buoyant and expanding tourism sector. The HIES data suggest that there is a high level of employment in the economy but paradoxically there is also a reportedly high-level of unemployment. This latter is reflected in concerns at the increasing health problems of poor nutrition, alcohol and drug abuse amongst the youth generation.

124. The extent of the "working-poor" – those with employment but whose income is still below the basic-needs minimum - can be gauged from the fact that 15.5% of those in employment were in the bottom quintile and 25.8% were in the bottom three deciles, see Appendix Tables A6 and A6a .

125. It is further estimated that 45.2% of the unemployed are in the bottom three deciles and thus households with unemployed heads are more likely to be amongst the most disadvantaged. It is interesting, however, that such high levels of unemployment appear to exist alongside the large number of foreign guest workers in the tourism and related sectors. But if the levels of recorded unemployment are accurate they tend to lend credence to the relatively high levels of basic needs poverty amongst such HH.

126. Table 22 and Chart 15 provide details of the primary economic activity of all working-age females in both urban and rural areas. Further details of economic activity of females by decile are provided in Appendix Tables A7 and A8.

Table 22									
Primary Economic Activity Status of Females aged 15-59 years									
% of all females in age cohort	Urban Females aged 15 - 59 years					Rural Females aged 15 - 59 years				
Ranked by adult equivalent per capita HH expenditure deciles	Working full/part time	Unem-ployed	Domestic duties	Full time education	Others	Working full/part time	Unem-ployed	Domestic duties	Full time education	Others
Average all Households	57.4	25.0	2.4	10.2	5.0	36.6	46.9	4.1	5.9	6.5
Lowest Quintile	43.8	34.7	0.7	15.1	5.7	24.2	64.9	4.1	1.9	4.8
Lowest Three Deciles	49.1	31.4	1.2	12.2	6.2	28.7	61.1	3.9	2.6	3.7
Highest Quintile	68.6	14.4	1.6	11.7	3.7	43.5	37.7	1.9	5.3	11.6

127. The chart illustrates the high level of unemployment reported by rural females in the bottom two and three deciles in particular and also by urban females, although to not quite the same degree. Further while on average around 36.6% of rural females are employed, this falls to only 24.2% of those in the bottom two deciles. For urban females the average employment rate is 57.4%, but falls to 49.1% of those in the bottom three deciles. This again highlights the situation of the "working poor"; even though a relatively large proportion of females are in employment, many are in low-wage positions where their earnings are often insufficient to bring them above the basic minimum cost of living or poverty line.

Chart 15
Primary Economic Activity of Females aged 15 - 69 years
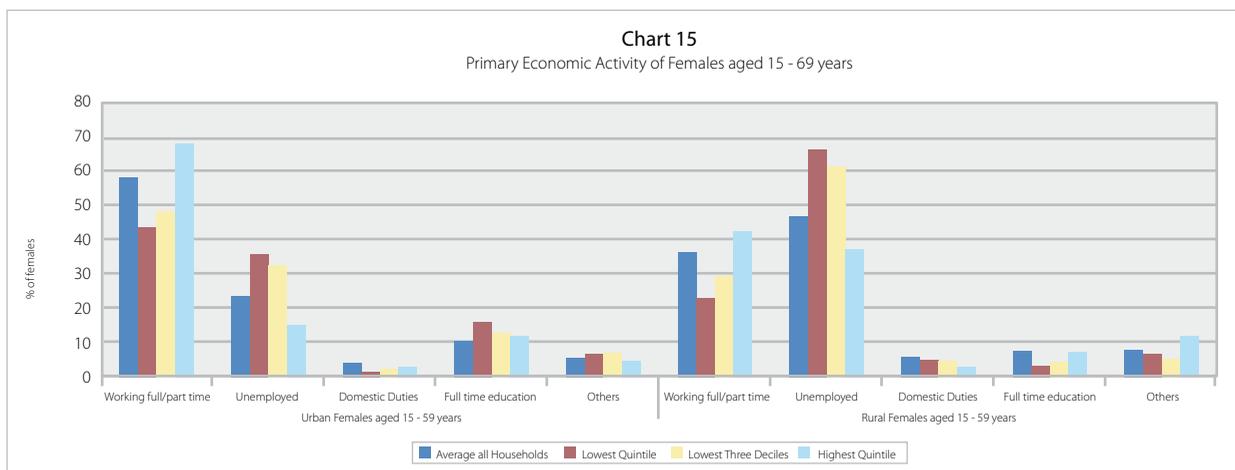
7.8 Educational Attainment

128. The relationship between the level of educational attainment of heads of HH and their status in the expenditure deciles is shown in Table 23 and Chart 16. Further details are provided in Appendix Tables A8 & A8a.

129. On average 6.4% and 9.5% of HH heads reported that they had either no education or had only reached a maximum of primary level respectively. In the lowest three deciles the proportions were 7.8% and 15.5% respectively. At the other end of the education spectrum an average of 42.2% of HH heads had achieved post secondary education, nevertheless those with post secondary still accounted for 28.8% of those in the lowest three deciles. This suggests that many with good educational backgrounds are perhaps not being used to the best advantage of the country.

Table 23				
Educational Attainment of HH Heads				
% of HH Heads maximum attainment				
Ranked by adult equivalent per capita HH expenditure deciles	No School	Primary	Secondary	Post Secondary
Average all Households	6.4%	9.5%	41.9%	42.2%
Lowest Quintile	9.9%	17.7%	44.6%	27.8%
Lowest Three Deciles	7.8%	15.5%	47.9%	28.8%
Highest Quintile	4.0%	7.5%	27.1%	61.5%

130. Those in the lowest three deciles either with no schooling or only with primary level account for 36.4% and 48.8% of all those in these attainment categories. Thirty-four percent of those with secondary education are also in the lowest three deciles, as are 20.5% of those with post-secondary attainment.

Chart 16
Highest Education Attainment of Heads of HH

131. Not surprisingly, the highest proportion with post-secondary education, 61.5%, are found in the highest two deciles. These account for 29.6% of all those with post secondary attainment. The strong link between the lack of a good education and vulnerability to poverty is demonstrated Palau as elsewhere. Achieving a minimum of primary education is essential and achieving secondary education is highly desirable as a means to reducing this vulnerability.

7.9 Housing Structures

132. Details of types of housing and house construction by decile are provided in Appendix Tables A10 through A12. In general housing conditions in Palau appear to be good. Overall some 85% of housing is constructed of permanent materials, either concrete or timber, with a further 14% constructed of corrugated iron. Some 44% of those houses constructed from corrugated iron were in HH in the lowest three deciles, while only 13% of those houses in the highest two deciles were made from this material; thus corrugated iron construction would seem to be associated with low income.

133. Approximately 38% of houses have floors of plywood, of these around 43% are in houses in the lowest three deciles compared to only about 10% of those houses in the highest two deciles. Thus this flooring material seems to be associated with housing in the lower income groups.

7.10 Energy Access and Use

134. The primary sources of energy for household lighting and cooking purposes are detailed in Appendix tables A13 & A14. The power reticulation system extends to almost all parts of Palau and electricity is available to 99% of all households. Thus only a very few households use other sources of power for lighting. However as seen elsewhere in the Pacific Region electricity, even when available, is often not the first choice of households for cooking. Chart 17 shows the nature of energy used for cooking.

135. It is interesting that although electricity is widely available a high proportion of households across all expenditure deciles use either gas or kerosene for cooking. Kerosene is the main source of energy for those in the bottom three deciles with 52.2% of all kerosene users being in these deciles.

136. It is only in the higher expenditure deciles where "clean" fuel becomes the primary source of cooking energy. Given the dominance of purchased power in Palau, compared to the frequent use of fuelwood in many other Pacific countries, the recent fuel and power prices rises will have had a major impact on household budgets. Indeed it is possible that the fuel and power price rises may lead to a greater use of fuelwood for cooking in the future.

Chart 17
Primary Source of Power for Cooking
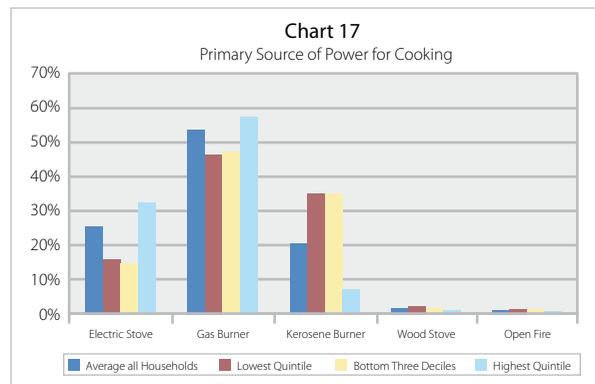
7.11 Access to Water and Sanitation

137. As with the power supply, Palau is also generally well served by water and sanitation services. Details are provided in Appendix table A15 & A16. On average some 81.4% of all HH have a piped water supply, this average level of access to piped water is fairly constant over all expenditure deciles, see Chart 18. A further 14.2% of HH on average have HH rain water tanks as their primary source of water. In the lowest three deciles the reliance on tanks is 15.8% compared to 10.9% in the highest decile. Those HH relying on other, basically unimproved water sources, account for only about 4.3% of all HH. However of these few households approximately one-third were on the bottom three deciles.

Chart 18
Primary Source of HH Water Supply
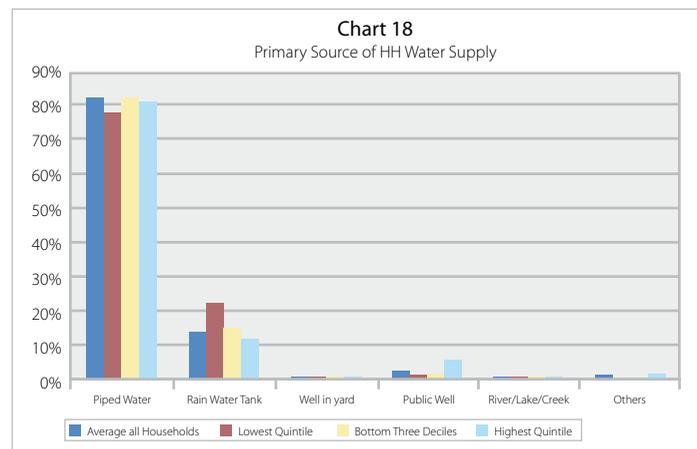
138. Palau therefore scores quite well in relation to the MDG goal for access to a safe and reliable water supply for all.

139. Details of access to sanitation are illustrated in Chart 19. This demonstrates that access to improved sanitation is good with 43.5% of HH being connected to the public sewage system and a further 42% having access to their own or a shared flush septic-tank system. Only 14.5% of HH rely on household pit toilets or other systems. However

of those that do rely on these unimproved sanitation systems almost 50% are to found in the bottom three deciles.

140. Although Palau also scores well in relation to the MDG Goal for improved sanitation, the poorest households are nevertheless amongst the most disadvantaged. It would therefore be possible for the government to improve overall achievement levels in this MDG Goal, as well as that for water supply, by targeting these few poor households that are currently not well served.

Chart 19
Primary System of Sanitation
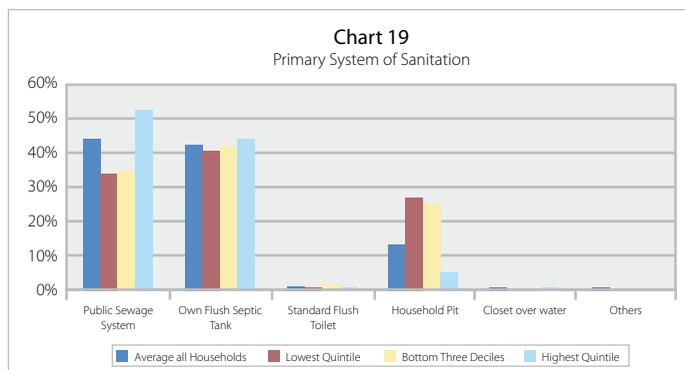
8. Conclusions

8.1 Poverty of Income or Opportunity?

141. Poverty is a multi-dimensional issue. The national poverty lines and levels of incidence of poverty between the urban centre of Koror/Airai, and the rural areas of the rest of the country are the "headline" indicators. They are but the basic building blocks on which poverty alleviation strategies can be founded. More important from a policy perspective is to analyse the specific characteristics, and where possible the causes of low-income/expenditure and poverty in disadvantaged and vulnerable sections of society.

142. Poverty of opportunity, e.g. lack of access to basic health and education services, lack of employment opportunities, poor standards of governance and unequal opportunities across gender and age, and in some cases ethnicity, are now regarded as just as important in defining the extent of poverty and hardship in a society as is the lack of income/expenditure. Often the conditions and circumstances giving rise to the poverty of opportunity are the causes of income/expenditure poverty. Alleviating poverty of opportunity will help to increase incomes and wealth.

143. Policy makers need to know who-the-poor-are, why-they-are-poor, and specifically, what are the characteristics of the poor and poor households so that targeted poverty alleviation measures can be initiated.

144. The BNPL measures the cost of the minimum standard of living and incidence of "income or expenditure" poverty associated with that minimum standard, but this is just one aspect of poverty or hardship. Families might have low incomes, but through good household budgeting and prioritising of expenditure, might still be reasonably well-fed and healthy. Nevertheless they are still likely to live in conditions where they experience varying degrees of hardship. The analysis suggests that relative poverty exists in both the urban and rural parts of Palau, with an estimated one-in-five households and just over one-in-four people living below the minimum living standard, or basic needs poverty line for Palau.

145. The analysis in this paper has therefore aimed to provide a basis for these questions to be answered and carried forward to the policy level. The information available from the household survey can be used to effectively guide the formulation of specific hardship and poverty alleviation policies. Additionally it provides new data for

monitoring progress towards the achievement of the MDGs and other national development priorities. Overall Palau scores well on those MDGs that can be derived from the HIES data.

146. There is much valuable information still to be "mined" from the survey results to inform specific policy discussions, particularly in relation to health and nutrition education. However it is hoped that the broad analysis presented here will encourage policy makers to ask further and more detailed questions.

8.2 How Does Poverty Affect People

147. Over the past five to six years Palau has enjoyed one of the steadiest, and highest, rates of economic growth in the region with GDP estimated to have increased at an average rate of 3.4% per annum between 2002 and 2007. However in 2008 and 2009 this rate of growth is forecast to fall to an average of only 1.5% per annum as the food and fuel prices impact on the economy. With the possibility of a global recession looming, and Palau's heavy reliance on Asian-based tourists, there is every likelihood that the growth rate could slow even further. Palau's high-cost, narrowly-based economy is therefore very vulnerable to these external events and the threat of poverty increasing is a real one.

148. However, as noted in the analysis, households with expenditure below the basic needs poverty line level will not necessarily be going hungry, although their diet is likely to be poor in nutrition. It means, more likely, that whilst they are probably not going hungry they are, nevertheless, struggling to meet their daily/weekly living expenses, particularly those that require cash payments (power, water, transport, education related costs, clothing, housing, medical costs etc).

149. These families will be constantly trying to balance their incomes with their expenditure and frequently something has to be given up, a trade-off will have to be made between one bill and another, food or fees. They may have to borrow from "loan-sharks" who charge very high interest rates for small unsecured loans to meet family commitments and community obligations. They may be borrowing from family members or simply rolling-over existing debts. Thus they may be frequently, and sometime constantly in debt or living from pay-check to pay-check with little capacity to meet unexpected expenses. The rapidly rising food and fuel prices of recent months will be impacting severely on these HH. The threat of economic slow-down will pose additional challenges to them and to the economy.

150. Although housing and access to basic services in Palau is of a comparatively high standard many of the very poorest in Palau society nevertheless live in relatively low-quality housing without adequate access to safe water and improved sanitation. Many adults and heads of poor households are often poorly educated and are thus either unemployed or unable to get anything but the lowest paid employment. It would seem that with the high level of unemployment reported by individuals throughout the country there is only limited access to economic opportunities despite the high number of guest workers in the economy. This presents the government with a policy paradox that needs to be addressed through education and employment policies. A combination of low educational attainment, socio-cultural factors relating to age, gender and other personal characteristics may further limit freedom of choice, or access to socio-economic opportunity.

151. Overseas migration to USA both as temporary workers and as permanent migrants may provide opportunities for some, but these often require some minimum educational or technical qualification. The loss of working age people overseas, frequently young men, leaves gaps in the domestic labour force that in Palau are often filled by guest workers.

152. The report highlights the following key issues for further investigation and policy consideration:
    - with the current threat of global recession resulting from the high food and fuel prices and the global financial crisis, the Palau economy is vulnerable due to its narrow base and heavy reliance on imported foods, fuel and other essentials;
    - the economic base of the economy therefore needs to be broadened and deepened to minimize its vulnerability and dependence on tourism generally, and diving/environmental tourism in particular; the large number of Asian tourists, for example, might suggest that golf-tourism would have potential if courses were developed;
    - a high level of unemployment amongst Palauans is recorded by the survey, however the economy employs a large number of guest workers at all levels of skill and experience; this paradox provides considerable scope for increasing domestic employment if the needed skills could be taught through TVET and other programmes;
    - beyond this additional economic opportunities need to be created to sustain the level of economic growth in the face of the current global economic situation, reduce the level of unemployment and to create greater incentives for young people to contribute to the domestic economy;
    - however, many who are recorded as being in employment are nevertheless still below the poverty line – the working poor - as a single "minimum-wage" is insufficient to enable a nuclear HH to meet the costs of its basic needs;
    - although comparatively good in terms of gender balance and progression rates from primary through secondary and post-secondary, the education system may be failing to provide those with the right skills needed for the Palau economy; raising skill levels is necessary to enable higher wages to be earned;
    - agricultural production has considerable scope for growth both for domestic consumption and perhaps export, with a high reliance on imported food the food security situation is weak, rising prices will exacerbate the plight of those already struggling to meet the costs of basic needs;
    - expenditure patterns revealed by the survey suggest that many HH are making unhealthy lifestyle choices that both exacerbate their inability to afford basic needs and threaten their future health;
    - there is therefore considerable scope for stronger health, nutrition and healthy-lifestyle awareness programmes to assist HH to cope with current rising prices.

153. Analysis of the survey data has identified a number of societal issues that need to be further investigated at a participatory level to determine their impact on the overall state of hardship for poor HH. It is therefore recommended that a Participatory Assessment of Hardship be undertaken to investigate these issues more thoroughly both to validate the survey findings in general and to provide greater clarity to the way in which Palau society provides a social safety-net and coping strategies for poor HH.

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ANNEX 1

Palau Model Menu
Source: SPC Nutrition Programme

Food Item	Food energy values			units	Male Menu		Female Menu		Average adult		CPI Cost of Menu	average CPI Price per 100g
	unit	number of units	calorie value (kcal)		number of units	calorie value in diet	number of units	calorie value in diet	number of units	calorie value in diet		
Breakfast												
Rice	gram	100	123	gram	360	442.8	270	332.1	315	387.5	0.25	0.08
Onion	gram	100	26	gram	20	5.2	20	5.2	20	5.2	0.03	0.14
Peas	gram	100	30	gram	40	12.0	40	12.0	40	12.0	0.14	0.36
Chicken	gram	100	231	ml	50	115.5	50	115.5	50	115.5	0.09	0.17
Milk	gram	100	66	ml	40	26.4	40	26.4	40	26.4	0.06	0.16
Coffee	gram	100	10	gram	150	15.0	150	150	150	15.0	0.33	0.22
Sugar	gram	100	394	gram	10	39.4	10	10	10	39.4	0.01	0.08
Lunch												
Bread	gram	100	242	gram	200	484.0	240	580.8	220	532.4	0.57	0.26
Tuna	gram	100	290	gram	80	232.0		0.0	40	116.0	0.16	0.41
Mayonnaise	gram	100	375	gram	15	56.3		0.0	7.5	28.1	0.06	0.78
Banana	gram	100	103	gram	200	206.0	200	206.0	200	206.0	0.20	0.10
Orange juice	gram	100	30	ml	125	37.5	125	37.5	125	37.5	0.19	0.15
Eggs	gram	100	75			0.0	120	90.0	60	45.0	0.16	0.26
Dinner												
Fresh fish	gram	100	130	gram	100	130.0	50	65.0	75	97.5	0.30	0.40
Salad Tomato	gram	100	30	gram	240	72.0	150	45.0	195	58.5	0.70	0.36
Lettuce	gram	100	30	gram	40	12.0	80	24.0	60	18.0	0.22	0.36
Onion	gram	100	30	gram	20	6.0		0.0	10	3.0	0.04	0.36
Steamed rice	gram	100	123	gram	360	442.8	180	221.4	270	332.1	0.22	0.08
Snacks												
Ice cream	gram	100	195	ml	100	195.0	60	117.0	80	156.0	0.17	0.21
Orange juice	gram	100	30	ml	125	37.5	0	0.0	62.5	18.8	0.09	0.15
Pawpaw	gram	100	51	gram	150	76.5	200	102.0	175	89.3	0.18	0.10
total calorie value						2643.9		2139.9		2339.1	3.90 daily cost per adult	
							Factor to bring to 2100 kcal		weekly cost	1.114	27.33	
											3.50 daily cost per adult adjusted	
											24.53 weekly cost	

Appendix tables

Table A1				
Householder Ethnicity				
Households (% by Decile)				
Decile	Palauan	Filipino	Other Asians	Others	Total
Decile 1	93.9%	5.5%	0.0%	0.7%	100.0%
Decile 2	70.2%	16.4%	4.4%	9.0%	100.0%
Decile 3	68.5%	20.9%	3.6%	7.0%	100.0%
Decile 4	90.2%	9.0%	0.8%	0.0%	100.0%
Decile 5	79.8%	15.4%	2.1%	2.7%	100.0%
Decile 6	80.5%	14.8%	2.8%	1.9%	100.0%
Decile 7	77.5%	20.1%	0.9%	1.5%	100.0%
Decile 8	79.2%	11.0%	3.6%	6.1%	100.0%
Decile 9	79.8%	12.2%	0.8%	7.2%	100.0%
Decile 10	78.2%	8.7%	0.0%	13.1%	100.0%
Average	79.7%	13.4%	1.9%	5.0%	100.0%
Number of HH	3056	557	266		

Table A1a				
Household Ethnicity				
(% by Ethnicity)				
Decile	Palauan	Filipino	Other Asians	Others	Average
Decile 1	11.5%	4.0%	0.0%	1.4%	9.7%
Decile 2	9.0%	12.5%	23.3%	18.3%	10.2%
Decile 3	8.6%	15.6%	18.9%	14.1%	10.0%
Decile 4	11.2%	6.6%	4.4%	0.0%	9.9%
Decile 5	10.0%	11.5%	11.1%	5.6%	10.0%
Decile 6	10.1%	11.1%	14.5%	3.8%	10.0%
Decile 7	9.5%	14.7%	4.4%	3.0%	9.8%
Decile 8	9.9%	8.2%	18.9%	12.3%	10.0%
Decile 9	10.1%	9.1%	4.4%	14.5%	10.1%
Decile 10	10.0%	6.7%	0.0%	26.9%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table A2			
Distribution of HH Expenditure %			
Ranked by adult equivalent per capita HH expenditure deciles	National	Urban	Rural
1st Decile	4.6	4.4	4.3
2nd Decile	5.6	6.3	5.7
3rd Decile	7.0	6.8	6.7
4th Decile	8.2	7.7	7.8
5th Decile	8.8	9.1	8.2
6th Decile	9.1	8.8	9.3
7th Decile	10.2	10.5	9.9
8th Decile	10.4	10.0	11.8
9th Decile	15.2	15.3	14.3
Top Decile	20.9	20.9	21.9
Total	100.0	100.0	100.0
Ratio of Q1:Q5	3.5	3.4	3.6

Table A3					
Proportion of Females by Deciles					
	Urban Females			Rural Females		
% of females by decile	<15 years	>15 but <60	>60 years	<15 years	>15 but <60	>60 years
Decile 1	16.8	11.7	14.9	15.7	13.8	10.8
Decile 2	14.3	12.9	12.2	14.8	11.9	12.6
Decile 3	9.5	12.2	13.1	17.2	13.3	11.9
Decile 4	10.5	10.1	15.5	10.4	10.9	11.4
Decile 5	12.5	11.1	1.2	8.4	8.7	14.0
Decile 6	8.1	7.9	7.0	7.7	9.6	3.1
Decile 7	6.5	9.4	11.2	9.0	8.5	13.5
Decile 8	9.4	8.6	6.1	6.7	9.1	11.4
Decile 9	7.7	10.5	9.1	6.2	8.2	5.8
Decile 10	4.7	5.5	9.7	4.0	6.0	5.8
	100.0	100.0	100.0	100.0	100.0	100.0
Bottom Quintile	31.1	24.6	27.1	30.5	25.7	23.3
Lowest three deciles	40.6	36.8	40.2	47.7	39.0	35.2
Top Quintile	12.5	16.0	18.8	10.3	14.3	11.6
Total number of females	1857	4642	658	517	1117	297

Table A4			
Householder Gender			
Households (% by Decile)			
Decile	Male	Female	Total
Decile 1	76.5%	23.5%	100.0%
Decile 2	77.0%	23.0%	100.0%
Decile 3	63.3%	36.7%	100.0%
Decile 4	72.6%	27.4%	100.0%
Decile 5	82.4%	17.6%	100.0%
Decile 6	77.9%	22.1%	100.0%
Decile 7	74.8%	25.2%	100.0%
Decile 8	66.1%	33.9%	100.0%
Decile 9	75.2%	24.8%	100.0%
Decile 10	69.2%	30.8%	100.0%
Average	73.5%	26.5%	100.0%

Table A4a			
Householder Gender			
Households (% by Ethnicity)			
Decile	Male	Female	Average
Decile 1	10.1%	8.6%	9.7%
Decile 2	10.7%	8.8%	10.2%
Decile 3	8.6%	13.9%	10.0%
Decile 4	9.8%	10.2%	9.9%
Decile 5	11.3%	6.7%	10.0%
Decile 6	10.6%	8.4%	10.0%
Decile 7	10.0%	9.3%	9.8%
Decile 8	9.0%	12.8%	10.0%
Decile 9	10.3%	9.4%	10.1%
Decile 10	9.6%	11.9%	10.2%
Total	100.0%	100.0%	100.0%

Table A5					
Householder Marital Status					
Households (% by Decile)					
decile	Married	Widowed	Divorced	Separated	Never Married	Total
Decile 1	74.0%	13.3%	8.1%	2.8%	1.8%	100.0%
Decile 2	73.9%	17.3%	0.0%	0.0%	8.7%	100.0%
Decile 3	73.1%	21.8%	1.8%	0.0%	3.4%	100.0%
Decile 4	73.7%	19.9%	2.8%	0.0%	3.6%	100.0%
Decile 5	73.9%	8.4%	4.0%	7.2%	6.4%	100.0%
Decile 6	63.7%	14.9%	5.3%	5.5%	10.6%	100.0%
Decile 7	83.4%	5.5%	4.1%	2.8%	4.2%	100.0%
Decile 8	57.4%	16.7%	7.4%	4.0%	14.5%	100.0%
Decile 9	65.1%	6.9%	12.4%	1.5%	14.1%	100.0%
Decile 10	56.1%	10.0%	14.1%	4.3%	15.5%	100.0%
Average	69.4%	13.5%	6.0%	2.8%	8.3%	100.0%

Table A5a					
Householder Marital Status					
Households (% by Marital Status)					
Decile	Married	Widowed	Divorced	Separated	Never Married	Average
Decile 1	10.4%	9.6%	13.1%	9.8%	2.1%	9.7%
Decile 2	10.8%	13.1%	0.0%	0.0%	10.7%	10.2%
Decile 3	10.6%	16.2%	2.9%	0.0%	4.1%	10.0%
Decile 4	10.5%	14.6%	4.6%	0.0%	4.3%	9.9%
Decile 5	10.7%	6.3%	6.7%	25.7%	7.7%	10.0%
Decile 6	9.2%	11.1%	8.8%	19.6%	12.8%	10.0%
Decile 7	11.8%	4.0%	6.7%	9.8%	4.9%	9.8%
Decile 8	8.3%	12.3%	12.3%	14.2%	17.4%	10.0%
Decile 9	9.4%	5.2%	20.8%	5.2%	17.1%	10.1%
Decile 10	8.3%	7.6%	24.0%	15.7%	19.0%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A6							
Householder Economic Activity							
Households (% by decile)							
Decile	Working-Wages & Salaries	Own business	Sell product	Domestic duties	Own household consumpn	Others	Unemployed	Total
Decile 1	36.0%	0.0%	2.8%	0.7%	0.0%	11.8%	48.7%	100.0%
Decile 2	64.6%	0.0%	0.4%	0.0%	0.0%	5.8%	29.2%	100.0%
Decile 3	66.0%	0.8%	1.8%	2.3%	0.0%	6.1%	23.0%	100.0%
Decile 4	57.4%	3.9%	4.1%	0.6%	0.0%	15.2%	18.9%	100.0%
Decile 5	72.3%	2.4%	0.4%	0.0%	0.0%	0.7%	24.2%	100.0%
Decile 6	57.6%	1.7%	2.4%	0.8%	0.0%	4.7%	32.7%	100.0%
Decile 7	77.1%	2.8%	2.8%	4.2%	0.0%	7.8%	5.2%	100.0%
Decile 8	72.7%	1.3%	0.8%	0.0%	0.4%	7.0%	17.7%	100.0%
Decile 9	76.1%	4.5%	0.4%	0.0%	0.0%	12.5%	6.6%	100.0%
Decile 10	67.2%	10.9%	1.5%	0.0%	0.0%	5.0%	15.4%	100.0%
Average	64.8%	2.8%	1.7%	0.9%	0.0%	7.6%	22.1%	100.0%

Table A6a							
Householder Economic Activity							
Households (% by Economic Activity)							
Decile	Working-Wages & Salaries	Own business	Sell product	Domestic duties	Own household consumpn	Others	Unemployed	Average
Decile 1	5.4%	0.0%	15.8%	7.9%	0.0%	15.0%	21.4%	9.7%
Decile 2	10.1%	0.0%	2.4%	0.0%	0.0%	7.7%	13.4%	10.2%
Decile 3	10.2%	3.0%	10.1%	27.0%	0.0%	8.0%	10.4%	10.0%
Decile 4	8.8%	13.5%	23.3%	7.3%	0.0%	19.7%	8.5%	9.9%
Decile 5	11.2%	8.4%	2.4%	0.0%	0.0%	0.9%	11.0%	10.0%
Decile 6	8.9%	6.0%	14.0%	9.9%	0.0%	6.2%	14.8%	10.0%
Decile 7	11.7%	9.7%	16.0%	48.0%	0.0%	10.0%	2.3%	9.8%
Decile 8	11.2%	4.4%	4.8%	0.0%	100.0%	9.2%	8.0%	10.0%
Decile 9	11.8%	15.9%	2.4%	0.0%	0.0%	16.5%	3.0%	10.1%
Decile 10	10.6%	39.1%	8.7%	0.0%	0.0%	6.7%	7.2%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A7									
Primary Economic Activity Status of Rural Females aged 15-59 years									
(% by Decile)									
Decile	Working full time	Working part time	Own business	Sell product	Own household consumptn	Unemployed	Domestic duties	Full time education	Others	Grand Total
Decile 1	18.8	3.0	0.0	2.6	0.0	70.1	1.7	3.9	0.0	100.0
Decile 2	24.1	2.6	0.0	7.1	0.0	59.8	6.5	0.0	0.0	100.0
Decile 3	32.4	5.3	0.0	1.3	0.0	53.4	3.5	4.0	0.0	100.0
Decile 4	31.4	0.0	1.6	3.8	0.0	49.5	5.9	7.7	0.0	100.0
Decile 5	42.0	0.0	5.6	4.7	0.0	29.8	9.1	6.2	2.7	100.0
Decile 6	42.0	0.0	4.2	2.4	0.0	32.6	5.6	13.1	0.0	100.0
Decile 7	43.5	0.0	0.0	4.2	0.0	43.2	5.5	3.6	0.0	100.0
Decile 8	46.6	0.0	0.0	3.9	2.0	31.4	0.0	12.7	3.4	100.0
Decile 9	51.4	0.0	2.2	5.7	0.0	37.9	0.0	2.8	0.0	100.0
Decile 10	35.5	0.0	3.8	7.7	0.0	37.6	3.8	7.7	3.8	100.0
Average	35.2	1.4	1.5	4.1	0.2	46.9	4.1	5.9	0.8	100.0

Table A7a									
Primary Economic Activity Status of Rural Females aged 15-59 years									
(% by Economic Activity)									
Decile	Working full time	Working part time	Own business	Sell product	Own household consumptn	Unemployed	Domestic duties	Full time education	Others	Average
Decile 1	7.4	28.6	0.0	8.8	0.0	20.6	5.6	9.2	0.0	13.8
Decile 2	8.2	21.4	0.0	20.6	0.0	15.2	18.6	0.0	0.0	11.9
Decile 3	12.3	50.0	0.0	4.4	0.0	15.2	11.3	9.2	0.0	13.3
Decile 4	9.7	0.0	12.1	10.1	0.0	11.5	15.6	14.4	0.0	10.9
Decile 5	10.4	0.0	32.6	10.1	0.0	5.5	19.0	9.2	30.2	8.7
Decile 6	11.5	0.0	27.5	5.7	0.0	6.7	13.0	21.4	0.0	9.6
Decile 7	10.5	0.0	0.0	8.8	0.0	7.8	11.3	5.2	0.0	8.5
Decile 8	12.0	0.0	0.0	8.8	100.0	6.1	0.0	19.6	39.5	9.1
Decile 9	12.0	0.0	12.1	11.4	0.0	6.6	0.0	4.0	0.0	8.2
Decile 10	6.1	0.0	15.7	11.4	0.0	4.8	5.6	8.0	30.2	6.0
Average	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A8								
Primary Economic Activity Status of Urban Females aged 15-59 years								
(% by Decile)								
Decile	Working full time	Working part time	Own business	Sell product	Unemployed	Domestic duties	Full time education	Others	Grand Total
Decile 1	21.8	0.7	5.1	0.0	45.7	0.7	19.5	6.3	100.0
Decile 2	65.0	0.0	0.0	0.0	23.7	0.7	10.7	0.0	100.0
Decile 3	54.0	5.6	2.5	0.0	24.8	2.1	6.4	4.6	100.0
Decile 4	47.2	0.0	6.0	0.0	29.0	6.0	11.9	0.0	100.0
Decile 5	57.7	8.9	0.0	0.0	27.5	2.7	2.4	0.8	100.0
Decile 6	51.6	0.0	1.1	3.8	26.2	7.6	9.8	0.0	100.0
Decile 7	69.4	0.0	0.0	0.0	21.0	0.0	6.4	3.2	100.0
Decile 8	63.5	1.0	3.5	1.0	15.0	3.5	8.0	4.5	100.0
Decile 9	63.1	0.0	0.0	0.0	13.1	0.0	18.0	5.7	100.0
Decile 10	74.1	0.0	1.6	0.0	15.7	3.2	5.5	0.0	100.0
Average	55.5	1.9	2.0	0.4	25.0	2.4	10.2	2.7	100.0

Table A8a								
Primary Economic Activity Status of Urban Females aged 15-59 years								
(% by Economic Activity)								
Decile	Working full time	Working part time	Own business	Sell product	Unemployed	Domestic duties	Full time education	Others	Average
Decile 1	4.6	4.7	30.4	0.0	21.4	3.6	22.4	27.5	11.7
Decile 2	15.1	0.0	0.0	0.0	12.3	3.6	13.6	0.0	12.9
Decile 3	11.9	37.2	15.2	0.0	12.1	10.8	7.6	21.0	12.2
Decile 4	8.6	0.0	30.4	0.0	11.7	24.9	11.8	0.0	10.1
Decile 5	11.5	53.4	0.0	0.0	12.2	12.5	2.6	3.3	11.1
Decile 6	7.4	0.0	4.4	77.5	8.3	24.9	7.6	0.0	7.9
Decile 7	11.8	0.0	0.0	0.0	7.9	0.0	5.9	11.2	9.4
Decile 8	9.8	4.7	15.2	22.5	5.2	12.5	6.8	14.5	8.6
Decile 9	11.9	0.0	0.0	0.0	5.5	0.0	18.6	22.5	10.5
Decile 10	7.4	0.0	4.4	0.0	3.5	7.2	3.0	0.0	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A9				
Householder Educational Attainment				
Households (% by decile)				
Decile	No School	Primary	Secondary	Post Secondary	Total
Decile 1	10.7%	20.7%	46.3%	22.3%	100.0%
Decile 2	9.1%	14.7%	42.9%	33.3%	100.0%
Decile 3	3.6%	11.2%	54.4%	30.8%	100.0%
Decile 4	8.2%	7.0%	50.6%	34.2%	100.0%
Decile 5	4.4%	2.1%	52.4%	41.1%	100.0%
Decile 6	5.6%	9.3%	37.5%	47.5%	100.0%
Decile 7	0.7%	10.5%	47.9%	40.9%	100.0%
Decile 8	13.8%	4.8%	33.6%	47.8%	100.0%
Decile 9	3.2%	4.4%	34.8%	57.6%	100.0%
Decile 10	4.8%	10.5%	19.4%	65.4%	100.0%
Average	6.4%	9.5%	41.9%	42.2%	100.0%

Table A9a				
Householder Educational Attainment				
Households (% by Educational Attainment)				
Decile	No School	Primary	Secondary	Post Secondary	Total
Decile 1	16.3%	21.3%	10.8%	5.1%	9.7%
Decile 2	14.4%	15.7%	10.4%	8.0%	10.2%
Decile 3	5.7%	11.8%	13.0%	7.3%	10.0%
Decile 4	12.7%	7.3%	12.0%	8.0%	9.9%
Decile 5	6.9%	2.2%	12.6%	9.8%	10.0%
Decile 6	8.8%	9.9%	9.0%	11.3%	10.0%
Decile 7	1.0%	10.8%	11.2%	9.5%	9.8%
Decile 8	21.5%	5.0%	8.0%	11.3%	10.0%
Decile 9	5.0%	4.7%	8.4%	13.7%	10.1%
Decile 10	7.6%	11.3%	4.7%	15.9%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table A10				
Type of Roof				
Households (% by decile)				
Decile	Concrete roofing	Corrugated Iron	Traditional thatched	Others	Total
Decile 1	5.9%	88.4%	0.0%	5.7%	100.0%
Decile 2	13.7%	83.5%	0.0%	2.7%	100.0%
Decile 3	8.4%	86.1%	0.0%	5.5%	100.0%
Decile 4	14.8%	76.9%	0.0%	8.3%	100.0%
Decile 5	11.4%	82.7%	0.4%	5.5%	100.0%
Decile 6	7.8%	89.5%	0.0%	2.8%	100.0%
Decile 7	13.2%	83.6%	0.0%	3.2%	100.0%
Decile 8	19.9%	69.0%	0.0%	11.1%	100.0%
Decile 9	17.1%	76.5%	0.0%	6.3%	100.0%
Decile 10	27.8%	69.5%	0.0%	2.7%	100.0%
Average	14.1%	80.5%	0.0%	5.4%	100.0%

Table A10a				
Type of Roof				
Households (% by type)				
Decile	Concrete roofing	Corrugated Iron	Traditional thatched	Others	Total
Decile 1	4.1%	10.7%	0.0%	10.3%	9.7%
Decile 2	9.9%	10.6%	0.0%	5.1%	10.2%
Decile 3	6.0%	10.7%	0.0%	10.3%	10.0%
Decile 4	10.4%	9.5%	0.0%	15.4%	9.9%
Decile 5	8.1%	10.3%	100.0%	10.3%	10.0%
Decile 6	5.6%	11.1%	0.0%	5.1%	10.0%
Decile 7	9.2%	10.2%	0.0%	5.9%	9.8%
Decile 8	14.2%	8.6%	0.0%	20.6%	10.0%
Decile 9	12.3%	9.6%	0.0%	11.8%	10.1%
Decile 10	20.2%	8.8%	0.0%	5.1%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table A11

Type of Outer walls

Households (% by decile)

Decile	Permanent-concrete/plywood	Corrugated iron	Thatched/traditional	Other	Total
Decile 1	73.0%	24.2%	0.0%	2.8%	100.0%
Decile 2	79.7%	16.5%	3.1%	0.6%	100.0%
Decile 3	78.5%	18.1%	0.7%	2.8%	100.0%
Decile 4	87.1%	10.1%	0.0%	2.8%	100.0%
Decile 5	86.0%	14.0%	0.0%	0.0%	100.0%
Decile 6	69.8%	30.2%	0.0%	0.0%	100.0%
Decile 7	92.7%	4.5%	2.8%	0.0%	100.0%
Decile 8	96.7%	3.3%	0.0%	0.0%	100.0%
Decile 9	90.9%	8.3%	0.0%	0.8%	100.0%
Decile 10	92.2%	4.7%	3.1%	0.0%	100.0%
Average	84.7%	13.4%	1.0%	1.0%	100.0%

Table A11a

Type of Outer walls

Households (% by type)

Decile	Permanent-concrete/plywood	Corrugated iron	Traditional thatched	Other	Total
Decile 1	8.4%	17.6%	0.0%	28.3%	9.7%
Decile 2	9.6%	12.6%	32.5%	6.4%	10.2%
Decile 3	9.3%	13.6%	6.9%	28.3%	10.0%
Decile 4	10.2%	7.5%	0.0%	28.3%	9.9%
Decile 5	10.2%	10.5%	0.0%	0.0%	10.0%
Decile 6	8.3%	22.6%	0.0%	0.0%	10.0%
Decile 7	10.7%	3.3%	28.2%	0.0%	9.8%
Decile 8	11.4%	2.5%	0.0%	0.0%	10.0%
Decile 9	10.8%	6.2%	0.0%	8.6%	10.1%
Decile 10	11.2%	3.6%	32.5%	0.0%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table A12

Type of Floors

Households (% by decile)

Decile	Concrete	Plywood	Others	Total
Decile 1	40.6%	59.0%	0.4%	100.0%
Decile 2	54.5%	45.5%	0.0%	100.0%
Decile 3	41.7%	57.5%	0.8%	100.0%
Decile 4	63.3%	36.7%	0.0%	100.0%
Decile 5	56.7%	43.3%	0.0%	100.0%
Decile 6	55.7%	44.3%	0.0%	100.0%
Decile 7	68.8%	31.2%	0.0%	100.0%
Decile 8	73.5%	26.5%	0.0%	100.0%
Decile 9	83.1%	16.9%	0.0%	100.0%
Decile 10	81.6%	18.4%	0.0%	100.0%
Average	62.0%	37.9%	0.1%	100.0%

Table A12a

Type of Floors

Households (% by source)

Decile	Concrete	Plywood	Others	Total
Decile 1	6.4%	15.2%	33.3%	9.7%
Decile 2	8.9%	12.2%	0.0%	10.2%
Decile 3	6.7%	15.2%	66.7%	10.0%
Decile 4	10.1%	9.6%	0.0%	9.9%
Decile 5	9.2%	11.5%	0.0%	10.0%
Decile 6	9.0%	11.7%	0.0%	10.0%
Decile 7	10.9%	8.1%	0.0%	9.8%
Decile 8	11.8%	7.0%	0.0%	10.0%
Decile 9	13.5%	4.5%	0.0%	10.1%
Decile 10	13.5%	5.0%	0.0%	10.2%
Total	100.0%	100.0%	100.0%	100.0%

Table A13

Primary Source of Energy for Lighting and Appliances

Households (% by decile)

Decile	Electric, main electricity supply	Electric, own generator	Solar powered	Kerosene or spirit lamp	Oil lamp (including coconut or fat)	No lighting regularly available	Total
Decile 1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Decile 2	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Decile 3	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Decile 4	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Decile 5	97.3%	0.0%	0.0%	0.0%	0.0%	2.7%	100.0%
Decile 6	99.3%	0.0%	0.7%	0.0%	0.0%	0.0%	100.0%
Decile 7	98.7%	0.0%	0.0%	0.4%	0.9%	0.0%	100.0%
Decile 8	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Decile 9	97.5%	1.7%	0.0%	0.0%	0.8%	0.0%	100.0%
Decile 10	99.3%	0.0%	0.0%	0.7%	0.0%	0.0%	100.0%
Average	99.2%	0.2%	0.1%	0.1%	0.2%	0.3%	100.0%

Table A13a						
Primary Source of Energy for Lighting and Appliances						
Households (% by source)						
Decile	Electric, main electricity supply	Electric, own generator	Solar powered	Kerosene or spirit lamp	Oil lamp (including coconut or fat)	No lighting regularly available	Total
Decile 1	9.8%	0.0%	0.0%	0.0%	0.0%	0.0%	9.7%
Decile 2	10.3%	0.0%	0.0%	0.0%	0.0%	0.0%	10.2%
Decile 3	10.1%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%
Decile 4	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.9%
Decile 5	9.8%	0.0%	0.0%	0.0%	0.0%	100.0%	10.0%
Decile 6	10.0%	0.0%	100.0%	0.0%	0.0%	0.0%	10.0%
Decile 7	9.7%	0.0%	0.0%	38.5%	50.0%	0.0%	9.8%
Decile 8	10.1%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%
Decile 9	9.9%	100.0%	0.0%	0.0%	50.0%	0.0%	10.1%
Decile 10	10.3%	0.0%	0.0%	61.5%	0.0%	0.0%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A14						
Source of Energy for Cooking						
Households (% by decile)						
Decile	Electric stove	Gas burner	Kerosene burner	Wood stove	Open fire	Others	Total
Decile 1	13.2%	40.2%	44.3%	0.9%	1.4%	0.0%	100.0%
Decile 2	19.8%	53.9%	24.9%	1.5%	0.0%	0.0%	100.0%
Decile 3	12.9%	51.3%	34.4%	0.0%	0.6%	0.8%	100.0%
Decile 4	18.0%	62.9%	17.0%	0.7%	0.6%	0.8%	100.0%
Decile 5	23.0%	54.1%	22.1%	0.9%	0.0%	0.0%	100.0%
Decile 6	25.0%	57.5%	16.4%	1.1%	0.0%	0.0%	100.0%
Decile 7	36.8%	51.5%	10.7%	0.0%	0.4%	0.6%	100.0%
Decile 8	34.0%	52.0%	14.0%	0.0%	0.0%	0.0%	100.0%
Decile 9	21.3%	69.2%	8.6%	0.8%	0.0%	0.0%	100.0%
Decile 10	45.3%	46.3%	5.1%	0.0%	0.6%	2.7%	100.0%
Average	25.0%	53.9%	19.7%	0.6%	0.4%	0.5%	100.0%

Table A14a						
Source of Energy for Cooking						
Households (% by source)						
Decile	Electric stove	Gas burner	Kerosene burner	Wood stove	Open fire	Others	Total
Decile 1	5.1%	7.3%	22.0%	14.9%	37.1%	0.0%	9.7%
Decile 2	8.1%	10.2%	12.9%	25.8%	0.0%	0.0%	10.2%
Decile 3	5.2%	9.5%	17.5%	0.0%	17.1%	16.6%	10.0%
Decile 4	7.2%	11.6%	8.6%	11.4%	17.1%	16.6%	9.9%
Decile 5	9.2%	10.1%	11.2%	14.9%	0.0%	0.0%	10.0%
Decile 6	10.0%	10.7%	8.4%	18.6%	0.0%	0.0%	10.0%
Decile 7	14.4%	9.3%	5.3%	0.0%	11.6%	12.2%	9.8%
Decile 8	13.6%	9.6%	7.1%	0.0%	0.0%	0.0%	10.0%
Decile 9	8.6%	12.9%	4.4%	14.4%	0.0%	0.0%	10.1%
Decile 10	18.6%	8.8%	2.7%	0.0%	17.1%	54.5%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A15						
Source of Water Supply						
Households (% by decile)						
Decile	Piped Water	Rain water tank	Well in yard	Public well	River/lake/ creek	Others	Total
Decile 1	73.6%	24.9%	0.9%	0.0%	0.6%	0.0%	100.0%
Decile 2	80.3%	16.4%	0.0%	3.4%	0.0%	0.0%	100.0%
Decile 3	91.9%	6.1%	0.0%	2.0%	0.0%	0.0%	100.0%
Decile 4	84.2%	14.5%	0.0%	1.3%	0.0%	0.0%	100.0%
Decile 5	81.1%	14.2%	0.0%	2.0%	0.0%	2.7%	100.0%
Decile 6	79.0%	20.3%	0.0%	0.7%	0.0%	0.0%	100.0%
Decile 7	77.3%	13.6%	3.7%	4.1%	1.3%	0.0%	100.0%
Decile 8	83.8%	10.8%	0.0%	2.7%	0.0%	2.8%	100.0%
Decile 9	80.5%	13.8%	0.0%	5.0%	0.0%	0.6%	100.0%
Decile 10	82.3%	8.0%	0.0%	6.6%	0.0%	3.1%	100.0%
Average	81.4%	14.2%	0.4%	2.8%	0.2%	0.9%	100.0%

Table A15a						
Source of Water Supply						
Households (% by source)						
Decile	Piped Water	Rain water tank	Well in yard	Public well	River/lake/ creek	Others	Total
Decile 1	8.8%	17.1%	19.5%	0.0%	32.9%	0.0%	9.7%
Decile 2	10.0%	11.7%	0.0%	12.3%	0.0%	0.0%	10.2%
Decile 3	11.3%	4.3%	0.0%	7.2%	0.0%	0.0%	10.0%
Decile 4	10.3%	10.1%	0.0%	4.6%	0.0%	0.0%	9.9%
Decile 5	10.0%	10.0%	0.0%	7.2%	0.0%	29.6%	10.0%
Decile 6	9.7%	14.3%	0.0%	2.4%	0.0%	0.0%	10.0%
Decile 7	9.3%	9.4%	80.5%	14.4%	67.1%	0.0%	9.8%
Decile 8	10.3%	7.6%	0.0%	9.6%	0.0%	29.6%	10.0%
Decile 9	9.9%	9.8%	0.0%	18.0%	0.0%	6.6%	10.1%
Decile 10	10.3%	5.8%	0.0%	24.3%	0.0%	34.1%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A16							
Sanitation Facilities							
Households (% by decile)							
Decile	Public sewage system	Own flush septic tank	Shared flush toilet	Household pit	Closet over sea	None	Total
Decile 1	28.9%	32.0%	0.0%	39.0%	0.0%	0.0%	100.0%
Decile 2	38.0%	47.3%	1.4%	13.3%	0.0%	0.0%	100.0%
Decile 3	34.4%	43.2%	3.4%	19.1%	0.0%	0.0%	100.0%
Decile 4	47.3%	37.1%	0.0%	14.8%	0.0%	0.8%	100.0%
Decile 5	47.6%	42.2%	0.4%	9.8%	0.0%	0.0%	100.0%
Decile 6	38.9%	40.0%	0.0%	20.2%	0.0%	0.9%	100.0%
Decile 7	50.7%	41.5%	0.0%	6.9%	0.9%	0.0%	100.0%
Decile 8	45.0%	41.2%	2.8%	11.0%	0.0%	0.0%	100.0%
Decile 9	50.7%	42.4%	1.7%	4.4%	0.8%	0.0%	100.0%
Decile 10	52.6%	43.0%	0.0%	4.4%	0.0%	0.0%	100.0%
Average	43.5%	41.0%	1.0%	14.2%	0.2%	0.2%	100.0%

Table A16a							
Sanitation Facilities							
Households (% by source)							
Decile	Public sewage system	Own flush septic tank	Shared flush toilet	Household pit	Closet over sea	None	Total
Decile 1	6.5%	7.6%	0.0%	26.8%	0.0%	0.0%	9.7%
Decile 2	8.9%	11.7%	15.0%	9.5%	0.0%	0.0%	10.2%
Decile 3	7.9%	10.5%	35.2%	13.4%	0.0%	0.0%	10.0%
Decile 4	10.8%	9.0%	0.0%	10.3%	0.0%	49.1%	9.9%
Decile 5	11.0%	10.3%	4.3%	6.9%	0.0%	0.0%	10.0%
Decile 6	9.0%	9.8%	0.0%	14.3%	0.0%	50.9%	10.0%
Decile 7	11.4%	9.9%	0.0%	4.8%	50.0%	0.0%	9.8%
Decile 8	10.4%	10.0%	28.3%	7.7%	0.0%	0.0%	10.0%
Decile 9	11.7%	10.4%	17.3%	3.1%	50.0%	0.0%	10.1%
Decile 10	12.4%	10.7%	0.0%	3.2%	0.0%	0.0%	10.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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