



Pacific Centre

FEDERATED STATES OF MICRONESIA

Analysis of the 2005 Household Income
And Expenditure Survey



Pacific Centre

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A report on the estimation of basic needs poverty lines,
and the incidence and characteristics of
poverty in Federated States of Micronesia

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Yap



Chuuk



Pohnpei



Kosrae

Government of the Federated States of Micronesia
Office of S.B.O.C, Division of Statistics
and UNDP Pacific Centre, Suva, Fiji , September 2008

Acknowledgements

This analysis of the household income and expenditure survey has been undertaken with the support of technical assistance provided by the UNDP Pacific Centre in Fiji. The work benefited from support and technical inputs from the Government Statistician, Stoney Taulung, who guided the analysis. In the Statistics Division itself the primary collaborator was Ms Brihmer Johnson, who was responsible for coordinating and supervising the general conduct of the household income and expenditure survey and the processing of survey data. It was a pleasure to work with these staff of the Division of Statistics and the analysis has benefited from their insights, technical support and dedication.

The support and encouragement of Mathew Chigiyal of SBOC and previously of Marion Henry and Roger Mori of the Department of Resources and Development is also acknowledged with appreciation. Valuable inputs and comments have been provided on working drafts of the paper by UN colleagues in Fiji and at the UNDP Pacific Centre, especially Carol Flore and Jeff Liew, and before their departures Roderic Evers and Kai Carter.

Technical support has also been provided by staff of the Statistics Programme at SPC, notably by Graeme Brown, previous Regional Statistician, as well as Chris Ryan and Greg Keeble and consultant Kim Robertson.

However, none of those who have contributed their advice and insights are responsible for any errors in the analysis presented here. This report and analysis of the poverty lines is not the end of the story; it focuses only on the “headline” poverty lines and indicators. Further work is needed to make estimates of the poverty incidence of US\$1 and US\$2 per day in Purchasing Power parity terms for monitoring MDG 1.

It is also possible for more detailed analysis to be conducted on specific issues relating to food consumption patterns, gender, children in poverty and the nature of poverty at individual provincial levels. The further and more detailed analysis of the broader socio-economic aspects of the survey data which can be done on the survey data will add policy substance to the key poverty indicators. It will also assist in developing the various conclusions and hypotheses relating to poverty in FSM which are covered in this report.

David Abbott
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September 5, 2008

Foreword

Poverty as measured by national poverty lines is a relative measure of hardship. Its essence however lies within the context in which it is defined. While this report includes discussions on poverty in the FSM within the Pacific context, its primary focus is to assess and define poverty within the context of the basic costs of a minimum standard of living in the FSM and in particular within each of the FSM states.

An estimation of National Food and Basic Needs Poverty Lines for FSM is provided to enable determination of those living above and those living below the poverty line. Accordingly, many people in the FSM face hardship and poverty. The report and its findings are an important guide to the governments, policy-makers, and community leaders alike in planning and formulating appropriate policies that would improve the lives and well being of the people especially those living below the national poverty line. The challenge for the FSM is to fully embrace the need to deal with the increasing levels of hardship and poverty that exist in the FSM and ensure that the aspiration of the FSM people for better standard of living is met.

The FSM Government is indebted to the UNDP Pacific Centre, especially Mr. David Abbott, for the production of this report. It is my hope that the report will not be the last but first in a series of reports to follow to continue to assess poverty and gauge FSM's progress in addressing it. To this end, the continued assistance of UNDP Pacific Centre and of other donor agencies and partners is essential.

Fabian Nimea
Director
Office of SBOC

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Abbreviations

ABS	Australian Bureau of Statistics	NGO	Non Government Organisation
ADB	Asian Development Bank	PACER	Pacific Agreement on Closer Economic Relations
a.e.	Adult equivalent	PAH	Participatory Assessment of Hardship
BNPL	Basic Needs Poverty Line	p.c.a.e	per capita adult equivalent
CGER	Combined Gross Enrolment Rate	PGI	Poverty Gap Index
CPI	Consumer Price Index	PHDR	Pacific Human Development Report
CSO	Civil Society Organisation	PIC	Pacific Island Country
CVI	Composite Vulnerability Index	PICTA	Pacific Islands Trade Agreement
EEZ	Exclusive Economic Zone	PNG	Papua New Guinea
EU	European Union	PPA	Poverty Partnership Agreement
FAO	Food and Agriculture Organization of the United Nations	PPP	Purchasing Power Parity
FPL	Food Poverty Line	PPS	Probability Proportional to Size
FSM	Federated States of Micronesia	PRS	Poverty Reduction Strategies
FSMDB	FSM Development Bank	SBOC	Office of Statistics, Budget & Economic Management, Overseas Development Assistance and Compact Management
GDP	Gross Domestic Product	SDP	Strategic Development Plan
GNP	Gross National Product	SOE	State Owned Enterprise
HCI	Head Count Index	SPC	Secretariat of the Pacific Community
HDI	Human Development Index	SPGI	Squared Poverty Gap Index
HDR	Human Development Report	STI	Sexually Transmitted Infections
HH	Household	STR	Student Teacher Ratio
HIES	Household Income and Expenditure Survey	UN	United Nations
HPI	Human Poverty Index	UNDP	United Nations Development Programme
IMF	International Monetary Fund	UNFPA	United Nations Population Fund
IP	Incidence of Poverty	WHO	World Health Organization
LFPR	Labour Force Participation Rate	WTO	World Trade Organisation
L3D	Lowest Three Deciles		
MDG	Millennium Development Goals		
NCD	Non-communicable Disease		
NDS	National Development Strategies		

■ ■ ■ Executive Summary

1. 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 number of households and/or the proportion of the population that are deemed not to be able to meet these basic needs. The costs and basic needs for individual households are likely to differ across the country between the urban and rural areas. It is therefore necessary to analyse the data from each state to provide an understanding of the relative costs and standards of living of households and people living in different parts of the country.
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 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.

2. Purpose of the Paper

3. The purpose of this paper is therefore to provide estimates of National Food and Basic Needs Poverty Lines for FSM and the four states based on an analysis of the household data from the 2005 Household Income and Expenditure Survey (HIES). From these state and national level poverty lines the incidence of poverty can be estimated.
4. The HIES contains a wealth of information. This paper analyses the expenditure data to estimate the incidence of poverty and the Head Count Index (HCI)¹ by comparing food and basic needs poverty lines to recorded levels of expenditure.
5. It also provides an analysis of the broad characteristics of low-expenditure households 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 FSM, what common characteristics they might share and why they might be in this situation. Such information will be useful for government to define targeted policies and interventions to assist in alleviating their poverty and hardship.
6. 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 numbers of households and proportion of the population that are deemed to be unable to meet these needs. Every country experiences some incidence of poverty, but the levels of incidence measured by national poverty lines are not directly comparable across countries.
7. Thus, two countries may have similar levels of relative poverty measured by national poverty lines but very different levels of absolute poverty. The measurement of absolute poverty, enabling cross-country comparisons of the extent of poverty, is usually done through the estimation of the US\$1 per day PPP value used in Goal 1 of the Millennium Development Goals (MDGs). Presently this measure of poverty cannot be estimated since PPP indices are not yet available; however estimates should be available by the end 2008.
8. For the analysis of hardship and poverty in FSM the household income and expenditure data from the 2005 HIES has therefore

¹The 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 FSM, or any other Pacific Islands 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.

been used to estimate Food and Basic Needs Poverty Lines. These then provide the basis for estimating the relative poverty and hardship experienced by the poorest households in the country and the four states. From these, incidence levels, depth and severity of poverty have also been measured. Estimates have also been made of Gini coefficients on levels of inequality in expenditure by households. An analysis of the characteristics of the poorest 30% (bottom three deciles) of households has also been assessed.

3. Food and Basic Needs Poverty Lines

9. The Food Poverty Lines (FPL) for FSM and households/families in the four states have been estimated from the actual food expenditure patterns recorded in survey diaries for households in the lowest four-deciles of expenditure, measured in per-capita adult-equivalent terms. An FPL measures the cost of a minimally nutritious diet, based on an average adult daily food-energy intake of 2100 calories.²
10. To estimate the cost of the FPL in FSM, CPI prices were used to measure the costs of purchased items. The actual values recorded in the diaries were used to estimate the notional costs of items that were produced for home consumption (subsistence production). This is important because in Chuuk and Yap states particularly, subsistence production accounts for two-thirds and three-quarters, respectively, of food consumed by the poorest households. In comparison, Pohnpei and Kosrae subsistence production accounts for just over one-third of food consumed by those in the bottom thirty percent of households.
11. The weighted average household FPL in 2005 for the country as a whole is estimated to be US\$96.68 (US\$14.47 per capita adult equivalent (p.c.a.e.) per week. For Yap, which had the highest food costs, the weekly household food poverty line was estimated to be US\$122.97, (US\$16.77 per p.c.a.e. per week). In other states the corresponding figures were US\$92.32 in Chuuk, US\$93.88 in Pohnpei and US\$94.39 in Kosrae.
12. 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\$154.45 per household (US\$23.12 p.c.a.e.) per week. Yap is again the state with the highest BNPL at US\$186.54, followed by Pohnpei at US\$163.62 per household per week. For Chuuk and Kosrae the figures were US\$137.96 and US\$157.77, respectively.
13. The amounts actually reported by households as being spent on non-food essentials varies widely between the states. In Pohnpei poor households (bottom thirty-percent) reported spending 74% as much on non-food items each week as they spent on food. In Kosrae the figure was 67%. The higher figure for Pohnpei is consistent with the higher levels of non-food expenditure that are generally seen in other urban centres around the region. For the more rural states of Chuuk and Yap the expenditure on non-food items for the poorest households was equivalent to 49% and 52% of their food expenditure respectively--typical of more rural parts of the region.
14. For the purposes of calculating the BNPL the average actual dollar value of expenditure incurred by households in the lowest three was taken as the basis for the non-food factor. Applying these actual expenditure amounts to the FPL gives the non-food basic-needs component as illustrated in Table ES1. This table also summarises the weekly per capita adult equivalent poverty lines and the average cost per bottom-three-decile household in adult equivalent terms.

US\$ per capita adult equivalent per week	Food Poverty Line	Non-Food Basic Needs Factor	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH lowest three deciles a.e
	A	B	C = A*B	D = A+C	US\$ HH week
National Average	14.47	0.60	8.65	23.12	154.45
Yap	16.77	0.52	8.67	25.44	186.54
Chuuk	13.99	0.49	6.91	20.90	137.96
Pohnpei	14.35	0.74	10.66	25.02	163.62
Kosrae	13.37	0.67	8.98	22.35	157.77

² This is the minimum food-energy intake recommended by the Food and Agricultural Organisation of the UN, and the World Health Organisation.

4. Incidence of Poverty

15. The Incidence of Poverty has been estimated by calculating: a) the proportion of households, and b) the proportion of population, which reported weekly adult equivalent per capita expenditure less than the relevant food or basic needs poverty lines, see Section 6.3 and Table ES2.

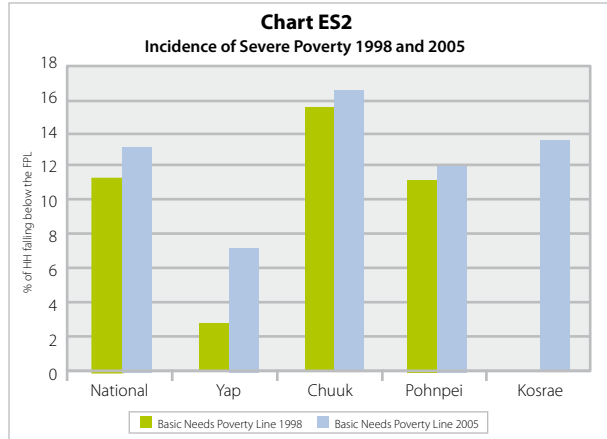
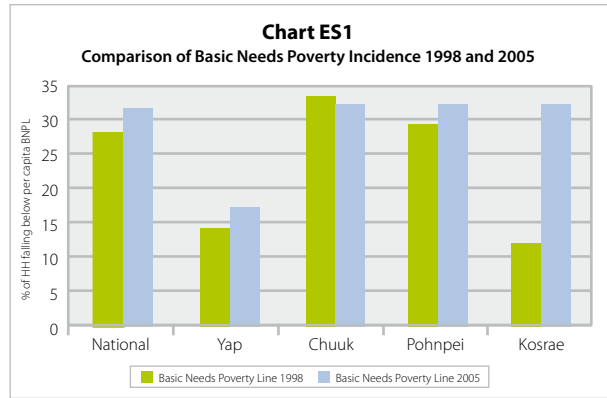
16. The average incidence of basic needs poverty, as measured by the Head Count Index (HCI) over all households, is estimated at 22.4%, accounting for 29.9% of the population. Within the national average, Pohnpei recorded a high poverty incidence of 24.4% of households and 33.9% of the population. In Chuuk the 2005 data indicates a level of poverty incidence that affects 23.1% of households and 28.7% of the population. Kosrae has the highest level of poverty incidence at 27.1% of households and 34.5% of the population.

17. These estimates of poverty from the 2005 HIES have been made on the basis of per capita adult equivalent expenditure to be consistent with the methodology adopted across the region. To compare the level of poverty with the estimates made from the 1998 HIES it is necessary to make adjustment to the latest figures to bring them to the equivalent per capita levels estimated from the 1998 survey, see Chart ES1.

18. On this basis it was estimated that in 1998 27.9% of households on average were below the BNPL, the comparable figure for 2005 was 31.4%. For the states the 1998 survey indicated that 29.5% of Pohnpei households fell below the poverty line; the comparable rate for 2005 was 32.2%. The data suggests therefore that there was a slight worsening of the overall poverty situation on Pohnpei between 1998 and 2005. In both Yap and Kosrae there appears to have been a significant worsening of the poverty situation. The proportion of households below the BNPL in Yap is estimated to have increased from 14.4% in 1998 to 17.1% in 2005, and in Kosrae the proportion increased from 12.3% to 32.1%. In Chuuk the overall poverty situation does not appear to have changed very much between 1998 and 2005, in 1998 the level of incidence is estimated to have been 32.9% of households with the comparable figure for 2005 being 32.3%.

19. While the levels of basic-needs poverty might appear to be relatively high, and in the cases of Yap and Kosrae to have increased significantly, it is nevertheless interesting to note that the levels of food poverty (those households that are unable to acquire a basic diet) is still quite low, averaging 11.2% at the national level in 1998 compared to a comparable 13.1% in 2005, see Chart ES2. Chuuk has the highest level of severe poverty followed by Kosrae which

Table ES2				
Incidence of Poverty				
Proportion of HH/Population with Weekly Per Capita Adult Equivalent Expenditure less than Food and Basic Needs Poverty Lines				
	Households		Population	
	Food	Basic Needs	Food	Basic Needs
National average	7.8	22.4	11.0	29.9
Yap	2.0	11.4	4.0	19.4
Chuuk	9.6	23.1	12.2	28.7
Pohnpei	6.8	24.4	10.9	33.9
Kosrae	7.1	27.1	8.8	34.5



saw a significant increase between 1998 and 2005. This suggests that the increasing monetisation of the society is placing ever greater burdens on those who have the least access to cash income, economic opportunities and employment.

20. In Yap food does not appear to be an issue. On average some two-thirds of food for Yap households comes from own production, for those in the bottom three deciles the proportion was recorded as 86%. But the opportunities for earning cash to meet non-food needs are often lacking. The state has only a small population, thus a small local employment market and little in the way of tourism or other related employment opportunities. The situation is high.
21. With food and fuel prices rising rapidly many households are becoming increasingly vulnerable to falling below the poverty lines. It is estimated that an additional 4.8% and 9.1% of the population would fall into poverty with increases in the BNPL of 10% and 20% respectively. This is discussed further in Section 6.4.

5. Depth and Severity of Poverty

22. The Poverty Gap Index (PGI), measuring the depth of poverty³ in FSM has been estimated at a national average of 9.3. This is slightly lower than Fiji (11.2) and the FSM level measured in 1998 of 9.8. The Squared Poverty Gap Index (SPGI), which measures the severity of poverty⁴ being experienced, is estimated at 4.0 nationally. This is a lower poverty severity index than estimated in 1998, 4.8, and is less than the recent estimate for Fiji, 5.1. This suggests that FSM experiences a somewhat lower level of poverty severity than other regional countries. These two indices reflect the fact that there is a wide variation in expenditure levels between the poor and non-poor households. Measured in per capita adult equivalent terms, the weekly household expenditure was almost ten times higher in households in the highest decile compared to those in the lowest decile, see Section 6.5.

6. Income Distribution and Inequality

23. Figures for the Gini Coefficient, a measure of inequality, indicate that the level of inequality in FSM has declined since 1998. At the national level the Gini Coefficient in 2005 was estimated at 0.27, down from 0.47 as indicated by the 1998 data. At the state level, Yap had the lowest coefficient, 0.24, putting it below Chuuk and Pohnpei with indices of 0.27 and Kosrae at 0.25, see Section 7. Although there are very wide differences in expenditure per capita between the poorest and better-off households, the larger household size in the poorest households means that the overall share of aggregate expenditure incurred by these households is higher than might otherwise be expected.

7. Who are the Poor and What are Their Characteristics?

Gender and Hardship

24. The gender of the head of household appears to play a relatively small role in determining the likelihood of a household being in poverty in FSM. The HIES analysis suggests that female-headed households are slightly over-represented in the lowest three expenditure deciles in Chuuk, Pohnpei and Kosrae. They are particularly over-represented in the poorest quintile of households. Nationally, 20.3% of households were reported as being headed by females. In the poorest decile the proportion was 21.6% and in the lowest three deciles, 22.8%. Females are, however, also slightly over-represented (21.8%) in the highest quintile, see Section 8.2.

Children in Hardship

25. The survey indicated that there were a total of 39,137 children less than 15 years in the country, with an average of 2.4 children per household. The analysis indicates that although about 45% of all children live in Chuuk, this state accounts for 50% of those that live in the poorest households, Section 8.3. Thus children from Chuuk are slightly disadvantaged compared to those in other states.

³ PGI: An index of the percentage by which the average expenditure of poor households falls below the BNPL, thus in FSM the average expenditure of poor households is 9.3% below the BNPL.

⁴ SGI: An index based on the PGI which by "squaring" the amount that a household's expenditure is below the BNPL gives additional weight to the poorest households; the higher the index the greater the severity of poverty experienced.

26. Overall female headed households were responsible for 20.2% of children living in poor households, this compared to an average of 16.7% of children living in female headed households in the population as a whole.

Educational Attainment of Head of Household

27. At the national level some 7% of household heads reported having had no schooling at all. However, in the poorest three deciles the reported rate was 11.6% and in the bottom quintile it averaged 13.7%. Amongst the highest three deciles the proportion of households with no education was only 4%. By state, those in the poorest households having the highest level of no education were Chuuk, 13.7% and Kosrae, 10.9%.
28. Those achieving only elementary level accounted for 35.8% of all household heads, but for 46.6% of those in the poorest three deciles. As education attainment increases, the proportion of those living in the poorest three deciles achieving these higher levels declines. Those completing high school accounted for 28.6% of those in the poorest deciles and 33.1% of those in the highest three deciles, section 8.5. Thus there would appear to be a clear link between the poorest households and the lack of educational achievement.

Source of Energy for Cooking

29. Almost two-thirds of the poorest households at the national level rely on wood for cooking. In the states, just over three-quarters of poor households in Yap and just over eighty percent of households in Chuuk rely on wood. Nationally, only 2.6% of those in the bottom three deciles used electricity compared with 16.2% in the top three deciles. In Yap and Chuuk none of the poorest households had access to electricity. Although power is widely available on Pohnpei only about 6% reported relying solely on electricity, Section 8.6. Yet, a further eight percent combined electricity use with kerosene. This suggests that the cost of purchased power is a deterrent from its use and that firewood is easily accessible, either in market or from collection. In the island areas there is very little use of energy sources other than firewood.

Access to Safe Water

30. Access to both safe water and sanitation facilities are important factors in ensuring good health for children. Access to these two is therefore a key issue in considering poverty and hardship alleviation. At the national level only 19.2% of households in the bottom three deciles had any sort of access to a public system or cistern. This compared with 49.9% of households in the top three deciles. At the other end of the scale, 37.8% of the poorest households relied on domestic wells or other sources of supply compared with only 11.5% of the top thirty-percent of households. The reliance on domestic wells and other sources is greatest in Chuuk state and least in Kosrae, Section 8.7.

Access to Sanitation

31. The poorest households are also significantly disadvantaged in access to improved sanitation. Only 7.4% of the poorest households have access to a flush toilet either inside their own house or in their building. However, a further 36.8% have access to an outside flush toilet. This compared with 43.8% with internal access to a flush toilet for those in the highest three deciles, and a further 25.5% with an external flush facility. One third of the poorest households had no access to improved sanitation. At the state level amongst the poorest households, two-thirds of those in Yap and forty percent of those in Chuuk had no proper sanitation system.

8. Conclusions

32. The estimate that around one-in-five households and almost one-in-three of the population of FSM 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-of-living environment with a relatively high-minimum standard of living (compared to other parts of the Pacific) 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.

33. However poverty in the FSM context does not mean hunger or destitution in the traditional sense of understanding. It means rather that many households are struggling to meet their basic living expenses on a daily or weekly basis, particularly those expenses that require cash payments. Families constantly 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 are made between one bill and another, food or fees. Households deemed to be experiencing basic-needs poverty are therefore facing hardship on a daily basis. They struggle to pay bills and to purchase adequate and suitably nutritious food. They might need to borrow regularly from informal loan providers (“loan-sharks”) who charge very high interest rates for small unsecured loans to meet family commitments and community obligations. They are thus frequently, and occasionally constantly, in debt.
34. Drift of populations to more urban centres, especially amongst young men, leads to higher levels of unemployment and growing numbers of people living in poor quality and squatter-type settlements, and generally in sub-standard housing conditions. These all contribute to a deteriorating social environment.
35. Many of the poor live in low-quality housing without proper access to water, sanitation and other basic services. Poor housing conditions lead to poor health, poor employment prospects, and poor education attainment. Children may miss school due to ill-health or because school fees or associated have not been paid. Adults are frequently poorly educated and thus unable to get anything but the lowest paid and often casual employment, if such employment is even available. The cycle of poverty can therefore be perpetuated.
36. This analysis seeks to provide government with clearer, evidence-based indications of the extent and nature of poverty in FSM. It suggests policy issues and possible policy options to address these. Increased opportunities for employment or economic opportunity, not only in the urban centres but also in the rural areas, together with improved basic education are amongst the most critical.
37. The following Table ES3 summarises the key MDG poverty indicators derived from the HIES.

Table ES3					
Millennium Development Goal Indicators					
	National	Yap	Chuuk	Pohnpei	Kosrae
1.1 Proportion of Population below Basic Needs Poverty Lines % (Note 1)	29.9	19.4	28.7	33.9	34.5
Proportion of Population vulnerable to falling into poverty; pcae <10% above BNPL %	4.8	4.7	5.0	5.0	0.4
1.2 Poverty Gap Ratio (PGR) - Depth of Poverty	9.3	5.2	8.5	10.8	9.4
Squared PGR - Severity of Poverty	4.0	1.7	3.6	5.1	3.7
1.3 Share of poorest quintile (20%) in consumption by region %	8.5	11.1	8.4	8.4	9.6
Ratio of Share of poorest quintile (20%) to highest quintile	4.2	3.2	4.2	4.1	3.6
Gini Coefficient: (0 = perfect equality 1 = perfect inequality)	0.27	0.24	0.27	0.27	0.25
1.9 Proportion of households with p.c.a.e below minimum level of dietary energy consumption (FPL) %	11.0	4.0	12.2	10.9	8.8
Note 1: Proportion of Population below US\$1 (PPP) per day : data not yet available					

National Poverty Lines and Estimates of the Incidence in of Poverty in FSM

1. Purpose of Paper

1. The purpose of this paper is to provide estimates of National Poverty Lines and the incidence of poverty for FSM and the individual states based on an analysis of the household data from the 2005 Household Income and Expenditure Survey (HIES).
2. The HIES contains a wealth of information on household income and expenditure and on household characteristics enabling a picture to be developed of the overall status of either well-being or hardship being experienced by the people of FSM. Specifically this paper analyses the expenditure data to estimate the incidence of poverty and the Head Count Index (HCI)⁵ by comparing food and basic needs poverty lines to recorded levels of expenditure. The analysis uses the “Cost of Basic Needs” methodology which is explained in the following sections.
3. It also provides an analysis of the broad characteristics of low-expenditure households (those in the lowest thirty-percent of weekly per capita adult equivalent expenditure); this analysis assesses their socio-economic status, demographics and levels of household access to basic services. Together with the poverty indicators these provide a good indication of which households are the most disadvantaged in FSM and the four states; what common characteristics they might share; and why they might be in this situation. Such information will be useful for national and state governments 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 FSM in particular, Section 2;
 - Outline the poverty analysis methodology used and provide an overview of some of the key household and socio-economic indicators from the HIES, Section 3;
 - Estimate food and basic needs poverty lines for households in FSM as a whole and each of the four states⁶ ; Sections 4 & 5;
 - Provide indications of the incidence of poverty amongst households in the states, estimates of the depth and severity of poverty by state, and estimates of the vulnerability of HH falling below the poverty lines in the face of rising prices and declining real incomes; Section 6;
 - Estimate the extent of inequality in income (or expenditure) amongst households, Section 7
 - An outline of some of the characteristics of poor households; section 8; and
 - Provide a summary of key policy issues arising from the analysis, section 9.
5. This report is the second occasion that national poverty lines have been estimated for FSM. The previous analysis was undertaken in 2003 on data from the 1998 HIES.⁷ FSM is therefore one of the few Pacific countries that, so far, is able to begin to assess changes in the levels of hardship and poverty over time and to determine whether development policies and initiatives have had any noticeable impact on the level of hardship and poverty experienced by the people.

⁵ 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 FSM, or any other Pacific islands 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.

⁶ The survey defined households as units “where normal family or household living arrangements are exercised”; and therefore excludes institutional housing such as schools, hospitals etc.

⁷ Hardship and Poverty Status Discussion Paper; ADB RETA 6047, presented to a national workshop on 30 January 2004.

■ ■ ■ 2. Introduction

2.1 Background

6. The Federated States of Micronesia (FSM) is a small north Pacific nation having a federal system of government made up of four states (Pohnpei, Kosrae, Yap and Chuuk), with a total population of around 110,000 (end 2007 estimate). The country consists of some 607 islands extending 1,800 miles across the archipelago of the historically designated Caroline Islands with a total land area of 702 sq. kms. The islands are a mix of coral atolls and hilly volcanic islands. Although fertile these volcanic islands, being very rugged and dissected by many steep river valleys, frequently have limited potential for large scale agricultural development. It has been estimated that less than 16% of Pohnpei, the largest volcanic island is suitable for cultivation. Generally however the islands are in pristine condition and surrounded by deep clear water with many relics from WWII which makes them attractive for diving and marine based niche tourism. Pohnpei is home to the ruins of Nan Madol, Yap has its traditional stone money, and both Chuuk and Kosrae also have important historical and cultural sites.
7. The climate is tropical with the high islands experiencing heavy year-round rainfall. Occasional cyclones cause severe damage however. The population is predominantly Micronesian with a small number of Polynesians. The social systems of the four states whilst varying in degree of hereditary and hierarchy, are all based on the typically Pacific community and family structures seen elsewhere in the region. Yap and Pohnpei are generally regarded as the more hierarchical and hereditary in their traditional leaderships and Kosrae the more egalitarian. Chuuk's generally poor economic performance and sometimes weak standards of governance reflect its more factional traditional structures.
8. FSM's principal resources are the fish stocks in the 2.6 million sq. km. of the exclusive economic zone (EEZ). The sustainable yield of these stocks has been estimated to exceed 0.25 million tons per annum. The population density is generally quite low, certainly on the main islands, and there is considerable agricultural and other potential for small-scale niche-market products. The human capital is generally quite limited with few students proceeding beyond the early years of secondary school and many of those that do enter tertiary education fail to complete their training. The links between poor educational attainment and poverty are analysed further in Section 8. There is also a steady out-migration to USA and elsewhere which has kept population growth low. The issues facing the nation are not so much the lack of resources, either natural or human, but rather the remoteness of the islands and therefore the difficulty in economically exploiting those resources that are available.
9. The high disparity between public and private sector wages, together with traditional aversion towards entrepreneurship, constrains private sector development. There is little commercial agriculture and only a handful of primary exports. By Pacific standards, expenditure on health and education is average, but there are urban-rural disparities and other differences both within and between the states.
10. In 1999 FSM ranked 7th (out of 12) on the UNDP Pacific Human Development Index (HDI) and 9th on the Human Poverty Index (HPI). The public service dominates the cash economy of each State, with the national government adding to this dominance in Pohnpei. FSM depends greatly on development assistance, primarily from the USA under the Compact of Free Association. The original Compact funding, with extensions, ended in 2003 but has been replaced by a new agreement that covers a twenty-year period to 2023. As some 50% of recurrent expenditure is still likely to be funded by Compact money, the government faces significant fiscal challenges particularly in the current period of rapidly rising prices for oil and food imports. These challenges continue to test governance structures at both national and state levels.
11. In the last five years GDP growth has been negative averaging minus 2.4% per annum⁸; the high rate of out-migration has kept the overall population growth rate to less than 0.5% resulting in per capita GDP declining by a similar amount. Rising import prices and negative growth are likely to have exacerbated the extent of hardship since the HIES in 2005. In the course of the analysis a sensitivity analysis has been conducted to assess the likely increase in the level of poverty incidence in the absence of any corresponding increase in income/expenditure levels, see Section 6.

⁸ Asian Development Outlook, 2008, Asian development Bank, Manila

2.2 Defining Hardship and Poverty in the FSM Context

12. Although the individual states of FSM may have differing traditions and cultures there is an underlying belief in the strength of the extended family system. In its broadest sense therefore, traditional FSM society, as well as Pacific societies generally, embrace caring for, and sharing with, the extended family. As a result, there has been a belief that poverty could not and should not be a part of normal life. The suggestion that there might be poverty in some form is not, therefore, something that, until recently, many Pacific Islanders have been prepared to accept. Indeed, the usual images of poverty (i.e. starving children, landless peasants, and men and women toiling with ox ploughs in paddy fields) do not immediately spring to mind in relation to FSM or the Pacific.
13. While the people of FSM have “enjoyed” a higher level of per capita Gross Domestic Product (GDP) than most of their Pacific neighbours, the high cost of living in FSM largely resulting from the very high reliance on imports (notably from the USA), have adversely affected the overall living standards of those without regular cash incomes and especially the most vulnerable. However whilst many might not have been especially well-off in financial or material terms, their strong family and community ties have traditionally provided social safety nets for the most disadvantaged and vulnerable. But in recent years the increasing monetisation of Pacific economies, and of FSM in particular with the flow of funds under the Compact, together with the impact of television and internet, the increasing rural/urban and overseas migration have begun to undermine these traditional structures.
14. In the case of FSM the ease of access to USA under the Compact of Free Association has, on the one hand kept population growth to a very low level, but on the other, has led to an out-migration of many young people with better education and valuable skills.
15. As a consequence poverty and hardship, as now defined and understood in the Pacific, (see Section 2.3 following), are being increasingly accepted as concerns which need greater attention from the development community. Some countries in the Pacific region, including Fiji Islands, Papua New Guinea (PNG), and Timor-Leste, have already fully embraced the need to deal with increasing levels of hardship and poverty and the consequent societal implications. Other countries, though perhaps not yet fully 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.
16. However, poverty and hardship must be seen as issues that are best dealt with before they become serious. This has become especially relevant in the past year or so as the impact of rising fuel and food prices have begun to have serious implications for both governments and households alike. Everyone has begun to experience serious declines in their real incomes as price rises have not been matched by increased earnings. As a consequence many more people have begun to experience hardship as they try to balance their daily living needs with their often very limited resources.
17. Poverty and hardship therefore 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, where families struggle to even provide adequate food for themselves, as in the MDG1 indicator of US\$1 per day, or it can be relative, where people are disadvantaged compared to their neighbours in terms of individual national, or localized poverty lines and where they struggle to meet the needs of a minimum standard of living in their own society.
18. Poverty and hardship may be temporary and widespread because of a natural disaster or a conflict situation, as may have been the case with many people being displaced in Solomon Islands during “the tensions” of the 1999 through 2002 period, or as a result of the 2006 tsunami in Solomon Islands’ Western Province. It may also be long-term, personal and chronic due to such causes as unemployment, sickness or disability and in the case of Fiji where leases on the sugar farms have not been renewed and farmers have lost their livelihoods.

19. 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. Their incomes might be just sufficient to meet their food needs but they may struggle to meet other basic needs expenditure. Additionally, they might lack access to basic services, such as water and sanitation or health and education facilities, freedom of choice, or socio-economic opportunities. This “poverty of opportunity”⁹ is just as important in defining the extent of poverty and hardship in a society as the lack of income. In fact, often the conditions and circumstances that give rise to poverty of opportunity (poor access to, or standards of, service delivery, poor governance, poor education and health, limited employment opportunities, and social exclusion) are the underlying causes of income poverty.
20. It is recognised that defining poverty by level of cash income or expenditure alone might not be appropriate in the Pacific where most economies include high levels of subsistence production and consumption of own produced food. The current analysis takes account of this subsistence production/consumption by valuing it as part of both income and expenditure, thus providing a better picture of overall well-being, see Section 2.5.
21. Household survey data on subsistence production also provides a sounder basis for estimating the non-monetary sector in national accounts. Historically in many countries, calculating the value of such subsistence production in the national income (gross domestic product) has not been complete; it may have been inadequately assessed in GDP estimates or occasionally it is missing entirely.
22. 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 analyzed 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. The 2005 HIES in FSM was one of the first in which a specific objective was declared as being to provide data for poverty analysis.
23. As a result of the Millennium Declaration endorsed at the UN Summit in 2000 and the subsequent adoption of Millennium Development Goals (MDGs) at the World Summit in 2000, there has been a growing awareness of the need to increase both understanding and knowledge of the extent of poverty and hardship in society. The integration of the MDGs as part of a core hardship alleviation and poverty reduction focus in national development priorities and strategies is an overarching goal of all the agencies that have contributed to this analysis.
24. A summary of the key MDG1 indicators derived from the HIES is at Table ES3 in the Executive Summary above.

2.3 Poverty = Hardship: A Pacific Definition of Poverty

25. After extensive consultations through a series of Participatory Assessments of Hardship (PAH) conducted by ADB¹⁰ in ten PICs over 2001 – 2005, 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;
- 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, skill) to meet the basic needs of the household, and/or customary obligations to the extended family, village community and/or the church.

⁹First 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.”
¹⁰RETAs 6002, 6047 and 6157 covering FSM, Kiribati, Fiji, PNG, RMI, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

26. 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 among the atolls of Polynesia and Micronesia and the high islands of Melanesia and most of Polynesia, the concerns of the people were very similar.
27. The causes of hardship and poverty centre around the need for income, a reasonable standard of basic services, for skills to meet opportunities and challenges as they become available. These 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. These concerns, although expressed widely at the regional level, were specifically mentioned in the consultations in FSM, see Box 1.

Box 1 **Priorities of the People of FSM**

These priorities were expressed during the consultations in Pohnpei, Chuuk and Yap states during the participatory assessment of hardship conducted by ADB in 2003.

1. **Access to income generation opportunities** as well as improved access to basic services were the common priorities identified by men, women, and youth consulted in Chuuk, Yap, and Pohnpei States. An emphasis was placed on access to scholarships and skills training to improve chances to find employment or other income opportunities for people from urban and rural areas, particularly for those who have dropped-out from school. Also, improved market access for people from the rural and outer islands was identified as a priority shared by men, women, and youth respondents from all sample states.
2. **Improved basic services and infrastructure** delivery, particularly transport to connect outer islands to state and overseas capitals to improve access to markets (e.g., to sell local produce, fish catch, and handicrafts), higher education, health, power supply, and water were the most common priorities identified by men, women, and youth in all three sample states.
3. **Improved access to information**, particularly family planning, good parenting, community planning and household management skills were priorities shared by men and women. People were increasingly recognizing the value of planning their families to be able to provide for their children's needs such as food, clothing, education, and health. Learning proper parenting skills was also increasingly valued to effectively deal with changes due to the modernization of traditional societies (e.g., alcohol and drug abuse) as well as to develop children's potentials to get a degree and good job.
4. **Access to skills and recreation centres** to cater to youth drop-outs and women who did not complete their education and have no means of accessing skills to find a job, improve craftwork or start a small business was a priority particularly shared by women and youth to improve their economic opportunities.
5. **Measures to stop alcohol and drug consumption** was a priority identified by women's groups throughout all three sample states. Laziness or lack of personal motivation, misallocation of household budget from family's basic needs (e.g., food, education) to alcohol or drugs as well as consistent disagreements among couples due to drug or alcohol were factors cited for this priority. This underlines the increasing role of drugs and alcohol in all sample states in causing stress and tension within the household, particularly for women.
6. **Enforcement of child support law** was a particular priority identified in Chuuk where an increasing number of single women were seen to be the cause of hardship for women's families, particularly in providing for the needs of children of separated or single parents.

ADB: Priorities of the People, Hardship in the Federated States of Micronesia, September 2004, ADB Manila

28. This situation is now changing 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.

2.4 What is the National Poverty Line

29. Poverty as measured by national poverty lines is a relative measure of hardship. It assesses the basic per capita costs of a minimum standard of living in a particular society, or region within a society, and measures the number of households and proportion of the population that are deemed unable to meet these needs. Every country experiences some incidence of poverty, 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 their respective national (domestic) poverty lines, but have very different levels of overall costs and general standards of living. The measurement of absolute poverty, enabling cross-country comparisons of the extent of poverty, is usually done through the estimation of the US\$1 per day PPP value used in Goal 1 of the MDGs. Presently this measure of poverty cannot be estimated since PPP indices are not yet available; however estimates should be available by end the 2008.
30. Poverty is 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 within each HH; however such detail is not available from broad-based HIES.
31. 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.
32. For Pacific Island Countries (PICs) data for estimating national basic needs poverty lines at the household level are becoming available as more surveys and analyses 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 the proportion of the population being in poverty is estimated to be highest in PNG (37.5%, 1996), Fiji (34.4%, 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 larger size of poor HH.
33. However the estimation of poverty lines and the incidence, depth and severity of poverty in society is not an exact science. There is considerable academic as well as empirical debate about the "best" methodology for measuring poverty in society. Box 2 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.
34. 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 the similar analyses in other PICs¹¹ and elsewhere in the world and provides a sound and well-tested methodology. It was also the method previously used to estimate the national poverty lines for FSM from the 1998 data. A comparison of the 1998 and 2005 poverty estimates is provided in Section 6.3.

¹¹ ADB Regional Poverty Programme RETA6022, 6047 and 6157 undertook similar poverty analyses in Samoa, Tonga, and FSM and jointly with UNDP in Tuvalu and Fiji, World Bank/ADB estimates of poverty in PNG and East Timor.

Box 2 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 not deemed to be poor. A poverty comparison assesses which of two distributions (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 households defined by some common characteristic (such 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 a 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 achieves the desired consistency for the purposes of Bank Poverty Assessments. But putting this method into practice with imperfect data can be difficult. Once "basic needs" are defined, we need to be able to measure their cost over time and location. Setting basic needs requires an inherent value judgment, which often leads to disagreements. Also price data are often inadequate.

World Bank, 1994

2.5 Estimating the Poverty Line for FSM

35. Following the "Cost of Basic Needs" methodology, the estimation of poverty lines and, from them, the extent or Incidence of Poverty (IP) in FSM has been 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; the Head Count Index (HCI) and other poverty indicators.

36. The Basic Needs Poverty Line is made up of two components, the cost of food and the amount of expenditure on 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 adult per capita)¹², termed the "**Food Poverty Line**" (FPL). 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 and 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.

37. 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 BNPL by estimating the proportion of households or population which have an expenditure (including the value of subsistence production consumed) less than the BNPL value, referred to as the Head

¹² This is the FAO/WHO recommended daily minimum adult calorie intake for a moderately active adult.

Count Index. Households with per capita adult equivalent expenditure below the FPL are deemed to be in absolute or “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.

38. 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 (Tables 8 & 9). However, their ability to generate cash income for non-food basic needs is often very limited, albeit that in the rural areas the need for non-food expenditure may itself be low due to lack of access to services. This, as the following analysis will attempt to illustrate, means that low rates of incidence of absolute/severe poverty (income/expenditure below the food poverty line) are seen along side quite high levels of basic needs poverty.
39. The depth and severity of poverty between households and population is then estimated by using the Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI), Section 6.5. Estimates of inequality are made using the Lorenz Curve and Gini Coefficients, Section 7.

■ ■ ■ 3. The Household Income and Expenditure Survey

3.1 Introduction

40. The survey was conducted under the authority of Section 4 of Public Law 5-77. The survey reference date was 1 June 2005. This survey in FSM was one of the first to explicitly recognise that the data was needed to assist in the analysis and assessment of the extent hardship being experienced in FSM society. It also recognised the need to provide nutritional data to assist in developing health and nutrition awareness programmes. This analysis therefore provides information on the hardship and poverty indicators and also begins to analyse the nutritional information to provide a basis for more detailed assessment of the impact of changing dietary patterns.
41. The main report of the survey was published in November 2007 and is available from the FSM national statistics office.¹³

3.2 Survey Methodology

42. The 2005 HIES comprised a total of 1380 households made up of samples¹⁴ of 280 HH in Yap, 500 in Chuuk, 460 in Pohnpei and 140 in Kosrae. These sample households represented 12.7% of all HH in Yap, 7.1% in Chuuk, 7.6% in Pohnpei and 11.7% in Kosrae.
43. The survey results indicate a total estimated population of 106,252 comprising 16,427 households throughout the country. The total population was made-up of 47,379 in Chuuk, the largest state, 37,268 in Pohnpei, 13,288 in Yap and 8,317 in Kosrae. These population estimates compare with the most recent 2000 population census which recorded a population of 107,008, suggesting that there has been at best a stable population and at worst a slight decline in the five years from 2000 through 2005.
44. 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 was estimated on the basis of householders’ valuations of what the items might be worth if sold locally. Since there are few organised markets in the rural areas, and thus no established price mechanism (and produce is often exchanged rather than sold), this tends to result in variations in estimated values. Items purchased in stores or in markets, were valued at the actual prices paid or at the CPI price. A review of subsistence valuations in the diaries suggested that on average local produce had an estimated value of around one half of the formal market price.

¹³ Household Income and Expenditure Survey Analysis Report 2005, Division of Statistics, Office of Statistics, Budget and Economic Management, Overseas Development Assistance and Compact Management, Palikir, Pohnpei, FSM, November 2007

¹⁴ 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 2005, Analysis Report, Division of Economic Planning and Statistics, Department of Economic Affairs, Federated States of Micronesia, Palikir, Pohnpei.

45. The survey also collected information on household demographics, employment, education attainment, and household characteristics including access to water and sanitation, and energy utilisation for cooking. The survey field-work was conducted in the first-quarter 2005. SPC and the US Census Bureau provided support to the conduct of the survey, data processing and editing.
46. Whether data on income or expenditure is used as the basis for the calculation of the poverty line and incidence of poverty depends primarily on the perceived accuracy and reliability of the two data sources. In most cases expenditure data is usually more comprehensive and is generally regarded as the more reliable, see Box 3. For FSM the aggregate recorded income and expenditure data were very similar, with aggregate income being just under 5% greater than aggregate expenditure.

Box 3 **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, researchers 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

However since the household diary expenditure is more detailed, and is used as the basis for assessing the food and non-food expenditure components, it was decided to use expenditure as the basis for the poverty analysis. This is consistent with the approach taken in almost all other Pacific poverty analyses. This analysis for FSM therefore uses the per capita household expenditure, adjusted for adult equivalence¹⁵, as the basis for the estimation of the poverty lines, levels of poverty incidence and other poverty related indicators. 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.

47. The detailed calculation of poverty lines and the estimation of poverty incidence has therefore been conducted on the basis of: a) per capita adult equivalent household expenditure, and b) the proportion of households and population deemed to have p.c.a.e expenditure below the food and basic needs poverty line levels. Households have been split into deciles ranked according to the level of per capita adult equivalent expenditure. For the broader analysis of poverty characteristics and vulnerability, the lowest three deciles (L3D) of households ranked in this manner has been used as the basis for detailed scrutiny.

3.3 Overview of HIES Results

3.3.1 Household Size and Composition

48. In the survey the overall national average household size was reported as 6.5 (5.3 a.e). However, for poor, very-low-expenditure (bottom-two-decile) households the average HH size was 8.7 (7.0 a.e), see Table 1. The largest average household size was to be found in Yap state where the lowest quintile HH had an average of 10.0 persons (8.4 a.e). The table illustrates that over all states the size of household declines as household expenditure increases such that the national average HH size in the highest quintile was 3.7 (3.1 p.c.a.e), and even in Yap the size of HH in the highest quintile was only 3.4 (2.8 p.c.a.e). This is a trend that is consistent with the situation in other parts of the region, although is perhaps especially marked in FSM. Low-expenditure, poor HH tend to be the largest and therefore most disadvantaged.

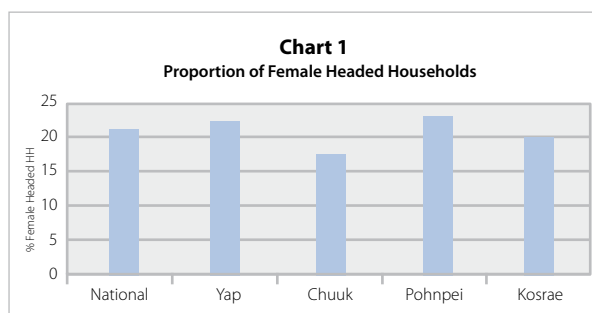
Household Size										
Adult equivalent per capita HH expenditure quintiles	National		Yap		Chuuk		Pohnpei		Kosrae	
	Actual	Adult Equivalent	Actual	Adult Equivalent	Actual	Adult Equivalent	Actual	Adult Equivalent	Actual	Adult Equivalent
Average all Households	6.5	5.3	6.0	5.0	6.8	5.5	6.2	5.0	7.0	5.7
Lowest Quintile	8.7	7.0	10.0	8.4	8.6	6.8	8.7	6.9	9.1	7.4
Lowest Three Deciles	8.4	6.7	8.8	7.3	8.3	6.6	8.3	6.5	8.7	7.1
Highest Quintile	3.7	3.1	3.4	2.8	4.1	3.5	3.4	2.9	4.8	3.9

49. Across the states there is not much difference overall in the size of the poorest HH, all being between 8.3 and 8.8 (6.5 and 7.3 p.c.a.e). Similarly, HH in the highest three expenditure deciles are all significantly smaller.

¹⁵ 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.

50. The proportions of female headed households are shown in Table 2 and Chart 1. Overall, approximately one-fifth of households were reported as being headed by women, a high of 23.1% of households in Pohnpei and a low of 17.5% in Chuuk. The poverty status of these households is discussed further in Section 8.2 below.

National average	20.3
Yap	21.8
Chuuk	17.5
Pohnpei	23.1
Kosrae	20.0



51. According to the survey, there were 39,137 children under the age of 15 years, accounting for 36.8% of the population. The distribution of children through the states is shown in Table 3 and Appendix Table A8. This also indicates the average number of children per household, averaging 2.4 nationally with a high of 2.5 per household in Chuuk and Kosrae. Further analysis of the poverty status of children is provided in Section 8.3 below.

	Children under 15 years	Average number per HH
National	39137	2.4
Yap	4337	2.0
Chuuk	17457	2.5
Pohnpei	14385	2.4
Kosrae	2958	2.5

3.3.2 Household Expenditure

52. Average household expenditure by state is summarised in Table 4 and by shown by decile in Appendix Table A1. This table also indicates average weekly per capita adult equivalent expenditure as recorded by the survey. At the national level average p.c.a.e expenditure for the poorest quintile is only one-tenth of that of the highest quintile HH. This captures the wide difference between those who are in formal employment, and thus earning relatively high cash incomes, and those who are in the informal sectors where opportunities for earning income are low. The national average weekly HH expenditure amounted to US\$246.71, equivalent to US\$37.95 per capita (US\$46.75 p.c.a.e). This compares with a per capita figure of US\$28.23 as recorded by the 1998 HIES, an increase of 34.4%, suggesting little, if any, increase in the level of real consumption.

US\$ per week					
Ranked by adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	246.71	339.23	219.19	248.77	226.50
Lowest Quintile	105.10	192.31	92.55	105.37	108.19
Lowest Three Deciles	120.26	193.32	107.27	120.10	119.54
Highest Quintile	437.46	591.65	380.93	428.21	386.35
US\$ per capita a.e. per week					
Average all Households	46.75	67.34	39.66	49.87	39.64
Lowest Quintile	15.08	22.92	13.69	15.32	14.67
Lowest Three Deciles	18.00	26.36	16.25	18.36	16.93
Highest Quintile	139.83	207.80	107.73	148.54	97.90
Ratio H20/L20 p.c.a.e exp	9.3	9.1	7.9	9.7	6.7

53. For households in the lowest quintile average weekly household expenditure amounted to only US\$105.10, equivalent to only US\$12.08 per capita (US\$15.08 p.c.a.e.). Pohnpei and Yap states appear to have the widest gaps between the highest and lowest p.c.a.e. expenditures, the highest quintile p.c.a.e. expenditure being 9.7 and 9.1 times greater respectively than that of those in the lowest quintiles. The corresponding figures were 7.9 in Chuuk and 6.7 in Kosrae. Across all states those in the lowest three deciles have an average per capita adult equivalent weekly expenditure of only around US\$18.00. Given the widely acknowledged high cost of living in FSM this suggests that many households are indeed likely to be experiencing significant degrees of hardship and poverty especially in the face of the recent big increases in the price of imported foods and fuel.

54. Food and non-food expenditure is shown in Tables 5 and 6. These show a familiar pattern of increasing non-food expenditure as a proportion of total weekly expenditure as both total expenditure and proximity to state/urban centres increases. Thus, the figures show that for households in Yap the average p.c.a.e weekly food expenditure amounted to US\$26.47 while in Kosrae, the lowest, weekly food expenditure amounted US\$15.22 p.c.a.e. For those in the lowest three deciles the corresponding figures were US\$17.73 in Yap and only US\$7.96 in Kosrae.

55. For non-food items households averaged weekly p.c.a.e expenditure amounting to US\$27.72. For those HH in the lowest three deciles non-food expenditure amounted to only US\$8.65 p.c.a.e per week. In the states, Yap had the highest average non-food expenditure of US\$37.69 p.c.a.e per week, while Chuuk had the lowest at US\$20.52. In the lowest three deciles non-food expenditure in Yap amounted to US\$8.67 p.c.a.e. and in Chuuk to only US\$6.91.

56. The patterns of food purchases and food produced for own consumption are shown in Tables 7 and 8. Further details of food production and consumption by decile are provided in Appendix Tables A2 to A4. The importance of subsistence agriculture in the state economies is shown clearly in these tables and in Table 9. Chart 2 illustrates the proportion of own production in total food consumed from table 9. Maintaining healthy subsistence agriculture is essential for food security in the event of a natural disaster or a disruption to shipping and transport services.

57. In Chuuk consumption of own production is higher than food purchases for all but the highest expenditure households. For those in the lowest three deciles in Chuuk, own production accounts for double the value of food purchases, US\$6.30 p.c.a.e. per week compared with only US\$3.02 p.c.a.e. per week purchased. In Pohnpei, in contrast, even the lowest expenditure households rely more on purchased items. For these L3D households in Pohnpei own production was only valued at US\$2.68 p.c.a.e. per week, compared to purchases worth US\$5.01 p.c.a.e. per week.

Table 5					
Weekly Household Food Expenditure					
US\$ per capita adult equivalent per week per HH					
Ranked by adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	18.44	26.47	18.83	15.72	15.22
Lowest Quintile	8.01	16.05	7.64	6.47	7.30
Lowest Three Deciles	9.36	17.73	9.35	7.75	7.96
Highest Quintile	40.04	48.30	44.03	33.68	31.37

Table 6					
Weekly Household Non-Food Expenditure					
US\$ per capita adult equivalent per week per HH					
Ranked by adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	27.72	37.69	20.52	34.05	24.41
Lowest Quintile	7.11	7.07	6.07	8.93	7.37
Lowest Three Deciles	8.65	8.67	6.91	10.66	8.98
Highest Quintile	95.23	135.35	61.56	113.80	66.53

Table 7					
Food Purchases					
US\$ per capita adult equivalent per week per HH					
Ranked by adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	9.52	8.43	8.61	10.64	11.53
Lowest Quintile	3.15	1.75	2.47	4.07	4.41
Lowest Three Deciles	4.01	2.41	3.02	5.01	5.23
Highest Quintile	24.50	23.63	23.18	24.82	25.33

58. The relative proportions of food and non-food expenditure are summarised in Table 10, details by decile are provided at Appendix Table A5. Nationally household expenditure is broadly 40% food and 60% non-food. However in Chuuk food is more important, accounting 47.5% of HH expenditure whereas in Pohnpei food makes up only about one-third of weekly HH expenditure. The pattern changes significantly in the lower deciles where, in Yap, food accounts for almost 70% of the weekly expenditure of HH in the lowest three deciles. In Chuuk the poorest three deciles spend almost sixty per cent of weekly budget on food; in Kosrae the comparable figure for HH in the lowest three deciles is 47% and 42.2% for those in Pohnpei. This illustrates clearly the different patterns of food and non-food expenditure in total expenditure between HH that are predominantly urban (Pohnpei) and those that are primarily rural (Chuuk), and between the differing levels of expenditure as discussed in the previous paragraphs.

59. The pattern of higher proportional food expenditure in HH in the more rural areas compared to those that are more urban is common to other regional countries. Urban living inevitably involves greater non-food expenditure; many rural or small-island based households will not have power, water or communications bills to pay. They will often spend less on transport and housing costs. Thus their need for non-food expenditure is less. Moreover, since rural cash incomes are lower the resources available to meet non-food expenditure is also less.

Table 8					
Weekly Food Produced for Own Consumption					
US\$ per capita adult equivalent per week per HH					
Ranked by adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	8.78	17.68	10.04	5.02	3.69
Lowest Quintile	4.85	14.36	5.12	2.31	2.89
Lowest Three Deciles	5.28	15.34	6.30	2.68	2.72
Highest Quintile	14.74	22.17	20.05	8.59	6.03

Table 9					
Own Production % of Food Consumed					
Ranked by adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	47.61	66.79	53.36	31.96	24.25
Lowest Quintile	60.49	89.48	67.07	35.69	39.64
Lowest Three Deciles	56.40	86.51	67.32	34.60	34.23
Highest Quintile	36.81	45.91	45.54	25.51	19.23

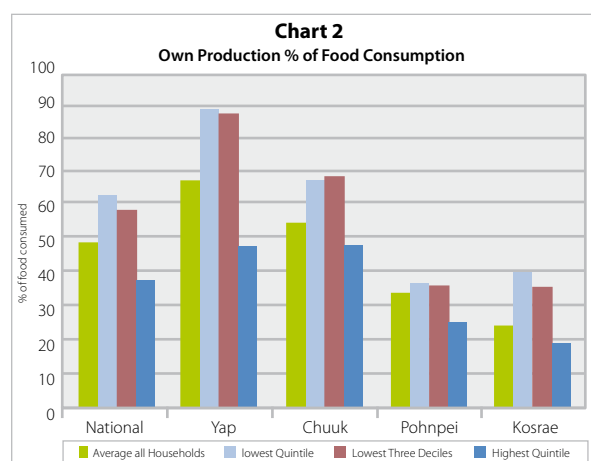


Table 10										
Proportion of Household Food & Non-Food Expenditure										
% of total expenditure	National		Yap		Chuuk		Pohnpei		Kosrae	
	Food	Non-Food	Food	Non-Food	Food	Non-Food	Food	Non-Food	Food	Non-Food
Average all Households	39.4	60.6	39.3	60.7	47.5	52.5	31.5	68.5	38.4	61.6
Lowest Quintile	53.1	46.9	70.0	30.0	55.8	44.2	42.2	57.8	49.8	50.2
Lowest Three Deciles	52.0	48.0	67.3	32.7	57.6	42.4	42.2	57.8	47.0	53.0
Highest Quintile	28.6	71.4	23.2	76.8	40.9	59.1	22.7	77.3	32.0	68.0

4. The Food Poverty Line

4.1 Low-Cost Diets

60. 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 as recorded in 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 estimate of FPL we need to be comfortable that actual food expenditure could meet basic nutrition needs, see Box 4.

Box 4 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

61. Food poverty lines were derived from the actual food expenditure and consumption patterns of the lowest three household expenditure deciles p.c.a.e., as recorded in the daily expenditure diaries, for the four individual states, and as a weighted average of these for the national level. This approach gives a good reflection of local consumption preferences even though these may not provide an “optimal” diet in nutrition terms. This has become the preferred approach and has been used in other regional poverty analyses.
62. The principal items of expenditure, including items of own production consumed, are summarised in Annexes 1 through 4. The method of derivation of the FPL from this data is described in detail in the following section.
63. For comparative purposes an assessment was made of the costs of the model diets for urban and rural households applicable to FSM as developed by the SPC Nutrition Programme and the FSM Department of Health. The details of the models diets are given at Annexes 5 & 6.
64. Comparative analyses 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.

4.2 The Food Poverty Lines

65. The food expenditure from the diaries of HH in the lowest four deciles in each of the states was analysed, Annexes 1 through 4. It was observed that: a) over 90% of food expenditure was accounted for by less than 50 or so items in each of the states; and b) fifteen items only accounted for 85.5% of all food expenditure (including the value of own production consumed) in Chuuk, 82.2% in Yap, 76.9% in Kosrae and 73.1% of all food expenditure in Pohnpei.
66. These top fifteen items are illustrated for Chuuk and Pohnpei in Charts 3 & 4. In the context of the recent big price increases for imported food, notably of rice and flour products, it may also be noted that in Chuuk only 34% of these items by value were imported compared with 60% for Pohnpei. In Yap only 14% of the items by value were imports. This further highlights the difference in consumption patterns of own production and imported purchases, as illustrated in Chart 2, between the urban (Pohnpei) and rural areas of the country. It also draws attention to the weaker level of food security associated with the urban centre.

67. For the estimation of the FPL (see Box 5) the top fifty or so items together with their share in daily food expenditure are shown in columns A and B of the respective Annexes showing the food expenditure for each state. 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 reported diary food expenditure values were grossed up to the total recorded food expenditure from the survey for the bottom three expenditure deciles by the appropriate factor to give a notional total food expenditure based on the listed items, column C;
 - each item was priced using the state CPI for all purchased items, and the average observed diary prices/values for items of own production columns D;
 - the implied unit volume consumed of each item in the diary was calculated, column E;
 - the Kcal (energy) value from the South Pacific Food Composition Tables¹⁶ was applied to each of the items, column F, to give a total Kcal value for recorded consumption, column G;
 - the annual and daily per capita adult equivalent Kcal consumption values represented by each item was then calculated, columns H (annual), and I (daily) ; and finally
 - the daily cost of each item according to its share in the overall daily food intake was estimated, column J.

Box 5

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

68. Summing the daily Kcal values of the expenditure patterns of each state (K) shows that Pohnpei HH reported notionally acquiring an average of 1302 kcal per capita a.e per day, Chuuk HH 1602 kcal per capita a.e per day, Yap HH 2462 kcal per capita a.e per day, and Kosrae HH 1369 kcal per capita a.e per day. Apart from Yap these calories consumption levels are all below the standard minimum of 2100 Kcal per day for an average adult.
69. In order to get to the minimum kcal daily food energy intake these values must be grossed-up (or down in Yap’s case) to the equivalent of 2100 Kcal by the ratio of the recorded Kcal value to the minimum (L). The notional estimated daily cost of the food items (M) is then grossed up also by the factor (L). This gives the adjusted daily cost of acquiring the minimum 2100 kcal per day from the listed items (N).
70. Finally, the daily cost is converted to a weekly value (O). Thus the cost of acquiring a minimum adult equivalent diet in Pohnpei is estimated at US\$2.05 per day and US\$14.35 per week; for Yap HH the costs are US\$2.40 per day and US\$16.77 per week, for

¹⁶The Pacific Islands Food Composition Tables, Second Edition, USP/FAO, 2004

Chuuk HH US\$2.00 per day and US\$14.00 per week, and for Kosrae HH US\$1.91 per day and US\$13.37 per week. These are the Food Poverty Lines used in the analysis, Table 11. The differences between the states in the level of the FPL represent the variations in the actual food expenditure patterns and the differences in the prices applied to calculate the cost of the diets.

71. Table 11 indicates that a HH in the lowest three expenditure deciles would need to “spend” considerably more on food living in Yap, US\$122.97 per week, compared to a similar bottom three decile HH in Chuuk, US\$92.32. This reflects the higher basic FPL in Yap (US\$2.40 p.c.a.e. per day) compared with Chuuk (US\$2.00 p.c.a.e per day) as well as the larger HH size in Yap (7.3 persons a.e) compared to Chuuk (6.6 persons a.e), see also Table 1. The amounts required to be “spent” include both the purchased items and those non-cash items of consumption of own produce.

US\$	Food Poverty Line		
	per capita a.e per day	per capita a.e per week	per HH per week a.e, lowest three deciles
National average	2.07	14.47	96.68
Yap	2.40	16.77	122.97
Chuuk	2.00	13.99	92.32
Pohnpei	2.05	14.35	93.88
Kosrae	1.91	13.37	94.39

72. In the analysis of the 1998 HIES the FPL was estimated at US\$8.40 per capita per week. No separate state level analysis of food expenditure was undertaken. The comparable per capita FPL level from the 2005 data would be US\$11.80, an increase of approximately 40.5% in the cost of a basic diet over the seven years. This compares with the recorded increase in the CPI of around 10% over the period. This therefore suggests that the actual cost of living for the ordinary household increased considerably more than indicated by the broad-based CPI.

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 or 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”.
74. The allowance for basic non-food expenditure is estimated from the HIES based on the level or proportion of non-food costs reported by households at defined levels of total expenditure. 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 and clothing.
75. There are a number of generally accepted methods of calculating non-food expenditures for the poverty lines. The World Bank suggests that a “non-food factor” should be applied to the Food Poverty Line based on the proportion of non-food expenditure actually incurred by households which have an average total income/expenditure equal to or less than the Food Poverty Line, see Box 6. This is intended to represent the bare minimum additional expenditure required to meet non-food basic needs. Households whose total income/expenditure 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.
76. 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/expenditure quintile, the lowest three or four 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 non-food expenditure.

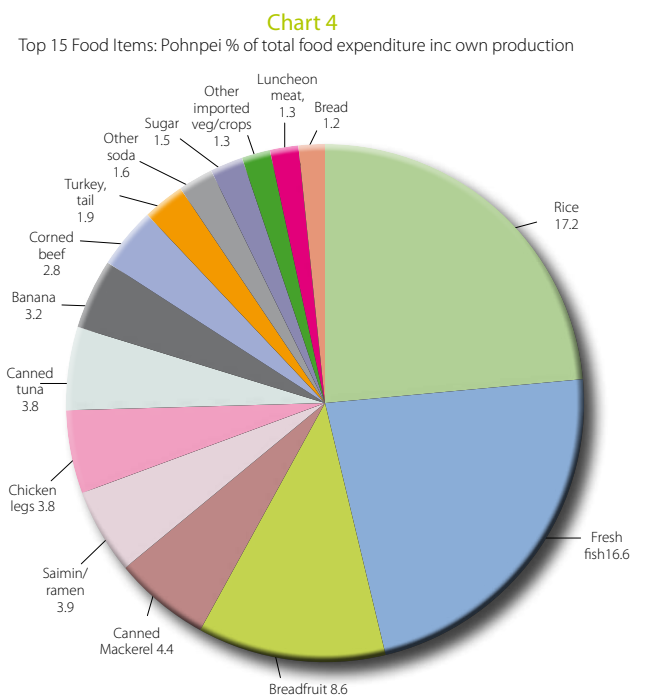
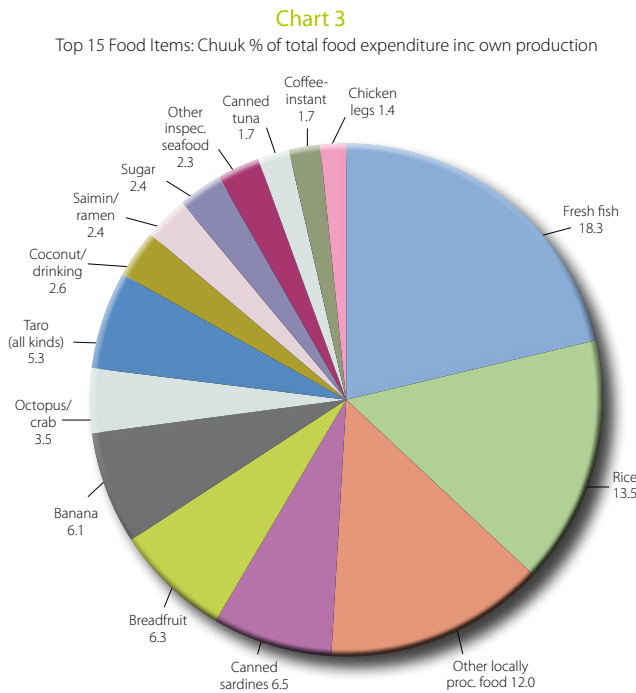
Box 6

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 absolute poverty. World Bank, 1994

77. For this analysis, consistent with other analyses undertaken for Pacific Island countries, the average actual level of non-food expenditure for HH in the lowest three deciles is taken as the basis for the non-food factor. The amounts of basic non-food expenditure from the survey indicate that the bottom-three deciles HH in Pohnpei would need to spend US\$10.66 p.c.a.e per week. The amounts were US\$8.67 for Yap, US\$8.98 for Kosrae and US\$6.91 for Chuuk, see Table 12. Thus the pattern of higher non-food expenditure the greater the degree of urbanisation holds true. In Pohnpei poor HH spend around 74% each week per capita on non-food basic needs compared to food, whereas in the remoter, rural states of Chuuk and Yap weekly non-food expenditure is equivalent to only about 50% of food expenditure.



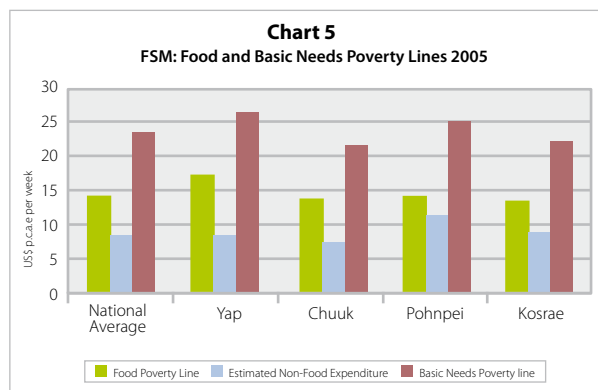
78. Compared to the corresponding figures from the 1998 survey it would seem that the non-food needs of those on Pohnpei have remained proportionately constant at around 75% of food costs, In Chuuk the non-food/food factor declined from 68% in 1998 to 49% in 2005. Similar declines are also observed in the non-food factors for both Yap and Kosrae. These falls in the amount spent on non-food items relative to food items suggests that HH are having to give up some non-food expenditure in order to maintain their food purchases in the face of rising both food prices and prices of other items. It is noted that public service salaries in FSM have not been increased for almost eight years and thus real incomes will have declined significantly over this period.
79. The actual average non-food expenditure recorded by households with adult equivalent per capita expenditure in the lowest three expenditure deciles therefore provides the essential non-food basic needs component which is added to the food poverty line to give the Basic Needs Poverty Line (BNPL). The BNPL is calculated by adding this non-food basic needs expenditure to the food poverty line.

5.2 Basic Needs Poverty Lines

80. Applying these non-food factors to the respective FPL gives the cost of non-food basic needs for Pohnpei as US\$25.02 p.c.a.e. per week, equivalent to US\$163.62 per household in adult equivalent terms (or US\$208.12 per capita L3D HH per week); for Yap US\$25.44 p.c.a.e. per week, equivalent to US\$186.54 per household in adult equivalent terms (or US\$223.13 per capita L3D HH per week), Kosrae US\$25.35 p.c.a.e. per week, equivalent to US\$157.77 per household in adult equivalent terms (or US\$194.75 per capita L3D HH per week), and for Chuuk US\$20.90 p.c.a.e. per week equivalent to US\$137.96 per household in adult equivalent terms (or US\$173.36 per capita L3D HH per week), see Table 12 and Chart 5. These are the Basic Needs Poverty Lines that are used to estimate the level of poverty incidence in FSM in the next Section.

Table 12						
Weekly Adult Equivalent Per Capita Poverty Lines						
US\$ per capita adult equivalent per week	Food Poverty Line	Non-Food Basic Needs Factor (% of Food)	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH adult equiv lowest three deciles	Weekly cost per HH lowest three deciles
	A	B	C = A*B	D = A+C	US\$ HH week	US\$ HH week
National average	14.47	0.60	8.65	23.12	154.45	193.56
Yap	16.77	0.52	8.67	25.44	186.54	223.13
Chuuk	13.99	0.49	6.91	20.90	137.96	173.36
Pohnpei	14.35	0.74	10.66	25.02	163.62	208.12
Kosrae	13.37	0.67	8.98	22.35	157.77	194.75

81. The need for higher basic needs non-food expenditure in the more urban centres is an extremely 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 wide range of non-food essentials, often unavailable in the rural areas. It is therefore important to remember that national, and more particularly regional or state-based poverty lines, measure relative poverty in a specific set of local circumstances with particular food costs and specific non-food “essentials”. Benchmark poverty lines will therefore vary depending on these circumstances.



6. The Incidence and Depth of Poverty in FSM

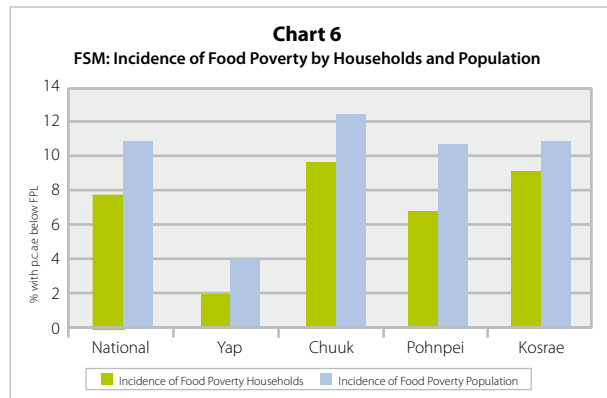
6.1 Head Count Ratio

82. 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 expenditure in the HIES data is summarised in Table 13: Incidence of Poverty for Population and Households. The incidence of poverty is measured by the “Head Count Index” which indicates the proportion of either households or population which had expenditure less than the relevant poverty line.

6.2 Incidence of Food Poverty

83. Table 13 and Chart 6 show that the level of food poverty, those households with per capita adult equivalent expenditure less than the Food Poverty Line (generally referred to as “absolute” or severe poverty), the poorest of the poor, is low. The data suggests that on average over the whole country about 7.8% of households, representing 11.0% of the population have expenditure which would be insufficient to meet basic food needs as defined by the food poverty line. Chuuk state appears to have the highest level of HH falling below the food poverty line, 9.6%; Yap has the lowest at 2.0%. These represent 12.2% and 4.0% of the Chuuk and Yap state populations respectively.

Table 13				
Incidence of Poverty				
Proportion of HH and Population with Weekly Adult Equivalent Per Capita Expenditure less than Food and Basic Needs Poverty Lines				
	Households		Population	
	Food	Basic Needs	Food	Basic Needs
National average	7.8	22.4	11.0	29.9
Yap	2.0	11.4	4.0	19.4
Chuuk	9.6	23.1	12.2	28.7
Pohnpei	6.8	24.4	10.9	33.9
Kosrae	7.1	27.1	8.8	34.5

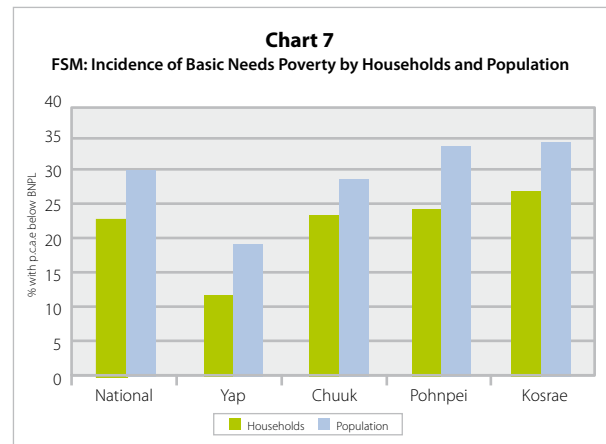


84. Even those HH experiencing food poverty may not necessarily be going hungry. Rather, they are likely to be consuming a poor diet with inadequate nutrition and are thus more likely to experience health problems as a result, and as indicated in Section 4.2. These health problems then translate into lowered learning abilities in children at school and less likelihood of adults getting employment; a perpetuation of the cycle or hardship and poverty. The reported increases in non-communicable diseases, many of which are related to diet (diabetes, hypertension, and high blood-pressure), suggest that many households do indeed have a poor level of nutrition whilst at the same time having plenty to eat.

85. These levels of absolute poverty, with HH having expenditure below the FPL, are generally slightly worse than the corresponding 1998 figures. For Chuuk, the level of food poverty is estimated to have risen from an estimated 15.6% of HH in 1998 to 16.8% in 2005. In Pohnpei the incidence is estimated to have risen from 10.8% of HH in 1998 to 11.9% in 2005. Over the period the numbers experiencing a high level of hardship appear to have increased most in both Kosrae and Yap with the proportion rising from the previous levels of zero and 2.8% respectively to 13.6% and 7.1%.

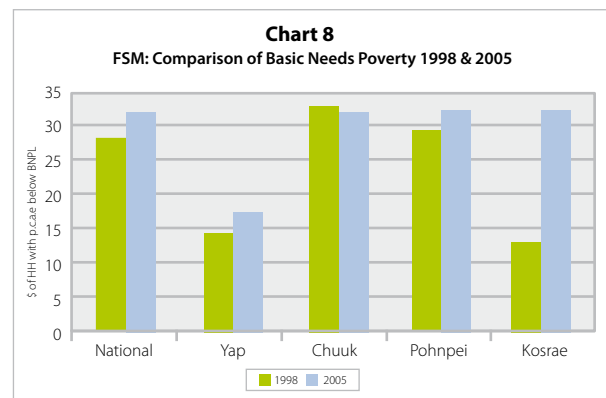
6.3 Incidence of Basic Needs Poverty

86. The estimated incidence of basic needs poverty is also shown in Table 13 and Chart 7. Nationally it is estimated that 22.4% of households, representing 29.9% of the population, had weekly per capita a.e expenditure less than the basic needs poverty line. Pohnpei at 24.4% of HH (33.9% of the population) had the highest proportion of HH with per capita a.e expenditure below the BNPL. Chuuk and Kosrae recorded basic needs poverty incidence of 23.0% and 27.1% of HH respectively, representing 28.7% and 34.5% of the populations respectively.



87. In terms of numbers of estimated population falling below the food and basic needs poverty lines the figures indicate that overall 11,675 people were under the FPL and 31,763 were below the BNPL. Of these 5,759 were below the FPL and 13,621 below the BNPL in Chuuk. A further 4,054 and 12,618 were below the FPL and BNPL respectively in Pohnpei. These two states therefore accounted for 84% of all those below the food poverty line and 83% of those below the basic-needs poverty line.

88. Chart 8 illustrates the change in the level of basic needs poverty incidence between 1998 and 2005 – as no adult equivalence figures are available for 1998, the 2005 figures in the Chart have been adjusted to a per capita basis to make them comparable to the 1998 estimates.



89. On this basis nationally it is estimated that the overall level of basic needs poverty rose from 27.9% to 31.4%. At the state level in Pohnpei the level rose from an estimated 29.5% of HH below the BNPL in 1998 to 32.2% in 2005. In Chuuk the level of incidence barely changed from 32.9% in 1998 to 32.3% in 2005. However there appear to have been quite marked increases in the level of incidence in both Yap and Kosrae where the rates rose from 14.4% and 12.3% in 1998, to 17.1% and 32.1% respectively in 2005.

90. The figures of basic needs poverty incidence suggest that although Pohnpei is the national capital, and therefore the general centre of employment, there are, nevertheless, many households whose expenditure cannot cover the basic-needs costs of a reasonable, minimum standard of living. There are many who would be classified as working poor, especially those engaged in small private enterprise businesses where hourly rates are low. They may be in employment, either full or part-time, but their income and thus expenditure is insufficient to meet all the needs of their family's.

91. The fact that there has been some deterioration in the extent of basic needs poverty is reflective of the low rates of economic growth, and the declines in real incomes experienced by many through the public sector wage freeze. The lack of economic growth has many causes including out-migration, declining commercial agricultural, slow tourism growth, lack of new investment and little creation of new employment. The generally weak fiscal situation will also have had a significant impact on the local state economies. These are all problems that are experienced, in varying degrees, by small island states throughout the Pacific region.

92. In considering the differences in the assessed incidence of hardship and poverty between the states it is important to remember that these are “relative” estimates. They measure the proportion of households or population in each state that has a level of expenditure below the poverty line for that particular state. As both the food and basic needs poverty lines have shown, there are quite significant differences in the costs of a minimum standard of living between the states.

6.4 Vulnerability of Households to Falling into Poverty

93. The recent rapid increases in the price of imported fuel and foods, notably rice and cereal products which, as already noted, feature prominently in the diets of households in FSM, will likely be causing many more households and individuals to be experiencing growing degrees of hardship and difficulty in meeting their basic-needs expenditure. These households are therefore becoming increasingly vulnerable to falling into poverty.

94. It is estimated that the additional number of people vulnerable to falling below the BNPL with increases in the poverty line of either 10% or 20% is 5079 and 9659 respectively. These would represent an additional 4.8% and 9.1% of the population in poverty respectively. As seen from Table 14 Chuuk would contribute the largest proportion of these vulnerable people followed by Pohnpei.

Table 14		
Vulnerable Households		
Number of population with p.c.a.e <10% and up to 20% above the BNPL		
	<10% above BNPL	<20% above BNPL
National average	5079	9659
Yap	623	1233
Chuuk	2358	4141
Pohnpei	1861	3248
Kosrae	34	368

6.5 Depth and Severity of Poverty

95. The Head Count ratio discussed in the previous paragraphs does not give any indication of the seriousness of the poverty being experienced. For example are those households that are below the poverty line just below it, or are they well below? This is referred to as the depth and severity of poverty.

96. The depth and severity of poverty are measured by the Poverty Gap Index ¹⁷ (PGI) and the Squared Poverty Gap Index (SPGI)¹⁸ respectively, Table 15. The former is a measure of the depth of poverty being experienced by each household below the basic needs poverty line. The latter measures the severity of poverty by giving more weight to the poorest households whose poverty gap is greatest. The PGI is Indicator 2 of Target 1, Goal 1 of the MDGs.

Table 15		
Depth and Severity of Poverty		
	Poverty Gap Index	Squared Poverty Gap
	Depth of Poverty	Severity of Poverty
National average	9.3	4.0
Yap	5.2	1.7
Chuuk	8.5	3.6
Pohnpei	10.8	5.1
Kosrae	9.4	3.7

97. At the national level the PGI (depth of poverty) for FSM has been estimated at 9.3, which is lower than Fiji (11.2) and also slightly lower than the FSM level measured in 1998 of 9.8. In 2005 Pohnpei had the highest PGI index of 10.8, up from 7.8 in 1998) with Kosrae and Chuuk at 9.4 and 8.5 respectively, 1998 figures 7.2 and 12.8 respectively. This suggests that households below the BNPL in these states have expenditure that is, on average, around 10% below the basic needs poverty level. It also suggests that the depth of poverty reduced significantly in Chuuk between the two surveys.

98. The SPGI, which is a measure of the severity of poverty being experienced, is estimated at 4.0 nationally. This is a lower poverty severity index than the 4.8 estimated in 1998, and is also lower than the recent estimate for Fiji, 5.1, similar to Tonga, 4.0 but above that for Samoa, 2.6. In the states Yap shows a low SPGI of 1.7, followed by Chuuk and Kosrae, 3.6 and 3.7, respectively. The comparable figures for these two states from 1998 were 6.3 and 3.5; again indicating a reduction in the severity of poverty in Chuuk. In 2005 Pohnpei had the highest SPGI of 5.1, up from 3.8 in 1998, reflecting perhaps the gap between the formal and informal sectors.

¹⁷ 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.

$$\text{Poverty Gap Index: } \frac{1}{N} \sum_{i=1}^m (\text{BNPL} - y_i) / \text{BNPL}$$

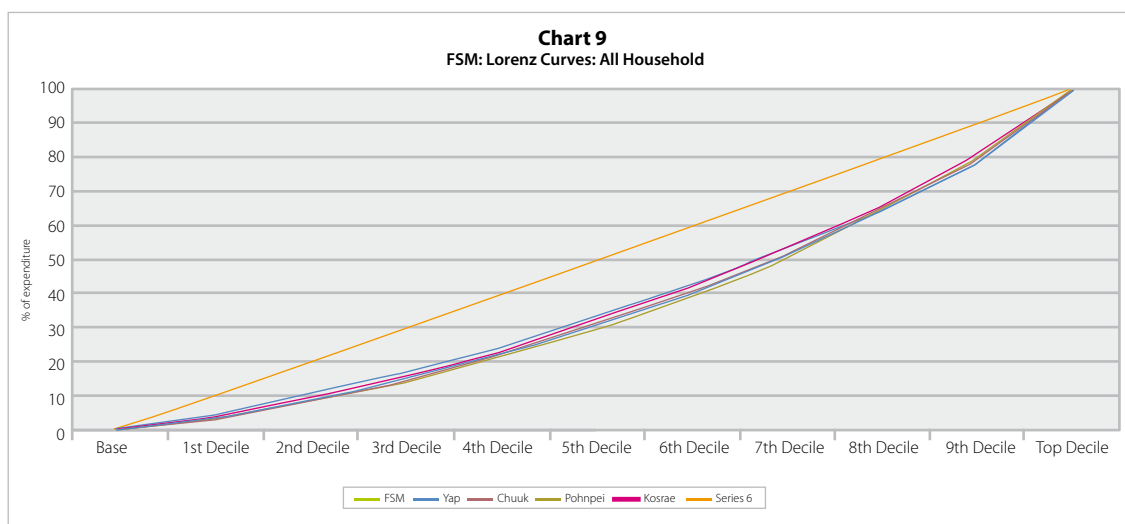
where: N = total number of households, m = number of households below basic needs poverty line; and y_i equals expenditure of each household.

¹⁸ 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.

99. These indices suggest that FSM experiences a generally similar level of poverty depth and severity than other regional countries. These two indices perhaps reflect the fact that there is a wide variation in expenditure levels between poor and non-poor households. Measured in per capita adult equivalent terms, and as noted from Table 4 above, weekly household expenditure was almost ten times higher in households in the highest quintile compared to households in the lowest expenditure quintile.

7. Income Distribution and Inequality

100. Levels of income distribution and inequality can be illustrated in a number of ways. Chart 9 plots the Lorenz Curves of household expenditure for 2005 and Table 16 summarises the Gini Coefficients (where a higher coefficient indicates greater inequality and a lower one represents great equality). The Lorenz Curves are a graphical representation of the Gini Coefficient in that the farther away the distribution from the centre line, the greater the degree of inequality. Thus the chart suggests that whilst inequality is present, it is similar across all states and indeed is not especially high.

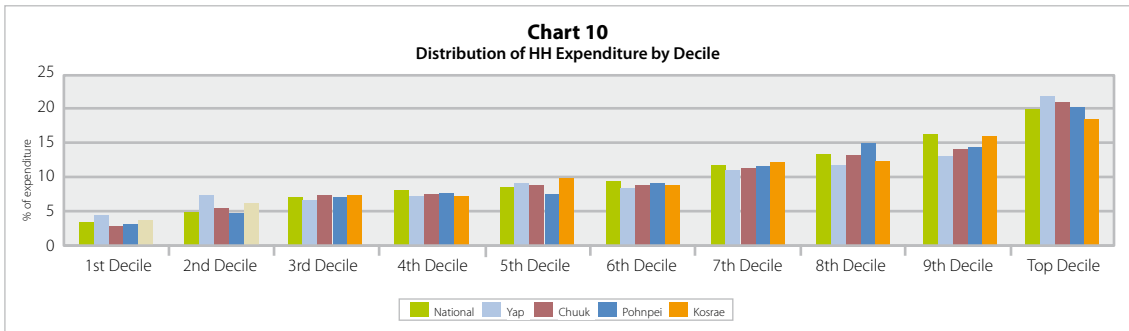


101. Figures for the Gini Coefficient indicate that the level of inequality in FSM has declined since 1998. At the national level the Gini Coefficient was 0.27, down from 0.47 as indicated by the 1998 data. At the state level, Yap had the lowest coefficient in 2005 at 0.24, down from 0.42 in 1998. This puts it slightly below Chuuk and Pohnpei with indices of 0.27 (0.51 in 1998) and Kosrae at 0.25 (0.31 in 1998).

102. These figures suggest that there has been a very sharp decline in the level of inequality in FSM. The PGI and SPGI discussed in the previous section also suggest that there was a general reduction in both the depth and severity of poverty over the period. This is further supported by the figures for the distribution of expenditure which showed that the poorest quintile's share of expenditure rose significantly over the period.

Total HH Expenditure ranked by p.c.a.e	Gini Coefficient
National average	0.27
Yap	0.24
Chuuk	0.27
Pohnpei	0.27
Kosrae	0.25

103. Chart 10 and Appendix Table A6 show the share of expenditure incurred by each decile. On average over the whole of FSM, the poorest ten-percent of households incurred about 3.4% of all expenditure while the top decile of households incurred around one-fifth (20.2%). As can be seen there were slight variations between the states with the lowest two deciles in Yap having a slightly higher share of expenditure, 11.1%, compared to 9.6% in Kosrae. In the highest two deciles of HH, those in Yap had 35.1% of expenditure compared to 34.1% in Kosrae. Although there are very wide differences in expenditure per capita between the poorest and better-off households, the larger household size in the poorest households means that the overall share of expenditure incurred by these households is higher than might otherwise be expected.



104. In comparison in 1998 the poorest quintile on average enjoyed only 4.5% of total expenditure whilst the top quintile had 52.6%. The change from 1998 to 2005 is particularly marked in Chuuk where in 1998 the poorest quintile secured only 4.1% of total expenditure compared with 8.4% in 2005. The share of expenditure of the poorest quintile in Pohnpei also rose from 5.5% in 1998 to 8.4% in 2005.

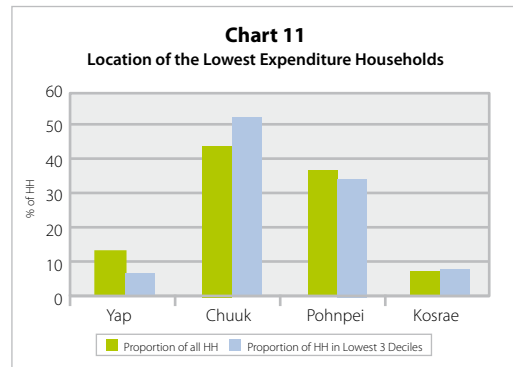
105. The ratio of the share of the bottom quintile to the top quintile of HH (MDG Indicator 3 of target 1, Goal 1) was 4.2 at the national level, and ranged from a high of 4.2 for Chuuk to a low of 3.2 for Yap. The comparable figures for 1998 were 11.6 at the national level, 13.8 in Chuuk, with a low of 3.9 in Kosrae. In Pohnpei and Yap the 1998 ratios were 9.0 and 8.4 respectively.

106. Exactly why these significant changes occurred, mainly improving income distribution across all states, but particularly in Chuuk, is difficult to explain; except that it is possible that the recording of domestic production for home consumption may have been better captured in the later data. Given that Chuuk comprises 50% of the total population, and is considered all rural and many of the poorest households in Pohnpei state are in the rural part of the state this could be, at least partly, a plausible explanation.

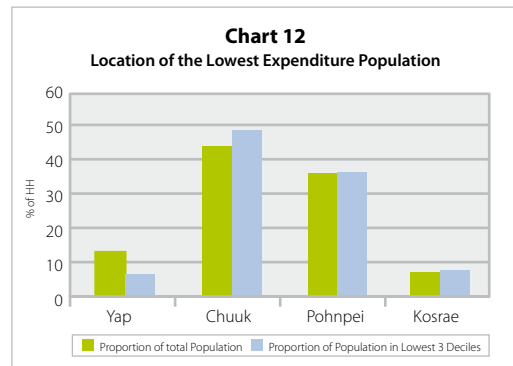
8. Who Are the Poor and What are their Characteristics?

8.1 Location of the Rural Poor

107. The following tables and charts begin to analyse the characteristics of the poor (those in the lowest three deciles of adult equivalent per capita expenditure) and non-poor households in FSM. Appendix Table A7 and Charts 11 and 12 illustrate the location of the low-expenditure poor by household and population across the states relative to the states' share of total population. Chart 11 shows that Chuuk has a higher proportion of the low-expenditure households than its share of the total number of households and is thus slightly over-represented amongst those below the poverty line. Yap appears to have a significantly smaller proportion of its households below the basic needs poverty line while the proportion of poor households in Pohnpei and Kosrae is generally in line with these state's share of the total number of households.

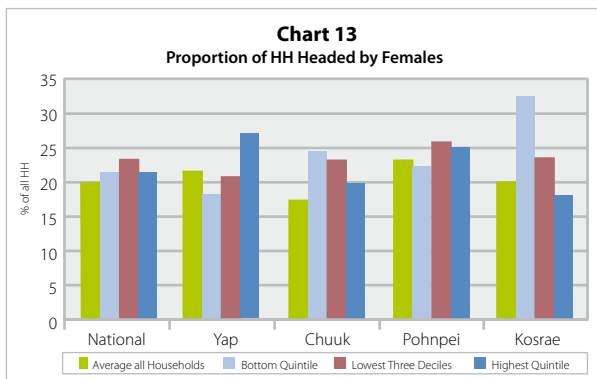


108. A similar pattern is observed in relation to the location of the poor population as illustrated by Chart 12. Chuuk has more of the poor population than its share in the total population would warrant while Yap has fewer.



8.2 Gender

109. Chart 13 and Appendix Table A8 illustrate how the proportion of female headed HH compares across expenditure deciles and states. The gender of the head of household appears to play a relatively small role in determining the likelihood of a household being in poverty in FSM. Nationally, 20.3% of households were reported as being headed by females. In the poorest quintile the proportion was 21.6% and in the lowest three deciles, 22.8%. Female headed households are, however, also slightly overrepresented (21.8%) in the highest quintile.



110. Compared to the number of female-headed HH in each state the HIES analysis suggests that these households are slightly over-represented in the lowest three expenditure deciles in Chuuk 23.3%, Pohnpei 25.6% and Kosrae 23.8%. They are particularly over-represented in the poorest quintile of households in Kosrae 32.1% and Chuuk 24.6%.

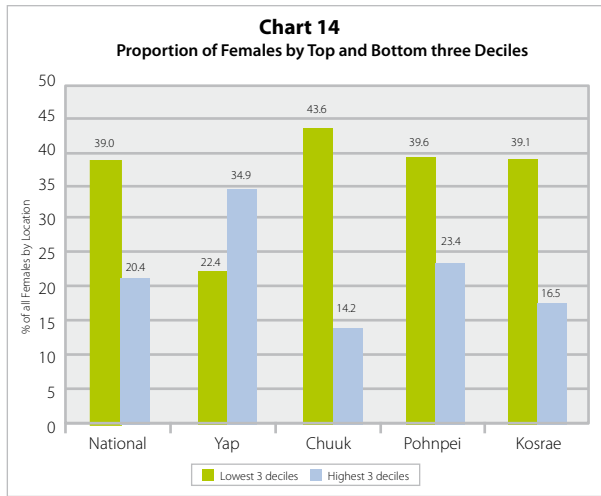


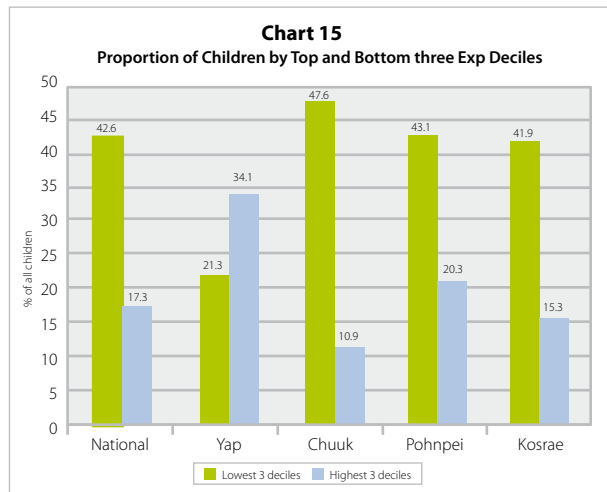
Table 17
Proportion of Children in Lowest Three Deciles

% Children <15 years by state	All Children	Children in poorest 30% of HH
National	36.8	42.6
Yap	11.1	5.5
Chuuk	44.6	49.9
Pohnpei	36.8	37.2
Kosrae	7.6	7.4
Total all States	100.0	100.0

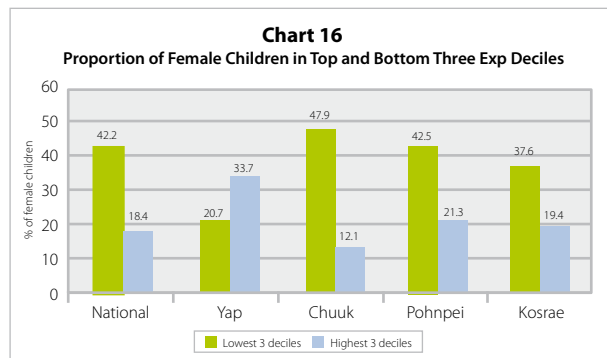
111. Chart 14 indicates the proportion of all females by expenditure decile. It shows clearly that only in Yap are females more likely to be in the top three expenditure deciles than in the bottom three deciles. In all other states females are much more likely to be in the lowest three deciles and therefore amongst the most vulnerable. The difference is most noticeable in Chuuk where 43.6% of all females are in households in the lowest three deciles compared to only 14.2% who are in households in the highest three deciles.

8.3 Children in Poverty

112. As noted in Section 3.3.1 above the survey results indicate that there were 39,137 (36.8% of total population) children under the age of 15 in the total estimated population of 106,252. The analysis indicates that although about 45% of all children live in Chuuk, this state accounts for 50% of those that live in the poorest households. Thus, children from Chuuk may be regarded as somewhat disadvantaged compared to those in other states, see Table 17.



113. Overall female headed households were responsible for 20.2% of children living in poor households; this compared to an average of 16.7% of children living in female headed households in the population as a whole. Thus, children living in female headed households are slightly more likely to be in a poor household.



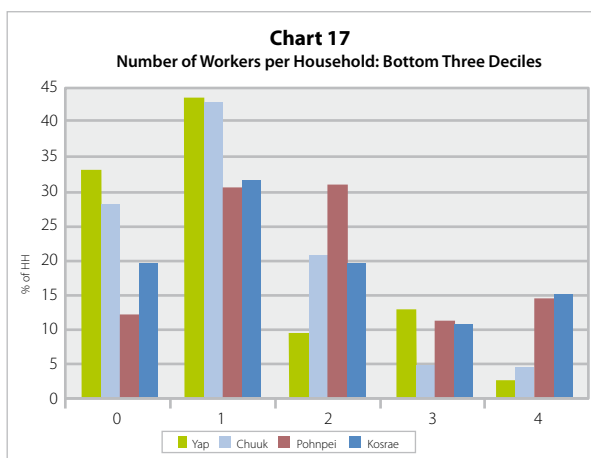
114. Chart 15 analyses the location by expenditure decile of all children and in Chart 16 focuses on the situation of female children.

115. The pattern seen for all children is replicated for females. Only in Yap are female children more likely to be in the highest three deciles compared to the lowest three, while the biggest difference in proportions is again seen in the figures for Chuuk.

8.4 Activity of Household Heads

116. Lack of employment or other income generating activities is often a primary cause of a household experiencing hardship and poverty. Indeed it is often found that even households that have one or more employed persons still fall below the poverty line if the employment is in the low-wage or informal sectors. This is especially true in large households with many children or old persons, in other words those with a high dependency ratio. These are termed the “working-poor” and would seem from the survey results that many such households exist in FSM.

117. The survey data indicates that on average 18.4% of all households are without any member in employment. Amongst the bottom three deciles however the proportion increases to 22.1%. In the highest three deciles the proportion of HH without an employed person is only 11.7%. Details are shown in Appendix Tables A21 - A24 and Chart 17 illustrates the number of workers in each household amongst the lowest three deciles.

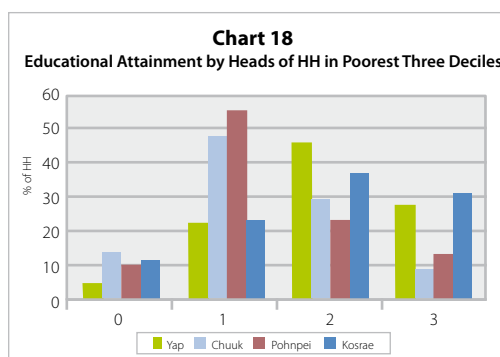


118. At the state level Chuuk has one-quarter of all households without an employed person; this proportion rises to 28.2% amongst the lowest three deciles. In Yap state 20.1% of households had no employed person. Among the poorest households this proportion rises to 33.1%. Surprisingly perhaps 42.8% of L3D HH in Yap had at least one person in employment; in Chuuk the proportion was 42.0% and even in Pohnpei the proportion was 31.4%. These figures clearly indicate the extent of the working poor.

8.5 Educational Attainment

119. Education is generally acknowledged as being one of the most critical factors in influencing whether a household is likely to be in poverty and whether it will be able to rise out of such a condition. It is therefore a concern that in FSM at the national level some 7.2% of household heads reported having had no schooling at all. The connection with poverty is illustrated by the fact that in the poorest three deciles the reported rate was 11.6% and in the bottom quintile it averaged 13.7%. Amongst the highest three deciles the proportion of households with no education was only 4%. By state, those in the poorest households having the highest level of no education were Chuuk, 13.7% and Kosrae, 10.9%.

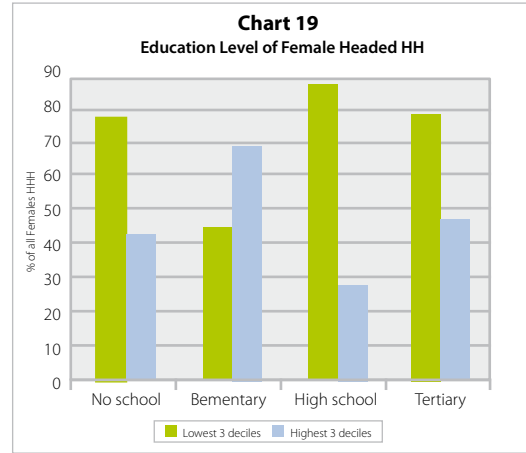
120. Chart 18 shows the highest educational level attained by heads of households in the lowest three expenditure deciles by state; see also Appendix Tables A18 to A20 for further details.



121. Those achieving only elementary level accounted for 35.8% of all household heads but for 46.6% of those in the poorest three deciles. As education attainment increases so the proportion of those living in the poorest three deciles achieving these higher levels declines. Those completing high school accounted for 28.6% of those in the poorest deciles and 33.1% of those in the higher deciles. Thus, there would appear to be a clear link between the poorest households and the lack of educational achievement.

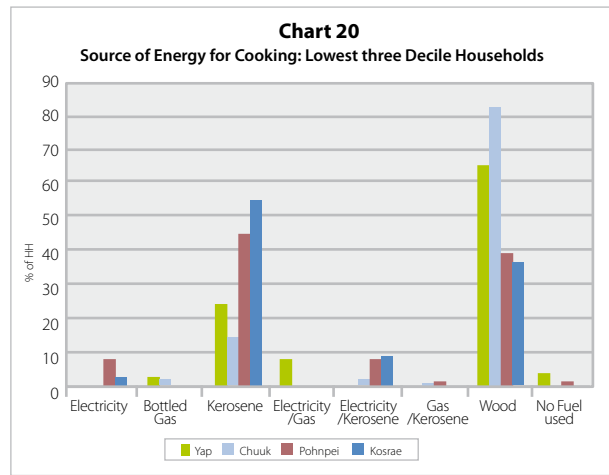
122. Chuuk in particular appears to have the highest rate of household heads in the poorest three deciles with no-school and also the lowest number with tertiary education.

123. Chart 19 illustrates the situation for female-headed households. This indicates that almost 55% of female-heads of households who have no education live in the bottom three deciles; further, of those who have only primary education 40% of these also live in the bottom three deciles. The contrast with those with higher education is clear. None of the female-heads with tertiary education are in the bottom three deciles, indeed almost eighty percent of these are in the highest three deciles.



8.6 Energy Access and Use

124. Chart 20 shows the nature of energy use for cooking used by HH in the lowest three deciles. Almost two-thirds of the poorest households at the national level rely on wood for cooking. In the states just on two-thirds of poor households in Yap and just over eighty percent of households in Chuuk rely on wood. Amongst all households only 2.6% of those in the bottom three deciles used electricity compared with 16.2% in the top three deciles. In Yap and Chuuk none of the poorest households had access to electricity; additional detail is provided in Appendix Tables A15 to A17.



125. Although power is widely available on Pohnpei only 13.7% (but only 6.9% of those in L3D) of all HH reported relying solely on electricity. However, a further eight percent overall (and 7.7% in L3D) combined electricity use with kerosene. In the island areas there is very little use of energy sources other than firewood. This suggests that the cost (and lack of availability) of purchased fuel is a deterrent to its use and that there is a relatively easy availability of firewood, either in the local market or from self-collection. It is only in the higher expenditure deciles where “clean” fuel becomes a major source of cooking energy. The high price of fuel and the ease of availability of coconuts do however provide an opportunity for an increase in the production of bio-fuels.

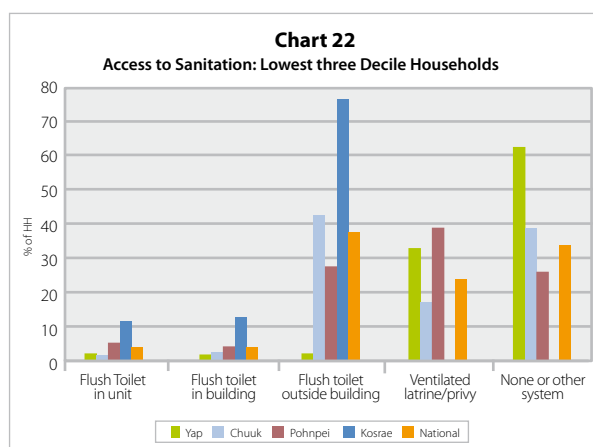
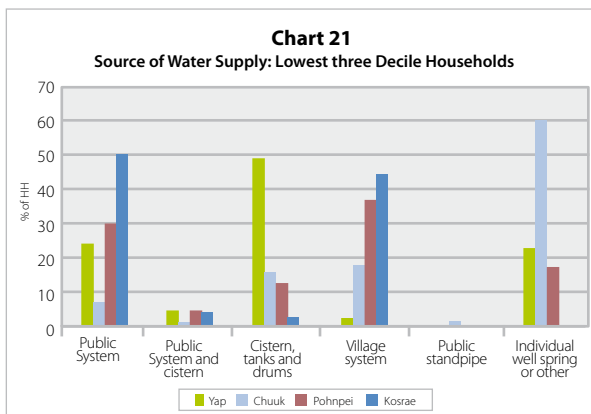
126. Thus while there may be significant health benefits, especially for women and young children, from the use of “clean” energy sources for cooking, the cost of such fuels compared to the “free” source of firewood is likely to be difficult to overcome. Changing to clean fuels might also require significant changes in traditional cooking methods and food types. Any change will therefore likely need to be slow and gradual.

8.7 Access to Water and Sanitation

127. The next Charts 21 & 22 look at access to water and sanitation, additional details are also provided in Appendix Tables A9 through A11 on water, and A12 through A14 on sanitation. Access to both safe water and sanitation facilities are important factors in ensuring good health for children. Access to these two is therefore a key issue in considering poverty and hardship alleviation. At the national level only 19.2% of households in the bottom three deciles had any sort of access to a public system or cistern. This compared with 49.9% of households in the top three deciles. At the other end of the scale, 37.8% of the poorest households relied on domestic wells or other sources of supply compared with only 11.5% of the top thirty-percent of households. The reliance on domestic wells and other sources is greatest in Chuuk state and least in Kosrae.

128. The poorest households are also significantly disadvantaged in access to improved sanitation. Only 7.4% of the poorest households have access to a flush toilet either inside their own house or in their building. However, a further 36.8% have access to an outside flush toilet. This compared with 43.8% with internal access to a flush toilet for those in the highest three deciles and a further 25.5% with an external flush facility. Almost one third of the poorest households had no access to improved sanitation. At the state level amongst the poorest households, sixty percent of those in Yap, and 38.1% of those in Chuuk had no proper sanitation system.

129. It has been noted above that there are many children living in households in the lowest deciles and thus these children are likely to be at high risk in terms of their health.



9. Conclusions

9.1 Poverty of Income/Expenditure or Opportunity?

130. Poverty is a multi-dimensional issue. The national poverty lines and levels of incidence of poverty between the states are basically the “headline” indicators. They are but the basic building blocks on which poverty alleviation strategies can be founded. Far more important from a policy perspective is to analyse the specific characteristics, and where possible, the causes of low-income/expenditure and poverty in these disadvantaged sections of society. We need to know who-are-the-poor, why-are-they-poor, and specifically, what-are-the-characteristics of the poor and poor households, so that targeted poverty alleviation measures can be initiated.
131. The analysis in this paper has therefore aimed to provide a basis for this to be 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.
132. The BNPL measures the incidence of “income or expenditure” poverty 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. As this paper indicates the poorest households might lack access to basic services, especially water and sanitation if they are in squatter areas in the urban centre of Pohnpei or in the remote parts of Chuuk for example. Similarly, they might lack access to health, education and transport facilities. These weaknesses in access are especially chronic in the rural parts of the country. A combination of low educational attainment, socio-cultural factors relating to age, gender and other personal characteristics might limit freedom of choice, or socio-economic opportunity.
133. This poverty of opportunity, e.g. lack of access to basic health and education services, employment opportunities, standards of good governance and equal opportunities across gender and age, is 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.

9.2 How Does Poverty Affect People

134. As already noted, households with income 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, school fees, clothing, housing, medical costs etc). 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.
135. Fortunately, few people appear to be going hungry, but there are indications in the expenditure patterns of the poorest households that many may be getting inadequate nutrition. This may be especially the case for children in the urban centres where local produce may not be so readily available in household diets. Poor diet and inadequate nutrition are critical issues for child health now are for their future health as adults. The data on expenditure patterns for the poorest households provide valuable information for national and state level health authorities to develop targeted health and nutrition awareness programmes.

136. The data should also be very valuable to agriculture sector policy makers to target extension and other services to improve local crop [production for domestic markets thereby helping to improve food security, particular for the more urban state and national centres.
137. Urban drift leading to higher levels of unemployment and growing numbers of people living in squatter settlements and sub-standard housing conditions result in a deteriorating social environment. Poor housing conditions lead to poor health, poor educational attainment and poor employment prospects, conditions which perpetuate poverty and hardship. The levels of urban hardship and poverty indicated by the analysis of the 2005 HIES point to a wide range of issues that need to be addressed by government policy. Strengthening educational achievement and skill levels, increasing opportunities for employment, not only in the urban centres but also in the rural areas, are amongst the most critical.
138. Poverty and hardship in the FSM context means having 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. Many households struggle to pay bills and, in the absence of home gardens in the urban centres, purchase adequate food. They borrow regularly from informal lenders who often charge very high interest rates for small unsecured loans to meet family commitments and community obligations. They will also run-up trade-store debts or borrow from other family members. They are frequently, and occasionally constantly, in debt.
139. As a consequence many of the poorest in FSM society live in low-quality housing without proper access to water, sanitation and other basic services. Children frequently miss school due to ill-health or because school fees or associated costs have not been paid, or families simply cannot afford the costs of uniforms, books and other related costs. Adults themselves are frequently poorly educated and thus unable to get anything but the lowest paid employment, if such employment is even available. The cycle of poverty can therefore be perpetuated.
140. Perhaps the most critical issue is education. Without good basic education it is very difficult for the poor to move out of poverty. Higher income derives from having the ability to take advantage of economic opportunities, this means having an ability to read and write and learn skills.

9.3 Policy Considerations

141. The priorities of the people, as outlined in Box 1 above, highlight those issues which were deemed important for reducing hardship and poverty at the household and community levels. They provide indicators for government in terms of identifying the policy challenges for creating more economic and employment opportunities, improving infrastructure and access improved quality of services. Other studies have highlighted the need for improving the policy and regulatory environment for foreign investment, access to micro-finance and to markets, either inwards as source of tourism or outwards for potential exports.
142. The analysis has identified that the extent of poverty and hardship within FSM rose between 1998 and 2005 and was quite high despite the fact that the country had a relatively high GDP per capita by Pacific Island standards. The costs of living are high in FSM but the opportunities for income generation are low, especially in the rural parts of the country. There are many challenges facing the FSM economy with rising food and fuel prices and the threat of global recession. Over the past five years the FSM economy has not performed well. According to the ADB¹⁹ the country has experienced negative growth averaging minus 2.8% per annum over the past six years. This will itself have likely led to a further increase in poverty and hardship after 2005. The recent food and fuel price rise with have exacerbated the situation, and as the analysis notes a ten percent increase in the level of the BNPL will have led to an increase up around five percent in the number of households falling below the poverty line.
143. The governments, both at state and national levels, needs to commit to renewed economic and public sector reform and to improving governance standards and service delivery. There needs to be recognition of the increasing extent of hardship and

¹⁹ADB Asian Development Outlook – Update 2008, September 2008

poverty throughout the country. More attention needs to be given to addressing the needs of the disadvantaged and those who are being left behind.

144. Amongst the key issues facing FSM in addressing the growing signs of hardship and poverty are the need to:
 - improve standards of governance, including transparency and accountability especially at the state level;
 - strengthen the institutional and regulatory basis for renewed domestic economic growth and stability;
 - ensure fiscal discipline and sound financial management within the framework of Compact II;
 - give greater emphasis to promoting private sector investment, access to financial services for people and communities and the creation of new employment opportunities;
 - broaden and deepen the economic base of the economy, especially in strengthening the contribution of the agriculture sector, and to improve food security;
 - improve technical and vocational training opportunities in order to meet the skill needs of the private sector and of those who will need lifestyle skills to succeed in the rural economy; and to
 - continue to improve the delivery of education, primary health care and health/nutrition education, particularly to those in the more remote islands.
145. At the micro level, it is necessary to address the specific needs of individual communities, islands and villages. This means promoting rural enterprise activities, especially in the agriculture sector, to create income generating opportunities as well as meeting particular local social development and infrastructure priorities.
146. The current high prices of imported food and fuel give many opportunities for domestic agriculture to provide import substitutes for the rice and cereal products that feature prominently in the diets of those in the urban centres. Coconut oil production for use as a bio-fuel could also provide a real economic opportunity for many in the rural areas.
147. In the social area small-scale hardship alleviation projects for improving water supplies, health services, transport and similar community based projects will need to be priorities. It also requires government to improve the quality of basic service delivery, through better training of teachers, better staffing of schools and clinics, better maintenance of health and education facilities and infrastructure and improving the availability of essential teaching materials and medical supplies.
148. The potential for a continuing weakening in the fiscal situation in the face of high fuel prices and rising personnel costs in particular is a serious challenge and needs careful monitoring to ensure that fiscal discipline is maintained. Renewed economic growth needs to be generated in the domestic economy through an appropriate investment enabling environment and improving governance standards. Growth oriented, employment-creating strategies, need to be implemented to keep the macroeconomic side moving forward.
149. FSM like many PICs will face serious challenges in coping with the impact of the coming period of global recession. The country did not benefit greatly during the period of sustained global expansion that appears to have now ended. High food and fuel prices, increasing unemployment in the USA and the lack of employment in the home economy will continue to limit economic opportunities for people in FSM. The global financial turmoil is likely to have an adverse impact on the ability of the Compact trust funds to increase their value at the projected rate, and therefore will impact on the future fiscal situation. These challenges cannot be ignored. Poverty and hardship are already a reality for many households in FSM. Standards of living may already have declined as households have begun to feel the squeeze of higher prices.
150. The option of migration to USA may become a choice for an increasing number of young people. This out-migration may then eventually become a threat to the viability of some small island communities, as is already occurring in some of the other Pacific countries.

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Appendix tables

Annex 1											
YAP											
Estimated Food Expenditure and Daily Calorie Intake											
Principal Diary Items; Lowest Four Deciles Per Capita a.e Expenditure											
Item Code	Item	% of diary exp	Grossed-up value to total	Price per unit	unit g	implied unit volume consumed	kcal value per 100g	kcal value	kcal per a.e. per annum	kcal per day per a.e	cost per day
	A	B	C	D		E	F	G	H	I	J
1260103	Fresh Fish	29.7	1938051.08	1.00	1938051	450	130	1133759880	185897.1	509.3	0.87
1330107	Taro (all kinds)	18.4	1199311.71	0.50	2398623	450	99	1068586737	175211.0	480.0	0.54
1310201	Banana	9.1	594278.46	0.25	2377114	450	110	1176671351	192933.1	528.6	0.27
1111508	Rice	4.3	283466.20	8.35	33948	9000	123	375804886	61618.9	168.8	0.13
1310115	Breadfruit	3.8	249159.62	0.10	2491596	450	30	336365490	55152.2	151.1	0.11
1310990	Other fresh fruits	2.7	174497.80	0.50	348996	450	30	47114407	7725.1	21.2	0.08
9121901	Betelnut	2.1	136890.61	0.10	1368906	25	352	120463736	19751.9	54.1	0.06
1260190	Other unspec. seafood	1.8	114809.67	1.00	114810	450	130	67163656	11012.5	30.2	0.05
1260120	Octopus/crab	1.7	110130.92	1.00	110131	450	109	54019218	8857.3	24.3	0.05
1310121	Coconut/drinking	1.6	106873.29	0.50	213747	200	16	6839891	1121.5	3.1	0.05
1320399	Other imported veg/crops	1.6	106198.90	0.67	158506	450	50	35663809	5847.6	16.0	0.05
1111506	Saimin/ramen	1.4	91795.68	0.53	173199	100	99	17146740	2811.5	7.7	0.04
1260105	Canned tuna	1.4	91624.91	0.98	93495	200	290	54226985	8891.3	24.4	0.04
1250101	Whole chicken, local	1.4	89399.19	1.35	66222	450	231	68837379	11286.9	30.9	0.04
1240120	Luncheon meat	1.3	83162.63	2.28	36475	340	192	23810773	3904.1	10.7	0.04
1260119	Canned mackerel	1.2	76902.57	1.35	56965	425	290	70209199	11511.9	31.5	0.03
1250107	Other poultry & unspec.	1.2	75993.62	1.35	56292	450	231	58515091	9594.4	26.3	0.03
1240118	Corned beef	1.1	71121.08	2.28	31193	340	192	20363087	3338.8	9.1	0.03
1510101	Sugar	0.9	61035.47	1.55	39378	2000	390	307146240	50361.3	138.0	0.03
1460102	Coffee-instant	0.9	60495.32	7.12	8497	226	132	2534686	415.6	1.1	0.03
1410199	Other soda	0.9	59601.74	0.63	94606	345	165	53854431	8830.3	24.2	0.03
1220402	Pork chops	0.9	58412.91	2.33	25070	450	198	22337299	3662.5	10.0	0.03
1250202	Turkey, tail	0.8	52545.75	0.75	70061	450	231	72828409	11941.3	32.7	0.02
1490999	Codials & other cold drinks	0.6	41900.64	0.63	66509	345	165	37860224	6207.8	17.0	0.02
1120101	Bread	0.6	37631.59	2.10	17920	900	242	39029338	6399.5	17.5	0.02
1310110	Apples	0.5	35547.46	1.95	18229	450	30	2460978	403.5	1.1	0.02
1210210	All other unspec.	0.5	34586.16	1.00	34586	900	130	40465802	6635.0	18.2	0.02
1710447	Soy sauce	0.5	33939.26	4.65	7299	1200	33	2890311	473.9	1.3	0.02
1330101	Potatoes	0.5	31656.48	1.03	30734	450	80	11064402	1814.2	5.0	0.01
1270101	Eggs/fresh	0.5	30321.73	2.62	11573	12	151	209706	34.4	0.1	0.01
1710699	All others	0.4	23968.87	1.63	14705	100	242	3558569	583.5	1.6	0.01
1120307	Cookies	0.3	21841.06	2.10	10401	900	242	22652301	3714.2	10.2	0.01
1260138	Frozen shrimp	0.3	19568.24	1.25	15655	450	122	8594372	1409.2	3.9	0.01
1530999	Other unspec. sugar	0.3	18512.45	1.55	11944	2000	390	93159436	15274.9	41.8	0.01
1320398	Other locally proc.food	0.3	18170.51	0.50	36341	450	100	16353459	2681.4	7.3	0.01
1240108	Franks	0.3	17189.05	0.87	19758	141	251	6992385	1146.5	3.1	0.01
	Items % of Total Diary Exp	95.6	6250593								

K Kcal p.c.a.e.per day from diary 2461.5
 L % of minimum daily energy need 117.2
 M Cost per day from diary 2.81
 N Cost per day to meet minimum energy need 2.4 0
 O Weekly cost of minimum diet, FPL 16.77

Annex 2											
CHUUK											
Estimated Food Expenditure and Daily Calorie Intake											
Principal Diary Items; Lowest Four Deciles Per Capita a.e Expenditure											
Item Code	Item	% of diary exp	Grossed-up value to total	Price per unit	unit g	implied unit volume consumed	kcal value per 100g	kcal value	kcal per a.e. per annum	kcal per day per a.e	cost per day
	A	B	C	D		E	F	G	H	I	J
1260103	Fresh Fish	18.3	1906195.81	1.00	1906196	450	130	1115124550	61863.0	169.5	0.29
1111508	Rice	13.5	1401582.31	16.34	85776	23000	123	2426607324	134619.3	368.8	0.21
1320398	Other locally proc.food	12.0	1246008.43	0.50	2492017	450	100	1121407583	62211.6	170.4	0.19
1260117	Canned sardines	6.5	671991.93	1.33	505257	425	290	622729360	34546.8	94.6	0.10
1310115	Breadfruit	6.3	654766.28	0.10	6547663	450	30	883934472	49037.5	134.3	0.10
1310201	Banana	6.1	637156.98	0.25	2548628	450	110	1261570811	69987.3	191.7	0.10
1330107	Taro (all kinds)	5.3	546945.69	0.50	1093891	450	99	487328606	27035.2	74.1	0.08
1260120	Octopus/crab	3.5	367564.82	1.00	367565	450	109	180290544	10001.9	27.4	0.06
1310121	Coconut/drinking	2.6	268069.22	0.50	536138	200	16	17156430	951.8	2.6	0.04
1111506	Saimin/ramen	2.4	250151.75	0.22	1137053	85	99	95683044	5308.1	14.5	0.04
1510101	Sugar	2.4	248733.71	1.74	142950	2000	390	1115013199	61856.9	169.5	0.04
1260190	Other unspec. seafood	2.3	237911.29	1.00	237911	450	130	139178103	7721.1	21.2	0.04
1260105	Canned tuna	1.7	174170.10	0.89	195697	200	290	113504108	6296.8	17.3	0.03
1460102	Coffee-instant	1.7	173900.62	5.77	30139	226	132	8990994	498.8	1.4	0.03
1250104	Chicken legs	1.4	143663.93	2.18	65901	450	231	68503969	3800.4	10.4	0.02
1260119	Canned mackerel	1.3	134217.44	1.16	115705	425	290	142606028	7911.3	21.7	0.02
1250202	Turkey, tail	1.1	115972.59	0.75	154630	450	231	160738015	8917.2	24.4	0.02
1240118	Corned beef	1.1	110111.80	2.34	47056	340	192	30718369	1704.1	4.7	0.02
1320399	Other imported veg/crops	1.0	107138.39	1.31	81785	450	50	18401632	1020.9	2.8	0.02
1120101	Bread	1.0	101609.82	1.22	83287	900	242	181398521	10063.3	27.6	0.02
1120305	Doughnuts	0.6	59109.31	1.04	56836	100	439	24950947	1384.2	3.8	0.01
1710401	Salt	0.6	58791.47	0.81	72582	750	0	0	0.0	0.0	0.01
1240120	Luncheon meat	0.5	56641.63	2.34	24206	340	192	15801561	876.6	2.4	0.01
1120201	Biscuits-cabin/dry	0.5	51548.57	0.65	79305	96	414	31519173	1748.6	4.8	0.01
1520290	Candy-other	0.5	50951.74	0.50	101903	50	250	12737935	706.7	1.9	0.01
1210210	All other unspec.	0.5	47863.26	1.00	47863	900	130	56000019	3106.7	8.5	0.01
1250103	Frying chicken	0.5	47229.52	2.18	21665	450	231	22520680	1249.4	3.4	0.01
7212108	Live pig	0.3	34638.87	1.00	34639	450	198	30863231	1712.2	4.7	0.01
1710447	Soy sauce	0.3	34330.16	3.03	11330	600	33	2243357	124.5	0.3	0.01
1240117	Spam	0.3	31148.31	2.71	11494	340	192	7503179	416.2	1.1	0.00
1310990	Other fresh fruits	0.3	30642.44	0.50	61285	450	30	8273459	459.0	1.3	0.00
1111406	Flour	0.3	26325.54	15.61	1686	23000	349	135371623	7509.9	20.6	0.00
	Items % of Total Diary Exp	96.4	10027083.69								

K Kcal p.c.a.e.per day from diary 1601.8
 L % of minimum daily energy need 76.3
 M Cost per day from diary 1.52
 N Cost per day to meet minimum energy need 2.00
 O Weekly cost of minimum diet, FPL 13.99

Annex 3											
POHNPEI											
Estimated Food Expenditure and Daily Calorie Intake											
Principal Diary Items; Lowest Four Deciles Per Capita a.e Expenditure											
Item Code	Item	% of diaryexp	Grossed-up value to total	Price per unit	unit g	implied unit volume consumed	kcal value per 100g	kcal value	kcal per a.e. per annum	kcal per day per a.e	cost per day
	A	B	C	D		E	F	G	H	I	J
1111508	Rice	17.2	1292978.87	16.06	80509	23000	123	2277607235	149760.0	410.3	0.23
1260103	Fresh Fish	16.6	1247762.54	1.00	1247763	450	130	729941083	47996.0	131.5	0.22
1310115	Breadfruit	8.6	644054.00	0.10	6440540	450	30	869472904	57170.6	156.6	0.12
1260119	Canned mackerel	4.4	327407.23	1.70	192592	425	290	237370239	15607.9	42.8	0.06
1111506	Saimin/ramen	3.9	289252.30	0.56	516522	100	99	51135675	3362.3	9.2	0.05
1250104	Chicken legs	3.8	285058.75	1.35	211155	450	231	219495234	14432.5	39.5	0.05
1260105	Canned tuna	3.8	282928.80	0.95	297820	200	290	172735475	11357.9	31.1	0.05
1310201	Banana	3.2	243738.39	0.25	974954	450	110	482602021	31732.6	86.9	0.04
1240118	Corned beef	2.8	213051.87	2.24	95112	340	192	62089402	4082.6	11.2	0.04
1250202	Turkey, tail	1.9	139869.49	0.75	186493	450	231	193859112	12746.9	34.9	0.03
1410199	Other soda	1.6	116724.38	0.52	224470	345	165	127779526	8401.9	23.0	0.02
1510101	Sugar	1.5	114956.66	1.57	73221	2000	390	571122240	37553.1	102.9	0.02
1320399	Other imported veg/crops	1.3	100777.08	0.35	287935	450	50	64785265	4259.8	11.7	0.02
1240120	Luncheon meat	1.3	99419.09	2.24	44384	340	192	28973562	1905.1	5.2	0.02
1120101	Bread	1.2	86978.76	1.53	56849	900	242	123816830	8141.4	22.3	0.02
1310121	Coconut/drinking	1.1	86176.03	0.50	172352	200	16	5515266	362.6	1.0	0.02
1120305	Doughnuts	1.1	85980.55	1.00	85981	100	439	37745462	2481.9	6.8	0.02
1111406	Flour	1.0	76817.62	2.81	27337	2250	349	214665609	14115.0	38.7	0.01
1280110	Milk-reconstit.	1.0	72195.66	1.02	70780	345	66	16116619	1059.7	2.9	0.01
1710447	Soy sauce	0.9	68569.68	2.29	29943	600	33	5928732	389.8	1.1	0.01
1280301	Ice Cream	0.9	64847.23	10.59	6123	4500	195	53733187	3533.1	9.7	0.01
1260120	Octopus/crab	0.8	61633.85	1.00	61634	450	109	30231401	1987.8	5.4	0.01
1210210	All other unspec.	0.8	61366.58	1.00	61367	900	130	71798902	4721.0	12.9	0.01
1460102	Coffee-instant	0.8	61242.33	5.59	10956	226	132	3268303	214.9	0.6	0.01
9121901	Betelnut	0.8	59054.00	0.10	590540	25	352	51967519	3417.0	9.4	0.01
1330107	Taro (all kinds)	0.7	53503.86	0.50	107008	450	99	47671941	3134.6	8.6	0.01
7212108	Live pig	0.7	51574.85	1.00	51575	450	198	45953192	3021.6	8.3	0.01
1910307	Chips-other & unsp	0.6	47536.96	0.50	95074	50	414	19680303	1294.0	3.5	0.01
1240108	Franks	0.6	47527.77	0.83	57262	141	251	20265728	1332.5	3.7	0.01
1320304	Cucumber	0.6	47290.81	0.50	94582	450	25	10640432	699.6	1.9	0.01
1450305	Ice Cake/pahr	0.6	46213.84	1.00	46214	100	242	11183749	735.4	2.0	0.01
1280108	Milk-powdered	0.6	42971.38	2.50	17189	380	334	21815711	1434.5	3.9	0.01
1810521	Plate lunch	0.6	42409.28	2.50	16964	200	375	127222785	836.6	2.3	0.01
1220405	Spare ribs	0.5	39994.09	2.06	19415	450	198	17298415	1137.4	3.1	0.01
1270101	Eggs/fresh	0.5	39930.66	2.48	16101	12	151	29175140	1918.4	5.3	0.01
1710401	Salt	0.5	35643.48	0.82	43468	750	0	0	0.0	0.0	0.01
1310204	Mango	0.4	33749.33	0.50	67499	450	68	20654592	1358.1	3.7	0.01
1420399	Other c./b fruit juice	0.4	32102.02	0.52	61735	345	36	7667443	504.2	1.4	0.01
1240129	Other can. meat	0.4	31982.44	2.24	14278	340	192	9320598	612.9	1.7	0.01
1250107	Other poultry & unspec.	0.4	29225.17	1.35	21648	450	231	22503382	1479.7	4.1	0.01
1120201	Biscuits-cabin/dry	0.4	29146.73	0.69	42242	96	414	16788517	1103.9	3.0	0.01
1250103	Frying chicken	0.4	27451.72	2.18	12593	450	231	13089939	860.7	2.4	0.00
1120307	Cookies	0.4	27417.16	1.53	17920	900	242	39029133	2566.3	7.0	0.00
1280101	Milk-fresh	0.3	22783.90	1.13	20163	1000	66	13307408	875.0	2.4	0.00
1120309	Bakery - Other unspec. bakery	0.3	22736.54	1.53	14860	900	242	32366127	2128.2	5.8	0.00
1910205	Can. spaghetti	0.3	22143.55	1.39	15931	418	130	8656695	569.2	1.6	0.00
1320320	Takuang	0.3	21572.67	2.50	8629	450	28	1087263	71.5	0.2	0.00
1610399	Other cooking oil	0.3	21264.87	2.82	7541	1375	878	91035522	5985.9	16.4	0.00
1610312	Shortening	0.3	21123.46	3.46	6105	1200	100	7326056	481.7	1.3	0.00
1460101	Coffee-canned/unspec.	0.3	19993.33	5.59	3577	226	132	1066978	70.2	0.2	0.00
1520290	Candy-other	0.3	18828.04	0.50	37656	50	250	4707011	309.5	0.8	0.00
	Items % of Total Diary Exp	94.1	7058959.65								

K Kcal p.c.a.e.per day from diary 1302.2
 L % of minimum daily energy need 62.0
 M Cost per day from diary 1.27
 N Cost per day to meet minimum energy need 2.05
 O Weekly cost of minimum diet, FPL 14.35

Annex 4											
KOSRAE											
Estimated Food Expenditure and Daily Calorie Intake											
Principal Diary Items; Lowest Four Deciles Per Capita a.e Expenditure											
Item Code	Item	% of diary exp	Grossed-up value to total	Price per unit	unit g	implied unit volume consumed	kcal value per 100g	kcal value	kcal per a.e. per annum	kcal per day per a.e	cost per day
	A	B	C	D		E	F	G	H	I	J
1260103	Fresh Fish	16.2	245344.01	0.75	327125	450	130	191368330	59539.7	163.1	0.21
1111508	Rice	12.8	194602.30	14.70	13238	23000	123	374510143	116519.9	319.2	0.17
1310115	Breadfruit	10.0	151271.40	0.10	1512714	450	30	204216394	63537.1	174.1	0.13
1250104	Chicken legs	9.3	141382.71	1.55	91215	450	231	94817632	29500.2	80.8	0.12
1260105	Canned tuna	4.8	72246.30	1.23	58737	200	290	34067363	10599.2	29.0	0.06
1250202	Turkey, tail	3.8	57383.61	0.75	76511	450	231	79533680	24745.0	67.8	0.05
1310201	Banana	3.2	48423.55	0.25	193694	450	110	95878630	29830.3	81.7	0.04
1120101	Bread	2.9	44150.01	1.50	29433	900	242	64105818	19945.0	54.6	0.04
1111506	Saimin/ramen	2.6	39018.57	0.38	102680	100	99	10165365	3162.7	8.7	0.03
1460102	Coffee-instant	2.4	37145.33	5.21	7130	226	132	2126909	661.7	1.8	0.03
1510101	Sugar	2.2	32787.37	2.03	16151	2000	390	125981040	39196.0	107.4	0.03
1410199	Other soda	2.0	30699.66	0.53	57924	345	165	32973172	10258.8	28.1	0.03
1710447	Soy sauce	1.7	26248.15	3.14	8359	600	33	1655138	515.0	1.4	0.02
1260119	Canned mackerel	1.7	25942.41	1.56	16630	425	290	20496167	6376.9	17.5	0.02
1420399	Other c./b fruit juice	1.4	21310.65	0.53	40209	345	36	4993930	1553.7	4.3	0.02
1111406	Flour	1.3	20074.00	2.53	7934	2250	349	62304762	19384.6	53.1	0.02
1260120	Octopus/crab	1.2	18002.25	1.00	18002	450	109	8830105	2747.3	7.5	0.02
1330107	Taro (all kinds)	1.1	16578.50	0.50	33157	450	99	14771444	4595.8	12.6	0.01
1240117	Spam	0.9	14123.44	3.38	4179	340	192	2727746	848.7	2.3	0.01
1240119	Corned beef hash	0.9	14054.99	2.19	6418	340	192	4189543	1303.5	3.6	0.01
1280101	Milk-fresh	0.8	12743.04	1.95	6535	1000	66	4313029	1341.9	3.7	0.01
1280110	Milk-reconstit.	0.8	11499.54	1.34	8582	345	66	1954063	608.0	1.7	0.01
1220106	Sausage	0.7	11328.41	1.60	7080	450	251	7997152	2488.1	6.8	0.01
1270101	Eggs/fresh	0.7	11317.01	1.94	5834	12	151	10570317	3288.7	9.0	0.01
1710401	Salt	0.7	11202.92	0.89	12588	750	0	0	0.0	0.0	0.01
1120305	Doughnuts	0.7	11066.02	1.50	7377	100	439	3238656	1007.6	2.8	0.01
1330121	Onions/Garlic	0.7	11043.21	1.00	11043	450	26	1292055	402.0	1.1	0.01
1610399	Other cooking oil	0.7	11004.42	1.94	5672	1375	878	68479819	21305.9	58.4	0.01
1120201	Biscuits-cabin/dry	0.6	8784.37	0.89	9870	96	414	3922764	1220.5	3.3	0.01
1280108	Milk-powdered	0.5	8328.04	2.50	3331	380	334	4227979	1315.4	3.6	0.01
1240120	Luncheon meat	0.5	7837.48	2.19	3579	340	192	2336214	726.9	2.0	0.01
1310121	Coconut/drinking	0.5	7595.63	0.50	15191	200	16	486120	151.2	0.4	0.01
1280301	Ice Cream	0.5	7529.46	4.39	1715	2250	195	7525172	2341.3	6.4	0.01
1310301	Oranges	0.5	7529.46	0.52	14480	450	40	2606351	810.9	2.2	0.01
1910205	Can. spaghetti	0.5	7506.64	2.08	3609	418	130	1961110	610.2	1.7	0.01
1710699	All others	0.5	7324.11	1.50	4883	100	242	1181623	367.6	1.0	0.01
1260117	Canned sardines	0.5	7038.90	1.71	4116	425	290	5073362	1578.5	4.3	0.01
1320203	Cabbages	0.5	7027.50	1.13	6219	450	65	1819064	566.0	1.6	0.01
1530999	Other unspec. sugar	0.4	6491.31	2.03	3198	2000	390	24941967	7760.1	21.3	0.01
1710440	Tomato catsup	0.4	5955.12	2.14	2783	340	114	1078600	335.6	0.9	0.01
1610312	Shortening	0.4	5783.99	3.21	1802	1200	100	2162241	672.7	1.8	0.00
1120309	Bakery -- Other unspec. bakery	0.4	5521.60	1.50	3681	900	242	8017368	2494.4	6.8	0.00
1320399	Other imported veg/crops	0.3	4875.90	0.48	10158	450	50	2285576	711.1	1.9	0.00
1330101	Potatoes	0.3	4859.92	0.76	6395	450	80	2302069	716.2	2.0	0.00
1320320	Takuang	0.3	4323.74	2.50	1729	450	28	217916	67.8	0.2	0.00
1120307	Cookies	0.3	4038.53	1.50	2692	900	242	5863943	1824.4	5.0	0.00
	Items % of Total Diary Exp	96.1	1460345.50								

K Kcal p.c.a.e.per day from diary 1368.6
L % of minimum daily energy need 65.2
M Cost per day from diary 1.24
N Cost per day to meet minimum energy need 1.91
O Weekly cost of minimum diet, FPL 13.37

Annex 5 SPC/DoH Model Diet: Urban								
FSM Male Urban								
Breakfast		unit	kcal per 100g	kcal value	CPI Unit	CPI Price	Diet cost	
	Bread	200	g	242	484.0	900	1.53	0.34
	Butter	10	g	727	72.7	450	3.51	0.08
	Coffee	5	g	132	6.6	180	5.59	0.16
	Milk	40	ml	66	26.4	1000	1.13	0.05
	Sugar	5	g	390	19.5	2000	1.57	0.00
Lunch								
	Breadfruit	200	g	30	60.0	450	0.10	0.04
	Tinned fish	80	g	290	232.0	200	0.95	0.38
Dinner								
	Breadfruit	100	g	30	30.0	450	0.10	0.02
	Rice	270	g	123	332.1	23000	16.06	0.19
	Cabbage	50	g	65	32.5	450	0.98	0.11
	Taro	100	g	99	99.0	450	0.50	0.11
	Spam	120	g	192	230.4	340	2.48	0.88
	Soy sauce	20	ml	33	6.6	600	2.29	0.08
Drinks								
	Coffee	5	g	132	6.6	180	5.59	0.16
	Milk	40	ml	66	26.4	1000	1.13	0.05
	Sugar	5	g	390	19.5	2000	1.57	0.00
	coconut	100	ml	16	16.0	450	0.50	0.11
Snacks								
	Donut	50	g	439	219.5	50	0.50	0.50
	Banana	200	g	110	220.0	450	0.25	0.11
	Other Fresh Fruit (local)	100	g	30	30.0	450	0.50	0.11
		Urban male		Kcal value	2169.8		cost per day	3.47

FSM Female Urban								
Breakfast		unit	kcal per 100g	kcal value	CPI Unit	CPI Price	Diet cost	
	Bread	200	g	242	484.0	900	1.53	0.34
	Butter	10	g	727	72.7	450	3.51	0.08
	Coffee	5	g	132	6.6	180	5.59	0.16
	Milk	40	ml	66	26.4	1000	1.13	0.05
	Sugar	5	g	390	19.5	2000	1.57	0.00
Lunch								
	Breadfruit	200	g	30	60.0	450	0.10	0.04
	Tinned fish	80	g	290	232.0	200	0.95	0.38
Dinner								
	Breadfruit	100	g	30	30.0	450	0.10	0.02
	Rice	180	g	123	221.4	23000	16.06	0.13
	Cabbage	50	g	65	32.5	450	0.98	0.11
	Taro	200	g	99	198.0	450	0.50	0.22
	Spam	80	g	192	153.6	340	2.48	0.58
	Soy sauce	20	ml	33	6.6	600	2.29	0.08
Drinks								
	Coffee	5	g	132	6.6	180	5.59	0.00
	Milk	40	ml	66	26.4	1000	1.13	0.01
	Sugar	5	g	390	19.5	2000	1.57	0.03
Snacks								
	Donut	50	g	439	219.5	50	0.50	0.50
	Banana	200	g	110	220.0	450	0.25	0.11
	Other Fresh Fruit (local)	100	g	30	30.0	450	0.50	0.11
		Urban female		Kcal value	2065.3			2.95
		Urban average adult		Kcal value	2117.55		cost per day	3.21

Annex 6: SPC/DoH Model Diet: Rural								
FSM Male Rural								
Breakfast		unit	kcal per 100g	kcal value	CPI Unit	CPI Price	Diet cost	
	Fresh coconut	250	ml	81	202.5	450	0.50	0.28
Lunch								
	Breadfruit	300	g	30	90.0	450	0.10	0.07
	Cooking banana	300	g	110	330.0	450	0.25	0.17
	Coconut cream	30	g	254	76.2	450	0.50	0.03
	Local fish	150	g	130	195.0	450	1.00	0.33
Dinner								
	Taro	300	g	99	297.0	450	0.50	0.33
	Rice	300	g	123	369.0	23000	16.06	0.21
	Local fish	150	g	130	195.0	450	1.00	0.33
	Coconut cream	30	g	254	76.2	450	0.50	0.03
	Cabbage	100	g	65	65.0	450	0.50	0.11
Drinks								
	Coffee	5	g	132	6.6	180	5.59	0.16
	Sugar	5	g	390	19.5	2000	1.57	0.00
	Coconut juice	500	ml	16	80.0	450	0.50	0.56
Snacks								
	Other Fresh Fruit (local)	200	g	30	60.0	450	0.35	0.16
	Banana	200	g	110	220.0	450	0.25	0.11
		Rural male		Kcal value	2282		cost per day	2.88

FSM Female Rural								
Breakfast		unit	kcal per 100g	kcal value	CPI Unit	CPI Price	Diet cost	
	Fresh coconut	250	ml	81	202.5	450	0.50	0.28
Lunch								
	Breadfruit	300	g	30	90.0	450	0.10	0.07
	Cooking banana	200	g	110	220.0	450	0.25	0.11
	Coconut cream	30	ml	254	76.2	450	0.50	0.03
	Local fish	120	g	130	156.0	450	1.00	0.27
Dinner								
	Taro	300	g	99	297.0	450	0.50	0.33
	Rice	250	g	123	307.5	23000	16.06	0.17
	Local fish	100	g	130	130.0	450	1.00	0.22
	Coconut cream	30	g	254	76.2	450	0.50	0.03
	Cabbage	100	g	65	65.0	450	0.50	0.11
Drinks								
	Coffee	5	g	132	6.6	180	5.59	0.16
	Sugar	5	g	390	19.5	2000	1.57	0.00
	Coconut juice	250	ml	16	40.0	450	0.50	0.28
Snacks								
	Other Fresh Fruit (local)	200	g	30	60.0	450	0.35	0.16
	Banana	200	g	110	220.0	450	0.25	0.11
		Rural Female		Kcal value	1966.5		cost per day	2.33
		Average Rural Adult		Kcal value	2124.25		cost per day	2.61

Annex 6: SPC/DoH Model Diet: Rural								
FSM Male Rural								
Breakfast		unit	kcal per 100g	kcal value	CPI Unit	CPI Price	Diet cost	
	Fresh coconut	250	ml	81	202.5	450	0.50	0.28
Lunch								
	Breadfruit	300	g	30	90.0	450	0.10	0.07
	Cooking banana	300	g	110	330.0	450	0.25	0.17
	Coconut cream	30	g	254	76.2	450	0.50	0.03
	Local fish	150	g	130	195.0	450	1.00	0.33
Dinner								
	Taro	300	g	99	297.0	450	0.50	0.33
	Rice	300	g	123	369.0	23000	16.06	0.21
	Local fish	150	g	130	195.0	450	1.00	0.33
	Coconut cream	30	g	254	76.2	450	0.50	0.03
	Cabbage	100	g	65	65.0	450	0.50	0.11
Drinks								
	Coffee	5	g	132	6.6	180	5.59	0.16
	Sugar	5	g	390	19.5	2000	1.57	0.00
	Coconut juice	500	ml	16	80.0	450	0.50	0.56
Snacks								
	Other Fresh Fruit (local)	200	g	30	60.0	450	0.35	0.16
	Banana	200	g	110	220.0	450	0.25	0.11
		Rural male		Kcal value	2282		cost per day	2.88

FSM Female Rural								
Breakfast		unit	kcal per 100g	kcal value	CPI Unit	CPI Price	Diet cost	
	Fresh coconut	250	ml	81	202.5	450	0.50	0.28
Lunch								
	Breadfruit	300	g	30	90.0	450	0.10	0.07
	Cooking banana	200	g	110	220.0	450	0.25	0.11
	Coconut cream	30	ml	254	76.2	450	0.50	0.03
	Local fish	120	g	130	156.0	450	1.00	0.27
Dinner								
	Taro	300	g	99	297.0	450	0.50	0.33
	Rice	250	g	123	307.5	23000	16.06	0.17
	Local fish	100	g	130	130.0	450	1.00	0.22
	Coconut cream	30	g	254	76.2	450	0.50	0.03
	Cabbage	100	g	65	65.0	450	0.50	0.11
Drinks								
	Coffee	5	g	132	6.6	180	5.59	0.16
	Sugar	5	g	390	19.5	2000	1.57	0.00
	Coconut juice	250	ml	16	40.0	450	0.50	0.28
Snacks								
	Other Fresh Fruit (local)	200	g	30	60.0	450	0.35	0.16
	Banana	200	g	110	220.0	450	0.25	0.11
		Rural Female		Kcal value	1966.5		cost per day	2.33
		Average Rural Adult		Kcal value	2124.25		cost per day	2.61

Table A1					
Weekly Household Total Expenditure					
HH deciles by per capita adult equivalent expenditure	US\$ per capita a.e per week				
	National	Yap	Chuuk	Pohnpei	Kosrae
Decile 1	11.76	18.49	10.76	11.84	11.83
Decile 2	18.66	28.37	16.52	19.65	17.53
Decile 3	24.31	36.10	21.64	25.36	22.13
Decile 4	30.38	43.28	26.64	32.79	28.66
Decile 5	37.00	56.59	31.78	40.63	33.23
Decile 6	44.44	71.60	37.66	49.74	40.17
Decile 7	55.13	90.94	44.36	59.69	47.11
Decile 8	71.58	112.18	56.74	79.28	56.58
Decile 9	101.03	144.02	76.94	107.86	77.94
Decile 10	182.64	224.17	143.49	200.74	123.41
Average	46.03	63.80	39.17	49.71	39.64

Table A2					
Weekly Household Food Expenditure					
HH deciles by per capita adult equivalent expenditure	US\$ per capita a.e per week				
	National	Yap	Chuuk	Pohnpei	Kosrae
Decile 1	5.69	12.08	5.69	5.01	5.30
Decile 2	10.45	20.57	9.46	8.11	9.31
Decile 3	12.21	22.66	12.96	10.71	9.47
Decile 4	15.33	26.14	14.43	12.26	13.22
Decile 5	17.49	30.77	17.08	14.45	11.14
Decile 6	20.26	30.16	18.67	19.02	16.64
Decile 7	23.37	29.13	20.95	20.32	20.76
Decile 8	26.25	30.70	25.09	24.16	20.79
Decile 9	33.13	34.56	35.22	28.24	27.45
Decile 10	48.05	58.82	54.37	40.45	36.37
Average	18.30	26.11	18.66	15.66	15.22

Table A3					
Weekly Household Food Purchases					
HH deciles by per capita adult equivalent expenditure	US\$ per capita a.e per week				
	National	Yap	Chuuk	Pohnpei	Kosrae
Decile 1	2.51	1.68	1.53	3.39	3.35
Decile 2	3.84	1.82	3.39	4.92	5.46
Decile 3	5.95	4.41	4.19	7.17	7.13
Decile 4	6.43	1.50	5.42	8.80	10.17
Decile 5	8.42	10.14	7.55	8.54	10.58
Decile 6	9.04	12.26	9.15	12.55	10.71
Decile 7	13.44	16.34	9.00	13.16	14.72
Decile 8	14.88	16.58	14.04	16.40	16.72
Decile 9	21.24	24.23	17.92	21.15	23.87
Decile 10	29.20	22.93	30.49	29.82	27.20
Average	9.52	8.43	8.61	10.64	11.53

Table A4					
Food Produced for Home Consumption by Households					
HH deciles by per capita adult equivalent expenditure	US\$ per capita a.e per week				
	National	Yap	Chuuk	Pohnpei	Kosrae
Decile 1	3.18	10.40	4.15	1.61	1.95
Decile 2	6.61	18.75	6.08	3.18	3.84
Decile 3	6.26	18.25	8.76	3.54	2.33
Decile 4	8.90	24.64	9.02	3.45	3.05
Decile 5	9.07	20.63	9.53	5.91	0.56
Decile 6	11.22	17.90	9.52	6.47	5.93
Decile 7	9.93	12.79	11.96	7.16	6.04
Decile 8	11.37	14.11	11.05	7.76	4.07
Decile 9	11.89	10.33	17.30	7.10	3.58
Decile 10	18.85	35.89	23.87	10.62	9.17
Average	8.78	17.68	10.04	5.02	3.69

Table A5					
Weekly Household Non-food Expenditure					
HH deciles by per capita adult equivalent expenditure	US\$ per capita a.e per week				
	National	Yap	Chuuk	Pohnpei	Kosrae
Decile 1	6.07	6.41	5.07	6.84	6.53
Decile 2	8.21	7.80	7.06	11.55	8.22
Decile 3	12.10	13.44	8.68	14.65	12.66
Decile 4	15.05	17.14	12.21	20.54	15.44
Decile 5	19.51	25.82	14.70	26.18	22.09
Decile 6	24.18	41.45	18.99	30.73	23.53
Decile 7	31.76	61.81	23.40	39.37	26.35
Decile 8	45.33	81.48	31.65	55.12	35.79
Decile 9	67.90	109.46	41.73	79.61	50.49
Decile 10	134.59	165.35	89.12	160.30	87.04
Average	27.72	37.69	20.52	34.05	24.41

Table A6					
Distribution of HH Expenditure %					
adult equivalent per capita HH expenditure deciles	National	Yap	Chuuk	Pohnpei	Kosrae
1st Decile	3.4	4.6	3.3	3.6	3.9
2nd Decile	5.1	6.5	5.1	4.8	5.7
3rd Decile	6.1	5.9	6.3	6.0	6.3
4th Decile	7.7	7.3	7.5	7.5	7.2
5th Decile	8.2	9.4	9.3	7.7	9.9
6th Decile	9.5	9.1	9.3	9.5	9.3
7th Decile	11.2	10.8	11.0	11.4	11.7
8th Decile	13.3	11.1	13.5	14.8	12.0
9th Decile	15.3	13.8	14.4	14.8	15.2
Top Decile	20.2	21.5	20.3	19.9	18.9
Total	100.0	100.0	100.0	100.0	100.0
Ratio of Q1:Q5	4.2	3.2	4.2	4.1	3.6

Table A7				
Location of HH in Lowest Three Deciles of National Expenditure				
	Proportion of all HH	Proportion of HH in Lowest 3 Deciles	Proportion of Total Population	Proportion of Population in Lowest 3 D
Yap	13.4	6.2	12.5	7.4
Chuuk	42.6	50.6	44.6	49.2
Pohnpei	36.7	35.2	35.1	35.3
Kosrae	7.3	8.0	7.8	8.0
Total	100.0	100.0	100.0	100.0

Table A8					
Proportion of Poorest Households Headed by Females					
	National	Yap	Chuuk	Pohnpei	Kosrae
Average all Households	20.3	21.8	17.5	23.1	20.0
Bottom Quintile	21.6	18.4	24.6	22.2	32.1
Lowest three deciles	22.8	20.9	23.3	25.6	23.8
Highest Quintile	21.8	26.3	19.8	24.8	17.9

Table A9							
Source of Water Supply							
per capita a.e expenditure deciles	Public system	Public system and cistern	Cistern, tanks and drums	Village system	Public standpipe	Individual well, spring or other	0
Decile 1	16.9	3.0	11.3	20.1	0.9	47.9	100.0
Decile 2	12.3	3.0	15.6	26.2	0.0	42.8	100.0
Decile 3	28.4	1.3	18.2	29.5	0.0	22.6	100.0
Decile 4	20.4	2.5	23.6	26.2	1.4	25.8	100.0
Decile 5	23.7	5.4	20.5	22.7	0.0	27.7	100.0
Decile 6	22.5	3.1	20.5	25.3	1.0	27.5	100.0
Decile 7	30.6	3.7	20.5	22.8	1.3	21.1	100.0
Decile 8	45.4	3.8	19.0	19.1	0.0	12.8	100.0
Decile 9	52.0	4.2	19.4	17.2	0.0	7.2	100.0
Decile 10	52.4	6.4	16.2	10.6	0.0	14.4	100.0
Total	30.5	3.6	18.5	22.0	0.5	25.0	100.0

Table A9a							
Source of Water Supply							
per capita a.e expenditure deciles	Public system	Public system and cistern	Cistern, tanks and drums	Village system	Public standpipe	Individual well, spring or other	
Decile 1	5.5	8.1	6.1	9.1	18.9	19.1	Decile 1
Decile 2	4.0	8.3	8.4	11.9	0.0	17.1	Decile 2
Decile 3	9.4	3.7	9.9	13.5	0.0	9.1	Decile 3
Decile 4	6.7	6.9	12.8	11.9	30.2	10.3	Decile 4
Decile 5	7.7	14.6	11.0	10.3	0.0	11.0	Decile 5
Decile 6	7.5	8.7	11.2	11.6	22.0	11.1	Decile 6
Decile 7	10.1	10.2	11.1	10.4	28.9	8.5	Decile 7
Decile 8	14.8	10.4	10.2	8.6	0.0	5.1	Decile 8
Decile 9	17.1	11.5	10.5	7.8	0.0	2.9	Decile 9
Decile 10	17.2	17.7	8.8	4.9	0.0	5.8	Decile 10
Total	100.0	100.0	100.0	100.0	100.0	100.0	Total

Table A10							
Source of Water Supply by State							
All HH	Public system	Public system and cistern	Cistern, tanks and drums	Village system	Public standpipe	Individual well, spring or other	
Yap	49.0	6.7	23.6	6.3	0.3	14.1	100.0
Chuuk	8.4	2.1	23.1	19.9	0.6	45.9	100.0
Pohnpei	43.6	4.0	14.0	29.6	0.2	8.6	100.0
Kosrae	59.3	5.0	5.0	24.3	1.4	5.0	100.0

Table A11							
Source of Water Supply by State							
HH in Lowest three expenditure deciles	Public system	Public system and cistern	Cistern, tanks and drums	Village system	Public standpipe	Individual well, spring or other	
Yap	23.0	4.2	48.4	2.4	0.0	22.0	100.0
Chuuk	5.9	0.4	15.4	17.7	0.6	60.0	100.0
Pohnpei	30.7	4.6	11.6	36.1	0.0	16.9	100.0
Kosrae	50.0	4.3	2.2	43.5	0.0	0.0	100.0

Table A12

Access to Sanitation Facilities						
per capita a.e expenditure deciles	Flush toilet in unit	Flush toilet in building	Flush toilet outside building	Ventilated latrine/privy	None or other system	
Decile 1	.9	3.0	39.3	25.3	31.5	100.0
Decile 2	4.6	2.1	36.3	22.0	35.0	100.0
Decile 3	4.9	6.5	34.8	24.7	29.2	100.0
Decile 4	10.3	7.9	32.5	19.9	29.4	100.0
Decile 5	7.8	10.9	26.2	24.7	30.4	100.0
Decile 6	8.1	8.3	34.4	15.7	33.4	100.0
Decile 7	12.2	11.7	33.8	15.6	26.8	100.0
Decile 8	20.6	13.8	27.0	19.0	19.6	100.0
Decile 9	25.9	17.2	28.9	14.0	14.0	100.0
Decile 10	36.6	17.7	20.6	8.7	16.4	100.0
Total	13.2	9.9	31.4	19.0	26.6	100.0

Table A12a

Access to Sanitation Facilities						
per capita a.e expenditure deciles	Flush toilet in unit	Flush toilet in building	Flush toilet outside building	Ventilated latrine/privy	None or other system	
Decile 1	0.7	3.0	12.4	13.3	11.8	Decile 1
Decile 2	3.5	2.1	11.5	11.6	13.1	Decile 2
Decile 3	3.7	6.6	11.2	13.1	11.1	Decile 3
Decile 4	7.8	8.0	10.3	10.5	11.0	Decile 4
Decile 5	5.9	10.9	8.3	12.9	11.4	Decile 5
Decile 6	6.2	8.5	11.1	8.4	12.7	Decile 6
Decile 7	9.2	11.8	10.8	8.3	10.1	Decile 7
Decile 8	15.6	13.9	8.6	10.0	7.3	Decile 8
Decile 9	19.6	17.3	9.2	7.4	5.3	Decile 9
Decile 10	27.8	17.9	6.6	4.6	6.2	Decile 10
Total	100.0	100.0	100.0	100.0	100.0	Total

Table A13

Access to Sanitation Facilities by State						
All HH	Flush toilet in unit	Flush toilet in building	Flush toilet outside building	Ventilated latrine/privy	None or other system	
Yap	13.6	7.1	9.0	29.5	40.9	100.0
Chuuk	5.3	6.8	39.8	16.3	31.8	100.0
Pohnpei	21.9	11.9	23.9	21.9	20.5	100.0
Kosrae	15.0	23.6	61.4	0.0	0.0	100.0
National	13.2	9.9	31.4	19.0	26.6	100.0

Table A14

Access to Sanitation Facilities by State						
HH in Lowest three expenditure deciles	Flush toilet in unit	Flush toilet in building	Flush toilet outside building	Ventilated latrine/privy	None or other system	
Yap	2.1	2.1	2.1	32.7	61.0	100.0
Chuuk	1.7	2.2	41.9	16.2	38.1	100.0
Pohnpei	4.6	4.5	26.6	39.2	25.1	100.0
Kosrae	10.9	13.0	76.1	0.0	0.0	100.0
National	3.5	3.9	36.8	24.0	31.9	100.0

Table A15									
Source of Energy for Cooking									
per capita a.e expenditure deciles	Electricity	Bottled Gas	Kerosene	Electricity/ Gas	Electricity/ Kerosene	Gas/ Kerosene	Wood	No Fuel used	Total
Decile 1	1.6	0.4	21.6	0.0	4.9	0.0	71.5	0.0	100.0
Decile 2	2.4	0.6	21.7	0.7	3.3	0.8	68.9	1.5	100.0
Decile 3	3.7	1.5	41.6	0.7	4.5	0.6	47.4	0.0	100.0
Decile 4	5.6	0.0	36.6	0.0	7.5	0.6	48.3	1.3	100.0
Decile 5	1.6	0.4	42.5	2.0	5.1	0.0	48.4	0.0	100.0
Decile 6	5.1	0.0	46.6	0.0	4.5	1.5	42.4	0.0	100.0
Decile 7	3.6	1.6	57.0	1.5	1.8	2.1	32.4	0.0	100.0
Decile 8	9.6	3.0	56.9	0.0	10.2	2.1	18.1	0.0	100.0
Decile 9	11.8	6.8	49.8	1.7	7.9	3.7	18.0	0.4	100.0
Decile 10	27.3	8.2	29.4	2.0	8.6	4.8	19.6	0.0	100.0
Total	7.3	2.3	40.4	0.9	5.8	1.6	41.5	0.3	100.0

Table A15a									
Source of Energy for Cooking									
per capita a.e expenditure deciles	Electricity	Bottled Gas	Kerosene	Electricity/ Gas	Electricity/ Kerosene	Gas/ Kerosene	Wood	No Fuel used	
Decile 1	2.2	1.7	5.3	0.0	8.4	0.0	17.1	0.0	Decile 1
Decile 2	3.4	2.8	5.3	8.3	5.6	5.0	16.6	47.3	Decile 2
Decile 3	5.2	6.6	10.4	8.3	7.7	3.8	11.5	0.0	Decile 3
Decile 4	7.7	0.0	9.0	0.0	12.8	3.8	11.6	40.5	Decile 4
Decile 5	2.2	1.7	10.4	22.8	8.7	0.0	11.6	0.0	Decile 5
Decile 6	7.0	0.0	11.6	0.0	7.8	9.2	10.3	0.0	Decile 6
Decile 7	4.9	7.2	14.1	17.0	3.2	13.1	7.8	0.0	Decile 7
Decile 8	13.2	13.4	14.1	0.0	17.4	12.9	4.4	0.0	Decile 8
Decile 9	16.3	29.9	12.3	19.7	13.6	22.7	4.3	12.2	Decile 9
Decile 10	37.8	36.6	7.3	23.9	14.9	29.5	4.7	0.0	Decile 10
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	Total

Table A16									
Source of Energy for Cooking by State									
All HH	Electricity	Bottled Gas	Kerosene	Electricity/ Gas	Electricity/ Kerosene	Gas/ Kerosene	Wood	No Fuel used	
Yap	6.6	8.7	37.2	2.5	1.9	4.3	37.9	0.8	100.0
Chuuk	1.9	1.1	29.1	1.0	3.8	1.9	60.9	0.3	100.0
Pohnpei	13.7	1.5	50.9	0.2	8.0	0.7	24.8	0.2	100.0
Kosrae	7.1	0.7	59.3	0.0	14.3	0.0	18.6	0.0	100.0
National	7.3	2.3	40.4	0.9	5.8	1.6	41.5	0.3	100.0

Table A17									
Source of Energy for Cooking by State									
HH in Lowest three expenditure deciles	Electricity	Bottled Gas	Kerosene	Electricity/ Gas	Electricity/ Kerosene	Gas/ Kerosene	Wood	No Fuel used	
Yap	0.0	2.1	22.4	7.7	0.0	0.0	64.0	3.8	100.0
Chuuk	0.0	1.4	13.3	0.0	1.6	0.4	83.2	0.0	100.0
Pohnpei	6.9	0.0	45.1	0.0	7.7	0.8	38.8	0.8	100.0
Kosrae	2.2	0.0	54.3	0.0	8.7	0.0	34.8	0.0	100.0
National	2.6	0.8	28.3	0.5	4.2	0.5	62.5	0.5	100.0

Table A18					
Educational Attainment of Heads of HH by Decile					
per capita a.e expenditure deciles	No school	Elementary	High school	Tertiary	Total
Decile 1	17.1	42.4	31.9	8.6	100.0
Decile 2	10.3	50.2	23.6	15.9	100.0
Decile 3	7.5	47.2	30.3	15.0	100.0
Decile 4	7.5	38.5	34.5	19.4	100.0
Decile 5	4.3	45.4	36.9	13.4	100.0
Decile 6	7.3	36.8	36.9	18.9	100.0
Decile 7	3.7	34.8	36.0	25.4	100.0
Decile 8	4.3	27.8	36.5	31.3	100.0
Decile 9	4.7	20.7	36.6	37.9	100.0
Decile 10	2.9	13.8	27.8	55.5	100.0
Total	7.0	35.8	33.1	24.1	100.0

Table A18a					
Educational Attainment of Heads of HH by Level Attained					
per capita a.e expenditure deciles	No school	Elementary	High school	Tertiary	Total
Decile 1	24.4	11.9	9.6	3.5	Decile 1
Decile 2	14.7	14.1	7.1	6.6	Decile 2
Decile 3	10.9	13.4	9.2	6.3	Decile 3
Decile 4	10.8	10.8	10.4	8.0	Decile 4
Decile 5	6.2	12.4	11.1	5.5	Decile 5
Decile 6	10.6	10.1	11.2	7.9	Decile 6
Decile 7	5.4	9.8	10.9	10.6	Decile 7
Decile 8	6.2	7.8	11.0	12.9	Decile 8
Decile 9	6.8	5.8	11.1	15.7	Decile 9
Decile 10	4.1	3.9	8.4	23.0	Decile 10
Total	100.0	100.0	100.0	100.0	Total

Table A19					
Educational Attainment of Heads of HH by State					
HH in Lowest three expenditure deciles	No school	Elementary	High school	Tertiary	Total
Yap	4.5	22.3	45.3	27.9	100.0
Chuuk	13.7	47.7	29.3	9.3	100.0
Pohnpei	10.0	54.9	22.8	12.3	100.0
Kosrae	10.9	21.7	37.0	30.4	100.0
National	11.6	46.6	28.6	13.2	100.0

Table A20					
Educational Attainment of Heads of HH by Decile					
All HH	No school	Elementary	High school	Tertiary	Total
Yap	5.2	19.0	43.5	32.2	100.0
Chuuk	8.4	41.4	33.1	17.1	100.0
Pohnpei	6.3	39.6	28.4	25.7	100.0
Kosrae	7.9	11.4	37.9	42.9	100.0
National	7.2	35.6	33.1	24.2	100.0

Table A21							
Number of Workers per Household							
% of HH with number of workers	0	1	2	3	4	N/S	Total
Decile 1	17.8	45.5	22.5	4.8	8.6	0.8	100.0
Decile 2	30.4	29.6	19.3	11.7	8.9	0.0	100.0
Decile 3	18.2	37.5	27.8	7.7	8.2	0.5	100.0
Decile 4	17.2	40.3	20.9	13.5	8.1	0.0	100.0
Decile 5	20.9	36.1	21.3	11.8	8.5	1.3	100.0
Decile 6	22.4	35.6	26.9	8.1	6.5	0.5	100.0
Decile 7	21.9	23.4	31.2	9.1	11.1	3.2	100.0
Decile 8	14.4	36.0	28.6	11.7	6.8	2.6	100.0
Decile 9	13.8	28.7	38.4	7.2	6.7	5.3	100.0
Decile 10	7.0	24.5	31.2	6.0	2.0	29.2	100.0
Total	18.4	33.7	26.8	9.1	7.5	4.4	100.0

Table A22							
Number of Workers per Household: All HH							
% of HH with number of workers	0	1	2	3	4	N/S	Total
Yap	20.1	34.1	28.1	7.5	5.6	4.5	100.0
Chuuk	25.3	39.0	20.8	6.8	5.2	2.8	100.0
Pohnpei	10.7	27.3	33.8	12.1	9.7	6.4	100.0
Kosrae	13.6	34.3	25.0	10.7	13.6	2.9	100.0
National	18.4	33.7	26.8	9.1	7.5	4.4	100.0

Table A23							
Number of Workers per Household: Lowest Three Deciles							
% of HH with number of workers	0	1	2	3	4	N/S	Total
Yap	33.1	42.8	9.1	12.6	2.4	0.0	100.0
Chuuk	28.2	42.0	20.4	4.8	4.6	0.0	100.0
Pohnpei	12.0	31.4	30.6	11.4	13.8	0.8	100.0
Kosrae	19.6	32.6	19.6	10.9	15.2	2.2	100.0
National	22.1	37.5	23.2	8.1	8.6	0.4	100.0

Table A24											
Classification of Workers											
% of HH with number of workers	Municipal Government	State Government	National Government	Other Government Agency	Government Owned Enterprise	Private Employment for Wages	Non-Profit Organisation	Self Employed	Working without pay	None	Total
Decile 1	1.7	3.0	0.0	0.5	0.0	11.6	0.1	0.2	0.1	82.9	100.0
Decile 2	2.0	2.6	0.0	0.6	0.0	15.2	0.2	1.3	0.1	78.2	100.0
Decile 3	0.9	2.7	0.6	0.4	0.1	13.9	0.7	1.2	0.1	79.3	100.0
Decile 4	1.8	4.8	0.5	0.7	0.0	16.5	0.8	0.2	0.1	74.5	100.0
Decile 5	2.6	5.4	0.4	1.1	0.0	15.0	0.9	1.2	0.1	73.3	100.0
Decile 6	1.4	5.9	0.6	0.9	0.1	14.9	0.5	1.0	0.1	74.6	100.0
Decile 7	1.3	8.4	0.9	1.6	0.2	19.4	1.3	0.3	0.1	66.6	100.0
Decile 8	1.5	10.5	1.0	1.9	0.2	18.6	0.8	0.5	0.0	65.2	100.0
Decile 9	1.6	10.4	2.5	2.9	0.3	22.6	2.1	0.7	0.5	56.4	100.0
Decile 10	1.4	12.6	3.3	3.7	0.4	23.6	2.8	1.2	0.3	50.8	100.0
Total	1.6	5.7	0.7	1.1	0.1	16.2	0.8	0.8	0.1	72.8	100.0

