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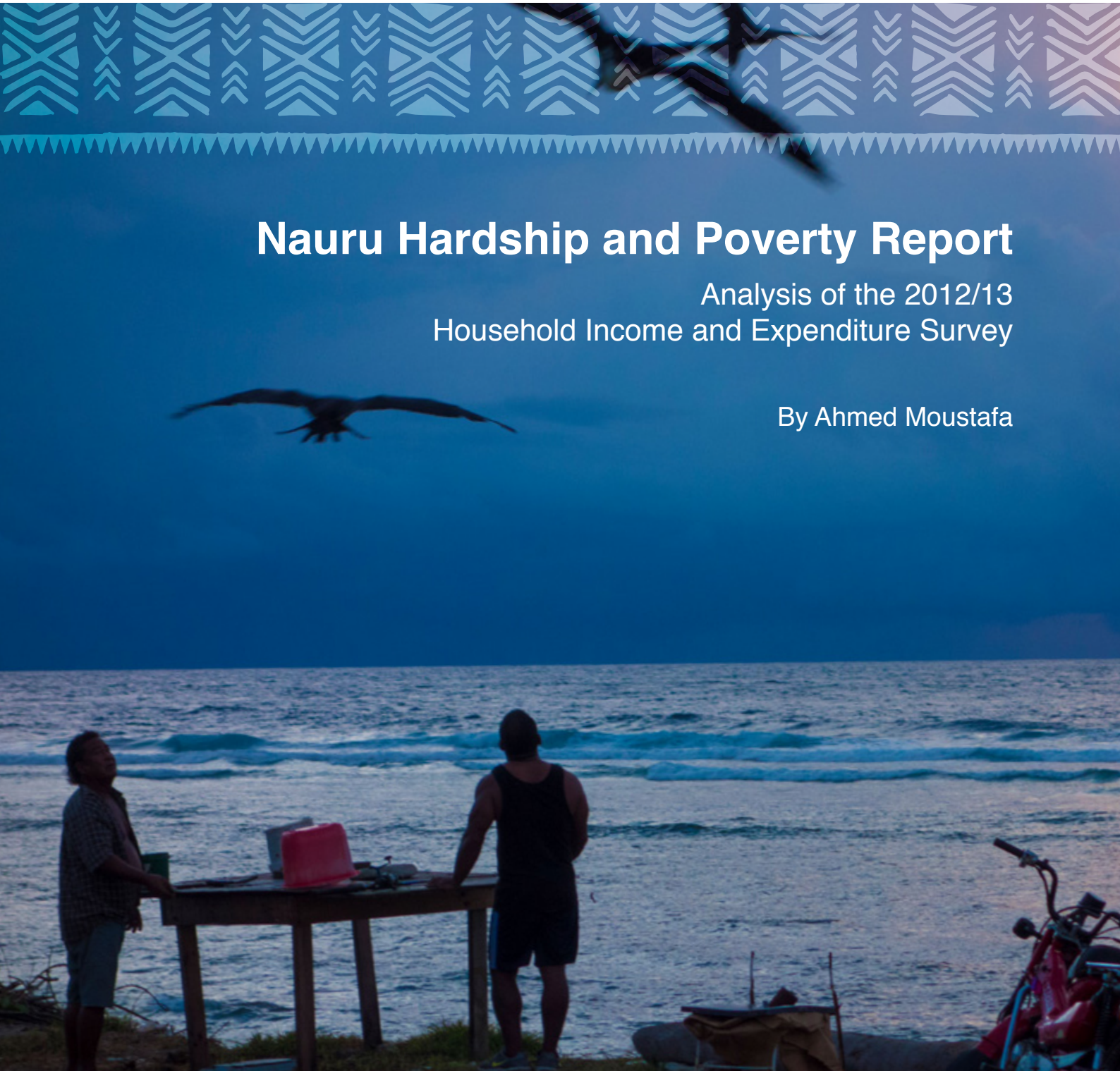
Nauru Hardship and Poverty Report

Analysis of the 2012/13 Household Income and Expenditure Survey

By Ahmed Moustafa



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ACRONYMS

ADB	Asian Development Bank
a.e	adult equivalent
AFF	Agriculture, Forestry and Fisheries sectors
AUD	Australian Dollars
BNPL	Basic Needs Poverty Line
CPI	Consumer Price Index
FAO	Food and Agriculture Organization
CVD	Cardiovascular disease, Alcohol, Tobacco and Kava
FPL	Food Poverty Line
FSM	Federated States of Micronesia
GDP	Gross Domestic Product
H3D	Highest three expenditure deciles
HCI	Head Count Index
HH	Households
HHH	Household head
HIES	Household Income and Expenditure Survey
IP	Incidence of Poverty
Kcal	Kilocalories
L3D	Lowest three expenditure deciles
LED	Local Economic Development
MCC	Millennium Challenge Corporation
MDG	Millennium Development Goal
NSO	Nauru National Statistic Office
p.c.a.e.	per capita adult equivalent
PGI	Poverty Gap Index
PIC	Pacific Island Country
PNG	Papua New Guinea
SDG	Sustainable Development Goal
SPC	Secretariat of the Pacific Community
SPGI	Squared Poverty Gap Index
STEPS	Stepwise Approach to Surveillance of Non-communicable Diseases
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations International Children Funds
USP	University of South Pacific
WHO	World Health Organization

FOREWORD

It can be said that it is now widely accepted by the average resident and indigenous inhabitants of Nauru that socio-economic issues demand better understanding. Of particular concerns are the hardships and poverty experienced by the residents and households on achieving the basic essentials required for a good quality of life.

One essential indicator of a good quality of life is the calculation of the Food Poverty Line (FPL), which measures the food intake requirements quantified in calories for the average adult or child, and in the case for Nauru are observed amongst the poorest 30 percent of the population. The other significant aspects measured in this report are the various measures for gauging the Basic Needs Poverty Line (BNPL). The BNPL is the estimate of the cost of minimum nutritional dietary intake requirements plus the cost of essential non-food basic needs to achieve acceptable standard of living. Most of these non-food costs require cash payments and are often the underlying cause of the greatest financial hardship. Household characteristics, gender dimensions of poverty, vulnerability of children are also covered in this report. A comparison of the overall average weekly cash expenditure between food and non-food per household in Nauru was $136 and $506 respectively. This signifies that expenditures on non-food essentials were almost four times more than expenditures on food. The differences between the poor to the wealthier population on essential food expenditures were not very significant. However, further findings show that the wealthier population spends almost twice as much on non-food essentials as the poorer population. It can be possible to make a learned statement that most of the income generated by the poor is strenuously dedicated to food with only minimal surpluses permitting any expenditure on non-food essentials.

The BNPL indicators can be considered more significant for pacific island countries and states (PICS) indicative of their geo-location and relative isolation from the rest of the world. Access and capacity on certain services, foreign investments, a thriving private sector, social safety nets, human capital, national infrastructures or even technology & communication, and the quality of these particular requirements in comparison to advanced societies differ for PICS (including Nauru), and that demotes their status to developing or least developed countries (LDC). It would be difficult to state that Nauru experiences absolute poverty due to its close access to marine resources. However, the limiting opportunities related to “essential” non-food basic needs (such as clothing, shelter, education, transport, communications, lighting and health care) poses hardships to the people of Nauru in gaining higher quality and standards of living.

Nauru has experienced some of its worst periods throughout 2003 to 2009 during the national economic crisis and further exacerbated by the global economic crisis which hit in 2008/09. Throughout these periods there were no overwhelming outputs of information that brought to light the hardship and poverty that were experienced by the people. Although, there has been a significant improvement in the country’s overall economy, the economic growth remains erratic, and the issues of inequality and distribution of wealth remains an ongoing concern that differentiates the people living on the island. The vulnerability indicators found in this report on certain pockets or deciles within the population can attest to the existence of such differences and inequalities.

A total of 460 households were interviewed, representing roughly almost one-third of the island, where they were asked a series of questions on their respective periodic expenditure and income. The size of the sample is seen as a significant representation of the whole population. Through the leadership and expert assistance of Mr. Ahmed Moustafa the Pacific Regional MDGs, Inclusive Growth and Sustainable Development Team Leader and Programme Manager at UNDP Pacific Center, this analysis of the Nauru 2012/13 household income and expenditure survey was achieved.

This report culminates the findings of the ***Household Income and Expenditure Survey*** that was undertaken from September 2012 to the end of August 2013. This was an approach that had not been tried before, therefore, was the first to be attempted on-island. The specific aim for the length of time taken was to eliminate any seasonal impacts. Especially patterns of income and expenditures resulting from occasional large payments such as those that occurred during this period. Payments of pending salary arrears, outstanding government rents to landowners and RONWAN (funds payout from government phosphate trust operated by the Nauru Phosphate Royalties Trust) capital pay outs to name a few had a direct impact in changing the usual spending patterns of households and individuals. The bureau's decision to extend the period to one year was an attempt at ensuring that uncommon household behaviors on spending and income generation were eliminated as much as possible. That being said the bureau anticipated 2012 and 2013 would be an atypical year.

Statistical information such as those that can be found herein are an essential output of work required in order for readers to achieve a better understanding and insight into the issues of hardship and poverty. The information analysed herein will inform the general population as well as planners and policy makers. They shall also provide an essential communication tool to Nauru's development partners and the international development community. The analysis in this report is structured in ten sections (see page 17) and details the incidences, severity and depth of the degree of poverty, as well as the identification and characteristics of the poor found within the Republic of Nauru.

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EXECUTIVE SUMMARY

1. INTRODUCTION

The hardship and poverty report for Nauru is based on the finding and analysis of the 2012/2013 Household Income and Expenditure Survey (HIES). By establishing the Food and Basic Needs Poverty line, this report aims to provide a detailed analysis of the inequality and poverty in Nauru.

The report categorizes households and individuals as extremely poor if their income falls below the food poverty line (FPL), poor if they are below the Basic Needs Poverty Line (BNPL) (defined below), highly vulnerable to becoming poor if their expenditure is 20% or less above the BNPL, vulnerable if their expenditure is more than 20% but less than 50% above the BNPL, potentially vulnerable if their expenditure is more than 50% but less than 100% above the BNPL; and non-poor if their expenditure level is 100% or more above the BNPL (as outlined in following table).

Poverty and vulnerability status classifications

Category of vulnerability Status	Expenditure relative to poverty line
Very Poor (extreme poverty)	Households/persons whose per capita adult equivalent weekly expenditure is below the FPL
Poor (basic needs poverty)	Households/persons whose p.c.a.e weekly expenditure is below the BNPL, i.e. the very poor and the poor
Very vulnerable	Households/persons whose p.c.a.e which is above the BNPL but less than 20% above the BNPL
Vulnerable	Households/persons whose p.c.a.e between 20% and 50% above the BNPL
Potentially vulnerable	Households/persons whose p.c.a.e. expenditure between 50% and 100% above the BNPL
Non-poor	Households/persons whose p.c.a.e expenditure was equal to or more than 100% above the BNPL

The 2012/2013 Household Income and Expenditure Survey

A total of 460 households were included in the survey which represented approximately 26% of the estimated number of all households in Nauru. The HIES was completed over a twelve-month period with a total sixteen three-week survey rounds, intended to capture the seasonal trends and consumption patterns. Households (HH) in the survey were requested to complete daily records of food and other non-food items purchased, consumed from their own production or given and received as gifts.

2. HARDSHIP AND POVERTY TARGETS AND INDICATORS FOR MDG1

The table below summarizes MDG 1 target indicators:

MDG 1 targets indicators

1.1	Proportion of Population below Basic Needs Poverty Lines % (Note 1)	24.0
	Proportion of Population vulnerable to falling into poverty; per capita adult equivalent expenditure <10% above BNPL %	28.3
1.2	Proportion of households with per capita adult equivalent expenditure below the minimum level of dietary energy consumption (FPL) %	0.0
1.3	Poverty Gap Index (PGI) - Depth of Poverty	6.1
	Squared PGI - Severity of Poverty	2.1
1.4	Share of poorest quintile (20%) in consumption %	12.2
	Ratio of Share of poorest quintile (20%) to highest quintile	29.8
	HH Gini Coefficient: Household Expenditure (Note 2)	0.37
	Population Gini Coefficient (Note 2)	0.52

Note 1: Proportion of Population below US$1 (PPP) per day not yet available

Note 2: 0 = perfect equality 1 = perfect inequality

3. THE FOOD POVERTY LINE AND BASIC-NEEDS POVERTY LINES FOR NAURU

The Food Poverty Line (FPL) has an absolute base (2,100 kilocalories/day per capita) with items that make up those calories derived from the actual consumption patterns of the lowest three deciles in each of the three areas.

The basic-needs poverty lines are based on consumption/expenditure as recorded by households and individuals in the HIES. Basic-needs poverty measure is based on the "Cost of Basic Needs" methodology. The Basic Needs Poverty Line (BNPL) is made up of two components: the cost of a minimum food basket; and expenditure for "essential" non-food basic needs. The basis for the estimation of non-food basic needs expenditure for Nauru and all other PICs is the average actual non-food expenditure of households in the bottom three deciles.

The calculation of the Basic Needs Poverty and Vulnerability Lines

AUD per capita adult equivalent adult equivalent per week	Food Poverty Line	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH in Lowest 3 Deciles
	A	B	C = A+B	D
Nauru National Basic-Needs Poverty Line	23.00	45.04	68.04	484.54
Nauru National Basic-Needs Poverty Line + 20%	27.59	54.05	81.64	581.45
Nauru National Basics-Needs Poverty Line + 50%	34.49	67.56	102.05	726.81
Nauru National Basic-Needs Poverty Line + 100%	45.99	90.08	136.07	969.08

The tables show that in 2012/13, the Nauru National Basic Needs Poverty line is 68.04 Australian dollars (AUD) per person per week while the weekly cost between the HH in the Lowest 3 Deciles is 484.54 AUD.

The calculation of the Basic Needs Poverty and Vulnerability Lines

AUD per capita adult equivalent adult equivalent per week	Food Poverty Line	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH in Lowest 3 Deciles
	A	B	C = A+B	D
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4. TRENDS IN FOOD AND BASIC NEEDS POVERTY

Incidence of basic needs poverty vulnerability

	HOUSEHOLDS		POPULATION		
	Number of HH	% of HH	Number of Persons	% of Persons	HH Size
Below Food Poverty Line (FPL)	0	0.0	0	0.0	N/A
Below Basic-Needs Poverty Line (BNPL)	286	16.8	2794	24.0	9.8
Highly vulnerable (within 20% of BNPL)	106	6.2	916	7.9	8.6
Vulnerable (within 20%-50% of BNPL)	232	13.6	1818	15.6	7.8
Potentially vulnerable (within 50%-100% of BNPL)	339	19.9	2430	20.8	7.2
Not Poor or Vulnerable	741	43.5	3702	31.8	5.0
TOTALS/AVERAGE	**1704**	**100.0**	**11660**	**100**	**6.8**

While the incidence of food poverty is zero, around 24% of the population (16.8% of households) are below the basic needs poverty line. The data demonstrate that 7.9% of Nauru's population (6.2% of households) is extremely vulnerable. The following table outlines the index for the Depth of Poverty (the Poverty Gap Index) and Squared Poverty Gap Index (SPGI) which is one of the MDG 1 and SDG1 key indicators. At the national level the SPGI was estimated at 2.1 while PGI was 6.1 in 2012/13.

Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI)

Poverty Gap Index (PGI)	Squared Poverty Gap Index (SPGI)
6.1	2.1

This Gini coefficient is very high by global standards for both developing and developed countries. The state of human development report, launched in the 2014 SIDS conference in Samoa documents the alarmingly rising inequality in the Pacific. The levels of inequality in Nauru however, can be considered among the highest in the Pacific.

The high level of inequality in Nauru is confirmed by the share of the poorest quintile in total consumption, which was estimated to be around only 12%, compared to 30% of total households' expenditure for the highest quintile.

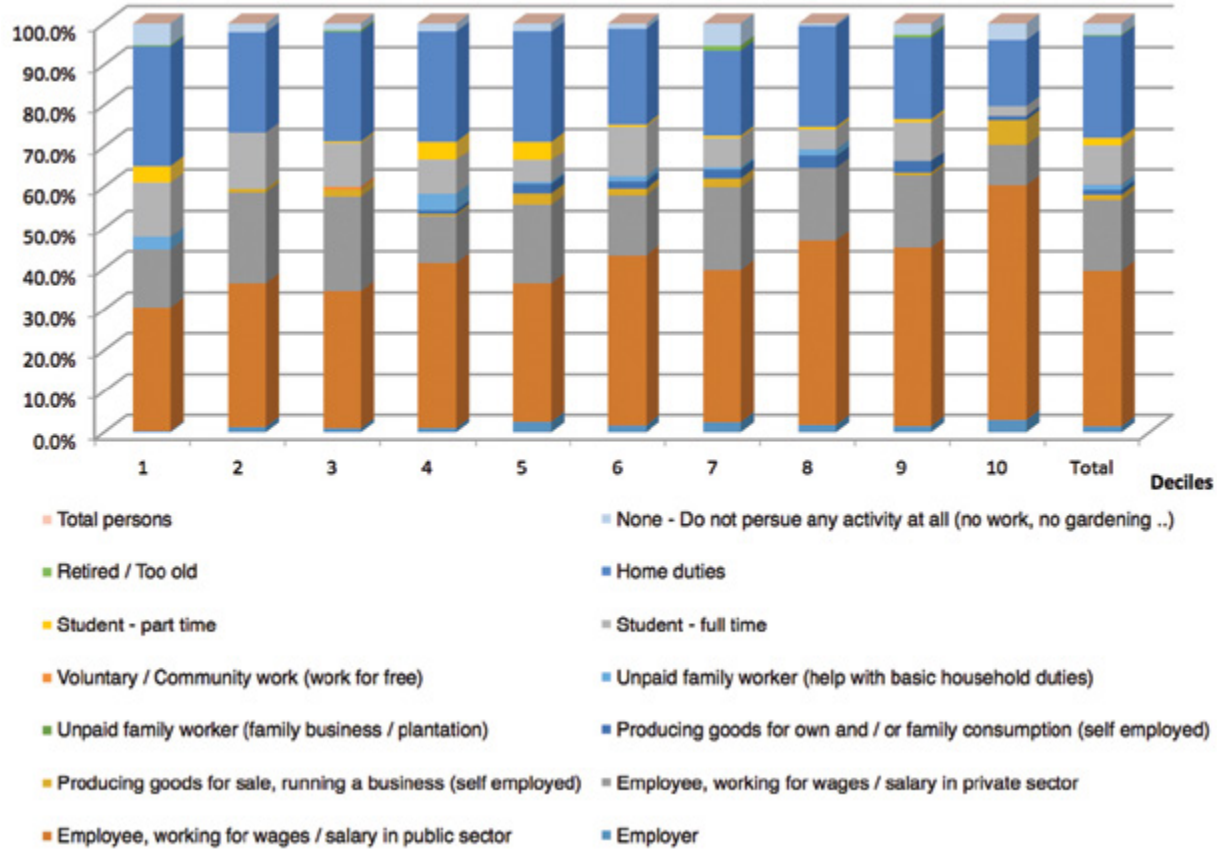
National households and population Gini coefficients of expenditure of Nauru and selected Pacific countries based on latest available HIES

	Households	Population
Nauru (2012/13)	0.37	0.52
Vanuatu (2010)	0.31	0.37
Tonga (2009)	0.24	0.38
Tuvalu (2010)	0.34	0.48
Fiji (2008)		0.41
Samoa (2008)		0.47

Economic activity and source of income

Nauru's economic growth over the period from 2003 and 2014 has been quite erratic. Similar to most Pacific countries Nauru experienced negative GDP growth in 2009, being adversely affected by the global economic crisis. The country's economy is mainly driven by government expenditure, foreign aid and rents as well as phosphate mining (comprising 17 % of the Gross Domestic Product in 2014). Many industry sectors within the country still remain undeveloped. During the survey, labor force age 15 to 59 constituted around 56% of the population. The government is the largest employer in the country (with 38% of the force across all the income/expenditure deciles). The private sector provided employment for only 17% of the labor force. Ownership of assets reflects inequality of distribution of income and expenditure. Male employed by government and private sector are slightly over-represented among the poor and vulnerable households compared to their female counterparts. Around 46% and 23% of male of labor force (15-59) compared to 30% and 12% of female labor force (15-59) were employed by public and private sector.

Labour force (age 15-59) by economic activity and income/expenditure decile



CHARACTERISTIC OF THE POOR

Gender

The 2012/13 HIES results show, that 586 households were headed by females (accounting for 35.4% of all households) of which 17.7 were below the BNPL accounting for 36.3% of all households under the BNPL. Around 7.5% of female-headed households were categorized as being extremely vulnerable (within 20% above BNPL), accounting for nearly 42% of households in this vulnerability group. Female headed households, therefore, are more vulnerable than male-headed households. Widowed persons are another risk group with 60% being classified as being poor or vulnerable to varying degrees. The data suggest a gender bias between male and female widowers.

Proportion of female headed households by vulnerability group

	% of all HH by head of HH		% of HH in the grouping	
	Female HHH	**Male HHH**	**Female HHH**	**Male HHH**
HH below Food Poverty Line	0.0	0.0	0.0	0
HH Below Basic-Needs Poverty Line	17.7	16.3	36.3%	63.7%
HH Vulnerable within 20% of BNPL	7.5	5.5	41.7%	58.3%
HH Vulnerable within 20%-50% of BNPL	13.1	13.9	33.1%	66.9%
HH Vulnerable within 50%-100% of BNPL	19.2	20.2	33.3%	66.7%
Not Poor or Vulnerable	42.4	44.1	33.5%	66.5%
TOTALS	**100.0**	**100.0**		

Education

Since education is free, expenditure on it is very low, averaging 1% to 2% of total non-food expenditure. 76% have received Secondary Education. Levels of education vary, but not considerably, between the poor and non-poor, especially among youth. According to the data there seems to be no significant gender bias.

Health

The HIES indicates that health expenditure is extremely low (comprising about 0.1% of total non- food expenditure) and that diet-related non-communicable disease (NCD) like obesity is a source of serious concern, becoming the primary cause of premature mortality and resulting in a stagnation of life-expectancy levels for significant period of time. Moreover, the level of those suffering from Diabetes is also high. 25% of daily intake consists of rice and raw sugar. 30 food items comprising around 85% of daily calories intake contain no vegetables or fruits. Unlike other Pacific islands such as Samoa, the subsistence farming is practiced only on a very small scale. Energy-dense, nutrient-poor and processed foods have largely replaced traditional whole foods. The high dependence on proceed and import food as well as cultural, historical and social factors (like colonization and globalization) have all contributed to this current state of affairs.

Poverty and vulnerability of children

According to the HIES data, the children and young adults are among one of the most vulnerable groups (particular those without formal employment in public or private sector) within Nauru's society. Youth unemployment stands approximately at 44%, (33 % of students and 28% of youth engaged in unpaid family work) being below the BNPL.

5. HUMAN MULTIDIMENSIONAL POVERTY

Access to energy and energy use:

Ninety-nine percent of all households surveyed, in spite of their vulnerability or poverty status, rely on the main grid for their electricity needs, which serves as the primary source of household lighting. Gas is the main energy source utilized for cooking, 48% of all households using gas cookers and 36% using electric ones. Gas cookers are the preferred source of cooking in households of higher expenditure quintiles while electric cookers are more common in lower expenditure quintiles.

Drinking Water and Sanitation:

Desalination and rain water tanks are the two main water sources supplying households in Nauru. The main desalination plant as well as the rain and water tanks provide for 35% and 59% of households, respectively. A large proportion of households in the highest expenditure quintiles (64%) rely on rain and own water tanks compared to other sources of water (only 23.6%). On the other hand, 43% of household in the lowest three expenditure deciles rely on the desalination plant as their main water source supply. Lower income/expenditure households rarely use their own water tanks due to their high cost. Access to improved water and sanitation does not seem to depend on income and or gender of the household's head.

Housing

Majority of houses in Nauru are built with permanent (timber, plywood, concrete), corrugated iron or asbestos/fiber roofs and concrete or wood (timber and/or plywood) floor. Asbestos and fiber roofs and walls are more likely among households at the lowest expenditure quintiles because of their low costs. Yet this may prove to have negative impact on the structure stability and the health of its inhabitants. Expectedly, the data clearly highlight that the type of house and its construction material depends on the wealth of its owner.

6. CONCLUSIONS

This executive summary highlights some of the key findings from the results of the 2012/13 HIES; in particular, the progress towards the achievement of the MDG1 targets and in establishing the benchmarks for measuring progress in reducing hardship and poverty which can be utilized further in the future under the Sustainable Development Goals. This report demonstrates the progress achieved and highlights the overall macroeconomic and poverty trends:

- Firstly, 2012/13 HIES reveals that 24% (16.8% of households) of the population in Nauru live below the national basic needs poverty line. The population Gini coefficient is a record high of 0.52. Yet, it should be noted that gender inequality is rather moderate. Young adults and children being the most vulnerable group in Nauru society. Children particular affected, 22.4% living in households with expenditure less than BNPL 7.4% and all children household that are extremely vulnerable and vulnerable, respectively. Those lower expenditure quintiles households tend to be larger and have more children than highest expenditure quintiles.
- Secondly, due to high consumption of sugar, lifestyle choice and low consumer of fresh fruits and vegetables, country suffers from higher diabetes and obesity prevalence. The negative health impact further affects the social and economic well-being of the population. These findings are consistent with other studies including STEPS (Stepwise Approach to Surveillance of Non-communicable Diseases) survey which factors are influenced by colonial and post colonial development, policy choice and accompanied rapid social and economic changes in Nauru.
- Thirdly, unlike most Pacific countries, the size and concentration of the population on one single island reduces the gap between levels of income and human poverty.

7. POLICY IMPLICATIONS AND RECOMMENDATIONS

Nauru's Poverty Reduction programmes need to be strengthened and refocused on balancing the economy and building up the nation's human capital as well as strengthening its social welfare system. Furthermore, these programmes need to be applied on both macro and micro scale. This would allow working members of the poor households to obtain more rewarding employment and generate income.

At the Macro level, poverty reduction in Nauru will require concerted and coordinated efforts to push ahead with reforms that will allow sustaining and boarding economic growth and enhance its inclusiveness. The private sector should be encouraged to drive more economic growth and eventually replace government as the main employer. Yet, it is also crucial that this should be done not at the expense of the public sector and that regulation is a central component to ensure balanced economy. While further detailed growth analysis would be needed, obvious choice for investment seems to be fishery sector. Moreover, further policies aimed at improving the population's health are strongly recommended. This can be achieved by Government utilizing public schemes to promote physical exercise, providing additional education, introducing more laws to strengthen food standards and encouraging increase in

local agriculture. Furthermore, the government should consider some of forms of financial incentives to promote healthy behavior (e.g. discounts on health insurance premiums).

Another key priority should be to address youth unemployment and vulnerability. Youth empowerment strategies like additional vocational training should be implemented, since they have proven rate of return of 200 to 1000 percent in terms of improved educational outcomes, crime prevention, and healthier lifestyle. Promoting social marketing and strengthening education is another means for the government to improve the nation's human capital and tackle inequalities within the system. Schools, workplaces and churches may be considered as places which could be utilized for these purposes.

A. INTRODUCTION

1. The purpose of this paper is to provide an in-depth analysis of poverty and inequality in Nauru, using the Food and Basic Needs Poverty Lines, including the incidence, severity and depth of poverty, and identification of the characteristics of the poor, using data from the Nauru National Statistic Office's (NSO) 2012/13 Household Income and Expenditure Survey (HIES).

2. The report estimates and analyzes inequality in the distribution of expenditure and calculates Gini coefficients from expenditure data. In estimating expenditure, and the degree of poverty, the analysis takes account of the high levels of subsistence production and consumption by calculating the value of subsistence production consumed by households, thus providing a better picture of overall well-being. Subsistence production is also incorporated as part of income measurement.

3. The paper is structured as follows:

   Section B provides background on Nauru, economic growth trends, and price changes;

   Section C provides the HIES results on household composition and expenditure, and the method for estimating poverty lines;

   Section D sets out the findings on poverty;

   Section E discusses distribution and inequality;

   Section F discusses linkages between growth, income distribution and poverty;

   Section G discusses the key characteristics of the poor;

   Section H identifies vulnerable groups;

   Section I discusses access to services;

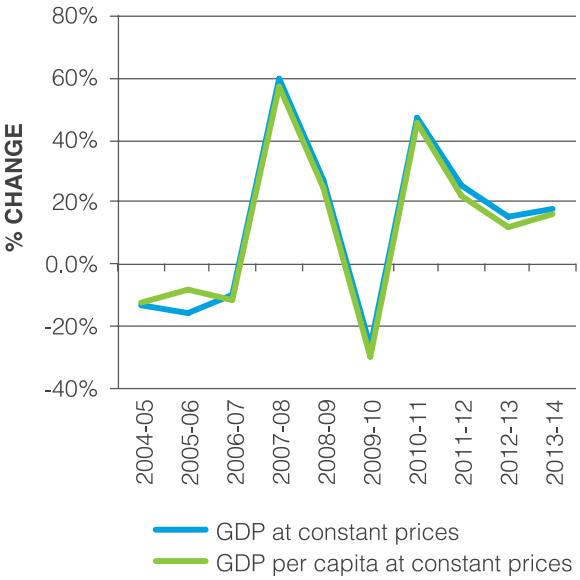
   Section J concluding remarks;

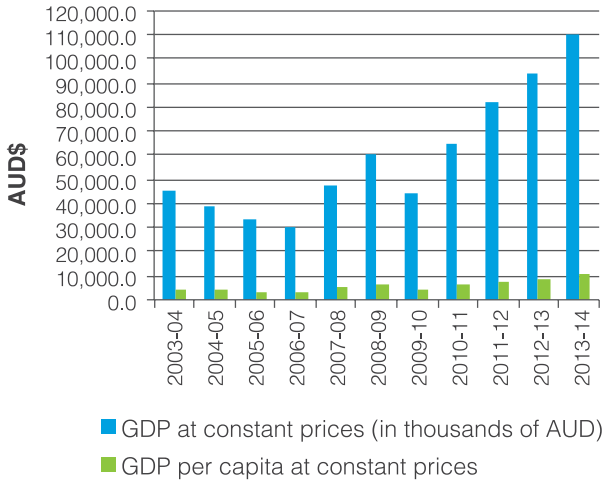
   Section K policy implication and policy recommendations;

B. BACKGROUND

4. Nauru is a small Pacific Island Country (PIC) with a land mass of only 21 square kilometres, a population of 10,527 at the time of the 2012/13 HIES, living on one single Island (14 districts), and population density of approximately 478 persons/km^2 (2011 Census). According to the 2011 Census, annual population growth averaged around 1.8% between 2006 and 2011.

Figures 1.a and 1.b: Growth rates (constant prices) of GDP and per capita GDP (constant prices in AUD) 2004-2014

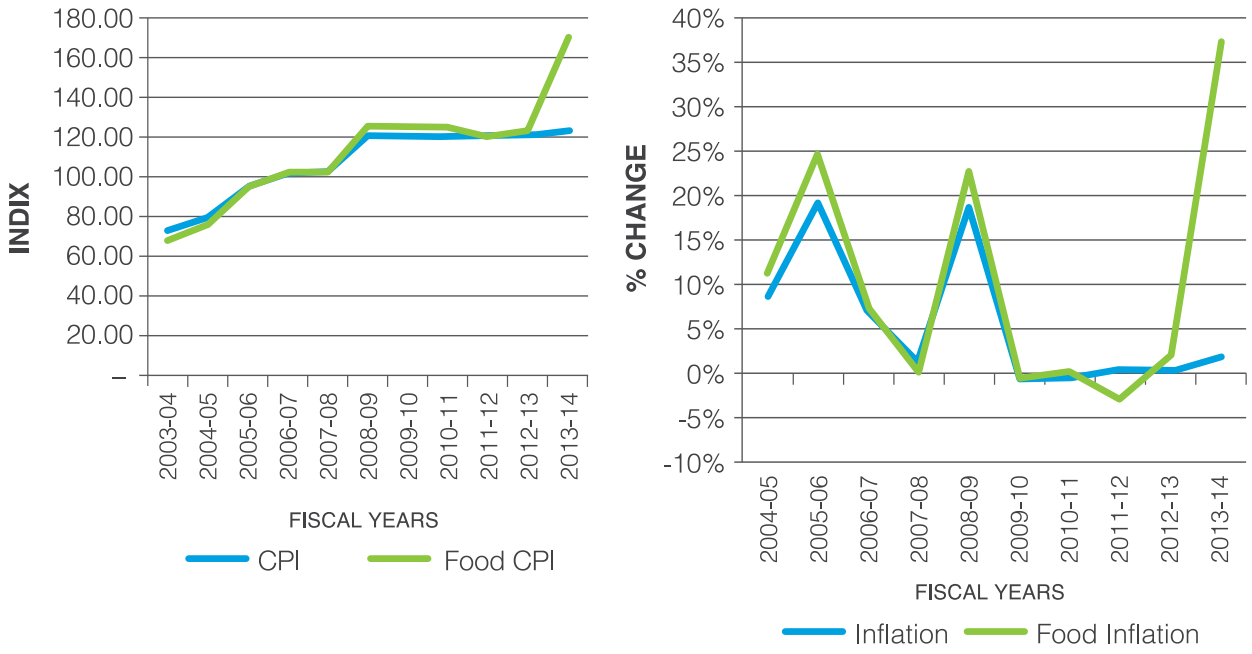




Source: Nauru National Statistics Office.

5. Economic growth has been quite erratic over the period from 2003 to 2014. Akin to most Pacific countries, Nauru was adversely affected by the global economic crises, resulting in negative GDP growth in 2009. The close correlation between GDP and per capita GDP real growth rates reflects the flat population growth during that period. Economic growth was mainly driven by government expenditure, financed by foreign aid and rents, construction and Phosphate processing. While mining declined significantly compared to previous record levels in the 1990s, still comprised, on average, around 1% to 2% of GDP throughout the period from 2002 to 2014. Phosphate processing comprised around 17% of GDP in 2014, down from 30% in the previous year (2013) and a record high of 45% of GDP in 2011/12.

Figures 2.a and 2.b: Consumer price and food price indexes (2000-2010) and the annual percentage change in consumer price (Inflation Rate) and food price indexes (Food Inflation Rate), 2003/04-2013/14



Source: Nauru National Statistics Office

6. Between 2003 and 2012, the consumer price index (CPI) and the food price index moved in very close alignment. The food price index, however, soared in 2013 and 2014 surpassing the average inflation rate. Figures 2.a and 2.b show that the CPI and the food price index rose sharply in 2007 and 2008 in response to the global food and energy crises. The food price index rose faster, recording around a 20% increase in 2009. Inflationary pressure relaxed in 2010. Inflation remained from 2011 to 2014.

C. OVERVIEW OF THE HIES RESULTS AND METHODOLOGY

7. The reference period for the survey was the twelve-months from September 2012 through to August 2013. A total of sixteen three-week survey rounds were conducted with approximately forty households being surveyed in each round. A total of 460 households were included in the survey; this represented approximately 26% of the estimated number of all households in Nauru. The methodology that has been used in the analysis of the HIES2012/13 followed the approach agreed at the SPC Poverty Analysis Technical Workshop held in November 2007.

C.1. HOUSEHOLDS SIZE AND CHARACTERISTICS

8. The following table summarises the characteristics of the survey in terms of the estimates for the total number of HH and population in Nauru. The table also shows the estimated number of "adult equivalent" population which is used as the basis for the poverty/hardship estimates.

Table 1: Households, population size and adult equivalents by expenditure level

HOUSEHOLD AND POPULATION SIZE					
	Number of HH	**Actual Population**	**Average HH size**	**Adult Equivalent Population**	**Adult Equivalent Population per HH**
Decile 1	170	1883	11.1	1511	8.9
Decile 2	168	1361	8.1	1077	6.4
Decile 3	171	1327	7.8	1036	6.1
Decile 4	172	1415	8.2	1075	6.2
Decile 5	169	1166	6.9	879	5.2
Decile 6	170	1202	7.1	915	5.4
Decile 7	172	1031	6.0	780	4.5
Decile 8	170	895	5.3	666	3.9
Decile 9	170	844	5.0	654	3.8
Decile 10	172	537	3.1	447	2.6
TOTAL/AVERAGE	**1704**	**11660**	**6.8**	**9038**	**5.3**

9. To make comparisons, the analysis divides households into deciles – that is ten equal sized groups of households that are ranked by, for example, the level of household expenditure per adult equivalent. The first decile will be the ten percent of households with the lowest expenditure per adult equivalent, the second decile the ten percent of households with the next lowest equivalent expenditure and so on. Quintiles are two deciles combined together – so the lowest quintile is decile one and two (the lowest two deciles). Dividing households this way enables a closer analysis of the characteristics of households of different expenditure levels.

10. Adult equivalents (a.e) are derived from "equivalence factors" where children of 14 years and under are counted as half an adult; thus a household with two adults and two children both under 15 years would be equivalent to 3 adult equivalents. This methodology has been adopted to: a) take account of the downward bias in per capita expenditure that would otherwise occur in households with more children, often those with lower expenditure levels anyway, and which might therefore have an upward bias in the likelihood of a particular household falling below the poverty lines; and, b) to make an allowance for the "economies of scale" in a household of larger size.

11. The overall national average household size was 6.8 members (5.3 adult equivalents). Poor households were larger on average. Table 1 shows that, for the lowest decile, the average household size was 11.1 (8.9 a.e). Households in the second lowest decile had 8.1 members (6.4 a.e) Meanwhile, the average size for households in the highest expenditure decile (10th decile) was only 3.1 (2.6 a.e.) and the second highest expenditure decile (9th decile) had 5.0 members (3.8 a.e).

Table 2: Number and proportion of households headed by females by expenditure level

Decile	Female HHH	Male HHH	Total	% female	% male
1	72	91	163	44.3	55.7
2	57	112	169	33.7	66.3
3	61	110	171	35.5	64.5
4	53	117	170	31.1	68.9
5	50	117	167	29.9	70.1
6	56	119	175	31.9	68.1
7	63	109	172	36.6	63.4
8	54	117	170	31.5	68.5
9	60	114	174	34.3	65.7
10	61	111	172	35.4	64.6
TOTAL	**586**	**1118**	**1704**	**34.4**	**65.6**

There is no significant difference in terms of size between female and male headed households. Female-headed households made up 34.4% of all households (compared to 65.6% of all households are headed by males). Female headed households were slightly over represented (above national average) at the lowest expenditure deciles, underrepresented in the middle expenditure deciles (below the national average) and within the national average at the highest expenditure deciles. This will be discussed further in the section covering gender dimension of poverty.

13. There were 4498 children under age 0-14 years during the time of the survey, accounting for around 38.6% of the population. Nationally, the average number of children per household was 2.6. Both female and male headed households had on average around the same number of children (2.8 and 2.5 respectively) across all expenditure deciles. Households in the lowest expenditure have significantly larger number of children per households compared to higher expenditure deciles. The vulnerability of children will be discussed in a separate section.

Table 3: Number and proportion of children per household by expenditure level

CHILDREN 0-14 YEARS											
	Female HHH				Male HHH				All HH		
Decile	Average per HH	Total per decile	% per decile	% children	Average per HH	Total per decile	% per decile	% children	Average per HH	Total per decile	% per decile
1	4.2	302	18.3	44.6	4.1	376	13.2	55.4	4.2	678	15.1
2	3.0	170	10.3	33.6	3.0	335	11.8	66.4	3.0	505	11.2
3	2.6	161	9.7	32.8	3.0	329	11.5	67.2	2.9	489	10.9
4	4.1	219	13.3	36.5	3.3	382	13.4	63.5	3.5	601	13.4
5	3.6	179	10.9	36.7	2.6	309	10.8	63.3	2.9	488	10.9
6	3.2	179	10.8	35.2	2.8	329	11.6	64.8	2.9	508	11.3
7	2.4	151	9.1	35.6	2.5	273	9.6	64.4	2.5	423	9.4
8	2.7	147	8.9	39.6	1.9	223	7.8	60.4	2.2	370	8.2
9	1.8	109	6.6	36.3	1.7	191	6.7	63.7	1.7	300	6.7
10	0.6	35	2.1	25.9	0.9	100	3.5	74.1	0.8	135	3.0
Average/Total	**2.8**	**1651**	**100**	**36.7**	**2.5**	**2847**	**100**	**63.3**	**2.6**	**4498**	**100**

C.2 HOUSEHOLD EXPENDITURE

14. Household total weekly expenditure averaged $665 AUD and the average total weekly expenditure per capita adult equivalent (p.c.a.e).was $125.38 AUD. For the lowest expenditure deciles (1st and 2nd deciles), the average weekly household expenditure was $384 AUD and $432 AUD ($43.25 and 67.39 pcaae), respectively, compared to $920AUD and $1053 AUD ($239.21 and 405.44 pcaae) per week for the highest expenditure deciles (9th and 10th deciles (Table 4).

Table 4: Weekly household and adult equivalent average total expenditure (AUD $ per week) by decile

Deciles	Food Cash	Food Subsistence	Food Gifts	Non-Food	Total HH Expenditure	Total Expenditure per HH	Total Expenditure per HH PCAE
Decile 1	18363	1748	440	44787	65339	384	43.25
Decile 2	20617	2225	591	49140	72573	432	67.39
Decile 3	21425	3256	581	61591	86853	508	83.87
Decile 4	26282	3338	524	72176	102320	595	95.22
Decile 5	22621	2474	853	73071	99019	586	112.59
Decile 6	27681	2997	554	91367	122598	721	133.97
Decile 7	23793	2873	2390	93597	122653	713	157.19
Decile 8	24138	5405	1450	93501	124494	732	187.07
Decile 9	23974	2814	659	128926	156373	920	239.21
Decile 10	23411	3193	294	154144	181042	1053	405.44
Average All	**232304**	**30324**	**8335**	**862301**	**1133264**	**665**	**125.38**

15. The overall average weekly cash expenditure on food and non-food per household in Nauru was $136 and 506 AUD ($25.70 and $ $95.40 AUD pcae) respectively (Table 5). Food expenditure averaged around $108 AUD to $125 AUD ($12.16 to $20.69 AUD p.c.a.e) at the lowest three expenditure deciles, compared an average of $142 to $136 AUD ($36.27 to $52.43 AUD p.c.a.e) at the highest three expenditure deciles. Non-food expenditure averaged around $269.45 AUD to $360.18 AUD ($29.65 to $59.48 AUD p.c.a.e) at the lowest three expenditure deciles, compared an average of $550 to $8.69.19 AUD ($140.50 to $345.21 AUD p.c.a.e) at the highest three expenditure deciles.

Table 5: Major components of household expenditure by expenditure level

AUD$ per week	FOOD CASH			FOOD SUBSISTENCE			FOOD GIFTS			NON-FOOD		
Deciles	Total	per HH	per HH PCAE	Total	per HH	per HH PCAE	Total	per HH	per HH PCAE	Total	per HH	per HH PCAE
Decile 1	18363	108	12.16	1748	10	1.16	440	2.59	0.29	44787	263.45	29.65
Decile 2	20617	123	19.15	2225	13	2.07	591	3.52	0.55	49140	292.50	45.63
Decile 3	21425	125	20.69	3256	19	3.14	581	3.40	0.56	61591	360.18	59.48
Decile 4	26282	153	24.46	3338	19	3.11	524	3.05	0.49	72176	419.63	67.17
Decile 5	22621	134	25.72	2474	15	2.81	853	5.05	0.97	73071	432.37	83.08
Decile 6	27681	163	30.25	2997	18	3.27	554	3.26	0.60	91367	537.45	99.84
Decile 7	23793	138	30.49	2873	17	3.68	2390	13.89	3.06	93597	544.17	119.95
Decile 8	24138	142	36.27	5405	32	8.12	1450	8.53	2.18	93501	550.01	140.50
Decile 9	23974	141	36.67	2814	17	4.31	659	3.88	1.01	128926	758.39	197.22
Decile 10	23411	136	52.43	3193	19	7.15	294	1.71	0.66	154144	896.19	345.21
Average All HH	**232304**	**136**	**25.70**	**30324**	**18**	**3.36**	**8335**	**4.89**	**0.92**	**862301**	**506.04**	**95.40**

16. Table 6 illustrates the shares of food, substance, gifts and non-food in total households' expenditure per decile. On average, non-food expenditure constitutes 76% of total household expenditure, ranging around 68% in lower expenditure deciles to 85% in higher expenditure deciles. Meanwhile, food expenditure averages around 28% of total expenditure for the lowest expenditure deciles and around 12%-15% in the highest expenditure deciles.

Table 6: Shares of major households' expenditure components in total households' expenditure

Decile: HH weekly pcae expenditure	Food Cash	Food Subsistence	Food Gifts	Non-Food	Total HH Expenditure
Decile 1	28.1	2.7	0.7	68.5	100.0
Decile 2	28.4	3.1	0.8	67.7	100.0
Decile 3	24.7	3.7	0.7	70.9	100.0
Decile 4	25.7	3.3	0.5	70.5	100.0
Decile 5	22.8	2.5	0.9	73.8	100.0
Decile 6	22.6	2.4	0.5	74.5	100.0
Decile 7	19.4	2.3	1.9	76.3	100.0
Decile 8	19.4	4.3	1.2	75.1	100.0
Decile 9	15.3	1.8	0.4	82.4	100.0
Decile 10	12.9	1.8	0.2	85.1	100.0
Average All HH	**20.5**	**2.7**	**0.7**	**76.1**	**100.0**

17. Average food subsistence is significantly lower than most Pacific countries and does not constitute a key contributor to overall households' food consumption. Table 7 shows the proportion of subsistence food production in total food consumption for selected Pacific countries, based on most recent surveys. Notwithstanding the different years of the surveys, the data reflect the high proportion of subsistence production in the Pacific countries. The proportion of subsistence food production in Samoa and Tonga is twice that of Nauru. Meanwhile, the proportion of subsistence food production in Tuvalu and Vanuatu average around nearly 31% and 58% of all food expenditure, respectively, compared to only 11% in Nauru.

Table 7: Comparison of the proportion of subsistence food production in total food expenditure in selected Pacific countries

	Nauru (2012/13 HIES)	Samoa (2008 HIES)	Tonga (2009 HIES)	Tuvalu (2010 HIES)	Vanuatu (2010 HIES)
Average all HH	**11.2**	28.4	24.1	31.3	57.8
Lowest Quintile	**9.0**	46.6	30.0	43.6	63.8
Lowest Three Deciles	**10.4**	44.9	29.7	42.3	64.1
Highest Quintile	**11.1**	13.4	18.0	20.3	53.6

18. The low share of subsistence production in Nauru compared to other Pacific countries is due to urban nature of the island, mainly concentrated along costal line, and the high population density. Access to land is exceptionally limited. This creates a higher risk of food insecurity compared to other Pacific countries where subsistence production provides mitigation measures, as observed in both Vanuatu and Samoa in response to the food and energy crises.

C.3. THE NAURU POVERTY LINES

19. Poverty lines provide a measure of the level of hardship experienced by households and individuals. They assess the basic costs of an acceptable minimum standard of living in a particular society and measure the number of households and/or the proportion of the population that cannot satisfy these food and non-food basic needs. Non-food basic needs as the costs and basic needs for individual households differ between the urban and rural

20. In Nauru, expenditure levels are used to quantify poverty. This is the standard used in the Pacific region for the analysis of poverty by the Secretariat of the Pacific Community (SPC), United Nations Development Program (UNDP) and the Asian Development Bank (ADB). Discrepancies are often observed between declared income and expenditure, with declared income being significantly lower than declared consumption. A consumption approach better allows for the incorporation of food production for own consumption, and gifts of food and non-food items, in the assessment of a household's position relative to the poverty line.

21. Nauru's poverty measures draw on the "Cost of Basic Needs" methodology. Using the "Cost of Basic Needs" methodology, the estimation of *food* and *basic needs* poverty lines and hence the extent or Incidence of Poverty (IP) follows a four stage process:

    i. calculating the Food Poverty Line (FPL);

    ii. estimating a non-food basic needs component;

    iii. combining the FPL with the non-food basic needs component to give an estimate of the Basic Needs Poverty Line (BNPL); and finally,

    iv. Estimating the incidence of poverty against the BNPL benchmark using the Head Count Index (HCI) (the proportion of the population with a standard of living below the poverty line); also measured are vulnerability-to-poverty status, and the prevalence of poverty by gender, age and other disaggregated characteristics and indicators of hardship and poverty.

22. The Basic Needs Poverty Line is made up of two components: the cost of a minimum food basket, and an amount of expenditure for "essential" non-food basic needs. The BNPL is therefore intended to represent the minimum expenditure that is required by an individual, household or family to:

    - Provide a basic, low-cost, minimally nutritious diet - measured in terms of the minimum daily calorie intake required for basic human survival. This food energy requirement is internationally benchmarked at an average of 2,100 kilocalories/day per adult per capita[1] and termed the "Food Poverty Line" (FPL). The FPL includes food that is purchased from markets or shops, as well as food grown for own consumption (subsistence) and any gifts of food received;
    - an additional amount which is required to meet the costs of purchasing (or otherwise acquiring) essential non-food basic needs (e.g. costs relating to housing/shelter, clothing, utilities, school fees and/or other education related expenses, health, transport and communications) 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.

23. The Incidence of Poverty is then measured against the BNPL by estimating the proportion of households or population which have a Per *Capita Adult Equivalent* (p.c.a.e.) expenditure (including the value of subsistence production consumed) less than the BNPL value. This is referred to as the Head Count Index (HCI).

24. Households with p.c.a.e expenditure below the FPL are deemed to be in absolute or "extreme" poverty since their expenditure is below that required to meet basic food needs. Those with expenditure below the BNPL are in "basic needs" poverty.

25. Table 8 classifies households/persons on a spectrum from very poor to non-poor in relation to the level of their expenditure.

Table 8: Poverty and vulnerability status classifications

Category of vulnerability Status	Expenditure relative to poverty line
Very Poor (extreme poverty)	Households/persons whose per capita adult equivalent weekly expenditure is below the FPL
Poor (basic needs poverty)	Households/persons whose p.c.a.e weekly expenditure is below the BNPL, i.e. the very poor and the poor
Very vulnerable	Households/persons whose p.c.a.e which is above the BNPL but less than 20% above the BNPL
Vulnerable	Households/persons whose p.c.a.e between 20% and 50% above the BNPL
Potentially vulnerable	Households/persons whose p.c.a.e. expenditure between 50% and 100% above the BNPL
Non-poor	Households/persons whose p.c.a.e expenditure was equal to or more than 100% above the BNPL

[1] This is the FAO/WHO recommended daily minimum adult calorie intake for a moderately active adult and the standard calorie benchmark for estimating food poverty lines.

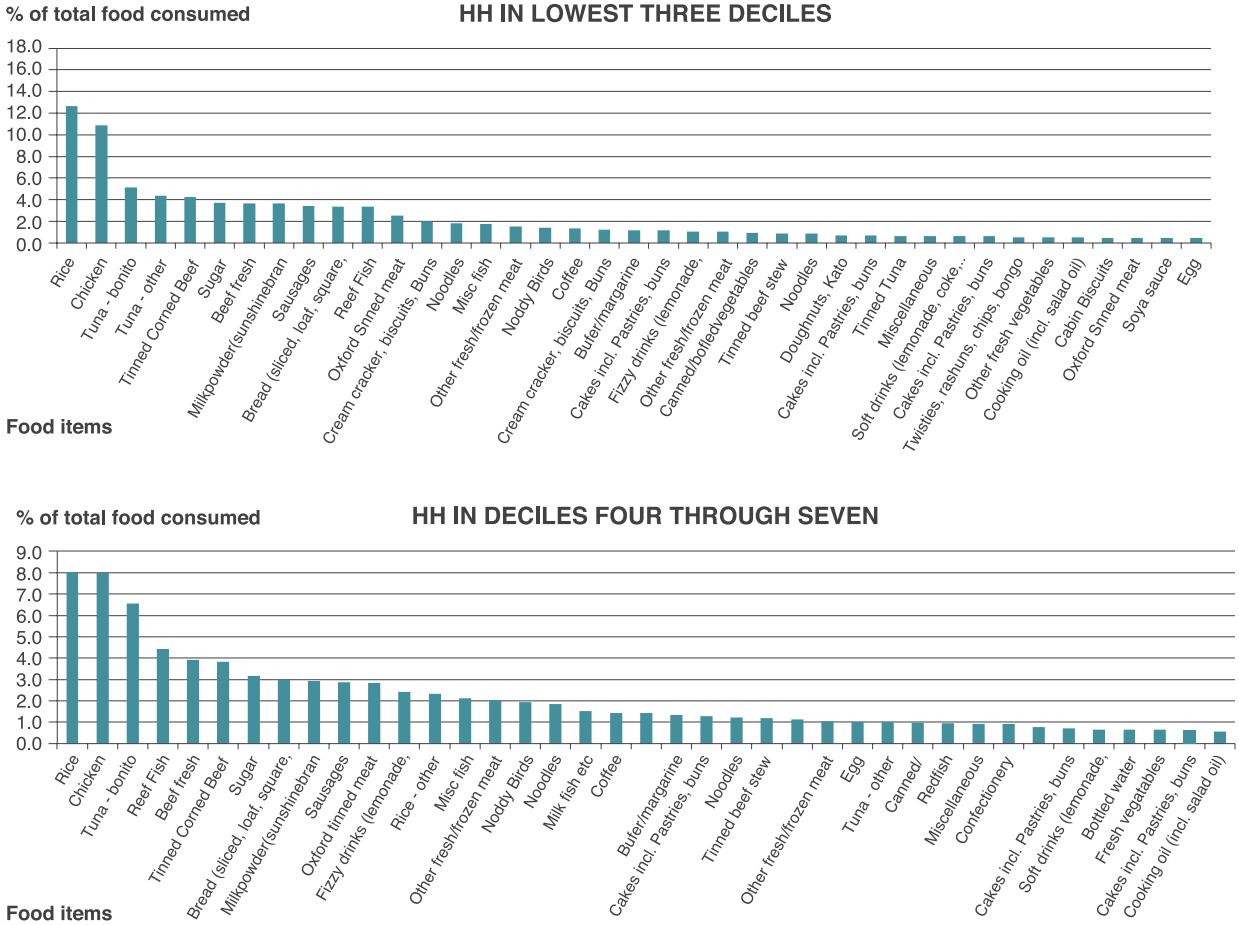
C.4. POVERTY LINE ESTIMATION

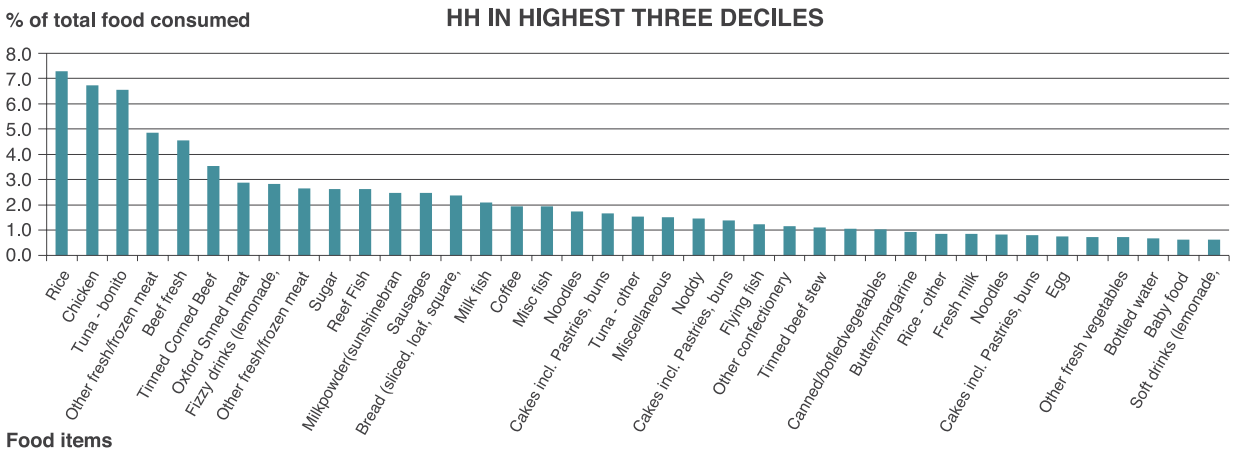
I) Derivation of the food basket for the FPL

26. For the purpose of calculating the food poverty line, an expenditure-based method has been used. The expenditure-based food basket was derived from the type of food and expenditure patterns of the poor (households with p.c.a.e. in the lowest 3 expenditure deciles), as reported by households. The food items (from purchases, household production, and transfers to and from households as gifts) were then weighted by expenditure shares and quantities. The first 30 items, with the highest weighted expenditure and covering approximately 80-85% of all food expenditure, formed the food basket used in the estimation of the FPL. The FPL has an absolute base (2,100 kilocalories/day) but the items that make up those calories are derived from actual consumption patterns in each of the three areas; (Figures 3.a, 3.b and 3.c). Two thirds of food consumed by households in the lowest come from top fifteen as illustrated in figure 3.a.

27. The approach adopted for calculation of the food basket recognises the preferences/ affordability of poor households and therefore may actually deliver a nutritionally inferior diet to that used in the so-called "model-diets" often developed by ministries of health and SPC nutritionists. However, since actual consumption patterns give indications of potential health implications they are preferred for policy analysis purposes.

Figures 3a, 3.b and 3c: Food baskets of expenditure deciles groupings





II) Derivation of the Food Poverty Line (FPL)

28. The average weekly food expenditure p.c.a.e. and corresponding amount of food p.c.a.e. per week consumed were calculated from the diary-based weighted food basket. This calculation used commodity prices, primarily from the CPI, adjusted for the balance of purchases, household production, public and private transfers[2]. This calculation used commodity prices primarily from the CPI but also where CPI prices were not available the prices for the analysis were derived from those collected during the survey and calculated as weighted prices from quantities and values given by households for purchases, own production, public and private transfers[3].

29. The "consumed weights" in grams and/or units were converted to calorific values p.c.a.e per day using *The Pacific Islands Food Composition Tables*[4]. The food calorie values used in the analysis are either for raw food or cooked items as specified in the tables; no additional adjustments have been made for different cooking processes, and there is generally no loss of food-energy value due to cooking.

30. To get the cost of the nutritionally required 2,100 kilocalories[5] per person per day; 2,100 was divided by the total kilocalories consumed, as derived from the expenditure diary data, and multiplied by the mean weekly expenditure to get the food poverty line. Accordingly the national food poverty line was estimated to be $23.00 AUD of weekly expenditure per capita adult equivalent (p.c.a.e).

III) The Estimation of Non–Food Components

31. The FPL is not sufficient on its own to determine a benchmark of basic needs and poverty classifications. A household that can afford to meet food requirements of all members, but lacks the resources to acquire non-food essentials such as clothing, shelter, education, transport, communications, lighting and health care, experiences hardship in a very basic sense.

32. A widely accepted scaling-up approach is used for non-food items to determine a Basic Needs Poverty Line (BNPL). This approach uses the FPL as the reference point for estimating non-food basic needs expenditure. The rationale for this approach is that if a household is meeting all its food requirements, it is likely it would also be meeting basic non-food requirements. Conversely if a household is not able to meet its food requirements, it is probably not able to meet its basic needs for non-food items either. This is not necessarily always the case since as income increases the share of food in total households' expenditure tends to decrease due to the low income elasticity of demand for food items.

[2] The weighted price is a mean of prices from the different sources, i.e. purchases, own production and private transfers, each at its particular price.
[3] The weighted price is a mean of prices from the different sources, i.e. purchases, own production and private transfers, each at its particular price.
[4] The Pacific Islands Food Composition Tables, Second Edition, USP/FAO, 2004
[5] The Food and Agricultural Organization (FAO) and the World Health Organization (WHO) recommend a minimum food energy intake of 2100 kilocalories per person per day for an average active person.

33. Further, for other Pacific Island Countries, taking the level of the FPL as a reference point for estimating non-food basic needs would give a very low figure for non-food basic needs expenditure. This is because subsistence production makes up a significant part of the FPL and, therefore, the proportion of households falling below the FPL is very small and the non-food basic needs calculation would be based on a very small number of the very poorest households. This would not give a true reflection of the actual costs of essential non-food items. Notwithstanding the low proportion of subsistence production in Nauru compared to other Pacific countries, it is still quite high compared to the average global levels. Moreover, using the same methodology throughout the region enables regional comparisons.

34. The basis for the estimation of non-food basic needs expenditure for Nauru and all other PICs is the average actual non-food expenditure of households in the bottom three deciles. The BNPL was calculated by estimating the average total non-food expenditure p.c.a.e. per week for households in the lowest three deciles and multiplying it by the average size of households at the lowest three expenditure deciles (Table 9). This is the estimated cost of "non-food" basic needs.

Table 9: The calculation of the Basic Needs Poverty and Vulnerability Lines

AUD per capita adult equivalent adult equivalent per week	Food Poverty Line	Estimated Non-Food Expenditure	Basic Needs Poverty Line	Weekly cost per HH in Lowest 3 Deciles
	A	B	C = A+B	D
Nauru National Basic-Needs Poverty Line	23.00	45.04	68.04	484.54
Nauru National Basic-Needs Poverty Line + 20%	27.59	54.05	81.64	581.45
Nauru National Basic-Needs Poverty Line + 50%	34.49	67.56	102.05	726.81
Nauru National Basic-Needs Poverty Line + 100%	45.99	90.08	136.07	969.08

35. It is sometimes argued that this method leads to an over-inclusion of non-basic items and therefore raises the BNPL. However, it is deemed preferable from a planning and policy perspective to slightly over-estimate than to under-estimate basic-needs requirements.

IV) The Basic Needs Poverty Lines

36. Combining the food and non-food components provides the Basic Needs Poverty Lines (BNPL) and provides basis for defining vulnerability lines. These represent the estimated expenditure (including household subsistence production) required per adult equivalent per week to meet the costs of a minimum standard of living. The BNPLs measure each household against the basic needs standard.

National Poverty Lines; Income or Consumption

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 2004, pages 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 dissave. 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 2004, p 41)

37. The incidence of basic-needs poverty/hardship is measured by the proportion of households and population that fall below these levels of per capita adult equivalent weekly expenditure for the respective regions. This is discussed in the next section.

D. POVERTY INDICATORS

D.1 POVERTY INDICATORS

38. Expenditure poverty is measured in terms of poverty incidence, the depth of poverty, and the severity of poverty. Poverty incidence is the proportion of households/population below the defined food and basic need poverty lines.

39. The depth of poverty measures the gap between the average level of expenditures of the poor and the BNPL[6]. It is expressed as the Poverty Gap Index (PGI). The PGI gives an indication of how much extra household expenditure would be required to bring people and households in poverty up to the BNPL. A higher PGI indicates a greater depth in the extent of poverty.

40. Poverty severity, expressed as the Squared Poverty Gap (the mathematical squaring of the poverty gap) or Poverty Severity Index, gives added weight to those households and individuals furthest below the poverty line. In the Poverty Severity Index, the higher the index, the greater the degree of poverty being experienced by those below the BNPL. This index helps policy-makers to see how "severe" the depth of poverty is by giving extra weight to the very poorest. It also helps to identify how resources might be redistributed among the poor to reduce inequality.

D.2 INCIDENCE OF FOOD POVERTY

41. The incidence of food poverty in Nauru, according to the survey results, is zero. That is there are no households with expenditure levels below the food poverty line. This should be interpreted cautiously as it does not rule out the possibility of malnutrition and poor diet suffered by households in the lowest expenditure deciles.

42. In the Pacific region as a whole the levels of extreme, or food poverty, are generally very low. Most households, especially those in the rural areas, have access to land for subsistence cropping and are therefore able to meet a high proportion of the their daily food needs from their own production. Even in many urban areas of the Pacific, households still manage to provide at least a proportion of their own food needs. This feature of Pacific society, access to land and subsistence crops is what sets the region apart from most of parts of the developing world where access to land and subsistence crops is often much less widespread.

[6] If the BNPL were $50 per capita adult equivalent per week and the average level of expenditure of those households below this level was $40 per week the poverty gap would be 0.2 or 20%. Thus if there were 1000 persons in the households below the BNPL it would cost $10000 per week in direct transfers (1000x$10) to "buy" these poor out of poverty.

D.3 INCIDENCE OF BASIC NEEDS POVERTY AND HARDSHIP

43. The incidence of basic needs poverty is to be 16.8% of households, which translates into 24% of the population based on the average size of households below the basic needs poverty line. Incidences of basic needs poverty and various degrees of vulnerability are illustrated in Table 10.

Table 10: Incidence of basic needs poverty vulnerability

	HOUSEHOLDS		POPULATION		
	Number of HH	% of HH	Number of Persons	% of Persons	HH Size
Below Food Poverty Line (FPL)	0	0.0	0	0.0	N/A
Below Basic-Needs Poverty Line (BNPL)	286	16.8	2794	24.0	9.8
Highly vulnerable (within 20% of BNPL)	106	6.2	916	7.9	8.6
Vulnerable (within 20%-50% of BNPL)	232	13.6	1818	15.6	7.8
Potentially vulnerable (within 50%-100% of BNPL)	339	19.9	2430	20.8	7.2
Not Poor or Vulnerable	741	43.5	3702	31.8	5.0
TOTALS/AVERAGE	**1704**	**100.0**	**11660**	**100**	**6.8**

44. Further, 7.9% of Nauru's population (6.2% of households) are extremely vulnerable, with expenditure levels bordering the basic needs poverty line (20% above BNPL). Around 15.6% of the population are vulnerable and 20.8% of the population are potentially vulnerable. Only 31% of the population are deemed non-poor or vulnerable. Vulnerable households, while are not below the basic needs poverty line, still experience, to a lesser extent, hardship. Moreover, they are highly susceptible to falling below the BNPL as a result of an economic shock, such as loss of employment and/or income.

45. Interestingly the data suggest that the poorest households, those below the BNPL, produce less of their own food (8.0%) compared to those who just above the BNPL (14.1%). Yet the approximate 11% overall average for the proportion of subsistence food produced across all households is consistent with the levels in some other urban areas around the region; e.g. Apia (Samoa) & Nuku'alofa (Tonga) both approximately 10%. However, at the other end of the scale is Port Villa (Vanuatu) home produce accounted for about 20% of food consumed (Table 11).

Table 11: Proportion of subsistence production in total food consumption per vulnerability status

Poverty & Vulnerability Status	Subsistence Production	Total Food Consumption	Subsistence % of Food
	$	$	%
HH below Food Poverty Line	-	-	0.0
HH Below Basic-Needs Poverty Line	155,231	1,934,890	8.0
HH Vulnerable within 20% of BNPL	117,537	832,519	14.1
HH Vulnerable within 20%-50% of BNPL	208,901	1,879,192	11.1
HH Vulnerable within 50%-100% of BNPL	308,359	2,979,073	10.4
Not Poor or Vulnerable	786,809	6,464,422	12.2
TOTALS	**1,576,838**	**14,090,097**	**11.2**

D.4 THE DEPTH AND THE SEVERITY OF POVERTY

46. As discussed earlier (in section D1), the depth and severity of poverty are measured by the Poverty Gap Index[7] (PGI) and the Squared Poverty Gap Index (SPGI)[8] respectively (Table 12). The PGI is Indicator 2 of Target 1, Goal 1 of the MDGs.

Table 12: Poverty Gap Index (PGI) and the Squared Poverty Gap Index (SPGI)

Poverty Gap Index (PGI)	Squared Poverty Gap Index (SPGI)
6.1	2.1

47. At the national level the PGI (depth of poverty) for Nauru was estimated at 6.1. This means there needs to be an average 6.1% real increase in income of households below the BNPL for them to move just above the BNPL. In other words, the poor have expenditure/income that is, on average, 6.1% lower than BNPL. This PGI is significantly lower than, for example, in Samoa (8.2 in 2008), Fiji (9.9 in 2008/09), and the Federated States of Micronesia (FSM) (9.3 in 2005), around the same level as in Tonga (6.3 in 2009) and significantly higher than Vanuatu (2.9 in 2010). Since the average inflation rate for 2013/14 was around 2%, up from 0.1% in 2012/13, assuming perfect equality in the distribution of income, a minimum of 8.1% real increase in income of households in the lowest two expenditure/income deciles is needed to achieve 100% poverty reduction at the national level.

48. At the national level the SPGI (severity of poverty) was estimated at 2.1. This is lower than Samoa (2.9 in 2008), Fiji (2.6 in 2008/09), Tonga (4.0 in 2009) and FSM (4.0 in 2005) and higher than Vanuatu (1.0 in 2010). Higher SPGI means that households below the BNPL experience more severe poverty and hardship.

D.5 MILLENNIUM DEVELOPMENT GOALS: POVERTY TARGET STATUS

49. Table 13 summarizes the MDG 1 poverty targets indicators in 2013/14.

Table 13: MDG 1 targets indicators

1.1	Proportion of Population below Basic Needs Poverty Lines % (Note 1)	24.0
	Proportion of Population vulnerable to falling into poverty; per capita adult equivalent expenditure <10% above BNPL %	28.3
1.2	Proportion of households with per capita adult equivalent expenditure below the minimum level of dietary energy consumption (FPL) %	0.0
1.3	Poverty Gap Index (PGI) - Depth of Poverty	6.1
	Squared PGI - Severity of Poverty	2.1
1.4	Share of poorest quintile (20%) in consumption %	12.2
	Ratio of Share of poorest quintile (20%) to highest quintile	29.8
	HH Gini Coefficient: Household Expenditure (Note 2)	0.37
	Population Gini Coefficient (Note 2)	0.52
Note 1: Proportion of Population below US$1 (PPP) per day not yet available		
Note 2: 0 = perfect equality 1 = perfect inequality		

[7] 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 recognized by its inclusion as a specific indicator in MDG1.

$$\text{Poverty Gap Index: } 1/N^{*}\left(\sum_{i=1}^{m}(BNPL - yi)/BNPL\right)$$

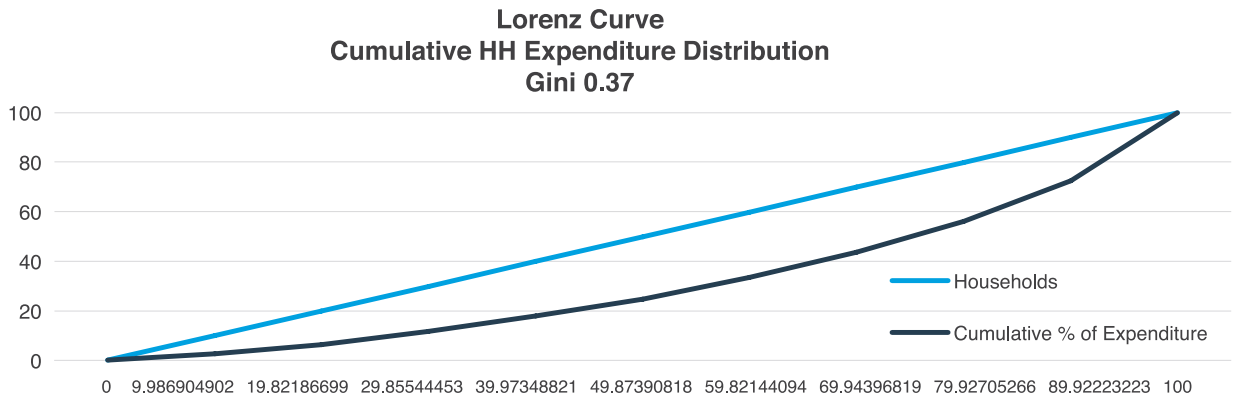
where: N = total number of households, m = number of households below basic needs poverty line; and yi equals expenditure of each household.

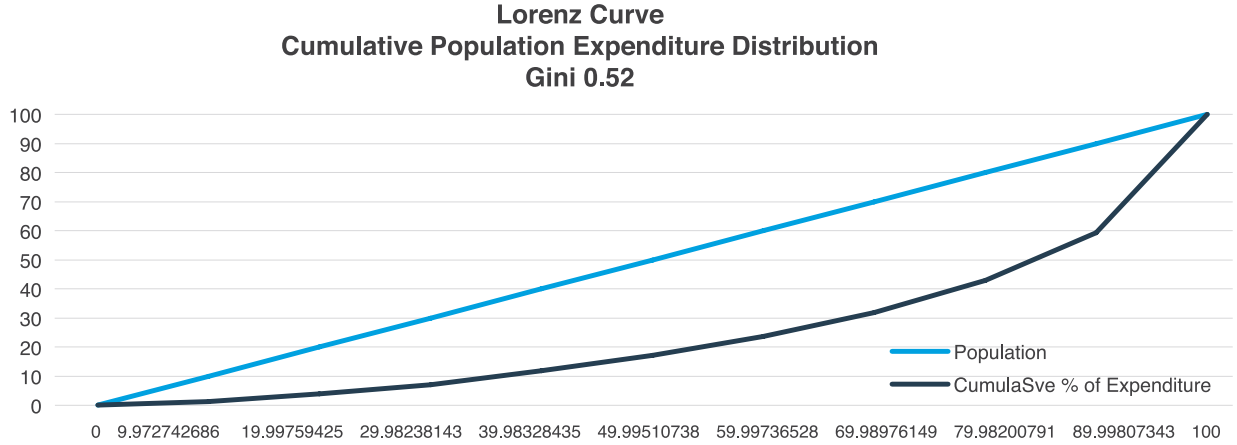
[8] Through the process of squaring the index the SPGI gives greater weight to those at the lowest consumption/income levels and thus better reflects the severity of the poverty gap. In both the PGI and SPGI, the higher the index the greater the depth and severity of poverty, respectively.

E. EXPENDITURE DISTRIBUTION AND INEQUALITY

50. The Gini coefficient is a measure of the level of inequality in the distribution of income or expenditure of households and individuals. In a situation of perfect equality (everyone has the same level of expenditure) the Gini coefficient would be equal to zero. At the other extreme, a Gini coefficient of 1.0 would indicate total inequality, where one household or individual received all the income while other households received none at all. Thus, an increase in the coefficient over time suggests an increase in the level of inequality. A "normal" population index level would be between 0.3 and 0.4; anything above this indicates a high degree of inequality.

Figures 4.a and 4.b: Lorenz curve cumulative households and population expenditure distribution





51. The Gini coefficient has been estimated for both households and for the population to be 0.37 and 0.52, respectively. The Gini coefficient tends to be higher for the population, as poorer households tend to be larger and this accentuates inequality. The Gini coefficients can be depicted graphically in Lorenz Curves where the further the expenditure line is from the line of equality, the greater the degree of inequality. Figures 4.a, 4.b, and 10.c illustrate the households and population Lorenz curves, respectively. This Gini coefficient is very high by global standards for both developing and developed countries.

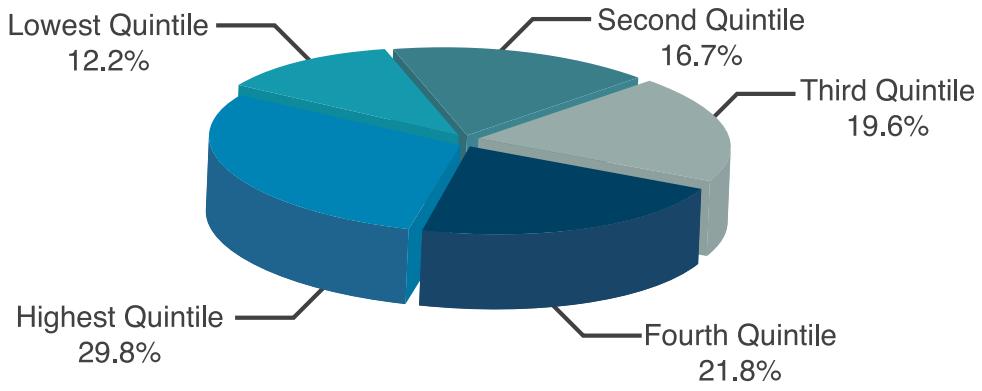
The state of human development report, launched in the 2014 SIDS conference in Samoa documents the alarmingly rising inequality in the Pacific. The levels of inequality in Nauru, can be considered among the highest in the Pacific.

Table 14: National households and population Gini coefficients of expenditure of Nauru and selected Pacific countries based on latest available HIES

	Households	Population
Nauru (2012/13)	0.37	0.52
Vanuatu (2010)	0.31	0.37
Tonga (2009)	0.24	0.38
Tuvalu (2010)	0.34	0.48
Fiji (2008)		0.41
Samoa (2008)		0.47

52. The Gini coefficient, however, has its limitations and must be interpreted cautiously as measure of inequality due to its inherent statistical bias towards the median income strata. It should be complemented by careful analysis of the actual distribution across expenditure and/or income deciles and the use of indicators such as the share of the poorest quintile in total expenditure and the ratio of the share of the poorest quintile to the share of the highest quintile, which are indicators 1.4 of MDG 1. The share of the poorest quintile in total consumption was estimated to be around only 12%, compared to 30% of total households' expenditure for the highest quintile.

Figure 5: The distribution of households' expenditure by quintiles



53. The ratio of the share of expenditure of the highest quintile to the share of expenditure of the lowest quintile was around 3. This means that the share of the lowest quintile is nearly three time that of the lowest quintile. The shares of the 10th and 9th expenditure deciles in total households' expenditure are 16% and 14%, respectively, compared to 5.8% and 6% for the 1st and 2nd deciles, respectively. Meanwhile, the share of the lowest three deciles was only 20% of total expenditure. Figure 5 illustrate the distribution of households' expenditure by quintiles. The share of the highest two quintiles in total expenditure is more than half. The share of the highest quintile (only 12% of the population) is 30% of the total expenditure, compared to only 12% for nearly 28% of the population who fall in the lowest quintile and 17% of the expenditure for the second lowest quintile that comprises around 24% of the population.

54. The ownership of assets also reflects inequality of distribution of income and expenditure. Table 15 shows that, for instance, only 15% of the poor own fridge and/or television set, compared to around 90% of the non-poor households. While, 22% of all households own vehicles, only 11.5% of poor households, 4.5 of extremely vulnerable households and 9% of vulnerable households own vehicles; compared to 37% of the households that are not poor or vulnerable.

Table 15: Selected asset ownership by vulnerability group

	Internet	Computer	vehicle	Washing Machine	TV	Fridge
HH below Food Poverty Line	0.0	0.0	0.0	0.0	0.0	0.0
HH Below Basic-Needs Poverty Line	3.3	7.2	11.5	10.7	14.1	15.0
HH Vulnerable within 20% of BNPL	1.3	3.3	4.5	3.4	5.5	6.0
HH Vulnerable within 20%-50% of BNPL	2.9	7.0	9.0	10.0	11.9	12.4
HH Vulnerable within 50%-100% of BNPL	6.0	10.2	15.5	12.3	18.2	17.7
Not Poor or Vulnerable	15.8	26.2	36.9	30.2	37.5	39.0
% of all HH with asset	29.3	53.9	77.3	66.6	87.2	90.2
% of HH without asset	70.7	46.1	22.7	33.4	12.8	9.8

F. KEY CHARACTERISTICS OF THE POOR AND VULNERABLE

55. Understanding which groups are poor, their characteristics, and where they are located, is critical for the design of effective poverty reduction policies and provides the basis for better targeting of support.

G. VULNERABLE GROUPS

G.1. LOCATION OF THE POOR

56. Due to sample and population size disaggregation and analysis at the district level is not advisable as it will suffer from high sampling errors and may yield misleading results. However, geographic disparities have been observed with relative concentration of poverty in some district[9].

G.2 GENDER

57. In the 2012/13 HIES, there were 586 households headed by females, accounting for 35.4% of all households, of which 17.7 were below the BNPL accounting for 36.3% of all households under the BNPL. Around 7.5% of female-headed households were extremely vulnerable (within 20% above BNPL), accounting for nearly 42% of households in this vulnerability group. Female headed households, therefore, are more vulnerable than male-headed households.

Table 16: Proportion of female headed households by vulnerability group

	% of all HH by head of HH		% of HH in the grouping	
	Female HHH	Male HHH	Female HHH	Male HHH
HH below Food Poverty Line	0.0	0.0	0.0	0
HH Below Basic-Needs Poverty Line	17.7	16.3	36.3%	63.7%
HH Vulnerable within 20% of BNPL	7.5	5.5	41.7%	58.3%
HH Vulnerable within 20%-50% of BNPL	13.1	13.9	33.1%	66.9%
HH Vulnerable within 50%-100% of BNPL	19.2	20.2	33.3%	66.7%
Not Poor or Vulnerable	42.4	44.1	33.5%	66.5%
TOTALS	**100.0**	**100.0**		

[9] Readers interested in geographical distribution of poverty at the district level may contact Nauru National Statistical Office for details and disaggregated data by district.

58. Around 20.4% of female-headed HH were in the top decile; a further 10.5% of female HHH were in the third decile, such that overall there were proportionately ten-percent more female HHH in L3D with correspondingly fewer female HHH in the 4th, 5th and 6th deciles. Female-headed households are slightly over-represented in the low expenditure deciles (22% of all female-headed households are in the lowest expenditure quintile. Around 35% of households in the highest expenditure quintile are female headed, compared to 65% are male headed households.

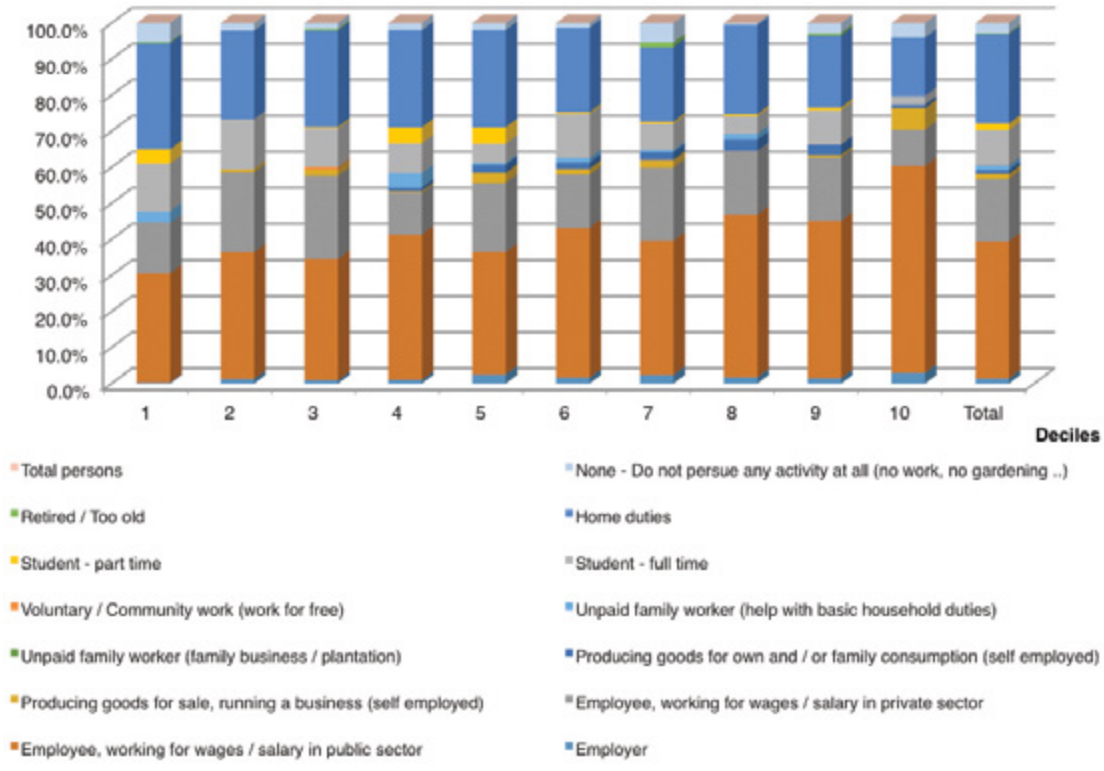
Table 17: Distribution of households by expenditure levels and head of households

Decile	% female	% male	total	% female	% male	% of all HH
1	44.3	55.7	100	12.4	8.1	9.6%
2	33.7	66.3	100	9.7	10.0	9.9%
3	35.5	64.5	100	10.4	9.9	10.0%
4	31.1	68.9	100	9.0	10.5	10.0%
5	29.9	70.1	100	8.5	10.5	9.8%
6	31.9	68.1	100	9.5	10.7	10.3%
7	36.6	63.4	100	10.8	9.8	10.1%
8	31.5	68.5	100	9.1	10.4	10.0%
9	34.3	65.7	100	10.2	10.2	10.2%
10	35.4	64.6	100	10.4	9.9	10.1%
TOTAL				**100.0**	**100.0**	**100.0%**

59. For male HHH there was a very small difference between the top and bottom deciles (20.0% to 18.3%), there were slightly fewer than expected male HHH in the 3rd decile, but proportionately higher proportions in the 4th, 5th and 6th deciles (Table 17).

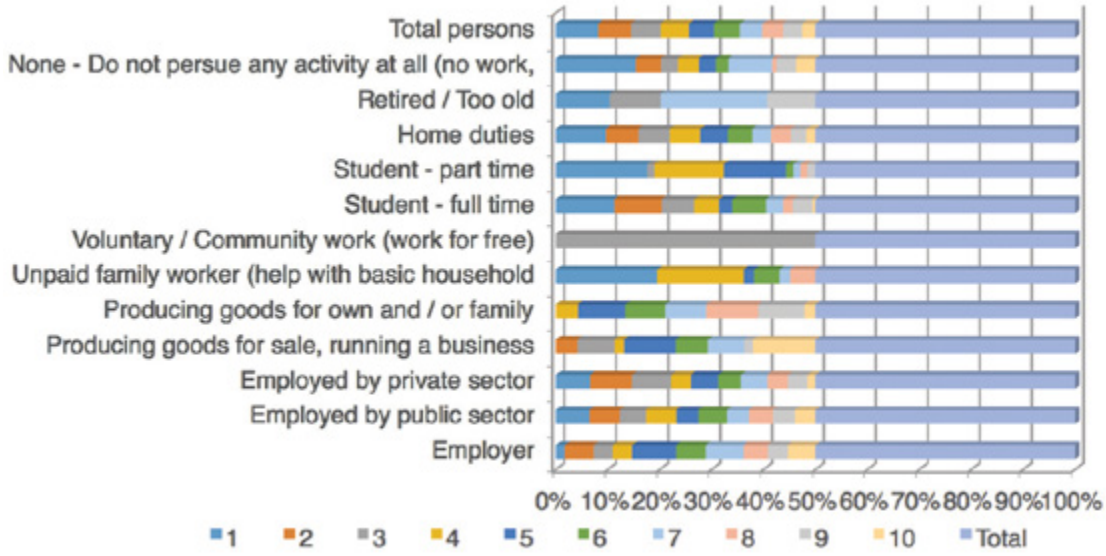
G.3 ECONOMIC ACTIVITY AND SOURCE OF INCOME

Figures 6: Labour force (age 15-59) by economic activity and income/expenditure decile



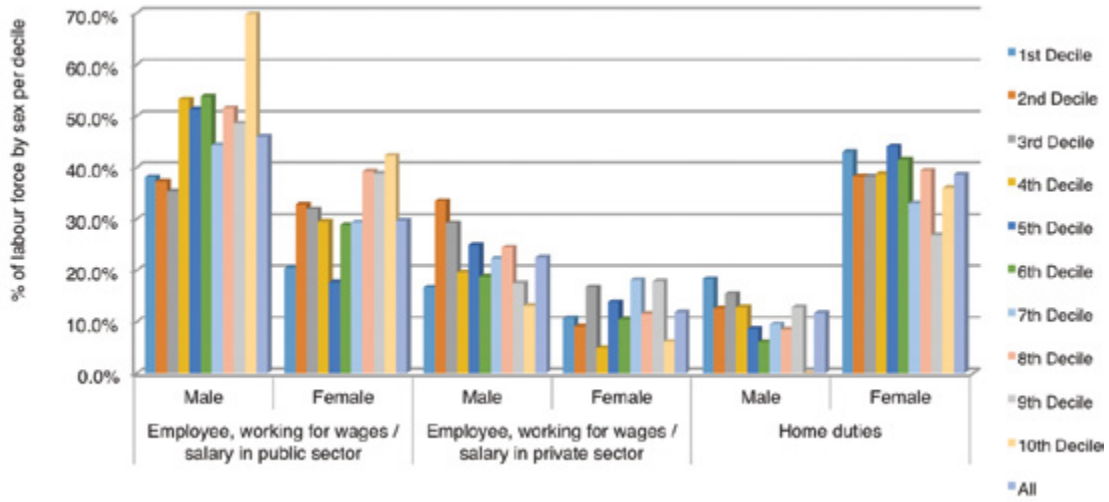
60. At the time of the survey, labour force age 15 to 59 constituted around 56% of the population. The majority of the economically active persons in Nauru (nearly 56%) are wage earners. The government is the single largest employer in the country, providing employment for 38% of the labour force, across all income/expenditure deciles. Meanwhile, the private sector provided employment for only 17% of the labour force. A quarter of the labour force was engaged in home duties (figure 6). Around 57% and 44% of the labour force in the highest two income deciles (8th and 10th), respectively, were employed by the government, compared to only 13% and 12% of the lowest two deciles(1st and 2nd).

Figures 7: The distribution of Labor force by economic activity across income expenditure deciles



61. Clearly, students, retirees, unemployed and individuals engaged in home duty activities are more vulnerable than their counterparts in the public and private sector and are, therefore, overrepresented in the lower expenditure deciles (Figure 7). Due to the fact that the government is the largest employer, there is an apparent even distribution of government employees across all income deciles. Figure 6 however, shows that government employees are less vulnerable than their counterparts who are engaged in other income generation activities.

Figures 8: Proportions of males and females in formal employment by public and private sector per income deciles



62. Males were over-represented, compared to their female counterparts, in formal employment by public and private sectors across all income/expenditure deciles. Around 46% and 23% of male labour force (age 15-59), compared to 30% and 12% of female labour force (age 15-59) were employed by public and private sectors, respectively. Contrarily, a significantly larger proportion of females of working age (15-59) was engaged in home duties as sole economic activity, compared to males from the same age group, across all income/expenditure deciles. Engagement in home duties was the main and only economic activity for around 39% of all females age 15-59, compared to 12% of males from the same age group. For females and males (age 15-59), the proportion engaged in home duties as main economic activities declined as income/expenditure increased. At the highest expenditure decile (10th decile), however, 36% of working age females, and no male, were engaged in home duties as main economic activity.

63. Males employed by government and private sector are slightly over-represented among the poor and vulnerable households compared to their female counterparts. This could be due to the number of households relying solely on the income of low-paid male heads of household and no working spouses. The proportion of employed females (in public and private sectors) in non-poor/non-vulnerable group is also slightly higher than male. On one hand, 40% and 21% of males, compared to only 22% and 10% of females, working for public and private sectors, respectively, were below the BNPL. Conversely, 54% and 18% of males, compared to only 36% and 13% of females, working for public and private sectors, respectively, were considered not or vulnerable. This confirms the over-representation of males among the government and private sectors employees, yet suggests that there is no significant gender-based wage discrimination in public or private sector.

Table 18: Economic activity and vulnerability status

ALL PERSONS 15-59 YEARS BY ACTIVITY							
	Employed						
	Government	Private Sector	Employer/ Self Employed	Unpaid family worker/ Home duties	Student	No economic activity	Total
HH/Persons below Food Poverty Line	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HH/Persons Below Basic-Needs Poverty Line	21.2	23.8	8.1	29.4	33.9	37.7	25.3
HH/Persons Vulnerable within 20% of BNPL	7.1	11.3	2.0	8.3	8.3	6.8	8.1
HH/Persons Vulnerable within 20%-50% of BNPL	14.6	16.6	8.2	14.7	17.2	7.3	14.8
HH/Persons Vulnerable within 50%-100% of BNPL	18.7	18.7	32.1	20.8	17.3	13.2	19.4
Not Poor or Vulnerable	38.3	29.7	49.6	26.8	23.4	34.9	32.4
TOTALS	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

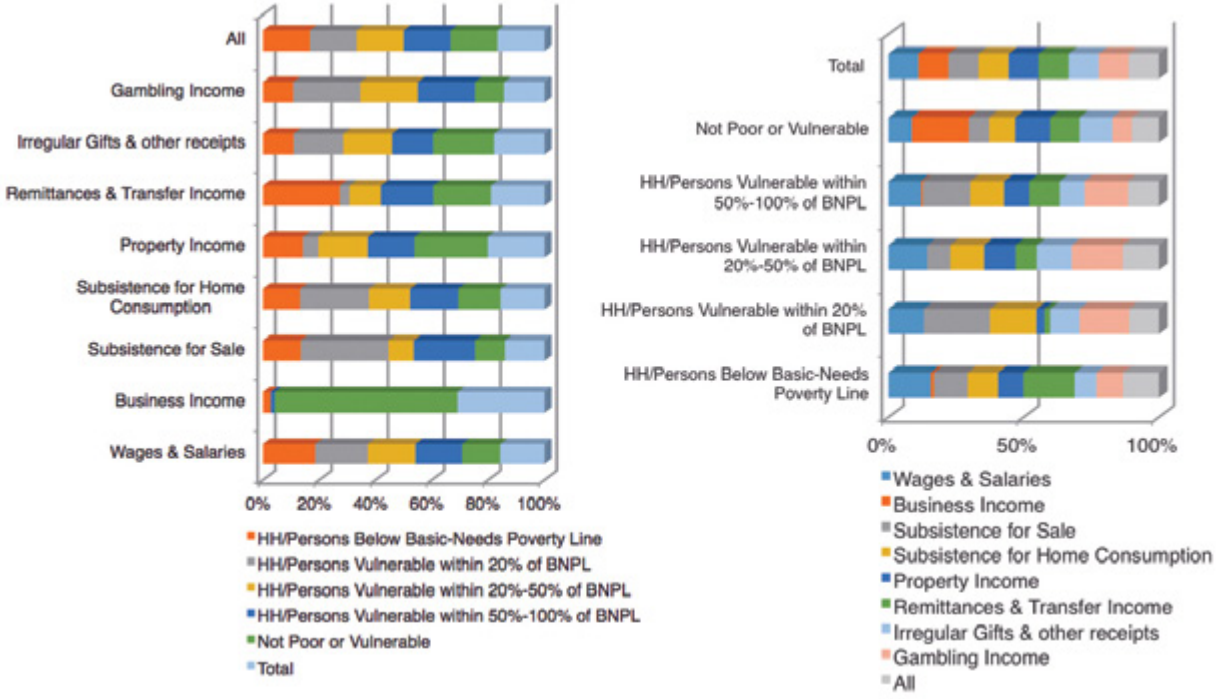
MALES 15-59 YEARS BY ACTIVITY							
	Employed						
	Government	Private Sector	Employer/ Self Employed	Unpaid family worker/ Home duties	Student	No economic activity	Total
HH/Persons below Food Poverty Line	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HH/Persons Below Basic-Needs Poverty Line	23.9	25.7	9.0	39.8	34.9	40.4	27.5
HH/Persons Vulnerable within 20% of BNPL	4.9	12.9	3.8	9.2	10.0	11.6	8.0
HH/Persons Vulnerable within 20%-50% of BNPL	12.7	16.9	10.3	15.2	16.3	0.0	13.8
HH/Persons Vulnerable within 50%-100% of BNPL	21.0	18.5	21.7	15.8	13.6	15.4	18.8
Not Poor or Vulnerable	37.5	26.0	55.2	20.0	25.1	32.7	31.9
TOTALS	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

FEMALES 15-59 YEARS BY ACTIVITY							
	Employed						
	Government	Private Sector	Employer/ Self Employed	Unpaid family worker/ Home duties	Student	No economic activity	Total
HH/Persons below Food Poverty Line	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HH/Persons Below Basic-Needs Poverty Line	17.0	19.9	7.1	25.9	32.9	33.9	22.9
HH/Persons Vulnerable within 20% of BNPL	10.7	8.1	0.0	8.0	6.7	0.0	8.1
HH/Persons Vulnerable within 20%-50% of BNPL	17.7	16.0	5.9	14.5	18.0	17.7	15.8
HH/Persons Vulnerable within 50%-100% of BNPL	15.0	19.0	43.8	22.4	20.7	10.2	20.1
Not Poor or Vulnerable	39.6	37.0	43.3	29.1	21.7	38.1	33.0
TOTALS	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

64. Wages and salaries are the main source of income, around 58% of all households' actual income (imputed rent excluded[10]), followed by property income, 18% of actual income. Property income constitutes a larger portion of the income of non-poor households (24%), compared to only 13% of income for households below BNPL and around 5% of total income for the highly vulnerable households (HH within 20% above BNPL). Subsistence production for own consumption as well as for sale is relatively insignificant by Pacific standards. Households with access to formal employment (particularly in the public sector) and/or property income are the least vulnerable. The poor, therefore, have a very low share of wages and property income, 19% and 11%, respectively; while the non-poor/non-vulnerable receive 40% and 60% of wages and property income, respectively. Remittances and gifts constitute 3% and 11% of total households' income, respectively.

[10] Imputed rent is not an actual cash income and it amounted to around 31% of total income for all households. Including imputed income, therefore, distorts the structure of actual income received by households. Expectedly, imputed rent was higher for non-poor/non-vulnerable households, around 56% of their total income, due to the high value of their housing properties. In contrast, it only constituted around 8% of the income of households below the BNPL.

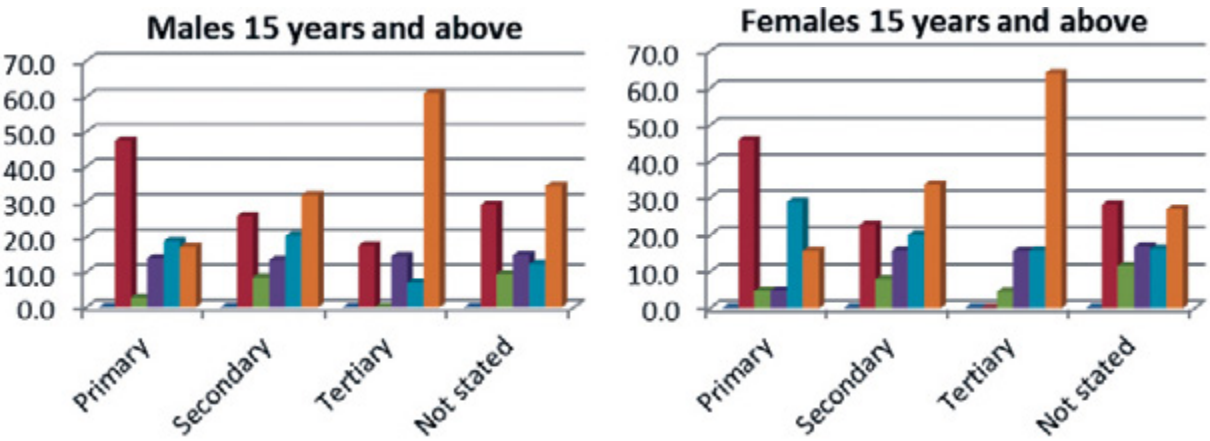
Figures 9.a and 9.b: Mapping of sources and income and vulnerability status

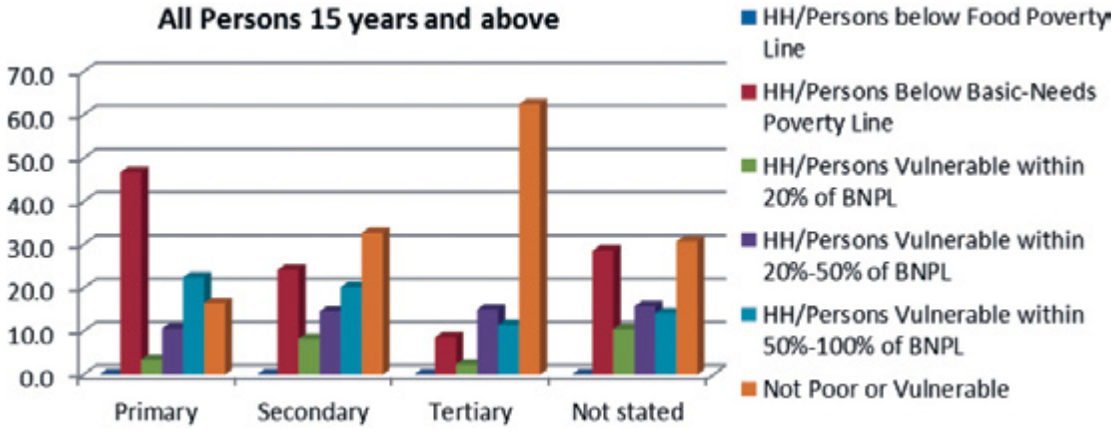


G.4. EDUCATIONAL BACKGROUND

65. In general, the majority of individuals in the age group of 15+ have secondary education, with small minorities with tertiary and only primary education. Expectedly, nonetheless, there is a clear correlation between educational attainment and poverty/vulnerability status. The incidence of basic need poverty is significantly higher among people with low levels of education (primary education only). For the 15+ age group, while 47% of all individuals (age 15 and above) with only primary education were below the BNPL, only 9% of individuals with tertiary education were below the BNPL and they were all males (accounting for 18% of all males with tertiary education). There were no females with tertiary education below the BNPL. Only 16% of individuals with only primary education (compared to 33% and 63% of individuals with secondary and tertiary educations, respectively) were not poor or vulnerable. The educational gender parity (measurement used to a determine level of access that male and females have to education. It was established by the United Nation Education, Scientific and Cultural Organization) in the Pacific is quite high and Nauru is not an exception. Gender, therefore, does not seem to play a role in conjuncture with educational attainment.

Figure 10: Poverty/vulnerability status and educational attainment

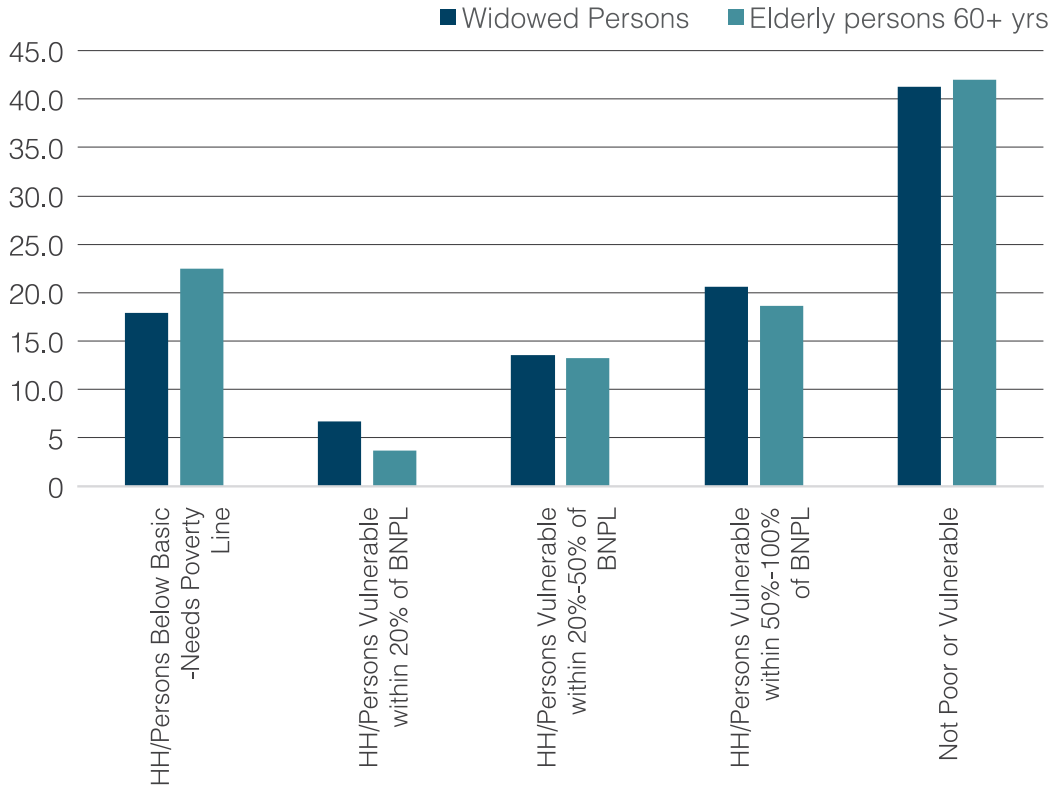



All Persons 15 years and above
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Primary
Secondary
Tertiary
Not stated
HH/Persons below Food Poverty Line
HH/Persons Below Basic-Needs Poverty Line
HH/Persons Vulnerable within 20% of BNPL
HH/Persons Vulnerable within 20%-50% of BNPL
HH/Persons Vulnerable within 50%-100% of BNPL
Not Poor or Vulnerable

H. HUMAN POVERTY AND PUBLIC SERVICES

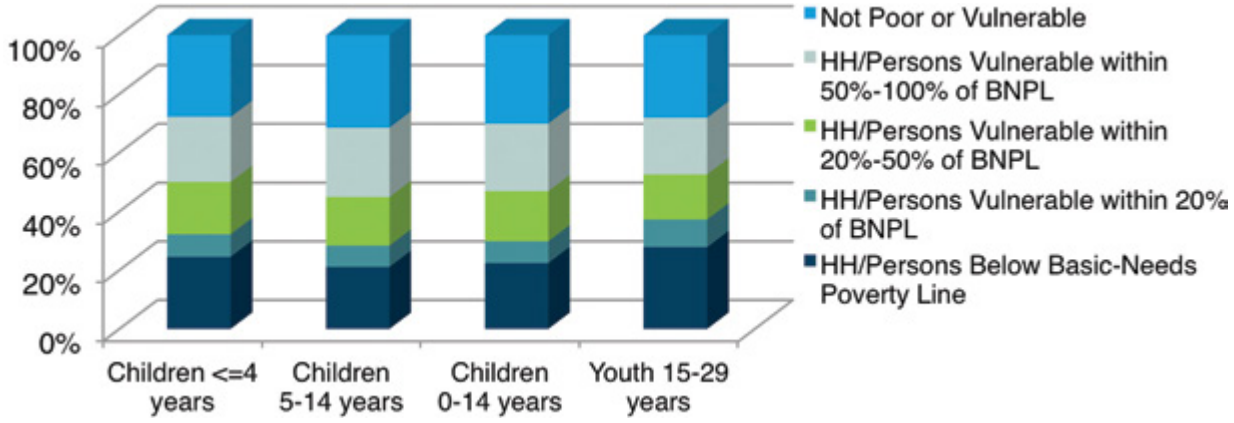
H.1. VULNERABLE AGE AND SPECIFIC GROUPS

Figure 11: Vulnerability status of elderly (aged 60 +) and widowers



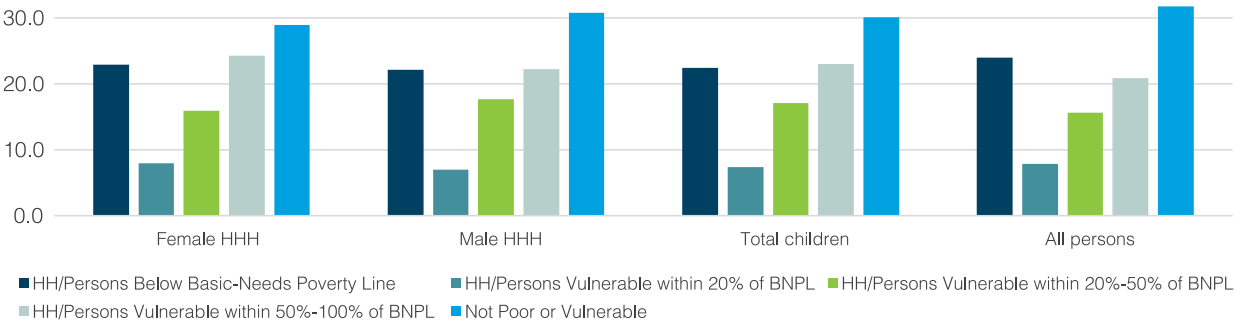
66. The incidence of basic needs poverty among elderly (aged 60 plus) men and women is around 23%. The data reveal no significant gender bias between male and female elderly. Widowed persons are among the vulnerable group (60% poor and/or vulnerable to varying degrees). Around 18% of widowed persons are below the BNPL. Now gender bias has been observed between male and female widowers.

Figure 12: Poverty/vulnerability status of children and youth



67. Figure 12 illustrates the poverty and vulnerability status of children and youth. A quarter of children (age 4 and under) and a fifth of children (age 5-14) in Nauru are below the BNPL, 8% of children under 4 years, and similarly age 5 to 14 years, are among the highly vulnerable and 18% of children under 4 years and 17% of children age 5 to 14 years, are vulnerable. Only 18% of children (age 4 and under) and 32% of children age 5-14 are considered not poor or vulnerable. Children living households headed by female are almost equally vulnerable as their counterparts living male headed households (figure 13).

Figure 13: Poverty and vulnerability status of children (age 0-14) by head of households



68. Youth (age 15-29) are also among the most vulnerable age groups with 28% below BNPL, 9% highly vulnerable, 15% are vulnerable and 19% are potentially vulnerable. Only 28% of youth are considered not poor or vulnerable (figure 12). Interestingly, young females seem to be slightly better off than their male counterparts. Around 32% of young males (age 15-29) are below the BNPL, 9% are highly vulnerable, 15% are vulnerable and 18% percent are potentially vulnerable. In comparison, 24% of young females (age 15-29) are below the BNPL, 9% are highly vulnerable, 16% are vulnerable and 21% are potentially vulnerable. More young females, however, are engaged in unpaid family work (43% of female age 15-29) compared to their male counterparts (only 15.5%) of the same age group. In general, 29% of youth (15-29), male and female, are engaged in unpaid family work, 22% are students and 3% are unemployed. Less than half of youth (45%) are employed in government (29%) and private sector (16.4%).

69. It is not surprising, therefore, that the youth are among the vulnerable groups. Young persons with no formal employment in public or private sector are the most vulnerable. Around 44% of the unemployed youth, 33% of students and 28% of youth engaged in unpaid family work are below the BNPL. Youth engaged in formal employment (government or private sector), on the other hand are generally better off. Youth employed by government are particularly better off than their counterparts in the private sector (table 19).

Table 19: The poverty and vulnerability of youth (aged 15-29) by sex and economic activity

	Employed		Self-employed and unpaid workers		Unemployed		
YOUTH 15-29: ALL							
	Government	Private Sector	Employer/ Self Employed	Unpaid family worker/ Home duties	Student	No economic activity	Total
HH/Persons Below Basic - Needs Poverty Line	24.1	27.5	23.0	28.3	33.1	44.4	28.3
HH/Persons Vulnerable within 20% of BNPL	7.4	14.1	0.0	9.1	8.8	5.9	9.1
HH/Persons Vulnerable within 20%-50% of BNPL	14.9	16.4	0.0	15.3	17.8	9.0	15.5
HH/Persons Vulnerable within 50%-100% of BNPL	19.6	18.6	29.5	22.5	16.4	9.5	19.5
Not Poor or Vulnerable	34.1	23.4	47.5	24.8	23.9	31.2	27.6
TOTALS	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
YOUTH 15-29: MALES							
HH/Persons Below Basic - Needs Poverty Line	25.5	29.4	29.4	43.5	35.3	52.3	32.3
HH/Persons Vulnerable within 20% of BNPL	4.4	18.8	0.0	7.8	10.4	7.7	9.3
HH/Persons Vulnerable within 20%-50% of BNPL	13.7	16.6	0.0	18.5	16.1	0.0	14.8
HH/Persons Vulnerable within 50%-100% of BNPL	23.5	15.6	27.5	16.3	12.1	12.3	18.0
Not Poor or Vulnerable	32.9	19.6	43.0	13.9	26.1	27.8	25.7
TOTALS	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
YOUTH 15-29: FEMALES							
HH/Persons Below Basic - Needs Poverty Line	21.2	23.6	15.8	22.4	30.9	16.9	24.1
HH/Persons Vulnerable within 20% of BNPL	13.3	4.7	0.0	9.5	7.3	0.0	9.0
HH/Persons Vulnerable within 20%-50% of BNPL	17.4	16.1	0.0	14.1	19.5	40.3	16.4
HH/Persons Vulnerable within 50%-100% of BNPL	11.7	24.6	31.6	24.9	20.5	0.0	21.0
Not Poor or Vulnerable	36.4	31.0	52.6	29.0	21.8	42.8	29.5
TOTALS	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

I. EXPENDITURE ANALYSIS

I.1. ENERGY

70. Nearly all households in Nauru (99% of all households), regardless of their poverty or vulnerability status, rely on electricity provided through the main grid as the primary source of household lighting, A small proportion of households (less than 1%) rely on other sources. Gas is the main source of energy for cooking. Around 48% of all households use gas cookers, followed by electric cookers in 36% of households. Around 2% and 14% of households utilize Kerosene and Wood (open fire) for cooking, respectively. Gas is the preferred source of energy for cooking in households at the highest expenditure quintile, while electric cookers are more common in households at the lowest expenditure quintile. At the highest expenditure quintile, around 50% of households use gas cookers and 30% of households use electric cookers, compared to 40% of households in the lowest expenditure quintile use gas cookers and 49% of households' uses electric cookers.

I.2. WATER AND SANITATION

71. There are two main sources of water supply for households' consumption in Nauru: the main desalination plant and rain and water tanks providing for 35% and 59% of all households, respectively. Around 3% of households rely on piped supply outside neighborhood and 4% rely on other sources of water. A larger proportion of households in the highest expenditure quintile (64%) rely on rain and own water tanks compared to other sources of water (only 23.6% rely on the main desalination plant). Meanwhile, nearly half (43%) of households in the lowest three expenditure deciles rely on the desalination plant as the main source of water supply. Clearly the costs of installing own water tanks are prohibitive for households at the low income/expenditure deciles.

Table 20: Access to drinking water by sex of head of households and expenditure decile group

Decile: HH weekly pcae expenditure		Average all HH	Lowest Quintile	Lowest Three Deciles	Highest Quintile
Desalination plant	Male	34.0	41.6	41.9	22.7
	Female	35.5	49.3	44.6	25.4
	Total	34.5	44.6	42.9	23.6
Rain - water tank	Male	58.4	53.3	52.2	63.2
	Female	60.0	50.7	53.7	66.2
	Total	59.0	52.3	52.8	64.2
Piped supply outside neighbourhood	Male	3.0	1.6	3.6	5.5
	Female	2.4	0.0	1.6	5.8
	Total	2.7	1.0	2.8	5.6
Other Water Sources	Male	4.6	3.6	2.3	8.7
	Female	2.1	0.0	0.0	2.6
	Total	3.7	2.2	1.4	6.6

72. Household flush septic tanks are the main type of sanitation for 66% of households in Nauru. Only 2% of households are connected to the public sewage system. Shared flush toilets are more common among households at the highest income/expenditure quintile, particularly male headed households, while flush septic tanks are more common among households at the lowest income/expenditure quintile, particularly female headed households. Access to improved water supply and sanitation does not seem to depend on income/expenditure levels or sex of head of households.

Table 21: Type of Sanitation by sex of head of households and expenditure decile group

Decile: HH weekly pcae expenditure		Average all HH	Lowest Quintile	Lowest Three Deciles	Highest Quintile
Public Sewage System	Male	2.5	1.8	2.8	1.5
	Female	2.0	6.6	4.5	2.6
	Total	2.3	3.7	3.5	1.9
Own flush septic tank	Male	63.6	67.2	66.8	52.7
	Female	69.2	79.6	72.5	62.1
	Total	65.5	72.1	69.0	56.0
Shared flush Toilet	Male	10.5	7.1	6.1	18.3
	Female	8.6	2.8	6.4	12.4
	Total	9.8	5.4	6.2	16.2
None/Other System	Male	23.4	24.0	24.3	27.5
	Female	20.2	11.0	16.6	22.9
	Total	22.3	18.9	21.4	25.9

I.3. HOUSING

73. The majority of houses in Nauru is built with permanent walls (timber, plywood, concrete), corrugated iron or asbestos/fiber roofs and concrete or wood (timber and/or plywood) floor. Asbestos and fiber roofs and walls are more common among households in the lowest expenditure quintile due to their low costs. Wooden floors are more common among households at the highest income/expenditure quintile, while concrete floors are more common among households at the lowest income/expenditure deciles (table 22). Expectedly, the type house and material used for construction depend on the level of income, yet to a much lesser degree compared to the rest of the region. Most households have inside kitchens (75% of all households) with small proportion with outside kitchen (5%) and 20% of households across all expenditure deciles have no kitchens. Inside kitchens are slightly more common among households at the highest income/expenditure quintile, while outside kitchens are more common among households at the lowest income/expenditure quintile.

Table 22: Housing type by expenditure level and sub-national area

		TYPE OF ROOF			
Decile: HH weekly pcae expenditure		Average all HH	Lowest Quintile	Lowest Three Deciles	Highest Quintile
Corrugated iron with guttering	Male	55.9	54.5	55.1	51.3
	Female	54.3	61.1	56.6	42.9
	Total	55.4	57.1	55.7	48.4
Corrugated iron without guttering	Male	14.0	11.0	12.5	19.6
	Female	15.4	12.0	14.2	19.0
	Total	14.5	11.4	13.2	19.4

Concrete roofing	Male	1.4	2.6	1.7	1.6
	Female	1.5	0.0	1.9	0.0
	Total	1.4	1.6	1.8	1.1
Asbestos / Fibro	Male	14.0	16.6	16.9	12.2
	Female	14.7	18.7	17.9	12.3
	Total	14.3	17.5	17.3	12.3
Thatched / traditional	Male	2.1	1.8	1.2	1.4
	Female	1.1	2.6	1.7	2.7
	Total	1.8	2.1	1.4	1.9
Other materials	Male	12.5	13.5	12.6	13.8
	Female	12.9	5.6	7.6	23.0
	Total	12.7	10.4	10.7	17.0
TYPE OF WALLS					
Decile: HH weekly pcae expenditure		**Average all HH**	**Lowest Quintile**	**Lowest Three Deciles**	**Highest Quintile**
Permanent - timber / plywood / concrete	Male	85.1	88.2	89.1	82.5
	Female	78.5	79.3	75.3	74.8
	Total	82.8	84.7	83.9	79.8
Asbestos / Fibro	Male	8.9	1.8	4.4	7.3
	Female	14.9	11.6	16.6	22.2
	Total	11.0	5.6	9.0	12.5
Thatched / traditional	Male	0.9	1.8	1.2	1.4
	Female	0.6	0.0	0.0	0.0
	Total	0.8	1.1	0.7	0.9
Corrugated iron / improvised	Male	3.3	8.3	5.4	2.9
	Female	1.8	5.4	3.7	3.1
	Total	2.8	7.1	4.7	2.9
Other Materials	Male	1.7	0.0	0.0	5.9
	Female	4.2	3.7	4.4	0.0
	Total	2.6	1.4	1.7	3.8
TYPE OF FLOOR					
Decile: HH weekly pcae expenditure		**Average all HH**	**Lowest Quintile**	**Lowest Three Deciles**	**Highest Quintile**
Concrete	Male	73.1	82.1	80.3	71.6
	Female	73.5	77.4	78.7	73.2
	Total	73.2	80.4	79.8	72.1
Timber / plywood	Male	21.9	14.2	17.2	22.8
	Female	20.8	16.7	15.2	20.7
	Total	21.6	15.1	16.5	22.1
Gravel	Male	1.4	0.0	0.0	1.6
	Female	0.6	2.8	1.9	0.5
	Total	1.1	1.0	0.6	1.2
Other Materials	Male	3.6	3.7	2.4	4.1
	Female	5.1	3.1	4.2	5.6
	Total	4.1	3.5	3.0	4.6

I.4. EDUCATION

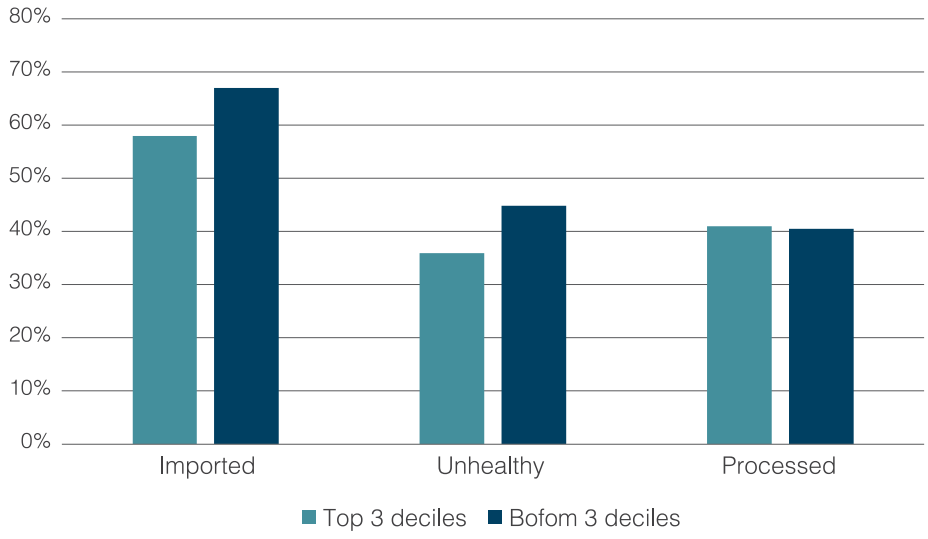
74. Education is free in Nauru and, therefore, expenditure on education is very low, averaging around 1% to 2% of total non-food expenditure. As previously mentioned, the majority of citizens has at least primary education and around 76% have secondary education. Gender parity is quite high. Households below the BNPL spent around 1.9 % of their non-food expenditure on education compared to less than 1.4% by households that are not considered poor or vulnerable. Levels of educational attainment vary, yet not considerably, between poor and the non-poor, particularly among the youth (age 15-29), as explained earlier.

I.5. HEALTH

75. Expenditure on health was also extremely low, around 0.1% of total non-food expenditure, across all expenditure deciles. No significant disparities were observed among income/expenditure deciles. The following section provides an analysis of non-food expenditure.

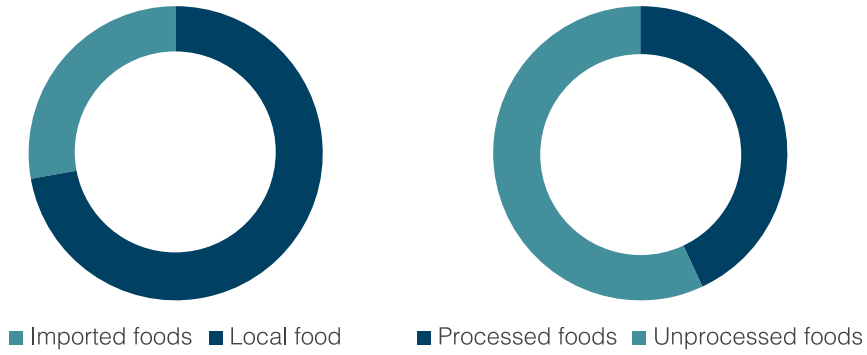
76. Akin to most of the Pacific region, obesity and the incidence of diet related non-communicable diseases are quite high. The diet profile comprises mostly sugar and carbohydrates. Rice and raw sugar constitute 25% of daily intake and the 30 food items comprising around 85% of daily calories intake contain no vegetables or fruits.

Figure 14: Food expenditures on different food classifications



77. Foods in HIES data can be arbitrarily classified[i] into four categories: imported/local, 'unhealthy' /'healthy', non-traditional/traditional, processed/unprocessed (note that these categories overlap). A rapid analysis of household-level food expenditure and caloric intake based on these categories show that expenditure on imported, 'unhealthy' (e.g. sugar, processed and fatty meats, oil, etc) and processed foods is substantial and a greater proportion of expenditure on imported and unhealthy food items is found amongst the lowest 3 deciles compared to the top 3 (Figure 14) In the lowest 3 Deciles, the majority of caloric intake (72%) is from imported food (Figure 15.a) and a significant share of it (43%) is from processed foods (figure 15.b).

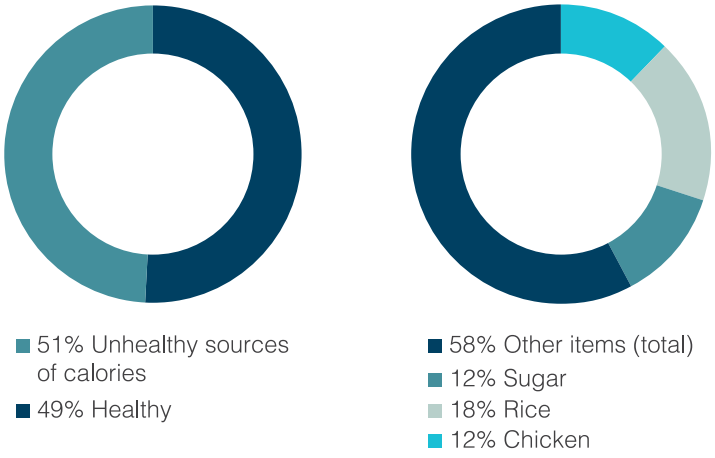
Figures 15.a and 15.b. Caloric intake from imported vs. local food and from processed vs. unprocessed.



78. Rice accounts for the single most important source of calories in the lowest 3 deciles households. Most notable is the high consumption of white sugar which represents the third major source of calories behind rice and on par with chicken (figure 16.a). A large proportion of the sources of calories in the lowest 3 deciles can be considered 'unhealthy'. Diets in Nauru, like in other PICs have experienced important transformations and shifts against the backdrop of rapid social change, colonization and globalization. Energy-dense, nutrient-poor processed foods (essentially imported) having largely replaced traditional whole foods [ii, iii, iv].

79. The high share of imported and processed foods in households' consumption is to be put in relation to the high food import dependency of Nauru and limited possibilities for local food production. While poor and unbalanced diets are not the sole explanation for the rise of obesity and Non-communicable diseases (NCD) in Nauru's recent history, they are undeniably a major factor.

Figures 16.a and 16.b. Top 3 food items and their share in total caloric intake (%) – Lowest 3 Deciles; and Sources calories in lowest 3 Deciles Healthy vs. unhealthy



80. The latest (2007)[11] NCD STEPS Survey[v] identified widespread behavioral risk factors in Nauru. Tobacco use (53% overall), was generally higher in women (56%) than men (49.7%) across all age groups and smoking was also more prevalent among those with low educational levels. Harmful alcohol consumption was also found to be widespread with 29.8% and 25.6% of male and female respectively binge drinking on any day of the week preceding the survey. Physical activity was found to be low (ranging from 40% to 50%) with 16.5% of people reported no physical activity in work, travel or recreation time.[vi]

81. The prevalence of those who report eating less than 5 servings of fruits and vegetables per day was 96.9%: 97.3% of males and 96.4% of females. This data is consistent with the extremely low expenditure on fresh fruits and vegetables (less than 0.6%) observed in the HIES survey data. The prevalence of overweight and obesity, an intermediary risk factor for many NCDs, is very high for both men and women (82.1 and 82.2 respectively). Obesity has emerged rapidly in Nauru in the second half of the 20th Century.[vii]

82. Of great concern is the prevalence of diabetes and its complications. Diabetes prevalence ranges from 16.2% among the 15-64 age group, to 24.1% in the 35-44 age group, 37.4 % among 45-55 year-olds and 45 % in the 55-64 age group.[viii] Diabetes is most prevalent among those with high educational attainment.[ix] A criss-cross sectional study in 2014 found very high prevalence of microalbuminuria (71%) -an indicator of future nephropathy (kidney disease\failure). Diabetic retinopathy which can lead to significantly impaired vision and blindness was also found to be very high (69%).[x]

83. Nauru recorded the highest Age-standardized death rate (per 100 000) from Non-communicable diseases (NCD) among males and the third highest among females in the entire Western Pacific Region in 2008.[xi] Cardiovascular diseases (CVD), cancers, diabetes and chronic respiratory diseases have overtaken all other causes of death since the mid-1970s.

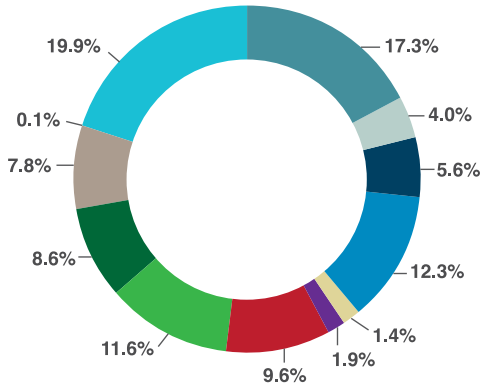
84. Increased NCD related premature mortality surpasses the decline of all other causes of death and this has led to a stagnation in life expectancy at around the mid-50s for males and 60 years old for females for a significant period of time.[xii, xiii] This stagnation at relatively low levels is alarming and constitutes a major development challenge for Nauru.

85. Figures 14a, b, c and d, illustrate the structure of non-food expenditure of all households as well as by vulnerability status. Interestingly, excluding miscellaneous and non-recurrent major expenditure, transportation is the largest expenditure category, absorbing around 19% of the non-food expenditure of all households, followed by donations to community and church (17% of households' non-food expenditure). Households that are not poor or vulnerable on average spend more on transportation and donations (as a share of their overall non-food expenditure) compared to poor and vulnerable households. Meanwhile, poor and vulnerable households spend a larger share of their non-food expenditure on clothing, education, household maintenance and phone and internet.

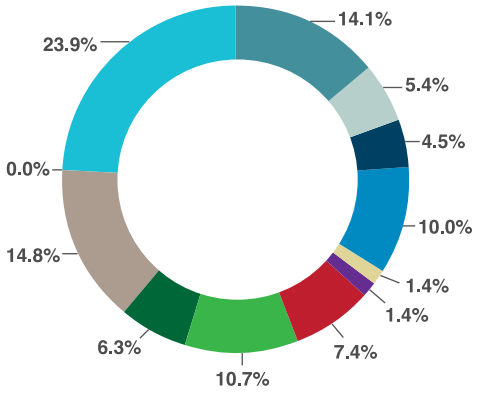
86. Poor and vulnerable households spend quite a substantive share of their overall non-food expenditure on gambling and Alcohol, Tobacco and Kava (ATK). Gambling and ATK constitute, on average, 5% and 8% of total households' non-food expenditure, respectively. Households below the BNPL spend, on average, 6% and 8% of their non-food expenditure on gambling and ATK, respectively. That is a total of 15% of non-food expenditure. Given the depth of poverty in Nauru, reducing expenditure on gambling and ATK by about 60% will reduce the incidence of basic needs poverty by more than half.

Figure 14a, 14.b, 14.c and 14.d: Expenditure profile by poverty and vulnerability status (% of total non-food expenditure)

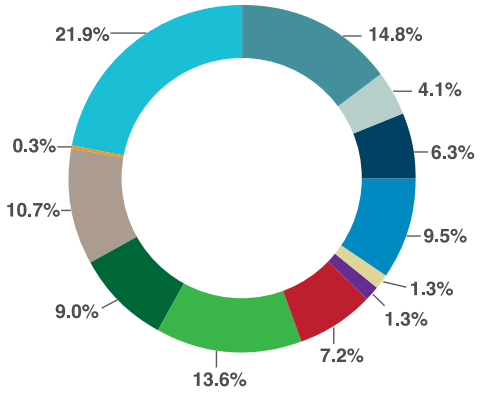
HH/Persons Below Basic-Needs Poverty Line



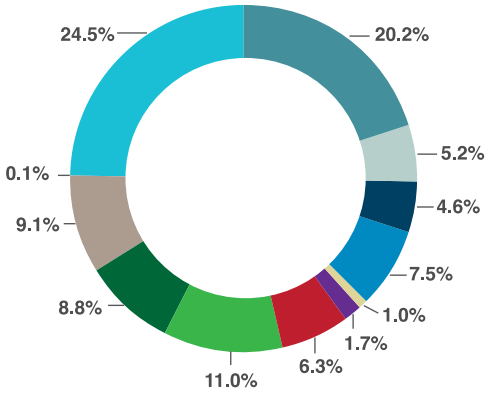
HH/Persons Vulnerable within 20% of BNPL



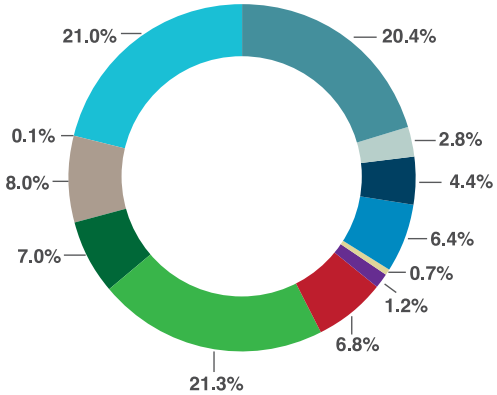
HH/Persons Vulnerable within 20%-50% of BNPL



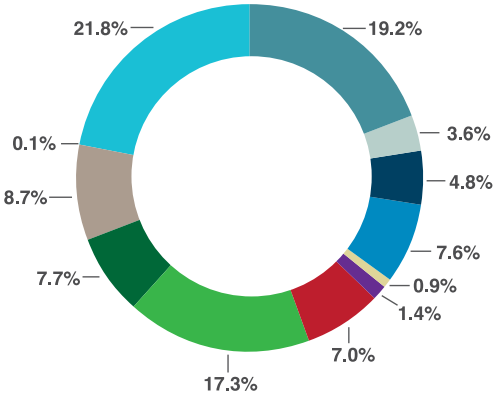
HH/Persons Vulnerable within 50%-100% of BNPL

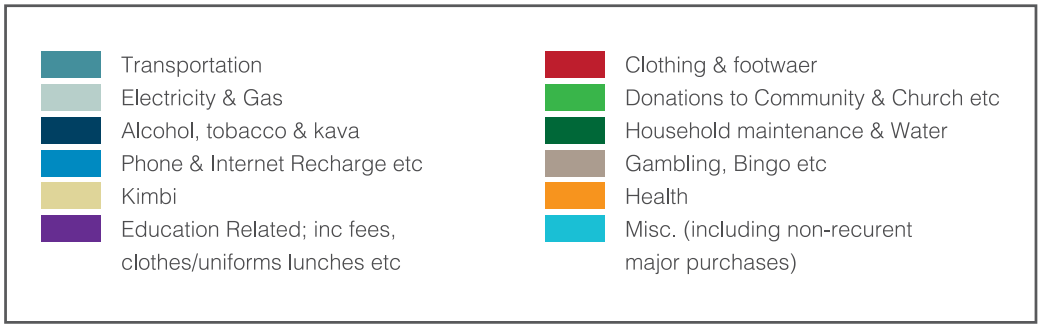


Not Poor or Vulnerable



All HH/Persons





J. CONCLUDING REMARKS

87. It is hoped that the analysis contained in this report will stimulate national policy makers in Nauru, and users in the international community, to seek more detailed analysis on specific issues identified in this report such as human poverty, food consumption patterns, specific areas of expenditure including health and education, youth poverty and unemployment and children in poverty. Further and more detailed analysis of broader socio-economic issues in Nauru, which can be done using the survey data, will add substance to the key poverty indicators. Most importantly, it would inform the formulation of policies and initiatives aiming at addressing the various dimensions of poverty, and the better targeting of vulnerable groups.

88. The results from the analysis of the 2012/13 HIES reveal that 24% (16.8% of households) of the population in Nauru live below the national basic needs poverty line. While the incidence of food poverty is effectively zero, poor and under nutrition are wide spread. Inequality, as demonstrated by various indicators, is alarmingly high. The population Gini coefficient is a record high of 0.52. Gender inequality however, is rather moderate. Youth and children are the most vulnerable groups in Nauru.

89. Unlike most Pacific countries, the size and concentration of the population on one single island reduced the gap between levels of income and human poverty. As discussed in the reports, water and sanitation, sources of energy and other basic services are nearly equally accessible by poor and vulnerable households. Around 8% of the population (6.2% of households) are extremely vulnerable with expenditure within 20% of the BNPL, 15.6% and 20.8% of the population are vulnerable and potentially vulnerable, respectively.

90. Households affected by a combination of adverse factors and/or multiple deprivations face the highest risk of poverty. For example, a person's age can interact with gender and labor market profile to produce different welfare outcomes across individuals and households. Similarly, inequality is deeper and wider when more than one vulnerability factor is present.

91. Government continues to be the main source of secure, and relatively well-paid, employment, while the private sector is lagging behind in terms of job creation and income generation. Unlike most Pacific countries, subsistence and small scale commercial production and trade are not a major source of livelihoods and income. People who are unemployed, particularly the youth, and/or elderly are highly vulnerable to poverty. There is a strong correlation between vulnerability status and education level.

92. Children are highly vulnerable to poverty and hardship, with 22.4% living in households with expenditure less than the BNPL, 7.4% and 17% of all children live in households that are extremely vulnerable and vulnerable, respectively. Poor households (the lowest three deciles) are typically larger and tend to have more children than households in the highest expenditure quintile.

93. Although certainly not as accurate as detailed nutritional surveys, the HIES data on food expenditure and caloric intake provide some insights on Households' food consumption. These insights are consistent with negative health outcomes observed in the STEPS survey (e.g. low fresh fruits and vegetable consumption, high consumption of sugar and high diabetes prevalence). As elsewhere in the Pacific and much of the developing world, current food consumption patterns and choices are linked to colonial[xiv], post-colonial development policy choices and accompanying rapid social and economic changes in Nauru. Improving the availability and affordability of healthier food choices for Nauruans is therefore critical in population diet related health outcomes. A number of policy areas could be explored (some already ongoing).

K. POLICY IMPLICATIONS

PRINCIPLES FOR INTERVENTION

94. The characteristics of the poor revealed by the HIES provide a wealth of information for policy makers to use to devise efficient and effective and well-targeted poverty reduction strategies. If interventions to reduce poverty are to be effective as well as financially feasible, they must be based on proven and cost effective mechanisms to allocate resources and assistance directly, efficiently and effectively to poor households, rather than relying on indirect effects, such as spillover, externalities and market forces in allocating benefits from economic growth. Although the explicit goal of many types of interventions is to reduce poverty, they are also likely to benefit some non-poor as well. Given the limited funding for programmes, it is preferable to direct available resources, and therefore benefits, as effectively as possible toward those who need them most.

95. Direct targeting is based on identifying poor households or individuals (e.g. identifying those who are below the poverty lines). If providing assistance directly to the poor is not feasible, intervening on the basis of their characteristics (characteristic targeting), such as age grouping, size of households and education level, might be the best option. Characteristic targeting, however, has two potential drawbacks. First, some non-poor households possess the same characteristics as the poor and, hence, receive benefits (leakage). Second, not all poor households possess the designated characteristics to benefit from the intervention, and consequently might not be reached (under-coverage). The success of characteristic targeting depends on the ability of programme designers to minimize these problems.

96. Targeting poverty reduction programmes to a subgroup of the population has an intuitive appeal for policymakers, but it also poses considerable difficulties. Direct targeting explicitly identifies individual households as poor or non-poor and directly provides benefits to the former group and tries to withhold them from the latter. The specific form of such targeting depends on the ability of governments to identify the poor.

97. If beneficiaries can be identified on a household or individual level, transfers and/or some other forms of direct assistance could be mobilized to reduce their vulnerability. For example, the provision of food or medical care to elderly and disabled individuals, or to households that display clear signs of malnutrition, or to individuals who have special needs, such as pregnant and lactating women, are all forms of direct targeting of assistance. However, the 'screening', needed to identify the poor, such as their level of income, can be very expensive to implement.

98. In practice, there are two alternatives to direct targeting of the poor based on income measures. The first involves targeting types of spending and can be called 'broad targeting'. Under this approach, no attempt is made to reach the poor directly as individuals. Instead, programmes hope to achieve gains by targeting types of spending that are relatively more important to the poor. Spending on basic social services, such as primary education and primary health care, is one example.

99. The second approach entails targeting *categories of people*. Under this approach, which can be called 'narrow targeting', benefits are directed to certain types of people. Examples are food stamp schemes targeted to mothers in food-insecure communities or micro-credit schemes targeted to women vendors. In Nauru, for instance, households with a female head who has no schooling or only primary education are relatively more vulnerable. So targeting through combining gender, education level and head of household criteria could be effective. Also, while targeting female-headed households in general might not make sense, given that they are represented in highest as well as the lowest deciles, directing resources to households headed by female sole parent with three or more children – who are generally in poverty - may be efficient.

100. Narrowly targeted schemes are based on one of two principles - or a combination of both. The first is indicator targeting (also called categorical targeting). This approach identifies a characteristic of poor people (an indicator) that is highly correlated with low income but can be observed more easily than income. The indicator is then used as a proxy for income to identify and target the poor. Alternatively, such indicators as gender, nutritional status, disability or household size could be used to identify beneficiaries.

101. The second approach to narrow targeting is self-targeting. Instead of relying on an administrator or a policy maker to choose participants in and /or beneficiaries of the poverty reduction programme, this approach relies on beneficiaries opting in through incentives that would induce the poor, and only the poor, to participate in a programme. Examples are public employment schemes that use work requirements and conditions to help screen out the non-poor, and subsidy programmes that target items that the poor consume but the rich do not.

102. Both narrow targeting approaches offer the hope of avoiding two commonly identified errors of targeting: 1) leakage of benefits to the non-poor, which is measured by the ratio of non-poor beneficiaries to total beneficiaries; and 2) under-coverage of the poor, which is measured by the ratio of poor beneficiaries to the total poor population. One drawback of indicator targeting is that not all of the poor can be identified by the same indicators.

103. Common methods of assessment can obscure some of the potential benefits of narrow targeting. Assessments of the benefits from geographical targeting provide an example. Several studies have examined the potential impact on poverty of allocating a predetermined budget optimally across regions. But the static gains of such an allocation are often found to be modest, reflecting, in essence, that the poor are heterogeneous.

104. Recent work, which allows for gauging the potential dynamic effects of programmes, suggests, however, that static assessments can greatly underestimate the long-term benefits. Gains could percolate through and strengthen over time as a result of the positive external effects of development in poor regions on the productivity of the private investments by poor households.

105. In order to enable poor households to take advantage of economic opportunities and access the benefits of economic growth, Nauru's poverty-reduction programme would have to focus efforts on building up the human capital of the working-age population. This would enable working members of poor households to secure more rewarding employment and generate better income.

106. An important implication is that programmes to improve educational institutions -particularly those providing technical training and helping to retain children in school -represent social investment with potentially very high long-run returns. A crucial prerequisite to the success of any demand-side interventions, however, is to tackle the supply-side challenges first.

POLICY RECOMMENDATIONS

107. A social and economic policy package to accelerate poverty reduction will need to simultaneously address challenges at the macro and micro levels through micro-level and local people-centered development initiatives that complement overall macroeconomic policies and are geared towards balanced, sustainable and inclusive growth and widening the economic base.

108. At the macro level, poverty reduction in Nauru will require concerted and coordinated efforts to push ahead with reforms that will allow sustaining and broadening economic growth and enhance its inclusiveness. There is a need for identifying potential promising sectors that can drive economic growth and create jobs and livelihood. Private sector should be the main driver of growth and income generation and eventually replace the government as the main employer. While this will require separate in-depth growth and macroeconomic analysis and feasibility studies, an obvious choice seems to be the fishery sector.

109. Social protection is a promising strategy to address poverty and vulnerability. Social protection policies should be implemented to support the vulnerable segments of the population, such as the elderly. For example, social protection in the form of non-contributory social pensions is a proven strategy for reducing poverty, vulnerability and inequality for people of all ages. A growing body of evidence demonstrates that social pensions both reduce the poverty and vulnerability of older people, and result in net contributions to multigenerational household economies and the wider community. It is, also, possible to design social protection programmes that provide aging and vulnerable population with access to medical care, income opportunities and basic rights.

110. A recent study projected impact of various social protection interventions on poverty in Vanuatu, shows that a universal cash grant with a value equal to 30% of the national poverty line and an estimated cost of around 0.7% of GDP, targeting all children under 5 years of age may result in up to 10% reduction in the incidence of basic needs poverty and 10% to 18% in the depth of poverty. The study also included Kiribati, Samoa and Solomon Islands[11]. Social protection schemes can be more effective when combined with abolishing school fees (which has already been implemented in Vanuatu) and/or providing school meals.

111. Addressing youth unemployment and vulnerably should be one of the key priorities. Studies have shown that return on investments in youth range from 200 to 1000 percent in terms of improved educational outcomes, crime prevention, healthier lifestyles, and more.[12] Empowering young people through building capacity and creating access to opportunities can be an effective development strategy for Nauru.

112. The youth strategy should therefore aim to empower young people as agents of positive change, catalysts for development, and as leaders and contributing members of society by building on their strengths, harnessing their dynamism, and championing their voices. Partnerships with regional and international agencies can help in tapping much needed technical and financial support to design programmes which can empower youth socio-economic empowerment.

113. There should be incentives for local production of fresh produce and protein sources (local fisheries, animal husbandry); coupled with disincentives (import tariff structure, excise regimen, other types of regulatory mechanisms) for less healthy food products (e.g. high in fat, sodium, sugar, alcohol). Establish and enforce food standards and marketing regulation (e.g. improved labeling of food products as well marketing practices especially those targeting children with unhealthy products and snacks etc…)as well as engage more closely with importers and retailers and possibly manufacturers about nutritional quality of food imports to Nauru;

11 Sampson, M. (2012) Micro-simulation analysis of social protection interventions in Pacific Island countries: AusAID Pacific social protection series: poverty, vulnerability and social protection in the Pacific

12 Anton, P.A. and Temple, J. (2007), Analyzing the Social Return on Investment in Youth Mentoring Programs. Wilder Research. Saint Paul.

114. Promote social marketing, education and awareness consistent with population wide health and wellbeing based on a deeper understanding of the socio-cultural underpinnings of obesity and other risk factor in Nauru. Settings-based such as schools, workplaces, churches, homes, etc… are to be considered;

115. Support/ promote new social or consumer movements (or piggy-back on existing compatible social movements e.g. environment, indigenous culture revival) especially among youth to trigger community and society level changes that will in turn facilitate individual behavior change around food consumption and other risk factors (e.g. alcohol, tobacco consumption and physical activity). Consider some forms of financial incentives to encourage healthy behaviors (e.g. discounts on health insurance premiums);

116. Introduce and enforce policies vis-à-vis built environments that favor health seeking behaviors (walking/ cycling over motor vehicles, etc…), meanwhile, rezoning of land to ensure greater availability of space for healthy leisure and local food production.

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APPENDIX A

Table A.1: Source of water supply by expenditure deciles

Proportion of HH with Water Supply Source by Gender of HHH and Decile															
Decile: HH weekly pcae expenditure	**Desalination plant**			**Rain - water tank**			**Piped supply outside neighborhood**			**Other Water Source**			**All HH**		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	48.7	57.7	52.7	47.4	42.3	45.1	0.0	0.0	0.0	3.9	0.0	2.2	100.0	100.0	100.0
2	35.5	38.6	36.6	58.3	61.4	59.4	2.9	0.0	1.9	3.3	0.0	2.2	100.0	100.0	100.0
3	42.5	34.6	39.7	50.3	60.2	53.8	7.2	5.1	6.4	0.0	0.0	0.0	100.0	100.0	100.0
4	31.8	9.8	25.0	65.5	90.2	73.2	0.0	0.0	0.0	2.7	0.0	1.8	100.0	100.0	100.0
5	39.0	44.8	40.7	58.3	47.9	55.2	0.0	7.4	2.2	2.7	0.0	1.9	100.0	100.0	100.0
6	28.5	38.2	31.6	64.5	50.7	60.1	2.6	0.0	1.8	4.3	11.1	6.5	100.0	100.0	100.0
7	20.5	48.1	30.6	67.4	46.9	59.9	0.0	0.0	0.0	12.0	4.9	9.4	100.0	100.0	100.0
8	50.1	25.1	42.2	44.2	74.9	53.9	5.7	0.0	3.9	0.0	0.0	0.0	100.0	100.0	100.0
9	21.1	21.3	21.2	64.2	67.1	65.2	6.4	6.2	6.3	8.3	5.3	7.3	100.0	100.0	100.0
10	24.4	29.3	26.1	62.1	65.3	63.2	4.4	5.4	4.8	9.1	0.0	5.8	100.0	100.0	100.0
Average all HH	**34.0**	**35.5**	**34.5**	**58.4**	**60.0**	**59.0**	**3.0**	**2.4**	**2.7**	**4.6**	**2.1**	**3.7**	**100.0**	**100.0**	**100.0**

Table A.2: All Persons 15 years & above: Poverty/Vulnerability Status by Level of Education Completed

All Persons 15 years & above: Poverty/Vulnerability Status by Level of Education Completed					
Highest level of education attained	**Primary**	**Secondary**	**Tertiary**	**Not stated**	**All persons**
HH/Persons below Food Poverty Line	0.0	0.0	0.0	0.0	0.0
HH/Persons Below Basic-Needs Poverty Line	46.8	24.2	8.6	28.7	24.9
HH/Persons Vulnerable within 20% of BNPL	3.4	8.2	2.3	10.5	8.2
HH/Persons Vulnerable within 20%-50% of BNPL	10.7	14.6	15.1	15.9	14.7
HH/Persons Vulnerable within 50%-100% of BNPL	22.5	20.2	11.4	14.2	19.5
Not Poor or Vulnerable	16.6	32.8	62.5	30.8	32.8
Totals	100.0	100.0	100.0	100.0	100.0
Number of persons	182	6075	152	753	7162

Table A.3: Sources of Income by Type of Income and Poverty/Vulnerability Status

% of income received by type of income	Wages & Salaries	Business Income	Subsistence for Sale	Subsistence for Home Consumption	Property Income	Remittances & Transfer Income	Irregular Gifts & other receipts	Gambling Income	Imputed Rent	Total Income
HH/Persons below Food Poverty Line	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HH/Persons Below Basic-Needs Poverty Line	18.6	1.4	14.8	13.3	11.1	22.5	9.6	11.7	8.1	13.3
HH/Persons Vulnerable within 20% of BNPL	6.6	0.0	12.4	8.7	1.5	1.0	5.5	9.3	4.4	5.2
HH/Persons Vulnerable within 20%-50% of BNPL	14.6	0.0	8.6	12.6	11.9	7.9	13.1	19.2	11.7	13.0
HH/Persons Vulnerable within 50%-100% of BNPL	20.0	0.9	29.1	20.6	15.4	18.5	15.3	26.6	17.6	18.4
Not Poor or Vulnerable	40.2	97.7	35.1	44.7	60.1	50.1	56.5	33.3	58.3	50.1
TOTAL INCOME	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Sources of Income by Type of Income and Poverty/Vulnerability Status

Income source by poverty/vulnerability status %	Wages & Salaries	Business Income	Subsistence for Sale	Subsistence for Home Consumption	Property Income	Remittances & Transfer Income	Irregular Gifts & other receipts	Gambling Income	Imputed Rent	Total Income
HH/Persons below Food Poverty Line	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HH/Persons Below Basic-Needs Poverty Line	55.7	0.1	1.9	1.1	10.6	3.8	5.6	2.3	19.0	100.0
HH/Persons Vulnerable within 20% of BNPL	50.9	0.0	4.1	1.8	3.7	0.4	8.3	4.6	26.3	100.0
HH/Persons Vulnerable within 20%-50% of BNPL	45.0	0.0	1.1	1.0	11.6	1.4	7.9	3.8	28.1	100.0
HH/Persons Vulnerable within 50%-100% of BNPL	43.2	0.0	2.7	1.2	10.6	2.2	6.5	3.7	29.8	100.0
Not Poor or Vulnerable	31.9	1.7	1.2	0.9	15.2	2.2	8.8	1.7	36.3	100.0
TOTAL INCOME	**39.9**	**0.8**	**1.7**	**1.1**	**12.7**	**2.2**	**7.8**	**2.6**	**31.2**	**100.0**

(ENDNOTES)

i. This classification used here is consistent with the methodology used by Estime et al. in other PICs. Ref. Estime, M.S.; Lutz, B.; Strobel, F. **Trade as a Trade as a structural driver of dietary risk factors for non-communicable diseases in the Pacific: an analysis of household income and expenditure survey data.** *Globalization and Health 2014, 10:48*

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