

REPUBLIC OF MALDIVES

TSUNAMI IMPACT ASSESSMENT 2005

A socio-economic countrywide assessment at household level,
six months after the tsunami



FOREWORD AND ACKNOWLEDGEMENTS

In 1997, the Government, recognizing the need for island-specific information on a wide variety of socio-economic characteristics at household level, undertook the first Vulnerability and Poverty Assessment (VPA-1). Seven years later, in 2004 this was followed by a second survey (VPA-2) to assess the progress in poverty reduction on all 200 inhabited islands over time. The results indicated a large reduction in poverty. And then, a few months later, on 26 December 2004, came the tsunami that affected the lives and livelihoods of a significant part of the population and destroyed houses, health posts, schools, harbours, jetties, and personal belongings across the country.

To gauge the island-specific impact of the tsunami at household level, under the directive of His Excellency President Maumoon Abdul Gayoom the Ministry of Planning and National Development (MPND) took the initiative to carry out a detailed investigation – the Tsunami Impact Assessment (TIA). The TIA has a similar coverage and methodology as VPA-2. It was conducted on all inhabited islands, tsunami-affected or not, and asked, where practicable, the same questions as VPA-2, which in turn were broadly the same as for VPA-1. In addition, in order to capture tsunami-specific information, it included for the most-affected islands extra modules on psychosocial and reproductive health, losses due to the tsunami, and tsunami aid received.

The TIA continues the principle of following a ‘panel’ of the same households over time: the sample covered most of the same households as in VPA-2, which in turn included about half of those covered in VPA-1. Thanks to the excellent registration system of the National Disaster Management Center, almost all displaced households could be traced in their new temporary locations. Thus, as well as being able to compare socio-economic conditions six months before the tsunami and six months afterwards, the surveys also maintained a unique panel that can be used to track household changes over a longer period.

Practically the same project team that carried out VPA-1 and VPA-2 also brought the TIA to a successful completion under the able guidance of Hans de Kruijk and Willem van den Anandel who guided all three studies. For the TIA they were assisted by Juliette Leusink and Dorieke Looije and by the MPND counterpart staff consisting of Mariyam Saba, Mohamed Firshan, Aishath Aniya, Fathmath Hashiya, Aishath Anees, Aishath Suzy and Aishath Shifaza. Huzaifa Zoomkawala prepared the data entry programme; Annemieke van der Steeg supervised data cleaning, Peter Stalker edited the final document and Najfa Shaheem Razee made the layout of the report.

The coordination of the TIA was ably undertaken by the then Strategic Planning Section of MPND headed by Asim Ahmed, Director Strategic Planning, and assisted by Aishath Saadh, Inaz Ahmed, Aminath Umaima, Aminath Shuha, Aminath Mushfiga Ibrahim and Ahmed Naeem. The Statistics Section of MPND prepared the questionnaires, enumerator manuals, conducted the training and supervised fieldwork and data processing. Fuwad Thowfeek, Assistant Director General, and Aishath Shahuda, Director Economic Statistics, coordinated the activities. Mariyam Niyaf, Aishath Laila and Hana Mansoor were in charge of



overall survey preparation and management. Hussain Niyaz, Ibrahim Naseem, Ahmed Nihad, Maharath Ahmed, Aminath Shirmeen and Fathmath Shifaza gave full support to the preparatory work. Jeehan Hassan Didi, Ibrahim Athif, Yasir Waseem and Mohamed Jawad worked as counterparts in data processing. They were assisted by Aishath Sajny and Gasim Abdul Sattar.

The fieldwork was carried out in June and July 2005 by 65 enumerators. The staff of the Administration and Finance Section of MPND organized the logistics of this large operation in close co-operation with all 20 Atoll Offices and 200 Island Offices. Thereafter, 25 data entry operators edited, coded and transferred the written information from the questionnaires in electronic format.

Financial and technical assistance was provided by UNDP in partnership with UNFPA. Throughout the study, the staff of the UNDP Office in Male' especially Abdul Bari Abdulla, Saeeda Umar and Ibrahim Nasir provided valuable assistance and logistical support. The staff of UNFPA, especially Dunya Maumoon, guided Ahmed Afaal and Sheena Moosa to include the psychosocial and reproductive health modules in the study.

The support and valuable contributions of all persons mentioned above are gratefully acknowledged. Finally, we are extremely grateful to the thousands of respondents who have answered (practically without any non-response) sometimes very personal questions under difficult circumstances.

In addition to gauging the socio-economic impact of the tsunami, the TIA will be a valuable tool in informing development planning as the country recovers from the effects of the tsunami.



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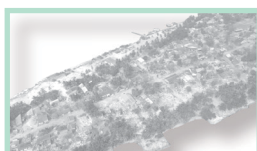
CONTENTS

v

FOREWORD AND ACKNOWLEDGEMENTS	i
CONTENTS	v
List of Figures	vii
List of Tables	ix
Box	ix
MAP OF MALDIVES - NORTH (WITH TSUNAMI IMPACT MARKINGS)	x
MAP OF MALDIVES - SOUTH (WITH TSUNAMI IMPACT MARKINGS)	xi
ACRONYMS AND ABBREVIATIONS	xii
EXECUTIVE SUMMARY	xiii
Socio-economic situation at the household level	xiii
Macro-economic developments	xv
Challenges ahead	xvi
CHAPTER I - INTRODUCTION AND ECONOMIC BACKGROUND	I
Sources of economic development	5
Effects of the tsunami	8
CHAPTER 2 - THE TSUNAMI IMPACT ASSESSMENT	13
Sample design and methodology	13
Limitations	15
Using the CD ROM	16
CHAPTER 3 - MAJOR DAMAGE, REPAIR AND REPLACEMENT	17
Household size	18
Food supplies	20
Aid received	23
Consumer durables	26
Education	28
Housing	29
Infrastructure	30
CHAPTER 4 - PSYCHOSOCIAL AND REPRODUCTIVE HEALTH	39
Psychosocial impacts	39
Findings	41
Reproductive health	54
Objectives of the study	55
CHAPTER 5 - INCOME AND POVERTY	63
Concepts	64
Income	65
Income poverty	69
Poverty dynamics	77
Poverty Profiles	79



CHAPTER 6 - EMPLOYMENT	83
Labour force and employment	83
Unemployment	85
Earnings	92
CHAPTER 7 - REMAINING CHALLENGES	95
Long-standing challenges	95
TECHNICAL NOTE 1. THE MEASUREMENT OF VULNERABILITY AND POVERTY	97
1. The Theory of Poverty Dominance	97
2. Empirical Application to Maldives	101
TECHNICAL NOTE 2. SAMPLING METHODOLOGY FOR TIAS ¹	103
TECHNICAL NOTE 3. PANEL ANALYSES	121
APPENDIX I	127
STATISTICAL ANNEX I	133
Explanatory Note to the Statistical Annex	133
General	134
Transport	140
Communication	147
Education 1	153
Education 2	160
Health 1	166
Health 2	172
Environment 1	179
Recreation	185
STATISTICAL ANNEX II	191
Education	191
Health	192
Drinking Water	193
Consumer Goods	194
Housing	195
Environment	196
Food Security	197
Employment	198



List of Figures

Figure 1-1 – Government employment, 1980-2005	2
Figure 1-2 – Changes in government employment, 1981-2004, percentage	2
Figure 1-3 – Government wage bill, employment and salaries, 1990-2005, current prices indexed to 1990	3
Figure 1-4 – End-of-year debt, 1994-2005	4
Figure 1.5 – Labour force developments, 1995-2005	5
Figure 1-6 – Tourism and fisheries share in GDP, constant 1995 prices	6
Figure 1-7 – Tourist arrivals from Europe and total, 1979-2004.	7
Figure 1-8 – Relationship between the annual increase in European tourist arrivals and the annual dollar/euro exchange rate, 1979-2004.	7
Figure 1-9 – Current account balance and gross official reserves, 1986-2006.	9
Figure 1-10 – Unit values of imports, building materials, capital goods and total, annual percentage change, 1995-2006	9
Figure 3-1 – Average household size, 1997-2005	19
Figure 3-2 – Average household size 2005, poorest and richest 50 percent	19
Figure 3-3 – Food crises, by displacement group, 2004-05	21
Figure 3-4 – Food crises by impact level, 2004-05	21
Figure 3-5 – Food shortages, by month and cause, after the tsunami, to July 2005	22
Figure 3-6 – Food shortages, by month and displacement level, affected population only	22
Figure 3-7 – Aid received, by displacement level	23
Figure 3-8 – Aid received, by impact level	24
Figure 3-9 – Sources of financial aid	25
Figure 3-10 – Aid received, by item, in January 2005	25
Figure 3-11 – Lost consumer goods, by displacement level	27
Figure 3-12 – Replacement rates of major consumer goods, by income groups	27
Figure 3-13 – Books and uniforms lost or damaged, by impact level	28
Figure 3-14 – The development of Dhuvaafaru island	29
Figure 3-15 – Damage to electricity infrastructure, by impact level	30
Figure 3-16 – Accessibility, by impact level	31
Figure 3-17 – Damage to coastal protection, by impact level	31
Figure 3-18 – Damage to sanitary systems, by displacement level	32
Figure 3-19 – Problems with accumulated garbage, by displacement level	33
Figure 3-20 – Damage to water supply systems, by displacement level	33
Figure 3-21 – Days of water shortage, by impact level	34
Figure 3-22 – Population reporting damage to agricultural fields, by displacement level	35
Figure 3-23 – Percentage of vessels damaged, by extent and displacement level	37
Figure 4-1 – Survey population by age	40
Figure 4-2 – Psychosocial distress, by displacement level	42
Figure 4-3 – Rating of health, by age group	43
Figure 4-4 – Ratings of life in general, by sex	43
Figure 4-5 – Life in general, by sex and age	44
Figure 4-6 – Main causes of worry	45
Figure 4-7 – Six main causes of worry, by psychosocial group, and sex	46
Figure 4-8 – Response to anxiety or worry	46
Figure 4-9 – Proportion talking to friends or family, by age	47



Figure 4-10 – Difficulty in sleeping due to tsunami-related worries, by sex	48
Figure 4-11 – Difficulty in sleeping due to tsunami-related worries, by sex, PDEs and PDIs	48
Figure 4-12 – Change in appetite due to tsunami-related worries	49
Figure 4-13 – Changes in headaches following the tsunami, by sex	49
Figure 4-14 – Employment situation, by psychosocial distress level	50
Figure 4-15 – Hopes for the future, by sex and age group	51
Figure 4-16 – Satisfaction with family's safety, by sex and age group	51
Figure 4-17 – Violence encountered, by psychosocial distress level and sex	52
Figure 4-18 – Relationship with partner	53
Figure 4-19 – Relationship with family	53
Figure 4-20 – Things that helped people cope	54
Figure 4-21 – Age distribution of respondents, by displacement level	55
Figure 4-22 – Proportion of women moderately distressed, by age group and displacement level	56
Figure 4-23 – Proportion of women in good health, by distress level and displacement group	56
Figure 4-24 – Pregnancy status, by age group and displacement level	57
Figure 4-25 – Planned and unplanned pregnancies, by age and displacement group	58
Figure 4-26 – Pre-tsunami contraceptive use, by age group and displacement level	59
Figure 4-27 – Pre- and post-tsunami contraceptive use, by age group and displacement level	59
Figure 4-28 – Reasons for stopping contraceptive use, by displacement level	60
Figure 4-29 – Desire to have more children, by age group and displacement level	61
Figure 4-30 – Suggestions for improvement of reproductive health services	61
Figure 5-1 – Household income per person per day, Maldives, Male' atolls, 1997–2005	63
Figure 5-2 – Mean household incomes, 1997–2005, Rf. per person per day	66
Figure 5-3 – Median household incomes, 1997–2005, Rf. per person per day	66
Figure 5-4 – Composition of household income, 1997–2005, Maldives	67
Figure 5-5 – Composition of household income, 1997–2005, Male'	68
Figure 5-6 – Composition of household income, 1997–2005, atolls	68
Figure 5-7 – Composition of household income, 1997–2005, PDEs	69
Figure 5-8 – Composition of household income, 1997–2005, PDIs	70
Figure 5-9 – Composition of household income, 1997–2005, host islands	70
Figure 5-10 – Cumulative population ranked from poor to rich, 1997–2005, Maldives	71
Figure 5-11 – Cumulative population ranked from poor to rich, 1997–2005, Male'	72
Figure 5-12 – Cumulative population ranked from poor to rich, 1997 – 2005, atolls	73
Figure 5-13 – Cumulative population ranked from poor to rich, 1997–2005, PDEs	74
Figure 5-14 – Cumulative population ranked from poor to rich, 1997–2005, PDIs	75
Figure 5-15 – Cumulative population ranked from poor to rich, 1997–2005, host islands	75
Figure 5-16 – Cumulative population ranked from poor to rich, by displacement level, 1997–2005	76
Figure 5-17 – Cumulative population ranked from poor to rich, by displacement level, 1997–2005, lowest income groups	76
Figure 5-18 – Income poverty dynamics 1997–2005, atoll population, Rf.15 poverty line	78
Figure 5-19 – Income poverty dynamics 1997–2005, atoll population, Rf. 21 poverty line	78
Figure 5-20 – Major determinants of household income 2004 and 2005	80
Figure 5-21 – Characteristics of poverty and vulnerability	81
Figure 6-1 – Employment and unemployment, 15 years and over, 2004 and 2005	83
Figure 6-2 – Employment and unemployment, men and women, 15 and older, 2004 and 2005	84

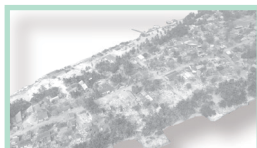


Figure 6-3 – Employment and unemployment, young men and women aged 15 to 24, 2004 and 2005	86
Figure 6-4 – Employed labour force, by sex and displacement level, 2004 and 2005	87
Figure 6-5 – Unemployment rates, young men and women, 15 to 24, 2004 and 2005	87
Figure 6-6 – Employment by type of activity, atolls, 2004 and 2005	88
Figure 6-7 – Employment by type of activity, Male', 2004 and 2005	89
Figure 6-8 – Employment by type of activity, PDEs, 2004 and 2005	90
Figure 6-9 – Employment by type of activity, PDIs, 2004 and 2005	90
Figure 6-10 – Employment by type of activity, host islands, 2004 and 2005	91
Figure 6-11 – Changes in manufacturing employment, by displacement level and sex, 2004 and 2005	91
Figure 6-12 – Change in income earned from tourism by atoll, 2005	92
Figure 6-13 – Changes in income earned from tourism by impact level, 2005	93
Figure 1. Frequency distributions for two regions A and B	99
Figure 2. Cumulative frequency distributions for two regions A and B	100
Figure 3. Intersecting cumulative frequency distributions for regions A and B	100
Figure 4. Poverty gap index for two regions A and B	101

List of Tables

Table 2-1 – Tsunami impact classification	15
Table 2-2 – Tsunami displacement classification	15
Table 3-1 – Rice, sugar and flour received by displacement and impact level, percentage	26
Table 3-2 – Replacement value of consumer durables, Rf. millions	26
Table 3-3 – Value of traded agricultural commodities in Male', 2002-2005, Rf. millions	36
Table 5-1 – Poverty headcount ratios, Maldives, Male', atolls	72
Table 5-2 – Poverty headcount ratios, PDEs, PDIs and host islands	73
Table 5-3 – Percentage distribution of panel households, by income class, 2004-2005	77
Table 1. Tsunami Impact Categories	104
Table 2: Size and allocation of samples in atolls	105
Table 3.1: Number of households to be sampled by islands	106
Table 3.2: Size and allocation of sample in Male	109
Table 4: Computation of design weights for Male by strata	110
Table 5: Average value of Vulnerability and poverty indices by quintiles	112
Table A3.1: Poverty regressions 2004 and 2005, One-period static analysis	122
Table A3.2: Regression results of dynamic analysis: Fall & Escape, 15 Rufiyaa per person per day	125

Box

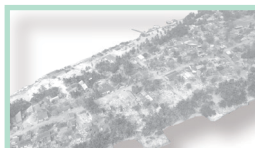
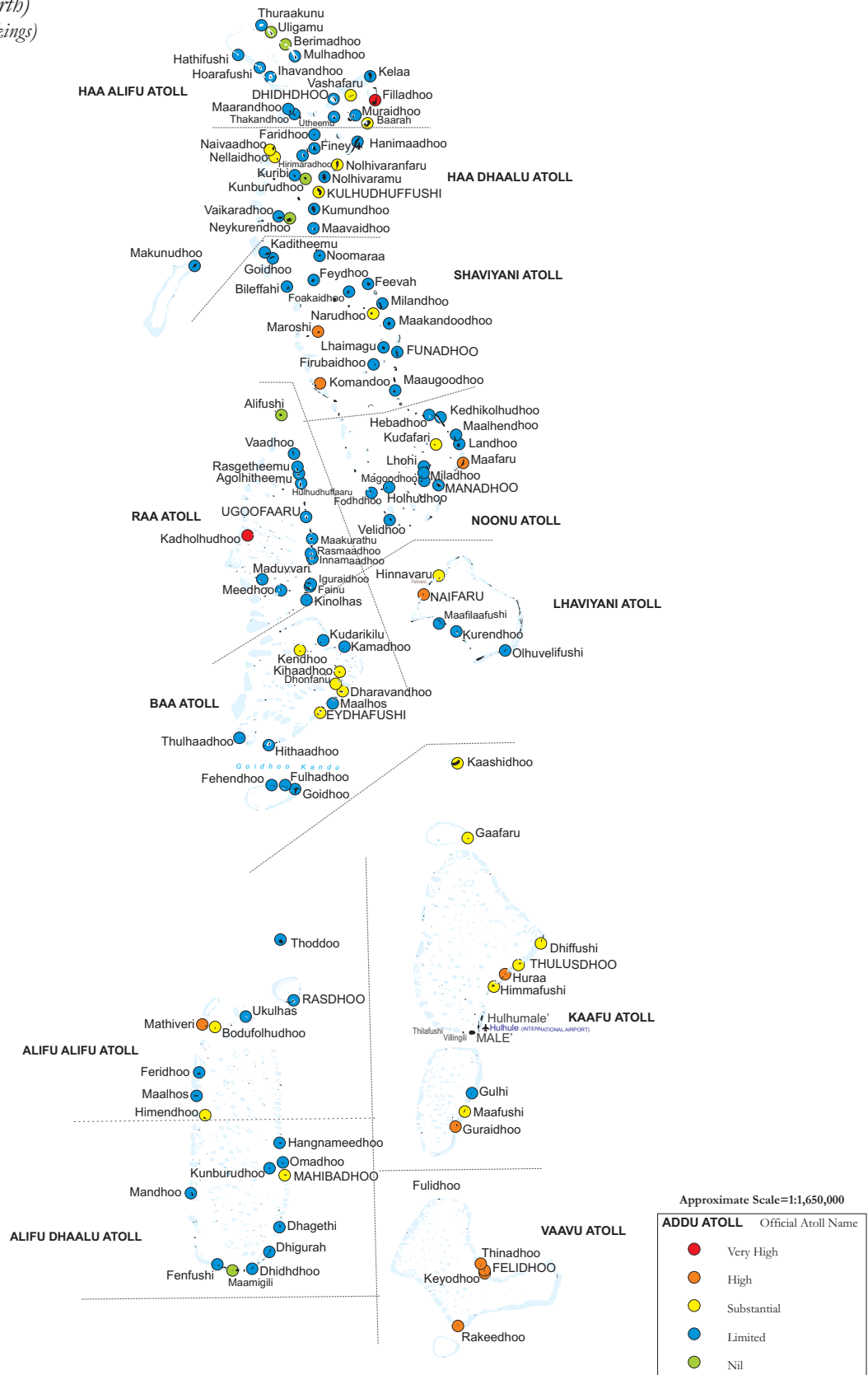
Box 1.1 – The 2004 tsunami	11
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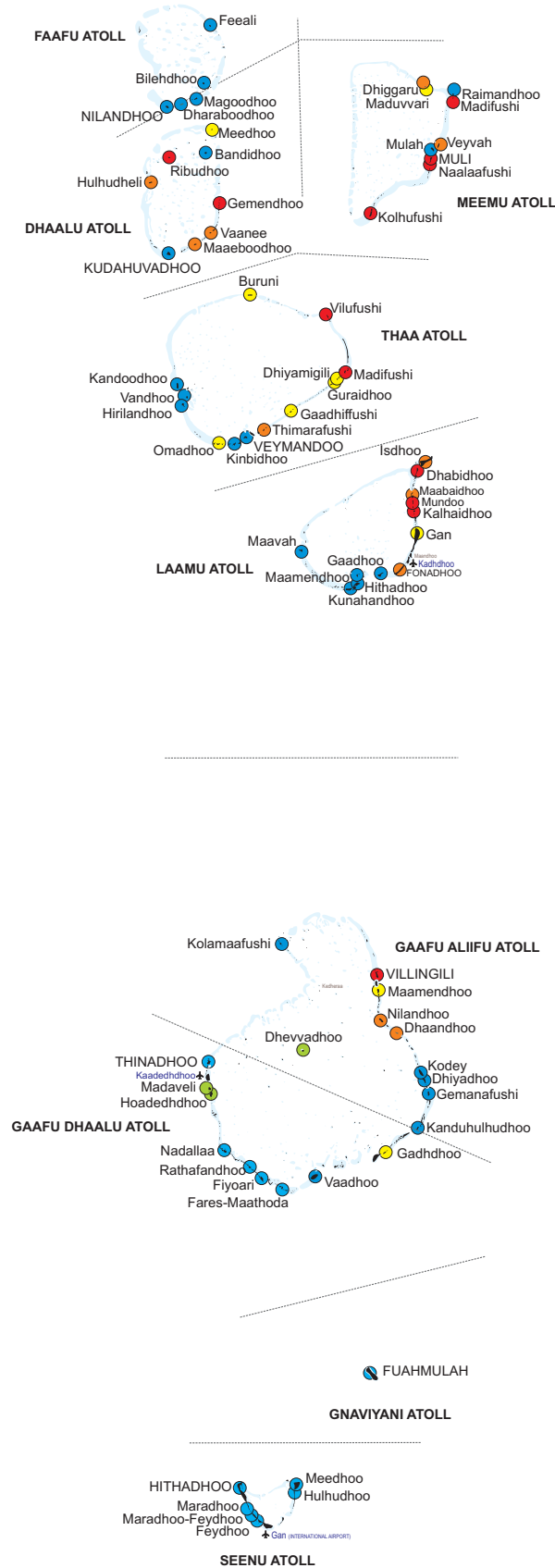
TSUNAMI IMPACT ASSESSMENT 2005

Map of Maldives (North)
(with tsunami impact markings)

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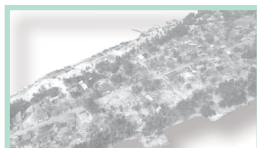


Map of Maldives (South)
(with tsunami impact markings)



ACRONYMS AND ABBREVIATIONS

CHW	Community health workers
GDP	Gross domestic product
HIES	Household Income and Expenditure Survey
HVI	Human vulnerability index
IMR	Infant mortality rate
LDC	Least developed country
MDG	Millennium Development Goal
MIFCO	Maldives Industrial Fisheries Company Ltd..
MPND	Ministry of Planning and National Development
NDMC	National Disaster Management Center
NGO	Non-governmental organization
PDE	Persons/population displaced externally
PDF	Portable document format
PDI	Persons/population displaced internally
PPP	Purchasing power parity
Rf	Maldivian rufiyaa
TIA	Tsunami Impact Assessment
UNDP	United Nations Development Programme
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
VPA	Vulnerability and Poverty Assessment
VPA-1	First Vulnerability and Poverty Assessment, 1997/98
VPA-2	Second Vulnerability and Poverty Assessment, 2004
VPS	Vulnerability and Poverty Survey
VRS	Vital registration system
WHO	World Health Organization



EXECUTIVE SUMMARY

Immediately after the tsunami, the Maldivian population faced a grim situation. Worst off were many people on the islands: some had lost family members and many others had suffered psychosocial stress and faced serious health threats from damaged water supplies. There were also losses of property as well as threats to livelihoods, since on many inhabited islands, as well as on a number of resorts, the tsunami destroyed physical infrastructure and damaged agricultural land.

Thousands of people had to leave their homes – and many have yet to return. Six months after the tsunami, about 11,000 persons, 4 percent of the total population, were still living in temporary accommodation. Of these, more than 10,000 were on the 14 most-affected islands¹ and another 1,000 on other islands. Since reconstruction takes time, the situation had changed only marginally even by the second quarter of 2006.

There are also persistent psychosocial problems. On the 14 most-affected islands about two-thirds of women, and more than half of men, continued to have difficulties with sleeping or eating or having less hope for the future or feeling less satisfied with the safety of their family after the tsunami. For both men and women, the main worries were housing and the future of their children. But not everything was negative. Around 30 percent of married people, men and women, felt that after the tsunami the relationship with their partners had improved, though about five percent considered it had worsened. Similarly, around 40 percent of women and half of men felt that their relationships with their families had improved while less than five

percent indicated that they had deteriorated.

People returned fairly quickly to employment. Six months after the tsunami the majority of people of the most-affected populations had started work again. The extent of employment did not, however, seem to be linked to levels of stress. Indeed there appears to be no clear relationship between levels of psychosocial distress and the characteristics of the labour force.

Much of the lost property has now been restored or replaced. By the end of 2006 or the beginning of 2007, as a result of ongoing housing projects, most displaced people should have new permanent residences. People have also replaced most of their lost consumer durables: by July 2005, households had, for example, replaced 80 percent of gas cookers and washing machines and about 60 percent of TV sets.

Socio-economic situation at the household level

The tsunami badly affected the mainstay of the Maldivian economy, the tourist resorts. By June 2005, bed capacity was still more than 20 percent below that in the two previous years and tourism bed-nights were only running at half the rate of 2004. This had serious knock-on effects particularly for the workforce. Although the resorts generally did not lay off their local staff, many workers lost out because they normally rely for a substantial proportion of their income on service charges and tips.

The tsunami also damaged equipment for traditional fish processing – a major activity on the islands – resulting in reduced output. This was

¹ For four of these islands the population was displaced to other islands while on the other ten islands most people moved to temporary accommodation on their own island.



evident in 2005, a year when fish catches were very high and industrial processing capacity, mainly in MIFCO, was stretched to the limit. As a result, not all the fish could be processed and some was wasted.

The economic effects on the inhabited islands varied between different population groups. People on the ten major host islands to which people were displaced benefited from substantial increases in economic activity – incomes for the original population went up by about one-third. Those who had moved to these islands, on the other hand, suffered economic losses, though by the middle of 2005 their incomes were back to about 80 percent of pre-tsunami levels.

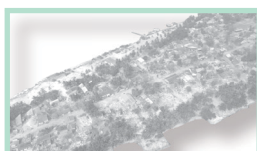
There were also knock-on effects in Male'. As a result of reduced trade as well as disturbances in the property markets, incomes fell by about 10 percent. However, in the rest of the country, covering most of the atoll population, incomes actually went up. These are of course broad averages and the experiences of households or individuals in each of these groups will vary greatly.

Some of the benefits arose from repair and reconstruction which created additional job opportunities in construction and transport. These partially compensated for the losses in other sectors. Communities also benefited from various types of support – as the international community, local donors, and the government helped affected households re-establish themselves. There was also an additional cushion for government employees; a few months before the tsunami they had received major salary increases – which provided further support for a substantial part of the population. Overall, the net income effect of this complex mix of positive and negative economic factors seems to have been positive: in June 2005, household incomes were about seven percent higher than in September of the previous year.

It is also important to consider impacts from both a short- and long-term perspective. For instance, people on the host islands who benefited in the short term from the arrival of displaced people could see these gains reversed in the long term when the visitors are resettled in their permanent locations. Other benefits will be longer lasting, especially the post-tsunami rebuilding of infrastructure.

The tsunami had a limited impact on other social indicators such as those for poverty, health and education that are included within the Millennium Development Goals. This is first because although people's incomes initially fell they subsequently recovered very quickly. As a result, there was a significant reduction in poverty. Between June 2004 and June 2005, the proportion of the island population with an income less than Rf. 15 per day fell from over 30 to around 20 percent. The second reason is that other MDG indicators, such as life expectancy and literacy, reflect long-term investment in health and education, and are thus more resilient and less likely to be affected by a short period of crisis. Indeed after the tsunami the people from the most-affected islands perceived that education and health facilities had actually improved. For the displaced population this was because they had moved to islands with facilities were already better, or that were upgraded to meet the needs of the expanded population.

It is also possible to use the panel studies within the VPAs and the TIA to track the experience of individual households of the island population. Over the past eight years these show considerable overall improvements, though they also signal continuing vulnerability. Using a poverty line of Rf. 15, the studies indicate that, between 2004 and 2005, more than half of those classified as 'poor' had managed to escape poverty but during the same period 10 percent of the 'non-poor' fell back into poverty.



This vulnerability is confirmed by considering the longer-term picture. From the 1997 VPA-1 onwards there was a fall in the proportion of poor people. However, only about two-thirds of those classified as 'non-poor' in 1997 remained non-poor throughout. Similarly, out of the 44 percent of the population classified as poor in 1997, only 7 percent remained so throughout; the other 13 percent classified as poor in 2005 were people who had fallen into poverty since 1997.

Macro-economic developments

The current status of the economy can be gauged by considering the major economic activities – tourism, fisheries and construction.

At the beginning of the new millennium, after a few difficult years the economy had been returning to its growth path of the previous decade. In 2003, growth had again reached more than eight percent and at the end of 2004 it was even higher. Furthermore, a number of new resorts were under construction, enhancing both current growth, through the construction sector, and prospective future growth through greater tourism capacity. The trade and transport sectors had also been expanding, especially after the August 2004 increase in government wages had boosted consumption.

Then came the shock of the tsunami. This brought many economic activities to a sudden halt. Even so the slowdown was briefer than might have been expected. Tourism recovered quite quickly. The tsunami hit during the peak period and largely wiped out the rest of the season. Nevertheless, by the middle of 2005 many resorts that had closed were back in business and tourist flows also started to revert to more normal levels: during the first four months of 2006 tourist arrivals were nearly double those of the first four months of 2005 and bed-nights were only about 8 percent below the record levels of 2004.

This recovery reflected a reassertion of underlying economic factors. From 2003, much of the growth in tourism had been due to the strengthening of the euro against the rufiyaa, making Maldives cheaper for Europeans. The tsunami did reduce tourism but once initial fears of a repeat tsunami had subsided, these fundamentals reasserted themselves allowing tourism to rebound sharply.

Fishing too has done well. In fact, in 2005 fishing communities enjoyed the highest catch on record. Although between 2004 and 2005 the number of trips fell by 10 percent, the catch per trip increased substantially so that the total catch was about 30 percent above the average of the preceding five years. Subsequently it dropped back: during the first four months of 2006, the catch declined by about 15%, but was still at the levels of 2003 and 2004.

The construction sector too continues to boom. The extra activity generated in the aftermath of the floods, including relocating people and providing accommodation, and refurbishing damaged resorts and infrastructure on many islands, stimulated additional opportunities. This is evident from data on the value of imported building materials and the number of foreign construction workers both of which in the past few years have shown sharp increases. Up to 2003, using constant 2002 prices, annual construction material imports were about Rf. 800 million. Then, due to the development of additional resorts, they started rising rapidly – to Rf. 1.6 billion in 2004 and Rf. 1.9 billion in 2005, an increase of about 15 percent. And they continued at the 2005 rate in the first three months of 2006.

The tsunami put pressure on government finances and on the external current account as government and export revenues shrank due to the reduction in tourism activity. At the same time emergency and reconstruction efforts increased government expenditures along with imports.



These two developments resulted in sharp increases in deficits of both the government budget and the current account, even though the major part of tsunami relief aid was received in the form of grants. Nonetheless, thanks to continuing strong economic growth, the government and foreign debts remain in relative terms well below those in the early 1990s and as percentage of export earnings foreign debt is projected to remain well below ten percent.

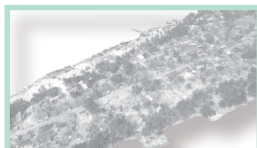
It should also be emphasized that the tsunami's worst effects were experienced by a relatively small group of people. A number of households lost family members, went through traumatic experiences and saw both personal and business property destroyed. But these terrible events affected only a small percentage of the total population. And even they, in most cases, ultimately picked up the threads of their lives.

Challenges ahead

The speed of recovery from the tsunami has been impressive. But a number of problems remain, including the reconstruction of housing, water and sanitation systems, and tackling the reduced accessibility of islands due to difficulties with the reef, the loss of jetties, and shallower lagoons.

In addition to tsunami-related issues, Maldives faces a number of persistent ongoing challenges. These include

- *Education* – For the island population one of the highest priorities is the quality of education – a concern expressed in both VPA surveys and the TIA.
 - *Health services* – On some islands, many people still do not have adequate medical services, due to the non-availability of doctors or medicines.
 - *Water supplies* – A large part of the atoll population still lack secure supplies of drinking water.
 - *Social problems in Male'* – Continuing migration from the islands is creating high population densities and crowded living conditions that can lead to stress. This, combined with large numbers of unemployed youth, could provide a fertile breeding ground for social unrest, drug abuse and violence.
- *Disparities* – Large income and non-income disparities between Male' and the atolls.
 - *Youth unemployment* – In both Male' and in the atolls there is clearly a mismatch between the aspirations of young people and the realities of the labour market.
 - *Vulnerability* – Although far fewer people are poor, the panel analysis shows that many people can still rapidly slip into poverty.



CHAPTER I

INTRODUCTION AND ECONOMIC BACKGROUND

Over the past quarter of a century, Maldives has witnessed nothing short of an economic revolution. The expansion of tourism has fuelled rapid economic growth. The tsunami caused a temporary pause but growth has now resumed.

Over the past 20 years the economy of Maldives has grown rapidly, with an annual rate of growth of more than 8 percent. Per capita GDP increased on average by about 5.5 percent annually – from less than \$800 in 1984 to around \$2,500

today. The economic structure and its development over time are summarized in Table I-1.

Much of this activity is within the public sector, which over recent years has accounted for an increasing proportion of employment. Excluding those working for public corporations, between 1980 and 2004 the number of Maldivian citizens employed directly by the Government increased from less than 6,000 to around 30,000 – from 3.5 to 10 percent of the total population. This increase,

Table 1-1 – Gross domestic product by activity, percentage, 1984-2006

Sector	1984	1989	1994	1999	2004	2005	2006*
Primary sector	19	17	13	10	9	11	9
Agriculture	7	5	4	3	2	3	2
Fisheries	12	11	8	6	6	7	6
Coral and sand mining	1	1	1	1	1	1	1
Secondary sector	13	12	13	15	16	17	17
Manufacturing	10	9	10	8	8	8	7
Electricity ¹				3	4	5	4
Construction	3	3	3	4	4	5	6
Tertiary sector	68	71	74	75	75	72	74
Distribution	5	5	5	5	4	4	4
Tourism	29	33	34	33	32	23	29
Transport	4	9	11	14	15	18	16
Financial services ²				3	3	3	3
Real estate	5	5	5	5	4	4	4
Business services	12	8	9	3	3	3	3
Government administration services	9	9	9	11	13	16	16
Education and other services ²				2	2	2	2
FISIM	-4	-4	-4	-4	-4	-4	-4
Imputed rent of owner-occupied dwellings	8	6	5	3	3	3	2
Total	100	100	100	100	100	100	100
GDP (Rf. million)	1,615	2,637	3,978	6,056	8,312	7,934	9,352
GDP per capita (Rf.)	9,074	12,637	16,559	22,761	28,715	26,715	31,294
GDP per capita (\$)	771	1,074	1,407	1,934	2,440	2,271	2,445
Average annual growth rate of GDP		10	9	9	7	-5	18

Notes: 1. For 1984 to 1999, electricity was included in manufacturing

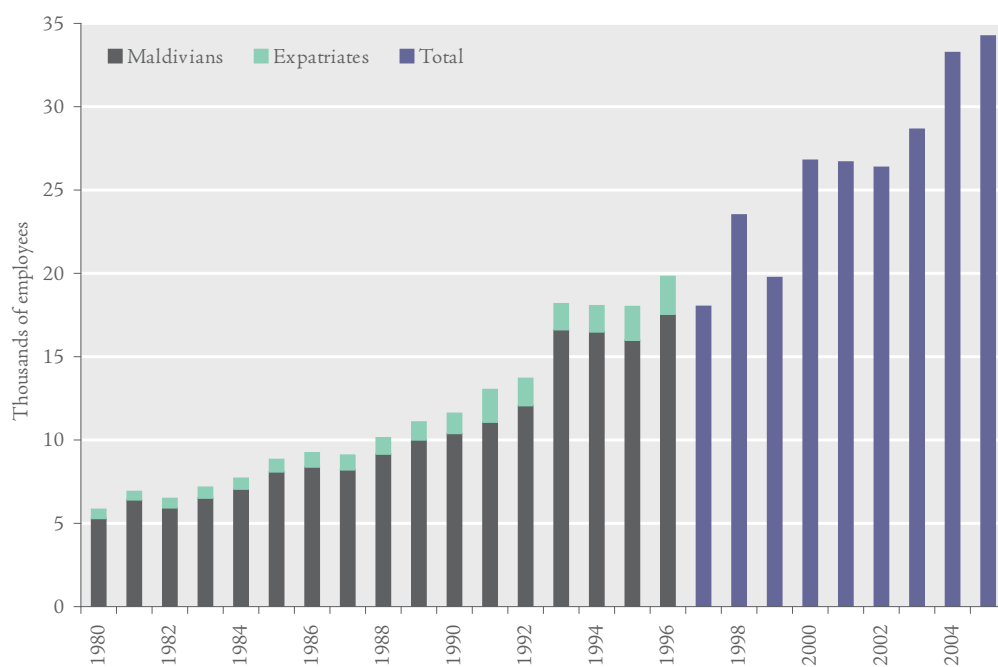
2. For 1984 to 1999, this was included in business services

* 2006 figures are forecasts

Source: Calculated from Statistical Yearbooks, various years, MPND

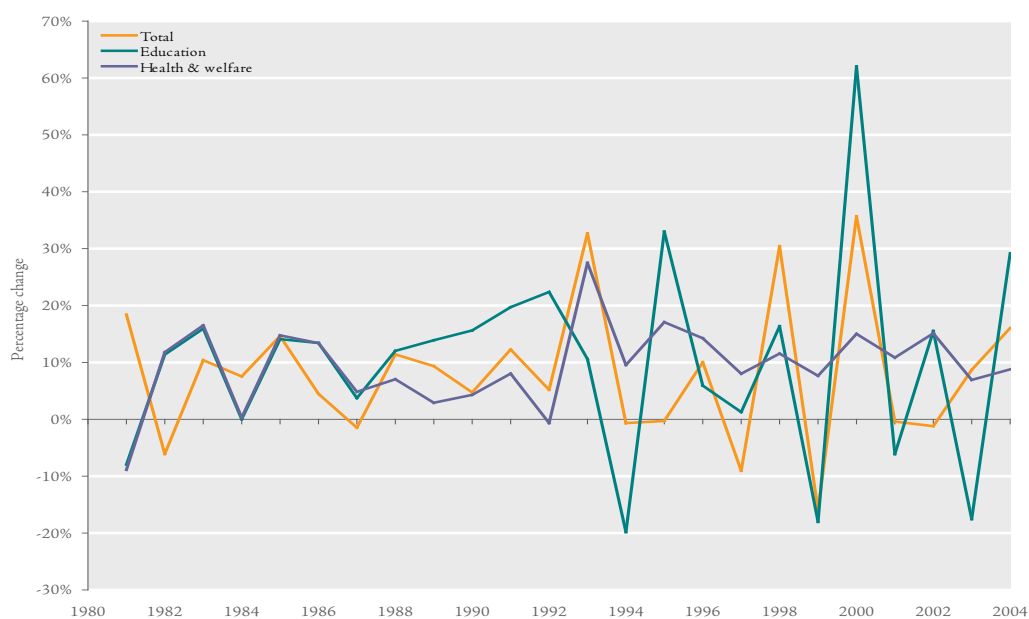


Figure 1-1 – Government employment, 1980-2005

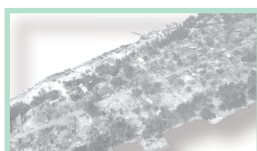


Note: Since 1996, there has been no breakdown by nationality
 Source: Calculated from Statistical Yearbooks, various years, MPND

Figure 1-2 – Changes in government employment, 1981-2004, percentage



Source: Calculated from Statistical Yearbooks, various years, MPND



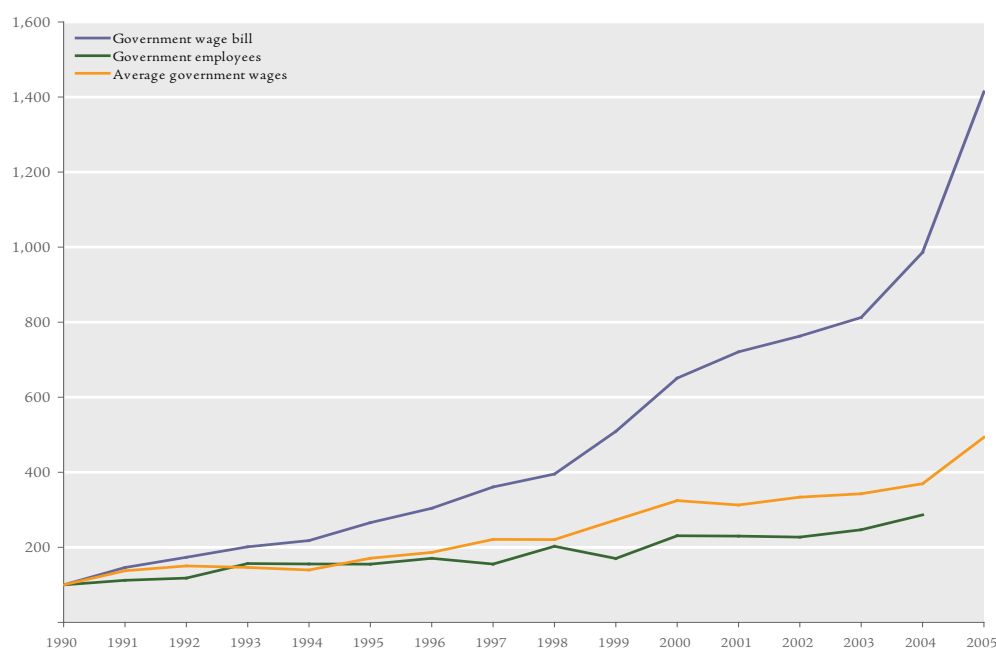
amounting to around 7.5 percent per year, is illustrated in Figure 1-1.

Much of this growth corresponds to an expansion in health, education and other social services. Between 1980 and 2005, the proportion of employees in these services rose from around 25 to nearly 40 percent, the total number increasing from 1,000 to 9,000. However, many of these government workers are expatriates who work as teachers, doctors, nurses and in various other professions; over the same period, their numbers increased from 500 to around 3,000. Nevertheless, this growth has not been uniform. Indeed government employment has been rather volatile, with increases in some years and sharp reductions in others (Figure 1-2).

Recent years have also seen increases in government salaries. Between 1990 and 2005, average government remuneration (salaries, allowances and pensions) increased more than five-fold. The developments of government employment, the salary bill and average salaries are shown in Figure 1-3.

This expansion of government activity has been financed mostly through taxes and other revenues. A smaller part, however, has come through loans, both domestic and foreign, which has resulted in significant levels of government debt. Between 1994 and 2004, debt had been falling as a proportion of GDP from 90 to around 45 percent. Following the tsunami, however, this proportion

Figure 1-3 – Government wage bill, employment and salaries, 1990-2005, current prices indexed to 1990



Source: Calculated from Statistical Yearbooks, various years, MPND



rose to around 55 percent and by the end of 2006 should be around 70 percent – which is still below the levels in the early 1990s. The progress of the debt is shown in Figure 1-4.

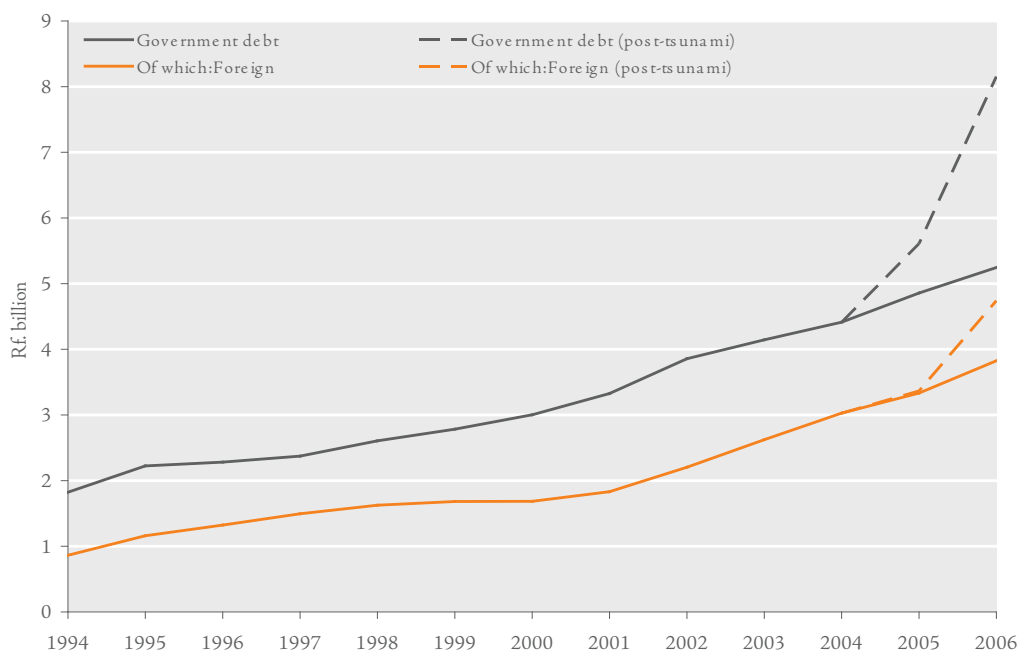
In addition to government foreign borrowing, there is also significant private borrowing from overseas, mostly for the development of resorts and other tourism-related facilities. In 1994 this accounted for half of foreign borrowing, though by 2005 this proportion had dropped to around 25 percent.

As a result of the tsunami, government debt increased sharply between 2004 and 2006 – by around Rf. 3 billion, around two-thirds of which

was domestic debt. As a result the share of overall government debt accounted for by foreign debt fell from 70 to 60 percent.

Economic expansion in Maldives has also been accompanied by a change in the structure of the labour force. With the national labour force growing more slowly than the demand for workers, many more foreigners had to be recruited. Between 1985 and 2005 the proportion of foreigners in the workforce increased from under 2 percent to almost one-third (Figure 1-5). As in other countries, the immigrant workforce is employed at both the top and bottom ends of the labour market, doing work that local people are unable or unwilling to do. At the top there are expatriates in professions such

Figure 1-4 – End-of-year debt, 1994-2005



Source: Calculated from Statistical Yearbooks, various years, MPND

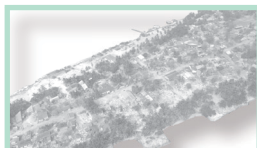
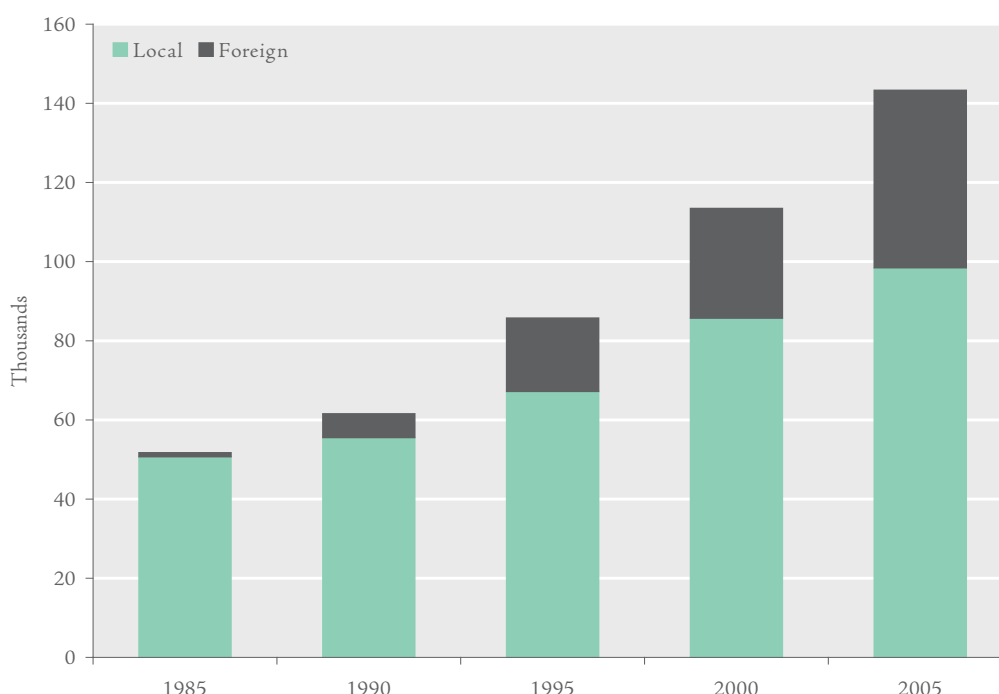


Figure 1.5 – Labour force developments, 1995-2005

Source: Calculated from Statistical Yearbooks, various years, MPND

as medicine and education for which there are too few trained Maldivians. At the lower end there are many foreign unskilled workers and craftsmen such as construction labourers, sales staff, domestic servants, waiters and room attendants doing work that many local people reject.

For local workers there is a clear mismatch between supply and demand. Many young Maldivians are leaving school but remain idle because they cannot find work for which they have the necessary skills – or because the work available does not match their aspirations, in terms of either career or remuneration.

Sources of economic development

The driver for rapid economic development has been tourism. Over the past 20 years, as narrowly defined to include only hotel and restaurant services¹,

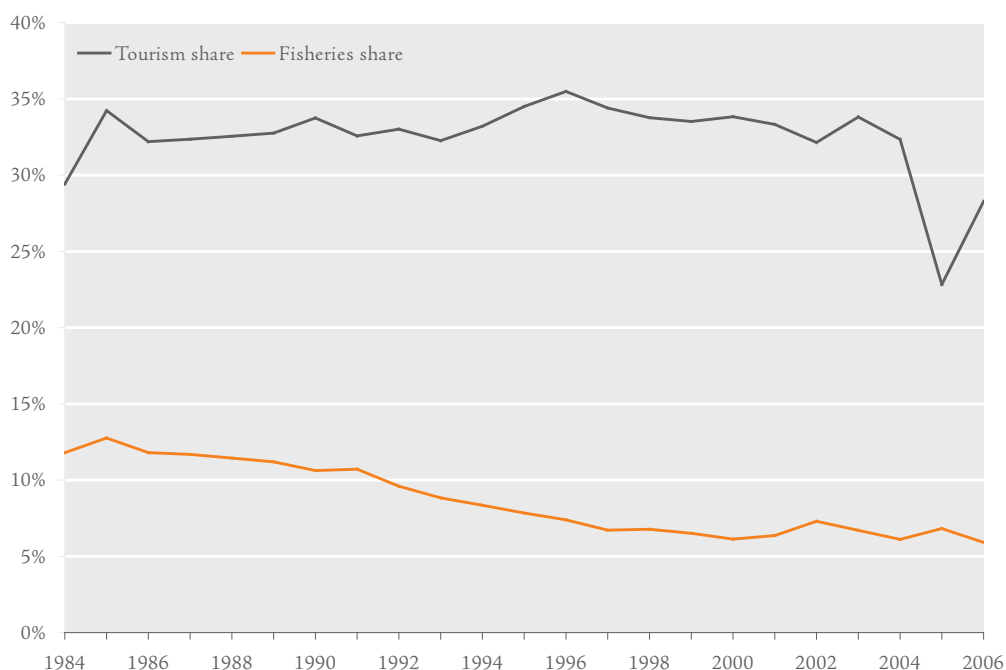
¹ ISIC code H. The United Nations' International Standard Industrial Classification of All Economic Activities (ISIC), revision

tourism accounts for about one-third of GDP. However, including other activities that in practice are devoted exclusively to tourism, such as parts of manufacturing, construction, trade, transport and other services, tourism would represent well over half of the economy.

The other activity of importance outside tourism, especially in terms of employment and income on the islands, is fisheries and its related processing. However, even though output of fisheries has been increasing over time, the rate of increase was lower than that of tourism-related activities and its relative share therefore declined from about twelve percent in the 1980s to only half that in the recent past. These developments are shown in Figure 1-6. Including all supporting activities in tourism and fish processing in fisheries would give an even sharper dichotomy. In this scenario, between 50 and 60 percent of GDP would be accounted for by

³, is used. Group H covers hotels, boarding houses, restaurants, canteens and the like.



Figure 1-6 – Tourism and fisheries share in GDP, constant 1995 prices

Source: Calculated from Statistical Yearbooks, various years, MPND

tourism while the share of fisheries would decline from about one quarter of the economy twenty five years ago to about twelve percent today.

Most tourists to Maldives come from Europe. And though the total number of tourists has been rising, the proportion of Europeans also continues to increase. Since the early 1980s, the share of Europeans among short-term arrivals of foreigners has risen from about 70 to close to 80 percent. International statistics count all non-resident foreigners as 'tourists'. However this will include substantial numbers of business visitors. Excluding visitors from Japan, the Republic of Korea and Malaysia, most of whom are probably business visitors, Europeans accounted for nearly 80 percent of tourist arrivals in the early years, and for nine out of ten in the past five years (Figure 1-7).

Nevertheless even for Europeans Maldives is a marginal destination. The half million visitors to Maldives represent less than one in a thousand

European holidays. And the main niche that Maldives occupies is highly competitive. Although some people come for diving or other specific purposes, the majority of Europeans are seeking the '3 Ss' – sun, sand and sea – for which there is a wide choice of competing destinations, in the Caribbean, the Mediterranean, Africa and the Indian Ocean. Each of these destinations has its own attractions and disadvantages and in many cases, the tourist's choice is determined by price.

It comes as no surprise therefore that the changes in European tourist arrivals in Maldives closely match changes in exchange rates – and particularly changes in the rates between the euro and the dollar since, with only occasional adjustments, the rufiyaa is pegged to the dollar. This is illustrated in Figure 1-8. Which shows that, over the past fifteen years, tourist arrivals and exchange rate movements have been closely linked, implying that the choice of visiting Maldives seems to be very price-sensitive.

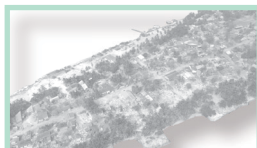
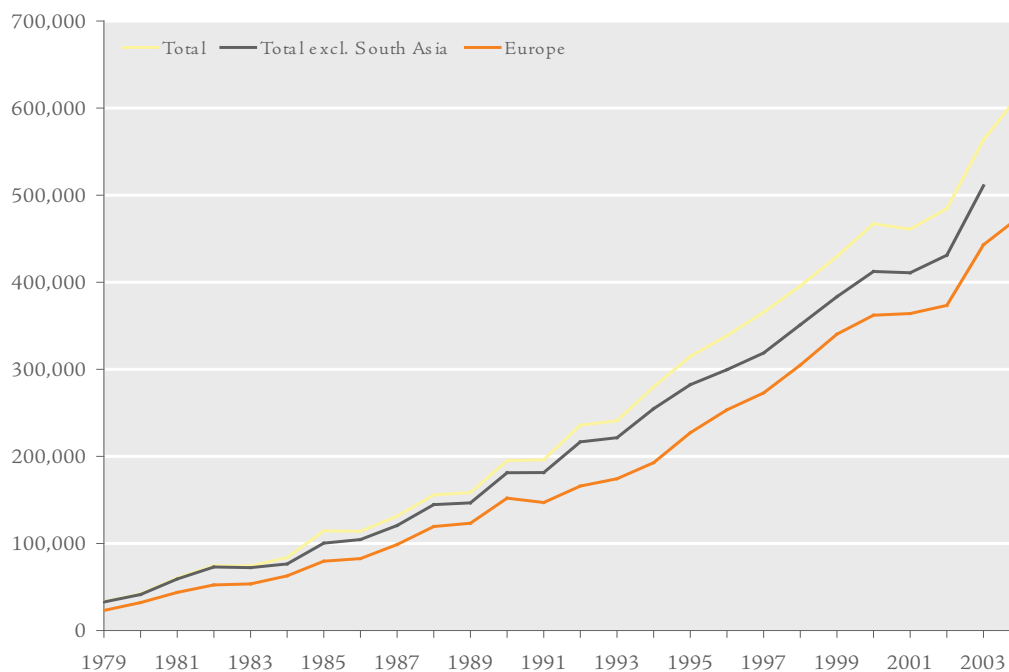
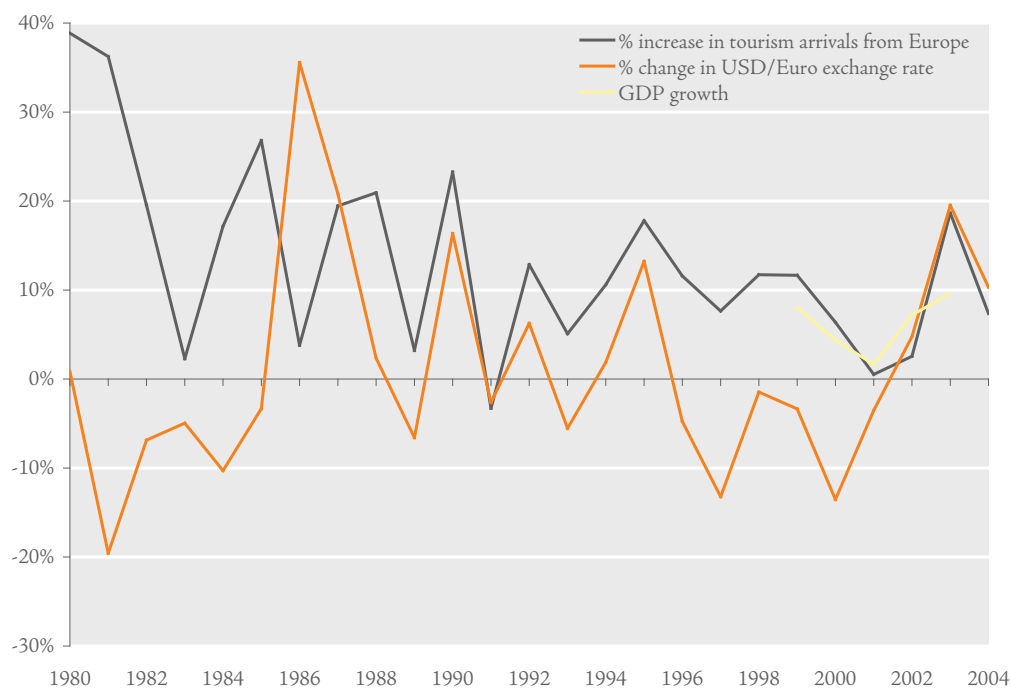


Figure 1-7 – Tourist arrivals from Europe and total, 1979-2004.

Source: Calculated from Statistical Yearbooks, various years, MPND

Figure 1-8 – Relationship between the annual increase in European tourist arrivals and the annual dollar/euro exchange rate, 1979-2004.

Source: Calculated from Statistical Yearbooks, various years, MPND



The exchange rate also has a marked effect on the profitability of tourist enterprises. Between 1996 and 2002, some of the largest resort groups saw their profit margins halve – from about one-quarter of turnover to about one-eighth. Over the past few years, however, with the increased value of the euro versus the dollar, the profitability of resort operations has been restored. Since tourism is so significant in the national economy the exchange rate also affects GDP growth rates – with, for example, a notable dip in growth between 2000 and 2002.

Maldivians not only benefit from tourism through employment and income, they also gain via government revenue. With the benefit of a ready source of tax income from tourism, including bed taxes, land lease and import duties, the Government has been able to avoid levying income or sales taxes – though it does make a number of charges for services, both on the public and on tourist and other businesses.

Effects of the tsunami

The steady growth of the economy was suddenly interrupted by the tsunami – which brought most tourism to a halt and badly damaged the country's physical and social infrastructure. The extent of the damage was evident from a Joint Needs Assessment carried out early in 2005 by the World Bank, the Asian Development Bank, and the United Nations. The total costs, estimated at \$304 million, about 35 percent of GDP, are summarized in Table 1-2.

Note that this does not include the reconstruction of damaged tourist resorts. These suffered a significant reduction in capacity, with about twenty percent of resort capacity still out of service months later. However most of the available capacity for the season had been pre-sold and some of the losses in income, in addition to most of the physical damage, were expected to be covered by insurance.

Table 1-2 – Cost of reconstruction (\$ millions)

Sector	Needs for next six months	Medium-term needs	Total costs
Education	8.4	12.7	21.1
Health	4.9	7.3	12.2
Housing	22.2	51.8	74.0
Water and sanitation	18.4	27.2	45.6
Other costs for new host islands	5.0	10.0	15.0
Fisheries	5.8	8.3	14.1
Agriculture	4.8	6.3	11.1
Transport	2.0	22.9	24.9
Power	1.9	2.8	4.7
Livelihoods	17.4	0.0	17.4
Environment	3.7	6.1	9.8
Disaster Risk Management	0.7	3.7	4.4
Administration etc..	15.0	35.0	50.0
Total	110.2	194.1	304.3

Note: Costs of reconstruction of tourist resorts (estimated at around \$100 million) and some transport costs are excluded, as most of them will be covered by insurance payments.

Source: World Bank-Asian Development Bank-United Nations System, Joint Needs Assessment, February 8, 2005.

The IMF in its assessment described the effects of the tsunami as follows²:

“The tsunami of December 26, 2004 had a devastating effect on Maldives. Although loss of life was limited, there was extensive damage to housing and infrastructure, with virtually complete destruction on 14 out of about 200 inhabited islands, leading to the abandonment of some of them. Some 5 percent of the population have lost their homes, one quarter of tourist resorts are closed, and 8 percent of fishing boats were damaged. Tourism and fisheries account for 40 percent of GDP, one-third of employment, and generate most of Maldives' foreign exchange earnings.”

The same report also expected that the

² International Monetary Fund, Maldives: Use of Fund Resources—Request for Emergency Assistance—Staff Report, IMF Country Report No.05/145, April 2005

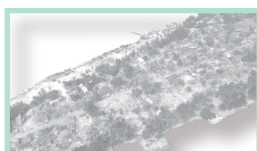
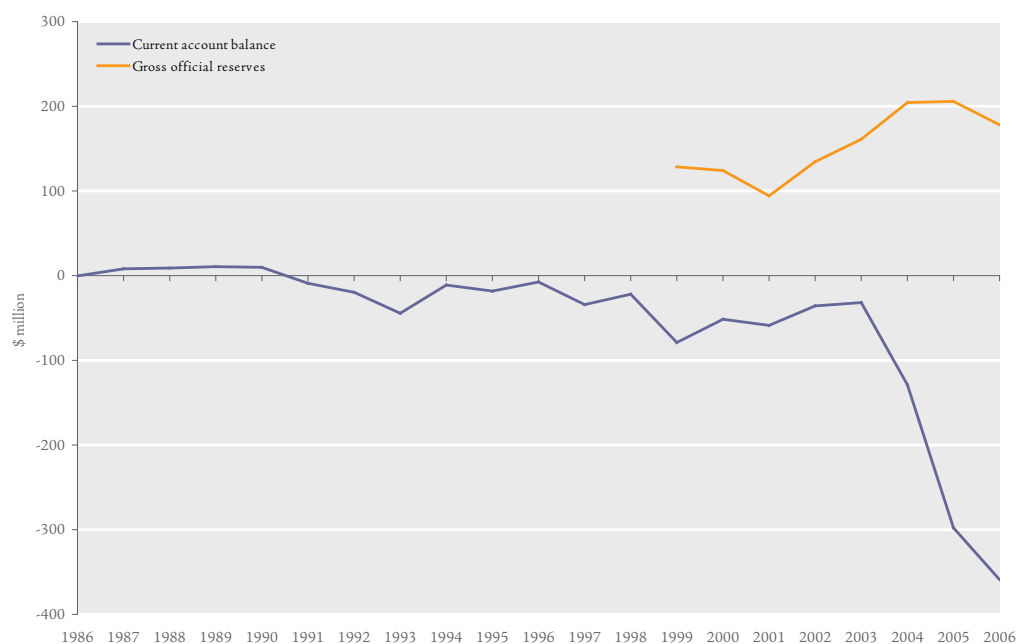
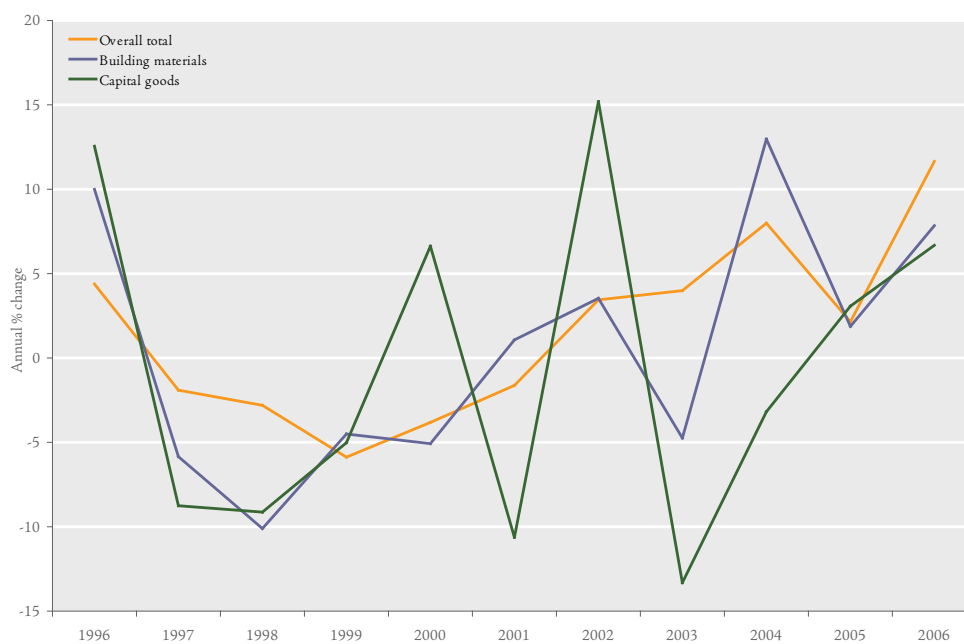


Figure 1-9 – Current account balance and gross official reserves, 1986-2006.

Source: Calculated from Statistical Yearbooks, various years, MPND

Figure 1-10 – Unit values of imports, building materials, capital goods and total, annual percentage change, 1995-2006

Note: The figures for 2005 and 2006 are estimates, and for 2006 refer to the first quarter at an annual rate.

Source: Calculated from external trade data sets of the MPND



economy would be affected by the loss of income from tourism and fisheries, and that the Government would incur large reconstruction costs. At the time it was estimated, though with much uncertainty, that GDP growth in 2005 would be 5 percentage points lower than expected. Net losses to the balance of payments were estimated at about 19 percent of GDP, or \$160 million. Of the \$300-million cost of replacing damaged infrastructure, about one-third of this would be incurred in 2005 and the remainder mostly in 2006. Lower tourism taxes and reduced imports were expected to result in revenue losses equivalent to about 5 percent of GDP.

The tsunami struck in the high season which is when most of the losses were incurred as, in the immediate aftermath, tourists feared a repeat of the disaster and stayed away. The reduction in capacity had less impact in the subsequent low season. By the start of the new 2005/06 season, most resorts were back in operation again, fears of a repeat tsunami had subsided, and bookings had picked up.

The rest of the economic infrastructure did not suffer greatly. The most-affected islands lost tools and equipment but elsewhere the infrastructure was largely intact and most of the disruptions, such as the partial closure of Male' airport, were brief.

The effects on the national labour force were also limited because of the buffer provided by foreign labour. Enterprises were able to terminate the contracts of expatriate employees, or send them on early leave or not replace them, allowing businesses to meet their needs without laying off local staff. However, some local employees in the tourist industry did suffer losses of service charges and tips.

Fishing communities too remained largely intact. They lost relatively little of their fishing boats and gear. And in fact in 2005 fish catches were higher than ever before which partially compensated for

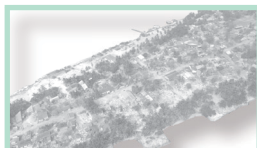
other tsunami-related losses.

The tsunami did however put extra pressure on government finances. The Government lost income from tourism taxes and related charges while incurring the extra costs of helping the disaster victims of repair and reconstruction. It was compensated for some of these by grants from various sources, but some of the financial support came also in the form of loans, resulting in substantial extra debt (Figure 1-9). Even so, the debt is sustainable, with projected service payments well below ten percent of exports.

The tsunami also caused a sharp deterioration in the current account. This had already been negative for over ten years, largely due to the increase in economic activity that had increased the demand for imports – though more than offset by large capital inflows, mostly of foreign direct investment for tourist resorts and the second mobile telephone network. As a result, the Government was able to maintain reserves at about three-and-a-half months of imports. In 2005 and 2006, the current account went even further into the red; even so continuing capital inflows allowed the reserves to hold up, at about two-and-a-half months of imports.

The effect of the tsunami on prices is more difficult to ascertain since there are no appropriate price indices. A broad indication is possible, however from the unit-value indices of imports. As Figure 1-10 shows, over recent years there has been considerable variation, though the fluctuations in the overall total have more to do with a change in the mix of imports than with overall prices. Over the period 1997-2001, as a result of the Asian crisis, unit values of imports went down but subsequently started rising again.

For 2006 the annualized change in overall import unit-values is the highest over the entire period, but the increases for building materials and capital goods are somewhat lower. Certainly the

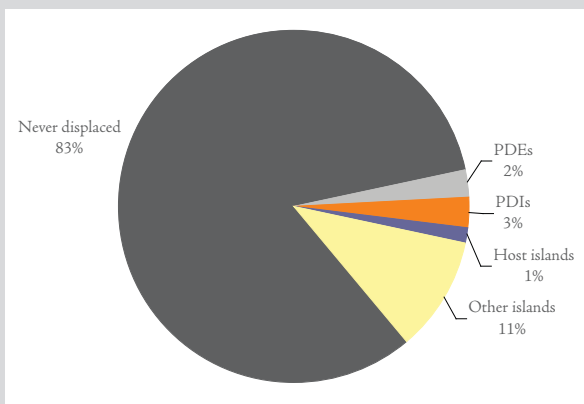


Box 1.1 – The 2004 tsunami

On the morning of the 26th December, 2004 Maldives experienced the greatest natural disaster in living memory. A tsunami generated by a huge underwater earthquake on a fault line near Indonesia swept across the country. It inundated the land on some islands and on a few destroyed anything standing. On others, however, such as the capital Male', it had scarcely any effect, and in the atolls in the extreme north and south there was only limited physical damage.

The tsunami caused the relocation of 17 percent of the atoll population (see chart below). Most of them returned to their own houses after a short time and by mid 2005 only about four percent of the islanders were still living in temporary accommodation. Half of those, the persons displaced externally (PDEs), were living on host islands while the others, the persons displaced internally (PDIs), were on their own islands.

Population displaced by the tsunami



In the map of Maldives at the front of this report, the islands have been colour-coded according to their tsunami impact category. This shows that the most severe impact was generally on islands on the eastern edges of the atolls, and the heaviest impact geographically was in the Central South region which included 11 of the 14 most severely affected islands.

cost of reconstruction was higher than originally estimated which will have been exacerbated by the limited local capacity in terms of both companies and workers, but it is difficult to say to what extent the rise was due to an underestimate of the damage or to a rise in prices.

Over recent years there do not seem to have been major changes in consumer prices. The picture does, however, depend on the choice of expenditure patterns. Using the consumption pattern for 1993, which also has relatively few observations per item, would suggest that in recent years prices have been changing by more than five percent per year. But using the updated pattern for 2003, suggests that the consumer price index has changed very little.

Overall therefore it seems that the tsunami's macro-economic effects were quite small and mostly short term. This is largely because it did little damage to the economic infrastructure, and even this was offset by favourable circumstances, such as large fishing catches and the strength of the euro. As a result, although the GDP declined in 2005, it staged a remarkable recovery in 2006, so that average annual growth for the two years was between 7 and 8 percent, thus continuing the trend evident since 2002.

This is not to underestimate the suffering of those directly affected by the tsunami, but the population was also able to benefit from many opportunities provided by the economy's excellent performance.



CHAPTER 2

THE TSUNAMI IMPACT ASSESSMENT

The Tsunami Impact Assessment uses much of the same methodology as the earlier Vulnerability and Poverty Assessments and also collects information from some of the same households, allowing for the analysis of results from a 'panel' of respondents. In addition, it gathers more detailed information from the most-affected islands on the impact of the tsunami.

In 1998, the Government, recognizing the need for island-specific information, undertook the first Vulnerability and Poverty Assessment (VPA-1). This survey, carried out with the assistance of UNDP, included a number of innovations in both the collection and analysis of data. For example, to overcome the problem of dealing with many different islands, VPA-1 covered all 200 inhabited islands but within each island also selected a limited sample of households for more detailed study.

In mid 2004, the Government followed this with a second survey, VPA-2. To ensure that the information from the two surveys was fully consistent, this used, broadly speaking, the same questionnaires and definitions. However, in designing the second survey the Government also took into account both the experience gained while carrying out VPA-1 and the changes in the nation over the intervening seven years.

One year later, in June and July 2005, to gauge the effects of the tsunami, the Government then carried out a further investigation – the Tsunami Impact Assessment (TIA). The TIA had a similar coverage as VPA-2. It was conducted on all 200 inhabited islands¹, and used, where practicable, the

same questions. It also continued the principle of following a 'panel' of households: the sample covered most of the same households as in VPA-2, which in turn included about half of those covered in VPA-1. Thus, as well as being able to compare livelihood and socio-economic conditions six months before the tsunami and six months afterwards, the surveys also maintained a unique panel that can be used to track household changes over a longer period.

The information collected in the TIA survey was edited, coded and entered onto computerized databases during the third quarter of 2005. It was then analysed for completeness and accuracy, and its summary results were compared with external information to check for inconsistencies. It was supplemented with information from the administrative records of government ministries and data from the National Disaster Management Centre (NDMC). This work was complete by the end of 2005.

Sample design and methodology

Since the sample of households of both VPAs and the TIA include all islands they allow for the collection of aggregates for any group of islands, and the results are representative for the various groups. Thus it is possible to follow the experience of the tsunami-related groups². However, for some of the

not been re-inhabited since. Nevertheless, due to an excellent post-tsunami administration, the relocated households from these islands could be traced and they were interviewed on their new location.

² Basically, ten households were covered on each island in the VPA surveys, with additional allowances for islands with more than 1,500 inhabitants. For the TIA survey, the sample design was slightly modified and the sample size increased for the (smaller number of) most affected islands and decreased for the less affected ones and Male' to ensure an adequate sample size for all analytical groupings.

¹ Four of the islands, namely Kandholhudhoo in Raa Atoll and Madifushi in Meemu Atoll, Ghemendhoo in Dhaalu Atoll and Vilufushi in Thaa Atoll, which were vacated after the tsunami, have



tsunami-related groups, the two VPAs had covered only a small number of households. As can be seen in the detailed tabulations, some classes include small numbers of actual observations so the accuracy of the conclusions is sometimes less than optimal.

The VPA surveys both covered a minimum of ten households on each inhabited islands, though used larger samples in the more heavily populated islands. In total in the atolls they enumerated about 2,400 households, covering a wide range of socio-economic characteristics.

The TIA had a somewhat different focus. Rather than considering the country's general vulnerability and poverty status it focused instead on the effects of the tsunami on households. For this purpose, and to ensure an adequate number of responses for all groups used in the analysis, it increased the sample size in the most-affected islands and reduced it in the islands not directly affected. Appendix 1 gives details by island.

The TIA was not able to locate all the target households. There were a number of reasons for this: the movements of the population; the break-up of households; and in some cases the absence of responsible household members at the time of enumeration. In the event the TIA sampled 2,412 households, though since 76 households, 3.2 percent, subsequently had to be excluded the ultimate sample size was 2,336 households remained. By international standards, a non-response rate of 3.2 percent is very low. Of this total 1,849 has also been enumerated during VPA-2.

Where possible and appropriate, the TIA used the same methodology as VPA-2, which in turn was broadly the same as for VPA-1. However, in order to capture tsunami-specific information it also included for the 14 most-affected islands some additional modules on psychosocial and reproductive health; losses due to the tsunami; and tsunami aid received. In addition, the TIA made similar

adjustments to the household questionnaire to cover various tsunami-related changes. This too was administered on a limited number of islands: apart from the 14 most-affected islands, it was also used on a further 54 islands – those where at least one-third of households had received tsunami assistance. It total, therefore, the form was administered on about one-third of islands.

The TIA did not, however, include the household expenditure form as households on the most-affected islands had been provided with free basic facilities and free food prepared in canteens for the entire population. This made it difficult to collect household expenditure information, which would not have been comparable with that used in the VPA studies. The TIA did therefore not use expenditures as a proxy for household incomes but switched to actual income data. Nor did the TIA include the problems and priorities modules, which were not expected to provide useful information.

Island groupings

The TIA also presents its findings in a different way. The VPAs had analysed the information by atoll and region. The TIA, however, presents its findings for two special island groupings that cut across atolls and regions: the 'tsunami impact classification' and the 'tsunami displacement classification'.

The tsunami impact classification, which was devised by the NDMC, is based on five levels, from nil to very high (Table 2-1). The most serious damage during the tsunami was caused by flooding, which in addition to destroying property also increased soil salinity which until washed out by rainfall will reduce agricultural production. Impact levels 1 to 3 all experienced complete flooding.

The tsunami displacement classification, consists of four groups: first, those who were relocated to other islands, 'people displaced externally' (PDEs); second, those on ten islands who

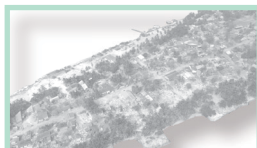


Table 2-1 – Tsunami impact classification

Level	1	2	3	4	5
Definition	Very high	High	Substantial	Limited	Nil
Number of islands in this group	14	23	34	120	9
Population	13,015	21,700	41,371	121,370	7,459
Percentage of atoll population	6	11	20	59	4
Description	Population displaced and temporary shelter required	Population displaced and major damage to housing and infrastructure	Damage to more than a quarter of buildings and infrastructure	Flooding in few houses but no structural damage	No Flooding

Table 2-2 – Tsunami displacement classification

People displaced externally (PDE)	People displaced internally (PDI)	Original population of host islands	Population of all other islands
5,133 people, 3% of atoll population	7,882 people, 4% of atoll population	15,747 people, 8% of atoll population	176,153, 3% of atoll population
4 islands	10 islands	10 islands	176 islands
Kandholhudhoo	Filladhoo	Alifushi	All other islands
Madifushi	Muli	Ugoofaaru	
Gemendhoo	Naalaafushi	Maduvvari	
Vilufushi	Kolhufushi	Meedhoo	
	Ribudhoo	Hulhudhuffaaru	
	Madifushi	Maamigili	
	Dhabidhoo	Kudahuvadhoo	
	Mundhoo	Buruni	
	Kalhaidhoo	Gan	
	Viligili	Fonadhoo	

were accommodated in temporary housing on their own islands, 'people displaced internally' (PDIs); third, the original population living on islands that hosted the majority of the PDEs; and fourth the inhabitants of all other islands. The information on these groups is summarized in Table 2-2.

Limitations

The TIA shares some of the limitations of the VPAs. First, they did not allow for accurate estimates for individual islands: on most islands they only surveyed ten households, which is too few to allow for island-level analysis. Second, they involved a time lag between the collection of the data and the

publication of the reports, during which period the conditions may well have changed. The report for VPA-2, for example, was only published six months after the tsunami. Similarly for the TIA, while the data were collected in June 2005, the results are not being published until late 2006 by which time some of the information on repair and reconstruction will be out of date. Any survey necessarily describes the conditions at the time of the survey, though that does not reduce the value of the results or the analytical findings.

For analysing the differences between VPA-2 and TIA there was the additional problem alluded to earlier that for some of the impact and displacement classifications, VPA-2 offered only a small number

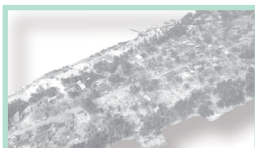


of observations – leading to a larger variance than would normally be expected.

Using the CD ROM

The accompanying CD ROM contains an electronic version of this report as an Acrobat PDF file. It also includes the data sets for the two VPA surveys, plus that of the Household Income and Expenditure Survey, in a consistent format – with data dictionaries, look-up tables and the other supporting information required for independent use.

The Statistical Regulations of the Republic of Maldives do not allow the release of information that can be identified with particular individuals, so all identifying information, including the names of individuals and houses, has been removed. However, in order to ensure the fullest use of the information, the data set includes the island identifiers. The household serial numbers have been allocated in such a manner that the panel households have the same number in both VPAs and the TIA – from 8,000 to 10,000.



CHAPTER 3

MAJOR DAMAGE, REPAIR AND REPLACEMENT

The tsunami had a serious impact on many inhabited islands – affecting households in different ways – destroying houses, reducing food supplies and even affecting family size. It also damaged infrastructure, including water supplies and sanitation, and inundated agricultural land with salt water, as well as reducing access to the islands.

The World Bank-Asian Development Bank-UN System Joint Needs Assessment¹ prepared shortly after the event summarized the devastation caused by the tsunami as follows:

“The Tsunami travelled at over 700 kilometres an hour reaching Maldives at 9:20 am which is about 3 hours after tremors were felt. From around 9:15 am, tsunamis struck the islands of Maldives. Tidal waves ranging from 4 to 14 feet were reported in all parts of the country. The force of the waves caused widespread infrastructure devastation in the atolls. Flooding caused by the tsunami wiped out electricity on many islands destroying communication links with most atolls. Even though less than 100 lives are lost, Maldives is among one of the worst affected countries by the recent tsunami. Thirty nine islands were damaged and nearly a third of Maldives 300,000 people were affected.”

“Twenty islands – about a tenth of the inhabited islands of the country – have been largely devastated and fourteen islands had to be evacuated. 188 islands had no communications for the first ten hours and four islands have no direct communication up to now. Nearly 12,000 people have been displaced from their islands and another 8,500 of them have

to be temporarily relocated to other places on their own island i.e. 7% of the population were displaced. Over 1,300 suffered injuries and in addition to the 83 confirmed deaths another 25 are missing and feared dead. Water supply was disrupted in about 15% of the islands and 25% had major damage to the essential infrastructure, such as jetties and harbours, that links these islands with Male'. Electric supplies in many affected islands are yet to be restored.”

Four inhabited islands suffered damage so extensive that they can be considered as having been completely destroyed. The former inhabitants of these islands, more than five thousand, 2.5 percent of the atoll population, were relocated to various host islands.

Ten other islands also suffered extensively, with most houses and infrastructure destroyed or seriously damaged. Initially the people living on these islands were evacuated but subsequently moved back. Nevertheless, at the time of the survey about two-thirds of the population of these islands remained displaced internally and lived in temporary shelters – a total of 7,500 persons, another 2.5 percent of the atoll population.

Other islands were less affected. Even so, about 1,000 persons remained displaced internally on various other islands. In total, therefore, in the middle of 2005 about 11,000 people were still displaced – around 5.5 percent of the atoll population, or nearly 4 percent of the total population. The population of Madifushi Island in Meemu Atoll were invited to Maamigili Island in Alifu Dhaalu and have now decided to relocate there permanently.

As well as causing death and injury and damage to houses and personal property, on many islands the

¹ World Bank-Asian Development Bank-UN System Joint Needs Assessment, February 8, 2005.



tsunami also caused major damage to infrastructure. Respondents reported, for example, damage to their coastal protection systems, electricity supplies and sanitary infrastructure as well as to the all-important water-collection systems and storage tanks. Many vessels were also damaged. They also said that the floods destroyed most agricultural crops and many large trees and turned the land saline making it unsuitable for immediate replanting.

In addition, the tsunami resulted in the contamination of groundwater – by penetrating the land with salt water as well as by destroying sewerage systems or causing them to overflow – and all this on small islands where population growth had already made water supplies precarious.

In a number of cases, the tsunami even swept away island offices, health clinics and schools. Education was also affected by the loss of students' personal property including uniforms, schoolbooks, notes and other school materials. On the 14 most-affected islands, four out of five school children lost either their books or uniforms, or both. This was just over half the population on islands in the second impact level and 40 percent of people in the third level.

The Government and a multitude of donors, including bilateral and multilateral organisations and overseas NGOs as well as local individuals, businesses and social organisations, provided financial support as well as food, drinking water and clothing – and also replaced books, uniforms and other educational requirements.

Household size

One of the effects of the tsunami was an increase of household size. Before the tsunami, average household size had been falling, though it was still quite large: between 1997 and 2004 it declined from 6.2 to 6.1 persons in the atolls and from 8.7 to 8.0 in Male'. The tsunami destroyed or

badly damaged many houses, and even though the Government built a large number of temporary shelters average household size rose again, from 6.1 to 6.6 in the atolls and from 8.0 to 8.2 in Male'. This is illustrated in Figure 3-1 which shows that after the tsunami average household size increased in all the impact classifications, indicating that people had moved not just to the ten 'host islands' but also to many more islands including Male' and Hulhumale'. The most dramatic increase, however, from 5.9 to 6.9, was for the people displaced externally (PDEs) those who had left their own islands and were living in temporary shelters or with host families on other islands.

In most countries, poor households are typically larger than richer ones. However, following the tsunami people were relocated according to need, irrespective of income level. This is evident from Figure 3-2 which shows that although for both Male' and the atolls as a whole poorer households were larger this was not the case for PDIs or PDEs.

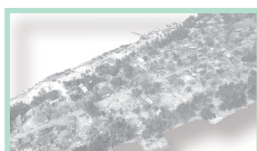
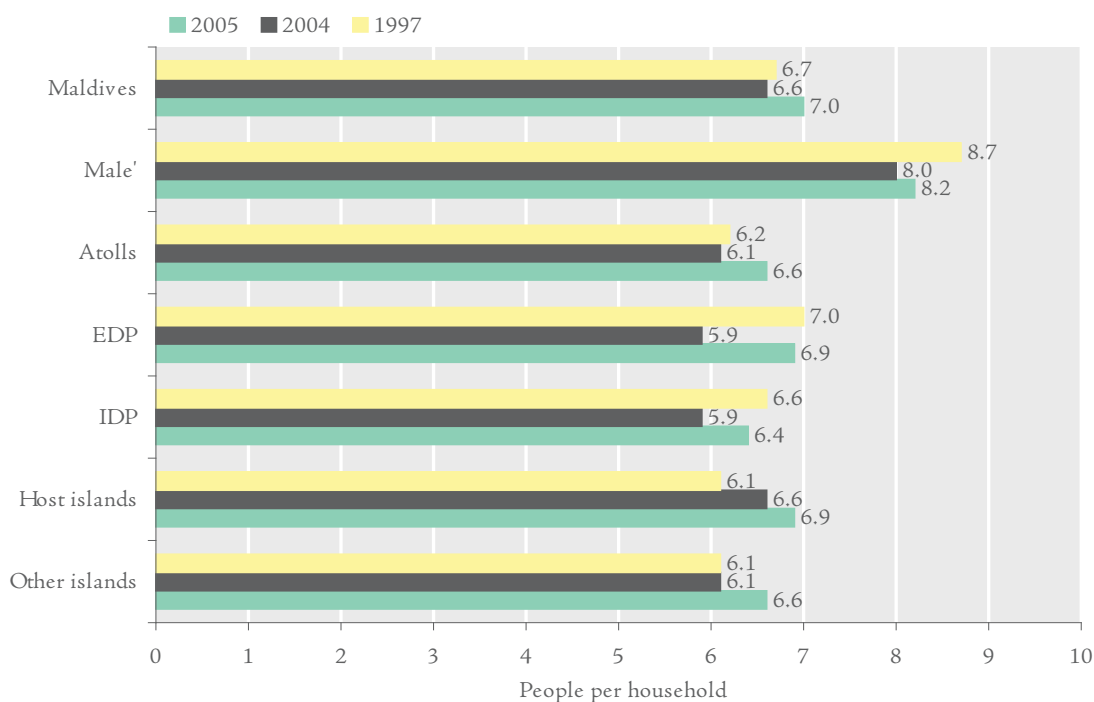
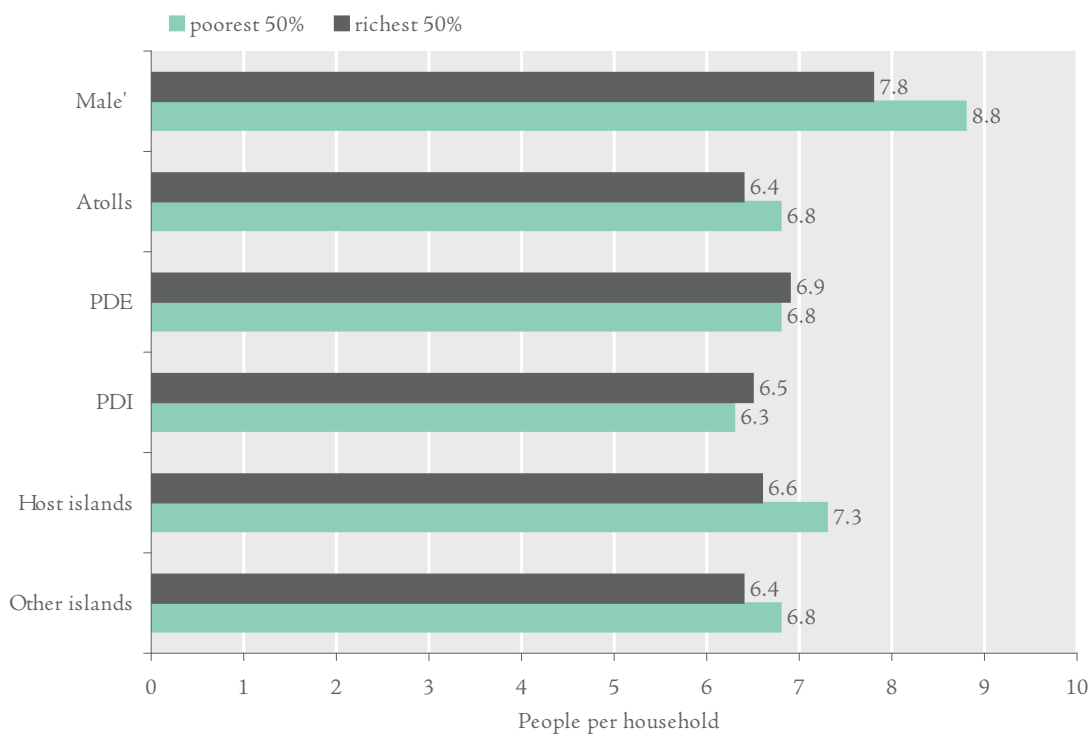


Figure 3-1 – Average household size, 1997-2005*Figure 3-2 – Average household size 2005, poorest and richest 50 percent*

Food supplies

One of the most pressing needs immediately after the tsunami was food. Many institutions responded with food aid though its distribution was sometimes less than optimal – not always arriving in sufficient quantities at the right time to the right places. It should be noted however, that some of the islands are so remote that they are difficult to reach even at the best of times and can experience local food shortages.

The VPA-2 and the TIA collected information on the number of people experiencing a food crisis in the year prior to the tsunami or in the six months following the disaster. A food crisis is defined as a period when a household does not have access to the three most basic food products: rice, flour or sugar. The information presented below relates specifically to the three high-impact groups of the island population.

Overall, just over one-quarter of this target population reported food crises, averaging 1.8 crises per household. However, the character of these crises varied depending on whether or not they had been caused by the tsunami. Households reporting tsunami-related crises on average had 1.7 crises which lasted a week or more, while those with other food crises reported more than two crises lasting on average for ten days. In total over the seven-month reference period, the affected households were without essential food for nearly four weeks; more than four weeks for tsunami-induced shortages and three weeks for the other households.

As might be expected, the proportion of the various tsunami-affected groups suffering food crises rose substantially between 2004 and 2005. Less than ten percent of the island population reported any food crises in 2004 while following the tsunami about one-quarter of the PDEs and PDIs had problems.

In fact, 80 percent of the people covered in this part of the survey² that faced food shortages in 2005 cited the tsunami as the reason. The main causes were the loss of agricultural crops and fish processing capacity, and inadequate stocks of food available on the islands at the time of the disaster even after taking into account the provision of food aid. This is illustrated, by displacement group, in Figure 3-3.

Figure 3-4 examines the situation by impact level. This shows that food shortages were reported in 2005 for less than one-quarter of the population of the two most severely affected groups. But the third level of impact – islands that had been flooded during the tsunami and suffered damages to more than one-quarter of houses – around one-third had food supply problems. This is probably because this group received substantially less food aid.

As might also be expected, the number of people experiencing food shortages peaked in December 2004 and fell thereafter. This trend is illustrated in Figure 3-5 from which it is clear that the major cause of food shortages was the tsunami. However the number of people affected fell, from between 15 and 20 percent of the sample population to between 3 and 4 percent in the later months. Throughout this period, however, between 500 and 1,500 people experienced food shortages for other reasons. The three main causes were: the non-availability of the staple foods in island shops, reported in half the cases, and transport difficulties and the lack of money to purchase food, reported in around one-quarter of cases.

The extent of food shortages can also be presented by displacement group, as in Figure 3-6. It

² The information is obtained from the household module of the questionnaire. This was administered to all islands that suffered a 'very high' and 'high' impact as well as on all islands where more than one-third of the population had received cash tsunami assistance from the Government. In all, about 27 percent of the total island population is covered by this part of the survey.

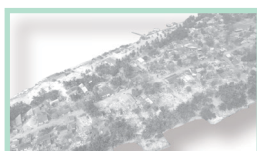


Figure 3-3 – Food crises, by displacement group, 2004-05

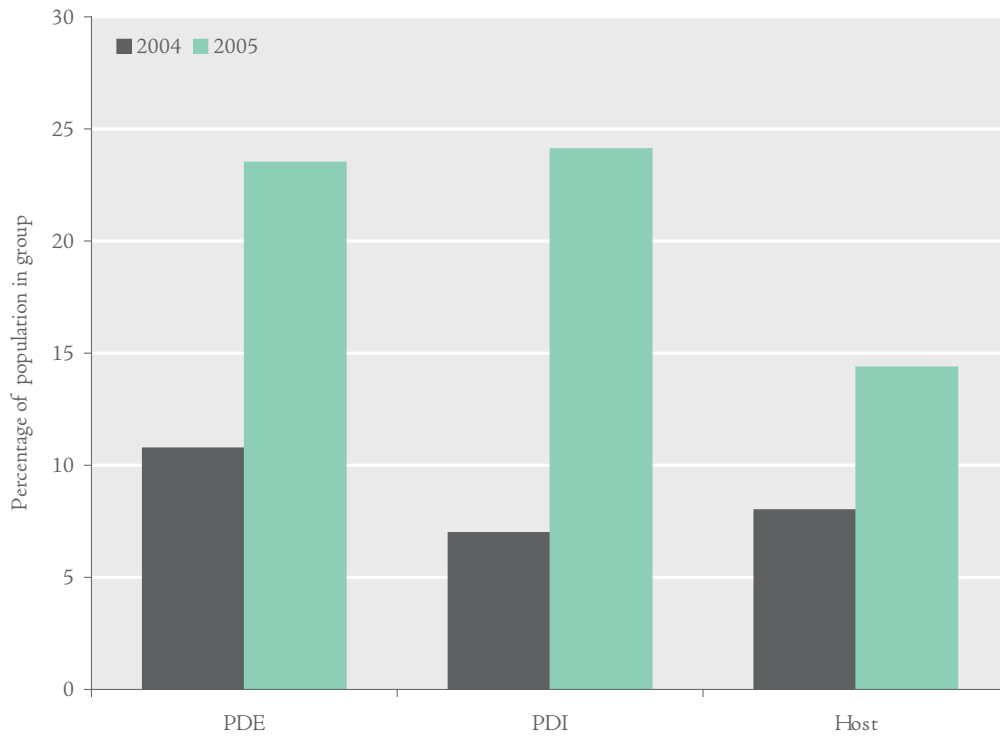


Figure 3-4 – Food crises by impact level, 2004-05

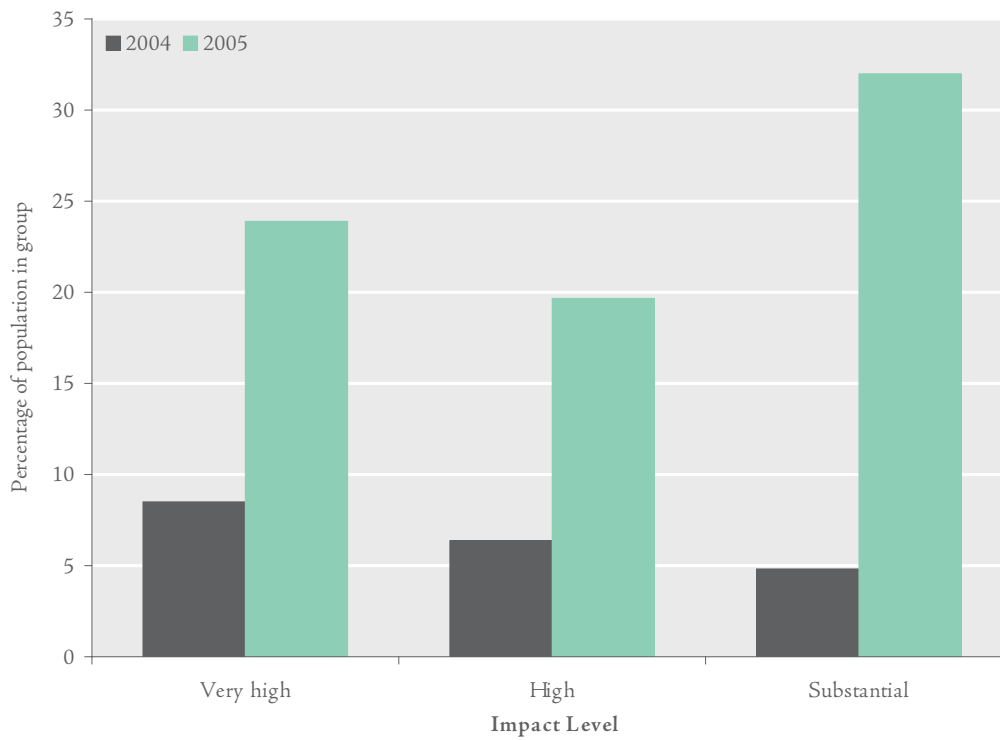


Figure 3-5 – Food shortages, by month and cause, after the tsunami, to July 2005

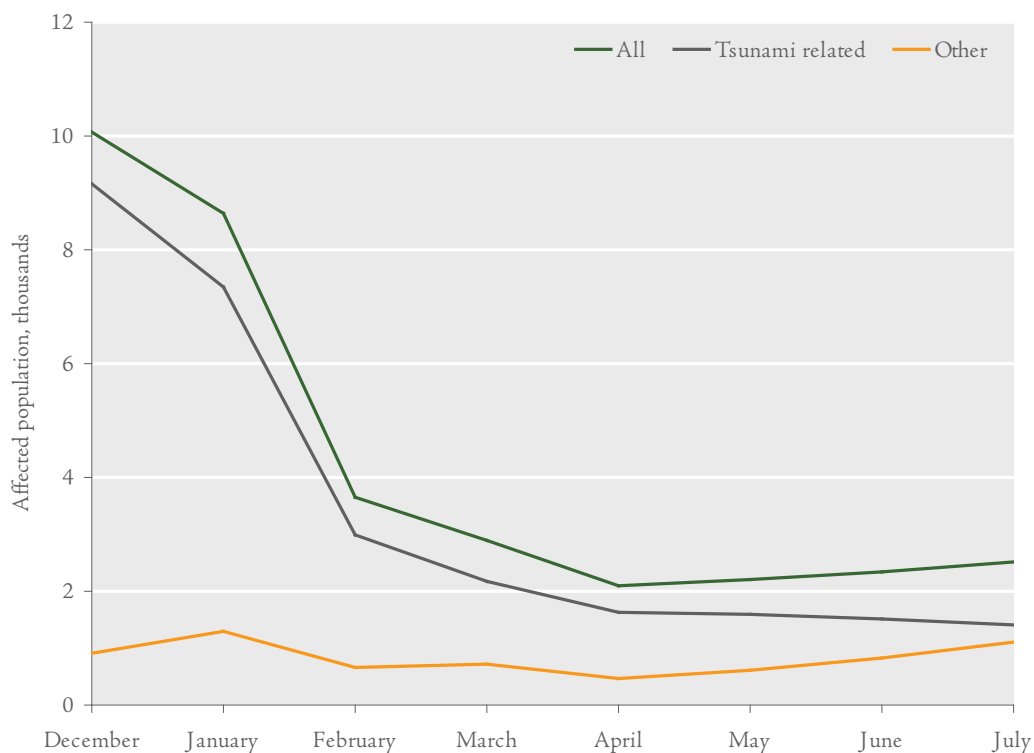
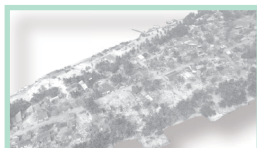
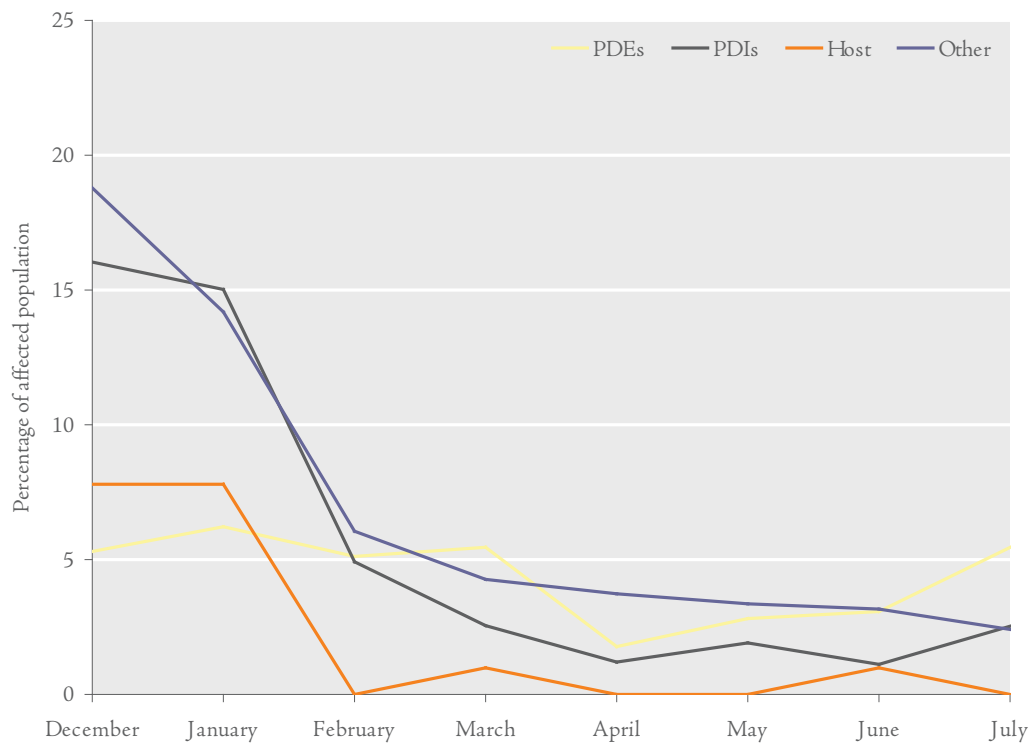


Figure 3-6 – Food shortages, by month and displacement level, affected population only



should be emphasized, however, that the reference populations for this figure are not the total group populations, but only the most-affected populations to whom the household module was administered. Interestingly, immediately after the tsunami the people least likely to be facing food shortages were the people whose lives had been most disrupted, the PDEs – about five percent reporting problem at this time. This is probably because this group who had lost more or less everything received a great deal of immediate attention. After three months, however, the various groups were in more or less the same situation, except that the host islands reported barely any shortages.

Aid received

Immediately after the tsunami, all affected households received a cash payment of Rf. 500, Rf. 1,000, or Rf. 1,500 per person, depending on the extent of damage. With an average household size of more than six persons, this meant that households that lost all their possessions on average received about Rf. 10,000. As Figure 3-7 indicates, on average more than three-quarters of the affected population received financial aid while more than seven out of eight persons got food and clothing – with the levels being higher for the PDEs than the PDIs or the host communities.

Figure 3-7 – Aid received, by displacement level

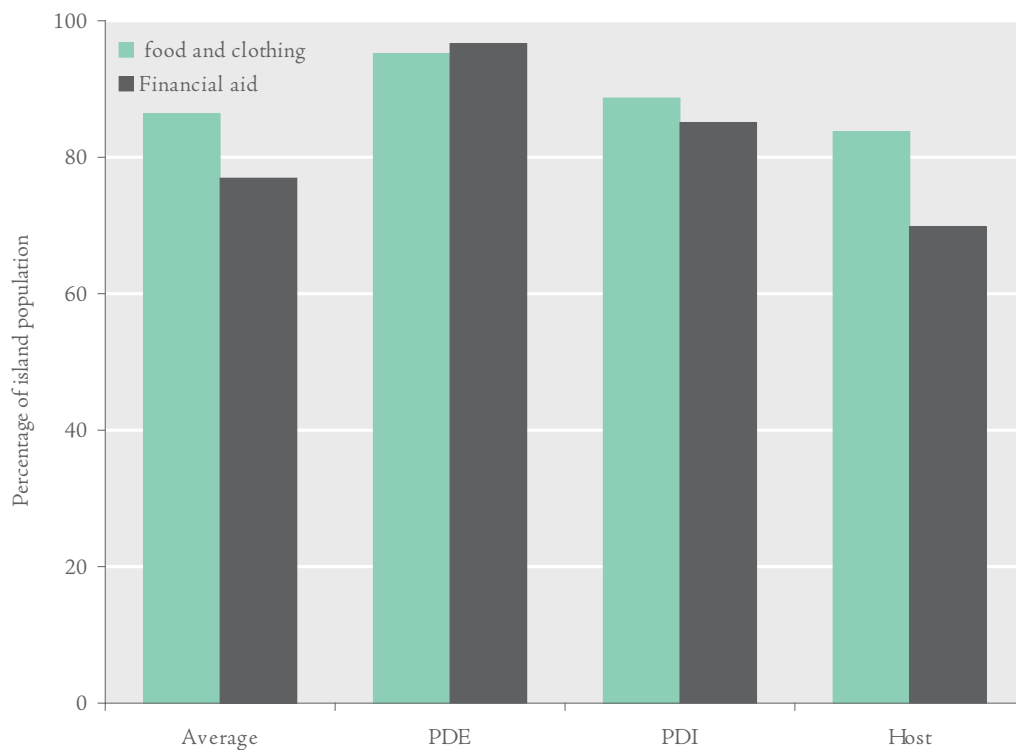


Figure 3-8 confirms that the assistance was also reasonably well targeted geographically with respect to impact levels: the islands that were hit most severely received more aid.

Almost all the financial aid came from the Government, with only about 3 percent from other sources. As Figure 3-9 indicates, much of the non-government aid was concentrated in the third level of impact. And where islands did not get financial aid this was often made up for in food and other items.

As is evident from Figure 3-10, in the month after the tsunami almost everyone in the affected communities received supplies of rice, sugar and bottled water, though around 20 percent of people said that this was insufficient. Milk, biscuits, canned fish and cooking oil and clothes were distributed to

between 80 and 90 percent of the population but up to one-third of people that received these items considered the quantities too small.

Six months after the tsunami, while distribution of most of the other items had ceased, around one-quarter of communities were still receiving rice, sugar and flour, though of these one-fifth said that the supplies were insufficient.

Distribution of the basic commodities can also be analysed by displacement and impact level, as in Table 3-1. For the displacement levels there do not appear to be substantial differences, but for the impact levels it is clear that those in the third impact level, substantial, were disappointed since around one-quarter said that they did not get enough of these commodities.

Figure 3-8 – Aid received, by impact level

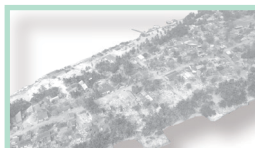
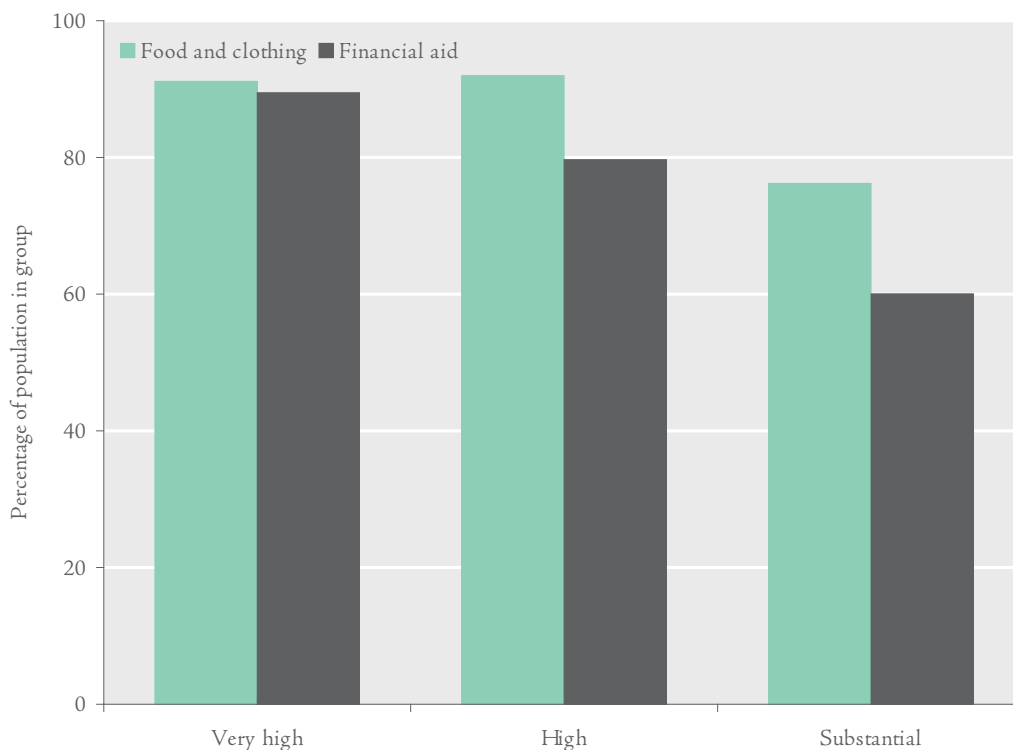


Figure 3-9 – Sources of financial aid

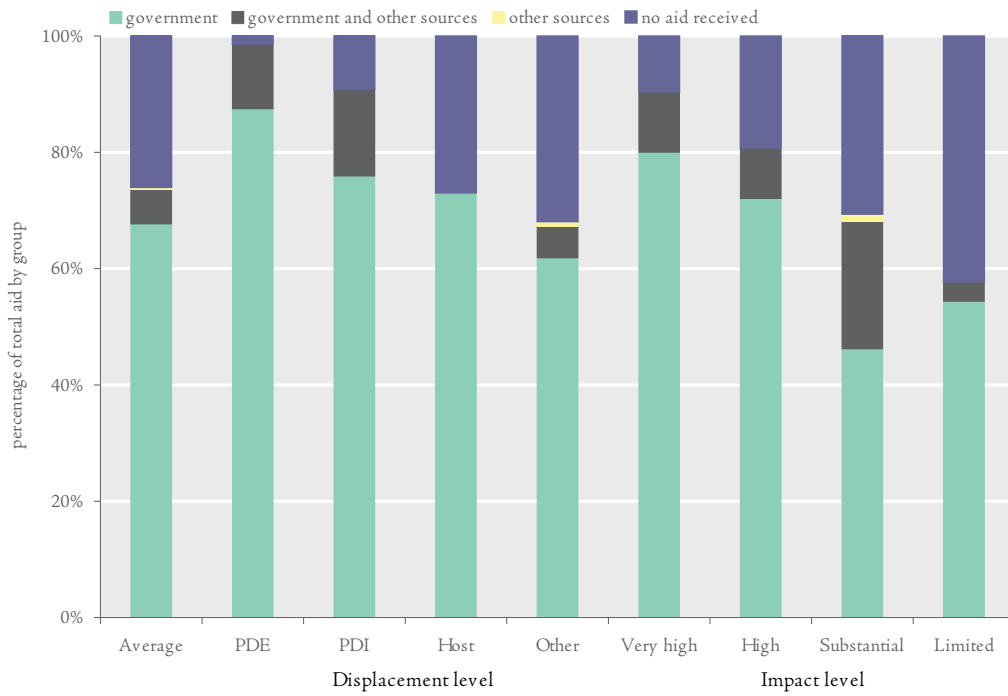
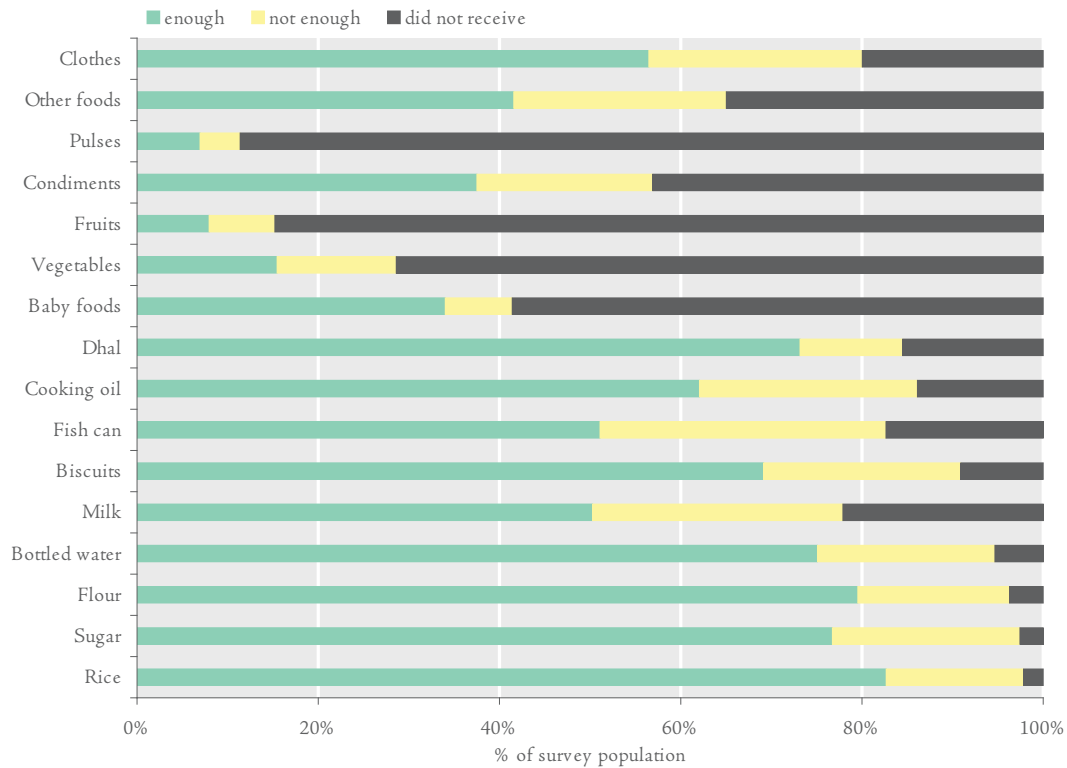


Figure 3-10 – Aid received, by item, in January 2005



Consumer durables

As well as losing their houses many people also lost consumer durables. Ownership of such items had increased substantially in the years before the tsunami. As is evident from Table 3-2, the total replacement value of such items had increased to five-fold between 1997/98 and 2004. For the three highest impact groups, by 2004 the stock was worth over Rf. 400 million. Note that the VPA surveys did not cover furniture, furnishings, business tools and appliances or various other possessions, so the total value of household possessions was actually considerably greater.

In 2004, more than 90 percent of households owned a fan, more than 80 percent had a washing machine, and around 50 percent had a fridge or a sewing machine.

The TIA survey, however, included a wider range of household items and asked households which goods had been lost or severely damaged. The results are in Figure 3-11. This shows that the most severe losses, as expected, were suffered by the PDEs, among whom more than 80 percent reported losses of the most basic items. Indeed for some of these items the only reason the figures are not closer to 100 percent for the PDEs is that they did not possess them in the first place. The PDIs faced losses of between 50 and 70 percent of their belongings, while the population on the host islands recorded losses of between 40 and 60 percent.

Since then, many of these goods have been replaced. By July 2005, households had replaced 80 percent of gas cookers and washing machines and 60 percent of TV sets. As Figure 3-12 indicates, for a number items the replacement rate does not

Table 3-1 – Rice, sugar and flour received by displacement and impact level, percentage

	Displacement level			Impact level		
	PDE	PDI	Host	Very high	High	Substantial
<i>Rice</i>						
Enough	88	88	92	88	88	77
Not enough	7	9	8	8	9	23
Not at all	5	2	0	3	3	0
<i>Sugar</i>						
Enough	83	80	93	81	79	74
Not enough	12	18	7	16	18	24
Not at all	5	2	0	3	0	4
<i>Flour</i>						
Enough	86	84	93	85	84	75
Not enough	9	13	7	11	12	22
Not at all	5	3	0	4	2	5

Table 3-2 – Replacement value of consumer durables, Rf. millions

Impact level	1997/98	2004
Very high	28	64
High	24	120
Substantial	45	252
Limited	148	841
Nil	16	39
Total	260	1,315

differ greatly between income groups, though understandably the richest half of the population were not only more likely to have mobile phones or motor cycles, they were also more likely to have replaced them.

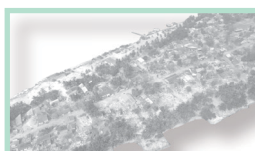
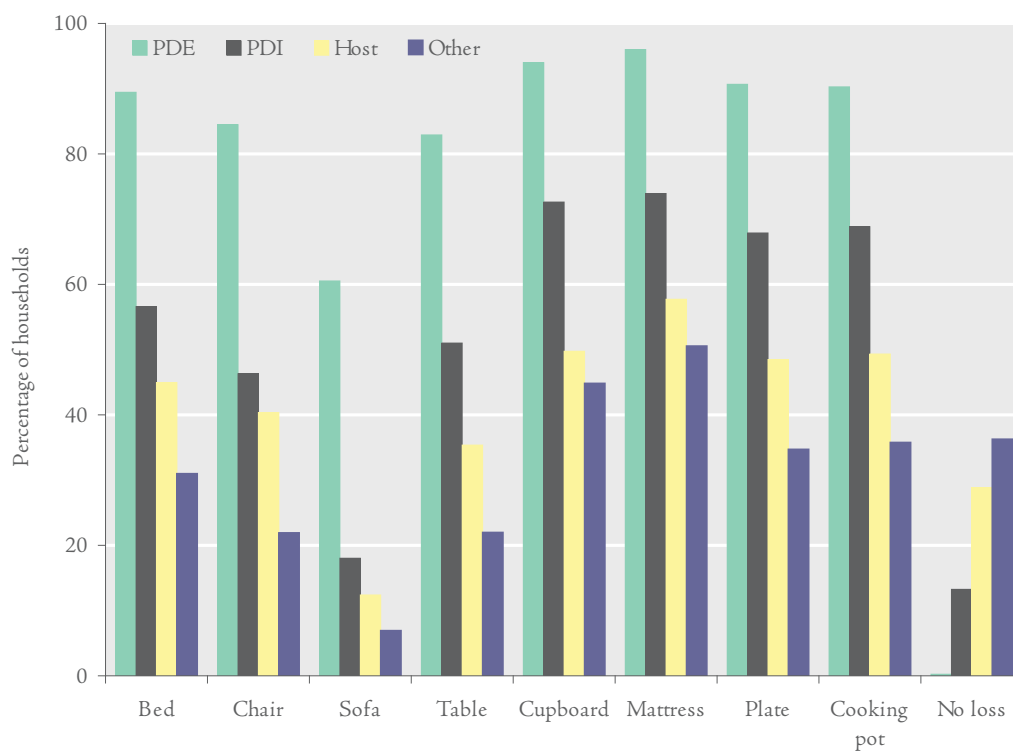
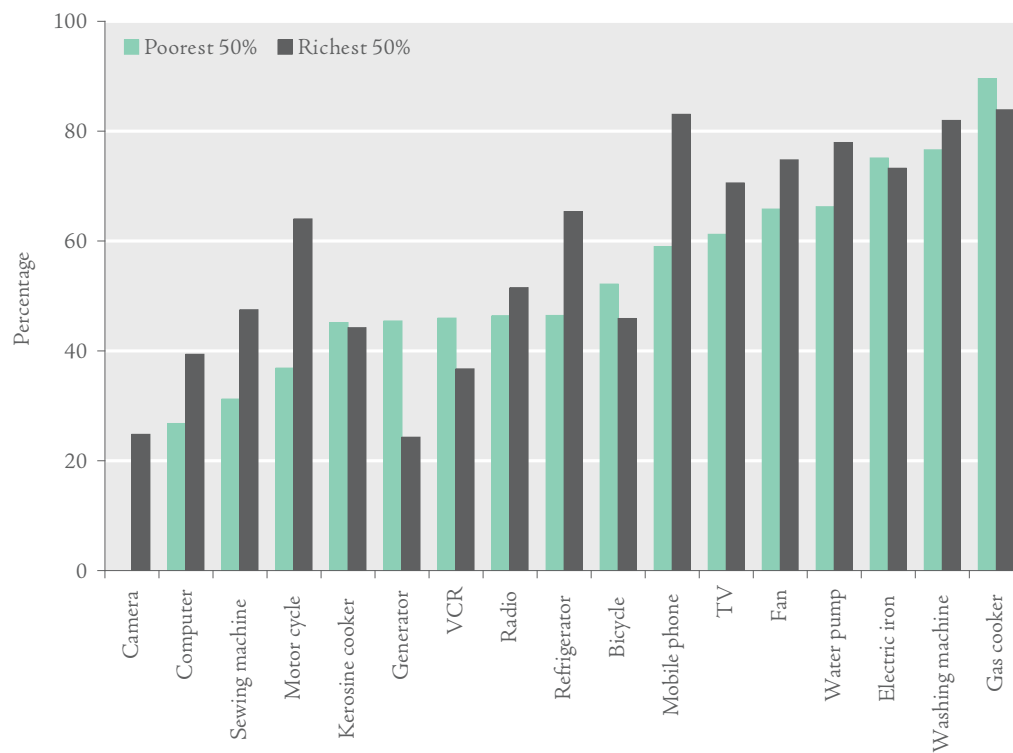


Figure 3-11 – Lost consumer goods, by displacement level*Figure 3-12 – Replacement rates of major consumer goods, by income groups*

Education

As might be expected, the damage to, or loss of, schoolbooks and uniforms was closely related to the severity of the tsunami impact. On the 14 most-affected islands, four out of five school children lost either their books or uniforms, or both. Losses were less, around 50 percent, for people on islands in the second impact level and 40 percent for those on islands in the third impact level.

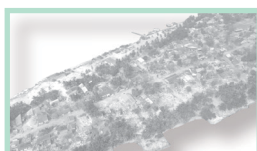
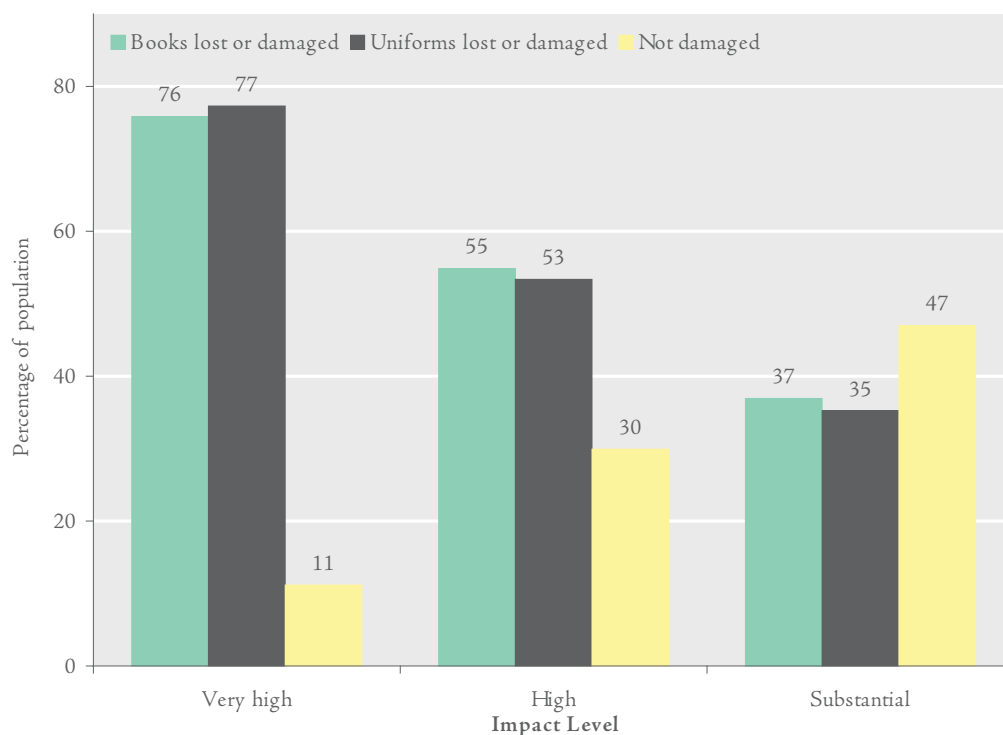
However since the tsunami the overall educational situation has improved. Previously 65 percent of the population was living on islands with schooling up to grade ten or higher, but by 2005 this proportion had increased to 70 percent. Over the same period for primary schools in the atolls the ratio of students to trained teachers fell from around 40 to 35 – a major change over such a short period of time.

Housing

Most of the displaced people, both PDEs and PDIs, continued to live in temporary shelters. For many different reasons, both logistical and administrative, the construction or reconstruction of houses had been slower than anticipated. By April 2006, only ten percent of displaced households had had their houses built or repaired.

Slowest has been the construction of new houses. The National Disaster Management Centre says that 2,606 new houses will be provided for the displaced population on 18 islands, but by the end of April 2006, less than four percent of these houses had been completed, while 15 percent were under construction; the rest were still at the stages of planning, design or tendering.

Figure 3-13 – Books and uniforms lost or damaged, by impact level



One of the most extensive new communities is in Raa Atoll. Here the Government is now developing a hitherto uninhabited island, Dhuvaafaru, to permanently house about 3,500 of the presently displaced persons from Kadholhudhoo island.

Progress has been slightly better on house repair. Some 5,320 houses on 82 different islands have been scheduled for major repairs and by mid-April 2006, 12 percent of these repairs had been completed – and on six islands all repair works had been finished. Of the rest of the house repairs, a further quarter were ongoing.

The slow pace of progress in rehousing the displaced population has often been due to the need for extensive and lengthy preparations. Often builders have to repair harbours and jetties, protection works, roads and other facilities and reclaim land – even before clearing land or carrying out other works directly related to house construction. In some cases, delays were also incurred in the consultation processes: on some islands different groups of displaced populations disagreed about the best long-term solutions to their problems.

Figure 3-14 – The development of Dhuvaafaru island



Infrastructure

In many cases too the works were slower because the Government wanted to take the opportunity not just to replace the previous infrastructure but to improve on it. Before the tsunami, many communities lacked adequate systems for electricity, water supply and sewerage. The 'Building Back Better' concept takes a forward-looking approach, not just replacing damaged facilities but building better ones, and the design and planning of these takes time.

Electricity

Over past decades one major achievement, often through community efforts, has been the extension of electricity supplies. In 1997 supplies

were available only on a few larger islands but by 2004 they had been extended to all islands. The tsunami caused extensive damage to those systems as can be seen in Figure 3-15. The worst damage was to distribution boxes and cables, but around half the population in the 'very high' and 'high' impact level islands were also affected by damage to generators.

Accessibility

Even before the tsunami a number of islands were difficult to reach. The tsunami made a difficult situation worse, primarily by making lagoons shallower, as well as through beach erosion and damaged jetties. As can be seen from Figure 3-16, this was true even in the least affected zones. For the atolls as a whole, 70 percent reported shallower lagoons. In addition, 60 percent reported damage

Figure 3-15 – Damage to electricity infrastructure, by impact level

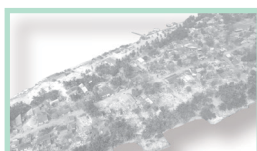
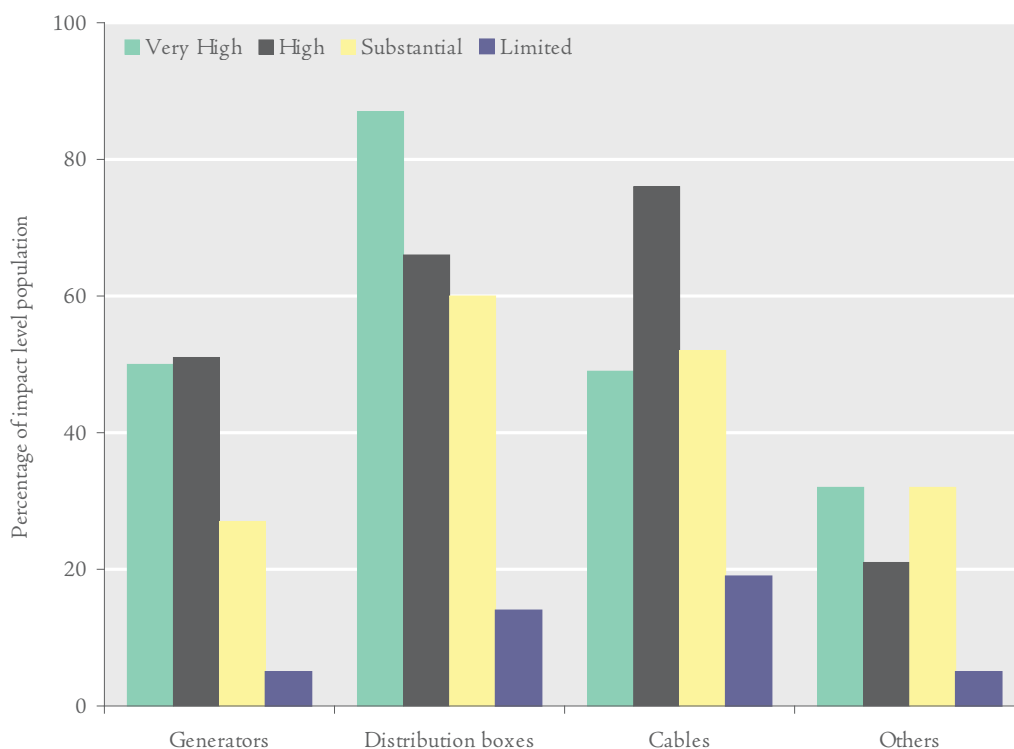


Figure 3-16 – Accessibility, by impact level

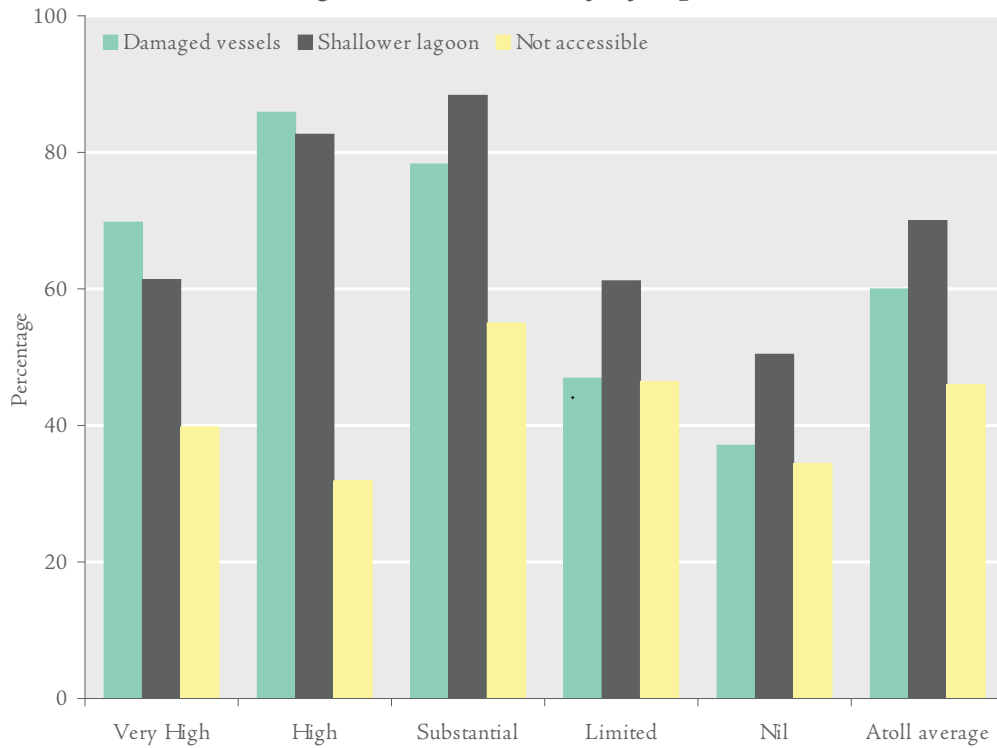
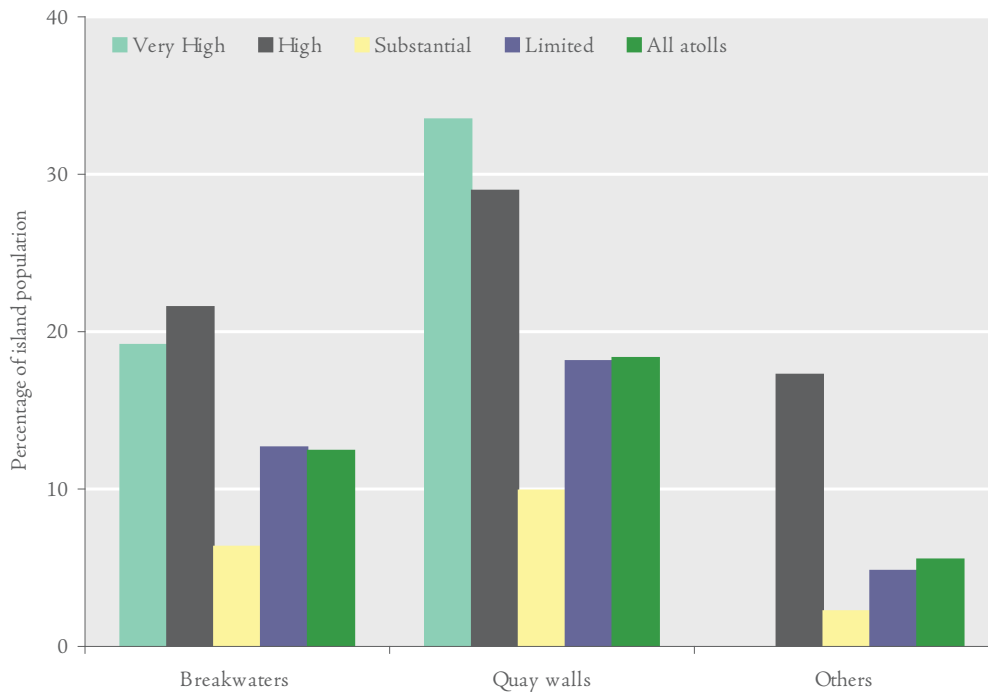


Figure 3-17 – Damage to coastal protection, by impact level



to vessels. All this damage has made these islands much more vulnerable

Coastal protection

Since all the islands in Maldives are very low lying, the population depend for survival on coastal protection systems, including quay walls and breakwaters. Most damage was done to quay walls: nearly one in five people living on islands with quay walls had these damaged by the tsunami (Figure 3-17).

Sanitary systems

The tsunami resulted in extensive damage to sanitary systems, causing septic tanks to crack or overflow – contaminating groundwater and

heightening the risk of disease. On a number of islands the sanitary systems are not yet back to their pre-tsunami levels. The situation in the atolls, for the different displacement levels, is given in Figure 3-18.

Accumulated garbage

Many islands still have a problem with accumulated garbage, including the debris and discarded items damaged during the tsunami. More than half the atoll population lived on islands that experienced problems. For about 20 percent of the population the situation had been resolved six months later, but on islands where about one-third of the atoll population live the problem remained. The problems were of course much worse for the most-affected groups.

Figure 3-18 – Damage to sanitary systems, by displacement level

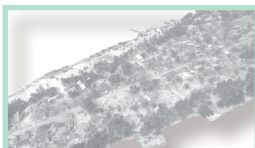
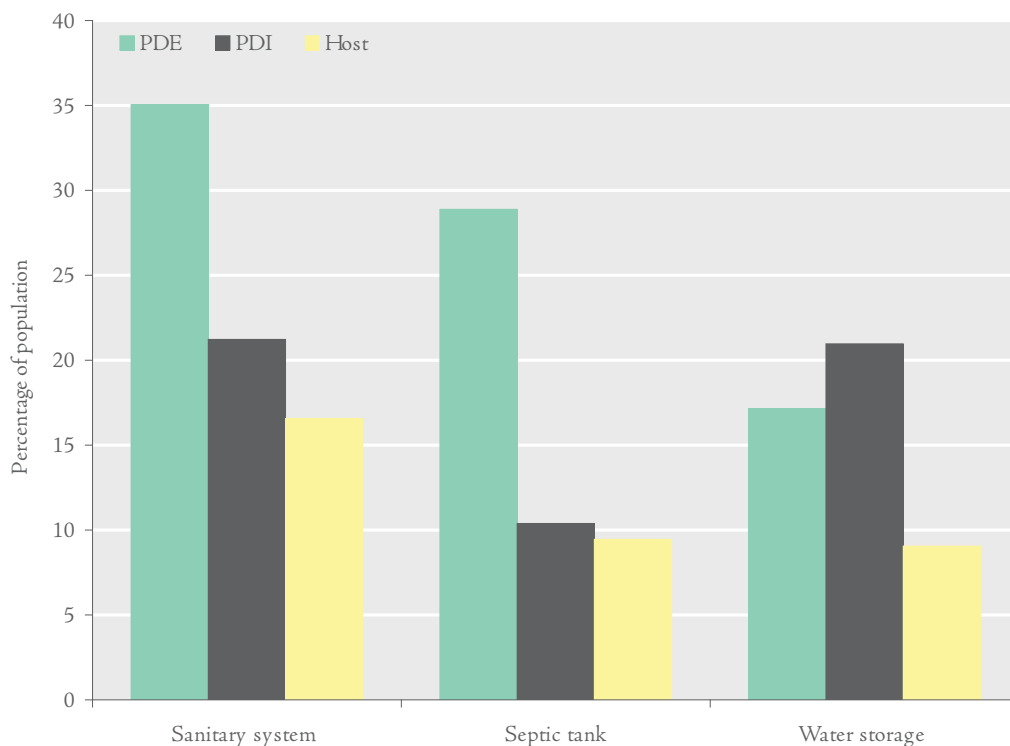


Figure 3-19 – Problems with accumulated garbage, by displacement level

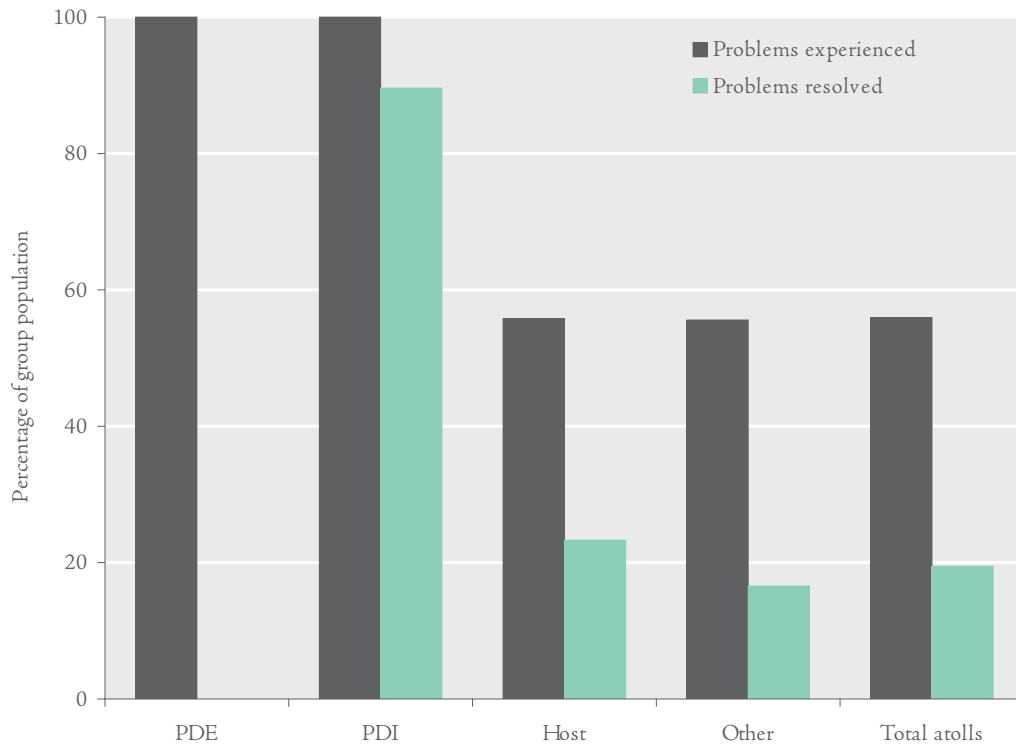
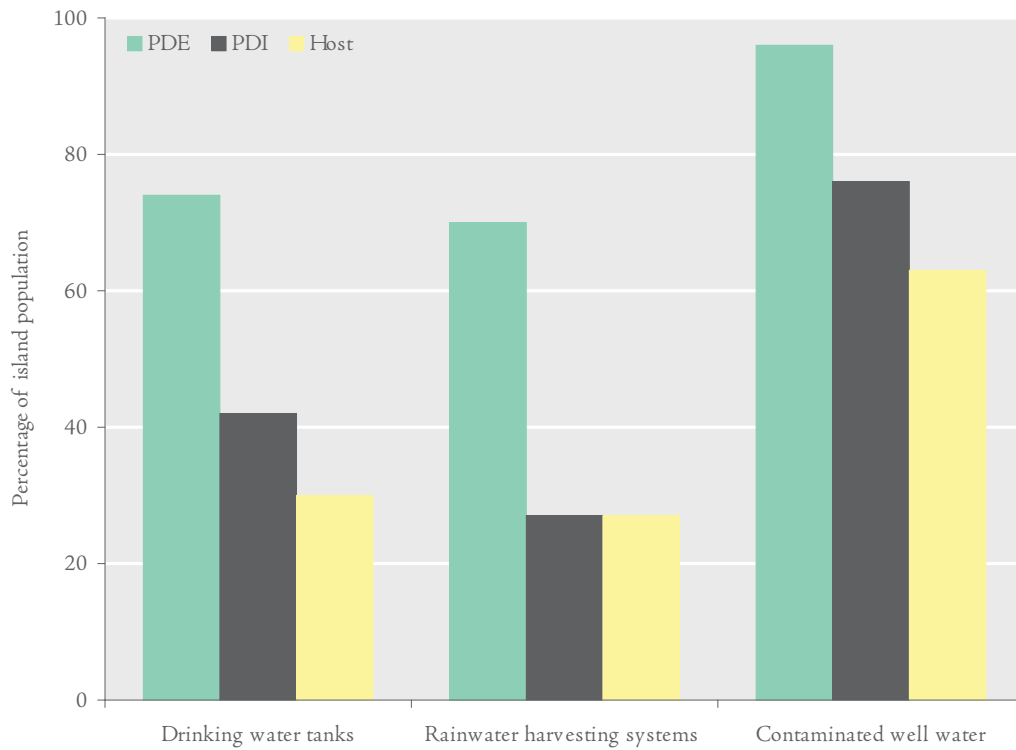


Figure 3-20 – Damage to water supply systems, by displacement level



Water supplies

The tsunami had a serious impact on water supplies, by damaging water tanks and systems for rainwater harvesting, as well as by contaminating the groundwater taken from wells, either through salination or leaking or overflowing septic tanks. The extent of the damage is indicated, by displacement group, in Figure 3-20.

The immediate water problems on the affected island were resolved by delivering drinking water supplies from Male', either in tanks or bottles. Some islands were also supplied with desalination plants, though these are expensive to run and maintain and in the longer term may prove unsustainable.

Following the tsunami, households on many islands also received water tanks, but an extensive trip to the northern part of the country in February 2006 discovered that many of these had yet to be

installed – probably because of a shortage of funds to repair rainwater collection systems and connect them to these new tanks. The contamination of ground water will also take time to resolve.

The shortages of water do, however, also have to be set in context. On many islands even before the tsunami water supplies were already precarious. This is illustrated in Figure 3-21 which shows that in 2004 around one-third of people on the 71 most-affected islands experienced water shortages, often up to 40 days or more. After the tsunami, in the first half of 2005, the situation was much worse. Despite efforts to bring water to affected communities less than one-third of the population of these islands reported having enough water throughout the period – half the proportion of the previous year – and around 40 percent suffered shortages of more than 40 days.

Figure 3-21 – Days of water shortage, by impact level

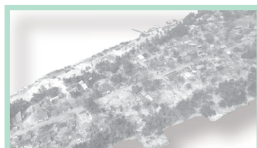
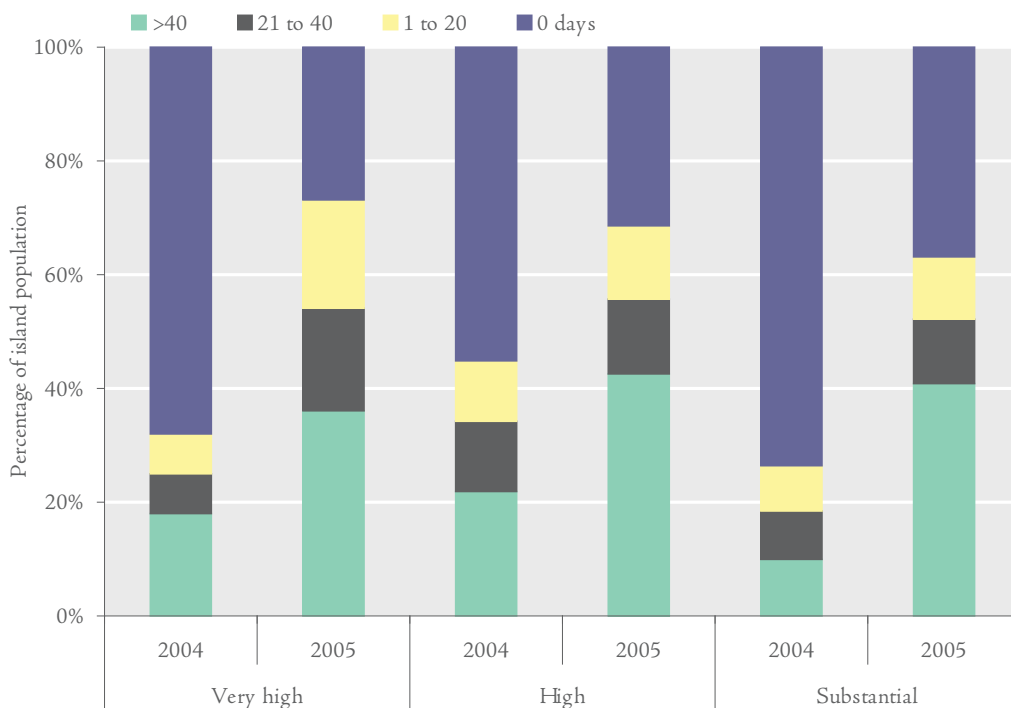
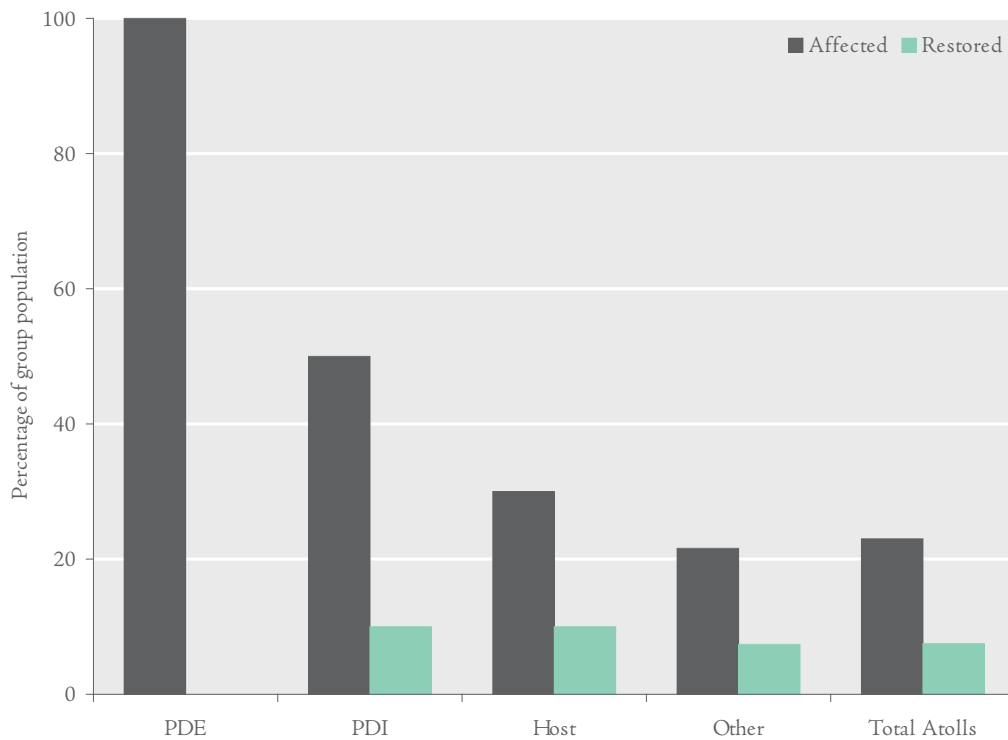


Figure 3-22 – Population reporting damage to agricultural fields, by displacement level

Agriculture

Although agriculture amounts to around 3 percent of GDP, on more than one-quarter of the islands the cultivation of fruits and vegetables for home use and for sale to Male' was reported as the most important or second-most important economic activity – providing employment for about five percent of the total atoll population and about eight percent of women.

The impact of the tsunami on agriculture was devastating not only to the cultivated crops but also to the trees and crops in backyards and home gardens. The tsunami affected agriculture on nearly one-quarter of islands, though six months later agriculture had been restored on one-third of these. Figure 3-22 depicts the extent of damage and recovery, according to the populations affected.

Most species of fruit and shade trees on the small islands have poor resistance to salt water so

were seriously damaged by the inundation. Species commonly grown are mango, breadfruit, and guava. On severely affected islands all fruit trees including mango and breadfruit died and did not regenerate. Only in a few cases did trees that appeared to be affected, and lost most of their leaves, subsequently regenerate. The other affected trees died and it will take a long time for replacements to grow to the necessary size. Many bananas plants also died. About 40 percent of the atoll population lived on islands where many trees died.

Of course, coconuts, screw pine and various other trees that are native to the small islands did not suffer from the salinity but on a number of islands the damage was severe also for these species because of the enormous force of the waves, which uprooted and carried away the trees.

Six months after the tsunami employment in agriculture was back to its pre-tsunami level.



Agricultural activity on particular islands have intensified through aid as well as extension programs that have been targeted towards improving the situation and livelihood of farmers and home gardeners. Displaced communities have started agricultural activities on their host islands, anew or because they were farmers either based on their full-time or seasonal activities.

One of the earliest projects implemented was the testing of soil salinity in selected islands across the country. After three missions in March and July 2005 and February 2006, it was concluded that there would be a considerable time elapse before the ground water in the islands return to the pre-tsunami levels. In the last year and a half, the ground water has shown improvements and the cultivation of crops have increased. This recovery of the ground

water has in fact been faster than was expected in the aftermath of the tsunami.

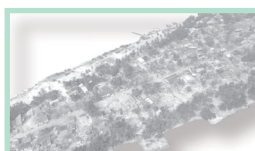
While agricultural production declined after the tsunami, the turnover of agricultural commodities at the Malé market was higher in 2005 than in 2004. The products coming mostly into the Malé Market are supplied from nearby islands which have not been affected. The latter is indicated in Table 3.3.

Although agricultural production has seriously been affected by the tsunami, recovery has been faster than envisaged and the seasonal rains of the past year has assisted the recovery of the land from salt water and improved the level of production on the islands.

Table 3-3 – Value of traded agricultural commodities in Male', 2002-2005, Rf. millions

Variety/year	2002	2003	2004	2005
Banana	6.5	10.0	17.9	15.3
Watermelon	5.5	8.7	12.8	12.5
Githeyo mirus	1.9	3.9	12.6	14.0
Cucumber	0.1	4.5	10.0	10.1
Betel Leaf	1.5	4.7	9.4	15.4
Young Coconut	2.2	3.0	4.7	5.1
Butternut	-	-	3.5	1.8
Pumpkin	0.4	1.1	3.3	3.6
Kopee faiy	0.6	0.8	3.1	4.1
Coconut	1.8	1.7	3.0	4.1
Mango	1.9	2.4	0.8	2.6
Others	2.9	3.6	9.1	18.0
	25.2	44.4	90.3	106.9

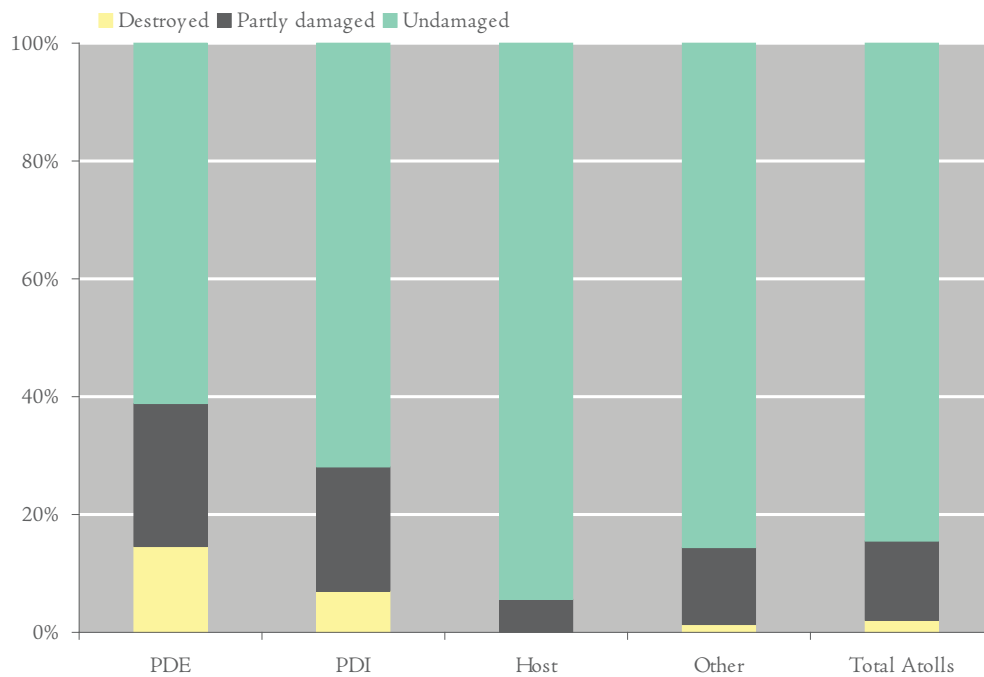
Source: Ministry of Fisheries, Agriculture & Marine Resources



Vessels

In the atolls, the tsunami damaged 15 percent of all vessels of which one in six was beyond repair. These were distributed across around half the islands – though on the most-affected islands about one-quarter were damaged (see Figure 3-23).

Figure 3-23 – Percentage of vessels damaged, by extent and displacement level



CHAPTER 4

PSYCHOSOCIAL AND REPRODUCTIVE HEALTH

Apart from causing physical damage the tsunami had a lasting psychosocial impact – raising levels of stress and affecting people's outlook on life. Higher levels of stress can also undermine reproductive health.

In earlier studies, the mental health situation in Maldives was found to be comparable with that in other countries with similar levels of socio-economic development. However, the tsunami and its aftermath will have affected people's mental states, increasing stress and thus also affecting reproductive health.

The TIA included therefore modules on psychosocial and reproductive health, though since the tsunami is unlikely to have had this kind of impact in the less-affected islands these questionnaires were only applied on islands in the two highest-impact groups – 37 islands, covering about 16 percent of the atoll population. On these islands a questionnaire was administered to a sample of adults to gauge their psychosocial condition. And another special questionnaire was administered to a sample of women aged 15 to 49 years to assess the tsunami's reproductive health impacts. Medical experts of the Ministry of Health, assisted by UNFPA, analysed these surveys and have published the results in two reports¹. This chapter offers only a selection of their findings.

Psychosocial impacts

In both developed and developing countries traumatic life events, including disasters, affect

people's mental health. And although the risk factors for mental disorders are similar across the world, disasters appear to have more severe mental health effects on people in developing countries. This is often attributed to the greater challenges faced by people attempting to deal with the disaster in socio-economic contexts that are comparatively lesser well resourced.

Following the tsunami, quite a few people availed themselves of the psychosocial assistance offered by the National Disaster Management Center. Those on the most severely affected islands had direct and indirect psychological problems of varying degrees of severity – as did people on some neighbouring islands.

According to WHO, tsunami-related mild psychological distress will have affected up to 40 percent of this population. Thanks to the resilience of human nature, however, and supportive coping mechanisms, for half to two-thirds of these people such effects last only a few weeks. Some however will develop moderate to severe psychological disorders and would benefit from social and basic psychological interventions. Around five to ten percent will also have generalized anxiety, depression and post-traumatic stress disorders. The tsunami could also have caused a marginal increase in severe mental disorders such as psychosis, severe depression and severe disabling anxiety. The most serious effects are likely to be in people who were already suffering from mental and psychological disorders; traumatic events can exacerbate these conditions causing severe mental disorders.

More commonly, the normal responses to a disaster include confusion, hopelessness, crying, headaches, body aches, anxiety, and anger. People

¹ Ministry of Health and UNFPA, *Tsunami Impact Assessment Survey 2005 – Psychosocial Module (draft)* and Ministry of Health and UNFPA, *Tsunami Impact Assessment Survey 2005 – Reproductive Health Module (draft)*, Male', 2006



may be feeling helpless; some may be in a state of shock; others may be aggressive, mistrustful and uncertain about their future. There may be feelings of loss of control or agency over own lives, despairing, feeling relieved or guilty that they are alive, sad that many others have died, and ashamed of how they might have reacted or behaved during the critical incidents. People may also experience a sense of outrage, shaken religious faith, loss of confidence in themselves or others, or sense of having betrayed or been betrayed by others they trusted. Such responses are to be expected and usually they resolve over time as the lives of people are stabilised.

In persons with pre-disaster mental and psychological disorders, traumatic events exacerbate their condition and may cause severe mental disorders; they are affected disproportionately. An individual's response also depends on his or her personality. People who are hardy and who have stable, calm personalities, as well as those with strong self-esteem and who feel in control of their lives, are less likely to suffer post-disaster distress.

Those more likely to be affected during disasters are people who have experienced bereavement, separation from their family, or physical injury – either themselves or other member of their family. Much will depend too on the severity of exposure and on a person's previous experience of disaster.

There are also gender differences. Worldwide, both in normal circumstances as well as following a traumatic event, mental disorders occur more frequently in women than in men. The additional stresses placed on women because of their social and economic constraints placed women at greater risk of lower wellbeing.

The impact can also depend on age. In this case however, globally no consistent pattern has been detected. Some researchers suggest that those most at risk are children, while others suggest

that those most vulnerable are middle-aged adults who, following a disaster, will have increased responsibilities and obligations. The effect on age may, however, differ according to social, economic and cultural contexts.

After a disaster the most important form of support is through families. In addition, people can be helped by social networks such as peer groups, through which they can share experiences and enhance their sense of belonging. Ultimately, however, people have to cope as individuals, but it is not just the way that people cope that matters; just as important is their belief in their capacity to cope.

Objectives and methods

This module of the TIA survey was applied to a sample of the population of the 14 most-severely affected islands and enumerated half the households, randomly selected, that were enumerated for the other modules of the TIA. A total of 854 persons of 15 years and older were interviewed. The sample was almost equally divided between PDEs and PDIIs, with shares of 45 and 55 percent respectively.

Figure 4-1 – Survey population by age

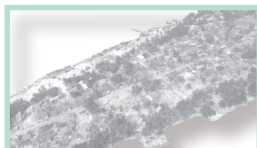
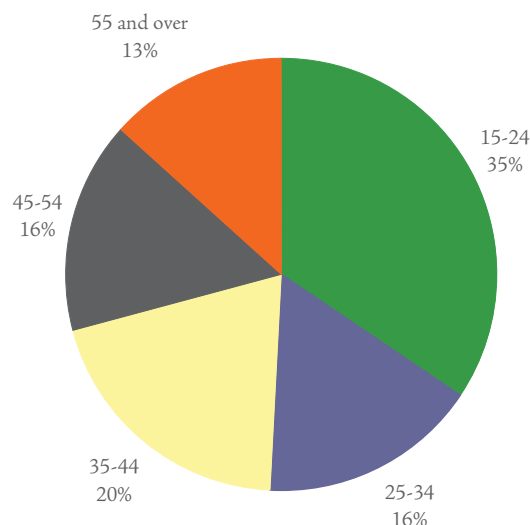


Figure 4.1 shows the age distribution of the sample population. 60 percent of respondents were women and 40 percent men.

For this module enumerators administered a largely descriptive, 35-question questionnaire. This was a simplified adaptation of WHO's Global Health Questionnaire, GHQ 12 and included questions related to social condition and status.

The survey data were adjusted for non-response and raised to the full sample population. The analysis was presented as cross-tabulations segregated by gender and age groups as well as by components specifically related to the tsunami. Due to the small numbers involved, it was not found useful to include cross-tabulations by island.

Taking the groupings proposed by WHO, the analysis uses the following classification of respondents.

Moderately distressed – Respondents who had one or more symptoms of a psychological or mental disorder following, or related to, the tsunami – and continued to have such symptoms at the time of the study: difficulties with sleeping or eating or having less hope for the future or feeling less satisfied with the safety of their family due to the tsunami

Mildly distressed – Those who had difficulties with sleeping or eating following the tsunami but no longer had them at the time of the survey.

Not affected – Those who did not have any symptom of a psychological or mental disorder.

It should be noted that this classification is based on less information than is normally collected in such studies – as the questionnaire does not cover all the GHQ 12 questions – and will thus be less accurate than one based on the full GHQ 12. In a number of cases, health workers also identified

people with mental disorders, but this information could not be used as the form did not collect information on a causal relationship between the tsunami and mental health problems.

There may have been some bias as a result of non-response, but it is believed that this was largely corrected by adjustments to the raising factors. For the individual islands and age groups non-response rates were similar, generally between 25 and 35 percent of the expected numbers. However, the non-response rate for men, at nearly 40 percent was about three times higher than that for women – due to the absence of these men at the time of the survey. This problem had, however, been anticipated at the design stage, and the sample size increased accordingly. The actual number of respondents – 500 women and about 350 men – provides the desired level of accuracy. On the 14 islands the respondents made up about ten percent of the adult population – about 12 percent of the women and nearly 9 percent of the men.

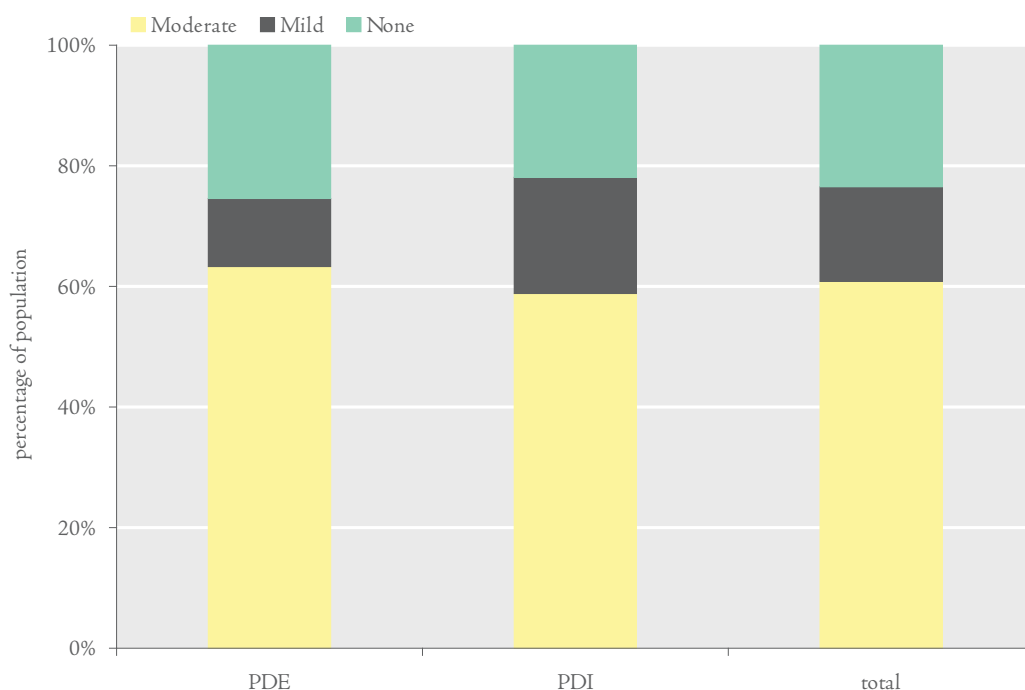
Findings

The survey found that the majority of the population were moderately distressed – about two-thirds of women and more than half of men (Figure 4-2). A further one-sixth of both sexes were classified as mildly distressed. Only one out of six women, and one-third of men, were not distressed.

The patterns being similar between the persons displaced externally (PDEs) and the persons displaced internally (PDIs). The PDEs had slightly higher levels of moderate distress but overall levels were marginally higher among the PDIs.

Thus far, the levels of distress do not seem to be linked with employment. A preliminary analysis of the labour force characteristics of the people with different distress levels did not show a clear pattern. Those more distressed, women or men,



Figure 4-2 – Psychosocial distress, by displacement level

had similar labour force participation rates to the other groups. Nor were there any obvious patterns related to unemployment levels or other linked characteristics.

Health

About three quarters of the respondents considered their health to be good, a further 8 percent thought it was reasonable, while 15 percent thought it was not good (Figure 4-3). There was no difference between men and women. As might be expected, the proportion of the population considering themselves in good health decreases with age. Of young adults 90 percent reported good health, while for people of 55 and over the proportion was only 40 percent.

At the time of the survey, nearly one-quarter of respondents were taking medicines – often for non-communicable chronic diseases, such as diabetes, cardiovascular diseases and skin

conditions. Four percent were taking medicines for various psychological and mental health conditions or to treat such symptoms as difficulty in sleeping, loss of appetite, headaches, feeling tired, epilepsy and mental problems.

A health care provider identified around 7 percent of respondents having a history of mental illness. This is much lower than the prevalence of mental disorders in the country as a whole: the 2003 Mental Health Survey conducted by the Ministry of Health estimated the rate at about 22 percent – though it did find the prevalence of epilepsy and psychotic disorders to be around 7 percent.

Life in general

In a broader context, respondents were also asked how they felt about life in general. As can be seen in Figure 4-4, more than half responded that generally things were good and four percent thought

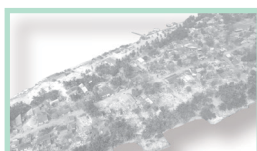


Figure 4-3 – Rating of health, by age group

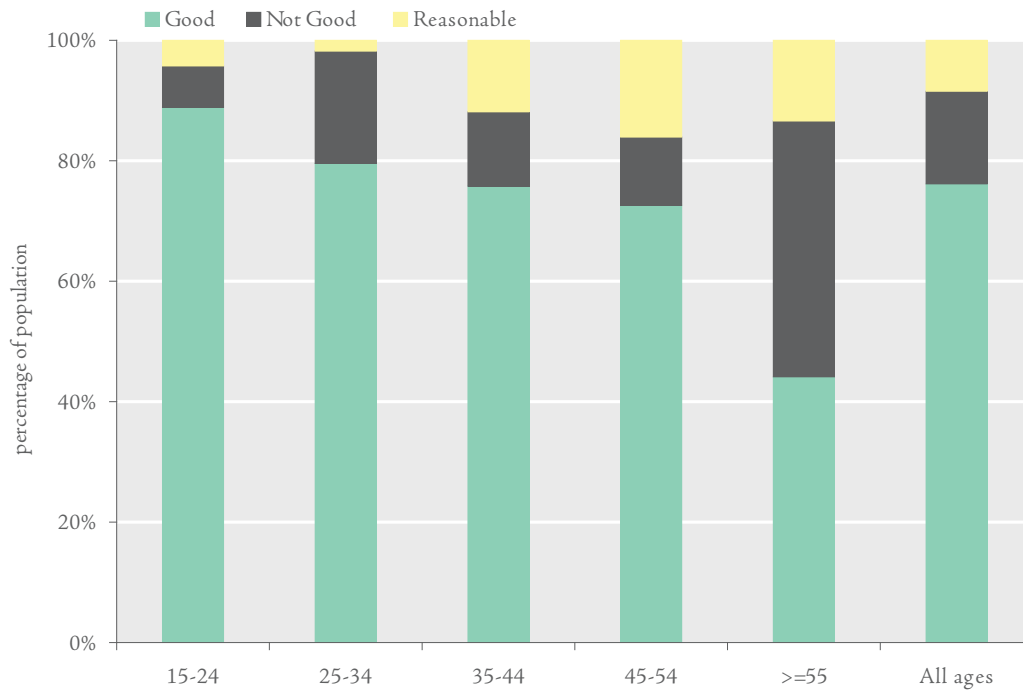
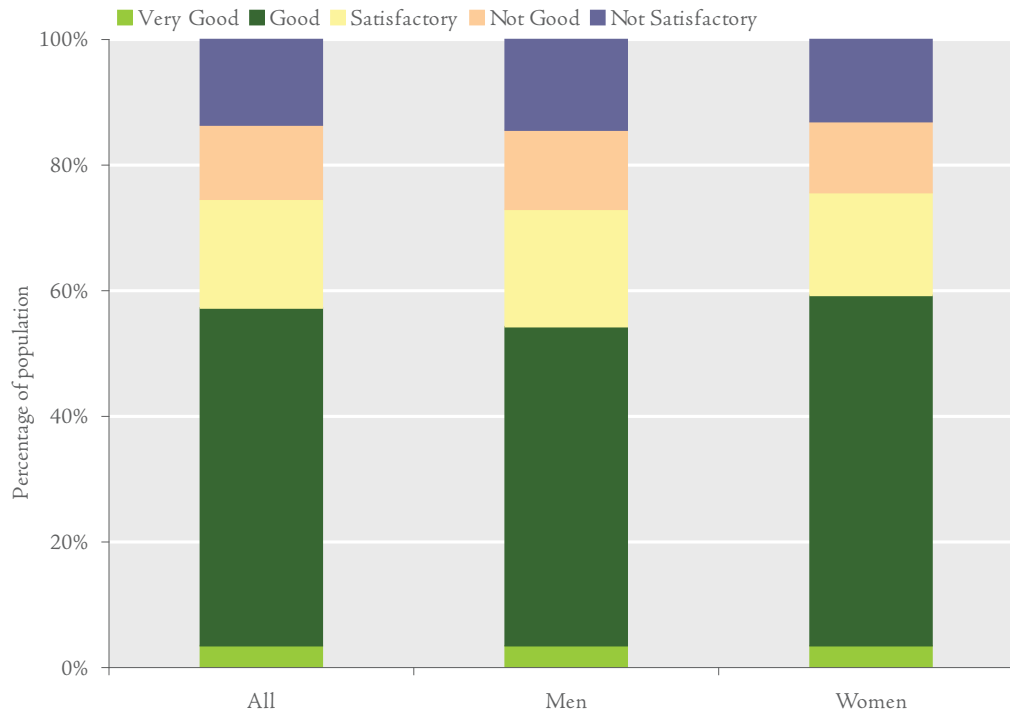


Figure 4-4 – Ratings of life in general, by sex

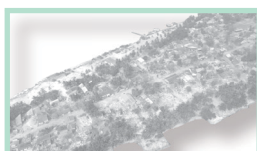
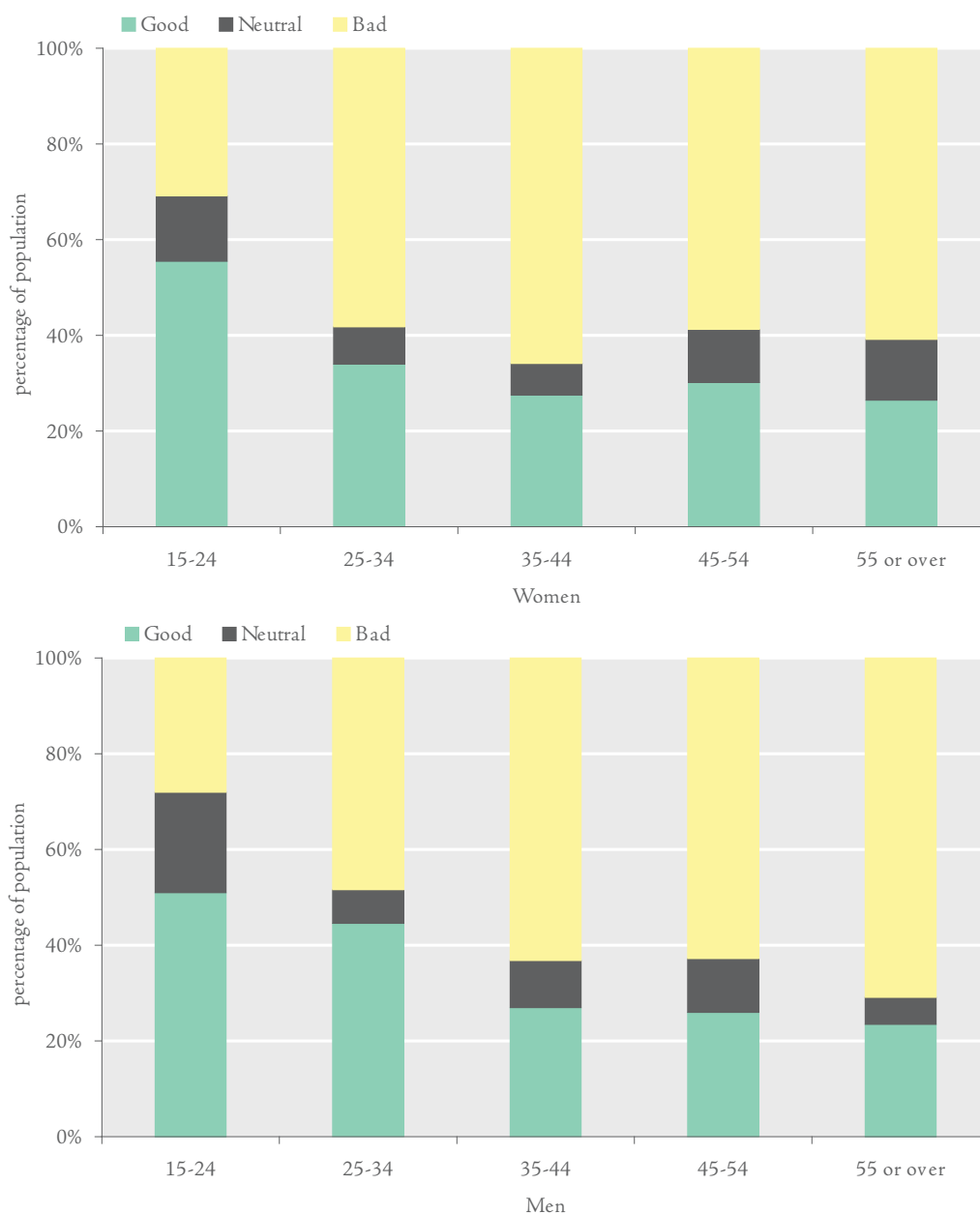


they were 'very good'. About one quarter of the respondents perceived that things were either 'not satisfactory' or 'not good'. The remaining sixth gave a neutral response. Differences between the sexes were limited, except that five percent more women than men indicated that life was good.

While the overall distribution of men and women was roughly similar, looking at the same

information by age group reveals substantial differences. Younger women tended to have a better feelings about life than men in the same age group, while the highest proportion of dissatisfied women could be found in the 35-44 age group. Older men, on the other hand, were much less likely to feel good, with nearly half of the men over the age of 45 indicating that they were not satisfied, against about 30 percent of women. It may be important to consult

Figure 4-5 – Life in general, by sex and age



this group in designing programmes so that their concerns can be addressed. Future programming should address this discrepancy.

These differences are evident in Figure 4-5, where the two highest and lowest classes have been combined, giving three groups that can be interpreted as 'good', 'neutral' and 'bad'.

Causes of worry or concern

As might be expected from a population deprived of their own homes and living in temporary shelters, the main source of worry was housing. This is followed by worries about the children's future and

about the way family and friends have been affected (Figure 4-6). On all of these issues, most people said that as a result of the tsunami the situation had worsened, except for the partner's treatment which stayed much the same. The pattern is the same for women and men, with the exception that men worried somewhat more about employment – their fourth most-important concern as against the sixth for women.

For the six main worries, the information has been further disaggregated by psychosocial group and sex. The results are given in Figure 4-7. In general, the moderately affected people have more worries than those mildly affected by the tsunami,

Figure 4-6 – Main causes of worry

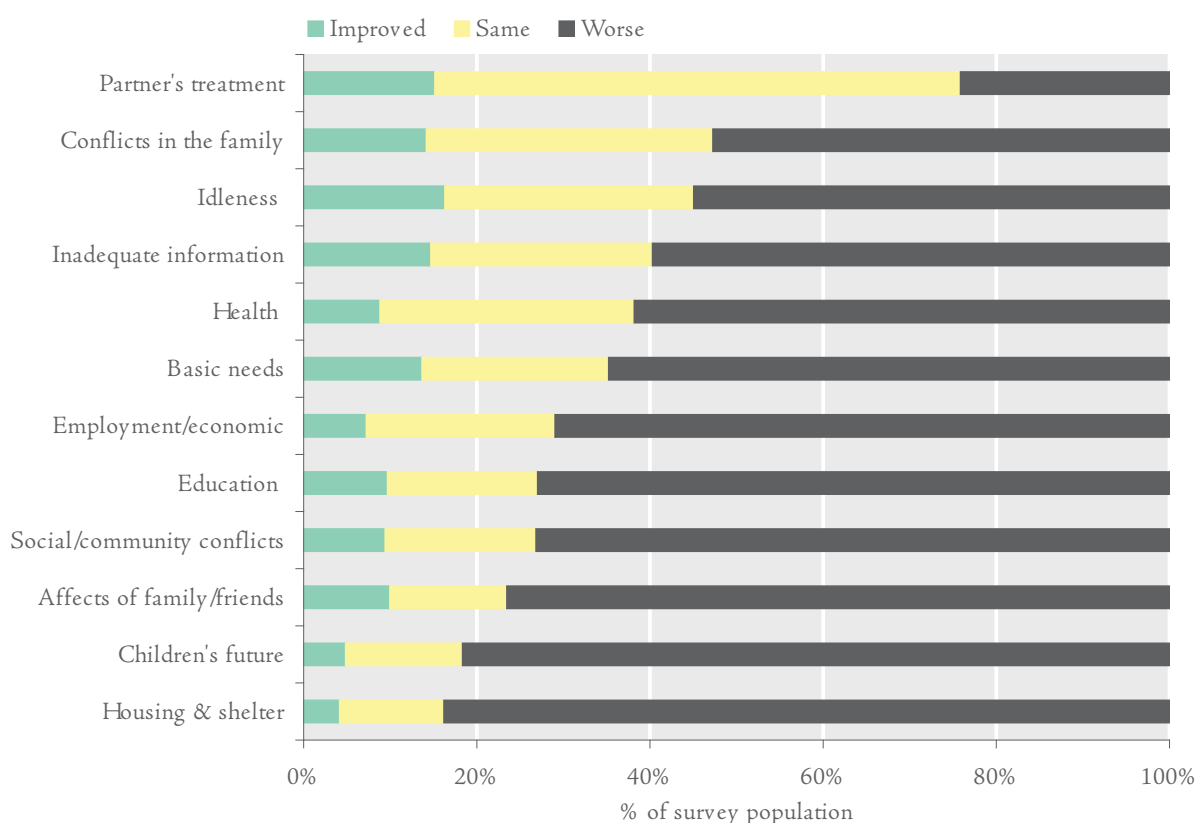
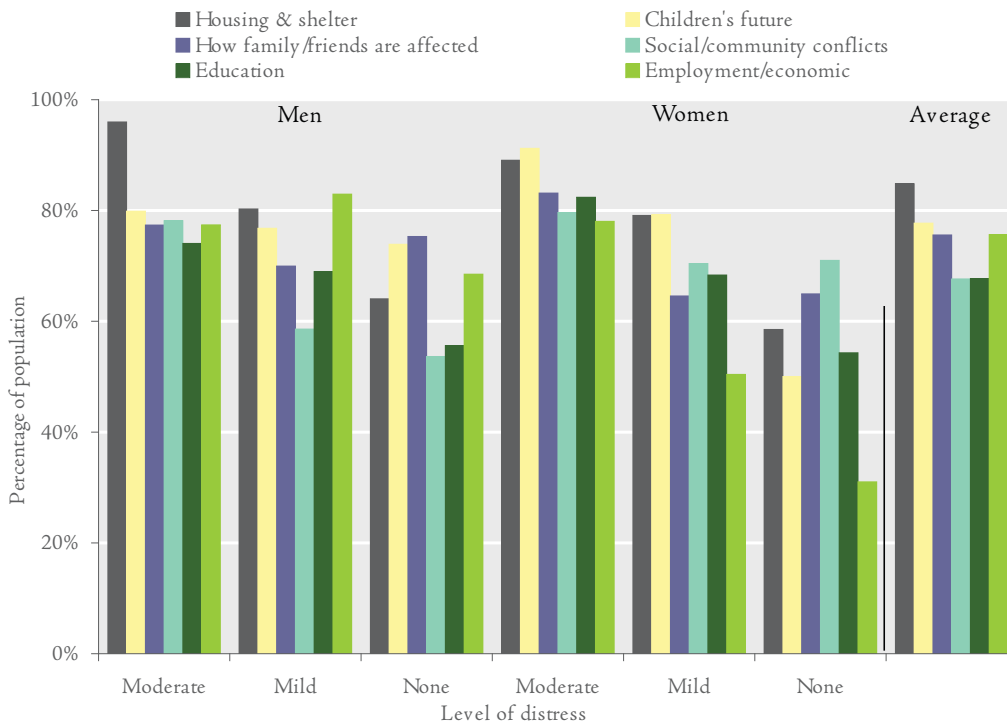


Figure 4-7 – Six main causes of worry, by psychosocial group, and sex

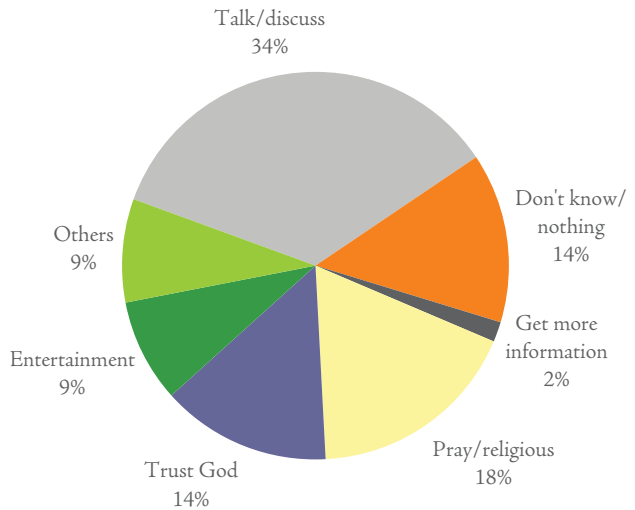


who in turn have more than the people classified as not affected – though this is not true for all the main worries. The figure also shows that the intensity of worries is similar for men and women, though on average, men worry a bit more about housing and employment while women are more concerned about family and community.

Response to worries

When worried and anxious, in about one-third of cases, people talked about this to another person. A further one-third said that they prayed, engaged in religious activities or trusted in God. In other cases people kept themselves busy with some form of entertainment, or did nothing much at all (Figure 4-8).

Figure 4-8 – Response to anxiety or worry



Overall, people were more likely to talk to friends than family members. It is also noticeable that young people were more likely to discuss their problems than older people, who used other ways to reduce their worries and anxieties (Figure 4-9).

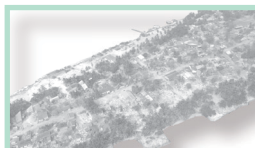
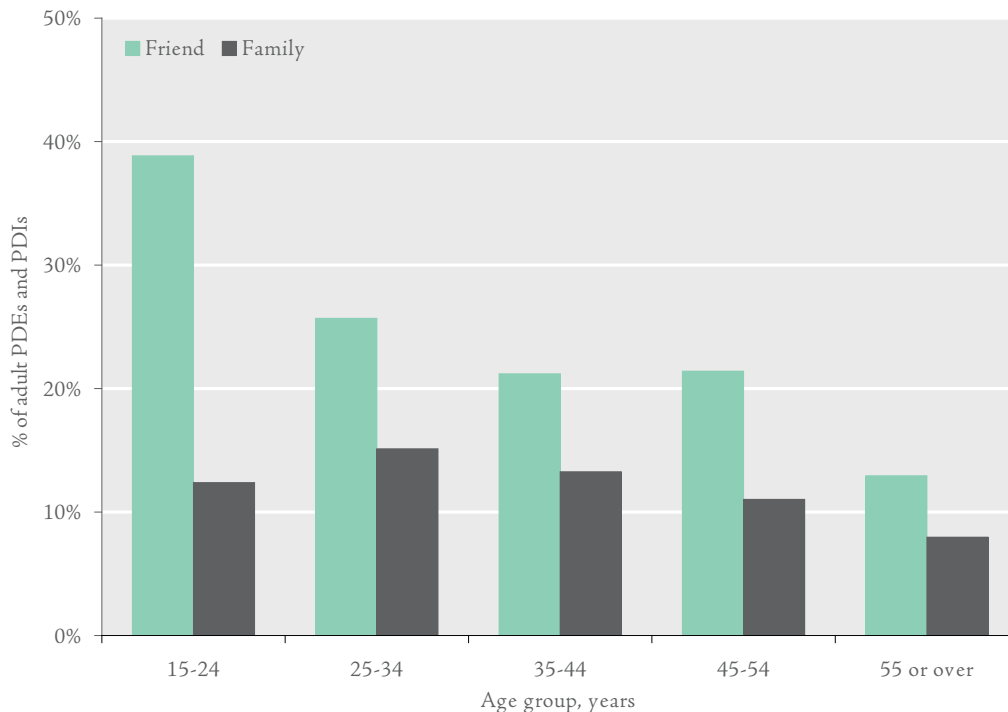


Figure 4-9 – Proportion talking to friends or family, by age

This gives some direction on how psychosocial support could be organised. Well-informed and sensitised family members and friends will be able to help many people to cope with their situations.

Somatic symptoms

Respondents were asked about somatic symptoms such as difficulty in sleeping, changes in appetite, or headaches due to worry. The first two of these were used to determine levels of distress, according to the classification described earlier.

Nearly two-thirds of women, and more than half of men, covered by this module reported that after the tsunami they had problems with sleeping. Six months later, the situation had improved substantially, nevertheless more than one in three women and a quarter of men continued to face difficulties.

Perhaps information on relaxation methods, consultation with the group on how to manage

worries, provision of information that will resolve their worry may be some of the ways of addressing these well being concerns.

Among the PDEs, women were much more affected than men by sleeping problems immediately after the tsunami. Six months later, the rates for both had gone down substantially. As can be seen in Figure 4-11, among the PDIs, sleeping problems following the tsunami were reported by about one-third of women but half of men. After six months, the rate for men had halved while that for women was unchanged.

The tsunami also led to losses of appetite. Immediately following the tsunami, nearly half the respondents had problems with eating, though after six months the proportion was down to one in five (Figure 4-12). While immediately after the tsunami the incidence was higher for women than men, six months later the levels were similar for both.



Figure 4-10 – Difficulty in sleeping due to tsunami-related worries, by sex

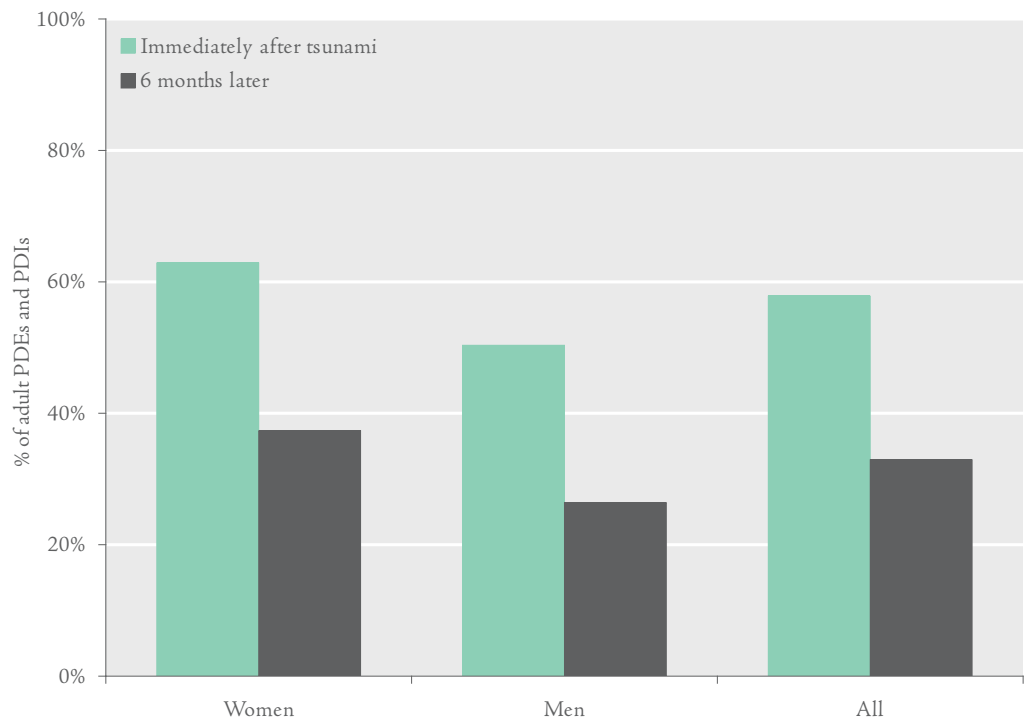


Figure 4-11 – Difficulty in sleeping due to tsunami-related worries, by sex, PDEs and PDIs

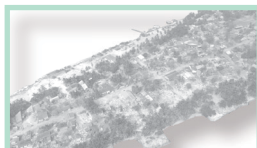
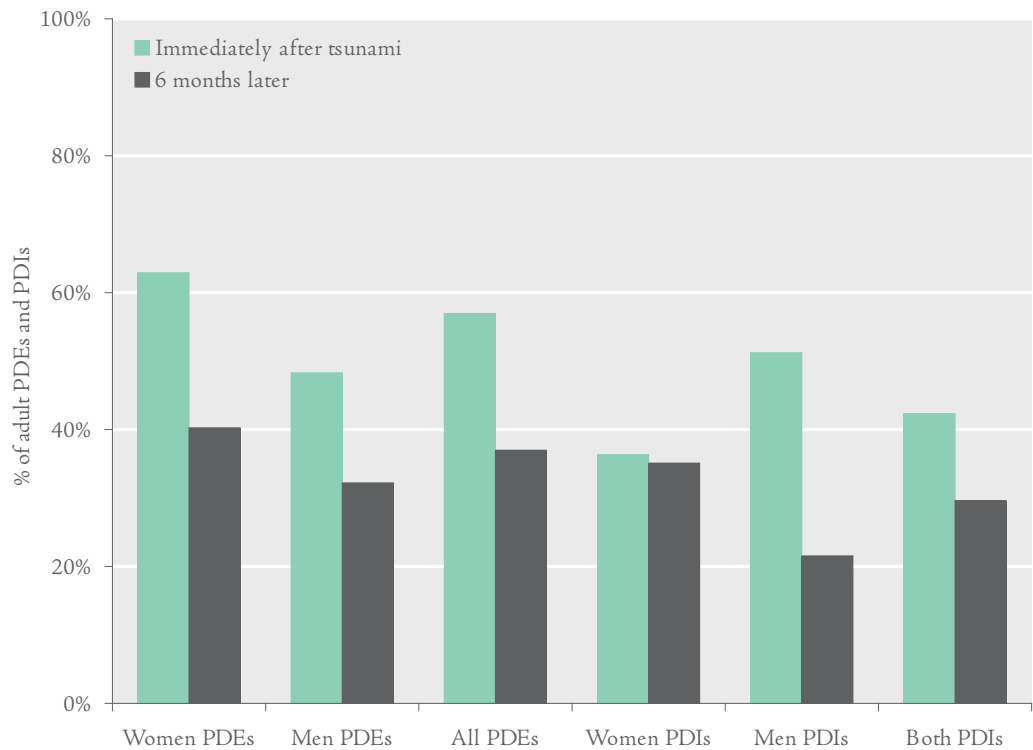


Figure 4-12 – Change in appetite due to tsunami-related worries

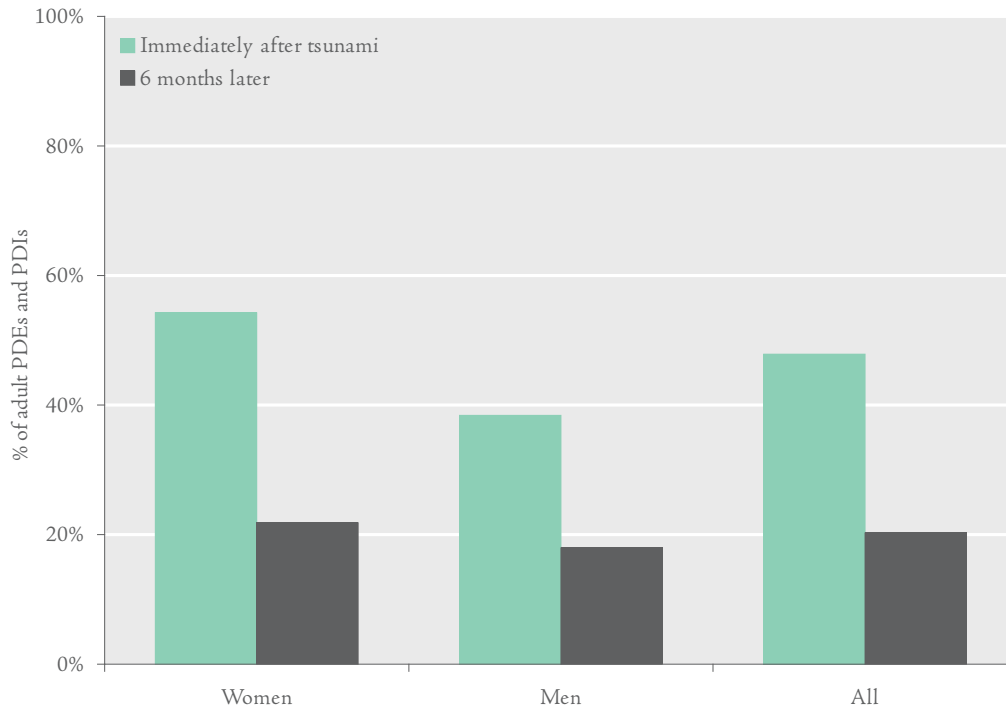
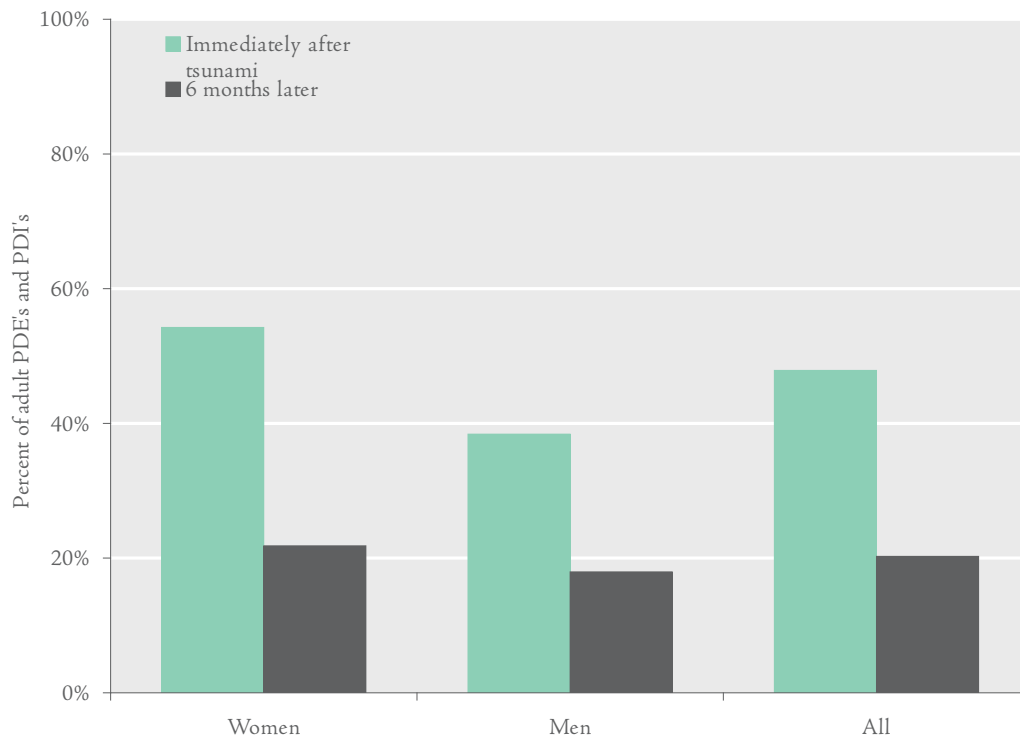


Figure 4-13 – Changes in headaches following the tsunami, by sex



About half of respondents stated that they had severe headaches immediately following the tsunami, with women suffering significantly more than men. Six months later, the incidence had gone down to about one in five, with men and women affected more or less equally (Figure 4-13). Again relaxation methods, community activities and festivals which take people's minds off their problems and which are fun may help relax people and may help them to cope.

Work

As the people from the most-affected islands had all been evacuated after the tsunami, many had lost their jobs or livelihoods. Figure 4-14 shows the employment situation six months later, by level of psychosocial distress. Overall, 60 percent of the people reported that they had again picked up the activities they were engaged in before the

disaster. There does not appear to be a link between employment and psychosocial distress; or if there is it is very weak.

Hopes for the future

The survey asked respondents about their hopes for the future. The results are summarized in Figure 4-15. This shows that while around half of both women and men said they were more hopeful than before, which basically meant a better life than before.

The younger age groups were in general more optimistic than the older ones; and within those, the men were in better spirits than the women. Hopes were highest in the 25-34 age group where 70 percent of men and half of women looked forward to a brighter future. However in the highest age group the pattern was reversed: half of women kept

Figure 4-14 – Employment situation, by psychosocial distress level

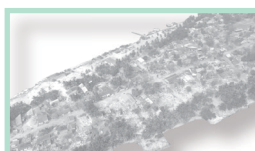
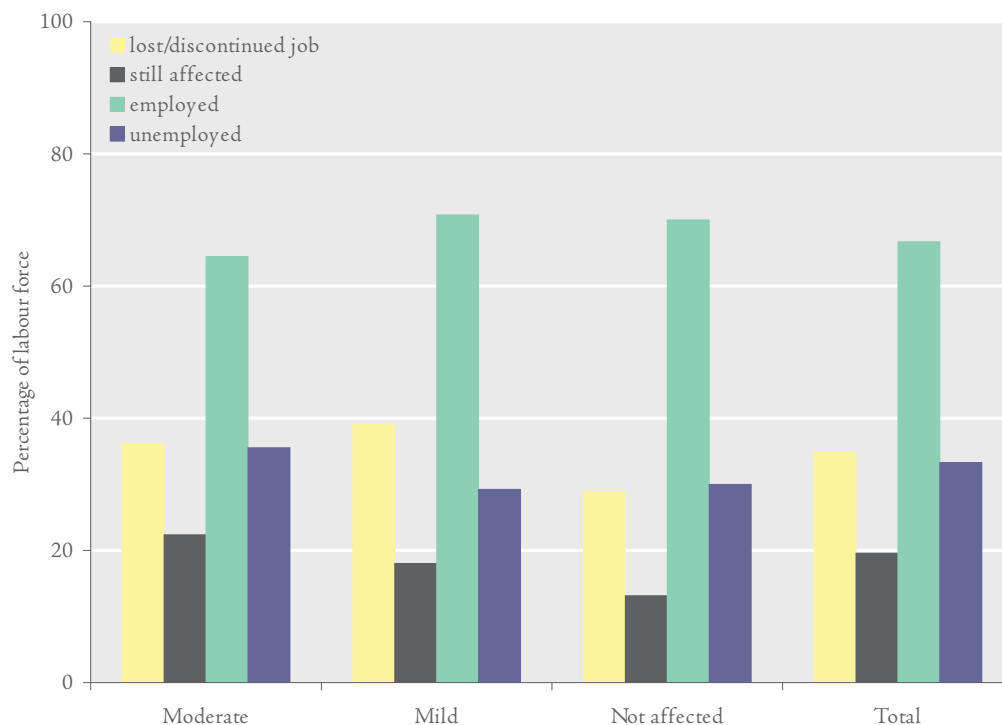


Figure 4-15 – Hopes for the future, by sex and age group

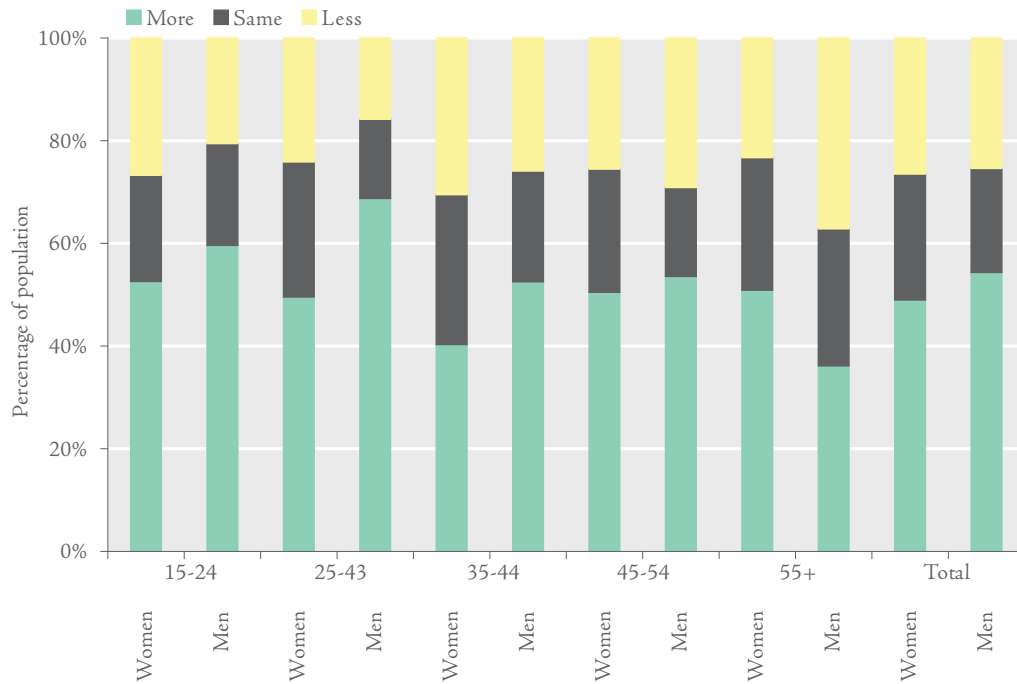
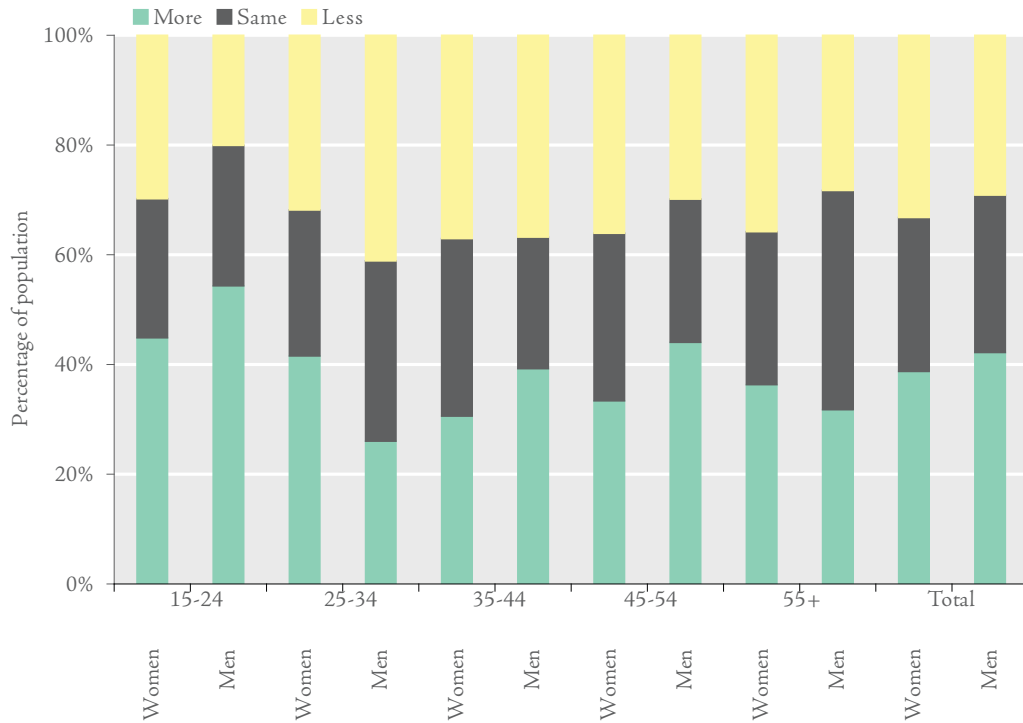


Figure 4-16 – Satisfaction with family's safety, by sex and age group



a positive outlook on life, compared with only one-third of men.

With respect to the safety of their families and themselves, about 40 percent of the respondents thought that it was better than before, while 30 percent thought that the situation had become worse. This is important and points towards the need for understanding the reason why people feel that their living conditions are not safe or secure enough. Ensuring that protective community and infrastructure mechanisms are set in place may be some of the required responses.

Unlike with their hopes for the future, however, there is no clear pattern of these feelings by age group (Figure 4-16).

All respondents were also asked three related questions on violence. First, they were asked if they

had been tempted to hit someone. Around ten percent said that they had, with similar answers from men and women and from the three levels of psychosocial distress. Second, they were asked if they had encountered violence. These levels too averaged around 10 percent, suggesting that in many cases these feelings had been translated into action, though, as is evident from Figure 4-17, men were more likely to have encountered violence than women. Respondents were also asked if they had any inclination towards self injury. The overall average was around 5 percent, but with no obvious psychosocial distress or gender pattern.

Relationships

Married respondents were asked about the relationship with their partner. About 30 percent of married men and women said it was better than before, and only about 5 classified the relationship as

Figure 4-17 – Violence encountered, by psychosocial distress level and sex

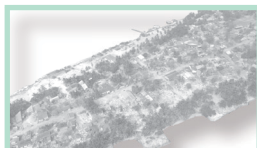
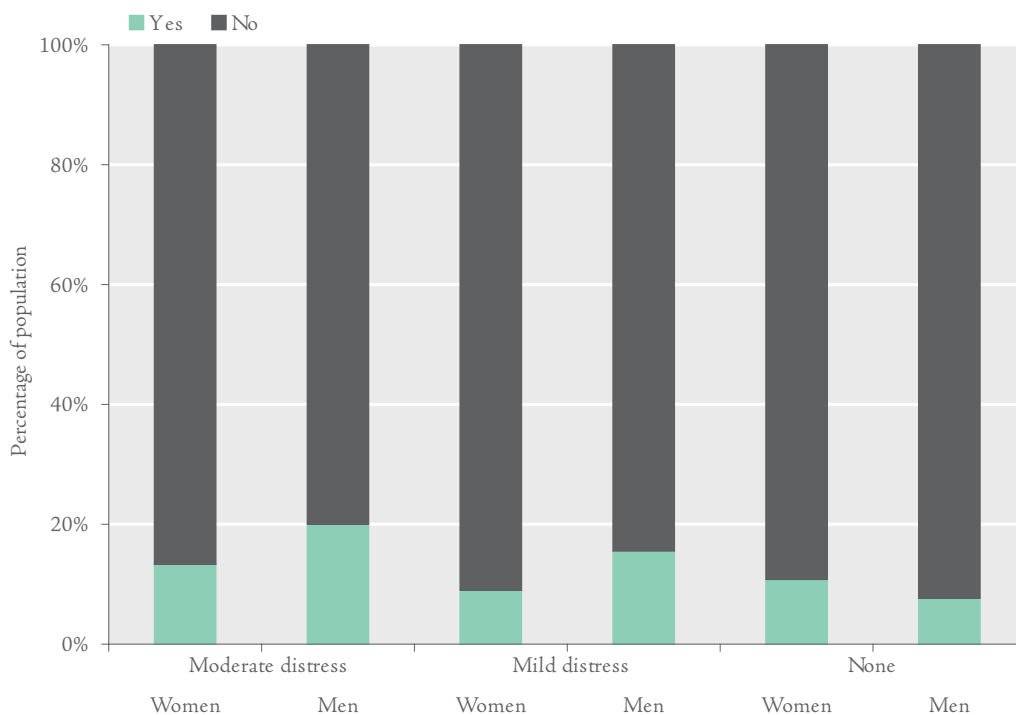


Figure 4-18 – Relationship with partner

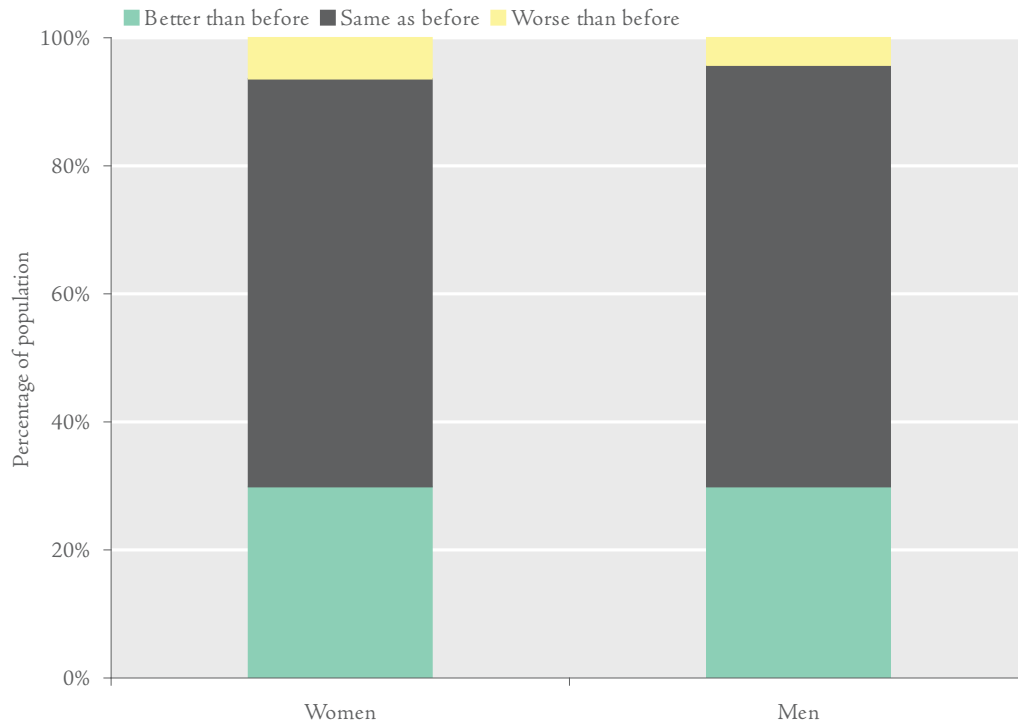
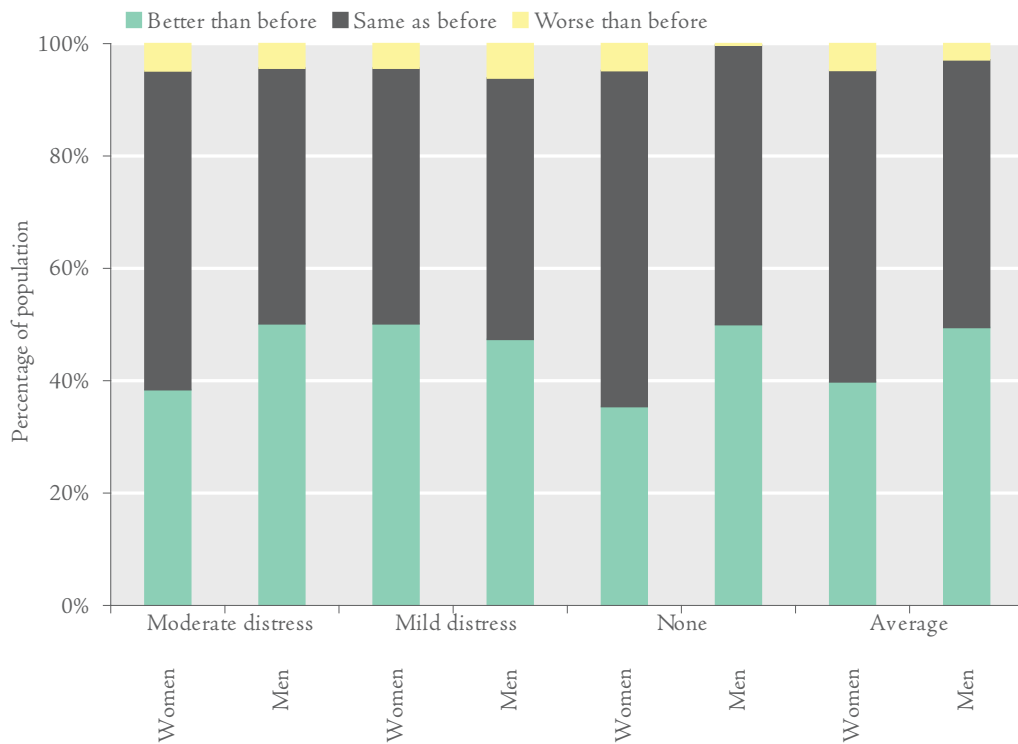


Figure 4-19 – Relationship with family



worse. The feelings of men and women were similar, but as can be seen in Figure 4-18, slightly more women than men thought that their relationship had deteriorated.

The question about relationships with the family produced a slightly different result. The same small percentage of respondents thought that these had worsened, but a substantially higher proportion considered that they had improved – nearly half of men and 40 percent of women. However there is no clear relationship with the level of psychosocial distress (Figure 4-19)

Coping mechanisms

Nearly one third of respondents felt that religion helped them to cope with the tsunami and the ongoing consequences, and a similar percentage credited support from their family. This is shown in Figure 4-20 which also indicates that self-confidence

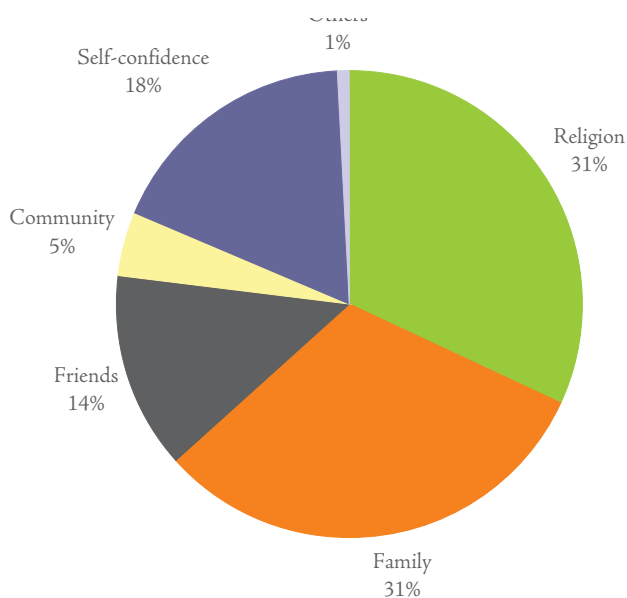
and friends were each the source of inspiration for about one-sixth of the population.

Reproductive health

At the time of the tsunami, approximately 4,000 women in Maldives were pregnant. As far as is known none of these died as a direct result of the tsunami. None of the maternal deaths in 2005 occurred among the displaced groups. However, it is also important to note that, given the Maldivian culture and tradition, many of the reproductive health conditions, especially reproductive tract infections, may have been unreported due to reluctance to seek care and stigma attached to it.

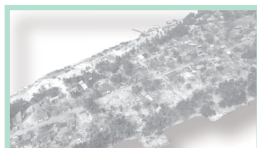
Moreover, some stress-induced reproductive health problems could emerge in the future. There is, for example, some anecdotal evidence of intra-uterine deaths in tsunami-affected areas, though these have yet to be confirmed by official records. There have been no reports of pre-term deliveries or other complications.

Figure 4-20 – Things that helped people cope



However, there is still a concern about unplanned pregnancies. Although contraception is available on almost all islands, with special emphasis given to those islands with displaced people, the survey reported that about half of pregnancies had not been planned. This also reflects a low level of contraceptive use – by only around one-third of women – though it is not clear whether this is an exceptional period or the normal situation.

Reproductive health will be affected not just by post-disaster living conditions but also by the impact of the tsunami on service delivery. Services were disrupted by damage to the physical facilities and the loss of equipment, materials and drugs as well as the resignation of staff. Although most of the affected facilities are now in operation, restoring them to pre-tsunami levels will require speedy implementation of reconstruction and rehabilitation projects.



Objectives of the study

The objective of this study is to assess the overall reproductive health situation as well as the effects on reproductive health of married women aged 15 to 49 who were displaced by the tsunami. For this module, the sample consists of 255 women. As the numbers are quite small, it is not possible to provide an analysis at island level. Nor is it possible to provide an analysis of births since during the reference period there were only 23 reported births in the sample population.

Overall, 26 percent of the women in the sample were aged 15 to 24, 32 percent were aged 25 to 34, and 42 percent were 35 or older. However there was a distinct difference between the PDEs and PDIs,

with the latter having a much smaller percentage of young women.

As might be expected, the severity of psychosocial distress is somewhat higher in the PDEs than in the PDIs. This is presented in Figure 4.25, which gives the percentage of moderately distressed women. It also shows that the oldest women have the highest distress levels, followed by the youngest group.

General health

Most women in the sample were healthy: 79 percent said that their general health was good and 7 percent said it was reasonable; only 14 percent said it was not good. Moreover, as Figure 4-23 indicates,

Figure 4-21 – Age distribution of respondents, by displacement level

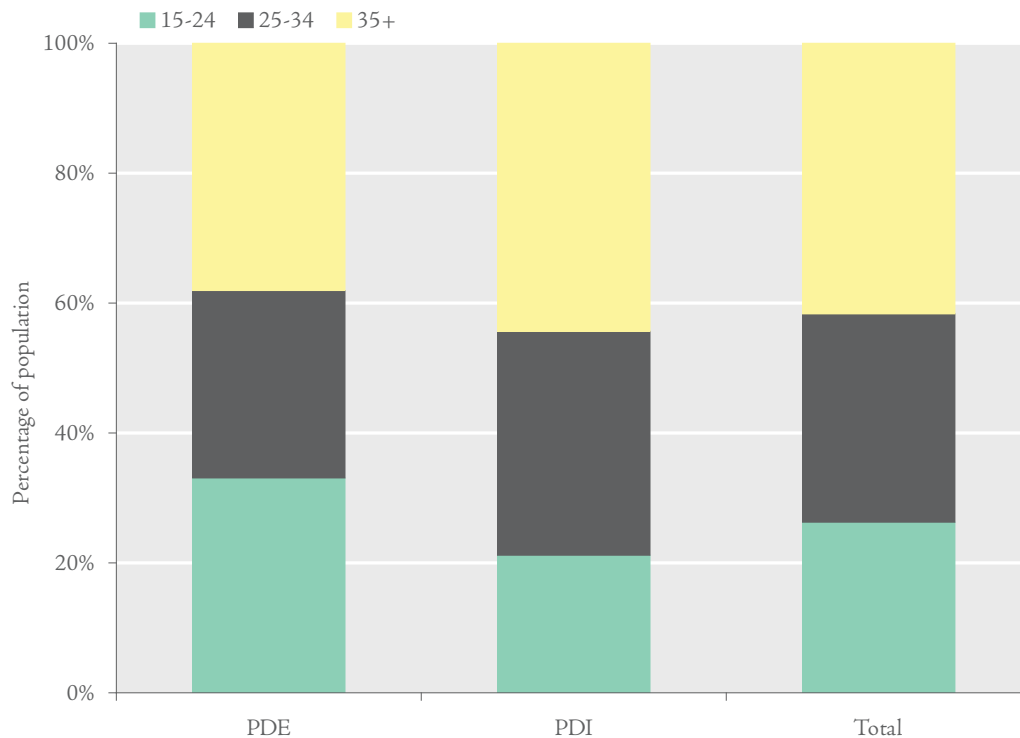


Figure 4-22 – Proportion of women moderately distressed, by age group and displacement level

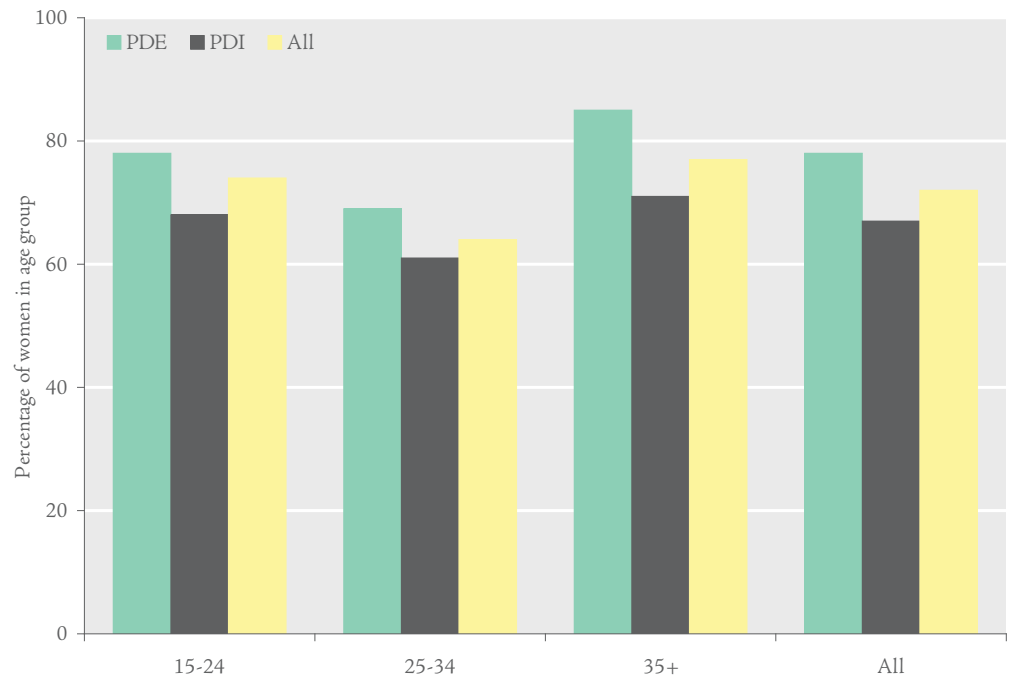
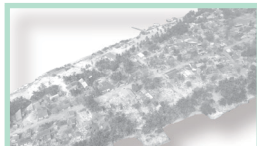
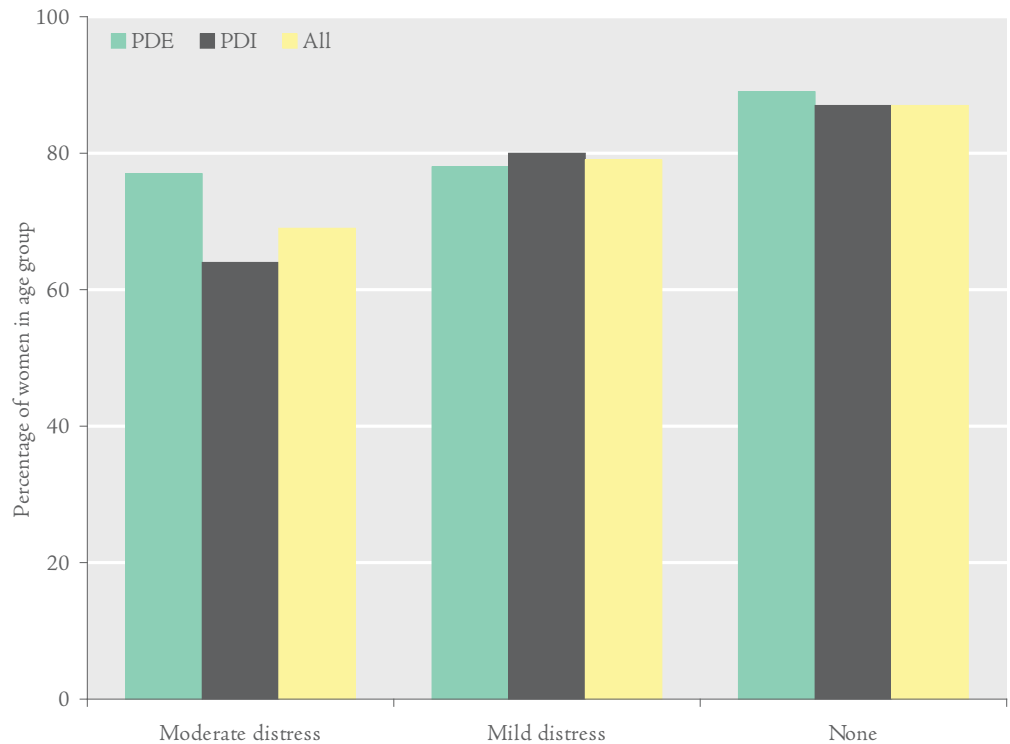


Figure 4-23 – Proportion of women in good health, by distress level and displacement group



the health situation improves as the distress level falls, in both PDEs and PDIs.

Menstruation

About 85 percent of the women reported no change in their menstruation patterns since the tsunami. This was true for both the PDIs and PDEs. In both groups the fewest problems were among the youngest women. The most common change was a more irregular pattern – 14 percent among women aged 25-34 for the middle age-group in the PDEs.

Pregnancy status

At the time of enumeration, about 9 percent of the women reported that they were pregnant, ranging from nearly one-fifth in the youngest age group to four percent in the oldest group. In the

PDEs, the proportion was 7 percent while amongst in the PDIs it was about 11 percent (Figure 4-24).

Unplanned pregnancies

Among all these pregnant women, 46 percent reported that their pregnancies were not planned. But there were sharp differences between age groups. In the 25 to 34 age group, nearly all pregnancies were unplanned, while in the 15-24 age group the proportion was only one out of eight (Figure 4-25).

There were also pronounced differences between the PDEs and the PDIs. In the PDEs, one in fourteen women were pregnant and about one-third of these did not plan their pregnancies. In the PDIs, one in nine women reported that they were pregnant and more than half did not plan their pregnancies.

Figure 4-24 – Pregnancy status, by age group and displacement level

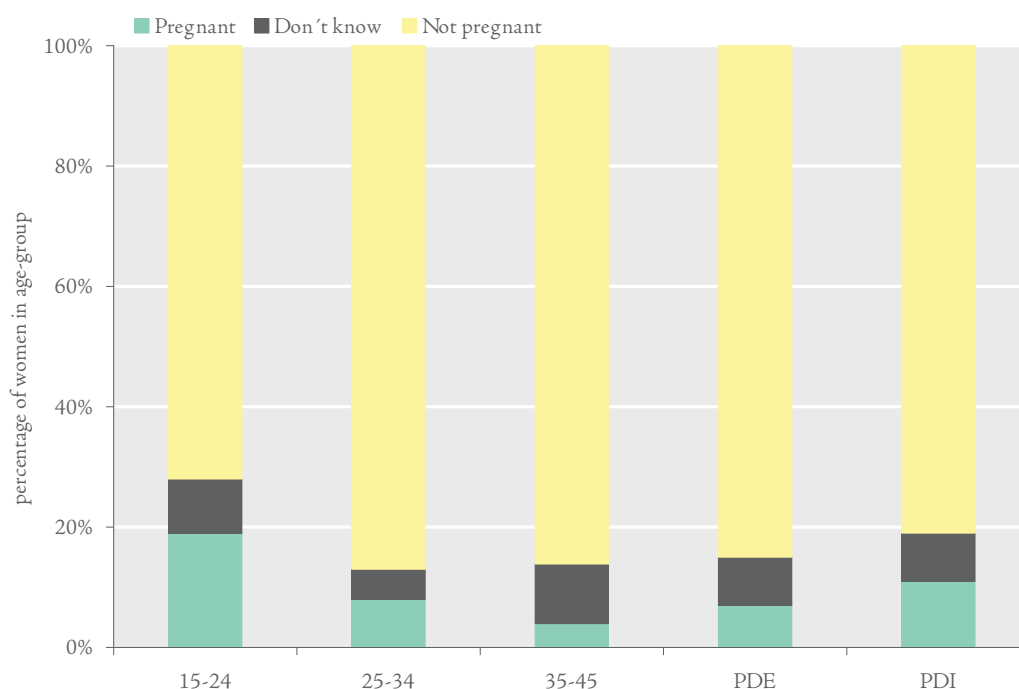
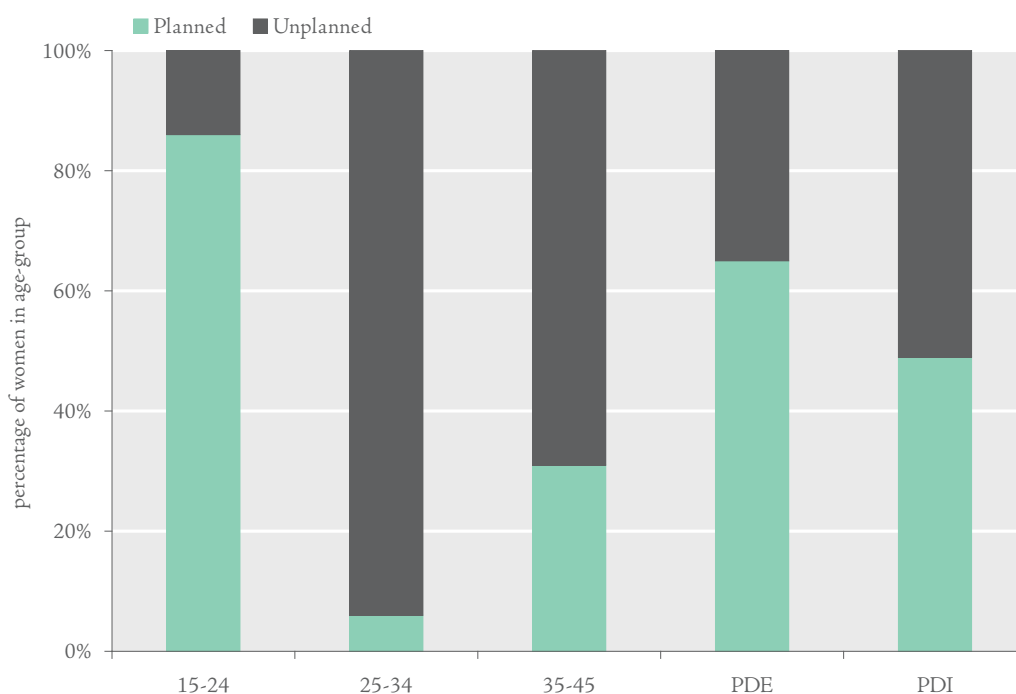


Figure 4-25 – Planned and unplanned pregnancies, by age and displacement group

Pregnancy information

Most women had their pregnancies confirmed. About two-thirds did so at a hospital, health centre or a private clinic, though one-fifth did not undertake any confirmation tests. For their first ante-natal care visit, seven out of eight women went to a doctor and two-thirds did so within one month after missing their period. Most of the women gave birth in a hospital.

Some 13 percent of the women had children below one year of age and they were asked about breast-feeding. About half the women reported that they had breast-fed their babies for less than four months and one-quarter for more than half a year.

Contraceptive use

Prior to the tsunami, contraceptive use was already quite low – around 30 percent. The highest use was amongst women in the age group 25-34, followed by the older women. Among the youngest

women it was only 18 percent. As can be seen in Figure 4-26, the patterns in the PDEs and PDIs are quite distinct.

After the tsunami, the rate was lower still. Two out of five women who had been using contraceptives prior to the tsunami subsequently stopped, while only four percent started – eight percent of those in the PDEs and one percent in the PDIs. As a result, after the tsunami nearly eight in ten women did not use any method of birth control – with the rate about 15 percentage points lower among the PDIs than the PDEs (Figure 4-27). Of those continuing to use contraceptives, 15 percent changed methods but the vast majority continued with the same method as before.

Reasons for stopping use were mostly linked to the tsunami. Around 40 percent of those who stopped said that this was because of the loss of contraceptives or contraceptive use records, while another 12 percent said it was due to relocation. The remainder gave a range of other reasons, but

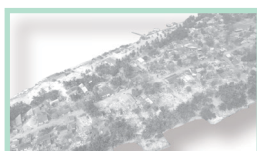
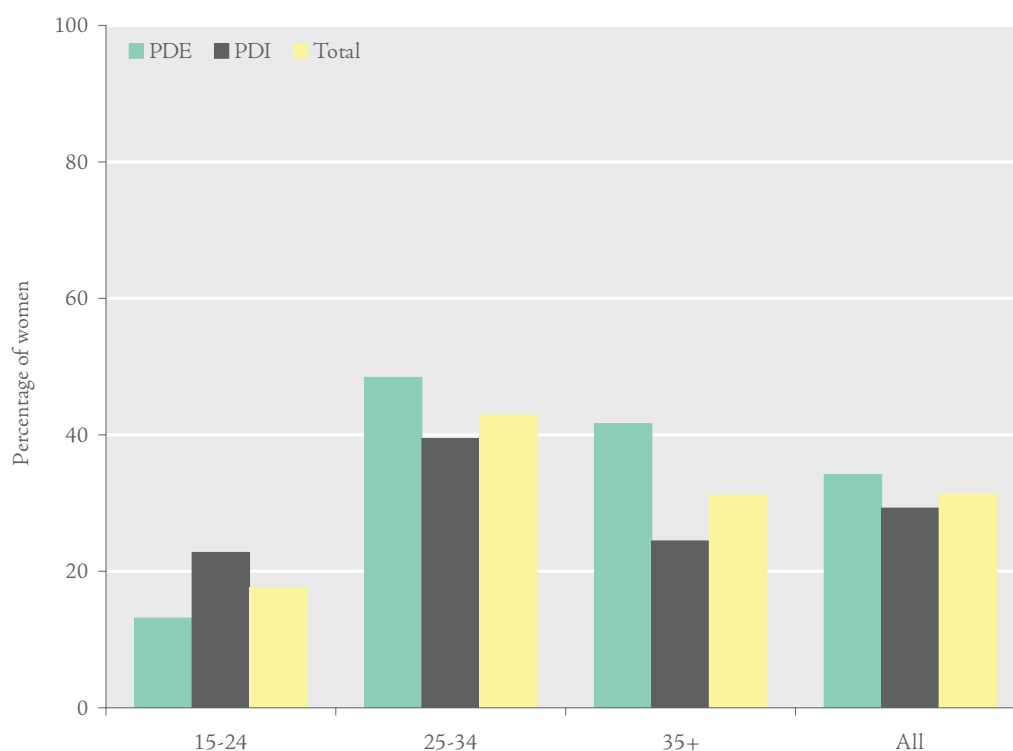
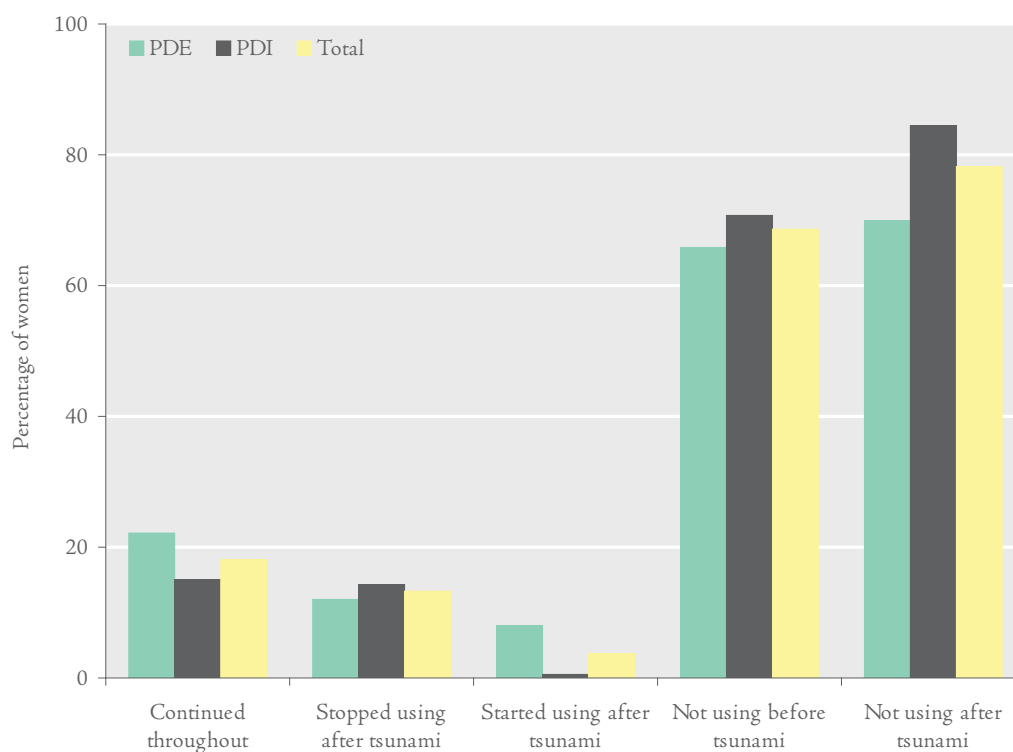


Figure 4-26 – Pre-tsunami contraceptive use, by age group and displacement level*Figure 4-27 – Pre- and post-tsunami contraceptive use, by age group and displacement level*

in numbers too small to permit statistical accuracy (Figure 4-28).

The survey also asked women if they wanted more children. Around 30 percent said yes, while 60 percent said no and the rest were unsure. Unsurprisingly, the desire for more children was highest amongst the younger women, with about 60 percent wanting more. For the middle age group this proportion was one-third and for those of 35 and over it was less than one in ten. There were some differences between the PDEs and PDIIs, especially for the 25-34 age group where the proportion wanting more children was about twice as high among the PDIIs than among the PDEs (Figure 4-29).

Improving reproductive health services

At the end of the interview, respondents were asked to make suggestions for improvements in local reproductive health services. Twelve percent did not have any suggestions, but the others on average made more than two each. Foremost amongst these was the provision of more information, which was mentioned by two out of three women. About one-third of the women suggested more doctors and improvements in care. One-quarter of women wanted a health care facility on or near their island and a similar proportion wanted the provision of medicines. One in six wanted more training for health-care workers (Figure 4-30).

Figure 4-28 – Reasons for stopping contraceptive use, by displacement level

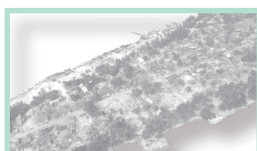
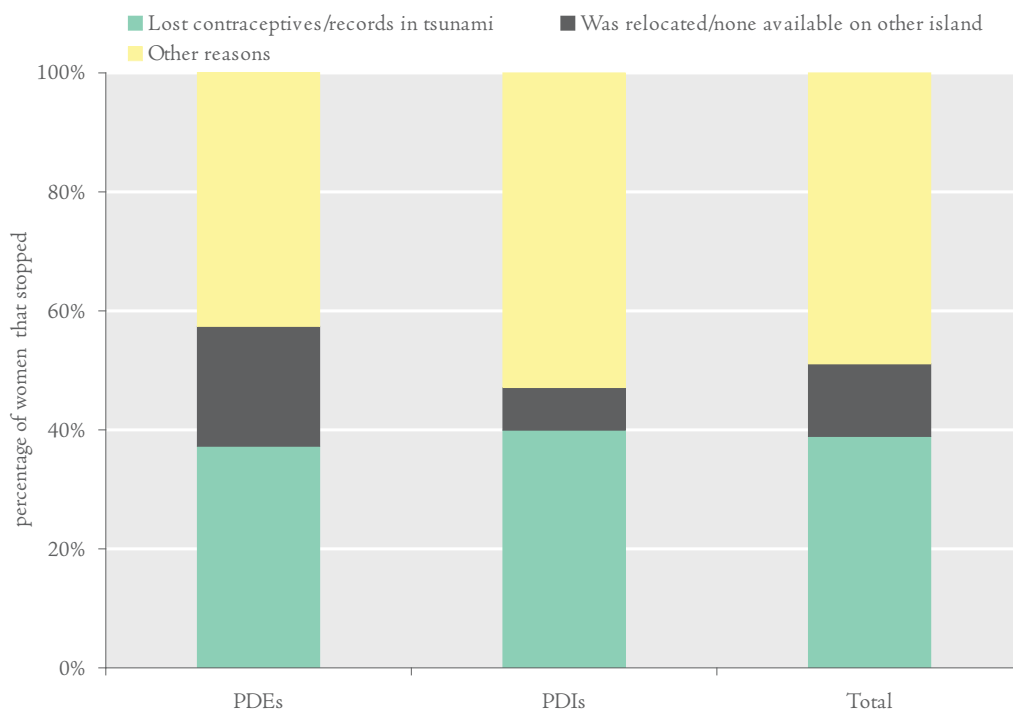
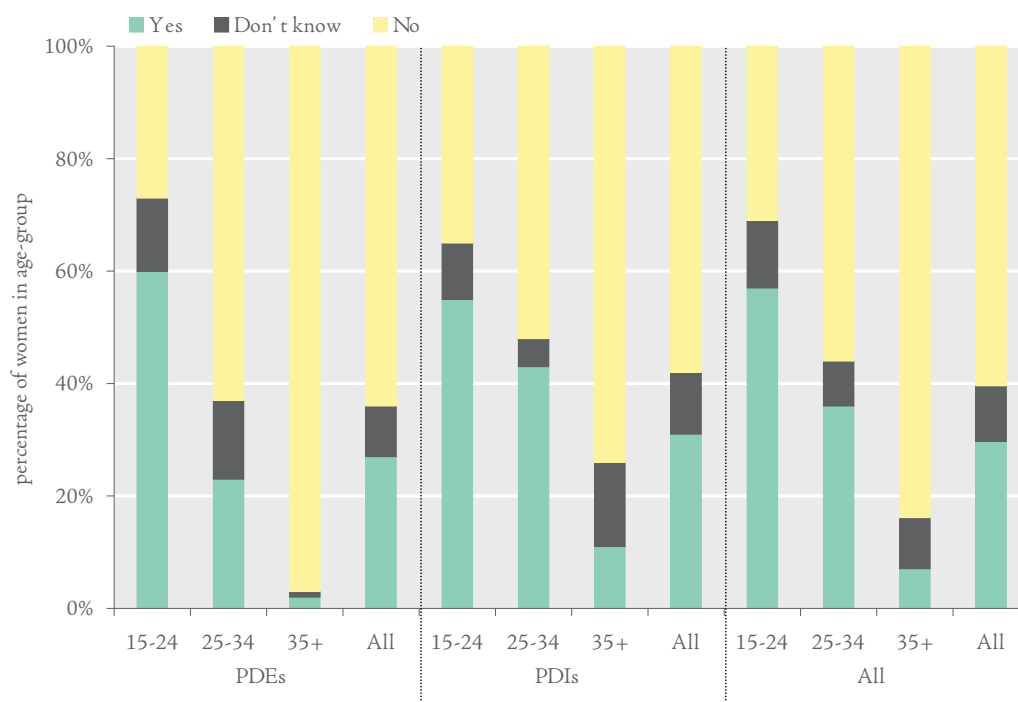
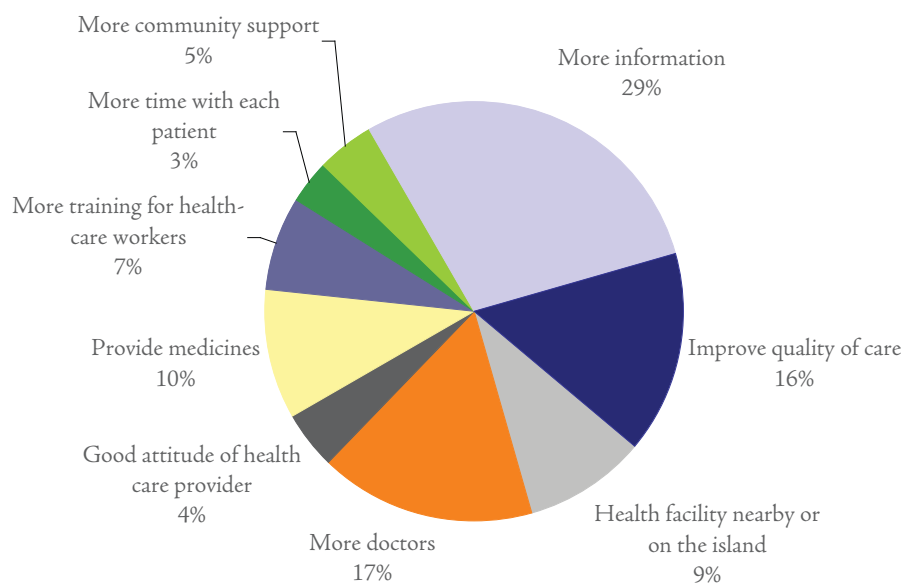


Figure 4-29 – Desire to have more children, by age group and displacement level*Figure 4-30 – Suggestions for improvement of reproductive health services*

CHAPTER 5

INCOME AND POVERTY

Surprisingly perhaps, the tsunami did not have a serious impact on incomes or poverty. Indeed for most people the progress of previous decades appears to have continued uninterrupted.

This chapter presents the main findings on levels and trends of income and disparities. It also reports on the panel analysis, describing some of the significant characteristics of those households that have succeeded in climbing out of poverty.

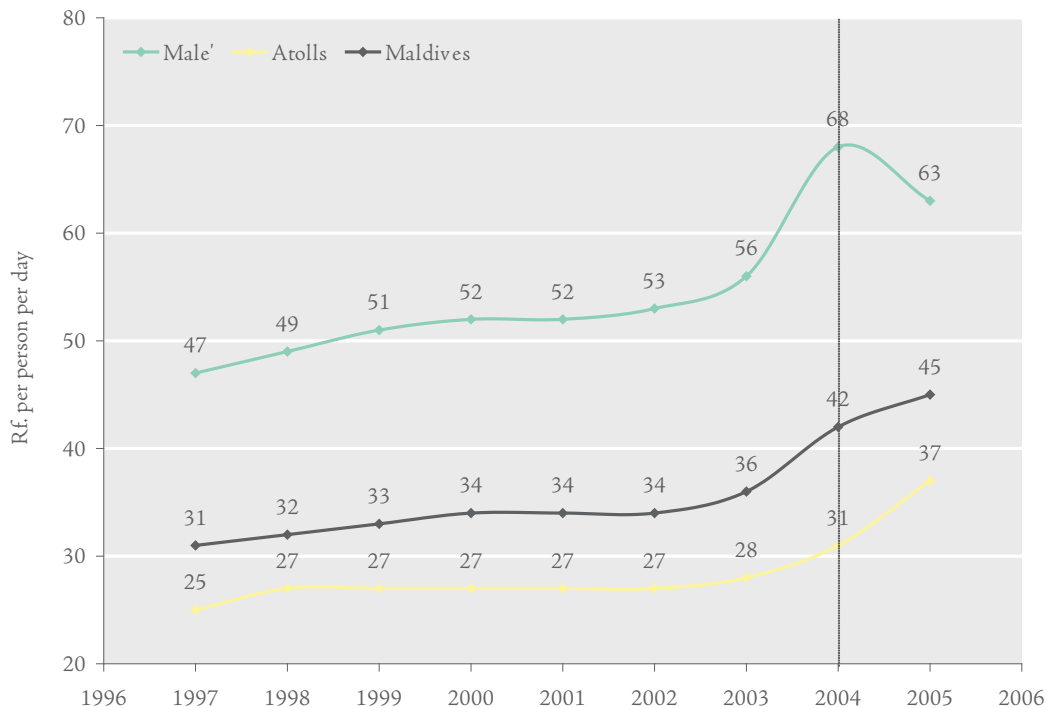
In addition it considers the implications for vulnerability. People with higher incomes can also 'buy themselves out' of vulnerability: for example, by acquiring well equipped and located houses. And in places where community facilities are limited households may also provide themselves with electricity generators, water desalination facilities,

and satellite telephone and television receivers. They can also afford the most appropriate forms of transport. Thus not only are they non-poor they can also reduce their vulnerability to poverty and improve other aspects of their lives.

Given the importance of income poverty, this chapter includes a description of concepts and methodology. In addition, it introduces a theory central to the analysis of this chapter, that of 'poverty dominance'.

Maldives has been developing rapidly over the past 25 years and this trend has continued. Indeed, six months after the tsunami, average household incomes were higher than before. The development of per capita household incomes is shown in Figure 5-1. This is based on three observations: VPA-1 in

Figure 5-1 – Household income per person per day, Maldives, Male' atolls, 1997–2005



1997, VPA-2 in 2004 and TIA in 2005. Estimates of the years between 1997 and 2004 are derived by applying the development of per capita GDP growth rate over these years to the VPA observations.

At first sight, it may seem surprising that the incomes of the island population continued to grow after the tsunami whereas in Malé, which was only slightly damaged by the tsunami, household incomes declined by about ten percent. The following sections will elaborate on this, but first the concept of household income and the methods used to obtain it from the data sets will be described.

Concepts

Income is defined here as consisting of the following components:

- *Wage income* – including regular wages, overtime, tips, goods and services in kind, uniforms and travel allowances, and wage income from non-resident earners like resort workers;
- *Business profits* – from self-employed own-account workers;
- *Property income* – including rent received from buildings, land and goods, and dividends;
- *Own produced consumer goods* – for instance, a consumed home-grown banana is valued at the local market price and added to household income;
- *Miscellaneous income* – including pensions, alimony, and the value of appliances and equipment sold.

On average, in 2005, the most important component, contributing more than half of household income, was wages. Business profits, including income of own-account workers, made up over one-third. Less important were property income (7 percent), own-produced consumption (3

percent), and miscellaneous income (1 percent).

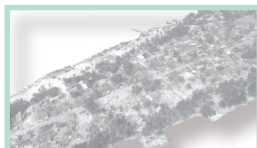
Not included in household income are gifts from family or friends, from abroad, zakath, assistance from the Government, tsunami aid received, and, for owner-occupiers, imputed housing rent.

As in the VPA-1 and VPA-2 surveys, the principal unit of analysis is the household, which is defined here as consisting of persons who usually sleep and eat in the house. Also included are non-resident income earners such as resort workers whom the other members consider to be part of the household. Per capita incomes are derived by simply dividing the household income by the number of members – though this method has the disadvantage that it assumes that income is equally distributed among all its members and does not take into account economies of scale within the household.

Inflation and price differences across regions

During the period 1997-2005, there was practically no inflation at the household level. However, this does not mean that there have been no price increases. For instance, after the tsunami there were increases in the prices of building materials. But these were absorbed by the government and donors who took responsibility for reconstruction. Households get the newly constructed houses free so they do not experience the increases.

It would be interesting to investigate price differences between regions, but these are practically impossible to measure. In 1997/8 efforts were made to estimate regional purchasing power parities based on an average standard consumption basket. But in Maldives this was difficult to construct as only a few items met the two essential criteria: homogeneity, and availability and use throughout the country. The basket also had to exclude luxury goods and consumer durables since the country has



only one shopping centre for these goods – Male'. Furthermore, the three most important items that are actually homogenous and available and consumed throughout the country – wheat flour, rice and sugar – are imported and sold throughout the country at a common, fixed price which, when necessary, is subsidized. All these considerations still apply.

Moreover, even six months after the tsunami, the affected population on the devastated islands were provided with food, water and electricity free of charge. In such a situation, it is not very relevant to try to estimate regional price differences. The income and poverty analysis in this report is therefore based on nominal prices, unadjusted for price differences over time or across regions.

Reference periods

The fieldwork for VPA-1 was conducted between November 1997 and February 1998; its reference year is 1997. The VPA-2 data were collected in June/July 2004. Subsequently, in August 2004, government employees were given a general wage increase – on average, government wages went up by 44 percent, ranging from nearly 25 percent for the highest incomes to 60 percent for the lowest classes. As government employment accounts for nearly one-quarter of the total Maldivian labour force, and for four out of ten employees, this wage increase had a substantial effect on household incomes. This round of government salary increases was not, however, emulated by the private sector.

To get a clearer picture of the tsunami impact, the reference point for comparisons of household incomes over time has been fixed at September 2004 rather than at the time of the VPA2 survey in June/July of that year. To arrive at the approximate September 2004 incomes, government salaries have been adjusted according to the new rates, but all other incomes have been kept the same.

Income

Before the tsunami, there had been impressive growth in household incomes – which between December 1997 and July 2004 increased by more than 35 percent. And despite the tsunami they continued to rise: between September 2004 and June 2005, average per capita household income increased by a further 7 percent.

However this overall growth masks a different experience among the islands and for Male'. Between 2004 and 2005, most island groups enjoyed an increase in mean per capita household income. The average incomes of the original population on the host islands increased by 30 percent as a result of a boost in economic activity and more people in the shops. But people living on the four islands that were completely devastated and had to leave, the PDEs, lost nearly all their property and incomes in the immediate aftermath of the tsunami. As a result their incomes declined, though six months later they were back to about 80 percent of pre-tsunami levels. Over this period, incomes also declined in Male', by about 10 percent. These developments are illustrated in Figure 5-2, where the percentages under the group names are their approximate share of the national population.

It is also important, however, even within these island groups, to investigate the income experience of various subgroups and in particular to see what happened to the richer and poorer people. One way of doing this is to consider a different form of average, the median income, which is the income at which half the population has a higher income and the other half a lower one. As indicated in Figure 5-3, this produces a slightly different pattern. For both the PDEs and for Male', median income increased. A fall in mean income, combined with a rise in median income implies that the income losses were concentrated in the richer half of the population.



Figure 5-2 – Mean household incomes, 1997-2005, Rf. per person per day

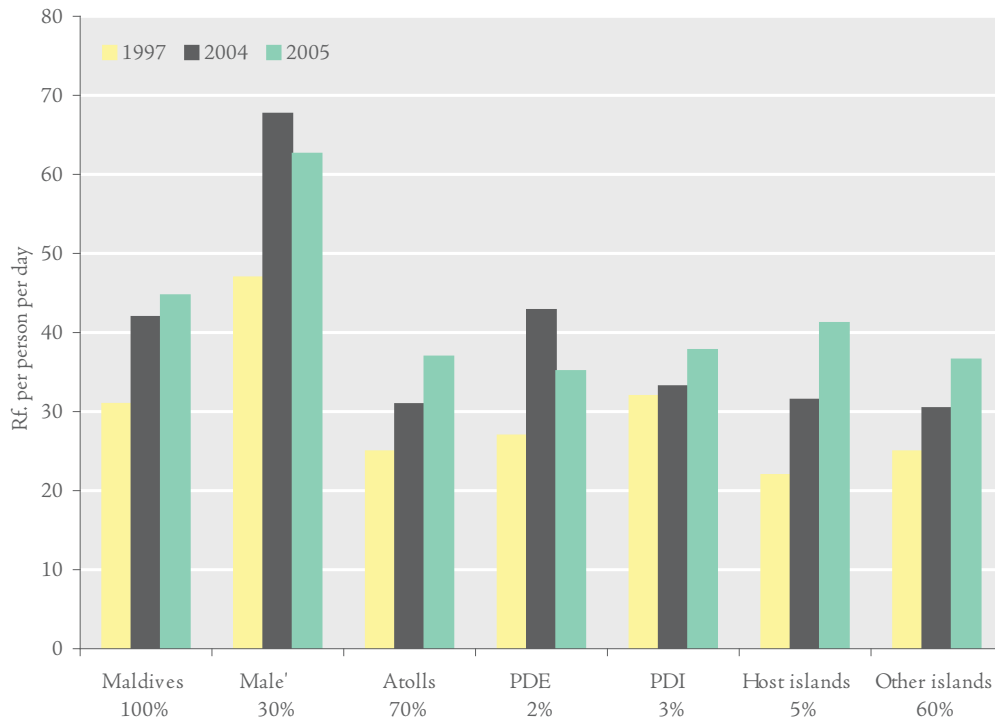
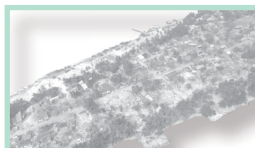


Figure 5-3 – Median household incomes, 1997-2005, Rf. per person per day



Components of income

The increase in average household income after the tsunami was due mainly to increases in business profits (Figure 5.4). The tsunami reduced agricultural and manufacturing activities but resulted in a boom for construction and transport. Furthermore, 2005 was an excellent year for fishing. These shifts in sectoral composition resulted, however, in overall wage income being roughly the same as before the tsunami.

Though Male' was only slightly damaged, incomes there in July 2005 were about 10 percent lower than before the tsunami. Some of this is due to a small decline in wage incomes, probably related to tourism, but the most-affected income stream was that derived from property, of which 90 percent comes from rent of buildings, as well as dividends, rental of machinery and equipment, and rent of land (Figure 5-5).

A fairly large share of households reported incomes from renting out properties – 21 percent in 2004 and 26 percent in the following year – though the surveys did not ask for a breakdown of rental income between commercial and residential properties.

In the atolls, on the other hand, overall incomes continued to improve in 2005, with increases in both business profits and wages (Figure 5-6).

Displaced persons

Both PDEs and PDIIs lost their fields so their income from own-produced agricultural produce was set at zero, but they maintained their income from fisheries and other products at the level of 2004. This is included in business profits (Figure 5-7).

Figure 5-4 – Composition of household income, 1997-2005, Maldives

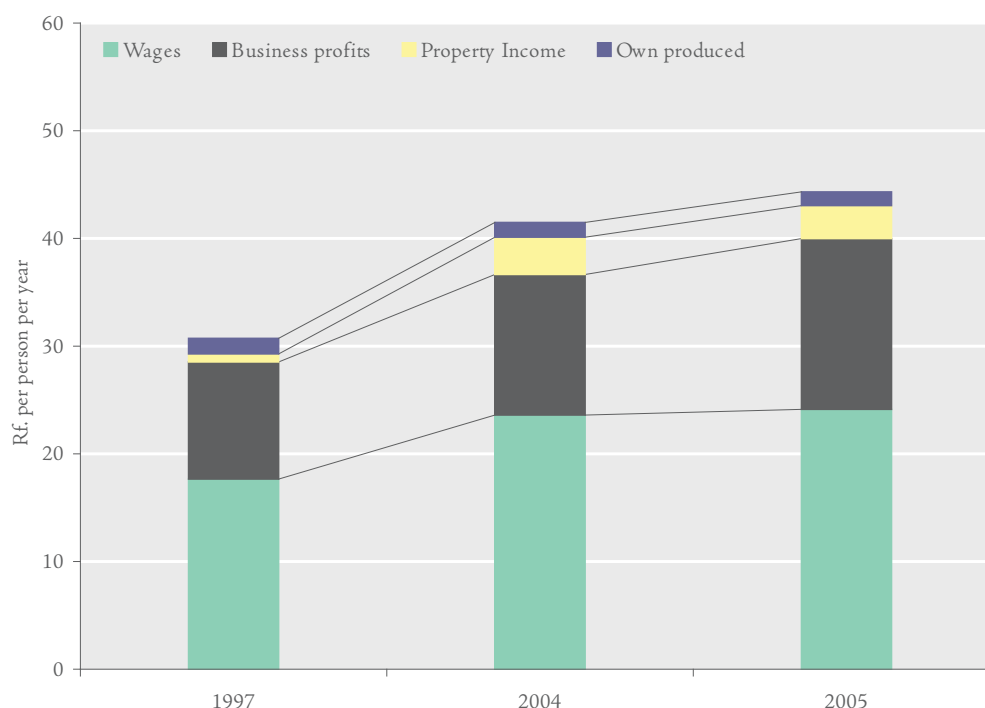


Figure 5-5 – Composition of household income, 1997-2005, Male'



Figure 5-6 – Composition of household income, 1997-2005, atolls

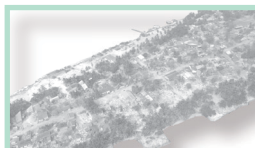
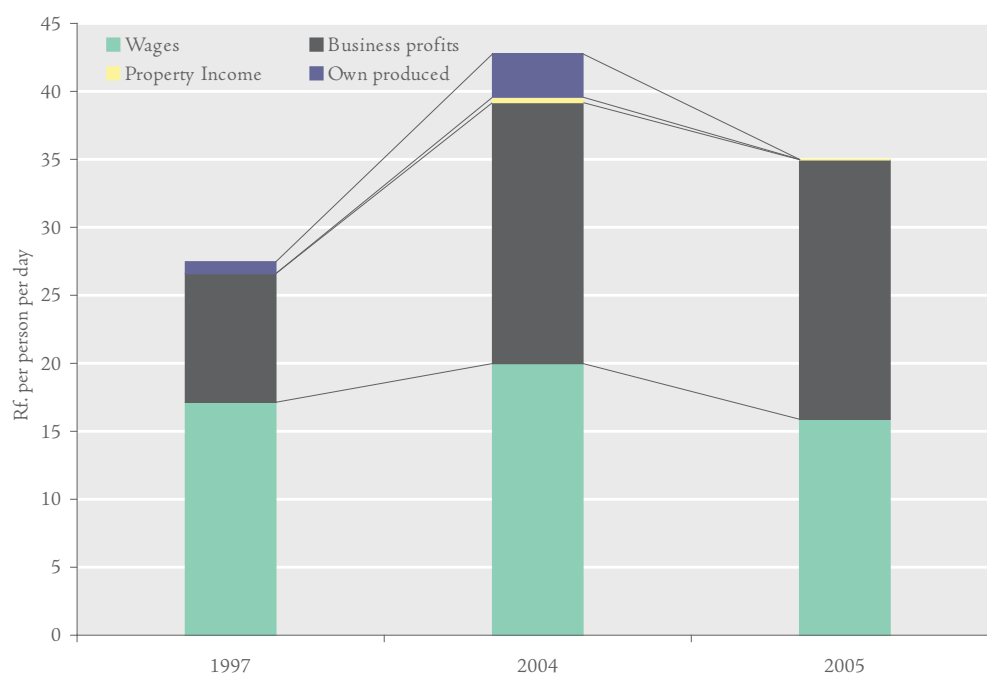


Figure 5-7 – Composition of household income, 1997-2005, PDEs

Workers among the PDEs were especially hard hit by the decline in tourism because their proportion of resort workers was relatively high. Although the resorts continued to pay basic salaries, and laid off scarcely any Maldivian workers, the latter still lost their incomes from service charges and tips. PDIs, on the other hand, were in a more fortunate position and managed to increase both wages and business profits (Figure 5-8).

Host islands

As might be expected, the tsunami resulted in a substantial increase in business activity on the host islands. Their total population increased by about two-thirds – from about 16,000 to roughly 27,000 – which helped the original population to double their business profits (Figure 5-9). This experience might also be presented as evidence in support of policies for population consolidation.

Income poverty

Poverty analysis in Maldives is not based on a single poverty line. However it is constructed, the choice of a single poverty line is always arbitrary, subjective and based on value judgements – and moving the line only slightly can significantly change the incidence of poverty.

Therefore, instead of searching for a single poverty line VPA-1, VPA-2 and this TIA base their approach on the theory of poverty dominance. This theory, which is described in detail in Technical Note 1, considers a continuum of all possible poverty lines. It is illustrated Figure 5.10. The x-axis shows all per capita incomes; the y-axis shows the percentage of the population below each of these income levels (the headcount ratio). Thus, in 1997 (the yellow line) the proportion of the population having less than Rf. 10 per person per day was about



Figure 5-8 – Composition of household income, 1997-2005, PDIs

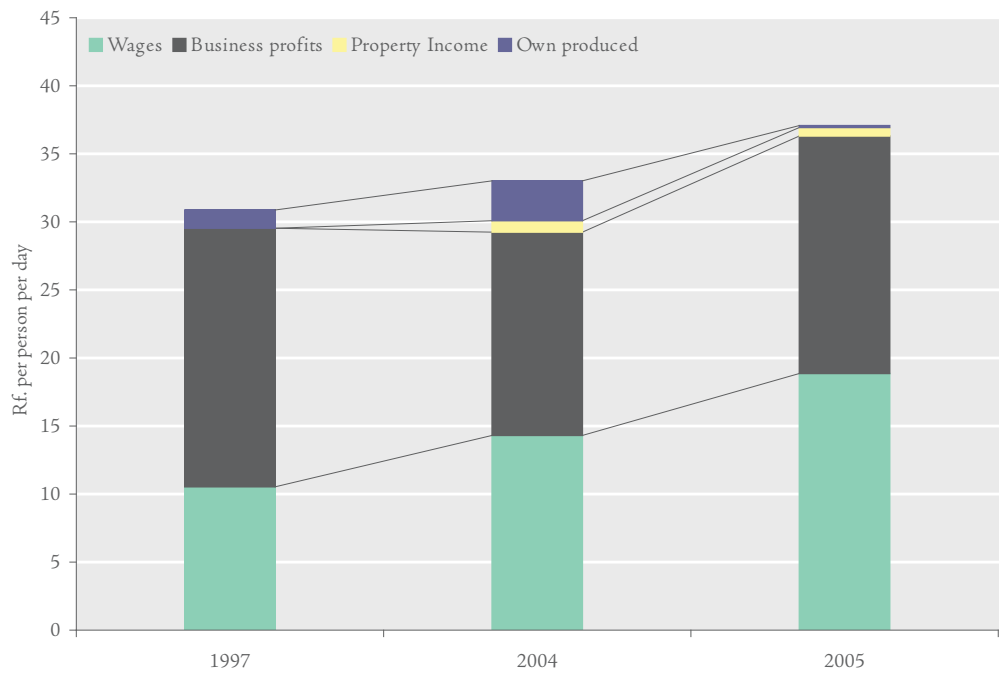


Figure 5-9 – Composition of household income, 1997-2005, host islands

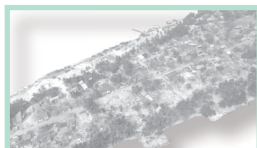
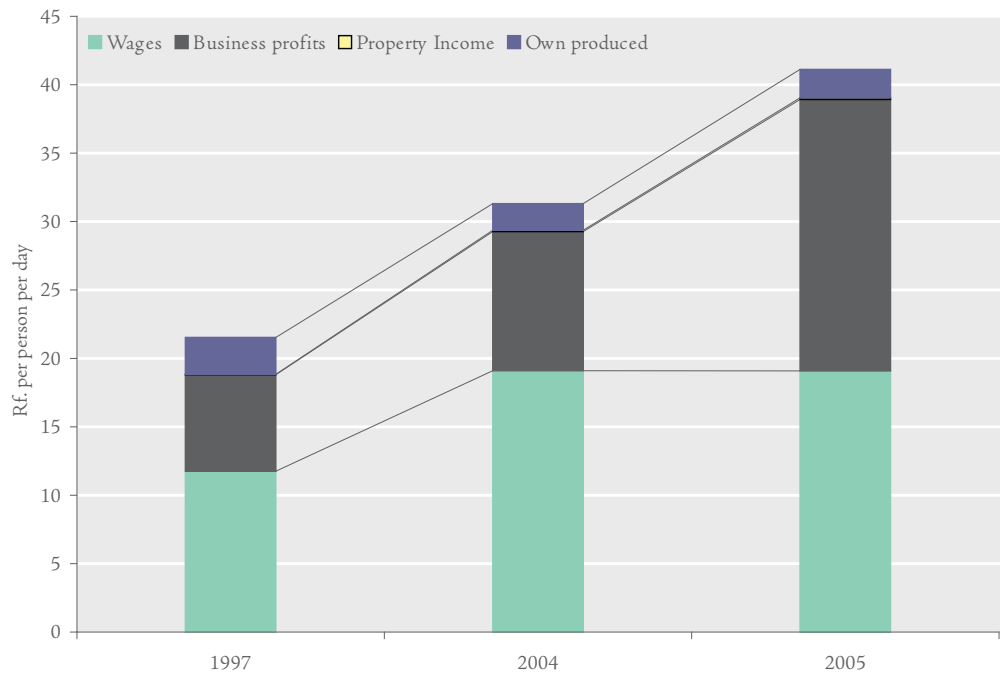
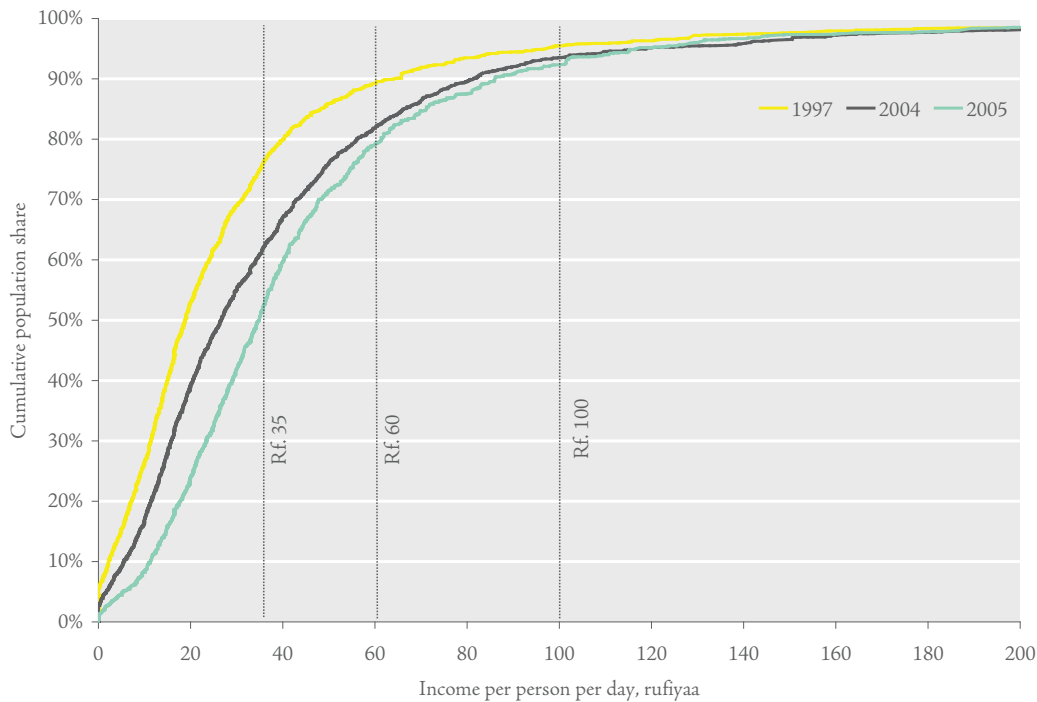


Figure 5-10 – Cumulative population ranked from poor to rich, 1997-2005, Maldives

25 percent, in 2004 (the grey line) it was less than 20 percent, whereas in 2005 (the green line) it had come down to less than 10 percent. Similarly, in 1997 the proportion of the population having less than Rf. 20 per person per day was around 50 percent, in 2004 it was about 40 percent, while by 2005 it had come down to around 25 percent.

The extent of progress is represented by the distance between the coloured lines; the larger the area between them, the greater the progress. The gap between the yellow and grey lines is larger than the gap between the grey and green lines, which indicates that progress was greater during the period 1997-2004 compared with 2004-05. Since more progress can be expected in seven years than one year, it is remarkable that after the tsunami such significant progress in poverty reduction was made.

The situation for the period 2004-05, can be considered for four income bands delineated by the

dotted lines. It appears that the gap between the grey and green lines widens in the interval from 0 to about Rf. 35, narrows in the interval Rf. 35-60, and practically coincides in the interval Rf. 60-100. In the fourth band, from Rf. 100 onwards, the grey line is below the green line.

In other words, between 2004 and 2005, the poorest income group, with less than Rf. 35 per person per day has become smaller, falling from 60 to 50 percent of the population. Meanwhile the middle-income group between Rf. 35 and Rf. 60 per person per day has risen from 20 to 30 percent of the population, indicating an emerging middle class. The upper-middle income group, with Rf. 60-100 per person per day has kept the same share at around 10 percent, like the richest income group with more than Rf. 100 per person per day, but the richest of the rich perform worse in 2005 than in 2004.



Male'

Figure 5-11 presents the cumulative frequency distributions for Male'. Up to Rf. 40 per person per day, the green line is completely below the grey line indicating that poverty has declined for all reasonable poverty lines. For the income group Rf. 40-100 per person per day, the grey and green lines practically overlap, indicating that the income situation did not change much as a result of the tsunami. At the income of about Rf. 100 per person per day, the two lines cross, and beyond that the green line stays above the grey one, indicating that after the tsunami the rich formed a smaller proportion of the population.

Figure 5-12 presents the cumulative frequency distributions for the atolls. The three lines do not cross; the green line is completely below the grey line, which in turn is completely below the yellow line – indicating that for all possible poverty lines poverty has declined.

The charts in Figure 5-10 to Figure 5-12, show that over the period 1997-2004 poverty declined in Male' and in the atolls – and continued to do so even after the tsunami. To give an idea of the extent of this decline, Table 5.1 presents the headcount ratios for four different poverty lines.

Figure 5-11 – Cumulative population ranked from poor to rich, 1997–2005, Male'

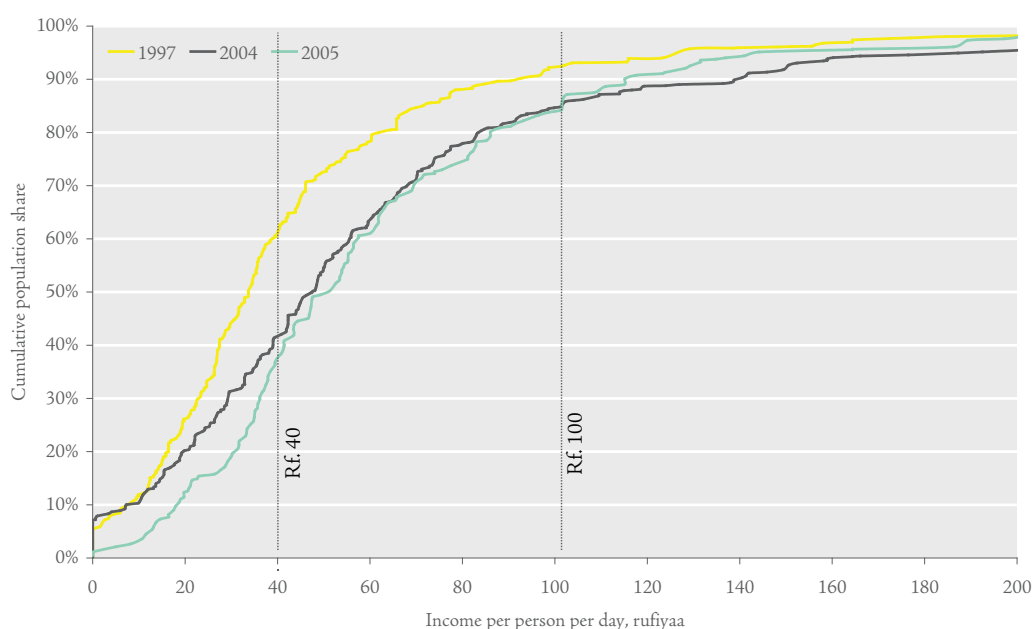


Table 5-1 – Poverty headcount ratios, Maldives, Male', atolls

Poverty line	Maldives			Male'			Atolls		
	1997	2004	2005	1997	2004	2005	1997	2004	2005
Rf. 7.5	21%	12%	6%	10%	10%	*	25%	13%	8%
Rf. 10	26%	17%	8%	12%	11%	*	31%	20%	11%
Rf. 15	40%	28%	16%	18%	15%	7%	48%	34%	20%
Rf. 21	55%	41%	26%	27%	20%	13%	64%	50%	32%

Note: * Too few observation to be statistically reliable

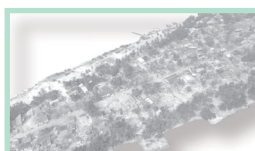
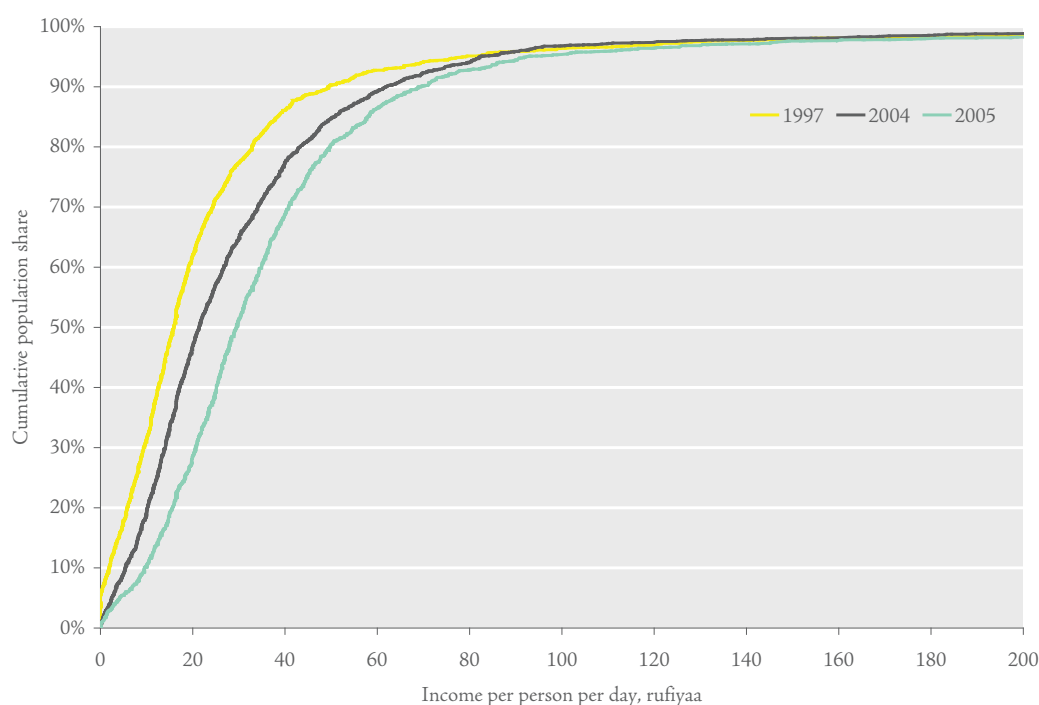


Figure 5-12 – Cumulative population ranked from poor to rich, 1997 – 2005, atolls



Of these poverty lines, VPA-1 and VPA-2 considered the first three: the median income of the island population in 1997, Rf.15 per person per day; half the median income, Rf. 7.5 per person per day; and an in-between line of Rf.10 per person per day. The third line, Rf. 21 per person per day is the median income of the island population in 2004. But even on this higher line, the headcount ratio declined substantially in both Male' and in atolls.

PDEs, PDIs and host islands

Table 5-2 shows the headcount ratio for persons displaced externally (PDEs), persons displaced internally (PDIs) and for people on the host islands – according to the same poverty lines.

Prior to the tsunami, the people on the four islands that were completely devastated (PDEs) had

Table 5-2 – Poverty headcount ratios, PDEs, PDIs and host islands

Poverty line	Atolls			PDEs			PDIs			Host islands		
	1997	2004	2005	1997	2004	2005	1997	2004	2005	1997	2004	2005
Rf. 7.5	25%	13%	8%	15%	*	9%	18%	13%	10%	20%	15%	*
Rf. 10	31%	20%	11%	21%	*	13%	29%	20%	14%	28%	19%	*
Rf. 15	48%	34%	20%	39%	25%	25%	40%	34%	21%	47%	32%	9%
Rf. 21	64%	50%	32%	60%	47%	36%	61%	50%	31%	69%	46%	20%

Note: * Too few observation to be statistically reliable



done remarkably well on income poverty. In both 1997 and 2004, their headcount ratios were much lower than the atoll average, especially for the lower poverty lines. In 1997, for the poverty lines of Rf. 7.5, 10 and 15, the PDE headcount ratios were 15, 21 and 39 percent respectively compared with 25, 31 and 48 percent respectively for the atoll average. In 2004, just before the tsunami, while on average 20 percent of people had less than Rf. 10 per person per day, on the PDE islands very few households had less than this sum.

After the tsunami, this picture changed dramatically. The proportion of the PDE population below all possible poverty lines rose higher than the atoll average. Moreover, and understandably after such a disaster, between 2004 and 2005 there was a

transformation in income distribution. The situation is depicted in Figure 5-13. In 2005 the position of the poorest 30 percent of the population was mixed. Income poverty either increased or decreased, depending on the choice of the poverty line. The middle-income groups with an income between Rf.15 and about Rf. 30 per person per day, improved their situation – most likely fishing households – while, as might be expected, the richest half of the population lost most.

The situation was different for the PDIs. Prior to the tsunami, their income was the same as the atoll average and after the tsunami the picture did not change. As can be seen in Figure 5-14, the cumulative frequency distributions for the PDIs are quite similar to those of the atolls overall.

Figure 5-13 – Cumulative population ranked from poor to rich, 1997–2005, PDEs

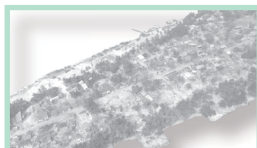
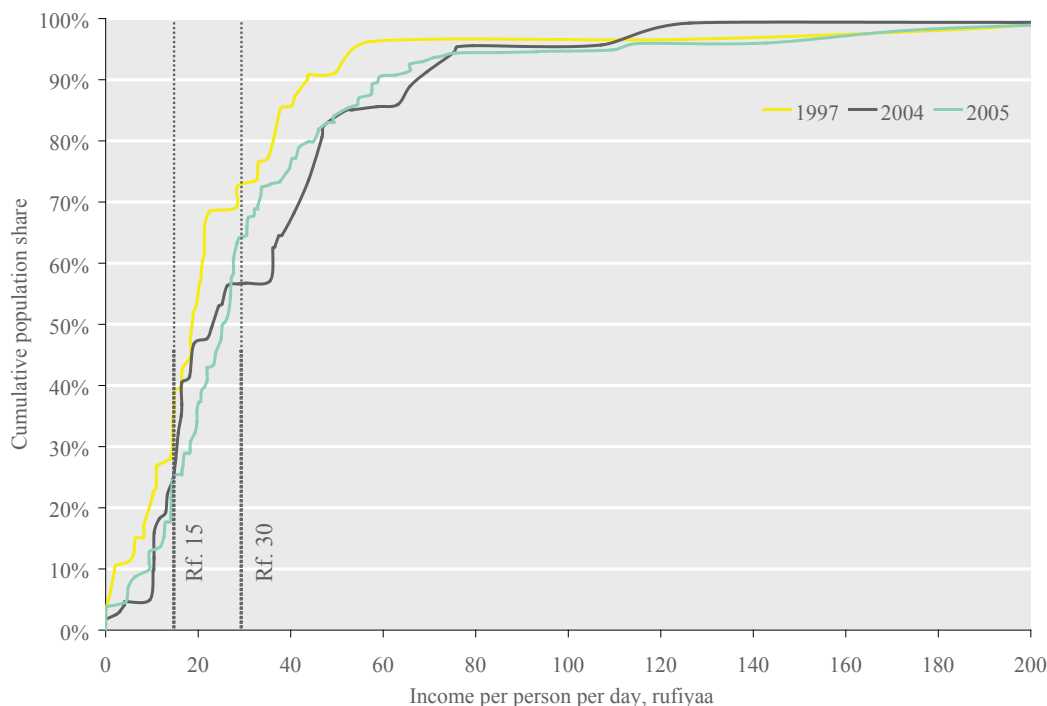


Figure 5-14 – Cumulative population ranked from poor to rich, 1997–2005, PDI

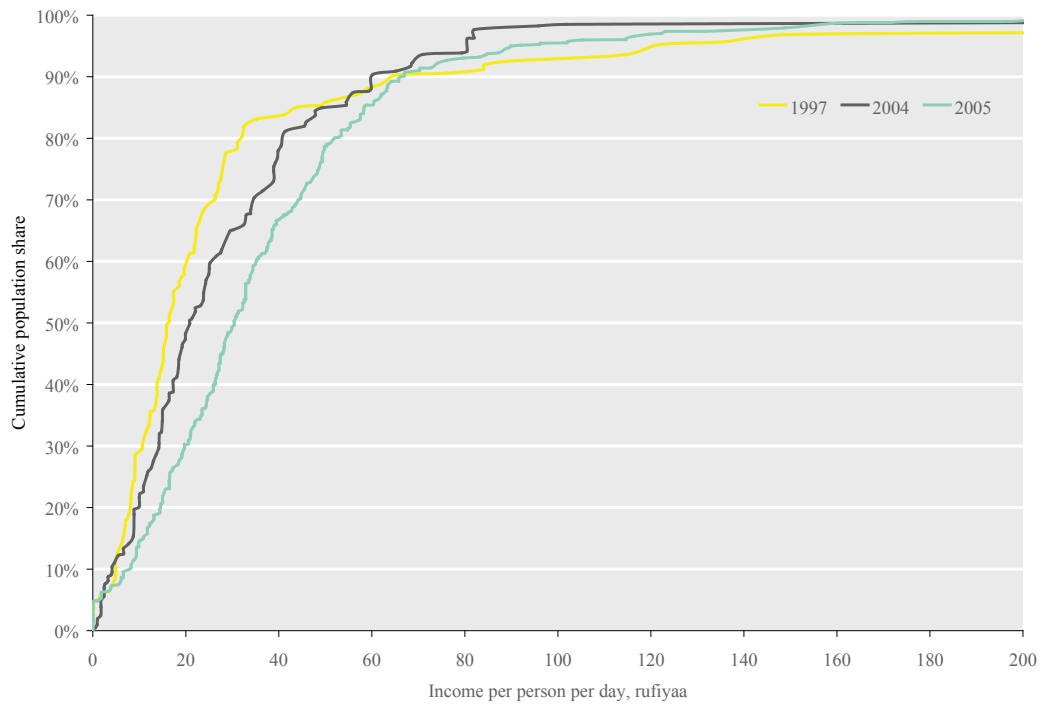


Figure 5-15 – Cumulative population ranked from poor to rich, 1997–2005, host islands

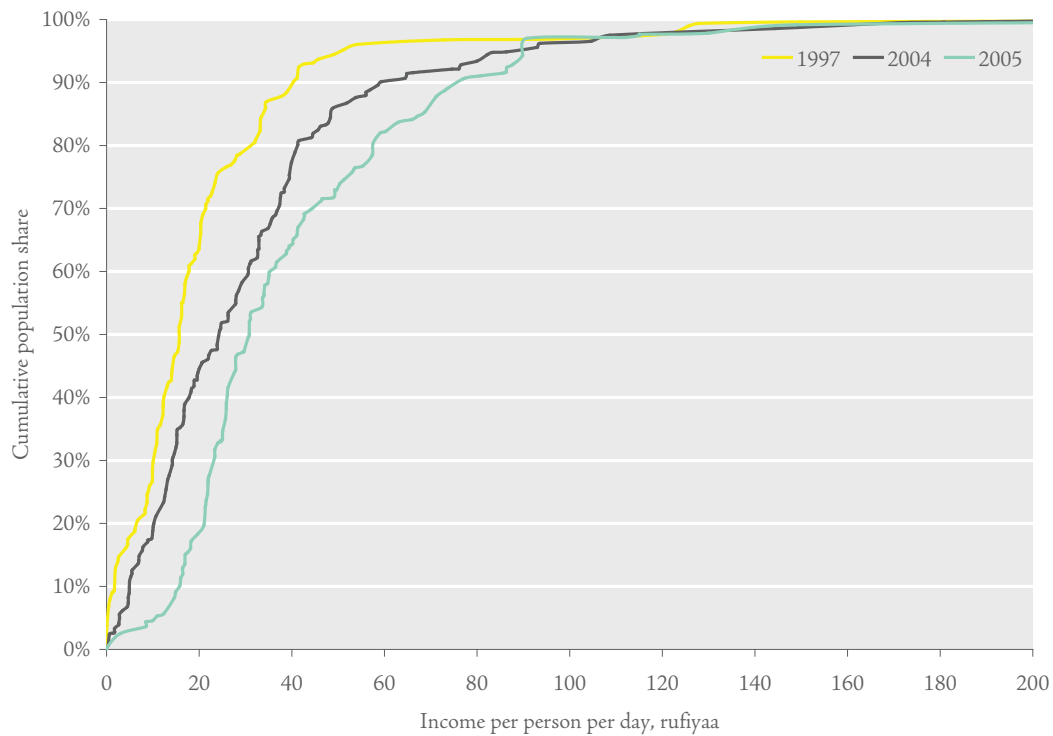


Figure 5-16 – Cumulative population ranked from poor to rich, by displacement level, 1997–2005

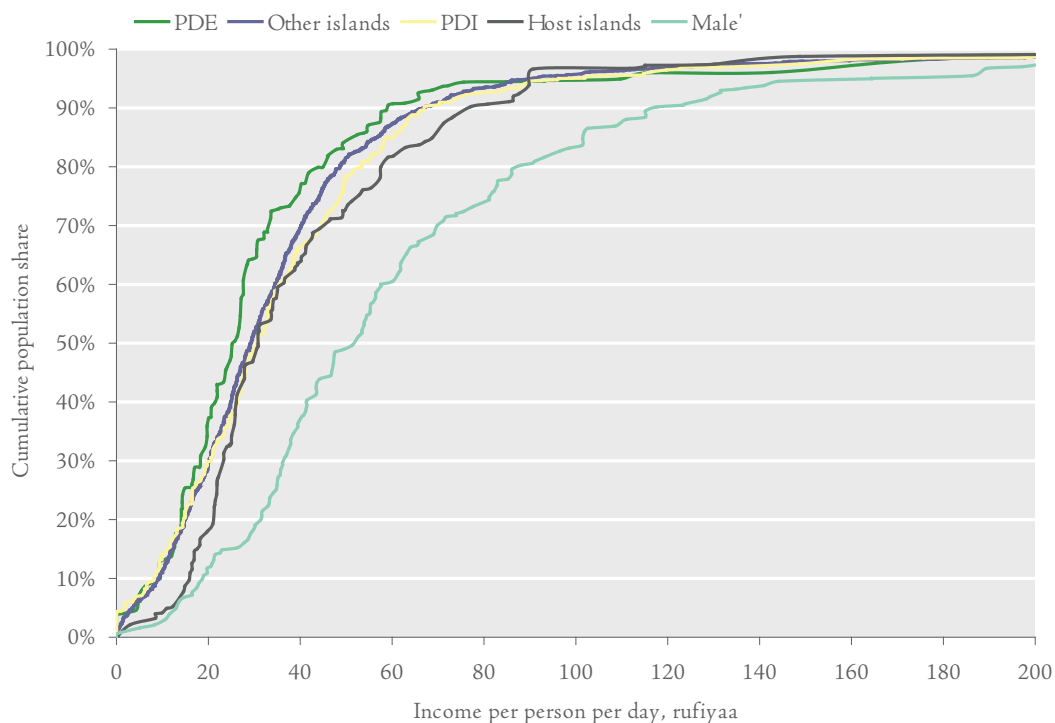
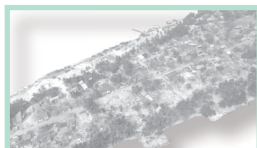
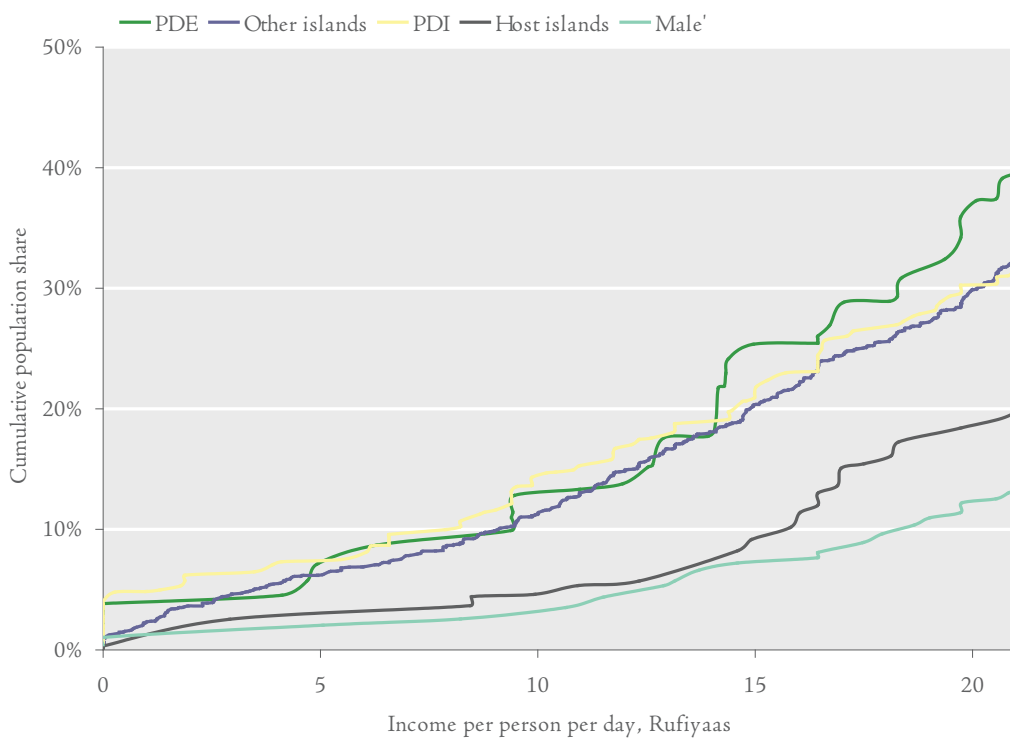


Figure 5-17 – Cumulative population ranked from poor to rich, by displacement level, 1997–2005, lowest income groups



The economic opportunities caused by the arrival on the host islands of the PDEs doubled business profits and reduced poverty for the original inhabitants. This is clear from Figure 5-15. The green line is entirely below the grey line and the gap between the two lines is larger than for other island groups – indicating greater progress.

Figure 5-16 summarizes some of the preceding information by combining the cumulative frequency distributions of the five different island groups in one chart. It shows that Male' is far better off across the whole income range. As for the atoll population, the host islands are slightly better than average and the PDEs are performing a bit below average.

Figure 5.17 is an enlargement of Figure 5.16 for the lowest income groups. Comparing income poverty among the different island groups, it can be concluded that there is less poverty in Male' and on the host islands for all reasonable poverty lines and that for PDEs and PDIs the poverty incidence does not significantly differ from that on the other islands.

Poverty dynamics

VPA-1, VPA-2, and the TIA, not only used roughly the same questions, over time they also followed a large number of the same households – permitting a 'panel analysis'. Of the 2,336 participating households in the TIA in 2005, 1,797 households

had also been included in the 2004 survey while 1,019 households are included in all three studies. Slightly more households were selected to take part in the TIA survey, but due to an excellent post-tsunami administration system and a low non-response rate, almost all the selected households participated.

Table 5.3 reports on the poverty dynamics of the 1,797 households that were interviewed in both 2004 and 2005. The information for this panel shows that income poverty was reduced for all possible poverty lines – the share of the population below the various poverty lines was consistently lower in 2005 than in 2004. One can look, for example, at the Rf. 4.34 per day line, which is equivalent to the line of one dollar-a-day in purchasing power parity used as the international MDG poverty line. In 2004, 9 percent of the population was below this while one year later the proportion had fallen to 6 percent. Over the same period, the proportion of the island population with an income higher than Rf. 15 per person per day increased from nearly 70 percent to over 80 percent.

However, one of the more disturbing findings of the sequence of surveys from 1997 onwards is that the population seems to be much more vulnerable than has been assumed. This has been depicted in Figure 5-18 which shows movements between the richer and poorer income groups. It is based on the 1997-2005 panel consisting of 1,019 households, and is therefore restricted to the atoll population. In

Table 5-3 – Percentage distribution of panel households, by income class, 2004-2005

	Rf.	TIA 2005					Total
		<4.34	4.34-7.5	7.5-10	10-15	>15	
VPA-2 2004	<4.34	2%	0%	1%	1%	6%	9%
	4.34-7.5	0%	0%	0%	1%	3%	5%
	7.5-10	1%	0%	0%	1%	3%	5%
	10-15	1%	0%	1%	2%	8%	12%
	>15	2%	1%	1%	4%	61%	69%
	total	6%	2%	3%	8%	81%	100%



1997, using the Rf. 15 poverty line, 44 percent of the population was poor and the remaining 56 percent non-poor. This 44 percent then splits into two groups: 18 percent remained poor while 26 percent became non-poor in 2004. However, examining the poor in 2004 shows them to be comprised of two groups: the 18 percent who had also been poor in 1997, and the 16 percent who had been non-poor in 1997. Similarly, there was a substantial movement between 2004 and 2005.

Over the period of the three surveys, only 7 percent of the original 44 percent poor remained so throughout. In 2005, they made up about one-third of all the poor, with the others moving in and out of poverty, and sometimes back again. Only two out of three non-poor in 1997 remained so throughout. Taken together, this means that during this period more than half of the island population moved between poverty classes at least once.

Figure 5-18 – Income poverty dynamics 1997-2005, atoll population, Rf.15 poverty line

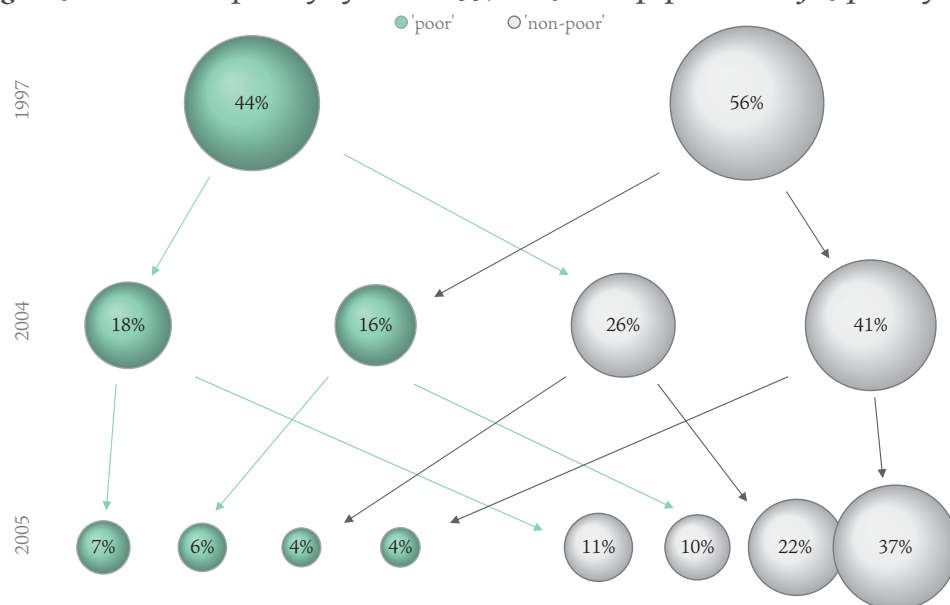
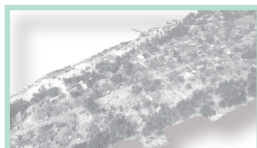
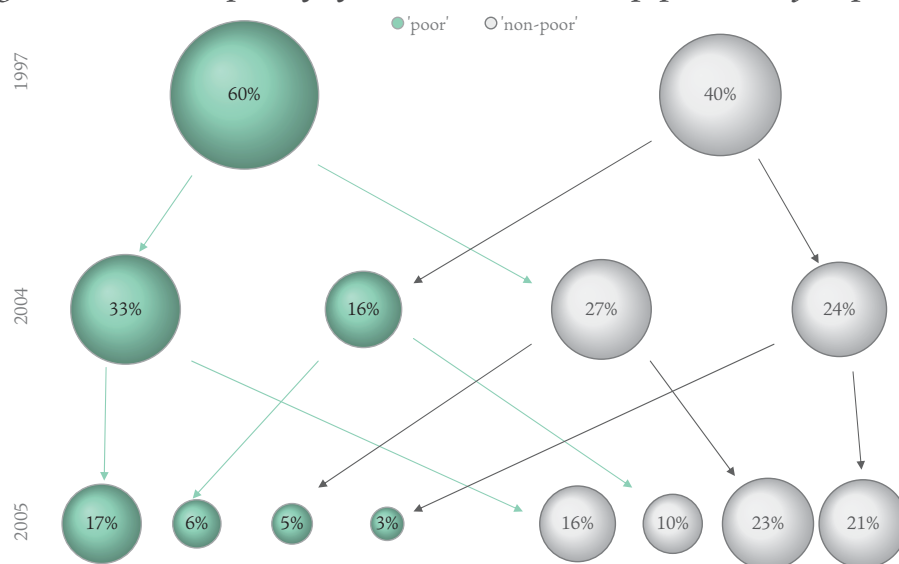


Figure 5-19 – Income poverty dynamics 1997-2005, atoll population, Rf. 21 poverty line



To determine whether this high level of vulnerability is sensitive to the choice of the poverty line, the same poverty dynamics analysis has been repeated using a poverty line of Rf. 21 per person per day (Figure 5-19). A comparison of these two figures shows that the levels and overall patterns of poverty dynamics are similar.

Poverty Profiles

The sample of the TIA differs from the two VPAs. The sample size of the TIA is larger on the most affected islands and smaller on the islands not directly affected. This reduced the number of panel households considerably – from 1,797 to 746 for the 2004-2005 period, and from 1,019 households to 374 households for all three periods.

Therefore, the analysis of the characteristics of the poor before and after the tsunami is based on those 746 households. To find the main determinants of household incomes before and after the tsunami, this section first presents the results of two 'ordinary least squares' (OLS) regressions, one for 2004 and one for 2005. Then it presents the results of two logit regressions that identify the main characteristics of households which, following the tsunami, escaped from, or fell into, income poverty. Statistical details of the four regressions are given in Technical Note 3.

Figure 5.20 gives, for 2004 and 2005, an overview of the main determinants of household income along with their relative importance. The determinants presented as green intervals have a positive impact on household incomes; those in pink have a negative impact. The larger the interval, the greater the contribution of that determinant.

The two OLS regressions show that in both years the strongest positive determinant of income level is the proportion of adults within the household who are employed. Income also tends to be higher if they are working as employees. They are

also likely to earn more if they are working in fishing, government, or tourism – though this effect is only statistically significant for 2005. Those working in construction are also likely to do better, particularly after the tsunami.

In most parts of the world poor households tend to be larger than rich ones. Average household size is smaller in rich countries than in poor ones; and within both poor and rich countries, the poor live in larger households than the rich. Accordingly, Figure 5.21 shows that in 2004 household size was negatively correlated with household income.

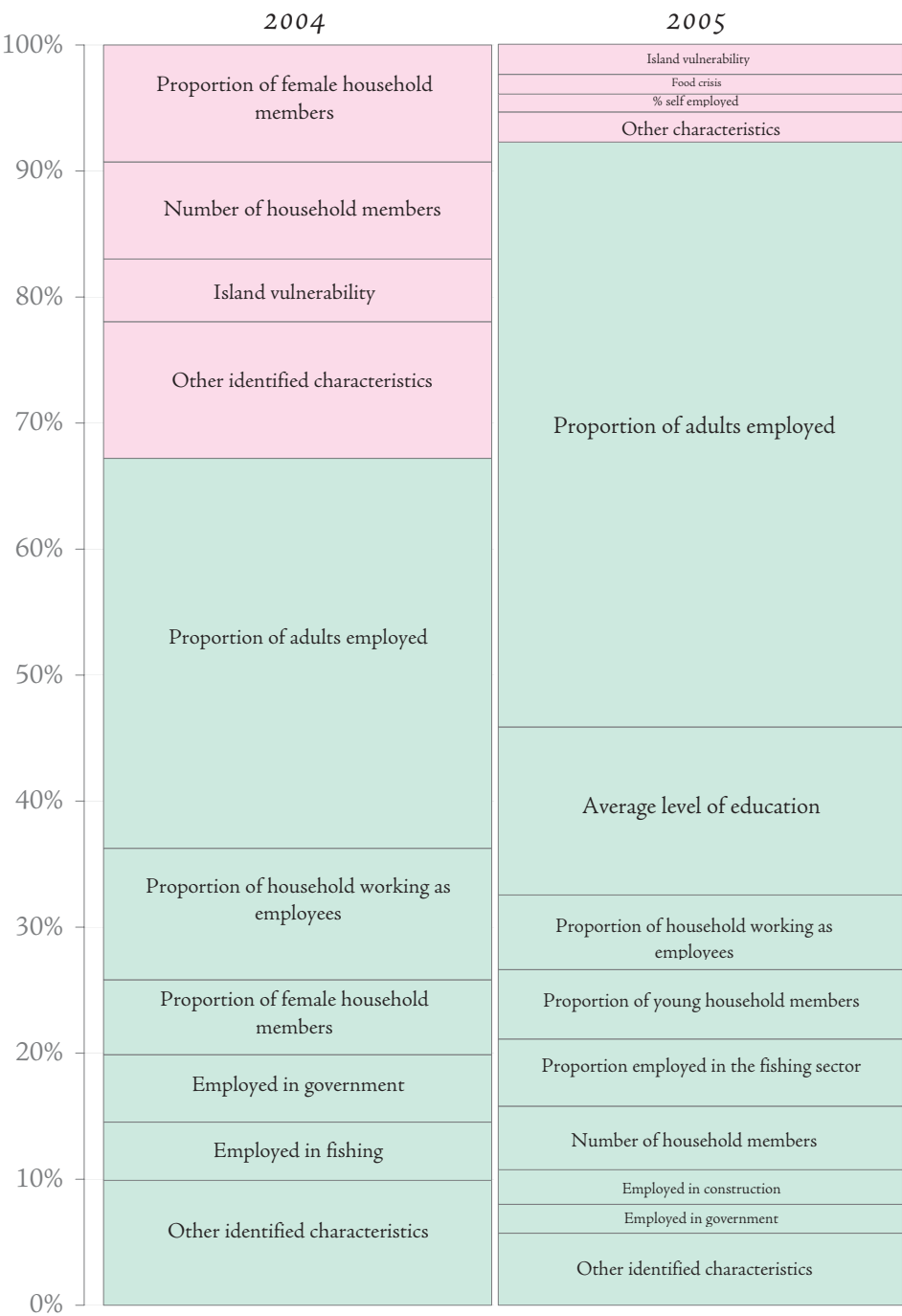
However, one of the most remarkable findings from Maldives 2005 regressions is that the relationship between household size and the level of income was different six months after the tsunami. Now larger households were likely to earn more, suggesting that, contrary to the usual assumptions, larger families do not necessarily have to be worse off. This contradictory result also applies to the proportion of young household members and the proportion of old household members, although these last two determinants are not significant.

A possible explanation for this remarkable finding could be that larger households are less vulnerable to disasters because their income sources are more diversified. In a society like Maldives where people share their incomes with all other household members, diversification matters. Some household members might have been working in sectors that were hit most by the tsunami like agriculture and manufacturing, while others might have been working as employees in the government sector or in tourism and thus retained their salaries.

Finally, as expected from theories of human capital, households tend to be richer if their members have higher levels of education.



Figure 5-20 – Major determinants of household income 2004 and 2005



Households who escaped from, or fell into, poverty

This section examines households who escaped from, or fell into, poverty after the tsunami. Two logit regressions identify the characteristics of

these important groups – using a poverty line of Rf. 15 per person per day.

Figure 5-21 presents the main results. Characteristics coloured in green are likely to

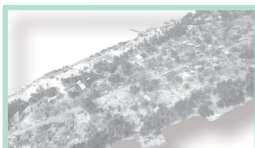
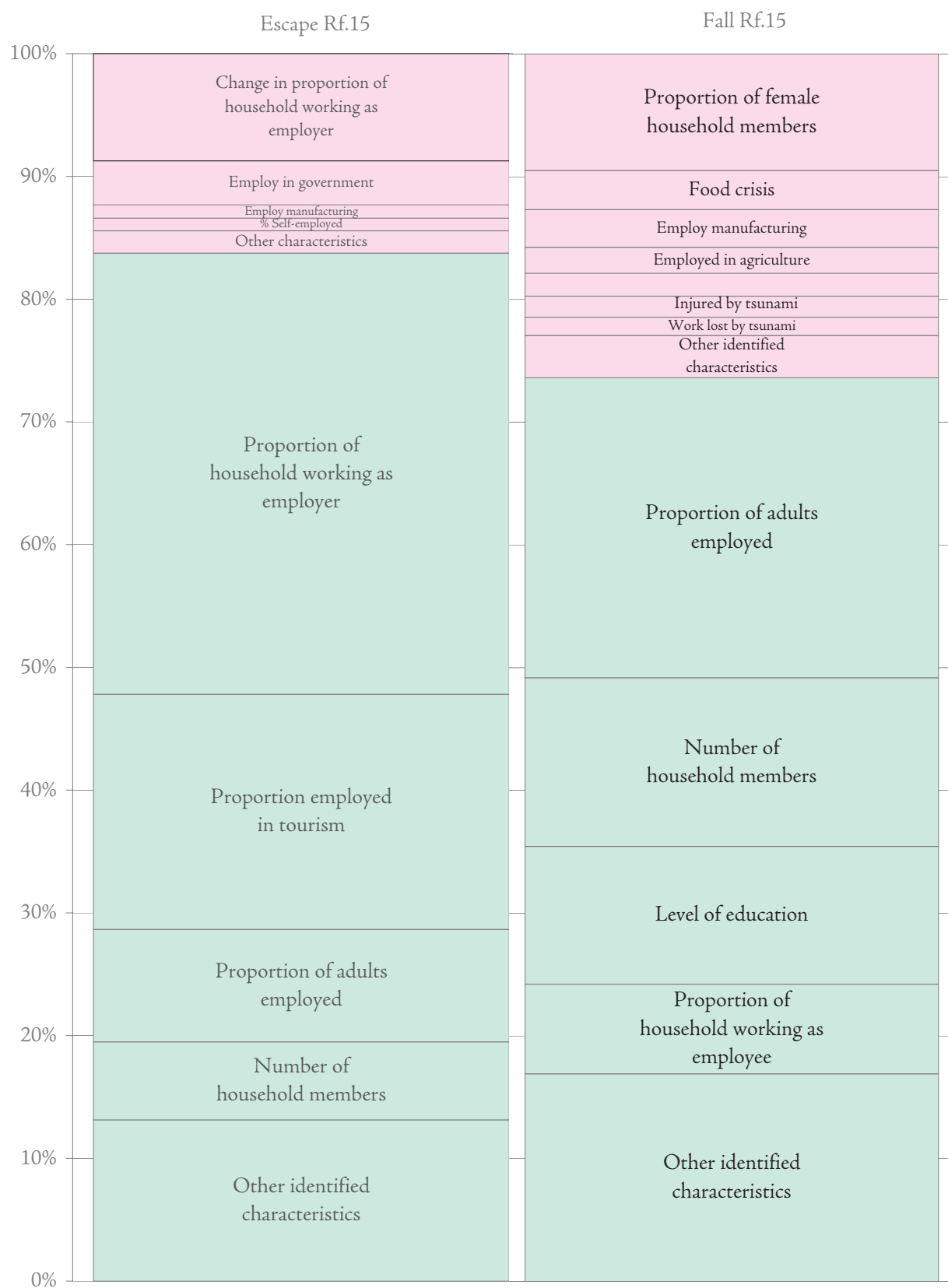


Figure 5-21 – Characteristics of poverty and vulnerability

help households escape from, or avoid falling into, poverty; those in pink are likely to hinder them. This highlights the importance of having a high proportion of household members employed. And it shows that the chances of escaping from poverty are highest when household members are employers. After the tsunami the proportion of employers decreased considerably, which of course had a negative effect on income.

Having a high initial proportion of employees also reduces the chances of falling into poverty. Increasing the proportion of employees in households will necessarily decrease the proportion of employers, but it can also decrease the number of own-account workers. Working under a fixed employment contract is more stable and safer.

Another helpful factor for not falling into poverty is having a higher average level of education – as expected from theories on human capital and from the previous regressions.

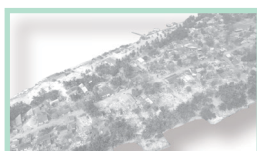
As in the OLS regressions for 2005 after the tsunami, there is a positive relationship between level of income and household size. Diversification and risk spreading help larger households avoid falling into poverty and give them a better chance of escaping it. Although in both fall and escape regressions the other household-composition variables are not significant, they do show some interesting outcomes. For instance, households are less likely to escape from poverty if they have a high proportion of elderly household members.

Much depends too on the economic sectors in which people are working. Apart from tourism the sectors hit most by the tsunami were agriculture and manufacturing. On many islands, the tsunami damaged soils and destroyed manufacturing equipment. Consequently, the households more likely to fall into poverty were those with a larger proportion of members who worked in these sectors. Although not significant, it is interesting

to note that those families whose members moved out of agriculture into another sector were then less likely to fall into poverty or better able to escape it. A similar effect is found for manufacturing workers: households whose members who lost their jobs in this sector and moved to another sector were less likely to fall into poverty.

Not surprisingly those in the best position were working in the sectors that boomed after the tsunami: fishing, construction, trade and transport. Fortunately the fishing catch was good in 2005 and the obvious need for reconstruction in addition to ongoing building activities in Male' and on resorts boosted the construction, trade and transport sectors. Accordingly, having a high initial proportion of household members employed in these sectors was beneficial. Moreover, this also applies for those families whose household members decided to move from agriculture or manufacturing into construction.

Other positive factors were: involvement in voluntary community activities; residing on host islands; and receiving remittances from family members working in resorts or in Male'.



CHAPTER 6

EMPLOYMENT

Following the tsunami more people are now seeking work, though since many have been unable to find jobs there has been a rise in unemployment.

Beyond the immediate physical damage and the attendant psychosocial impact the tsunami might also have been expected to have had a widespread economic impact. Chapter 5 explored this through changes in household income. Since most of this income comes from wages, and from the earnings

of self-employed and small businesses, this chapter looks in greater detail at changes in employment.

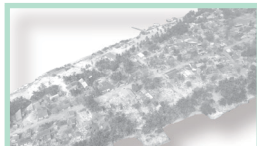
Labour force and employment

As can be seen from Figure 6-1, for Maldives as a whole around half the working age population is in the labour force. This participation rate increased somewhat in 2005 as following the tsunami more people, especially in the atolls, were willing to work, though since not all could find jobs the employment

Figure 6-1 – Employment and unemployment, 15 years and over, 2004 and 2005



Figure 6-2 – Employment and unemployment, men and women, 15 and older, 2004 and 2005



rate stayed much the same while unemployment rose – from 7 to 12 percent of the working-age population.

Figure 6-2 presents the information by sex. Men have much higher participation rates, making up about two-thirds of the working-age population, a proportion that did not change much between 2004 and 2005.

However there was a notable increase in unemployment for women. After the tsunami, a larger proportion of women, both in Male' and the atolls, were unsuccessfully looking for work. Overall unemployment for women was 10 percent of the working age population in 2004. This increased by half, to about 15 percent of the working age population in the following year.

The unemployment rate of women, that is the share of unemployed in the labour force, increased by six percent from about 22 to 28 percent. The sharpest increase in the unemployment rate for women was in Male', where it doubled to about 23 percent. In the atolls, the increase was from about one quarter to nearly 30 percent of the labour force. In 2005, in absolute terms, the number of women looking for work increased by about 6,000, to 15,500, while the number of unemployed men went from 4,000 to 6,500.

For younger people – aged 15-24 years – participation rates are lower since many are students. Another difference between the overall pattern and that of the youth is that participation rates of young men and women, though they still differ significantly, by around ten percentage points, are nevertheless much closer than those for older persons for whom participation rates by sex differ by nearly thirty percentage points (Figure 6-3). As in the overall labour force, the percentage of youngsters unemployed due to the tsunami is rather small – about two percent in the atolls and one percent overall – but twice as high for young women as for young men.

Figure 6-4 shows for 2004 and 2005 the proportion of the working age population that was employed. In Male' this fell, for both men and women. In the atolls as a whole, it increased somewhat, for both sexes. But within the atolls, the PDEs and PDIs had different experiences. Among the PDEs, employment of women was more or less halved while for men it increased slightly. Among the PDIs, the employment rates were marginally lower for both men and women, a pattern similar to that in Male'.

Unemployment

Essentially what happened between 2004 and 2005 was that, perhaps because households needed extra income, there was an increase in participation rates. Unfortunately, many people could not find the right kind of work and as a result while employment remained much the same there was an increase in the rate of unemployment. The situation was particularly difficult for young people. Even between 1997 and 2004 they were finding it increasingly hard to find work and the trend continued in 2005 when about a quarter of young people in the labour force, or about ten percent of all young people, were unemployed (Figure 6-5). Young women found it even harder to find work: their unemployment rates were about double those of young men. In the atolls, around half of young women willing to work could not find a job. In Male', around one young person in four looking for work was unemployed.

Unemployment by economic activity

Between 2004 and 2005 there was also a change in the structure of the labour market. As is evident from Figure 6-6 for the atolls the proportion of the employed labour force working in hotels and restaurants declined. But a number of sectors showed increases, notably construction, trade and transport, which benefited from intensive reconstruction activities. The result for fishing might seem surprising – a drop from 14 to 13 percent



Figure 6-3 – Employment and unemployment, young men and women aged 15 to 24, 2004 and 2005

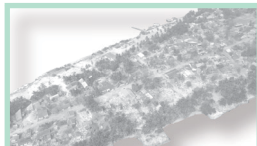
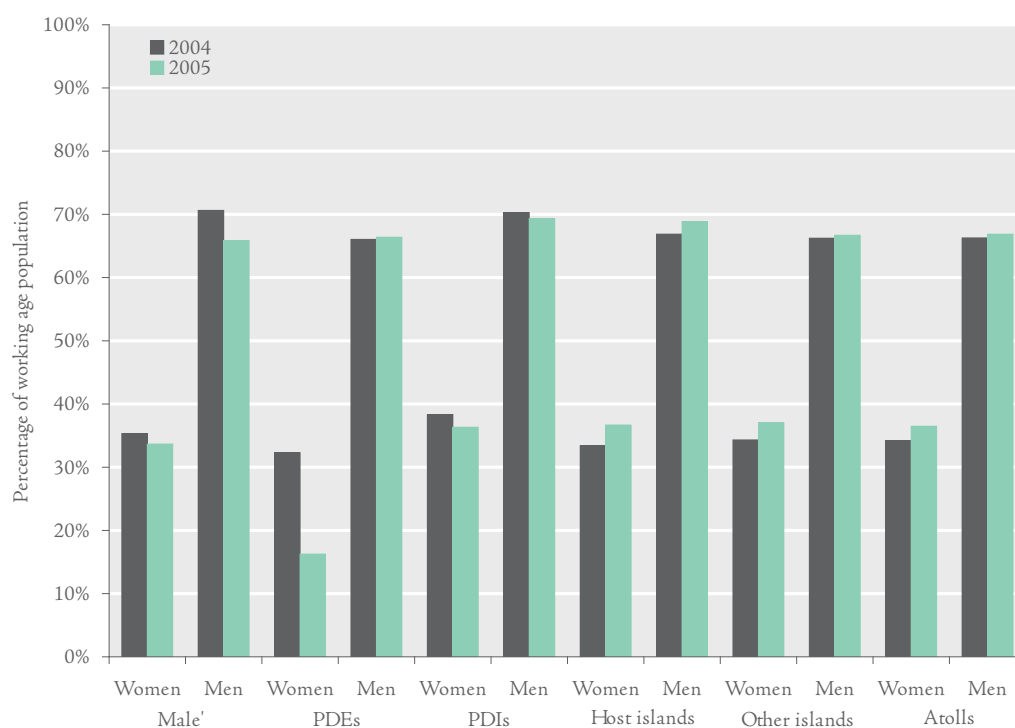
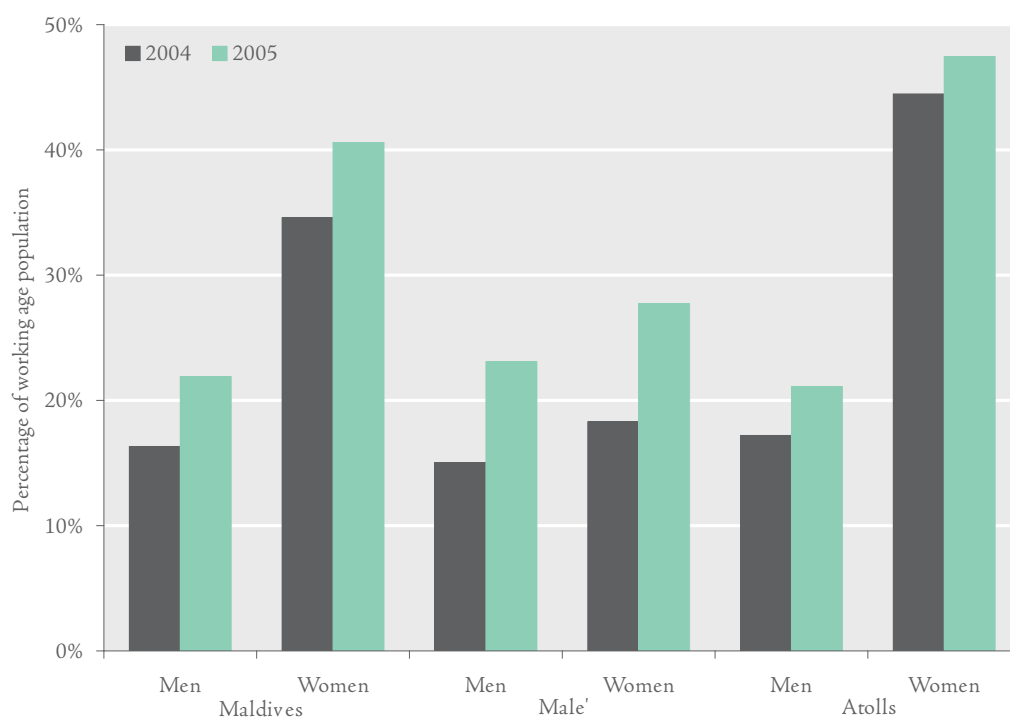


Figure 6-4 – Employed labour force, by sex and displacement level, 2004 and 2005*Figure 6-5 – Unemployment rates, young men and women, 15 to 24, 2004 and 2005*

– given that 2005 was a good fishing year. However this good result was due to a 40 percent higher catch per trip. In fact there were 10 percent fewer trips, hence a reduction in employment.

In Male', the development was somewhat different. The share of activities in the total remained more or less constant and only the transport and communications group witnessed a large increase (Figure 6-7).

There were similar patterns in the different displacement groups. However these were often more pronounced as activities were more narrowly spread and more severely affected by the events. Information for the PDEs, the PDIs and the host islands is given in Figure 6-8 - Figure 6-10. The major reductions in both PDEs and PDIs are in fishing and manufacturing, which were the two major activities

in both years, but with a substantially lower share after the tsunami than before. These activities were also the most important ones in the host islands, but here their share increased by about six percentage points between 2004 and 2005.

Employment in activities related to fish is divided between men and women. Fishing is largely a man's job, while traditional fish preparation is mostly done by the women. These two activities are of course related so developments with respect to fish will affect the employment of both men and women, although not necessarily to the same extent. One important development over recent decades has been the reduction in traditional processing. Now more fishermen sell their catch to the fish collection vessels of MIFCO and recently also to the new private operators. The local processing of fish on the most-affected islands was also constrained by the

Figure 6-6 – Employment by type of activity, atolls, 2004 and 2005

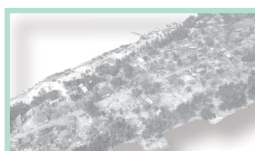
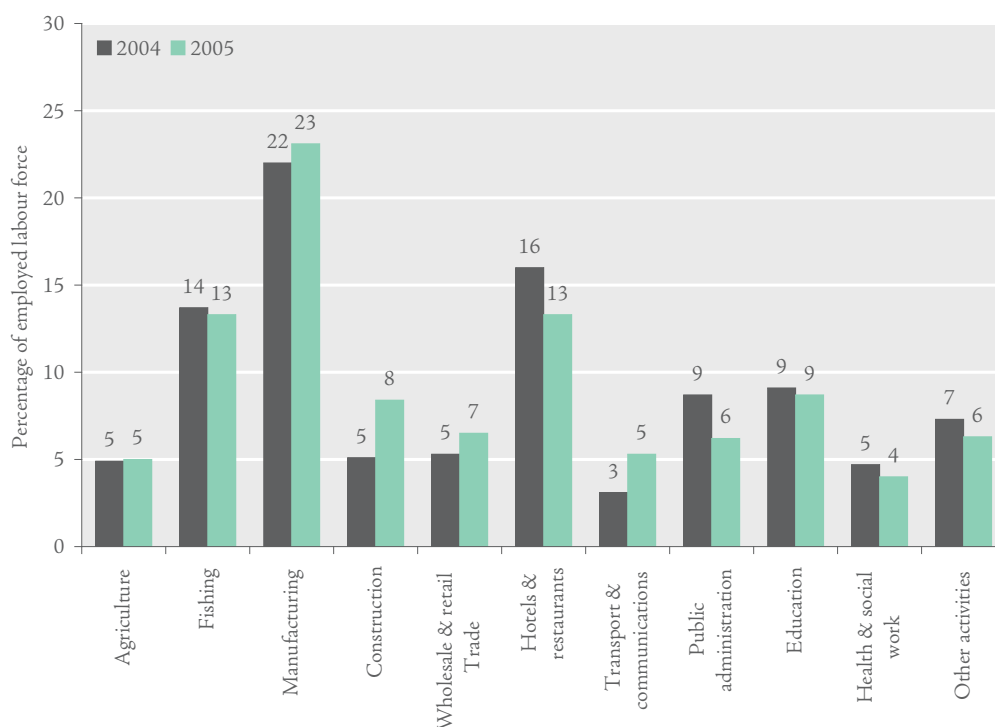
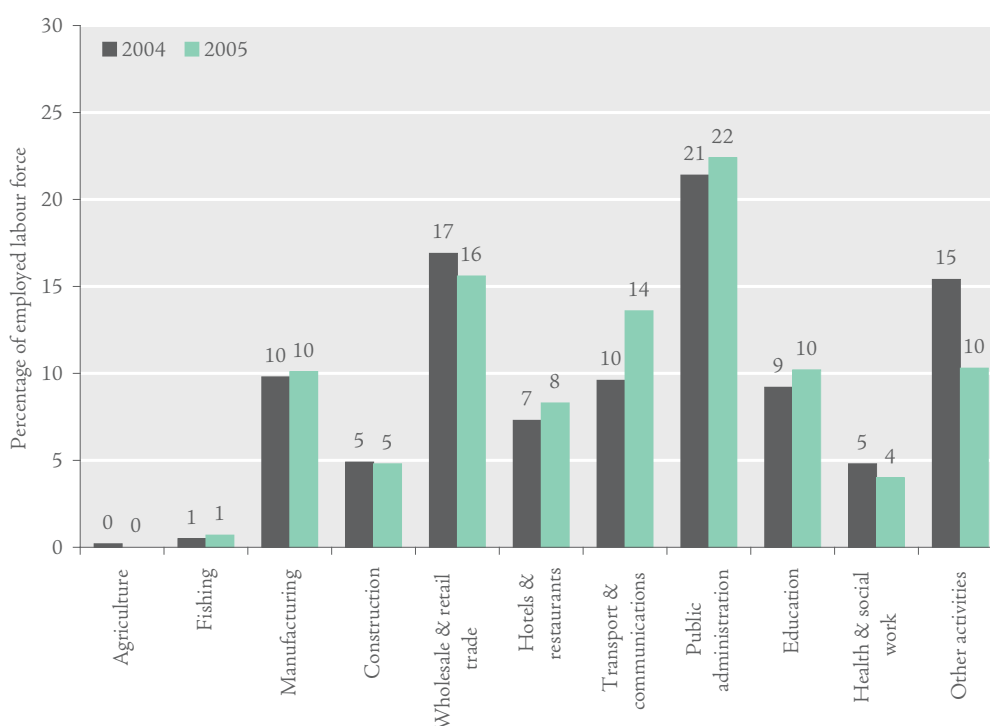


Figure 6-7 – Employment by type of activity, Male, 2004 and 2005

loss of equipment due to the tsunami. Thus, while overall the share of manufacturing employment increased in the atolls, it decreased among the PDEs and PDIs.

There were also pronounced changes in employment on the host islands. But these were different. On the one hand the proportion of people working in trade and transport increased, along with that for fishing and manufacturing. On the other hand a smaller proportion of people worked in public administration, education and health. This was because adding the displaced populations created economies of scale, especially when the original populations of the islands were small and because the relocated population also got a share in

these activities.

For manufacturing one of the most significant developments was the substitution of women by men. It seems that as well as being able to take up opportunities in construction and transport, men also benefited from jobs in industrial manufacturing. Between 2004 and 2005, while manufacturing employment in the PDEs and PDIs decreased by five percentage points, from about 22 to 17 percent of the employed labour force, a more important change was the substitution of women in the manufacturing labour force by men. For the PDEs there was clearly replacement, while in among the PDIs it was largely only women that lost manufacturing jobs.



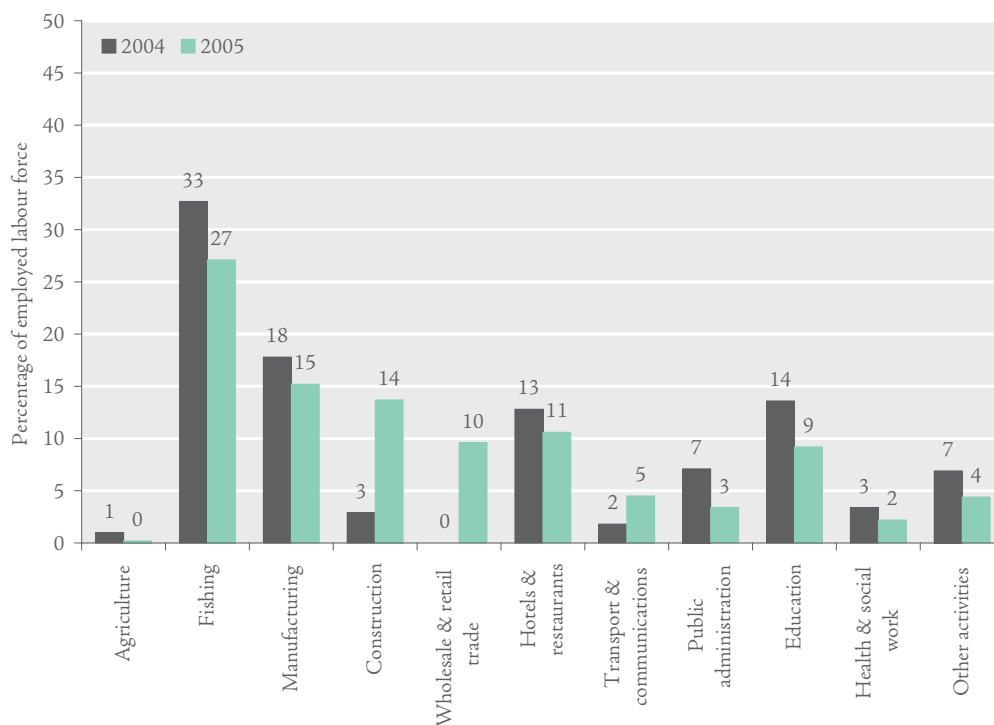
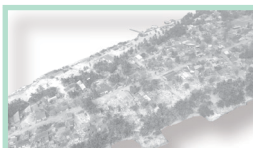
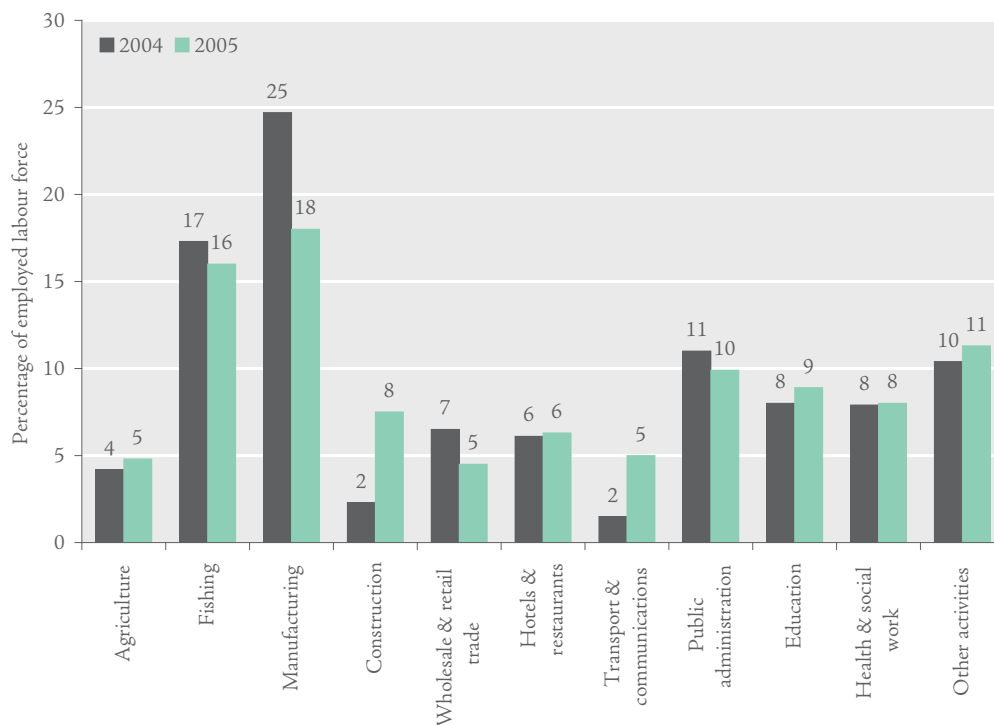
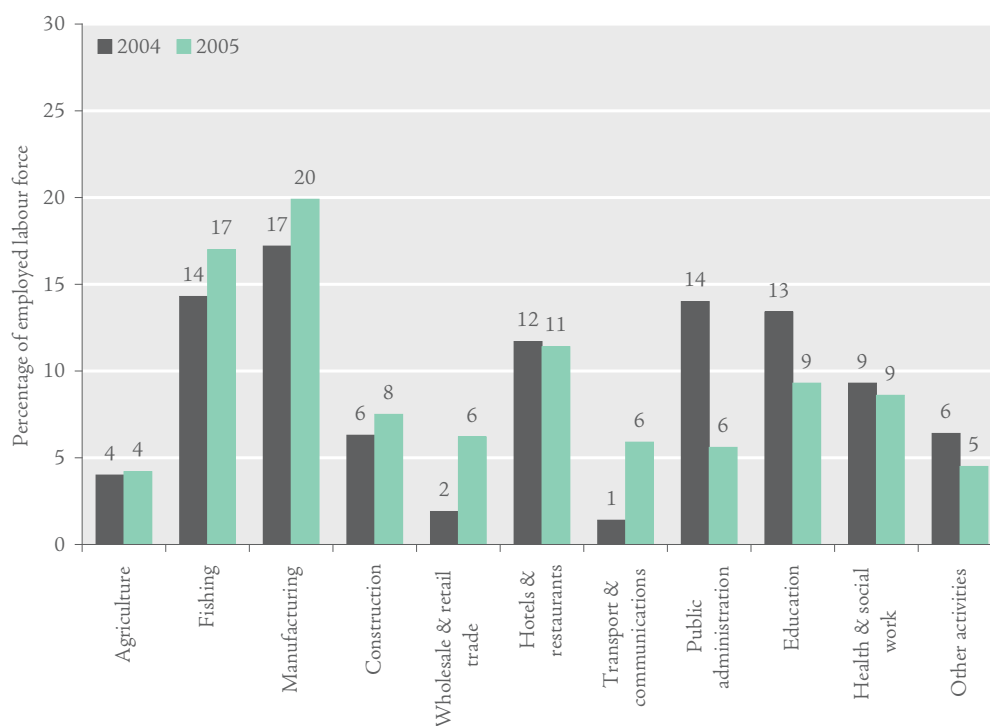
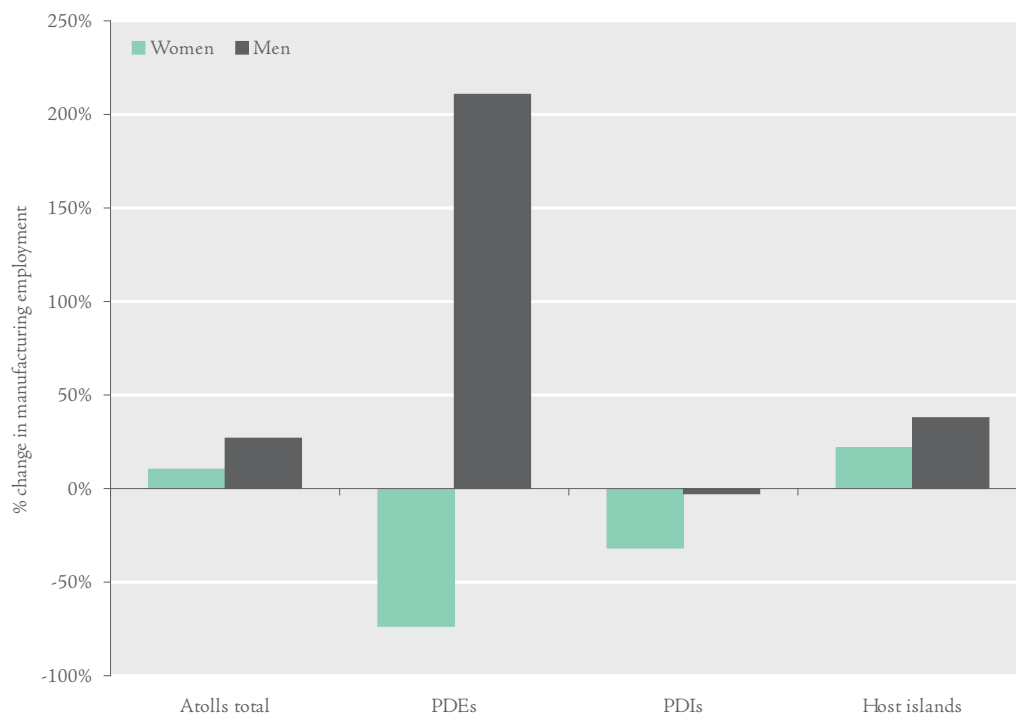
Figure 6-8 – Employment by type of activity, PDEs, 2004 and 2005*Figure 6-9 – Employment by type of activity, PDIs, 2004 and 2005*

Figure 6-10 – Employment by type of activity, host islands, 2004 and 2005*Figure 6-11 – Changes in manufacturing employment, by displacement level and sex, 2004 and 2005*

Earnings

Another important effect of the tsunami was the loss of income for those who retained their jobs but whose income was reduced because they relied partly on variable pay components. This is most common in tourism. Resort workers, for instance, have a basic salary but get most of their income from the service charges and tips, which are, of course, dependent on the number of guests. Workers on resorts that were closed after the disaster, have their incomes reduced to their basic salaries, while even those working in resorts that were open in the first half of 2005 had substantially lower incomes because there were fewer visitors. Other tourism-related activities were also affected – such as trade and recreational services.

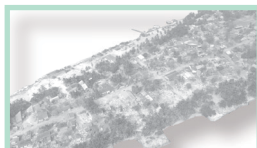
The survey asked island chiefs whether people on their island were earning less or more

from tourism. Figure 6-12 shows the responses. In most cases, people were earning less, especially those in the centre of the country, where most resorts are located.

Figure 6-13 presents the same information by tsunami impact level. The general pattern is the same, with a major part of the population reporting a loss of income. The most striking result is the high proportion of 'no change' reported at the top and the bottom – the most-affected islands and those not affected at all – probably because these groups include a number of islands where tourism was of little importance to begin with.

In summary, it may be concluded that the effects of the tsunami on employment have been rather limited. They were felt mostly in Male', and among the PDEs and PDIs where, as a proportion of the working-age population, the employed labour

Figure 6-12 – Change in income earned from tourism by atoll, 2005

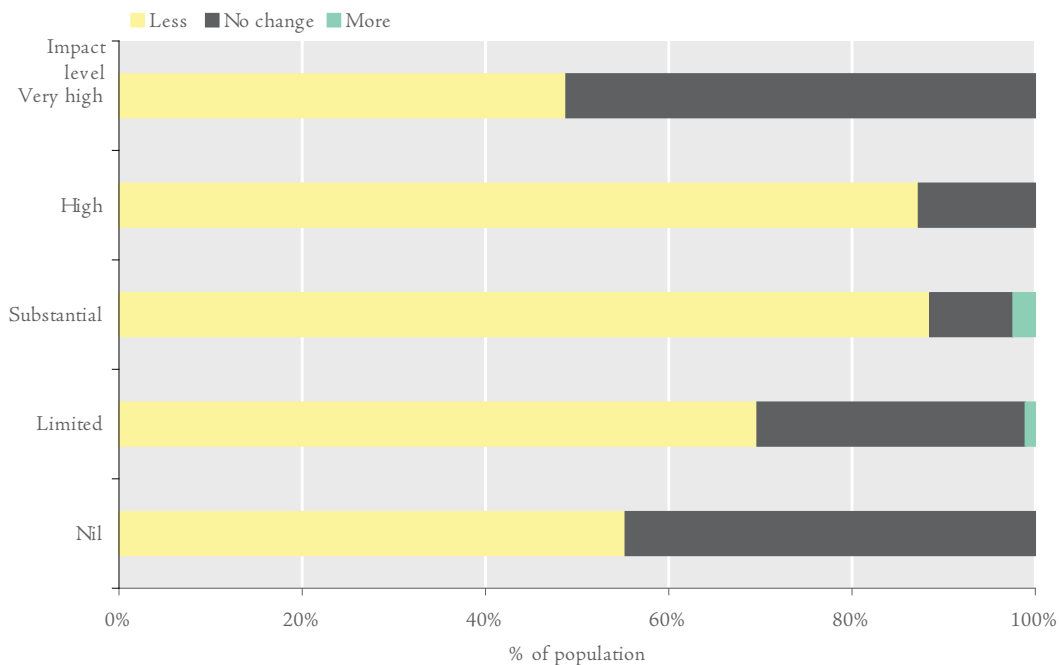


force actually went down. Only among the PDEs were women much more severely affected than men, who replaced them in about half the cases.

The number of people reported to have lost their jobs was modest – in the atolls, about two percent of the working-age population. A more important effect of the tsunami seems to have been to increase the number of persons, both men and women, that started looking for work but could not find a job and therefore ended up unemployed.

Finally, it was confirmed that there was a reduction in incomes related to tourism, with the pattern largely reflecting the location of the resorts and the main recruitment areas of staff in the other atolls.

Figure 6-13 – Changes in income earned from tourism by impact level, 2005



CHAPTER 7

REMAINING CHALLENGES

By July 2005, a number of the problems caused by the tsunami had yet to be resolved. Reasons for slow progress included funding shortages and difficulties with implementation which affected for instance the reconstruction of housing, water and sanitation systems. And even eighteen months after the disaster a substantial proportion of the people displaced remained in temporary shelters.

Some of the ways in which people can be helped to cope with these challenges would be to provide them with accurate and up-to-date information giving what is being done and being planned, realistic time-frames and status of progress/completion.

The tsunami also made islands less accessible – as a result of difficulties with the reefs, shallower lagoons or the loss of jetties. There was also more beach erosion and a number of islands had yet to be cleared of accumulated garbage. In addition, reconstruction and improvements to infrastructure had been slower than expected.

Some of the workers, mostly in manufacturing and agriculture, who stopped their work due to the tsunami, had neither resumed their former jobs nor moved to another activity. And many islands where agricultural fields had been damaged and groundwater contaminated had yet to be restored to their pre-tsunami status.

The financial cost of the tsunami recovery, both for the rebuilding of infrastructure and for extended care for the displaced persons, have been very high. Substantial support has come from the international community, but nonetheless a large burden had to be borne by the Government which has taken out loans for rebuilding infrastructure and incurred substantial budget deficits.

Long-standing challenges

Many of today's challenges pre-date the tsunami. Over a long period, there had been increasing income and non-income disparities between Male' and the atolls. The tsunami may have interrupted this trend by reducing the incomes of the richest part of the population in Male'. But unless the underlying causes are addressed this will probably only be a temporary slowing.

Another disturbing phenomenon, both in Male' and the atolls, is the continuing increase in youth unemployment. In Male', youth unemployment in 2004 was about one in six but in 2005 was one in four. The deterioration was not so severe in the atolls, but here the levels were already much higher: in 2005 nearly half of young women were unemployed.

The main problem is a mismatch between the aspirations of the local population and the realities of the labour market. Overall there is no lack of work, indeed there are labour shortages that can only be filled by bringing in large numbers of unskilled and low-skilled expatriate labourers; foreigners currently provide about one third of the labour force, mostly in low-skilled jobs. It will be important therefore to find various incentives for the locals, especially the youth, to fill available vacancies. It is equally important, however, to ensure that they have access to the general education and vocational training that will give them the necessary skills.

The surveys have also highlighted vulnerability to poverty. Over the eight years since the first VPA the overall poverty situation has improved dramatically, but the panel analysis shows that over this period a significant number of people fell into poverty. A much larger part of the population turned



out to be vulnerable than previously envisaged. Policy makers need to be concerned therefore not just about helping people to escape from poverty, but about preventing vulnerable population groups from falling into poverty.

Atolls

The island population has indicated that one of their highest priorities is improving education. In the VPAs as well as in the TIA, while acknowledging the improvements in infrastructure and facilities they expressed concerns about education quality.

They are also concerned about health. Due to the non-availability of doctors or specific services on their islands, they do not always have access to medical services. This also applies to medicines, because even when these are available on an island, there may be no-one to prescribe them.

A large part of the atoll population also lack secure access to drinking water. On many islands the tsunami contaminated groundwater sources, leaving the island population more dependent on erratic rainfall. And the pressure on limited water was exacerbated by increasing population size. The capacity lost in the tsunami can be replaced by rebuilding rainwater collection and storage systems. And on a number of islands further short-term relief can also be provided through desalination plants, though the high cost of operating and maintaining these units may in the long term make them unviable.

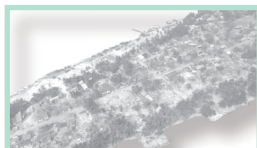
Male'

Continuing migration from the islands is resulting in very high population densities in Male'. According to the provisional results of the 2006 Census, more than one-third of the Maldivian population is now living in Male', compared with only one-quarter ten years ago.

These crowded living conditions are an important source of stress. Taken together with a large number of unemployed and underemployed youth, this in turn provides a fertile feeding ground for social unrest and can lead to increased violence, drug abuse and other social evils.

Short term versus long term

Fortunately, the tsunami has not undermined the country's long-term achievements. Major improvements in life expectancy, education, infant mortality and incomes, have not been compromised seriously, and in some cases not at all. Generous assistance from foreign and domestic sources – and good post-tsunami economic performance – have ensured that the economic impact has been overcome faster than might have been expected.



TECHNICAL NOTE 1. THE MEASUREMENT OF VULNERABILITY AND POVERTY

1. The Theory of Poverty Dominance

1.1 Introduction

The measurement of poverty usually involves three main steps. First, the population is classified from poor to rich according to a living-standard indicator like per capita household income or expenditure. Second, given a living-standard indicator, a poverty line is drawn somewhere. Third, given a ranking from poor to rich according to a selected living-standard indicator, and given a chosen poverty line, poverty under the poverty line is added in some way and expressed as a number, a poverty indicator. Examples of some simple but appealing poverty indicators are the headcount ratio, i.e. the proportion of the population under the poverty line, and the average shortfall of the poor, i.e. the distance of the average poor to the poverty line expressed as percentage of the poverty line. These indicators complement each other. The first indicator measures the incidence of poverty, and the second indicator measures the depth of poverty. More advanced poverty indicators allot a higher weight to the poorest of the poor than to those just under the poverty line.

1.2 Vulnerability and Poverty Indicators¹

A poverty indicator measures the extent of poverty given a ranking from poor to rich according to a chosen living-standard indicator and given a chosen poverty line.

1.2.1 The Headcount Ratio

The most popular poverty indicator is the headcount ratio or headcount index, defined as the number of poor as a proportion of the population.

$$H = \frac{q}{n}$$

where:

H is the headcount ratio or headcount index

q is the number of poor

n is the total population size

The headcount index ranges from zero (nobody is poor) to one (everybody is poor). The strength of H is its simplicity and its appeal. Although the headcount index may give a first crude impression of the extent of poverty, it is a meagre poverty index because it completely ignores the depth of poverty. It does not differentiate between extremely low incomes and incomes just below the poverty line. Further, and even more important, is the observation that H is a dangerous poverty indicator if used for analysing the success of anti-poverty policies. Successful anti-poverty policies aimed at persons just below the poverty line will reduce the headcount ratio, whereas successful policies aimed at raising the well-being of the poorest of the poor will not affect the headcount ratio if their new living standard is still below the poverty line. In other words, the H makes it more rewarding to support those just under the poverty line than to support the poorest of the poor.

¹ For readability, these indicators will be referred to in this report as poverty indicators.



1.2.2 The average income shortfall

A simple and widely used indicator for the depth of poverty is the average income shortfall, defined as the distance of the average poor to the poverty line as a proportion of the poverty line.

$$I = \frac{1}{q} \sum_{i=1}^q \frac{(z - y_i)}{z} = 1 - \frac{\mu_q}{z}$$

where: I is the average income shortfall

y_i is the living standard indicator of the household i

z is the poverty line

μ_q is the living standard indicator of the average poor

The average income shortfall ranges from zero (nobody is poor) to one (the living standard indicator of all the poor is zero). The strength of I , like that of H , is its simplicity and its appeal. As a poverty indicator, I is a poor indicator because it completely ignores the number of the poor. Further, like H , I is a dangerous poverty indicator if used for evaluating the success of anti-poverty programmes. When the income of a person just below the poverty line increases such that he is no longer poor, poverty according to the average income shortfall will increase rather than decline. Both H and I are partial poverty indicators. Each indicator describes only one aspect of poverty, and as such they are useful. They complement each other.

1.2.3 The Poverty Gap Ratio

The poverty gap ratio (PGR) is defined here as the average income shortfall normalised to the total population size rather than to the number of poor.

$$PGR = \frac{1}{n} \sum_{i=1}^q \frac{(z - y_i)}{y} = H * I$$

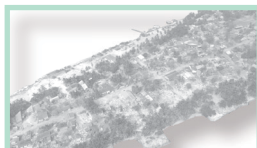
The poverty gap ratio includes both the incidence H and the depth of poverty I .

The meaning of the PGR can be illustrated by the following example. Consider two regions A and B. The poverty line in both regions is set at one dollar per day. Assume that the headcount ratios in regions A and B are 40 percent and 20 percent, respectively, and that the average income of the poor is 0.8 dollar in region A and 0.6 dollar in region B, respectively. According to the PGR, region A and B face the same extent of poverty. In region A, 40 percent of the population has an income shortfall of 20 percent, so that the PGR is 0.08 ($=0.4*0.2$). In region B, 20 percent of the population has an income shortfall of 40 percent, so that the PGR is also 0.08 ($=0.2*0.4$).

1.3 A Non-Dichotomous Concept of Vulnerability and Poverty

The second step in poverty measurement, after having ranked the population from poor to rich according to a chosen living-standard indicator, is to define the poverty line. The poverty line is the norm below which people are labelled as poor and above which people are considered as non-poor. Most disputes, both academic and political, about the incidence and depth of poverty in a country, its regional location and its development over time, focus on the definition of the poverty line. Being a norm, the definition of any poverty line, is subject to value judgements.

In poor countries, the poverty line is commonly set at subsistence level, but what is the level of subsistence for each dimension of poverty and vulnerability? In rich countries, poverty is often considered as a relative concept. The level of the poverty line is there often expressed as a percentage of the mean or median. Such ambiguous choices often induce controversy, especially because the incidence of poverty can be very sensitive to the level of the poverty line. The higher the poverty line the



more people fall under that line.

A dichotomous concept of poverty implies that a clear distinction can be made between the poor and the non-poor. A person is considered poor if his income (or other living standard) is below a certain poverty line, and he is considered not poor if he is above that line. Such a sharp distinction between the poor and the non-poor is not very realistic. A gradual transition from poverty towards non-poverty seems more appropriate. Then, poverty becomes a non-dichotomous concept.

1.4 Measuring Poverty Dominance without Poverty Lines

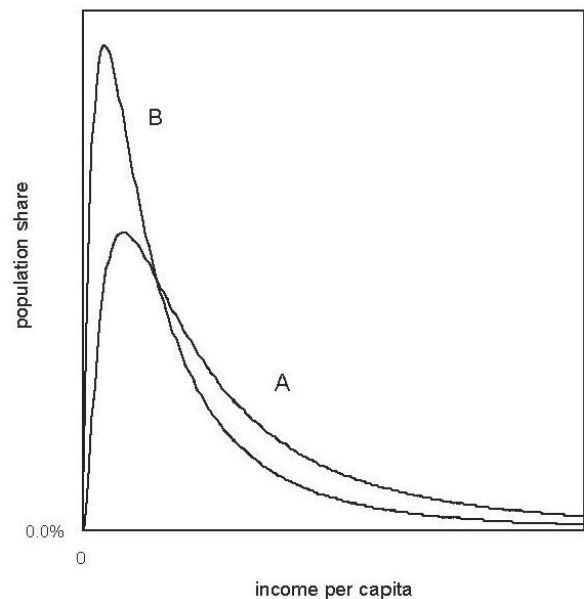
The previous sections have shown that the choice of the poverty line and the choice of the poverty indicator are not straightforward, but subject to uncertainties and arbitrariness. However, that does not mean that nothing can be said about poverty comparisons between regions. The new and rapidly developing theory of poverty dominance makes it possible to compare poverty situations between regions without knowing the level of the poverty line or the proper poverty indicator. Considerable progress has been made in this field during the last decade, mainly by Atkinson², Foster and Shorrocks³, Ravallion⁴, and Jenkins⁵ and Lambert. The next section presents an introduction of this new theory. In the presentation we shall use income as the living standard indicator, but the theory is also applicable to other living standard indicators as well as for multi-dimensional living standard indicators.

1.5 The Theory of Poverty Dominance

Consider two hypothetical regions A and B with their respective income distributions. Figure 1 shows their frequency distributions, i.e. the population share for each per capita income in the two regions. Suppose that both distributions have the same income range and a common but unknown poverty line z . Country A is richer on average, and the income inequality is higher in A than in B.

Figure 1 suggests that there is more poverty in B than in A, but the figure is inappropriate for drawing such a conclusion. For that, Figure 2 is much clearer. It shows the cumulative frequencies for all incomes per capita, i.e. the percentage of the population below a certain income level.

Figure 1. Frequency distributions for two regions A and B



² A.B. Atkinson, On the Measurement of Poverty, *Econometrica*, Vol.55, No.4, July 1987, pp.749-764.

³ James E. Foster and Anthony F. Shorrocks, Poverty Orderings, *Econometrica*, Vol.56, No.1, January 1988, pp.173-177.

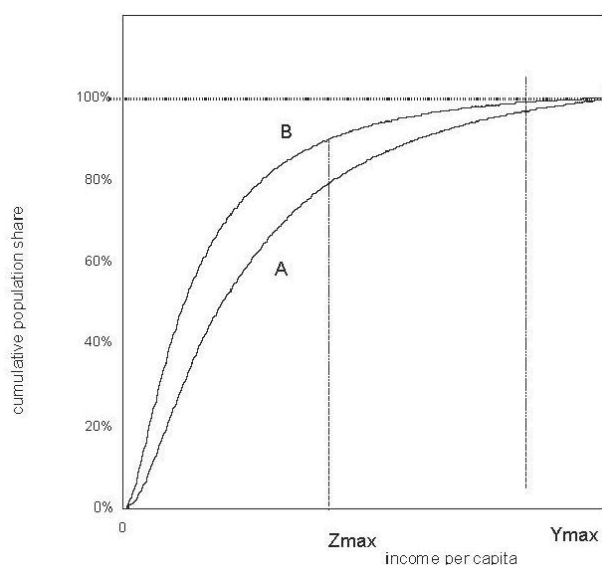
⁴ Ravallion, Poverty Comparisons, A Guide to Concepts and Methods, Living Standards Measurement Study, Working Paper No.88, The World Bank, Washington DC, 1992.

⁵ Stephen P. Jenkins and Peter J. Lambert, *Three I's of Poverty Curves: TIPs for Poverty Analysis*, forthcoming.



The cumulative frequency distributions in Figure 2 can be read in an alternative way. The x-axis contains all incomes per capita. That means that the unknown poverty line must be somewhere on the x-axis, although we do not know where. If the cumulative frequency distribution of country B is everywhere above that of country A, as in Figure 2, it means that the cumulative population share in B is higher than in A for all income levels, including the unknown poverty line. Interpreted in that way, the y-axis is actually the headcount ratio H and the x-axis is actually the unknown poverty line z . Therefore, we may conclude from Figure 2 that, according to the headcount ratio, poverty is definitely higher in B than in A.

Figure 2. Cumulative frequency distributions for two regions A and B



If the two curves intersect, the income level of the intersection point is relevant (see Figure 3). If they intersect at an income level that is too high to be a reasonable poverty line, we can still say that, according to the headcount ratio, poverty is higher in B than in A, for all reasonable poverty lines. In other words, the poverty dominance condition

according to the headcount ratio applies for non-intersecting cumulative frequency distributions and for cumulative frequency distributions that do not intersect in the interval $z < z_{\max}$, where z_{\max} is the maximum poverty line. The poverty dominance condition according to the headcount ratio is called the first-order dominance condition.

If the two curves intersect at a point that reasonably could be a poverty line, the ranking is inconclusive according to the first-order dominance criterion.

In that case, aggregate poverty indicators accounting also for the depth of poverty have to be examined. Figure 4 shows the (normalised) PGR on the y-axis and per capita income on the x-axis. Figure 4 can be derived from Figure 3. They have the same x-axis, while PGR ($= H \cdot I$), the y-axis of Figure 4, is actually the area under the curve of Figure 3 (normalised by z).

Figure 3. Intersecting cumulative frequency distributions for regions A and B

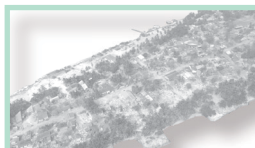
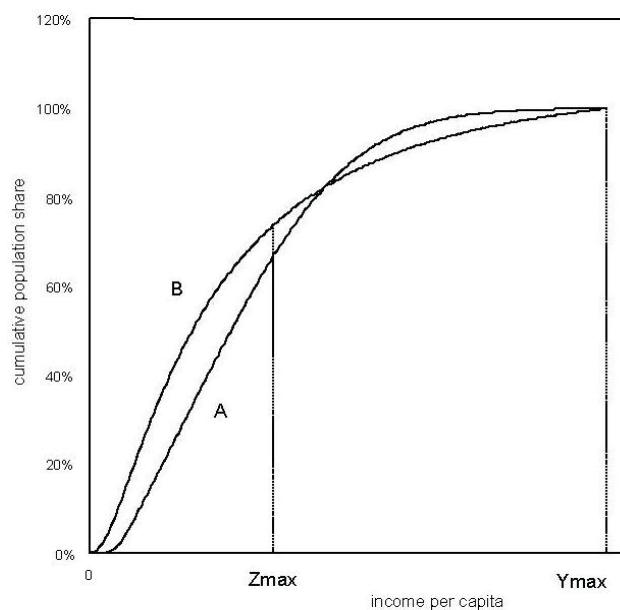
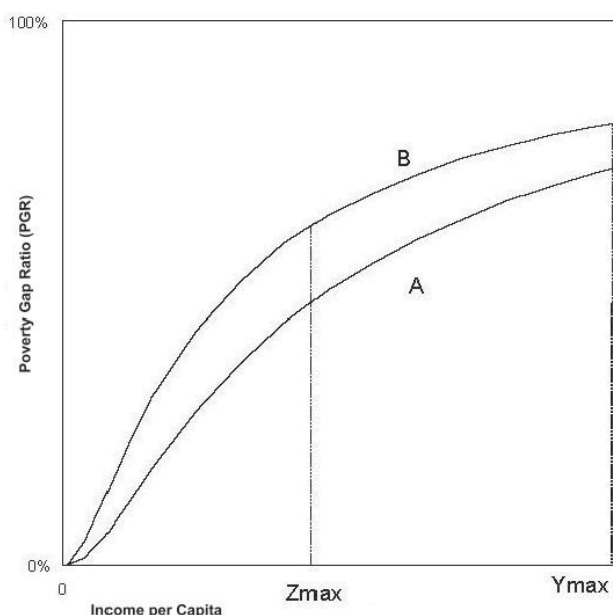


Figure 4. Poverty gap index for two regions A and B



If the PGR of region B is everywhere above that of region A, as in Figure 4, we may conclude that, according to the PGR, poverty is definitely higher in B than in A, whatever the level of the poverty line. Again, that conclusion holds for non-intersecting curves and for intersecting points in the interval $z > z_{\max}$.

This test is called the second-order dominance criterion, because it can be proved mathematically that poverty dominance of region B over A according to the first-order dominance condition, implies also poverty dominance of region B over A according to the second-order dominance condition. The area under B in Figure 3 is always larger than the area under A for all poverty lines. This theorem is not valid in the reverse order.

2. Empirical Application to Maldives

First, the usual poverty indicators like the headcount ratio and the poverty gap index are presented. These indicators are meaningful because they are appealing. As far as poverty dominance

is concerned, the previous section has shown that when atoll B is poverty dominant over atoll A for a certain living standard indicator according to the headcount criterion, then it necessary follows that B is also poverty dominant according to the PGR for that living standard indicator. This theorem is not valid in the reverse order. The second-order dominance condition does not imply the first-order dominance condition. The theory of poverty dominance will be applied to the 20 atolls of Maldives. Wherever possible, the households are the units of analysis. In other cases, the islands are the units of analysis for constructing the living standard distributions within atolls. In cases where the first-order dominance criterion is inconclusive, we shall continue with the second-order dominance criterion based on the PGR- curve.



TECHNICAL NOTE 2. SAMPLING METHODOLOGY FOR TIAS¹

1. Background

The tsunami that struck Maldives in the morning of the 26th December 2004 created havoc on many islands, making the VPA results instantly obsolete as a large number of households lost many, if not all, of their possessions. Nonetheless, the VPA-II data set contains a large volume of important and detailed information on the socio-economic situation in the atolls shortly before the disaster. At the same time, finding the characteristics that make households more successful can help in steering and speeding the recovery process that is to be started in the affected islands. This part of the VPA-II analysis has therefore also been completed.

The tsunami undid on many islands in a single strike what had been achieved over many years. It is therefore also important to measure what was lost, in terms of assets, incomes and earning capacities by households as a result of this natural disaster. A number of options to measure the effects can be thought of, all based on interviewing householders as was done in the VPA surveys.

The data set represents a second “panel” survey, one of the few in the region (same households, with similar questions a few months before and after the Tsunami). Analysis of these panel-data will provide important information about coping mechanisms and poverty reduction strategies of the households themselves.

2. Objectives of the survey

The main objective of the Tsunami Impact Assessment (TIA) is to provide insights in the changes in various standard of living measures

between mid-2004 and the middle of this year, using the same sample of households. The living standards of particular interest are income and wealth, employment and education, but other aspects are also covered. The fieldwork for the second VPA was conducted in June/July of 2004. It provided a detailed picture of many living standard dimensions of the island population on all 200 inhabited islands in Maldives. The first stage of the analysis was completed by mid-December. This included summarising the results for 2004 and comparing these to the situation as found in 1997 during the first VPA. The second part of the analysis is to find, if possible, the reasons for the success of some households and the failure of others to improve their situation. This analysis is based on comparison of the characteristics of more than thousand panel households being the same households that are followed in the 1997 (VPA-I) and the 2004 (VPA-II) Surveys.

The TIA questionnaire comprises different components. Some have been repeated from the VPA questionnaires, while others are specific for the tsunami. The latter modules will only be administered to those households and islands that were severely affected by the tsunami. The modules treated in this way are those for the household, the tsunami impact, the psycho-medial and health and reproduction modules. The definition of severely affected households and islands is given further on.

3. The frame

The TIA sample is basically the same one as used in the VPA-2, with all inhabited islands covered. However, adjustments are made in the



sample size of the different categories of islands according to the impact of the tsunami. Five impact categories were used, from very high for the islands that were evacuated, to nil for unaffected islands. The five categories are given in Table 1.

Table 1. Tsunami Impact Categories

Code	Definition	Description	Number Islands
1	Very high	Population displaced and temporary shelter required	14
2	High	Population displaced and major damage to housing and infrastructure	22
3	Substantial	Damage to more than a quarter of buildings and infrastructure	33
4	Limited	Flooding in few houses but no structural damage	122
5	Nil	No Flooding	9

The sample size for the VPA surveys was ten households for every 1500 persons on an island. In order to obtain a more accurate measurement of the impact of the tsunami, the sample size for the most affected populations has been increased while that for the less affected islands has been decreased. In other islands, the sample size has not been changed. A full listing of the sample size for the TIA by island is given at Annex 3. As indicated, the sample for the fourteen most affected islands was trebled, that for the next group was doubled while the sample for the last two groups was halved.

However, one additional source of information was used, namely the number of persons that received benefits after the tsunami. This information, tabulated by island of residence, was used to determine where the household questionnaire should be administered. Of course this included all the islands in categories 1 and 2, but

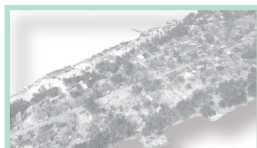
also on all islands in the other categories where more than one third of the population received financial support. The full list of those islands is marked in Annex 3 with a 1 in the last column. For islands thus marked that are in categories 4 and 5, the sample was kept at the level of VPA-2 rather than reduced by half.

The frame for Malé' consists of 5 wards and 317 enumeration blocks. Household data for enumeration blocks were available from the census results. Enumeration blocks created in the last census are clearly marked in the maps with the description of physical boundaries. It provided the possibility of taking these blocks as the primary sampling units in VPA sample design for Malé'. As Malé' was not severely affected by the tsunami, only half the VPA2 sample has been included in the TIA.

4. Sampling in atolls

As previous, sampling of islands is not considered appropriate, because the level of vulnerability is very much determined by the local conditions. The survey will cover the population of all 200 islands inhabited during the VPA-2¹. These islands are different in population sizes and the damage the tsunami caused. As a starting point, the sample of the VPA-2 will be used. The minimum sample at the time was 10 households for each island with less than 1500 inhabitants or approximately 200 households (the average household size in the atolls was around 7 persons according to the 2000 population census). For larger islands, the sampling rate was increased by 10 households for every 1500 inhabitants. Such a distribution satisfied the proportional allocation scheme and thereby reduced the variance of results arising from a disproportionate allocation. The total number of households sampled from all atolls in VPA-2 amounted to 2310 households.

¹ Four islands that were evacuated after the tsunami, have not been resettled since.



The VPA-2 sample size was then adjusted for the severity of impact of the tsunami. For the fourteen most severely affected islands, the sample was increased to three times the VPA-2 sample, thus giving a minimum of 30 households for each of those². The sample for islands in the second impact group was doubled, while the sample in the last two impact groups was halved.

A final adjustment was made on the basis of the share of the population that had received disaster relieve payments. All islands where more than one-third of the population had received payments were included in the sample for the household questionnaire. This included a number of islands in impact categories 3, 4 and 5. For those islands, the number of households in the sample has been kept to the VPA-2 numbers. A summary of the final sample for the TIAS in the atolls is given in Table 2.

In this sampling plan each island virtually becomes an independent stratum, so the selection of households will be carried out within each island independently from others. Such arrangement facilitates aggregating island data by different grouping relevant to statistical analysis. The number of households to be sampled for each island is given in table are given in Table 3.1 below.

Partial overlapping sample

In order to ensure the data comparability of two surveys the samples in all islands will be retained from those selected for VPA-2. For the 36 most affected islands in categories 1 and 2, additional households are to be selected from the VPA-2 list. Partial overlapping of samples for successive surveys has certain advantages. A completely repeated panel can give the information about the changes of

Table 2: Size and allocation of samples in atolls

Impact -group	Number of islands	Population VPA 2004	Number of households	Sampling rate relative to VPA-2	Number of households to be sampled	Number of household questionnaires applied
1	14	12,908	951	3x	480	480
2	22	20,404	1,688	2x	540 ⁱ	540
3	33	38,961	2,660	same	440	290
4	122	123,520	8,719	half	795	110
5	9	7,380	586	half	55	0
Total	200	203,173	14,604		2480	1,420

Data: VPA-2 and Tsunami relief efforts, MPND and Disaster Relief Centre

² In M. Madifushi only 22 households were present. All of these are to be enumerated.



Table 3.1: Number of households to be sampled by islands

Name of islands	Number sample households per island
Kadholhudhoo, Naifaru ² , Viligili	60
Kulhudhuffushi	50
Fonadhoo, Komandoo, Thimarafushi	40
Hithadhoo	35
Dhabidhoo, Filladhoo, Foammulah, Gemendhoo, Hinnavaru, Kalhaidhoo, Kolhufushi, Madifushi, Madifushi, Muli, Mundhoo, Naalaafushi, Ribudhoo, Vilufushi	30
Dhaandhoo, Eydhafushi, Felidhoo, Fulidhoo, Gadhdhoo, Gamu, Guraidhoo, Hulhudheli, Huraa, Isdhoo, Kaashidhoo, Keyodhoo, Maabaidhoo, Maaeoodhoo, Maafaru, Maafushi, Maroshi, Mathiveri, Nilandhoo, Rakeedhoo, Thinadhoo, Thinadhoo, Vaanee, Veyvah	20
All other inhabited islands	10 or fewer

variables of interest, but ignores the effect of changes outside the panel. In contrary, an independent sample in the successive period cannot measure the changes occurred in individual units. Partial overlap balances the advantage and disadvantages of both methods.

There are also certain gains in reduction of variance by using the same sampling units in the successive survey. Suppose, we are conducting two surveys in different time periods and the variable to be estimated is p , say it denotes the proportion of population living below the poverty line. The variance of the estimated change of the difference of $s_d^2 = p_1 - p_2$ is given by:

$$s_d^2 = s_{p1}^2 + s_{p2}^2 - 2s_{p1p2} = s_{p1}^2 + s_{p2}^2 - 2\rho s_{p1}s_{p2} \quad (2)$$

where, s_p^2 is the variance of estimates, suffix 1, 2 stands for period and s_{p1p2}^2 denotes the covariance and ρ - coefficient of correlation.

When the estimated proportion does not change sharply we can assume that variance of estimates of two periods are approximately equal (for example, if the poverty index falls to 17% from the earlier rate of 22% its variance will change merely

by 0.08. Therefore, $s_{p1}^2 \approx s_{p2}^2$. Then variance of the difference would appear as,

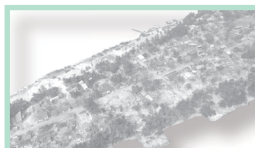
$$s_d^2 = 2s_p^2 - 2\rho s_p^2 = 2s_p^2(1 - \rho) \quad (3)$$

When the same sample of households are taken, survey data are highly correlated thus correlation coefficient ρ reaches up to 0.8. In this case, variance of difference will decrease significantly. If we take the same clusters (in our case, islands) but different households, the value of ρ will be much smaller around 0.25. In case of completely new sample there would be no correlation i.e. $\rho=0$, so higher the variance of difference.

To measure the gain of a partial overlap of the sample by reducing the variance of difference, we multiply the correlation coefficient ρ by a factor F that equal to the proportion of overlap. So the variance of difference would be :

$$s_d^2 = 2s_p^2(1 - F\rho) \quad (4)$$

It means with the value of $\rho=0.8$ and $F=0.5$ (proportion of overlapping sample) the variance of difference will be less by 40%. Practical implication of above remarks is that not all the ten households



but only 5 new households will be selected for each island with the population of 1500 and less and subsequently half of the sample of those given in Table 3.2 for other islands. When half of the sample is overlapping, there is still a high degree of correlation between the samples of two periods. Thus the “old sample” still holds the influence on major characteristics to make the data set highly comparable for the growth measurement.

Selection procedure

Information available about the households refer to the Population census of 2000. Therefore, it is necessary to have a fresh listing of households. Listing of household should be carried out in a systematic manner choosing a direction how the enumerators would move in the listing process. Normally a route (clock-wise or anti-clock-wise) of listing should be fixed. MPND/Stats has the good experience of listing households. The important thing to note that the households will be selected systematically with random start and this method gives better results if the listing is made in an order. Samples taken from the list arranged in order creates implicit strata of each interval. Systematic selection is simple, especially when the total number of units N is an integral multiple of the desired sample size n . Then an interval is calculated as $k = \frac{N}{n}$ and the random start is made between 1 to k . If the N is not an integral multiple then chose k so that N is greater than nk .

Let us take an example of K. Guraidhoo island, which had 68 households in the VPA-2. First, we identify the 10 households selected in VPA-2 and select them all. From the remaining 58 households we select 10 households systematically. Because, 58 cannot be divided by 10 we can take $k=5$ so that $n^*(k+1) > N > nk$ or $60 > 58 > 50$. So we take the random start between 1 to 5 and select every fifth household into sample.

If a household selected in VPA-2 does not exist any more

There are two reasons why an household selected in the VPA-2 cannot be found at this time in the same island or place anymore. The first reason is, as also in VPA-2, that mutations have taken place in the household since last year. For instance, the head of household may have died or the household may have migrated to Malé. In such cases of natural progression of life over time, the same rules apply as were used in the VPA-2. These are described below first. Then there are situations caused by the tsunami whereby households have been required to move due to the damage. These may now live in temporary shelters or with host families on the same island or on other islands. Some even may have moved into new permanent accommodation in either their own or another island. The procedures for such changes in households are given in the second section below under Tsunami-related changes.

Natural progression

Some households of the panel from the sample of VPA-2 may not exist any more in the island. First, households in the panel of the VPA-2 should be identified in the new list. If all households are found then sampling procedure for new households may begin. If there are the cases where an “old household” could not be found we have to apply some rules of replacement which are different for different conditions.

1. If the old household has moved away from the island then we consider it as a loss of panel household, thus the number of households in panel will decrease. We take the sample from the remaining “old households”. However, if in place (dwelling) of the “old household” we find the new household from the same family we regard it as a match case and consider it as an “old household”.



2. If we have the match of the household in our new list but the dwelling unit is different, we regard it as a household of the panel. It can happen when the household has moved to another place in the same island. Similar situation may also arise if the dwelling unit has been demolished. Again we try to find the household in the new list. If it could not be identified, we again consider it as a loss of panel household and follow the rule (1).
3. It is very unlikely that many of the households from the earlier sample do not exist. However, if it so happens, the number of households should be increased so that the total number of households selected from an island is matching the design number throughout all islands.
4. We assume that the household once identified in the listing will be available for interview. Non-response rate in the household surveys is quite negligible in Maldives, especially in atolls. In case the response from a selected household could not be attained (nobody at home or temporarily not at home, due to family vacation, or any emergency) substitution of sample households is allowed. Such substitution should be made from the respective panels, which means that the "old household" can be replaced from the panel of VPA-2, and new household from the rest.

If the households records of VPA-2 are readily available, it would also be advisable to carry out the listing in the same order (same route). In that case, both the selection from earlier sample as well as new sample should be made systematically, which would create a pair within each implicit stratum. Such arrangement greatly facilitates the estimation of sampling error using replication or interpenetrating sub-sample methods.

Tsunami-related changes

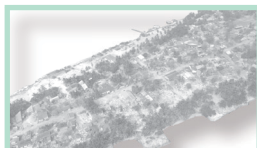
Due to the tsunami, a large number of households have been displaced. The members of

these households have sometimes been distributed over different host households, either in the same or in different islands. At the other hand, in temporary housing units, households that are not related share the same accommodation because of rules imposed for the use of the facilities. These situations cause special problems in both locating the VPA-2 households as well as in determining who should be part of the households.

As the main purpose of the TIA is to determine what happened to the households that were included in VPA-2, it is very important to try to get information for the group of people that made up the selected household before the tsunami struck. Thus, where possible, only the members of the pre-tsunami household with the natural changes (births³, deaths, migration into and out of the household due to work, studies, illness, etc..) should be included for the household, even though the household members may be distributed over different households at this time; or they may be grouped with other households) in a communal living arrangement. It should be possible to locate the old household members and to record the natural changes so that the best possible match between the VPA-2 and TIA can be obtained.

It may be noted that households now also include those members that are staying away from the household for some time due to work on an industrial or resort island or as seaman. Their income (or the part received by the household) is therefore treated as household earnings rather than transfers. Persons living away in Male' or other inhabited islands are not included as this may result in double-counts. The household membership status list has been expanded as compared to VPA-2 so that these household members can be coded properly. As these members are not normally present in the households

³ With more than twelve thousand persons in the sample for the 44 most-affected islands, quite a number of births and deaths can be expected. A two percent birth rate would mean 250 births and at a death rate of seven per thousand (not including tsunami-related deaths) some 80 deaths might be expected.



they belong to, they are by definition NOT the head of the household even if they would be the head when living with the household.

5. Sampling in Male'

As Male' was only affected in a minor way by the tsunami, the sample of households has been halved as compared with VPA-2. For VPA-2, sampling in Male' was different from that used in the atolls. In order to avoid the listing of all households, a two-stage self-weighting design was then applied. Male was stratified by 5 wards⁴ and selection was made within each ward. At the first stage, enumeration blocks will be selected probability proportion to the size (PPS) of blocks in terms of the number of households and at the second stage a fixed number of 10 households was selected for the VPA-2 using systematic sampling with a random start. In such case, block will be a primary sampling unit (PSU) and the household – the secondary sampling unit or elements.

For the TIAS, five households are selected from those included in the VPA-2 using random sampling from each selected block. All of the households in the block will be ranked, so that the households not selected serve as replacement households in case of refusal or an inability to locate the household.

Selection probability of a block for PPS selection equals $f_1 = a \cdot \frac{m_j}{\sum m_j}$ where, a denotes the number of blocks selected and m_j – number of households in selected j -th cluster. Similarly, selection equation of a household is: $f_2 = \frac{b}{m_j}$ where, b denotes the number of households to be selected in a PSU. Then overall selection rate within the stratum is given by:

$$f_0 = f_1 \times f_2 = \frac{a \cdot b}{\sum m_j} \rightarrow \text{const.} \quad (5)$$

The first stage selection is probability proportional to the size and second stage selection is inversely proportional to the size of PSU. Such sampling plan results in a self-weighting design, where each household within the stratum has an equal probability of being selected. The main advantage of this sampling plan is that the mean, ratio and proportion from the sample can be used without weighting. The list of sample for different

Table 3.2: Size and allocation of sample in Male'

Male'	Population	Number of households	Number of blocks in total	Sample	
				Number of blocks	Number of households
Henveyru	18100	2488	76	8	40
Galolhu	13878	1813	59	6	30
Machchangolhi	13589	1748	57	6	30
Maafannu	22372	2928	108	10	50
Viligili	4291	601	17	2	10
Total	72230	9578	317	32	160

Data: Population and household data taken from the Population census 2000, MPND

⁴ Hulemale was not yet inhabited at the time of sample design for VPA-2. Currently, about 2000 people are living on the island.



wards of Male' is given in Annex-1.

6. Estimation weight

Sampling in atolls is made at single stage using the systematic method with the intervals of $F_j = \frac{N_j}{n_j}$ from which $N_j = n_j F_j$. Thus the total of a variable y for j -th island is given by:

$\hat{Y} = y_j \cdot F_j$ where F_j serves as estimation weight

Estimation weight for each island is computed as the total number of households in an island divided by the sample size.

In Male, sample is made at two stage with the selection probability of $f_0 = f_1 \times f_2 = \frac{a.b}{\sum m_j}$,

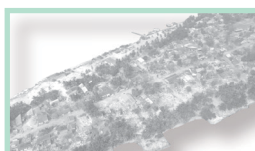
hence the design weight is computed as $w_h = \frac{1}{f_{0h}}$

Thanks to fairly proportional sampling design weights do not vary much across the strata. At the estimation stage, design weight may undergo some changes to adjust the difference of the number of households in the frame and in the actual list as well as the non-response. Thus, above weights can be used as raising factors after necessary adjustments.

Table 4: Computation of design weights for Male by strata

Male'	Number of households in total	Number of blocks in sample	Number of households in sample per block	Number of households in sample	Design weights
	$\sum m_j$	a	b	$a.b$	w_h
Henveyru	2488	8	5	40	62.2
Galolhu	1813	6	5	30	60.44
Machchangolhi	1748	6	5	30	58.26
Maafannu	2928	10	5	50	58.56
Viligili	601	2	5	10	60.1
Total	9578	3		160	

Compiled from Table 2.



7. How representative is the TIAS sampling

After this sample design was prepared and submitted for implementation, questions were raised how representative is the VPA sampling. Some asked why it was necessary to survey all islands, while a representative sample of few islands could be selected. Others argued how a small sample of 10 households can represent an island. Thus a general question arises: what is a representative sampling? Representative sample is not an absolute term, thus it is not possible to give any precise sense to a “generally representative sample”, but “...it is possible to define what should be termed a representative method of sampling and a consistent method of estimation⁵...” (Neyman, 1934)

A standard poverty assessment survey involves two-stage design where the some pre-defined area unit serve as a primary sampling unit and households as the secondary sampling unit (PSU). PSU's carry most of the burden of design as the allocation of samples over strata and domain are determined for PSU's. The household serves as an element of PSU. PSU's are selected with PPS, while households are often allocated at the fixed number or fixed rate per PSU. In repeated survey designs, panels are often fixed at the PSU level. VPA sampling has two domains Male' and Atolls and each of these domains has an independent sampling scheme. A standard design described above is applied to Male' but the design for the Atolls is different.

Sampling of PSU's in a standard design is done to represent a larger territorial area by a number of randomly selected smaller segments, where each of these segments is an integral part of the larger territory with some common characteristics. However, islands are very different from each other in terms of those variables which are determinant of vulnerability of islands. For example, one island

could not represent another for variables related to accessibility. Therefore, it was necessary to cover all islands in order to identify individual islands possessing a high rate of vulnerability. If the islands were sufficiently large, it would have been possible to survey a smaller segment rather than whole territory, because the segment could carry most of the common characteristics of the whole island. However, there were only 6 islands out of 200 with more than 3000 inhabitants. Segmentation in few islands would not have reduced the time and cost of the survey, because the cost of travelling within the island is very negligible in comparison to the cost of travelling to the island. In contrary, segmentation would have contributed to extra cost of mapping of blocks and updating household numbers etc.. Therefore, all islands were covered irrespective of their size and without sub-sampling.

The second question of representative sample arose from the sample size within an island. The sampling rate within the island for the VPA in the design was 10 households for every 1500 inhabitants. As 168 islands had less than 1500 inhabitants, there was only 10 households selected from these islands⁶. So the question was if such size could be considered a representative sample to assess the poverty and vulnerability situation of an island? The answer is affirmative, but depending on the variables that are estimated. It has already been mentioned about the common characteristics of an island which are very different from island to island, but very similar for households living in the same island. For example electricity, drinking water, food supply, access to other islands, health services are common to all inhabitants of the islands. Either these facilities are available to all or not available to anyone. It makes the population within an island highly homogeneous, which emphasises the robustness of estimates of vulnerability related variables from a small sample.

⁵ Neyman J. On the two different aspects of the representative method, 1934. Reprinted in *Landmark papers in Survey Statistics*, International Association of Survey Statisticians, 2000

⁶ The TIAS sample design was a variation on the VPA design and for the islands least affected by the Tsunami, only five households were enumerated while for the more affected islands the coverage was increased as compared to the VPA. The discussion in this section are equally valid for the TIAS survey.



If only few islands were taken into sample, estimates from such highly homogenous cluster would have adversely affected the reliability of estimates, because households strongly correlated within an island by common characteristics indeed were very different from those located in other islands which were not in sample. It would have resulted in a larger margin of design effect from clustering inflating thereby variance.

The survey covers vulnerability as well as poverty aspects. If the vulnerability factors are largely common, reasons of poverty might be different, especially when it is related to income and expenditure of households. In this case, one can argue that the sample of 10 households is rather small to provide independent estimates. In this case strength is borrowed by combining islands to some groups thereby analysing data from larger number of observations. For example, islands are be grouped

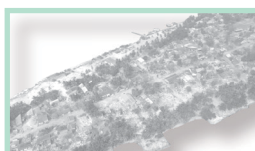
by quintiles based on one of the vulnerability indices. The following table is compiled by arranging the islands by non-income vulnerability index, where the 40 islands in the first quintile are regarded as the most vulnerable.

Estimates of mean income and consumption can be produced by similar quintiles where each group combines at least 400 sample households. This number of observations is large enough for reliable estimates. Combination can be made also by regions as it was done in the household income and expenditure survey. Poverty rate estimated for a group of island would be more reliable than for an island. Grouping of island by vulnerability index for better measurement of the poverty is entirely valid, as the correlation between the poverty and vulnerability indices was found directly proportional (see Table 5).

Table 5: Average value of Vulnerability and poverty indices by quintiles

Quintiles Most vulnerable=1 Least vulnerable=5	Share in total population	Index scale 0-10		
		Non-income vulnerability index	Income poverty index	Composite human vulnerability index
1	8.70	6.95	3.95	6.70
2	9.69	6.18	3.87	5.99
3	10.12	5.59	2.78	5.36
4	21.42	4.77	2.95	4.62
5	50.06	3.71	2.43	3.60
Maldives	100.00	4.83	2.48	4.64

Data: UNDP/MPND, Vulnerability and poverty assessment, 1998



From the policy point of view, it is more important to identify those factors that commonly affect the community (island) rather than causes of individual deprivation. Thus VPA has given the precedent to common factors of vulnerability over

the income and expenditure level of individual households. However, with the appropriate methods of estimation, income and expenditures based measures can also be presented with greater degree of precision.

Annex 1: List of selected blocks in Male by wards

	SN	Atoll/island code	Enumeration block no.	Number of households in the frame
Henveiru	1	1001	690	56
	2	1001	320	52
	3	1001	591	50
	4	1001	460	48
	5	1001	380	45
	6	1001	340	38
	7	1001	600	34
	8	1001	670	24
Galolhu	1	1002	440	47
	2	1002	60	48
	3	1002	220	28
	4	1002	480	29
	5	1002	160	34
	6	1002	130	43
Machchangolhi	1	1003	200	36
	2	1003	250	32
	3	1003	280	40
	4	1003	70	31
	5	1003	320	29
	6	1003	280	40
Maafannu	1	1004	650	25
	2	1004	820	40
	3	1004	740	27
	4	1004	280	25
	5	1004	331	21
	6	1004	640	46
	7	1004	352	21
	8	1004	770	25
	9	1004	770	25
	10	1004	780	42
Villigili	1	1005	140	54
	2	1005	160	52



Annex 2: Substitution procedure

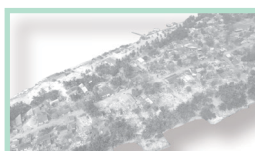
First, let us make clear that substitution is not recommended for non-response. Because the major variables reflecting the level of living of the non-responding household can be quite different from the one in the substitution list. From the past experience of household surveys, significant non-response is not expected in this survey too. However, due the small sample size at the level of islands, substitution is allowed in VPA in certain situations such as, family emergency, death of a household member

or relatives, family vacation, prolonged absence of household (temporarily not at home).

Households on the island will be selected systematically from the list. Systematic sample creates an interval from which one sample is taken. In the example below, there were 41 households listed in an island, from which 10 households from VPA-97 were identified and separated. We divide households in either side into 5 groups, which is otherwise called as an implicit stratum.

New sample households				Panel households from VPA-97		
Implicit stratum	HH no. in sample	Selection process		Implicit stratum	HH no. in sample	
1	1			1	1	
	2				2	
	3			2	3	Failure
	4	Sample			4	Substitution
	5				5	
2	6				6	
	7			4	7	
	8				8	
	9	Sample		5	9	
	10				10	
3	11			<p>Suppose, the sample household of this group (19th) could not be surveyed. It can be substituted by one of the sampled household of this interval from 16th to 20th household. Say, randomly selected substitution is 17th household.</p>		
	12					
	13					
	14	Sample				
	15					
4	16		Substitute			
	17					
	18					
	19	Sample	Failure			
	20					
5	21					
	22					
	23	Sample				
	24					
	25					
	26					

Substitution of unattained household should be made by the household from the same implicit stratum. In the above example, 19th household in the sample could not be attained. This household can be substituted only by one of the randomly selected households between 16th to 20th household. For the panel households, each group always has 2 households. Failure of observation one of those requires that another household of the same group is taken into sample. If it were not possible, substitution can also be a household from the closest group.



Annex 3: Sample selection for Atolls

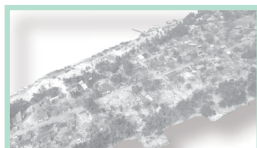
Serlal	Island	Reg ion	Atoll	Island/Ward Name	VPA-2		No of households		Tsunami Impact Code	Hhold Quest
					Popu- lation	Hholds	VPA-2	TIA		
1	2001	I	Haa Alifu	Thuraakunu	407	69	10	5	4	
2	2002	I	Haa Alifu	Uligamu	301	45	10	5	5	
3	2003	I	Haa Alifu	Berinmadhoo	100	34	10	5	5	
4	2004	I	Haa Alifu	Hathifushi	132	47	10	5	4	
5	2005	I	Haa Alifu	Mulhadhoo	220	45	10	5	4	
6	2006	I	Haa Alifu	Hoarafushi	2,458	134	20	10	4	
7	2007	I	Haa Alifu	Ihavandhoo	2,614	188	20	10	4	
8	2008	I	Haa Alifu	Kelaa	1,495	50	10	5	4	
9	2009	I	Haa Alifu	Vashafaru	455	53	10	10	3	I
10	2010	I	Haa Alifu	Dhidhdhoo	2,985	117	20	10	4	
11	2011	I	Haa Alifu	Filladhoo	634	30	10	30	1	I
12	2012	I	Haa Alifu	Maarandhoo	485	42	10	5	4	
13	2013	I	Haa Alifu	Thakandhoo	445	33	10	5	4	
14	2014	I	Haa Alifu	Utheemu	557	50	10	5	4	
15	2015	I	Haa Alifu	Muraidhoo	441	46	10	5	4	
16	2016	I	Haa Alifu	Baarah	1,258	46	10	10	3	
17	2101	I	Haa Dhaalu	Faridhoo	124	43	10	5	4	
18	2103	I	Haa Dhaalu	Hanimaadhoo	1,199	44	10	5	4	
19	2104	I	Haa Dhaalu	Finey	290	38	10	5	4	
20	2105	I	Haa Dhaalu	Naivaadhoo	418	41	10	10	3	
21	2106	I	Haa Dhaalu	Hirimaradhoo	301	47	9	5	4	
22	2107	I	Haa Dhaalu	Nolhivaranfaru	306	48	10	10	3	I
23	2108	I	Haa Dhaalu	Nellaidhoo	690	35	9	10	3	I
24	2109	I	Haa Dhaalu	Nolhivaramu	1,665	143	19	10	4	
25	2110	I	Haa Dhaalu	Kuribi	442	56	10	5	4	
26	2111	I	Haa Dhaalu	Kuburudhoo	155	46	10	5	5	
27	2112	I	Haa Dhaalu	Kulhudhuffushi	8,654	299	50	50	3	
28	2113	I	Haa Dhaalu	Kumundhoo	931	48	10	5	4	
29	2114	I	Haa Dhaalu	Neykurendhoo	827	54	10	5	5	
30	2115	I	Haa Dhaalu	Vaikaradhoo	1,179	54	9	5	4	
31	2116	I	Haa Dhaalu	Maavaidhoo	399	19	7	5	4	
32	2117	I	Haa Dhaalu	Makunudhoo	1,125	44	10	5	4	
33	2201	I	Shaviyani	Kaditheemu	1,193	73	10	5	4	
34	2202	I	Shaviyani	Noomaraa	445	42	10	5	4	
35	2203	I	Shaviyani	Goidhoo	413	60	10	5	4	
36	2204	I	Shaviyani	Feydhoo	762	50	10	5	4	
37	2205	I	Shaviyani	Feevah	823	50	10	5	4	
38	2206	I	Shaviyani	Bilehffahi	418	43	10	5	4	
39	2207	I	Shaviyani	Foakaidhoo	1,476	45	10	5	4	



TSUNAMI IMPACT ASSESSMENT 2005

116

Serlal	Island	Reg ion	Atoll	Island/Ward Name	VPA-2		No of households		Tsunami Impact Code	Hhold Quest
					Popu- lation	Hholds	VPA-2	TIA		
40	2208	1	Shaviyani	Narudhoo	413	68	10	10	3	
41	2209	1	Shaviyani	Maakandoodhoo	435	45	8	5	4	
42	2210	1	Shaviyani	Maroshi	613	48	10	20	2	I
43	2211	1	Shaviyani	Lhaimagu	703	51	10	5	4	
44	2212	1	Shaviyani	Firubaidhoo	129	41	7	5	4	
45	2213	1	Shaviyani	Komandoo	1,589	134	20	40	2	I
46	2214	1	Shaviyani	Maagoodhoo	808	51	10	5	4	
47	2215	1	Shaviyani	Funadhoo	1,494	59	10	5	4	
48	2296	1	Shaviyani	Milandhoo	1,307	67	10	5	4	
49	2302	2	Noonu	Hebadhoo	425	49	10	5	4	
50	2303	2	Noonu	Kendhikolhudhoo	1,293	72	10	5	4	
51	2305	2	Noonu	Maalhendhoo	509	40	10	5	4	
52	2306	2	Noonu	Kudafari	438	58	10	10	3	I
53	2307	2	Noonu	Landhoo	631	50	10	5	4	
54	2308	2	Noonu	Maafaru	725	59	10	20	2	I
55	2309	2	Noonu	Lhohi	560	69	10	5	4	
56	2310	2	Noonu	Miladhoo	903	62	10	5	4	
57	2311	2	Noonu	Magoodhoo	227	58	10	5	4	
58	2312	2	Noonu	Manadhoo	1,314	77	10	5	4	
59	2313	2	Noonu	Holhudhoo	1,734	139	20	10	4	
60	2314	2	Noonu	Fodhdhoo	204	39	10	5	4	
61	2315	2	Noonu	Velidhoo	2,000	127	20	10	4	
62	2401	2	Raa	Alifushi	1,911	106	17	10	5	
63	2402	2	Raa	Vaadhoo	350	54	10	5	4	
64	2403	2	Raa	Rasgetheemu	545	51	10	5	4	
65	2404	2	Raa	Agolhitheemu	291	53	10	5	4	
66	2407	2	Raa	Ugoofaaru	1,387	92	10	5	4	
67	2408	2	Raa	Kadholhudhoo	3,445	113	20	60	1	I
68	2409	2	Raa	Maakurathu	913	61	10	5	4	
69	2410	2	Raa	Rasmaadhoo	533	47	10	5	4	
70	2411	2	Raa	Innamaadhoo	576	72	10	5	4	
71	2412	2	Raa	Maduvvari	1,693	122	18	10	4	
72	2413	2	Raa	Iguraidhoo	1,498	65	10	5	4	
73	2414	2	Raa	Fainu	301	73	10	10	4	I
74	2416	2	Raa	Meedhoo	1,741	60	10	5	4	
75	2417	2	Raa	Kinolhas	435	55	10	5	4	
76	2418	2	Raa	Hulhudhuffaaru	1,110	52	10	5	4	
77	2501	2	Baa	Kudarikilu	346	49	10	5	4	
78	2502	2	Baa	Kamadhoo	465	40	10	5	4	
79	2503	2	Baa	Kendhoo	942	67	10	10	3	I



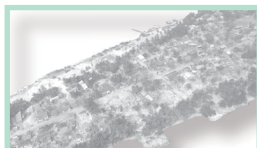
Serlal	Island	Reg ion	Atoll	Island/Ward Name	VPA-2	No of households	Tsunami Impact Code	Hhold Quest		
					Popu- lation	Hholds	VPA-2	TIA		
80	2506	2	Baa	Kihaadhoo	291	49	10	10	3	I
81	2507	2	Baa	Dhonfanu	332	65	10	10	3	I
82	2508	2	Baa	Dharavandhoo	814	48	10	10	3	I
83	2509	2	Baa	Maalhos	347	58	10	5	4	
84	2510	2	Baa	Eydhafushi	2,702	134	20	20	3	
85	2512	2	Baa	Thulhaadhoo	2,097	128	20	10	4	
86	2513	2	Baa	Hithaadhoo	977	56	10	5	4	
87	2514	2	Baa	Fulhadhoo	230	41	10	5	4	
88	2515	2	Baa	Fehendhoo	143	48	10	5	4	
89	2516	2	Baa	Goidhoo	512	62	10	10	4	I
90	2601	2	Lhaviyani	Hinnavaru	3,165	208	30	30	3	I
91	2602	2	Lhaviyani	Naifaru	4,002	206	28	60	2	I
92	2603	2	Lhaviyani	Kurendhoo	1,196	53	10	5	4	
93	2604	2	Lhaviyani	Olhuvelifushi	380	49	10	10	4	I
94	2605	2	Lhaviyani	Maafilaafushi	160	36	10	10	4	I
95	2701	3	Kaafu	Kaashidhoo	1,925	117	18	20	3	I
96	2702	3	Kaafu	Gaafaru	827	54	10	10	3	I
97	2703	3	Kaafu	Dhiffushi	941	79	10	10	3	I
98	2704	3	Kaafu	Thulusdhoo	935	76	10	10	3	
99	2705	3	Kaafu	Huraa	774	76	9	20	2	I
100	2706	3	Kaafu	Himmafushi	832	61	10	10	3	I
101	2711	3	Kaafu	Gulhi	656	84	10	10	4	I
102	2712	3	Kaafu	Maafushi	1,065	120	17	20	3	I
103	2713	3	Kaafu	Guraidhoo	1,396	68	10	20	2	I
104	2801	3	Alifu Alifu	Thoddoo	1,216	71	9	5	4	
105	2802	3	Alifu Alifu	Rasdhoo	1,083	76	10	5	4	
106	2804	3	Alifu Alifu	Ukulhas	553	56	10	5	4	
107	2805	3	Alifu Alifu	Mathiveri	508	68	9	20	2	I
108	2806	3	Alifu Alifu	Bodufolhudhoo	515	106	10	10	3	I
109	2807	3	Alifu Alifu	Feridhoo	601	41	9	5	4	
110	2808	3	Alifu Alifu	Maalhos	930	50	10	5	4	
111	2809	3	Alifu Alifu	Himandhoo	592	76	10	10	3	
112	2901	3	Alifu Dhaalu	Hangnameedhoo	506	54	10	5	4	
113	2902	3	Alifu Dhaalu	Omadhoo	765	89	10	5	4	
114	2903	3	Alifu Dhaalu	Kuburudhoo	384	60	10	5	4	
115	2904	3	Alifu Dhaalu	Mahibadhoo	1,992	146	15	7	4	
116	2905	3	Alifu Dhaalu	Mandhoo	312	68	9	10	4	I
117	2906	3	Alifu Dhaalu	Dhagethi	826	81	10	5	4	
118	2907	3	Alifu Dhaalu	Dhigurah	383	58	10	5	4	
119	2908	3	Alifu Dhaalu	Fenfushi	638	61	8	5	4	



TSUNAMI IMPACT ASSESSMENT 2005

118

Serlal	Island	Reg ion	Atoll	Island/Ward Name	VPA-2	No of households	Tsunami Impact Code	Hhold Quest	
					Popu- lation	Hholds	VPA-2	TIA	
120	2909	3	Alifu Dhaalu	Dhidhdhoo	93	49	10	5	4
121	2910	3	Alifu Dhaalu	Maamigili	1,808	116	17	10	5
122	3001	3	Vaavu	Fulidhoo	371	70	10	20	2
123	3002	3	Vaavu	Thinadhoo	69	24	10	20	2
124	3003	3	Vaavu	Felidhoo	499	68	9	20	2
125	3004	3	Vaavu	Keyodhoo	622	54	10	20	2
126	3005	3	Vaavu	Rakeedhoo	164	42	10	20	2
127	3101	4	Meemu	Raimandhoo	190	56	10	10	4
128	3102	4	Meemu	Madifushi	108	39	10	30	1
129	3103	4	Meemu	Veyvah	168	68	10	20	2
130	3104	4	Meemu	Mulah	1,307	73	10	5	4
131	3105	4	Meemu	Muli	819	55	10	30	1
132	3106	4	Meemu	Naalaafushi	318	65	10	30	1
133	3107	4	Meemu	Kolhufushi	958	72	10	30	1
134	3108	4	Meemu	Dhiggaru	1,011	61	10	10	4
135	3109	4	Meemu	Maduvvari	409	54	10	10	3
136	3201	4	Faafu	Feeali	956	58	10	5	4
137	3203	4	Faafu	Biledhdhoo	1,118	60	10	5	4
138	3204	4	Faafu	Magoodhoo	502	70	10	10	4
139	3205	4	Faafu	Dharaboodhoo	258	57	10	5	4
140	3206	4	Faafu	Nilandhoo	1,384	94	16	8	4
141	3301	4	Dhaalu	Meedhoo	981	60	10	10	3
142	3302	4	Dhaalu	Badidhoo	784	91	10	10	4
143	3303	4	Dhaalu	Ribudhoo	372	46	10	30	1
144	3304	4	Dhaalu	Hulhudheli	606	49	10	20	2
145	3305	4	Dhaalu	Gemendhoo	317	47	10	30	1
146	3306	4	Dhaalu	Vaanee	262	45	10	20	2
147	3307	4	Dhaalu	Maaeboodhoo	623	66	10	20	2
148	3308	4	Dhaalu	Kudahuvadhoo	1,446	54	10	5	4
149	3401	4	Thaa	Buruni	229	34	10	10	3
150	3402	4	Thaa	Vilufushi	1,262	78	10	30	1
151	3403	4	Thaa	Madifushi	728	61	10	30	1
152	3404	4	Thaa	Dhiyamigili	482	47	9	10	3
153	3405	4	Thaa	Guraidhoo	1,267	83	10	10	3
154	3406	4	Thaa	Kadoodhoo	359	55	10	5	4
155	3407	4	Thaa	Vandhoo	277	60	10	5	4
156	3408	4	Thaa	Hirilandhoo	873	64	10	5	4
157	3409	4	Thaa	Gaadhiffushi	239	41	10	10	3
158	3410	4	Thaa	Thimarafushi	1,409	114	20	40	2
159	3411	4	Thaa	Veymandoo	877	82	10	5	4



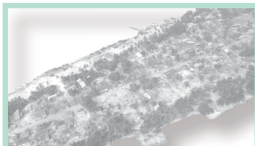
Serlal	Island	Reg ion	Atoll	Island/Ward Name	VPA-2		No of households		Tsunami Impact Code	Hhold Quest
					Popu- lation	Hholds	VPA-2	TIA		
160	3412	4	Thaa	Kibidhoo	869	61	10	10	4	1
161	3413	4	Thaa	Omadhoo	421	52	10	10	3	
162	3501	4	Laamu	Isdhoo	1,497	61	10	20	2	1
163	3502	4	Laamu	Dhabidhoo	506	65	10	30	1	1
164	3503	4	Laamu	Maabaidhoo	834	87	10	20	2	1
165	3504	4	Laamu	Mundhoo	550	73	10	30	1	1
166	3505	4	Laamu	Kalhaidhoo	498	67	10	30	1	1
167	3506	4	Laamu	Gamu	2,346	148	20	20	3	1
168	3507	4	Laamu	Maavah	1,579	79	10	5	4	
169	3508	4	Laamu	Fonadhoo	1,921	155	20	40	2	1
170	3509	4	Laamu	Gaadhoo	252	39	10	5	4	
171	3510	4	Laamu	Maamendhoo	990	61	10	5	4	
172	3511	4	Laamu	Hithadhoo	817	44	10	5	4	
173	3512	4	Laamu	Kunahandhoo	561	55	10	5	4	
174	3601	5	Gaafu Alifu	Kolamaafushi	1,220	61	10	5	4	
175	3602	5	Gaafu Alifu	Viligili	2,393	140	20	60	1	1
176	3603	5	Gaafu Alifu	Maamendhoo	1,144	60	10	10	3	1
177	3604	5	Gaafu Alifu	Nilandhoo	466	60	9	20	2	1
178	3605	5	Gaafu Alifu	Dhaandhoo	1,286	66	10	20	2	1
179	3606	5	Gaafu Alifu	Dheevadhoo	487	52	10	5	5	
180	3607	5	Gaafu Alifu	Kodey	313	51	10	5	4	
181	3608	5	Gaafu Alifu	Dhiyadhoo	100	38	10	5	4	
182	3609	5	Gaafu Alifu	Gemanafushi	1,034	59	10	5	4	
183	3610	5	Gaafu Alifu	Kanduhulhudhoo	492	57	10	5	4	
184	3701	5	Gaafu Dhaalu	Madeveli	1,163	71	10	5	5	
185	3702	5	Gaafu Dhaalu	Hoadedhdhoo	628	62	10	5	5	
186	3703	5	Gaafu Dhaalu	Nadallaa	693	74	10	5	4	
187	3704	5	Gaafu Dhaalu	Gadhdhoo	1,684	119	20	20	3	1
188	3705	5	Gaafu Dhaalu	Rathafandhoo	503	44	10	5	4	
189	3706	5	Gaafu Dhaalu	Vaadhoo	793	52	10	5	4	
190	3707	5	Gaafu Dhaalu	Fiyoari	803	43	10	5	4	
191	3708	5	Gaafu Dhaalu	Maathodaa	529	60	10	5	4	
192	3709	5	Gaafu Dhaalu	Fares	483	47	10	5	4	
193	3710	5	Gaafu Dhaalu	Thinadhoo	4,194	220	37	20	4	
194	3801	5	Gnaviyani	Foammulah	8,322	359	60	30	4	
195	3901	5	Seenu	Meedhoo	1,682	102	20	10	4	
196	3902	5	Seenu	Hithadhoo	10,124	516	70	35	4	
197	3903	5	Seenu	Maradhoo	2,236	131	20	10	4	
198	3904	5	Seenu	Feydhoo	3,140	134	20	10	4	
199	3905	5	Seenu	Maradhoo-Feydhoo	1,185	60	10	5	4	



Serial	Island	Reg ion	Atoll	Island/Ward Name	VPA-2		No of households		Tsunami Impact Code	Hhold Quest
					Popu- lation	Hholds	VPA-2	TIA		
200	3906	5	Seenu	Hulhudhoo	1,249	54	10	10	3	

(Footnotes)

- 1 Due to a coding error during sampling, only 15 households were selected in Lh. Naifaru rather than the 60 in the design. In total, therefor, the sample size in the atolls was 2435 households.
- 2 Lh. Naifaru was classified as a highly affected island, but due to a coding error during sample selection, it was treated as an island with limited tsunami impact. Therefore, not 60 but 15 households were enumerated and form 4 was not administered.



TECHNICAL NOTE 3. PANEL ANALYSES

A3.1 Static Analysis: Ordinary Least Squares

This section presents the details of the one-period static poverty analyses of the 746 panel households for, respectively, the year 2004 and 2005. Both regressions are run using Ordinary Least Squares (OLS), which is a regression method to estimate the 'line of best fit' by minimising the sum of the squared deviation of the data points to the regression line.

The dependent variable in both regressions is the logarithm of per capita per day household income plus 1, correcting for the fact that the logarithm of numbers smaller than 1 are negative, while the utility measured by the logarithm of income can not be negative. In both regressions, some insignificant results had to be left in the regression for comparison with the VPA2 results.

Table A3.1 shows the OLS regression results for both years 2004 and 2005, outlining for each explanatory variable the regression coefficient; the t-Statistic; the variable mean; and the product of the mean and the regression coefficient.

The regression coefficient specifies the sign and the size of the relationship between the dependent variable and that particular explanatory variable. The t-Statistic is an indicator of the significance of the regression coefficient; the higher the t-Statistic in absolute terms, the higher the reliability of the sign of the regression coefficient. A t-Statistic of 1.96 in absolute terms corresponds with a confidence level of 95 percent. The variable mean indicates the average value of each explanatory variable of the panel. The product of the mean and the regression coefficient is an indicator of the impact of each determinant of

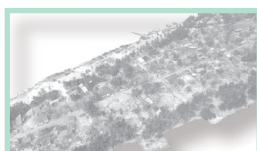
household income. This product has been used to show the relative importance of the determinants of household income in Figure 5.20 of Chapter 5.

R-Square measures the goodness of fit between the estimated regression line and the data, and as a result measures the success of the regression predicting the value of the dependent variable. R-Square will value 1 at perfect prediction or 0 if there is no fit at all. The Adjusted R-square corrects for the peculiarity that the general R-Square can never decrease after adding more explanatory variables. In other words, it corrects the R-Square when more variables are added at the right hand side of the equation that do not contribute much to the explanatory power of the model and can, therefore, even decrease when poorly predicting variables are added.



**Table A3.1: Poverty regressions 2004 and 2005,
One-period static analysis**

	2004				2005			
Number of Observations Included	746				745			
Mean of dependent variable	3.063				3.340			
Weighting factor	VPA2 members				TIAS members			
Method of regression	OLS				OLS			
Independent Variables	Coeffi- cient	t- Statistic	Mean	Mean* Coeffi- cient	Coeffi- cient	t- Statistic	Mean	Mean* Coeffi- cient
Fixed Term	2.280	7.40			1.390	5.04		
Household characteristics								
Number of household members	-0.031	-2.51	6.291	-0.195	0.018	2.72	6.569	0.118
Proportion of young household members	-0.050	-0.21	0.394	-0.020	0.359	1.91	0.360	0.129
Proportion of old household members	-0.338	-0.81	0.052	-0.018	0.178	0.51	0.056	0.010
Proportion of female household members	-0.448	-2.34	0.525	-0.235	-0.055	-0.33	0.498	-0.028
Dummy for female-headed household members	-0.149	-1.84	0.425	-0.063	-0.021	-0.38	0.423	-0.009
Average level of education*	-0.063	-0.65	1.786	-0.112	0.164	1.86	1.904	0.313
Dummy for occurrence of a food crisis	-0.253	-1.99	0.056	-0.014	-0.163	-2.59	0.227	-0.037
Dummy for taking a loan to invest	0.278	1.94	0.043	0.012	0.266	3.15	0.121	0.032
Proportion of household not working due to bad health	-0.391	-0.91	0.059	-0.023	-0.008	-0.04	0.111	-0.001
Employment								
Proportion of adults employed	2.354	8.74	0.333	0.784	3.155	13.86	0.345	1.088
Proportion employed in the trade and transport section	0.615	2.21	0.054	0.033	0.251	1.67	0.093	0.023
Proportion employed in the (semi) government	0.539	3.04	0.251	0.135	0.267	1.84	0.201	0.054
Proportion employed in the tourism sector	0.712	3.29	0.039	0.027	0.336	1.81	0.047	0.016
Proportion employed in the agriculture sector	0.048	0.24	0.041	0.002	-0.174	-0.77	0.026	-0.005
Proportion employed in the fishing sector	0.625	3.91	0.187	0.117	0.642	5.08	0.194	0.125
Proportion employed in the manufacturing sector	0.232	1.40	0.215	0.050	0.119	0.76	0.196	0.023
Proportion employed in the construction sector	0.843	3.08	0.045	0.038	0.731	5.28	0.088	0.064
Proportion of household working as employer	1.342	2.12	0.021	0.028	0.455	1.98	0.014	0.006
Proportion of household working as employee	0.724	5.73	0.365	0.264	0.315	4.10	0.440	0.139



	2004				2005			
Number of Observations Included	746				745			
Mean of dependent variable	3.063				3.340			
Weighting factor	VPA2 members				TIAS members			
Method of regression	OLS				OLS			
Independent Variables	Coefficient	t-Statistic	Mean	Mean* Coefficient	Coefficient	t-Statistic	Mean	Mean* Coefficient
Proportion of household working as own-account worker	0.153	1.59	0.398	0.061	-0.096	-1.06	0.347	-0.033
Proportion of household voluntary participating in community activities	-0.094	-0.59	0.259	-0.024	-0.031	-0.44	0.460	-0.014
Dummy for receiving remittances	0.725	8.19	0.208	0.151	0.342	3.15	0.067	0.023
Geography								
Population vulnerability index**	-0.260	-1.72	0.483	-0.126	-0.116	-1.17	0.482	-0.056
Weighted statistics								
R-Squared	81%				88%			
Adjusted R-Squared	81%				88%			
Durbin-Watson statistic	1.931				1.950			
Unweighted Statistics								
R-Squared	38%				40%			
Adjusted R-Squared	36%				38%			
Mean of Dependent Variable	3.100				3.338			
Durbin-Watson statistic	1.887				1.941			



A3.2 Dynamic Analysis: Logit regressions

This section presents the details of the two-period dynamic poverty analysis. The household characteristics of two types of events are examined; one being the characteristics of households that escaped from income poverty after the tsunami and the other describes the characteristics of households that fell into poverty after the tsunami, using a poverty line of Rf. 15 per person per day.

Logit regression techniques are used to estimate the equations. They differ from OLS regressions in that they render probability instead of numerical outcomes. In this case the dependent variables and their regression coefficients jointly predict whether a household with certain characteristics escapes from or falls into income poverty.

The first logit regression investigates the characteristics of the households that escaped from income poverty. The escape regression is run on the 222 panel households whose income was less than 15 Rufiyaa per person per day 2004. The dependent variable gets the value 1 when the income of that particular household was higher than Rf. 15 per person per day in 2005; it gets the value 0 when the household income was less than Rf.15 per person per day in both periods 2004 and 2005. If the estimated regression outcome is a value higher than 0.5 (the outcome will be between zero and one by definition) the household is predicted to escape poverty. In the escape regression 82 percent of the cases were predicted correctly using this model.

The second logit regression - examining the characteristics of households that fell into income poverty after the tsunami - is run on the 522 panel households with an income higher than Rf. 15 per person per day in 2004. The dependent variable takes the value 1 if the household income in 2005 fell under the 15 Rufiyaa threshold; it gets the value 0 if the household income is higher than Rf. 15 per person per day in both periods 2004 and 2005. Similarly, if

the estimated outcome of the regression is a value higher than 0.5 (the outcome will be between zero and one by definition) that particular household is predicted to fall into poverty.

The fall regression as shown in Table A3.2 predicts 89 percent of the cases correctly.

Instead of using t-Statistics, logit regressions make use of z-Statistics. The same principle applies: the higher the z-Statistic, the higher the significance with a minimum of 1.96 at a 95 percent confidence level, measuring the reliability of the regression coefficient. The other statistics specified in the regression result table A3.2 are identical to the OLS regression tables: the regression coefficient, the mean, and the product of the mean and the regression coefficient. Unlike in the OLS regressions, it is not the impact on income that is explained by the product of the mean and the regression coefficient, but this statistic now shows the contribution in size and sign of that variable to either the probability to escape from poverty or rather to fall into poverty. This product has been used to show the relative importance of the characteristics in Figure 5.23 in Chapter 5.

In addition, the measurement of the R-Squared has been replaced by the McFadden R-Squared, which is similar to the normal R-Squared reported in the OLS regression with values between 0 and 1.

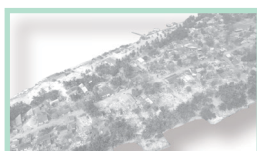
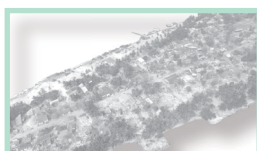


Table A3.2: Regression results of dynamic analysis: Fall & Escape, 15 Rufiyaa per person per day

Number of Observations Included	222				522			
Dependent variable	Escape				Fall			
Mean of dependent variable	0.66				0.34			
Method of regression	ML-Binary Logit				ML-Binary Logit			
Independent Variables	Coefficient	Z-Statistic	Mean	Mean* Coefficient	Coefficient	Z-Statistic	Mean	Mean* Coefficient
Fixed Term	-3.283	-2.70			0.825	0.62		
Household characteristics								
Initial number of household members	0.215	2.52	6.29	1.354	-0.174	-2.98	6.29	-1.094
Change in household members	0.115	1.17	0.29	0.033	0.039	0.52	0.28	0.011
Initial proportion of old household members	1.436	1.08	0.05	0.075	1.890	1.46	0.05	0.099
Change in proportion of old household members	-1.299	-0.40	0.00	-0.004	1.823	1.11	0.00	0.006
Initial proportion of female household members	0.449	0.36	0.52	0.235	1.444	1.34	0.52	0.757
Change in proportion of female household members	-0.871	-0.58	-0.03	0.023	0.626	0.46	-0.03	-0.016
Initial level of average education*					-0.501	-0.84	1.79	-0.894
Change in average level of education*					-1.353	-2.61	0.12	-0.161
Dummy for taking a loan to invest	0.999	1.16	0.12	0.121				
Dummy for occurrence of a food crisis	-0.488	-1.01	0.23	-0.111	1.114	2.68	0.23	0.253
Employment								
Initial proportion of adults employed	5.861	2.76	0.33	1.952	-5.854	-4.95	0.33	-1.947
Change in proportion of adults employed	5.126	3.28	0.01	0.062	-6.630	-5.36	0.01	-0.081
Initial proportion employed in the trade and transport sector	3.469	1.01	0.05	0.186				
Change in proportion employed in the trade and transport sector	4.887	2.52	0.04	0.191	1.646	2.14	0.04	0.065
Initial proportion employed in the (semi) government	-3.040	-2.46	0.25	-0.763	0.056	0.06	0.25	0.014
Change in proportion employed in the (semi) government	-1.504	-1.67	-0.05	0.073	1.541	1.92	-0.05	-0.075
Initial proportion employed in the tourism sector	105.797	18.48	0.04	4.081				
Initial proportion employed in the agriculture sector	-2.452	-1.28	0.04	-0.101	4.068	2.97	0.04	0.168
Change in proportion employed in the agriculture sector	-2.712	-1.82	-0.01	0.041	1.871	0.99	-0.02	-0.028
Initial proportion employed in the fishing sector	1.677	2.11	0.19	0.314	-0.105	-0.18	0.19	-0.020
Initial proportion employed in the manufacturing sector	-1.077	-1.03	0.21	-0.231	1.137	1.75	0.22	0.245



Change in proportion employed in the manufacturing sector	-1.243	-1.73	-0.02	0.023	1.260	2.13	-0.02	-0.024
Initial proportion employed in the construction sector	0.908	0.73	0.04	0.041	-2.566	-1.99	0.04	-0.115
Change in proportion employed in the construction sector	0.838	0.88	0.04	0.036	-2.451	-2.18	0.04	-0.106
Initial proportion of household working as employer	370.804	17.59	0.02	7.656				
Change in proportion of household working as employer	287.011	13.53	-0.01	-1.863	-2.001	-2.22	-0.01	0.013
Initial proportion of household working as employee	0.477	0.54	0.36	0.174	-1.599	-2.37	0.36	-0.582
Change in proportion of household working as employee	1.518	2.14	0.08	0.115	-2.005	-3.60	0.08	-0.152
Initial proportion of household working as own-account worker	-0.549	-0.68	0.40	-0.219				
Change in proportion of household working as own-account worker	-0.388	-0.66	-0.05	0.020				
Initial proportion of household voluntary participating in community activities	2.585	2.12	0.26	0.670				
Change in proportion of household voluntary participating in community activities	1.256	2.18	0.20	0.252				
Dummy for receiving remittances					-1.842	-2.07	0.07	-0.124
Tsunami impact variables								
Proportion of the household injured due to the tsunami	-0.136	-0.09	0.09	-0.012	1.516	1.58	0.09	0.136
Dummy work lost due to the tsunami	-1.033	-1.90	0.15	-0.159	0.771	1.52	0.15	0.119
Dummy for the loss of livelihood					-0.950	-2.09	0.36	-0.343
Geography								
Dummy Externally Displaced Islands	0.812	0.78	0.05	0.045	1.198	1.61	0.06	0.066
Dummy Internally Displaced Islands	0.292	0.52	0.14	0.041	1.057	2.24	0.14	0.149
Dummy Host Islands	0.405	0.47	0.06	0.025	-1.628	-1.97	0.06	-0.101
Dummy Other Islands								
McFadden R-squared	37%					37%		
Observations with Dependent = 0	75					454		
Observations with Dependent = 1	147					68		
Total observations	222					522		
Prediction Evaluation (success cutoff C = 0.5)	82%					89%		



APPENDIX I

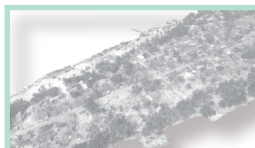
Sr	Atoll	Island	Impact levels		Displacement groups		Island population (pre-tsunami)	total households selected	HH's who filled form 3	Household form (form 4) selected	Household form (form 4)	Panel hh's form 4	RH		
			Code	Description	Code	Description							(form 6) and Psycho (form 7) selected	Psycho hh count	RH hh count
1	HA	Thurakunu	4	Limited	4	Other	411	5	5						
2	HA	Uligamu	5	Nil	4	Other	304	5	5						
3	HA	Berinmadhoo	5	Nil	4	Other	95	5	4						
4	HA	Hathifushi	4	Limited	4	Other	128	5	5						
5	HA	Mulhadhoo	4	Limited	4	Other	218	5	5						
6	HA	Hoarafushi	4	Limited	4	Other	2,488	10	10						
7	HA	Ihavandhoo	4	Limited	4	Other	2,642	10	10						
8	HA	Kelaa	4	Limited	4	Other	1,502	5	5						
9	HA	Vashafaru	3	Substantial	4	Other	458	10	9	9	9	9			
10	HA	Dhidhoo	4	Limited	4	Other	3,012	10	10						
11	HA	Filladhoo	1	Very high	2	PDI	641	30	28	28	28	10	15	13	9
12	HA	Maarandhoo	4	Limited	4	Other	488	5	5						
13	HA	Thakandhoo	4	Limited	4	Other	450	5	5						
14	HA	Uttheemu	4	Limited	4	Other	565	5	5						
15	HA	Muraiddhoo	4	Limited	4	Other	446	5	5						
16	HA	Baarah	3	Substantial	4	Other	1,268	10	9						
17	HDh	Faridhoo	4	Limited	4	Other	129	5	5						
18	HDh	Hanimaadhoo	4	Limited	4	Other	1,213	5	6						
19	HDh	Finney	4	Limited	4	Other	296	5	5						
20	HDh	Naivaadhoo	3	Substantial	4	Other	420	10	8	8					
21	HDh	Hirimaradhoo	4	Limited	4	Other	311	5	6						
22	HDh	Nolhivaranfaru	3	Substantial	4	Other	313	10	9	9	9	9			
23	HDh	Nellaidhoo	3	Substantial	4	Other	688	10	9		9	9			
24	HDh	Nolhivaramu	4	Limited	4	Other	1,687	10	10						
25	HDh	Kuribi	4	Limited	4	Other	451	5	5						
26	HDh	Kuburudhoo	5	Nil	4	Other	157	5	4						
27	HDh	Kulhudhuffushi	3	Substantial	4	Other	8,701	50	48						
28	HDh	Kumundhoo	4	Limited	4	Other	944	5	5						
29	HDh	Neykurendhoo	5	Nil	4	Other	838	5	5						
30	HDh	Vaikaradhoo	4	Limited	4	Other	1,191	5	5						
31	HDh	Maavaiddhoo	4	Limited	4	Other	396	5	5						
32	Sh	Makunudhoo	4	Limited	4	Other	1,131	5	5						
33	Sh	Kaditheemu	4	Limited	4	Other	1,208	5	5						
34	Sh	Noomaraa	4	Limited	4	Other	454	5	5						
35	Sh	Goidhoo	4	Limited	4	Other	421	5	5						
36	Sh	Feydhoo	4	Limited	4	Other	771	5	5						
37	Sh	Feevah	4	Limited	4	Other	829	5	5						
38	Sh	Bilehffahi	4	Limited	4	Other	420	5	5						
39	Sh	Foakaidhoo	4	Limited	4	Other	1,481	5	5						
40	Sh	Narudhoo	3	Substantial	4	Other	425	10	10						
41	Sh	Maakandoodhoo	4	Limited	4	Other	449	5	5						
42	Sh	Maroshi	2	High	4	Other	625	20	18	18	18	8			
43	Sh	Lhaimagu	4	Limited	4	Other	695	5	5						



TSUNAMI IMPACT ASSESSMENT 2005

128

Sr	Atoll	Island	Impact levels		Displacement groups		Island population (pre-tsunami)	total households selected	HH's who filled form 3	Household form (form 4) selected	Household form (form 4)	Panel hh's form 4	RH		RH hh count
			Code	Description	Code	Description							(form 6) and Psycho (form 7) selected	Psycho hh count	
44	Sh	Firubaidhoo	4	Limited	4	Other	128	5	5						
45	Sh	Komandoo	2	High	4	Other	1,606	40	40	40	40	20			
46	Sh	Maagoodhoo	4	Limited	4	Other	816	5	5						
47	Sh	Funadhoo	4	Limited	4	Other	1,503	5	5						
48	N	Milandhoo	4	Limited	4	Other	1,302	5	5						
49	N	Hebadhoo	4	Limited	4	Other	439	5	5						
50	N	Kedhikolhudhoo	4	Limited	4	Other	1,317	5	5						
51	N	Maalhendhoo	4	Limited	4	Other	506	5	5						
52	N	Kudafari	3	Substantial	4	Other	441	10	10	10	10	10			
53	N	Landhoo	4	Limited	4	Other	636	5	5						
54	N	Maafaru	2	High	4	Other	731	20	18	18	18	9			
55	N	Lhohi	4	Limited	4	Other	563	5	5						
56	N	Miladhoo	4	Limited	4	Other	914	5	5						
57	N	Magoodhoo	4	Limited	4	Other	230	5	5						
58	N	Manadhoo	4	Limited	4	Other	1,327	5	5						
59	N	Holhudhoo	4	Limited	4	Other	1,744	10	10						
60	N	Fodhdhoo	4	Limited	4	Other	208	5	5						
61	N	Velidhoo	4	Limited	4	Other	2,001	10	10						
62	R	Alifushi	5	Nil	3	Host	1,930	10	10						
63	R	Vaadhoo	4	Limited	4	Other	356	5	5						
64	R	Rasgetheemu	4	Limited	4	Other	553	5	5						
65	R	Agolhitheemu	4	Limited	4	Other	308	5	5						
66	R	Ugoofaaru	4	Limited	3	Host	1,403	5	5						
67	R	Kandholhudhoo (Dhuvaafaru)	1	Very high	1	PDE	3,444	60	54	54	53	16	30	27	20
68	R	Maakurathu	4	Limited	4	Other	924	5	5						
69	R	Rasmaadhoo	4	Limited	4	Other	547	5	5						
70	R	Innamaadhoo	4	Limited	4	Other	586	5	5						
71	R	Maduvvari	4	Limited	3	Host	1,717	10	11						
72	R	Iguraidhoo	4	Limited	4	Other	1,507	5	5						
73	R	Fainu	4	Limited	4	Other	292	10	10		10	10			
74	R	Meedhoo	4	Limited	3	Host	1,756	5	5	10					
75	R	Kinolhas	4	Limited	4	Other	434	5	6						
76	R	Hulhudhuffaaru	4	Limited	3	Host	1,116	5	5						
77	B	Kadarikilu	4	Limited	4	Other	353	5	5						
78	B	Kamadhoo	4	Limited	4	Other	443	5	5						
79	B	Kendhoo	3	Substantial	4	Other	948	10	9	9	9	9			
80	B	Kihaadhoo	3	Substantial	4	Other	288	10	10	10	10	10			
81	B	Dhonfanu	3	Substantial	4	Other	339	10	10		10	10			
82	B	Dharavandhoo	3	Substantial	4	Other	822	10	9	9	8	8			
83	B	Maalhos	4	Limited	4	Other	355	5	5						
84	B	Eydhafushi	3	Substantial	4	Other	2,732	20	19	19					
85	B	Thulhaadhoo	4	Limited	4	Other	2,116	10	10						
86	B	Hithaadhoo	4	Limited	4	Other	999	5	5	10					
87	B	Fulhadhoo	4	Limited	4	Other	222	5	4						
88	B	Fehendhoo	4	Limited	4	Other	150	5	5						
89	B	Goidhoo	4	Limited	4	Other	517	10	10	10	10	10			
90	Lh	Hinnavaru	3	Substantial	4	Other	3,176	30	29	30	29	29			
91	Lh	Naifaru	2	High	4	Other	4,048	15	15						
92	Lh	Kurendhoo	4	Limited	4	Other	1,207	5	5	10					
93	Lh	Olhuvelifushi	4	Limited	4	Other	389	10	9		9	9			



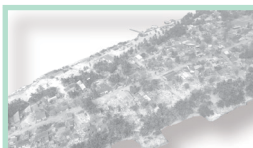
Sr	Atoll	Island	Impact levels		Displacement groups		Island population (pre-tsunami)	total households selected	HH's who filled form 3	Household form (form 4) selected	Household form (form 4)	Panel hh's form 4	RH		Psych hh count	RH hh count
			Code	Description	Code	Description							(form 6) and Psycho (form 7) selected			
94	Lh	Maafilaafushi	4	Limited	4	Other	159	10	10	10	10	10				
95	K	Kaashidhoo	3	Substantial	4	Other	1,907	20	18		18	18				
96	K	Gaafaru	3	Substantial	4	Other	826	10	10	20	10	10				
97	K	Dhiffushi	3	Substantial	4	Other	959	10	10	10	10	10				
98	K	Thulusdhoo	3	Substantial	4	Other	957	10	10	X						
99	K	Huraa	2	High	4	Other	787	20	20	20	20	9				
100	K	Himmafushi	3	Substantial	4	Other	846	10	10		10	10				
101	K	Gulhi	4	Limited	4	Other	671	10	10		10	10				
102	K	Maafushi	3	Substantial	4	Other	1,072	20	17		17	17				
103	K	Guraidhoo	2	High	4	Other	1,405	20	20	20	20	9				
104	AA	Thoddoo	4	Limited	4	Other	1,350	5	5							
105	AA	Rasdoo	4	Limited	4	Other	1,192	5	5							
106	AA	Ukulhas	4	Limited	4	Other	617	5	5							
107	AA	Mathiveri	2	High	4	Other	565	20	20	20	20	9				
108	AA	Bodufolhudhoo	3	Substantial	4	Other	575	10	9		9	9				
109	AA	Feridhoo	4	Limited	4	Other	665	5	5							
110	AA	Maalhos	4	Limited	4	Other	438	5	5							
111	AA	Himendhoo	3	Substantial	4	Other	647	10	10							
112	ADh	Hangnameedhoo	4	Limited	4	Other	517	5	5	10						
113	ADh	Omadhoo	4	Limited	4	Other	766	5	5							
114	ADh	Kuburudhoo	4	Limited	4	Other	388	5	5							
115	ADh	Mahibadhoo	3	Substantial	4	Other	2,014	7	7							
116	ADh	Mandhoo	4	Limited	4	Other	331	10	10		10	9				
117	ADh	Dhagerthi	4	Limited	4	Other	811	5	5							
118	ADh	Dhigurah	4	Limited	4	Other	393	5	5							
119	ADh	Fenfushi	4	Limited	4	Other	636	5	5							
120	ADh	Dhidhdhoo	4	Limited	4	Other	93	5	5							
121	ADh	Maamigili	5	Nil	3	Host	1,825	10	10							
122	V	Fulidhoo	2	High	4	Other	389	20	20	20	20	10				
123	V	Thinadhoo	2	High	4	Other	70	20	19	19	19	9				
124	V	FELIDHOO	2	High	4	Other	503	20	18	18	18	8				
125	V	Keyodhoo	2	High	4	Other	612	20	19	19	19	10				
126	V	Rakeedhoo	2	High	4	Other	166	20	20	20	20	10				
127	M	Raimandhoo	4	Limited	4	Other	168	10	10	10	10	10				
128	M	Madifushi	1	Very high	1	PDE	108	30	16	16	16	8	15	16	14	
129	M	Veyvah	2	High	4	Other	174	20	17	17	17	8				
130	M	Mulah	4	Limited	4	Other	1,323	5	5							
131	M	MULI	1	Very high	2	PDI	836	30	29	29	29	9	15	16	8	
132	M	Naalaafushi	1	Very high	2	PDI	326	30	30	30	30	10	15	14	12	
133	M	Kolhufushi	1	Very high	2	PDI	961	30	29	29	29	9	15	14	10	
134	M	Dhiggaru	2	High	4	Other	1,020	10	9	9	9	9				
135	M	Maduvvari	3	Substantial	4	Other	417	10	9		9	9				
136	F	Feeali	4	Limited	4	Other	951	5	5							
137	F	Biledhdhoo	4	Limited	4	Other	1,125	5	5	10						
138	F	Magoodhoo	4	Limited	4	Other	517	10	9		9	9				
139	F	Dharaboodhoo	4	Limited	4	Other	265	5	5							
140	F	Nilandhoo	4	Limited	4	Other	1,396	8	8							
141	Dh	Meedhoo	3	Substantial	4	Other	991	10	10		10	10				
142	Dh	Badidhoo	4	Limited	4	Other	786	10	10		10	10				
143	Dh	Ribudhoo	1	Very high	2	PDI	383	30	30	30	30	10	15	28	25	



TSUNAMI IMPACT ASSESSMENT 2005

130

Sr	Atoll	Island	Impact levels		Displacement groups		Island population (pre-tsunami)	total house-holds selected	HH's who filled form 3	House-hold form (form 4) selected	House-hold form (form 4)	Panel hh's form 4	RH		RH hh count
			Code	Description	Code	Description							(form 6) and Psycho (form 7) selected	Psycho hh count	
144	Dh	Hulhudheli	2	High	4	Other	593	20	20	20	20	10			
145	Dh	Gemendhoo	1	Very high	1	PDE	320	30	27	27	27	8	15	27	21
146	Dh	Vaanee	2	High	4	Other	270	20	19	19	19	9			
147	Dh	Maaebodhoo	2	High	4	Other	633	20	20	20	20	10			
148	Dh	Kudahuvadhoo	4	Limited	3	Host	1,460	5	5	10					
149	Th	Buruni	3	Substantial	3	Host	226	10	9		9	9			
150	Th	Vilufushi	1	Very high	1	PDE	1,261	30	25	25	25	9	15	13	10
151	Th	Madifushi	1	Very high	2	PDI	731	30	30	30	30	10	15	15	10
152	Th	Dhiyamigili	3	Substantial	4	Other	488	10	9		9	9			
153	Th	Guraidhoo	3	Substantial	4	Other	1,277	10	10						
154	Th	Kadoodhoo	4	Limited	4	Other	361	5	4						
155	Th	Vandhoo	4	Limited	4	Other	280	5	5						
156	Th	Hirilandhoo	4	Limited	4	Other	874	5	5	10					
157	Th	Gaadhifushi	3	Substantial	4	Other	243	10	10		10	10			
158	Th	Thimarafushi	2	High	4	Other	1,422	40	39	39	39	20			
159	Th	Veymandhoo	4	Limited	4	Other	904	5	5						
160	Th	Kibidhoo	4	Limited	4	Other	879	10	10		10	10			
161	L	Omadhoo	3	Substantial	4	Other	426	10	9						
162	L	Isdhoo	2	High	4	Other	1,500	20	20	20	20	10			
163	L	Dhabidhoo	1	Very high	2	PDI	523	30	30	30	30	10	15	15	13
164	L	Maabaidhoo	2	High	4	Other	846	20	20	20	19	9			
165	L	Mundoo	1	Very high	2	PDI	555	30	28	28	28	9	15	13	8
166	L	Kalhaidhoo	1	Very high	2	PDI	495	30	29	29	29	9		15	14
167	L	Gamu	3	Substantial	3	Host	2,364	20	19		19	19			
168	L	Maavah	4	Limited	4	Other	1,592	5	5						
169	L	FONADHOO	2	High	3	Host	1,950	40	37	37	37	18			
170	L	Gaadhoo	4	Limited	4	Other	254	5	5						
171	L	Maamendhoo	4	Limited	4	Other	995	5	5						
172	L	Hithadhoo	4	Limited	4	Other	816	5	5						
173	L	Kunahandhoo	4	Limited	4	Other	567	5	5						
174	GA	Kolamaafushi	4	Limited	4	Other	1,238	5	5						
175	GA	VILLINGILI	1	Very high	2	PDI	2,431	60	60	60	60	19	30	60	26
176	GA	Maamendhoo	3	Substantial	4	Other	1,148	10	9		9	9			
177	GA	Nilandhoo	2	High	4	Other	482	20	20	20	20	9			
178	GA	Dhaandhoo	2	High	4	Other	1,303	20	19	19	19	9			
179	GA	Dheevadhoo	5	Nil	4	Other	499	5	5						
180	GA	Kodey	4	Limited	4	Other	270	5	5						
181	GA	Dhiyadhoo	4	Limited	4	Other	105	5	5						
182	GA	Gemanafushi	4	Limited	4	Other	1,046	5	5						
183	GA	Kanduhulhudhoo	4	Limited	4	Other	492	5	5						
184	GDh	Madeveli	5	Nil	4	Other	1,175	5	5						
185	GDh	Hoadeddhoo	5	Nil	4	Other	636	5	5						
186	GDh	Nadallaa	4	Limited	4	Other	698	5	5						
187	GDh	Gadhdhoo	3	Substantial	4	Other	1,706	20	19		19	19			
188	GDh	Rathafandhoo	4	Limited	4	Other	512	5	5						
189	GDh	Vaadhoo	4	Limited	4	Other	801	5	5						
190	GDh	Fiyoari	4	Limited	4	Other	812	5	5						
191	GDh	Maathodaa	4	Limited	4	Other	529	5	5						
192	GDh	Fares	4	Limited	4	Other	484	5	5						
193	GDh	Thinadhoo	4	Limited	4	Other	4,218	20	20						



Sr	Atoll	Island	Impact levels		Displacement groups		Island population (pre-tsunami)	total households selected	HH's who filled form 3	Household form (form 4) selected	Household form (form 4)	Panel hh's form 4	RH	
			Code	Description	Code	Description							(form 6) and Psycho (form 7) selected	Psych hh count
194	Gn	Foammulah	4	Limited	4	Other	8,393	30	30					
195	S	Meedhoo	4	Limited	4	Other	1,700	10	10					
196	S	Hithadhoo	4	Limited	4	Other	10,196	35	35					
197	S	Maradhoo	4	Limited	4	Other	2,265	10	10					
198	S	Feydhoo	4	Limited	4	Other	3,173	10	10					
199	S	Maradhoo-Feydhoo	4	Limited	4	Other	1,187	5	5					
200	S	Hulhudhoo	4	Limited	4	Other	1,263	10	10					

Definitions:**Population**

	Tsunami Impact Classification	Number of Islands	Total number	% of Atoll	% of Total
1	Very High - Population displaced and extensive damage to housing and infrastructure	14	13,015	6%	4%
2	High - Population displaced and damage to housing and infrastructure	23	21,700	11%	7%
3	Substantial - Substantial damage to buildings and infrastructure	33	40,108	20%	14%
4	Limited - Flooding in few houses but no major structural damage	121	122,633	60%	42%
5	NIL - No Flooding	9	7,459	4%	3%

	Tsunami Displacement Classification				
1	Population Displaced Externally (PDE) – Living at another island	4	5,133	3%	2%
2	Population Displaced Internally (PDI) – living in temporary housing on own island	10	7,882	4%	3%
3	Host Island Population – original population of host islands	10	15,747	8%	5%
4	Other Islands	176	176,153	86%	60%



STATISTICAL ANNEX I

133

Explanatory Note to the Statistical Annex

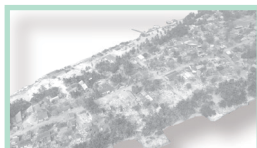
Unless otherwise stated, the figures in the following pages are percentages. For instance, the figure “9” in the column “no fan” indicates that 9 percent of the population in Gemendhoo has no fan. In some cases double negatives had to be used. For instance, a zero (0) in the column “no fan” is a double negative that indicates a positive situation. In this case, all households on the island have a fan. A blank has a different meaning than a zero. A zero means 0 percent while a “blank” indicates non-response.



General

134

		2004	2005	2004-2005	2005	2005	2005
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
1	Maldives	288,838	290,452	0.56%	100.00%	11546	25
2	Male'	85,665	85,665	0.00%	29.49%	187	458
3	Atoll average	203,173	204,787	0.79%	70.51%	11359	18
4	HAA ALIFU ATOLL	14,987	15,116	0.86%	5.20%	1348	11
5	Thurakunu	407	411	0.98%	0.14%	22	19
6	Uligamu	301	304	1.00%	0.10%	113	3
7	Berinmadhoo	100	95	-5.00%	0.03%	15	7
8	Hathifushi	132	128	-3.03%	0.04%	4	31
9	Mulhadhoo	220	218	-0.91%	0.08%	118	2
10	Hoarafushi	2,458	2,488	1.22%	0.86%	63	39
11	Ihavandhoo	2,614	2,642	1.07%	0.91%	61	44
12	Kelaa	1,495	1,502	0.47%	0.52%	213	7
13	Vashafaru	455	458	0.66%	0.16%	31	15
14	DHIDHDHOO	2,985	3,012	0.90%	1.04%	51	59
15	Filladhoo	634	641	1.10%	0.22%	226	3
16	Maarandhoo	485	488	0.62%	0.17%	41	12
17	Thakandhoo	445	450	1.12%	0.15%	45	10
18	Utheemu	557	565	1.44%	0.19%	47	12
19	Muraidhoo	441	446	1.13%	0.15%	50	9
20	Baarah	1,258	1,268	0.79%	0.44%	249	5
21	HAA DHAALU ATOLL	18,705	18,866	0.86%	6.50%	1651	11
22	Faridhoo	124	129	4.03%	0.04%	23	6
23	Hondaidhoo	0					
24	Hanimaadhoo	1,199	1,213	1.17%	0.42%	259	5
25	Finey	290	296	2.07%	0.10%	118	3
26	Naivaadhoo	418	420	0.48%	0.14%	26	16
27	Hirimaradhoo	301	311	3.32%	0.11%	43	7
28	Nolhivaranfaru	306	313	2.29%	0.11%	150	2
29	Nellaidhoo	690	688	-0.29%	0.24%	30	23
30	Nolhivaramu	1,665	1,687	1.32%	0.58%	221	8
31	Kuribi	442	451	2.04%	0.16%	32	14
32	Kuburudhoo	155	157	1.29%	0.05%	42	4
33	KULHUDHUFFUSHI	8,654	8,701	0.54%	3.00%	172	51
34	Kumundhoo	931	944	1.40%	0.33%	178	5
35	Neykurendhoo	827	838	1.33%	0.29%	163	5
36	Vaikaradhoo	1,179	1,191	1.02%	0.41%	97	12
37	Maavaidhoo	399	396	-0.75%	0.14%	36	11
38	Makunudhoo	1,125	1,131	0.53%	0.39%	61	19



General

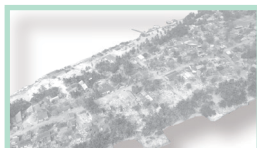
		2004	2005	2004-2005	2005	2005	2005
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
39	SHAVIYANI ATOLL	13,021	13,005	-0.12%	4.48%	962	14
40	Kaditheemu	1,193	1,208	1.26%	0.42%	90	13
41	Noomaraa	445	454	2.02%	0.16%	35	13
42	Goidhoo	413	421	1.94%	0.14%	106	4
43	Feydhoo	762	771	1.18%	0.27%	82	9
44	Feevah	823	829	0.73%	0.29%	79	10
45	Bilehffahi	418	420	0.48%	0.14%	58	7
46	Foakaidhoo	1,476	1,481	0.34%	0.51%	56	27
47	Narudhoo	413	425	2.91%	0.15%	42	10
48	Maakandoodhoo	435	449	3.22%	0.15%	91	5
49	Maroshi	613	625	1.96%	0.22%	27	23
50	Lhaimagu	703	695	-1.14%	0.24%	37	19
51	Firubaidhoo	129	128	-0.78%	0.04%	14	9
52	Komandoo	1,589	1,606	1.07%	0.55%	6	269
53	Maugoodhoo	808	816	0.99%	0.28%	27	31
54	FUNADHOO	1,494	1,503	0.60%	0.52%	86	17
55	Milandhoo	1,307	1,302	-0.38%	0.45%	126	10
56	NOONU ATOLL	10,963	11,057	0.86%	3.81%	750	15
57	Hebadhoo	425	439	3.29%	0.15%	20	22
58	Kedhikolhudhoo	1,293	1,317	1.86%	0.45%	219	6
59	Maalhendhoo	509	506	-0.59%	0.17%	34	15
60	Kudafari	438	441	0.68%	0.15%	23	20
61	Landhoo	631	636	0.79%	0.22%	81	8
62	Maafaru	725	731	0.83%	0.25%	114	6
63	Lhohi	560	563	0.54%	0.19%	35	16
64	Miladhoo	903	914	1.22%	0.31%	18	50
65	Magoodhoo	227	230	1.32%	0.08%	31	8
66	MANADHOO	1,314	1,327	0.99%	0.46%	92	14
67	Holhudhoo	1,734	1,744	0.58%	0.60%	17	101
68	Fodhdhoo	204	208	1.96%	0.07%	25	8
69	Velidhoo	2,000	2,001	0.05%	0.69%	43	47
70	RAA ATOLL	16,729	16,873	0.86%	5.81%	499	34
71	Alifushi	1,911	1,930	0.99%	0.66%	46	42
72	Vaadhoo	350	356	1.71%	0.12%	31	11
73	Rasgetheemu	545	553	1.47%	0.19%	30	18
74	Agolhitheemu	291	308	5.84%	0.11%	32	10
75	Hulhudhuffaaruu	1,110	1,116	0.54%	0.38%	49	23
76	UGUFAARU	1,387	1,403	1.15%	0.48%	28	50



General

136

		2004	2005	2004-2005	2005	2005	2005
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
77	Kadholhudhoo	3,445	3,444	-0.03%	1.19%	11	307
78	Maakurathu	913	924	1.20%	0.32%	43	21
79	Rasmaadhoo	533	547	2.63%	0.19%	23	24
80	Innamaadhoo	576	586	1.74%	0.20%	28	21
81	Maduvvari	1,693	1,717	1.42%	0.59%	16	105
82	Iguraidhoo	1,498	1,507	0.60%	0.52%	36	42
83	Fainu	301	292	-2.99%	0.10%	50	6
84	Meedhoo	1,741	1,756	0.86%	0.60%	31	57
85	Kinolhas	435	434	-0.23%	0.15%	45	10
86	BAA ATOLL	10,198	10,284	0.84%	3.54%	373	28
87	Kudarikilu	346	353	2.02%	0.12%	14	26
88	Kamadhoo	465	443	-4.73%	0.15%	16	27
89	Kendhoo	942	948	0.64%	0.33%	15	65
90	Kihaadhoo	291	288	-1.03%	0.10%	26	11
91	Dhonfanu	332	339	2.11%	0.12%	13	27
92	Dharavandhoo	814	822	0.98%	0.28%	46	18
93	Maalhos	347	355	2.31%	0.12%	23	15
94	EYDHAFUSHI	2,702	2,732	1.11%	0.94%	22	123
95	Thulhaadhoo	2,097	2,116	0.91%	0.73%	5	426
96	Hithaadhoo	977	999	2.25%	0.34%	28	35
97	Fulhadhoo	230	222	-3.48%	0.08%	32	7
98	Fehendhoo	143	150	4.90%	0.05%	21	7
99	Goidhoo	512	517	0.98%	0.18%	114	5
100	LHAVIYANI ATOLL	8,903	8,979	0.85%	3.09%	116	78
101	Hinnavaru	3,165	3,176	0.35%	1.09%	13	253
102	NAIFARU	4,002	4,048	1.15%	1.39%	14	284
103	Kurendhoo	1,196	1,207	0.92%	0.42%	20	61
104	Olhuvelifushi	380	389	2.37%	0.13%	20	20
105	Maafilaafushi	160	159	-0.62%	0.05%	49	3
106	KAAFU ATOLL	9,351	9,430	0.84%	3.25%	429	22
107	Kaashidhoo	1,925	1,907	-0.94%	0.66%	276	7
108	Gaafaru	827	826	-0.12%	0.28%	10	83
109	Dhiffushi	941	959	1.91%	0.33%	19	51
110	THULUSDHOO	935	957	2.35%	0.33%	34	29
111	Huraa	774	787	1.68%	0.27%	19	42
112	Himmafushi	832	846	1.68%	0.29%	25	34
113	Gulhi	656	671	2.29%	0.23%	6	122
114	Maafushi	1,065	1,072	0.66%	0.37%	23	46



General

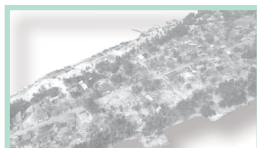
		2004	2005	2004-2005	2005	2005	2005
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
115	Guraidhoo	1,396	1,405	0.64%	0.48%	18	77
116	ALIF ALIFU ATOLL	5,998	6,049	0.85%	2.08%	286	21
117	Thoddoo	1,216	1,350	11.02%	0.46%	142	9
118	RASDHOO	1,083	1,192	10.06%	0.41%	17	72
119	Ukulhas	553	617	11.57%	0.21%	17	35
120	Mathiveri	508	565	11.22%	0.19%	20	28
121	Bodufolhudhoo	515	575	11.65%	0.20%	7	83
122	Feridhoo	601	665	10.65%	0.23%	43	15
123	Maalhos	930	438	-52.90%	0.15%	23	19
124	Himendhoo	592	647	9.29%	0.22%	16	39
125	ALIFU DHAALU ATOLL	7,707	7,774	0.87%	2.68%	259	30
126	Hangnameedhoo	506	517	2.17%	0.18%	17	30
127	Omadhoo	765	766	0.13%	0.26%	21	36
128	Kuburudhoo	384	388	1.04%	0.13%	5	79
129	MAHIBADHOO	1,992	2,014	1.10%	0.69%	18	114
130	Mandhoo	312	331	6.09%	0.11%	29	11
131	Dhagethi	826	811	-1.82%	0.28%	21	38
132	Dhigurah	383	393	2.61%	0.14%	43	9
133	Fenfushi	638	636	-0.31%	0.22%	16	39
134	Dhidhdhoo	93	93	0.00%	0.03%	13	7
135	Maamigili	1,808	1,825	0.94%	0.63%	75	24
136	VAAVU ATOLL	1,725	1,740	0.87%	0.60%	42	42
137	Fulidhoo	371	389	4.85%	0.13%	10	40
138	Thinadhoo	69	70	1.45%	0.02%	9	8
139	FELIDHOO	499	503	0.80%	0.17%	12	43
140	Keyodhoo	622	612	-1.61%	0.21%	7	84
141	Rakeedhoo	164	166	1.22%	0.06%	4	42
142	MEEMU ATOLL	5,288	5,333	0.85%	1.84%	249	21
143	Raimandhoo	190	168	-11.58%	0.06%	22	8
144	Madifushi	108	108	0.00%	0.04%	11	10
145	Veyvah	168	174	3.57%	0.06%	35	5
146	Mulah	1,307	1,323	1.22%	0.46%	58	23
147	MULI	819	836	2.08%	0.29%	29	29
148	Naalaafushi	318	326	2.52%	0.11%	9	37
149	Kolhufushi	958	961	0.31%	0.33%	76	13
150	Dhiggaru	1,011	1,020	0.89%	0.35%	7	140
151	Maduvvari	409	417	1.96%	0.14%	4	112
152	FAAFU ATOLL	4,218	4,254	0.85%	1.46%	146	29



General

138

		2004	2005	2004-2005	2005	2005	2005
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
153	Feeali	956	951	-0.52%	0.33%	14	70
154	Biledhdhoo	1,118	1,125	0.63%	0.39%	30	38
155	Magoodhoo	502	517	2.99%	0.18%	18	29
156	Dharaboodhoo	258	265	2.71%	0.09%	37	7
157	NILANDHOO	1,384	1,396	0.87%	0.48%	49	28
158	DHAALU ATOLL	5,391	5,436	0.83%	1.87%	161	34
159	Meedhoo	981	991	1.02%	0.34%	9	111
160	Badidhoo	784	786	0.26%	0.27%	20	39
161	Ribudhoo	372	383	2.96%	0.13%	16	24
162	Hulhudheli	606	593	-2.15%	0.20%	16	38
163	Gemendhoo	317	320	0.95%	0.11%	5	68
164	Vaanee	262	270	3.05%	0.09%	11	25
165	Maaebodhoo	623	633	1.61%	0.22%	18	36
166	KUDAHUVADHOO	1,446	1,460	0.97%	0.50%	67	22
167	THAA ATOLL	9,292	9,372	0.86%	3.23%	369	25
168	Buruni	229	226	-1.31%	0.08%	31	7
169	Vilufushi	1,262	1,261	-0.08%	0.43%	14	93
170	Madifushi	728	731	0.41%	0.25%	18	41
171	Dhiyamigili	482	488	1.24%	0.17%	24	21
172	Guraidhoo	1,267	1,277	0.79%	0.44%	27	47
173	Kadoodhoo	359	361	0.56%	0.12%	78	5
174	Vandhoo	277	280	1.08%	0.10%	23	12
175	Hirilandhoo	873	874	0.11%	0.30%	25	35
176	Gaadhiffushi	239	243	1.67%	0.08%	11	22
177	Thimarafushi	1,409	1,422	0.92%	0.49%	15	98
178	VEYMANDOO	877	904	3.08%	0.31%	41	22
179	Kibidhoo	869	879	1.15%	0.30%	31	29
180	Omadhoo	421	426	1.19%	0.15%	33	13
181	LAAMU ATOLL	12,351	12,457	0.86%	4.29%	1414	9
182	Isdhoo	1,497	1,500	0.20%	0.52%	294	5
183	Dhabidhoo	506	523	3.36%	0.18%	47	11
184	Maabaidhoo	834	846	1.44%	0.29%	43	20
185	Mundoo	550	555	0.91%	0.19%	20	28
186	Kalhaidhoo	498	495	-0.60%	0.17%	25	20
187	Gamu	2,346	2,364	0.77%	0.81%	517	5
188	Maavah	1,579	1,592	0.82%	0.55%	32	50
189	FONADHOO	1,921	1,950	1.51%	0.67%	159	12
190	Gaadhoo	252	254	0.79%	0.09%	69	4



General

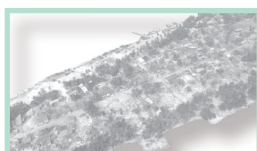
		2004	2005	2004-2005	2005	2005	2005
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
191	Maamendhoo	990	995	0.51%	0.34%	19	53
192	Hithadhoo	817	816	-0.12%	0.28%	109	8
193	Kunahandhoo	561	567	1.07%	0.20%	81	7
194	GAAFU ALIFU ATOLL	8,935	9,014	0.88%	3.10%	439	21
195	Kolamaafushi	1,220	1,238	1.48%	0.43%	20	61
196	VILLINGILI	2,393	2,431	1.59%	0.84%	55	44
197	Maamendhoo	1,144	1,148	0.35%	0.40%	49	24
198	Nilandhoo	466	482	3.43%	0.17%	57	9
199	Dhaandhoo	1,286	1,303	1.32%	0.45%	13	103
200	Dheevadhoo	487	499	2.46%	0.17%	21	24
201	Kodey	313	270	-13.74%	0.09%	104	3
202	Dhiyadhoo	100	105	5.00%	0.04%	49	2
203	Gemanafushi	1,034	1,046	1.16%	0.36%	47	22
204	Kanduhulhudhoo	492	492	0.00%	0.17%	25	20
205	GAAFU DHAALU ATOLL	11,473	11,571	0.85%	3.98%	602	19
206	Madeveli	1,163	1,175	1.03%	0.40%	34	35
207	Hoadedhdhoo	628	636	1.27%	0.22%	88	7
208	Nadallaa	693	698	0.72%	0.24%	41	17
209	Gadhdhoo	1,684	1,706	1.31%	0.59%	22	77
210	Rathafandhoo	503	512	1.79%	0.18%	35	15
211	Vaadhoo	793	801	1.01%	0.28%	167	5
212	Fiyoari	803	812	1.12%	0.28%	73	11
213	Maathodaa	529	529	0.00%	0.18%	16	34
214	Fares	483	484	0.21%	0.17%	22	22
215	THINADHOO	4,194	4,218	0.57%	1.45%	104	40
216	GNAVIYANI ATOLL	8,322	8,393	0.85%	2.89%	420	20
217	FOAMMULAH	8,322	8,393	0.85%	2.89%	420	20
218	SEENU ATOLL	19,616	19,784	0.86%	6.81%	845	23
219	Meedhoo	1,682	1,700	1.07%	0.59%	166	10
220	HITHADHOO	10,124	10,196	0.71%	3.51%	467	22
221	Maradhoo	2,236	2,265	1.30%	0.78%	75	30
222	Feydhoo	3,140	3,173	1.05%	1.09%	49	64
223	Maradhoo-Feydhoo	1,185	1,187	0.17%	0.41%	31	38
224	Hulhudhoo	1,249	1,263	1.12%	0.43%	56	23



Transport

140

		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per vessel	Dhoni <4 times per month to atoll capital	island not always accessible	Dhoni <3 times per month to Male'	no jetty	Difficulties with reef	other problems
1	Maldives	31	24	29	35	8	2	26
2	Male'	0	0	0	0	0	0	0
3	Atoll average	44	34	42	49	11	3	37
4	HAA ALIFU ATOLL	38	56	38	58	11	2	30
5	Thurakunu	0	100	100	100	0	0	100
6	Uligamu	100	100	100	100	100	100	100
7	Berinmadhoo	0	100	100	100	100	0	100
8	Hathifushi	0	100	100	100	100	0	100
9	Mulhadhoo	0	100	100	100	0	0	100
10	Hoarafushi	100	100	0	100	0	0	0
11	Ihavandhoo	0	100	0	0	0	0	0
12	Kelaa	0	0	100	100	0	0	100
13	Vashafaru	0	0	100	100	0	0	0
14	DHIDHDHOO	100	0	0	0	0	0	0
15	Filladhoo	0	0	100	0	100	0	0
16	Maarandhoo	0	100	100	100	0	0	100
17	Thakandhoo	0	100	100	100	0	0	100
18	Utheemu	0	0	100	100	100	0	100
19	Muraiddhoo	0	0	100	100	0	0	100
20	Baarah	0	100	0	100	0	0	0
21	HAA DHAALU ATOLL	28	6	91	41	27	4	86
22	Faridhoo	0	0	100	0	100	0	100
23	Hondaiddhoo							
24	Hanimaadhoo	100	0	100	100	100	0	100
25	Finney	0	0	0	0	0	0	0
26	Naivaadhoo	0	0	100	100	0	0	100
27	Hirimaradhoo	0	0	100	100	0	100	100
28	Nolhivaranfaru	100	0	0	100	0	0	0
29	Nellaidhoo	0	0	100	0	100	0	100
30	Nolhivaramu	100	0	100	100	100	0	100
31	Kuribi	0	0	100	0	100	100	100
32	Kuburudhoo	0	0	100	100	100	0	100
33	KULHUDHUFFUSHI	0	0	100	0	0	0	100
34	Kumundhoo	100	0	100	0	0	0	100
35	Neykurendhoo	0	0	100	100	100	0	0
36	Vaikaradhoo	0	0	100	100	0	0	100
37	Maavaidhoo	0	0	100	100	0	0	100



Transport

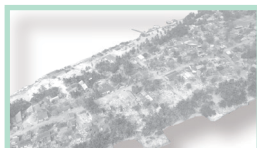
		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per ves- sel	Dhoni <4 times per month to atoll capital	island not always acces- sible	Dhoni <3 times per month to Male'	no jetty	Diffi-cul- ties with reef	other problems
38	Makunudhoo	100	100	0	100	0	0	0
39	SHAVIYANI ATOLL	13	77	74	49	16	6	74
40	Kaditheemu	0	100	0	0	0	0	0
41	Noomaraa	0	100	100	100	0	0	100
42	Goidhoo	0	100	100	100	0	0	100
43	Feydhoo	0	100	100	100	100	100	100
44	Feevah	0	100	100	0	100	0	100
45	Bilehffahi	0	100	100	100	100	0	100
46	Foakaidhoo	0	100	100	0	0	0	100
47	Narudhoo	100	100	100	100	0	0	100
48	Maakandoodhoo	0	100	100	100	0	0	100
49	Maroshi	0	100	0	100	0	0	0
50	Lhaimagu	0	100	100	100	0	0	100
51	Firubaidhoo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
52	Komandoo	0	100	0	0	0	0	0
53	Maaugoodhoo	0	100	100	100	0	0	100
54	FUNADHOO	0	0	100	0	0	0	100
55	Milandhoo	100	100	100	100	0	0	100
56	NOONU ATOLL	27	55	38	93	15	0	25
57	Hebadhoo	0	0	100	100	100	0	100
58	Kedhikolhudhoo	100	100	0	100	0	0	0
59	Maalhendhoo	0	0	0	100	0	0	0
60	Kudafari	0	0	100	100	100	0	0
61	Landhoo	0	100	100	100	0	0	100
62	Maafaru	100	0	100	0	100	0	100
63	Lhohi	0	0	100	100	0	0	100
64	Miladhoo	100	0	100	100	0	0	0
65	Magoodhoo	0	100	100	100	0	0	100
66	MANADHOO	0	0	0	100	0	0	0
67	Holhudhoo	0	100	0	100	0	0	0
68	Fodhdhoo	0	100	100	100	0	0	100
69	Velidhoo	0	100	0	100	0	0	0
70	RAA ATOLL	21	18	58	43	0	0	48
71	Alifushi	100	0	0	0	0	0	0
72	Vaadhoo	0	0	100	100	0	0	100
73	Rasgetheemu	0	0	100	0	0	0	100
74	Agolhitheemu	0	0	100	100	0	0	100



Transport

142

		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per vessel	Dhoni <4 times per month to atoll capital	island not always accessible	Dhoni <3 times per month to Male'	no jetty	Difficulties with reef	other problems
75	Hulhudhuffaar	100	0	100	100	0	0	100
76	UGUFAARU	0	0	100	0	0	0	100
77	Kadholhudhoo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
78	Maakurathu	0	0	100	100	0	0	100
79	Rasmaadhoo	100	100	100	100	0	0	100
80	Innamaadhoo	0	0	100	0	0	0	100
81	Maduvvari	0	100	0	100	0	0	0
82	Iguraidhoo	0	0	100	100	0	0	100
83	Fainu	0	100	100	100	0	0	100
84	Meedhoo	0	0	100	0	0	0	0
85	Kinolhas	0	100	100	100	0	0	100
86	BAA ATOLL	23	50	24	27	1	0	24
87	Kudarikilu	0	100	0	0	0	0	0
88	Kamadhoo	0	100	0	0	0	0	0
89	Kendhoo	0	0	0	100	0	0	0
90	Kihaadhoo	0	0	0	100	0	0	0
91	Dhonfanu	0	0	0	100	0	0	0
92	Dharavandhoo	100	100	0	100	0	0	0
93	Maalhos	0	0	0	0	0	0	0
94	EYDHAFUSHI	0	0	0	0	0	0	0
95	Thulhaadhoo	0	100	100	0	0	0	100
96	Hithaadhoo	100	100	0	0	0	0	0
97	Fulhadhoo	0	100	100	100	0	0	100
98	Fehendhoo	0	100	100	100	100	0	100
99	Goidhoo	100	0	0	0	0	0	0
100	LHAVIYANI ATOLL	45	18	40	6	0	0	40
101	Hinnavaru	0	0	100	0	0	0	100
102	NAIFARU	100	0	0	0	0	0	0
103	Kurendhoo	0	100	0	0	0	0	0
104	Olhuvelifushi	0	100	100	100	0	0	100
105	Maafilaafushi	0	0	0	100	0	0	0
106	KAAFU ATOLL	35	90	47	0	8	0	47
107	Kaashidhoo	100	100	100	0	0	0	100
108	Gaafaru	0	100	0	0	0	0	0
109	Dhiffushi	0	100	0	0	0	0	0
110	THULUSDHOO	0	0	0	0	0	0	0
111	Huraa	0	100	100	0	100	0	100



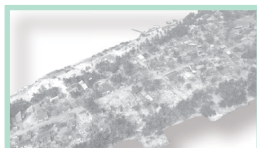
Transport

		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per vessel	Dhoni < 4 times per month to atoll capital	island not always accessible	Dhoni < 3 times per month to Male'	no jetty	Difficulties with reef	other problems
112	Himmafushi	0	100	0	0	0	0	0
113	Gulhi	0	100	100	0	0	0	100
114	Maafushi	0	100	100	0	0	0	100
115	Guraidhoo	100	100	0	0	0	0	0
116	ALIF ALIFU ATOLL	53	48	47	11	7	10	47
117	Thoddoo	100	0	0	0	0	0	0
118	RASDHOO	100	0	100	0	0	0	100
119	Ukulhas	0	0	0	0	0	0	0
120	Mathiveri	0	100	0	0	0	0	0
121	Bodufolhudhoo	0	100	100	0	0	100	100
122	Feridhoo	100	100	100	100	0	0	100
123	Maalhos	0	100	100	0	100	0	100
124	Himendhoo	0	100	0	0	0	0	0
125	ALIFU DHAALU ATOLL	0	37	20	19	10	0	20
126	Hangnameedhoo	0	0	0	0	0	0	0
127	Omadhoo	0	0	0	0	0	0	0
128	Kuburudhoo	0	0	100	100	0	0	100
129	MAHIBADHOO	0	0	0	0	0	0	0
130	Mandhoo	0	100	0	100	0	0	0
131	Dhagethi	0	0	100	0	100	0	100
132	Dhigurah	0	0	100	0	0	0	100
133	Fenfushi	0	100	0	100	0	0	0
134	Dhidhdhoo	0	100	0	100	0	0	0
135	Maamigili	0	100	0	0	0	0	0
136	VAAVU ATOLL	0	22	33	14	0	0	33
137	Fulidhoo	0	100	0	0	0	0	0
138	Thinadhoo	0	0	100	100	0	0	100
139	FELIDHOO	0	0	100	0	0	0	100
140	Keyodhoo	0	0	0	0	0	0	0
141	Rakeedhoo	0	0	0	100	0	0	0
142	MEEMU ATOLL	40	27	34	17	3	25	6
143	Raimandhoo	0	0	100	100	100	0	0
144	Madifushi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
145	Veyvah	0	0	n.a.	0	0	0	0
146	Mulah	100	0	100	0	0	100	0
147	MULI	100	0	0	0	0	0	0
148	Naalaafushi	0	0	100	100	0	0	100



Transport

		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per vessel	Dhoni <4 times per month to atoll capital	island not always accessible	Dhoni <3 times per month to Male'	no jetty	Difficulties with reef	other problems
149	Kolhufushi	0	0	0	0	0	0	0
150	Dhiggaru	0	100	0	0	0	0	0
151	Maduvvari	0	100	0	100	0	0	0
152	FAAFU ATOLL	33	12	41	41	12	0	41
153	Feeali	0	0	100	100	0	0	100
154	Biledhdhoo	0	0	0	0	0	0	0
155	Magoodhoo	0	100	100	100	100	0	100
156	Dharaboodhoo	0	0	100	100	0	0	100
157	NILANDHOO	100	0	0	0	0	0	0
158	DHAALU ATOLL	39	46	30	40	6	12	30
159	Meedhoo	0	100	0	0	0	0	0
160	Badidhoo	0	100	0	0	0	0	0
161	Ribudhoo	0	100	100	100	0	0	100
162	Hulhudheli	0	0	0	100	0	0	0
163	Gemendhoo	0	100	100	100	100	0	100
164	Vaanee	0	0	100	100	0	0	100
165	Maaebodhoo	100	0	100	100	0	100	100
166	KUDAHUVADHOO	100	0	0	0	0	0	0
167	THAA ATOLL	14	90	15	55	3	0	15
168	Buruni	0	100	0	0	0	0	0
169	Vilufushi	0	100	0	0	0	0	0
170	Madifushi	0	100	0	100	0	0	0
171	Dhiyamigili	0	100	100	100	0	0	100
172	Guraidhoo	100	100	0	0	0	0	0
173	Kadoodhoo	0	100	100	100	0	0	100
174	Vandhoo	0	100	100	100	100	0	100
175	Hirilandhoo	0	100	0	100	0	0	0
176	Gaadhiffushi	0	100	100	100	0	0	100
177	Thimarafushi	0	100	0	0	0	0	0
178	VEYMANDOO	0	0	0	100	0	0	0
179	Kibidhoo	0	100	0	100	0	0	0
180	Omadhoo	0	100	0	100	0	0	0
181	LAAMU ATOLL	49	27	70	78	28	4	70
182	Isdhoo	100	100	100	100	0	0	100
183	Dhabidhoo	0	100	100	100	0	0	100
184	Maabaidhoo	0	100	0	100	0	0	0
185	Mundoo	0	0	100	100	100	100	100



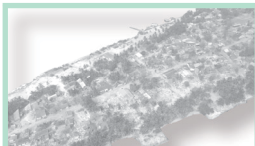
Transport

		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per ves- sel	Dhoni <4 times per month to atoll capital	island not always acces- sible	Dhoni <3 times per month to Male'	no jetty	Diffi-cul- ties with reef	other problems
186	Kalhaidhoo	0	100	0	0	0	0	0
187	Gamu	100	0	100	100	0	0	100
188	Maavah	0	0	0	100	0	0	0
189	FONADHOO	100	0	100	0	100	0	100
190	Gaadhoo	100	0	100	0	0	0	100
191	Maamendhoo	0	0	100	100	100	0	100
192	Hithadhoo	0	0	0	100	0	0	0
193	Kunahandhoo	0	0	100	100	0	0	100
194	GAAFU ALIFU ATOLL	71	32	48	87	28	0	21
195	Kolamaafushi	0	0	0	100	0	0	0
196	VILLINGILI	100	0	100	100	100	0	0
197	Maamendhoo	100	0	0	0	0	0	0
198	Nilandhoo	0	100	100	100	0	0	100
199	Dhaandhoo	100	0	0	100	0	0	0
200	Dheevadhoo	0	100	0	100	0	0	0
201	Kodey	0	100	100	100	0	0	100
202	Dhiyadhoo	0	100	100	100	100	0	100
203	Gemanafushi	100	100	100	100	0	0	100
204	Kanduhulhudhoo	100	100	0	100	0	0	0
205	GAAFU DHAALU ATOLL	87	0	32	100	22	11	25
206	Madeveli	100	0	100	100	0	0	100
207	Hoadedhdhoo	100	0	0	100	0	0	0
208	Nadallaa	100	0	100	100	100	100	100
209	Gadhdhoo	100	0	0	100	0	0	0
210	Rathafandhoo	0	0	100	100	100	0	100
211	Vaadhoo	100	0	0	100	0	0	0
212	Fiyoari	100	0	100	100	100	0	0
213	Maathodaa	0	0	100	100	100	100	100
214	Fares	0	0	0	100	0	0	0
215	THINADHOO	100	0	0	100	0	0	0
216	GNAVIYANI ATOLL	100	0	0	100	0	0	0
217	FOAMMULAH	100	0	0	100	0	0	0
218	SEENU ATOLL	100	0	0	37	0	0	0
219	Meedhoo	100	0	0	100	0	0	0
220	HITHADHOO	100	0	0	0	0	0	0
221	Maradhoo	100	0	0	0	0	0	0
222	Feydhoo	100	0	0	100	0	0	0



Transport

		2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	more than 100 people per ves- sel	Dhoni <4 times per month to atoll capital	island not always acces- sible	Dhoni <3 times per month to Male'	no jetty	Diffi-cul- ties with reef	other problems
223	Maradhoo-Feydhoo	100	0	0	100	0	0	0
224	Hulhudhoo	100	0	0	100	0	0	0



Communication

2005

147

	Atoll / Island name	no national news-paper on the island
1	Maldives	54
2	Male'	0
2.1	Male - Henveiru	0
2.2	Male - Galolhu	0
2.3	Male - Machchangolhi	0
2.4	Male - Maafannu	0
2.5	Male - Villigili	0
3	Atoll average	76
4	HAA ALIFU ATOLL	64
5	Thurakunu	100
6	Uligamu	100
7	Berinmadhoo	100
8	Hathifushi	100
9	Mulhadhoo	100
10	Hoarafushi	0
11	Ihavandhoo	100
12	Kelaa	100
13	Vashafaru	100
14	DHIDHDHOO	0
15	Filladhoo	100
16	Maarandhoo	100
17	Thakandhoo	100
18	Utheemu	100
19	Muraidhoo	100
20	Baarah	100
21	HAA DHAALU ATOLL	91
22	Faridhoo	100
23	Hondaidhoo	
24	Hanimaadhoo	0
25	Finey	100
26	Naivaadhoo	100
27	Hirimaradhoo	100
28	Nolhivaranfaru	100
29	Nellaidhoo	100
30	Nolhivaramu	100
31	Kuribi	100
32	Kuburudhoo	100
33	KULHUDHUFFUSHI	100
34	Kumundhoo	100

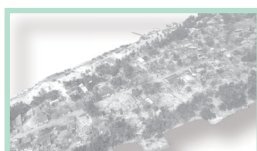


Communication

148

2005

	Atoll / Island name	no national news-paper on the island
35	Neykurendhoo	100
36	Vaikaradhoo	100
37	Maavaidhoo	100
38	Makunudhoo	100
39	SHAVIYANI ATOLL	90
40	Kaditheemu	0
41	Noomaraa	100
42	Goidhoo	100
43	Feydhoo	100
44	Feevah	100
45	Bilehffahi	100
46	Foakaidhoo	100
47	Narudhoo	100
48	Maakandoodhoo	100
49	Maroshi	100
50	Lhaimagu	100
51	Firubaidhoo	n.a.
52	Komandoo	100
53	Maaugoodhoo	100
54	FUNADHOO	100
55	Milandhoo	100
56	NOONU ATOLL	54
57	Hebadhoo	100
58	Kedhikolhudhoo	100
59	Maalhendhoo	100
60	Kudafari	100
61	Landhoo	100
62	Maafaru	100
63	Lhohi	100
64	Miladhoo	100
65	Magoodhoo	100
66	MANADHOO	0
67	Holhudhoo	0
68	Fodhdhoo	100
69	Velidhoo	0
70	RAA ATOLL	100
71	Alifushi	100
72	Vaadhoo	100
73	Rasgetheemu	100



Communication

2005

149

	Atoll / Island name	no national news-paper on the island
74	Agolhitheemu	100
75	Hulhudhuffaar	100
76	UGUFAARU	100
77	Kadholhudhoo	n.a.
78	Maakurathu	100
79	Rasmaadhoo	100
80	Innamaadhoo	100
81	Maduvvari	100
82	Iguraidhoo	100
83	Fainu	100
84	Meedhoo	100
85	Kinolhas	100
86	BAA ATOLL	35
87	Kudarikilu	100
88	Kamadhoo	100
89	Kendhoo	100
90	Kihaadhoo	100
91	Dhonfanu	100
92	Dharavandhoo	0
93	Maalhos	100
94	EYDHAFUSHI	0
95	Thulhaadhoo	0
96	Hithaadhoo	0
97	Fulhadhoo	100
98	Fehendhoo	100
99	Goidhoo	100
100	LHAVIYANI ATOLL	53
101	Hinnavaru	100
102	NAIFARU	0
103	Kurendhoo	100
104	Olhuvelifushi	100
105	Maafilaafushi	0
106	KAAFU ATOLL	57
107	Kaashidhoo	0
108	Gaafaru	100
109	Dhiffushi	100
110	THULUSDHOO	100
111	Huraa	0
112	Himmafushi	100

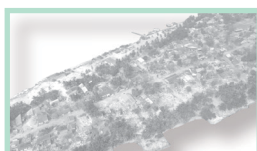


Communication

150

2005

	Atoll / Island name	no national news-paper on the island
113	Gulhi	100
114	Maafushi	100
115	Guraidhoo	0
116	ALIF ALIFU ATOLL	60
117	Thoddoo	0
118	RASDHOO	100
119	Ukulhas	100
120	Mathiveri	100
121	Bodufolhudhoo	100
122	Feridhoo	100
123	Maalhos	0
124	Himendhoo	0
125	ALIFU DHAALU ATOLL	51
126	Hangnameedhoo	100
127	Omadhoo	100
128	Kuburudhoo	100
129	MAHIBADHOO	0
130	Mandhoo	100
131	Dhagethi	100
132	Dhigurah	100
133	Fenfushi	100
134	Dhidhdhoo	100
135	Maamigili	0
136	VAAVU ATOLL	26
137	Fulidhoo	100
138	Thinadhoo	100
139	FELIDHOO	0
140	Keyodhoo	0
141	Rakeedhoo	0
142	MEEMU ATOLL	64
143	Raimandhoo	100
144	Madifushi	n.a.
145	Veyvah	100
146	Mulah	100
147	MULI	0
148	Naalaafushi	100
149	Kolhufushi	0
150	Dhiggaru	100
151	Maduvvari	100



Communication

2005

151

	Atoll / Island name	no national news-paper on the island
152	FAAFU ATOLL	67
153	Feeali	100
154	Biledhdhoo	100
155	Magoodhoo	100
156	Dharaboodhoo	100
157	NILANDHOO	0
158	DHAALU ATOLL	88
159	Meedhoo	100
160	Badidhoo	100
161	Ribudhoo	100
162	Hulhudheli	100
163	Gemendhoo	100
164	Vaanee	100
165	Maaebodhoo	0
166	KUDAHUVADHOO	100
167	THAA ATOLL	100
168	Buruni	100
169	Vilufushi	100
170	Madifushi	100
171	Dhiyamigili	100
172	Guraidhoo	100
173	Kadoodhoo	100
174	Vandhoo	100
175	Hirilandhoo	100
176	Gaadhiffushi	100
177	Thimarafushi	100
178	VEYMANDOO	100
179	Kibidhoo	100
180	Omadhoo	100
181	LAAMU ATOLL	93
182	Isdhoo	100
183	Dhabidhoo	100
184	Maabaidhoo	0
185	Mundoo	100
186	Kalhaidhoo	100
187	Gamu	100
188	Maavah	100
189	FONADHOO	100
190	Gaadhoo	100

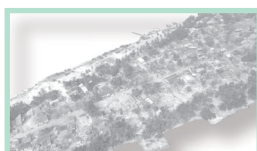


Communication

152

2005

	Atoll / Island name	no national news-paper on the island
191	Maamendhoo	100
192	Hithadhoo	100
193	Kunahandhoo	100
194	GAAFU ALIFU ATOLL	59
195	Kolamaafushi	0
196	VILLINGILI	100
197	Maamendhoo	0
198	Nilandhoo	100
199	Dhaandhoo	0
200	Dhevvaadhoo	100
201	Kodey	100
202	Dhiyadhoo	100
203	Gemanafushi	100
204	Kanduhulhudhoo	100
205	GAAFU DHAALU ATOLL	49
206	Madeveli	0
207	Hoadedhdhoo	100
208	Nadallaa	100
209	Gadhdhoo	100
210	Rathafandhoo	100
211	Vaadhoo	100
212	Fiyoari	100
213	Maathodaa	100
214	Fares	0
215	THINADHOO	0
216	GNAVIYANI ATOLL	100
217	FOAMMULAH	100
218	SEENU ATOLL	6
219	Meedhoo	0
220	HITHADHOO	0
221	Maradhoo	0
222	Feydhoo	0
223	Maradhoo-Feydhoo	0
224	Hulhudhoo	100



Education 1

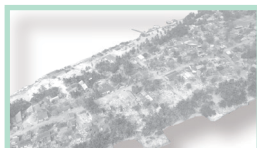
		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
1	Maldives	0	0	22	1	9	3	10	19
2	Male'	0	0	0	0	0	0	0	0
3	Atoll average	0	0	32	2	13	5	13	27
4	HAA ALIFU ATOLL	0	0	28	1	23	1	17	29
5	Thurakunu	0	0	0	0	100	0	0	100
6	Uligamu	0	0	100	0	100	0	0	0
7	Berinmadhoo	0	0	0	100	0	0	0	0
8	Hathifushi	0	0	0	0	100	0	0	0
9	Mulhadhoo	0	0	0	0	100	100	0	0
10	Hoarafushi	0	0	100	0	0	0	0	0
11	Ihavandhoo	0	0	0	0	0	0	100	100
12	Kelaa	0	0	0	0	0	0	0	0
13	Vashafaru	0	0	0	0	100	0	0	0
14	DHIDHDHOO	0	0	0	0	0	0	0	0
15	Filladhoo	0	0	0	0	100	0	0	0
16	Maarandhoo	0	0	100	0	100	0	0	0
17	Thakandhoo	0	0	0	0	100	0	0	0
18	Utheemu	0	0	100	0	0	0	0	0
19	Muraidhoo	0	0	100	0	100	0	0	0
20	Baarah	0	0	0	0	0	0	0	100
21	HAA DHAALU ATOLL	0	0	2	2	12	5	5	15
22	Faridhoo	0	0	0	100	0	0	0	0
23	Hondaidhoo								
24	Hanimaadhoo	0	0	0	0	0	0	0	100
25	Finey	0	0	0	0	100	100	0	0
26	Naivaadhoo	0	0	0	0	100	0	0	100
27	Hirimaradhoo	0	0	0	0	100	0	0	100
28	Nolhivaranfaru	0	0	0	0	100	0	0	0
29	Nellaidhoo	0	0	0	0	0	0	0	0
30	Nolhivaramu	0	0	0	0	0	0	0	0
31	Kuribi	0	0	0	0	100	0	0	0
32	Kuburudhoo	0	0	0	100	0	100	0	0
33	KULHUDHUFFUSHI	0	0	0	0	0	0	0	0
34	Kumundhoo	0	0	0	0	0	0	100	100
35	Neykurendhoo	0	0	0	0	0	0	0	0
36	Vaikaradhoo	0	0	0	0	0	0	0	0



Education I

154

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
37	Maavaidhoo	0	0	100	0	100	100	0	0
38	Makunudhoo	0	0	0	0	0	0	0	0
39	SHAVIYANI ATOLL	0	0	76	0	3	12	5	25
40	Kaditheemu	0	0	100	0	0	100	0	0
41	Noomaraa	0	0	100	0	0	0	0	0
42	Goidhoo	0	0	100	0	0	0	0	100
43	Feydhoo	0	0	100	0	0	0	0	0
44	Feevah	0	0	100	0	0	0	0	100
45	Bilehffahi	0	0	100	0	0	100	0	0
46	Foakaidhoo	0	0	100	0	0	0	0	0
47	Narudhoo	0	0	0	0	0	0	0	0
48	Maakandoodhoo	0	0	100	0	100	0	0	0
49	Maroshi	0	0	0	0	0	0	0	0
50	Lhaimagu	0	0	0	0	0	0	100	100
51	Firubaidhoo	n.a	n.a	n.a	n.a	n.a.	n.a	n.a	n.a
52	Komandoo	0	0	100	0	0	0	0	0
53	Maaugoodhoo	0	0	100	0	0	0	0	0
54	FUNADHOO	0	0	100	0	0	0	0	0
55	Milandhoo	0	0	0	0	0	0	0	100
56	NOONU ATOLL	0	0	34	0	8	0	6	22
57	Hebadhoo	0	0	0	0	100	0	0	0
58	Kedhikolhudhoo	0	0	0	0	0	0	0	0
59	Maalhendhoo	0	0	100	0	0	0	0	100
60	Kudafari	0	0	0	0	0	0	0	0
61	Landhoo	0	0	0	0	0	0	100	100
62	Maafaru	0	0	0	0	0	0	0	100
63	Lhohi	0	0	100	0	0	0	0	100
64	Miladhoo	0	0	100	0	0	0	0	0
65	Magoodhoo	0	0	100	0	100	0	0	0
66	MANADHOO	0	0	100	0	0	0	0	0
67	Holhudhoo	0	0	0	0	0	0	0	0
68	Fodhdhoo	0	0	100	0	100	0	0	0
69	Velidhoo	0	0	0	0	0	0	0	0
70	RAA ATOLL	0	0	5	0	12	0	28	51
71	Alifushi	0	0	0	0	0	0	0	100
72	Vaadhoo	0	0	100	0	100	0	0	0



Education 1

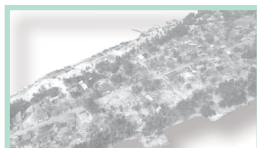
		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
73	Rasgetheemu	o	o	o	o	100	o	o	100
74	Agolhitheemu	o	o	o	o	100	o	o	o
75	Hulhudhuffaar	o	o	o	o	o	o	100	100
76	UGUFAARU	o	o	o	o	o	o	100	100
77	Kadholhudhoo	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
78	Maakurathu	o	o	o	o	o	o	o	100
79	Rasmaadhoo	o	o	o	o	o	o	100	100
80	Innamaadhoo	o	o	o	o	o	o	o	o
81	Maduvvari	o	o	o	o	o	o	100	100
82	Iguraidhoo	o	o	o	o	o	o	o	o
83	Fainu	o	o	o	o	100	o	o	o
84	Meedhoo	o	o	o	o	o	o	o	o
85	Kinolhas	o	o	100	o	100	o	o	100
86	BAA ATOLL	o	o	21	4	13	8	o	o
87	Kudarikilu	o	o	o	o	o	o	o	o
88	Kamadhoo	o	o	o	100	o	o	o	o
89	Kendhoo	o	o	o	o	o	o	o	o
90	Kihaadhoo	o	o	o	o	100	100	o	o
91	Dhonfanu	o	o	o	o	100	100	o	o
92	Dharavandhoo	o	o	100	o	o	o	o	o
93	Maalhos	o	o	o	o	100	o	o	o
94	EYDHAFUSHI	o	o	o	o	o	o	o	o
95	Thulhaadhoo	o	o	o	o	o	o	o	o
96	Hithaadhoo	o	o	100	o	o	o	o	o
97	Fulhadhoo	o	o	100	o	100	o	o	o
98	Fehendhoo	o	o	100	o	100	100	o	o
99	Goidhoo	o	o	o	o	o	o	o	o
100	LHAVIYANI ATOLL	o	o	6	o	6	2	o	o
101	Hinnavaru	o	o	o	o	o	o	o	o
102	NAIFARU	o	o	o	o	o	o	o	o
103	Kurendhoo	o	o	o	o	o	o	o	o
104	Olhuvelifushi	o	o	100	o	100	o	o	o
105	Maafilaafushi	o	o	100	o	100	100	o	o
106	KAAFU ATOLL	o	o	o	o	25	o	15	35
107	Kaashidhoo	o	o	o	o	o	o	o	o
108	Gaafaru	o	o	o	o	100	o	o	o



Education I

156

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
109	Dhiffushi	0	0	0	0	0	0	0	0
110	THULUSDHOO	0	0	0	0	0	0	0	0
111	Huraa	0	0	0	0	0	0	0	0
112	Himmafushi	0	0	0	0	100	0	0	100
113	Gulhi	0	0	0	0	100	0	0	0
114	Maafushi	0	0	0	0	0	0	0	100
115	Guraidhoo	0	0	0	0	0	0	100	100
116	ALIF ALIFU ATOLL	0	0	64	0	47	9	0	21
117	Thoddoo	0	0	100	0	0	0	0	0
118	RASDHOO	0	0	0	0	0	0	0	0
119	Ukulhas	0	0	100	0	100	0	0	100
120	Mathiveri	0	0	0	0	100	100	0	0
121	Bodufolhudhoo	0	0	100	0	100	0	0	0
122	Feridhoo	0	0	100	0	0	0	0	0
123	Maalhos	0	0	0	0	100	0	0	0
124	Himendhoo	0	0	100	0	100	0	0	100
125	ALIFU DHAALU ATOLL	0	8	48	4	5	17	0	30
126	Hangnameedhoo	0	0	100	0	0	0	0	100
127	Omadhoo	0	0	0	0	0	0	0	0
128	Kuburudhoo	0	0	0	0	100	100	0	0
129	MAHIBADHOO	0	0	0	0	0	0	0	0
130	Mandhoo	0	0	100	100	0	100	0	0
131	Dhagethi	0	0	0	0	0	0	0	0
132	Dhigurah	0	0	100	0	0	0	0	0
133	Fenfushi	0	100	100	0	0	100	0	0
134	Dhidhdhoo	0	0	0	0	0	0	0	0
135	Maamigili	0	0	100	0	0	0	0	100
136	VAAVU ATOLL	0	0	86	4	10	4	0	
137	Fulidhoo	0	0	100	0	0	0	0	0
138	Thinadhoo	0	0	0	100	0	100	0	0
139	FELIDHOO	0	0	100	0	0	0	0	0
140	Keyodhoo	0	0	100	0	0	0	0	0
141	Rakeedhoo	0	0	0	0	100	0	0	0
142	MEEMU ATOLL	0	0	51	0	9	14	25	25
143	Raimandhoo	0	0	100	0	100	0	0	0
144	Madifushi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.



Education 1

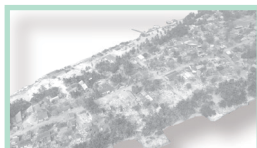
		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
145	Veyvah	0	0	0	0	0	0	0	0
146	Mulah	0	0	0	0	0	0	100	100
147	MULI	0	0	100	0	0	0	0	0
148	Naalaafushi	0	0	100	0	100	100	0	0
149	Kolhufushi	0	0	100	0	0	0	0	0
150	Dhiggaru	0	0	0	0	0	0	0	0
151	Maduvvari	0	0	100	0	0	100	0	0
152	FAAFU ATOLL	0	0	55	0	6	0	26	39
153	Feeali	0	0	100	0	0	0	0	0
154	Biledhdhoo	0	0	0	0	0	0	100	100
155	Magoodhoo	0	0	0	0	0	0	0	100
156	Dharaboodhoo	0	0	0	0	100	0	0	0
157	NILANDHOO	0	0	100	0	0	0	0	0
158	DHAALU ATOLL	0	0	49	0	5	14	7	37
159	Meedhoo	0	0	100	0	0	0	0	100
160	Badidhoo	0	0	100	0	0	100	0	0
161	Ribudhoo	0	0	0	0	0	0	100	100
162	Hulhudheli	0	0	0	0	0	0	0	0
163	Gemendhoo	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
164	Vaanee	0	0	100	0	100	0	0	0
165	Maaebodhoo	0	0	100	0	0	0	0	100
166	KUDAHUVADHOO	0	0	0	0	0	0	0	0
167	THAA ATOLL	0	0	48	0	19	0		12
168	Buruni	0	0	100	0	0	0	0	100
169	Vilufushi	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
170	Madifushi	0	0	100	0	0	0	0	0
171	Dhiyamigili	0	0	100	0	0	0	0	0
172	Guraidhoo	0	0	0	0	0	0	0	0
173	Kadoodhoo	0	0	0	0	0	0	0	0
174	Vandhoo	0	0	100	0	100	0	0	0
175	Hirilandhoo	0	0	0	0	100	0	0	0
176	Gaadhiffushi	0	0	0	0	100	0	0	0
177	Thimarafushi	0	0	100	0	0	0	0	0
178	VEYMANDOO	0	0	100	0	0	0	0	100
179	Kibidhoo	0	0	0	0	0	0	0	0
180	Omadhoo	0	0	100	0	100	0	0	0



Education I

158

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
181	LAAMU ATOLL	0	0	40	0	8	4	24	38
182	Isdhoo	0	0	100	0	0	0	100	100
183	Dhabidhoo	0	0	0	0	100	0	100	100
184	Maabaidhoo	0	0	100	0	0	0	0	100
185	Mundoo	0	0	100	0	0	100	0	0
186	Kalhaidhoo	0	0	100	0	100	0	0	0
187	Gamu	0	0	0	0	0	0	0	0
188	Maavah	0	0	0	0	0	0	0	0
189	FONADHOO	0	0	0	0	0	0	0	0
190	Gaadhoo	0	0	0	0	0	0	0	0
191	Maamendhoo	0	0	100	0	0	0	100	100
192	Hithadhoo	0	0	0	0	0	0	0	100
193	Kunahandhoo	0	0	100	0	0	0	0	0
194	GAAFU ALIFU ATOLL	0	0	40	0	10	13	5	11
195	Kolamaafushi	0	0	100	0	0	0	0	0
196	VILLINGILI	0	0	0	0	0	0	0	0
197	Maamendhoo	0	0	0	0	0	0	0	0
198	Nilandhoo	0	0	100	0	0	0	100	100
199	Dhaandhoo	0	0	0	0	0	0	0	0
200	Dhevvdhoo	0	0	0	0	0	0	0	100
201	Kodey	0	0	100	0	100	0	0	0
202	Dhiyadhoo	0	0	100	0	100	100	0	0
203	Gemanafushi	0	0	100	0	0	100	0	0
204	Kanduhulhudhoo	0	0	100	0	100	0	0	0
205	GAAFU DHAALU ATOLL	0	0	33	0	24	5	0	36
206	Madeveli	0	0	0	0	0	0	0	0
207	Hoadedhdhoo	0	0	100	0	0	100	0	0
208	Nadallaa	0	0	100	0	100	0	0	0
209	Gadhdhoo	0	0	100	0	0	0	0	0
210	Rathafandhoo	0	0	0	0	100	0	0	0
211	Vaadhoo	0	0	100	0	100	0	0	0
212	Fiyoari	0	0	0	0	100	0	0	0
213	Maathodaa	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
214	Fares	0	0	0	0	0	0	0	0
215	THINADHOO	0	0	0	0	0	0	0	100
216	GNAVIYANI ATOLL	0	0	100	0	0	0	0	0



Education 1

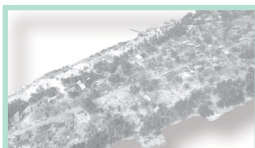
		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no drinking water in school	no toilet in school	no nursery	grade 5 as high- est grade	grade 6 or 7 as high- est grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
217	FOAMMULAH	0	0	1	0	0	0	0	0
218	SEENU ATOLL	0	0	6	11	9	0	52	52
219	Meedhoo	0	0	0	0	100	0	0	0
220	HITHADHOO	0	0	0	0	0	0	100	100
221	Maradhoo	0	0	0	100	0	0	0	0
222	Feydhoo	0	0	0	0	0	0	0	0
223	Maradhoo-Feydhoo	0	0	100	0	0	0	0	0
224	Hulhudhoo	0	0	0	0	0	0	0	0



Education 2

160

	2005	2005
Atoll / Island name	highest grade in school	Student/ trained teacher ratio (primary school)
1 Maldives		
2 Male'	12	n.a.
3 Atoll average		
4 HAA ALIFU ATOLL		
5 Thurakunu	7	82
6 Uligamu	7	38
7 Berinmadhoo	3	6
8 Hathifushi	7	23
9 Mulhadhoo	6	n.t.t.
10 Hoarafushi	10	38
11 Ihavandhoo	12	114
12 Kelaa	10	18
13 Vashafaru	7	48
14 DHIDHDHOO	10	22
15 Filladhoo	7	20
16 Maarandhoo	7	17
17 Thakandhoo	7	27
18 Utheemu	8	15
19 Muraidhoo	7	40
20 Baarah	9	86
21 HAA DHAALU ATOLL		
22 Faridhoo	5	12
23 Hondaidthoo		
24 Hanimaadhoo	10	51
25 Finey	6	n.t.t.
26 Naivaadhoo	7	53
27 Hirimaradhoo	6	56
28 Nolvivaranfaru	7	34
29 Nellaidhoo	8	32
30 Nolvivaramu	10	41
31 Kuribi	7	32
32 Kuburudhoo	4	n.t.t.
33 KULHUDHUFFUSHI	12	20
34 Kumundhoo	8	141
35 Neykurendhoo	9	30
36 Vaikaradhoo	10	23
37 Maavaidthoo	7	n.t.t.
38 Makunudhoo	9	30
39 SHAVIYANI ATOLL		



Education 2

161

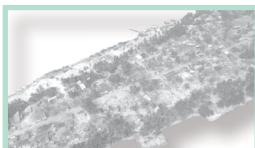
	2005	2005
Atoll / Island name	highest grade in school	Student/ trained teacher ratio (primary school)
40 Kaditheemu	11	n.a.
41 Noomaraa	8	39
42 Goidhoo	8	65
43 Feydhoo	8	42
44 Feevah	10	67
45 Bilehffahi	8	n.t.t.
46 Foakaidhoo	10	24
47 Narudhoo	8	15
48 Maakandoodhoo	7	15
49 Maroshi	10	13
50 Lhaimagu	9	137
51 Firubaidhoo	n.a.	n.a.
52 Komandoo	12	10
53 Maaugoodhoo	10	31
54 FUNADHOO	10	38
55 Milandhoo	10	51
56 NOONU ATOLL		
57 Hebadhoo	7	38
58 Kedhikolhudhoo	10	44
59 Maalhendhoo	8	92
60 Kudafari	10	27
61 Landhoo	8	285
62 Maafaru	8	63
63 Lhohi	8	50
64 Miladhoo	8	37
65 Magoodhoo	6	25
66 MANADHOO	10	28
67 Holhudhoo	10	18
68 Fodhdhoo	7	23
69 Velidhoo	12	23
70 RAA ATOLL		
71 Alifushi	12	76
72 Vaadhoo	7	49
73 Rasgetheemu	7	134
74 Agolhitheemu	7	22
75 Hulhudhuffaaru	10	104
76 UGUFAARU	10	85
77 Kadhohudhoo	n.a.	n.a.
78 Maakurathu	10	107



Education 2

162

	2005	2005
Atoll / Island name	highest grade in school	Student/ trained teacher ratio (primary school)
79 Rasmaadhoo	10	32
80 Innamaadhoo	9	183
81 Maduvvari	10	36
82 Iguraadhoo	10	32
83 Fainu	7	21
84 Meedhoo	11	86
85 Kinolhas	7	109
86 BAA ATOLL		
87 Kudarikilu	9	31
88 Kamadhoo	4	24
89 Kendhoo	10	21
90 Kihaadhoo	7	n.t.t.
91 Dhonfanu	7	n.t.t.
92 Dharavandhoo	10	14
93 Maalhos	6	9
94 EYDHAFUSHI	12	26
95 Thulhaadhoo	12	28
96 Hithaadhoo	10	14
97 Fulhadhoo	7	17
98 Fehendhoo	7	n.t.t.
99 Goidhoo	8	19
100 LHAVIYANI ATOLL		
101 Hinnavaru	12	22
102 NAIFARU	11	25
103 Kurendhoo	10	35
104 Olhuvelifushi	7	41
105 Maafilaafushi	7	n.t.t.
106 KAAFU ATOLL		
107 Kaashidhoo	10	26
108 Gaafaru	7	30
109 Dhiffushi	10	37
110 THULUSDHOO	10	19
111 Huraa	10	28
112 Himmafushi	7	63
113 Gulhi	7	49
114 Maafushi	10	53
115 Guraidhoo	9	270
116 ALIF ALIFU ATOLL		
117 Thoddoo	10	35



Education 2

163

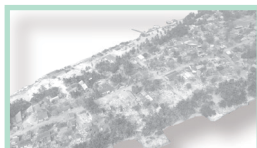
	2005	2005
Atoll / Island name	highest grade in school	Student/ trained teacher ratio (primary school)
118 RASDHOO	10	33
119 Ukulhas	7	59
120 Mathiveri	7	n.t.t.
121 Bodufolhudhoo	7	45
122 Feridhoo	10	28
123 Maalhos	6	17
124 Himendhoo	7	63
125 ALIFU DHAALU ATOLL		
126 Hangnameedhoo	10	70
127 Omadhoo	9	38
128 Kuburudhoo	7	n.t.t.
129 MAHIBADHOO	12	17
130 Mandhoo	5	n.t.t.
131 Dhagethi	10	44
132 Dhigurah	8	72
133 Fenfushi	10	n.t.t.
134 Dhidhdhoo	6	9
135 Maamigili	10	148
136 VAAVU ATOLL		
137 Fulidhoo	10	35
138 Thinadhoo	4	n.t.t.
139 FELIDHOO	10	18
140 Keyodhoo	10	16
141 Rakeedhoo	7	28
142 MEEMU ATOLL		
143 Raimandhoo	7	33
144 Madifushi	n.a.	n.a.
145 Veyvah	6	26
146 Mulah	10	280
147 MULI	10	37
148 Naalaafushi	6	n.t.t.
149 Kolhufushi	10	22
150 Dhiggaru	10	16
151 Maduvvari	8	n.t.t.
152 FAAFU ATOLL		
153 Feeali	10	48
154 Biledhdhoo	10	116
155 Magoodhoo	10	64
156 Dharaboodhoo	7	13



Education 2

164

	2005	2005
Atoll / Island name	highest grade in school	Student/ trained teacher ratio (primary school)
157 NILANDHOO	10	37
158 DHAALU ATOLL		
159 Meedhoo	10	70
160 Badidhoo	10	n.t.t.
161 Ribudhoo	9	108
162 Hulhudheli	10	23
163 Gemendhoo	n.a.	n.a.
164 Vaanee	7	25
165 Maaebodhoo	9	79
166 KUDAHUVADHOO	11	27
167 THAA ATOLL		
168 Buruni	10	82
169 Vilufushi	n.a.	n.a.
170 Madifushi	8	45
171 Dhiyamigili	8	24
172 Guraidhoo	10	40
173 Kadoodhoo	8	14
174 Vandhoo	7	38
175 Hirilandhoo	7	39
176 Gaadhiffushi	7	49
177 Thimarafushi	10	42
178 VEYMANDOO	10	85
179 Kibidhoo	10	23
180 Omadhoo	7	24
181 LAAMU ATOLL		
182 Isdhoo	10	175
183 Dhabidhoo	7	131
184 Maabaidhoo	10	90
185 Mundoo	8	n.t.t.
186 Kalhaidhoo	7	33
187 Gamu	10	31
188 Maavah	10	20
189 FONADHOO	12	21
190 Gaadhoo	6	41
191 Maamendhoo	10	248
192 Hithadhoo	8	94
193 Kunahandhoo	8	44
194 GAAFU ALIFU ATOLL		
195 Kolamaafushi	10	29



Education 2

165

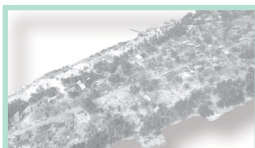
	2005	2005
Atoll / Island name	highest grade in school	Student/ trained teacher ratio (primary school)
196 VILLINGILI	12	19
197 Maamendhoo	10	35
198 Nilandhoo	9	169
199 Dhaandhoo	10	33
200 Dheevadhoo	9	69
201 Kodey	7	17
202 Dhiyadhoo	7	n.t.t.
203 Gemanafushi	9	n.t.t.
204 Kanduhulhudhoo	7	35
205 GAAFU DHAALU ATOLL		
206 Madeveli	10	27
207 Hoadedhdhoo	10	n.t.t.
208 Nadallaa	7	42
209 Gadhdhoo	10	27
210 Rathafandhoo	7	23
211 Vaadhoo	7	27
212 Fiyoari	7	30
213 Maathodaa	n.a.	n.a.
214 Fares	9	42
215 THINADHOO	10	91
216 GNAVIYANI ATOLL		
217 FOAMMULAH	12	18
218 SEENU ATOLL		
219 Meedhoo	6	19
220 HITHADHOO	12	130
221 Maradhoo	5	24
222 Feydhoo	10	28
223 Maradhoo-Feydhoo	10	23
224 Hulhudhoo	10	22
n.t.t. No trained teacher in primary school		



Health 1

166

		2005	2005
	Atoll / Island name	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital
1	Maldives	20	1
2	Male'	0	0
3	Atoll average	28	2
4	HAA ALIFU ATOLL	22	0
5	Thurakunu	100	0
6	Uligamu	0	0
7	Berinmadhoo	100	0
8	Hathifushi	100	0
9	Mulhadhoo	100	0
10	Hoarafushi	0	0
11	Ihavandhoo	0	0
12	Kelaa	0	0
13	Vashafaru	100	0
14	DHIDHDHOO	0	0
15	Filladhoo	100	0
16	Maarandhoo	100	0
17	Thakandhoo	100	0
18	Utheemu	0	0
19	Muraidhoo	100	0
20	Baarah	0	0
21	HAA DHAALU ATOLL	20	0
22	Faridhoo	100	0
23	Hondaaidhoo		
24	Hanimaadhoo	0	0
25	Finey	100	0
26	Naivaadhoo	100	0
27	Hirimaradhoo	100	0
28	Nolhivaranfaru	0	0
29	Nellaidhoo	100	0
30	Nolhivaramu	0	0
31	Kuribi	100	0
32	Kuburudhoo	100	0
33	KULHUDHUFFUSHI	0	0
34	Kumundhoo	100	0
35	Neykurendhoo	0	0
36	Vaikaradhoo	0	0
37	Maavaidhoo	100	0
38	Makunudhoo	0	0
39	SHAVIYANI ATOLL	47	0



Health 1

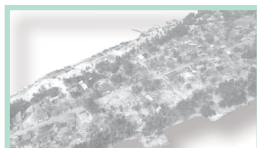
		2005	2005
	Atoll / Island name	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital
40	Kaditheemu	0	0
41	Noomaraa	100	0
42	Goidhoo	100	0
43	Feydhoo	100	0
44	Feevah	100	0
45	Bilehffahi	0	0
46	Foakaidhoo	100	0
47	Narudhoo	100	0
48	Maakandoodhoo	100	0
49	Maroshi	100	0
50	Lhaimagu	100	0
51	Firubaidhoo	n.a.	n.a.
52	Komandoo	0	0
53	Maaugoodhoo	0	0
54	FUNADHOO	0	0
55	Milandhoo	0	0
56	NOONU ATOLL	42	0
57	Hebadhoo	100	0
58	Kedhikolhudhoo	0	0
59	Maalhendhoo	100	0
60	Kudafari	100	0
61	Landhoo	100	0
62	Maafaru	100	0
63	Lhohi	100	0
64	Miladhoo	100	0
65	Magoodhoo	100	0
66	MANADHOO	0	0
67	Holhudhoo	0	0
68	Fodhdhoo	100	0
69	Velidhoo	0	0
70	RAA ATOLL	41	0
71	Alifushi	0	0
72	Vaadhoo	100	0
73	Rasgetheemu	100	0
74	Agolhitheemu	100	0
75	Hulhudhuffaar	0	0
76	UGUFAARU	0	0
77	Kadholhudhoo	n.a.	n.a.
78	Maakurathu	100	0



Health 1

168

		2005	2005
	Atoll / Island name	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital
79	Rasmaadhoo	100	0
80	Innamaadhoo	100	0
81	Maduvvari	0	0
82	Iguraidhoo	100	0
83	Fainu	100	0
84	Meedhoo	0	0
85	Kinolhas	100	0
86	BAA ATOLL	23	0
87	Kudarikilu	100	0
88	Kamadhoo	100	0
89	Kendhoo	0	0
90	Kihaadhoo	100	0
91	Dhonfanu	100	0
92	Dharavandhoo	0	0
93	Maalhos	100	0
94	EYDHAFUSHI	0	0
95	Thulhaadhoo	0	0
96	Hithaadhoo	n.a.	0
97	Fulhadhoo	100	0
98	Fehendhoo	100	0
99	Goidhoo	0	0
100	LHAVIYANI ATOLL	18	0
101	Hinnavaru	0	0
102	NAIFARU	0	0
103	Kurendhoo	100	0
104	Olhuvelifushi	100	0
105	Maafilaafushi	0	0
106	KAAFU ATOLL	26	20
107	Kaashidhoo	0	100
108	Gaafaru	100	0
109	Dhiffushi	100	0
110	THULUSDHOO	0	0
111	Huraa	0	0
112	Himmafushi	0	0
113	Gulhi	100	0
114	Maafushi	0	0
115	Guraidhoo	0	0
116	ALIF ALIFU ATOLL	36	0
117	Thoddoo	0	0



Health 1

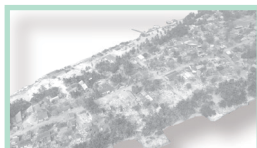
		2005	2005
	Atoll / Island name	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital
118	RASDHOO	0	0
119	Ukulhas	100	0
120	Mathiveri	100	0
121	Bodufolhudhoo	100	0
122	Feridhoo	0	0
123	Maalhos	100	0
124	Himendhoo	0	0
125	ALIFU DHAALU ATOLL	35	4
126	Hangnameedhoo	100	0
127	Omadhoo	100	0
128	Kuburudhoo	100	0
129	MAHIBADHOO	0	0
130	Mandhoo	100	100
131	Dhagethi	0	0
132	Dhigurah	0	0
133	Fenfushi	100	0
134	Dhidhdhoo	100	0
135	Maamigili	0	0
136	VAAVU ATOLL	71	0
137	Fulidhoo	100	0
138	Thinadhoo	100	0
139	FELIDHOO	0	0
140	Keyodhoo	100	0
141	Rakeedhoo	100	0
142	MEEMU ATOLL	53	0
143	Raimandhoo	100	0
144	Madifushi	n.a.	n.a.
145	Veyvah	n.a.	0
146	Mulah	100	0
147	MULI	0	0
148	Naalaafushi	n.a.	0
149	Kolhufushi	0	0
150	Dhiggaru	100	0
151	Maduvvari	0	0
152	FAAFU ATOLL	55	0
153	Feeali	100	0
154	Biledhdhoo	100	0
155	Magoodhoo	0	0
156	Dharaboodhoo	100	0



Health 1

170

		2005	2005
	Atoll / Island name	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital
157	NILANDHOO	0	0
158	DHAALU ATOLL	56	0
159	Meedhoo	100	0
160	Badidhoo	0	0
161	Ribudhoo	100	0
162	Hulhudheli	100	0
163	Gemendhoo	n.a.	0
164	Vaanee	100	0
165	Maaeboodhoo	100	0
166	KUDAHUVADHOO	0	0
167	THAA ATOLL	54	0
168	Buruni	100	0
169	Vilufushi	n.a.	n.a.
170	Madifushi	100	0
171	Dhiyamigili	100	0
172	Guraidhoo	0	0
173	Kadoodhoo	100	0
174	Vandhoo	100	0
175	Hirilandhoo	0	0
176	Gaadhiffushi	100	0
177	Thimarafushi	n.a.	0
178	VEYMANDOO	0	0
179	Kibidhoo	100	0
180	Omadhoo	100	0
181	LAAMU ATOLL	27	0
182	Isdhoo	0	0
183	Dhabidhoo	100	0
184	Maabaidhoo	0	0
185	Mundoo	100	0
186	Kalhaidhoo	100	0
187	Gamu	0	0
188	Maavah	0	0
189	FONADHOO	0	0
190	Gaadhoo	100	0
191	Maamendhoo	100	0
192	Hithadhoo	0	0
193	Kunahandhoo	100	0
194	GAAFU ALIFU ATOLL	28	12
195	Kolamaafushi	0	0



Health 1

171

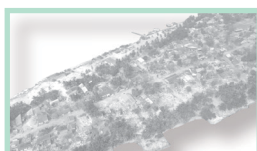
		2005	2005
	Atoll / Island name	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital
196	VILLINGILI	0	0
197	Maamendhoo	100	0
198	Nilandhoo	100	0
199	Dhaandhoo	0	0
200	Dheevadhoo	100	0
201	Kodey	100	0
202	Dhiyadhoo	100	0
203	Gemanafushi	0	100
204	Kanduhulhudhoo	0	0
205	GAAFU DHAALU ATOLL	35	0
206	Madeveli	100	0
207	Hoadedhdhoo	100	0
208	Nadallaa	100	0
209	Gadhdhoo	0	0
210	Rathafandhoo	100	0
211	Vaadhoo	0	0
212	Fiyoari	0	0
213	Maathodaa	n.a.	n.a.
214	Fares	100	0
215	THINADHOO	0	0
216	GNAVIYANI ATOLL	0	0
217	FOAMMULAH	0	0
218	SEENU ATOLL	6	0
219	Meedhoo	0	0
220	HITHADHOO	0	0
221	Maradhoo	0	0
222	Feydhoo	0	0
223	Maradhoo-Feydhoo	100	0
224	Hulhudhoo	0	0



Health 2

172

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
1	Maldives	17	20	0	1	22	39	49	59
2	Male'	0	0	0	0	0	0	0	0
3	Atoll average	24	29	0	1	31	56	69	59
4	HAA ALIFU ATOLL	22	26	0	0	38	42	80	100
5	Thurakunu	100	100	0	0	100	100	100	100
6	Uligamu	0	0	0	0	100	0	100	100
7	Berinmadhoo	100	100	0	0	100	100	100	100
8	Hathifushi	100	100	0	0	100	100	100	100
9	Mulhadhoo	100	100	0	0	100	100	100	100
10	Hoarafushi	0	0	0	0	0	0	100	100
11	Ihavandhoo	0	0	0	0	0	0	100	100
12	Kelaa	0	0	0	0	100	0	100	100
13	Vashafaru	100	100	0	0	100	100	100	100
14	DHIDHDHOO	0	0	0	0	0	100	0	100
15	Filladhoo	100	100	0	0	100	100	100	100
16	Maarandhoo	100	100	0	0	100	100	100	100
17	Thakandhoo	100	100	0	0	100	100	100	100
18	Utheemu	0	100	0	0	100	0	100	100
19	Muraiddhoo	100	100	0	0	100	100	100	100
20	Baarah	0	0	0	0	0	0	100	100
21	HAA DHAALU ATOLL	26	20	0	0	31	66	54	98
22	Faridhoo	100	100	0	0	100	100	100	100
23	Hondaiddhoo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
24	Hanimaadhoo	0	0	0	0	0	0	100	100
25	Finney	100	100	0	0	100	100	100	100
26	Naivaadhoo	100	100	0	0	100	100	100	0
27	Hirimaradhoo	100	100	0	0	100	100	100	100
28	Nolhivaranfaru	0	0	0	0	100	0	100	100
29	Nellaidhoo	100	100	0	0	0	100	100	100
30	Nolhivaramu	0	0	0	0	100	0	100	100
31	Kuribi	100	100	0	0	100	100	100	100
32	Kuburudhoo	100	100	0	0	100	100	100	100
33	KULHUDHUFFUSHI	0	0	0	0	0	100	0	100
34	Kumundhoo	100	100	0	0	100	100	100	100
35	Neykurendhoo	0	0	0	0	100	0	100	100
36	Vaikaradhoo	100	0	0	0	0	0	100	100
37	Maavaidhoo	100	100	0	0	100	100	100	100



Health 2

173

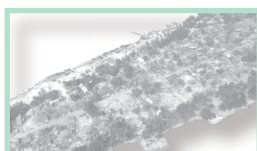
		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
38	Makunudhoo	0	0	0	0	0	0	100	100
39	SHAVIYANI ATOLL	36	47	1	0	47	59	88	82
40	Kaditheemu	0	0	0	0	0	0	100	100
41	Noomaraa	100	100	0	0	100	100	100	100
42	Goidhoo	100	100	0	0	100	100	100	100
43	Feydhoo	100	100	0	0	100	100	100	100
44	Feevah	100	100	0	0	100	100	100	100
45	Bilehffahi	0	0	0	0	0	0	100	100
46	Foakaidhoo	0	100	0	0	100	100	100	100
47	Narudhoo	100	100	0	0	100	100	100	100
48	Maakandoodhoo	100	100	0	0	100	100	100	100
49	Maroshi	100	100	0	0	100	100	100	100
50	Lhaimagu	100	100	0	0	100	100	100	0
51	Firubaidhoo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
52	Komandoo	0	0	0	0	0	0	100	0
53	Maaugoodhoo	0	0	0	0	0	0	100	100
54	FUNADHOO	0	0	0	0	0	100	0	100
55	Milandhoo	0	0	0		0	0	100	100
56	NOONU ATOLL	36	42	0	6	36	54	88	34
57	Hebadhoo	100	100	0	0	100	100	100	100
58	Kedhikolhudhoo	0	0	0	0	0	0	100	100
59	Maalhendhoo	100	100	0	0	100	100	100	100
60	Kudafari	100	100	0	0	100	100	100	0
61	Landhoo	0	100	0	100	0	100	100	0
62	Maafaru	100	100	0	0	100	100	100	0
63	Lhohi	100	100	0	0	100	100	100	100
64	Miladhoo	100	100	0	0	100	100	100	100
65	Magoodhoo	100	100	0	0	100	100	100	0
66	MANADHOO	0	0	0	0	0	100	0	0
67	Holhudhoo	0	0	0	0	0	0	100	0
68	Fodhdhoo	100	100	0	0	100	100	100	0
69	Velidhoo	0	0	0	0	0	0	100	0
70	RAA ATOLL	30	41	0	0	30	51	90	37
71	Alifushi	0	0	0	0	0	0	100	100
72	Vaadhoo	100	100	0	0	100	100	100	100
73	Rasgetheemu	100	100	0	0	100	100	100	100
74	Agolhitheemu	100	100	0	0	100	100	100	100



Health 2

174

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
75	Hulhudhuffaar	0	0	0	0	0	0	100	n a
76	UGUFAARU	0	0	0	0	0	100	0	0
77	Kadholhudhoo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
78	Maakurathu	100	100	0	0	100	100	100	100
79	Rasmaadhoo	100	100	0	0	100	100	100	0
80	Innamaadhoo	100	100	0	0	100	100	100	0
81	Maduvvari	0	0	0	0	0	0	100	100
82	Iguraidhoo	0	100	0	0	0	100	100	0
83	Fainu	100	100	0	0	100	100	100	0
84	Meedhoo	0	0	0	0	0	0	100	0
85	Kinolhas	100	100	0	0	100	100	100	100
86	BAA ATOLL	23	23	0	0	29	53	71	0
87	Kudarikilu	100	100	0	0	100	100	100	0
88	Kamadhoo	100	100	0	0	100	100	100	0
89	Kendhoo	0	0	0	0	0	0	100	0
90	Kihaadhoo	100	100	0	0	100	100	100	0
91	Dhonfanu	100	100	0	0	100	100	100	0
92	Dharavandhoo	0	0	0	0	0	0	100	0
93	Maalhos	100	100	0	0	100	100	100	0
94	EYDHAFUSHI	0	0	0	0	0	100	0	0
95	Thulhaadhoo	0	0	0	0	0	0	100	0
96	Hithaadhoo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
97	Fulhadhoo	100	100	0	0	100	100	100	0
98	Fehendhoo	100	100	0	0	100	100	100	0
99	Goidhoo	0	0	0	0	100	0	100	0
100	LHAVIYANI ATOLL	4	20	0	2	4	63	55	0
101	Hinnavaru	0	0	0	0	0	0	100	0
102	NAIFARU	0	0	0	0	0	100	0	0
103	Kurendhoo	0	100	0	0	0	100	100	0
104	Olhuvelifushi	100	100	0	0	100	100	100	0
105	Maafilaafushi	0	100	0	100	0	0	100	0
106	KAAFU ATOLL	32	41	0	0	54	27	100	0
107	Kaashidhoo	0	0	0	0	0	0	100	0
108	Gaafaru	0	100	0	0	100	100	100	0
109	Dhiffushi	100	100	0	0	100	100	100	0
110	THULUSDHOO	0	0	0	0	100	0	100	0
111	Huraa	0	0	0	0	100	0	100	0



Health 2

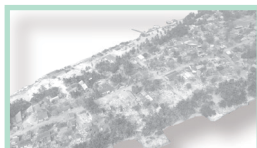
		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
112	Himmafushi	0	0	0	0	100	0	100	0
113	Gulhi	100	100	0	0	100	100	100	0
114	Maafushi	0	0	0	0	0	0	100	0
115	Guraidhoo	100	100	0	0	0	0	100	0
116	ALIF ALIFU ATOLL	36	36	0	20	36	36	100	0
117	Thoddoo	0	0	0	0	0	0	100	0
118	RASDHOO	0	0	0	0	0	0	100	0
119	Ukulhas	100	100	0	100	100	100	100	0
120	Mathiveri	100	100	0	0	100	100	100	0
121	Bodufolhudhoo	100	100	0	100	100	100	100	0
122	Feridhoo	0	0	0	0	0	0	100	0
123	Maalhos	100	100	0	0	100	100	100	0
124	Himendhoo	0	0	0	0	0	0	100	0
125	ALIFU DHAALU ATOLL	25	35	5	1	25	61	74	0
126	Hangnameedhoo	100	100	0	0	100	100	100	0
127	Omadhoo	0	100	0	0	0	100	100	0
128	Kuburudhoo	100	100	100	0	100	100	100	0
129	MAHIBADHOO	0	0	0	0	0	100	0	0
130	Mandhoo	100	100	0	0	100	100	100	0
131	Dhagethi	0	0	0	0	0	0	100	0
132	Dhigurah	0	0	0	0	0	0	100	0
133	Fenfushi	100	100	0	0	100	100	100	0
134	Dhidhdhoo	100	100	0	100	100	100	100	0
135	Maamigili	0	0	0	0	0	0	100	0
136	VAAVU ATOLL	71	71	0	0	71	71	100	0
137	Fulidhoo	100	100	0	0	100	100	100	0
138	Thinadhoo	100	100	0	0	100	100	100	0
139	FELIDHOO	0	0	0	0	0	0	100	0
140	Keyodhoo	100	100	0	0	100	100	100	0
141	Rakeedhoo	100	100	0	0	100	100	100	0
142	MEEMU ATOLL	32	53	0	0	25	71	82	0
143	Raimandhoo	100	100	0	0	100	100	100	0
144	Madifushi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
145	Veyvah	n.a.	n.a.	0	n.a.	n.a.	n.a.	n.a.	0
146	Mulah	100	100	0	0	0	100	100	0
147	MULI	0	0	0	0	0	100	0	0
148	Naalaafushi	n.a.	n.a.	0	n.a.	n.a.	n.a.	n.a.	0



Health 2

176

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
149	Kolhufushi	0	0	0	0	0	0	100	0
150	Dhiggaru	0	100	0	0	100	100	100	0
151	Maduvvari	0	0	0	0	0	0	100	0
152	FAAFU ATOLL	55	55	0	0	55	55	100	0
153	Feeali	100	100	0	0	100	100	100	0
154	Biledhdhoo	100	100	0	0	100	100	100	0
155	Magoodhoo	0	0	0	0	0	0	100	0
156	Dharaboodhoo	100	100	0	0	100	100	100	0
157	NILANDHOO	0	0	0	0	0	0	100	0
158	DHAALU ATOLL	56	56	5	0	37	85	71	12
159	Meedhoo	100	100	0	0	0	100	100	0
160	Badidhoo	0	0	0	0	0	0	100	0
161	Ribudhoo	100	100	0	0	100	100	100	0
162	Hulhudheli	100	100	0	0	100	100	100	0
163	Gemendhoo	na	na	0	na	na	na	na	0
164	Vaanee	100	100	100	0	100	100	100	0
165	Maaeboodhoo	100	100	0	0	100	100	100	100
166	KUDAHUVADHOO	0	0	0	0	0	100	0	0
167	THAA ATOLL	38	54	0	0	73	68	86	100
168	Buruni	0	100	0	0	100	100	100	100
169	Vilufushi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
170	Madifushi	100	100	0	0	100	100	100	100
171	Dhiyamigili	100	100	0	0	100	100	100	100
172	Guraidhoo	0	0	0	0	100	0	100	100
173	Kadoodhoo	100	100	0	0	100	100	100	100
174	Vandhoo	100	100	0	0	100	100	100	100
175	Hirilandhoo	0	0	0	0	0	0	100	100
176	Gaadhiffushi	100	100	0	0	100	100	100	100
177	Thimarafushi	na	na	0	na	na	na	na	100
178	VEYMANDOO	0	0	0	0	0	100	0	100
179	Kibidhoo	0	100	0	0	100	100	100	100
180	Omadhoo	100	100	0	0	100	100	100	100
181	LAAMU ATOLL	39	27	0	0	27	46	81	65
182	Isdhoo	0	0	0	0	0	0	100	100
183	Dhabidhoo	0	100	0	0	100	100	100	100
184	Maabaidhoo	0	0	0	0	0	0	100	100
185	Mundoo	100	100	0	0	100	100	100	0



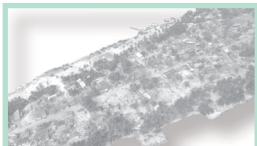
Health 2

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
186	Kalhaidhoo	100	100	0	0	100	100	100	100
187	Gamu	0	0	0	0	0	100	0	100
188	Maavah	0	0	0	0	0	0	100	100
189	FONADHOO	100	0	0	0	0	0	100	0
190	Gaadhoo	100	100	0	0	100	100	100	100
191	Maamendhoo	100	100	0	0	100	100	100	0
192	Hithadhoo	0	0	0	0	0	0	100	0
193	Kunahandhoo	100	100	0	0	100	100	100	100
194	GAAFU ALIFU ATOLL	15	28	0	0	42	55	73	100
195	Kolamaafushi	0	0	0	0	0	0	100	100
196	VILLINGILI	0	0	0	0	0	100	0	100
197	Maamendhoo	0	100	0	0	100	100	100	100
198	Nilandhoo	100	100	0	0	100	100	100	100
199	Dhaandhoo	0	0	0	0	100	0	100	100
200	Dhevvadhoo	100	100	0	0	100	100	100	100
201	Kodey	100	100	0	0	100	100	100	100
202	Dhiyadhoo	100	100	0	0	100	100	100	100
203	Gemanafushi	0	0	0	0	0	0	100	100
204	Kanduhulhudhoo	0	0	0	0	0	0	100	100
205	GAAFU DHAALU ATOLL	12	35	0	0	30	71	64	100
206	Madeveli	0	100	0	0	100	100	100	100
207	Hoadedhdhoo	100	100	0	0	100	100	100	100
208	Nadallaa	100	100	0	0	100	100	100	100
209	Gadhdhoo	0	0	0	0	0	0	100	100
210	Rathafandhoo	0	100	0	0	0	100	100	100
211	Vaadhoo	0	0	0	0	0	0	100	100
212	Fiyoari	0	0	0	0	0	0	100	100
213	Maathodaa	0	100	0	0	100	100	100	100
214	Fares	0	100	0	0	100	100	100	100
215	THINADHOO	0	0	0	0	0	100	0	100
216	GNAVIYANI ATOLL	0	0	0	0	0	100	0	100
217	FOAMMULAH	0	0	0	0	0	100	0	100
218	SEENU ATOLL	0	0	0	0	11	58	48	100
219	Meedhoo	0	0	0	0	0	0	100	100
220	HITHADHOO	0	0	0	0	0	100	0	100
221	Maradhoo	0	0	0	0	100	0	100	100
222	Feydhoo	0	0	0	0	0	0	100	100



Health 2

		2005	2005	2005	2005	2005	2005	2005	2005
	Atoll / Island name	no doctor	no nurse	no health worker	no mid- wife	no phar- macist	no health center	no hos- pital or private clinic	more then twelve hours to Male'
223	Maradhoo-Feydhoo	0	0	0	0	0	100	100	100
224	Hulhudhoo	0	0	0	0	0	0	100	100



Environment 1

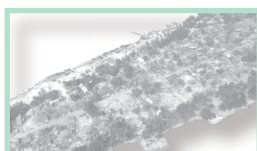
2005		
	Atoll / Island name	further beach erosion
1	Maldives	33
2	Male'	0
3	Atoll average	47
4	HAA ALIFU ATOLL	44
5	Thurakunu	0
6	Uligamu	0
7	Berinmadhoo	100
8	Hathifushi	0
9	Mulhadhoo	0
10	Hoarafushi	0
11	Ihavandhoo	100
12	Kelaa	0
13	Vashafaru	100
14	DHIDHDHOO	100
15	Filladhoo	0
16	Maarandhoo	0
17	Thakandhoo	0
18	Utheemu	0
19	Muraidhoo	100
20	Baarah	0
21	HAA DHAALU ATOLL	52
22	Faridhoo	0
23	Hondaidhoo	
24	Hanimaadhoo	0
25	Finey	0
26	Naivaadhoo	0
27	Hirimaradhoo	0
28	Nolhivaranfaru	0
29	Nellaidhoo	100
30	Nolhivaramu	0
31	Kuribi	100
32	Kuburudhoo	0
33	KULHUDHUFFUSHI	100
34	Kumundhoo	0
35	Neykurendhoo	0
36	Vaikaradhoo	0
37	Maavaidhoo	0
38	Makunudhoo	0
39	SHAVIYANI ATOLL	36



Environment I

180

		2005
	Atoll / Island name	further beach erosion
40	Kaditheemu	0
41	Noomaraa	0
42	Goidhoo	n.a.
43	Feydhoo	100
44	Feevah	100
45	Bilehffahi	0
46	Foakaidhoo	0
47	Narudhoo	0
48	Maakandoodhoo	0
49	Maroshi	100
50	Lhaimagu	100
51	Firubaidhoo	n.a.
52	Komandoo	100
53	Maaugoodhoo	0
54	FUNADHOO	0
55	Milandhoo	0
56	NOONU ATOLL	71
57	Hebadhoo	100
58	Kedhikolhudhoo	100
59	Maalhendhoo	100
60	Kudafari	0
61	Landhoo	0
62	Maafaru	100
63	Lhohi	0
64	Miladhoo	100
65	Magoodhoo	0
66	MANADHOO	0
67	Holhudhoo	100
68	Fodhdhoo	n.a.
69	Velidhoo	100
70	RAA ATOLL	24
71	Alifushi	100
72	Vaadhoo	100
73	Rasgetheemu	0
74	Agolhitheemu	n.a.
75	Hulhudhuffaar	n.a.
76	UGUFAARU	0
77	Kadholhudhoo	0
78	Maakurathu	0



Environment I

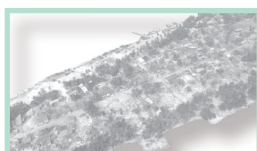
2005		
	Atoll / Island name	further beach erosion
79	Rasmaadhoo	0
80	Innamaadhoo	0
81	Maduvvari	100
82	Iguraidhoo	0
83	Fainu	0
84	Meedhoo	0
85	Kinolhas	0
86	BAA ATOLL	13
87	Kudarikilu	0
88	Kamadhoo	0
89	Kendhoo	0
90	Kihaadhoo	0
91	Dhonfanu	0
92	Dharavandhoo	100
93	Maalhos	0
94	EYDHAFUSHI	0
95	Thulhaadhoo	0
96	Hithaadhoo	0
97	Fulhadhoo	0
98	Fehendhoo	0
99	Goidhoo	100
100	LHAVIYANI ATOLL	4
101	Hinnavaru	0
102	NAIFARU	0
103	Kurendhoo	0
104	Olhuvelifushi	100
105	Maafilaafushi	0
106	KAAFU ATOLL	39
107	Kaashidhoo	0
108	Gaafaru	0
109	Dhiffushi	0
110	THULUSDHOO	0
111	Huraa	100
112	Himmafushi	100
113	Gulhi	100
114	Maafushi	0
115	Guraidhoo	100
116	ALIF ALIFU ATOLL	33
117	Thoddoo	0



Environment 1

182

		2005
	Atoll / Island name	further beach erosion
118	RASDHOO	100
119	Ukulhas	0
120	Mathiveri	0
121	Bodufolhudhoo	0
122	Feridhoo	100
123	Maalhos	n.a.
124	Himendhoo	0
125	ALIFU DHAALU ATOLL	60
126	Hangnameedhoo	0
127	Omadhoo	100
128	Kuburudhoo	100
129	MAHIBADHOO	n.a.
130	Mandhoo	0
131	Dhagethi	100
132	Dhigurah	100
133	Fenfushi	0
134	Dhidhdhoo	0
135	Maamigili	n.a.
136	VAAVU ATOLL	71
137	Fulidhoo	100
138	Thinadhoo	100
139	FELIDHOO	0
140	Keyodhoo	100
141	Rakeedhoo	100
142	MEEMU ATOLL	80
143	Raimandhoo	n.a.
144	Madifushi	n.a.
145	Veyvah	0
146	Mulah	100
147	MULI	0
148	Naalaafushi	100
149	Kolhufushi	100
150	Dhiggaru	100
151	Maduvvari	100
152	FAAFU ATOLL	67
153	Feeali	100
154	Biledhdhoo	0
155	Magoodhoo	100
156	Dharaboodhoo	0



Environment 1

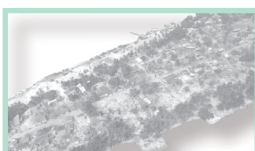
2005		
	Atoll / Island name	further beach erosion
157	NILANDHOO	100
158	DHAALU ATOLL	47
159	Meedhoo	100
160	Badidhoo	0
161	Ribudhoo	0
162	Hulhudheli	100
163	Gemendhoo	100
164	Vaanee	0
165	Maaeboodhoo	100
166	KUDAHUVADHOO	0
167	THAA ATOLL	65
168	Buruni	0
169	Vilufushi	100
170	Madifushi	100
171	Dhiyamigili	0
172	Guraidhoo	0
173	Kadoodhoo	100
174	Vandhoo	100
175	Hirilandhoo	100
176	Gaadhiffushi	100
177	Thimarafushi	100
178	VEYMANDOO	0
179	Kibidhoo	100
180	Omadhoo	0
181	LAAMU ATOLL	57
182	Isdhoo	0
183	Dhabidhoo	100
184	Maabaidhoo	0
185	Mundoo	0
186	Kalhaidhoo	0
187	Gamu	100
188	Maavah	100
189	FONADHOO	100
190	Gaadhoo	n.a.
191	Maamendhoo	0
192	Hithadhoo	0
193	Kunahandhoo	100
194	GAAFU ALIFU ATOLL	48
195	Kolamaafushi	0



Environment 1

184

		2005
	Atoll / Island name	further beach erosion
196	VILLINGILI	100
197	Maamendhoo	100
198	Nilandhoo	0
199	Dhaandhoo	0
200	Dheevadhoo	n.a.
201	Kodey	0
202	Dhiyadhoo	0
203	Gemanafushi	0
204	Kanduhulhudhoo	100
205	GAAFU DHAALU ATOLL	15
206	Madeveli	100
207	Hoadedhdhoo	0
208	Nadallaa	0
209	Gadhdhoo	0
210	Rathafandhoo	100
211	Vaadhoo	0
212	Fiyoari	0
213	Maathodaa	0
214	Fares	0
215	THINADHOO	0
216	GNAVIYANI ATOLL	100
217	FOAMMULAH	100
218	SEENU ATOLL	85
219	Meedhoo	0
220	HITHADHOO	100
221	Maradhoo	100
222	Feydhoo	100
223	Maradhoo-Feydhoo	0
224	Hulhudhoo	100



Recreation

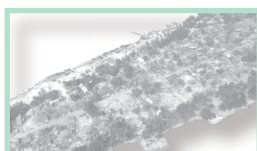
		2005	2005	2005	2005
	Atoll / Island name	no clubs	no events	not enough space	no income generat- ing community activities
1	Maldives	4	23	22	34
2	Male'	4	0	0	0
3	Atoll average	7	32	31	48
4	HAA ALIFU ATOLL	4	69	11	53
5	Thurakunu	0	100	0	100
6	Uligamu	0	100	100	0
7	Berinmadhoo	100	100	100	100
8	Hathifushi	100	100	100	100
9	Mulhadhoo	0	0	0	0
10	Hoarafushi	0	100	0	0
11	Ihavandhoo	0	0	0	0
12	Kelaa	0	100	0	100
13	Vashafaru	0	100	0	100
14	DHIDHDHOO	0	100	0	100
15	Filladhoo	0	100	100	100
16	Maarandhoo	0	0	0	0
17	Thakandhoo	0	100	0	100
18	Utheemu	0	100	0	0
19	Muraidhoo	100	100	100	0
20	Baarah	0	0	0	100
21	HAA DHAALU ATOLL	14	4	12	58
22	Faridhoo	100	100	0	100
23	Hondaidhoo				
24	Hanimaadhoo	0	0	0	100
25	Finney	100	0	0	100
26	Naivaadhoo	0	0	100	0
27	Hirimaradhoo	0	0	100	0
28	Nolhivaranfaru	100	0	100	0
29	Nellaidhoo	0	100	100	0
30	Nolhivaramu	0	0	0	0
31	Kuribi	100	0	100	0
32	Kuburudhoo	100	0	0	100
33	KULHUDHUFFUSHI	0	0	0	100
34	Kumundhoo	0	0	0	0
35	Neykurendhoo	100	0	0	0
36	Vaikaradhoo	0	0	0	0
37	Maavaidhoo	100	0	0	100
38	Makunudhoo	0	0	0	0



Recreation

186

		2005	2005	2005	2005
	Atoll / Island name	no clubs	no events	not enough space	no income generating community activities
39	SHAVIYANI ATOLL	13	42	33	7
40	Kaditheemu	0	0	0	0
41	Noomaraa	0	0	0	100
42	Goidhoo	0	100	0	0
43	Feydhoo	100	0	0	0
44	Feevah	0	100	0	0
45	Bilehffahi	0	100	0	100
46	Foakaidhoo	0	0	100	0
47	Narudhoo	100	100	0	0
48	Maakandoodhoo	100	100	100	0
49	Maroshi	0	0	0	0
50	Lhaimagu	0	0	0	0
51	Firubaidhoo	n a	n.a.	n.a.	n.a.
52	Komandoo	0	100	100	0
53	Maaugoodhoo	0	0	100	0
54	FUNADHOO	0	0	0	0
55	Milandhoo	0	100	n.a.	0
56	NOONU ATOLL	6	34	28	42
57	Hebadhoo	100	100	100	100
58	Kedhikolhudhoo	0	100	0	0
59	Maalhendhoo	0	0	0	100
60	Kudafari	0	100	0	0
61	Landhoo	0	0	0	100
62	Maafaru	0	100	0	0
63	Lhohi	0	100	0	0
64	Miladhoo	0	0	100	0
65	Magoodhoo	0	100	0	0
66	MANADHOO	0	0	0	100
67	Holhudhoo	0	0	100	100
68	Fodhdhoo	100	0	0	0
69	Velidhoo	0	0	0	0
70	RAA ATOLL	2	46	22	30
71	Alifushi	0	100	100	0
72	Vaadhoo	0	0	0	0
73	Rasgetheemu	0	0	0	0
74	Agolhitheemu	0	100	0	0
75	Hulhudhuffaar	0	100	0	100
76	UGUFAARU	0	0	0	0



Recreation

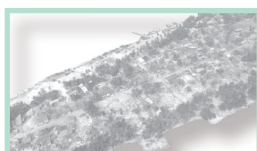
		2005	2005	2005	2005
	Atoll / Island name	no clubs	no events	not enough space	no income generat- ing community activities
77	Kadholhudhoo	n.a.	n.a.	n.a.	n.a.
78	Maakurathu	0	100	0	0
79	Rasmaadhoo	0	0	0	0
80	Innamaadhoo	0	0	0	0
81	Maduvvari	0	100	100	100
82	Iguraidhoo	0	0	0	0
83	Fainu	100	0	n.a.	0
84	Meedhoo	0	100	0	100
85	Kinolhas	0	0	0	100
86	BAA ATOLL	5	19	67	63
87	Kudarikilu	0	100	100	100
88	Kamadhoo	0	100	n.a.	100
89	Kendhoo	0	0	0	100
90	Kihaadhoo	0	0	100	0
91	Dhonfanu	0	100	0	100
92	Dharavandhoo	0	100	0	100
93	Maalhos	100	0	100	100
94	EYDHAFUSHI	0	0	100	100
95	Thulhaadhoo	0	0	100	0
96	Hithaadhoo	0	0	100	0
97	Fulhadhoo	0	0	0	0
98	Fehendhoo	100	0	0	0
99	Goidhoo	0	0	0	100
100	LHAVIYANI ATOLL	2	15	51	96
101	Hinnavaru	0	0	100	100
102	NAIFARU	0	0	0	100
103	Kurendhoo	0	100	100	100
104	Olhuvelifushi	0	0	0	0
105	Maafilaafushi	100	100	100	100
106	KAAFU ATOLL	0	0	42	35
107	Kaashidhoo	0	0	n.a.	100
108	Gaafaru	0	0	100	0
109	Dhiffushi	0	0	0	0
110	THULUSDHOO	0	0	0	0
111	Huraa	0	0	0	0
112	Himmafushi	0	0	0	0
113	Gulhi	0	0	100	0
114	Maafushi	0	0	100	0



Recreation

188

		2005	2005	2005	2005
	Atoll / Island name	no clubs	no events	not enough space	no income generating community activities
115	Guraidhoo	0	0	100	100
116	ALIF ALIFU ATOLL	0	40	32	57
117	Thoddoo	0	0	100	0
118	RASDHOO	0	0	0	100
119	Ukulhas	0	100	0	100
120	Mathiveri	0	100	0	100
121	Bodufolhudhoo	0	100	100	0
122	Feridhoo	0	100	0	100
123	Maalhos	0	0	0	100
124	Himendhoo	0	0	0	0
125	ALIFU DHAALU ATOLL	28	23	12	60
126	Hangnameedhoo	0	0	100	100
127	Omadhoo	0	0	0	0
128	Kuburudhoo	100	0	100	100
129	MAHIBADHOO	0	0	0	100
130	Mandhoo	0	0	0	100
131	Dhagethi	0	0	0	100
132	Dhigurah	0	0	n.a.	0
133	Fenfushi	0	0	0	100
134	Dhidhdhoo	0	0	0	0
135	Maamigili	100	100	0	0
136	VAAVU ATOLL	4	4	29	22
137	Fulidhoo	0	0	0	100
138	Thinadhoo	100	100	0	0
139	FELIDHOO	0	0	100	0
140	Keyodhoo	0	0	0	0
141	Rakeedhoo	0	0	0	0
142	MEEMU ATOLL	0	11	44	19
143	Raimandhoo	0	100	0	0
144	Madifushi	n.a.	n.a.	n.a.	n.a.
145	Veyvah	0	0	100	100
146	Mulah	0	0	100	0
147	MULI	0	0	100	100
148	Naalaafushi	0	0	0	0
149	Kolhufushi	0	0	0	0
150	Dhiggaru	0	0	0	0
151	Maduvvari	0	100	0	0
152	FAAFU ATOLL	0	0	22	0



Recreation

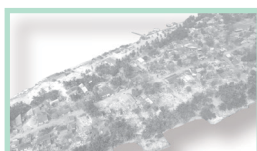
189

		2005	2005	2005	2005
	Atoll / Island name	no clubs	no events	not enough space	no income generat- ing community activities
153	Feeali	0	0	100	0
154	Biledhdhoo	0	0	0	0
155	Magoodhoo	0	0	0	0
156	Dharaboodhoo	0	0	0	0
157	NILANDHOO	0	0	0	0
158	DHAALU ATOLL	18	70	31	60
159	Meedhoo	0	100	100	0
160	Badidhoo	0	100	0	0
161	Ribudhoo	100	0	100	0
162	Hulhudheli	100	100	0	100
163	Gemendhoo	0	0	100	100
164	Vaanee	0	0	0	100
165	Maaebodhoo	0	0	0	100
166	KUDAHUVADHOO	0	100	0	100
167	THAA ATOLL	3	3	24	13
168	Buruni	0	0	0	0
169	Vilufushi	0	0	0	100
170	Madifushi	0	0	0	0
171	Dhiyamigili	0	0	100	0
172	Guraidhoo	0	0	0	0
173	Kadoodhoo	0	0	100	0
174	Vandhoo	0	0	0	0
175	Hirilandhoo	0	0	0	0
176	Gaadhiffushi	100	100	0	0
177	Thimarafushi	0	0	100	0
178	VEYMANDOO	0	0	0	0
179	Kibidhoo	0	0	0	0
180	Omadhoo	0	0	0	0
181	LAAMU ATOLL	12	44	12	0
182	Isdhoo	100	100	0	0
183	Dhabidhoo	0	0	0	0
184	Maabaidhoo	0	100	0	0
185	Mundoo	0	0	100	0
186	Kalhaidhoo	0	0	0	0
187	Gamu	0	100	0	0
188	Maavah	0	0	0	0
189	FONADHOO	0	0	0	0
190	Gaadhoo	0	0	0	0



Recreation

		2005	2005	2005	2005
	Atoll / Island name	no clubs	no events	not enough space	no income generating community activities
191	Maamendhoo	0	0	100	0
192	Hithadhoo	0	100	0	0
193	Kunahandhoo	0	0	0	0
194	GAAFU ALIFU ATOLL	1	52	57	52
195	Kolamaafushi	0	100	0	0
196	VILLINGILI	0	0	100	100
197	Maamendhoo	0	100	0	100
198	Nilandhoo	0	100	0	0
199	Dhaandhoo	0	100	100	0
200	Dheevadhoo	0	0	100	100
201	Kodey	0	0	100	0
202	Dhiyadhoo	100	0	100	100
203	Gemanafushi	0	0	0	0
204	Kanduhulhudhoo	0	100	100	100
205	GAAFU DHAALU ATOLL	17	0	64	52
206	Madeveli	0	0	100	0
207	Hoadedhdhoo	0	0	100	100
208	Nadallaa	100	0	100	100
209	Gadhdhoo	0	0	100	0
210	Rathafandhoo	0	0	100	100
211	Vaadhoo	100	0	100	0
212	Fiyoari	0	0	100	0
213	Maathodaa	0	0	100	0
214	Fares	100	0	100	0
215	THINADHOO	0	0	0	100
216	GNAVIYANI ATOLL	0	100	0	100
217	FOAMMULAH	0	100	0	100
218	SEENU ATOLL	0	37	40	89
219	Meedhoo	0	100	0	100
220	HITHADHOO	0	0	0	100
221	Maradhoo	0	0	100	0
222	Feydhoo	0	100	100	100
223	Maradhoo-Feydhoo	0	100	100	100
224	Hulhudhoo	0	100	100	100



STATISTICAL ANNEX II

191

Education

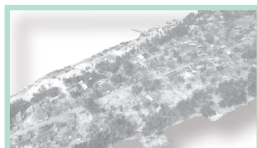
		2005	2005	2005
	Island name	Books/ Uniforms lost or damaged due to tsunami	Difficulties of getting books/ uniforms due to tsunami	Education level improved after tsunami (peoples perception)
1	Impact level 1	79	46	32
2	Filladhoo	62	28	48
3	Kadholhudhoo	85	35	24
4	Madifushi	71	30	77
5	MULI	69	36	23
6	Naalaafushi	83	38	7
7	Kolhufushi	83	41	29
8	Ribudhoo	88	47	27
9	Gemendhoo	83	73	83
10	Vilufushi	90	74	0
11	Madifushi	80	33	85
12	Dhabidhoo	76	40	55
13	Mundoo	84	59	72
14	Kalhaidhoo	97	51	15
15	VILLINGILI	67	55	28
16	Impact level 2	44	27	24
17	Maroshi	0	25	4
18	Komandoo	0	24	7
19	Maafaru	62	25	60
20	Naifaru	n.a.	n.a.	n.a.
21	Huraa	52	24	54
22	Guraidhoo	68	20	49
23	Mathiveri	74	41	51
24	Fulidhoo	20	12	23
25	Thinadhoo	24	0	6
26	Felidhoo	46	15	9
27	Keyodhoo	56	4	20
28	Rakeedhoo	52	26	23
29	Veyvah	67	40	3
30	Dhiggaru	58	25	38
31	Hulhudheli	43	24	39
32	Vaanee	76	16	43
33	Maeboodhoo	68	26	62
34	Thimarafushi	37	16	13
35	Isdhoo-Kalaithoo	67	56	44
36	Maabaidhoo	85	52	77
37	Fonadhoo	87	57	10
38	Nilandhoo	75	82	42
39	Dhaandhoo	55	44	0



Health

192

		2005	2005	2005	2005	2005	2005	2005
	Island name	no medical access	Chronic illness influenced due to tsunami	Health level improved after tsunami (peoples perception)	Sick or injured due to tsunami	minor injuries after tsunami	major injuries after tsunami	Still suffer- ing of injuries after tsunami
1	Impact level 1	36	9	40	11	10	3	2
2	Filladhoo	98	5	15	10	8	2	6
3	Kadholhudhoo	16	9	49	3	1	2	1
4	Madifushi	0	4	100	18	16	2	1
5	MULI	2	13	34	21	17	4	1
6	Naalaafushi	49	0	22	19	16	3	1
7	Kolhufushi	18	3	21	11	6	6	2
8	Ribudhoo	85	5	10	10	10	1	1
9	Gemendhoo	0	5	95	20	19	1	-
10	Vilufushi	91	12	3	26	21	4	2
11	Madifushi	52	11	70	18	13	5	1
12	Dhabidhoo	31	20	65	1	15	4	2
13	Mundoo	71	24	31	1	21	5	2
14	Kalhaidhoo	81	11	16	12	10	2	1
15	VILLINGILI	14	6	51	14	9	4	2
16	Impact level 2	43	6	25	8	9	2	1
17	Maroshi	80	13	27	8	8	n.a.	1
18	Komandoo	18	0	14	3	3	0	0
19	Maafaru	100	0	0	4	4	n.a.	n.a.
20	Naifaru	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
21	Huraa	4	3	37	8	6	2	1
22	Guraidhoo	46	5	23	12	9	4	1
23	Mathiveri	100	31	0	5	4	1	1
24	Fulidhoo	67	0	10	3	2	1	n.a.
25	Thinadhoo	67	1	0	4	3	1	1
26	Felidhoo	6	0	0	4	4	1	n.a.
27	Keyodhoo	55	0	4	3	3	1	n.a.
28	Rakeedhoo	89	0	0	4	1	4	3
29	Veyvah	94	9	3	13	13	n.a.	n.a.
30	Dhiggaru	23	0	23	22	22	n.a.	n.a.
31	Hulhudheli	100	0	0	4	4	n.a.	n.a.
32	Vaanee	92	0	0	2	2	n.a.	n.a.
33	Maaebodhoo	100	0	0	11	10	1	1
34	Thimarafushi	11	1	12	6	4	1	2
35	Isdhoo-Kalaadhoo	33	16	70	1	20	2	n.a.
36	Maabaidhoo	8	26	58	1	27	5	2
37	Fonadhoo	29	1	29	15	12	3	1
38	Nilandhoo	71	19	21	10	8	1	2
39	Dhaandhoo	36	15	56	15	8	6	2



Drinking Water

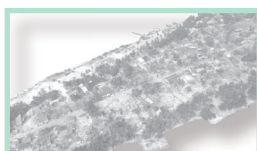
		2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
	Island name	Insuf- ficient drink- ing water	Unsafe drink- ing water	Untreated drinking water	Rain water tank in com- pound	Well water in com- pound	Public Rain water Tank	Private Rain water tank	Desali- nation plant/ piped supply	Damages to drink- ing water tanks	Damages to rain- water harvest- ing sys- tem	Contami- nated well water
1	Impact level 1	78	5	80	44	0	21	11	11	54	43	83
2	Filladhoo	81	0	92	71	4	6	11	8	36	7	77
3	Kadholhudhoo	84	17	57	20	1	16	13	13	78	73	99
4	Madifushi	33	0	100	50	0	0	50	0	96	96	96
5	MULI	44	0	100	94	0	2	4	0	43	29	67
6	Naalaafushi	55	0	100	36	0	58	6	0	21	8	62
7	Kolhufushi	84	0	100	22	0	71	7	0	60	48	89
8	Ribudhoo	75	0	100	56	0	45	2	0	15	n.a.	54
9	Gemendhoo	89	9	100	5	0	95	0	0	39	33	95
10	Vilufushi	74	0	31	8	0	23	0	69	70	70	85
11	Madifushi	89	9	96	46	3	29	12	0	30	38	81
12	Dhabidhoo	95	0	100	58	0	17	25	0	49	27	83
13	Mundoo	59	0	77	59	0	14	3	23	38	25	88
14	Kalhaidhoo	94	0	97	60	0	24	13	3	75	38	100
15	VILLINGILI	79	0	98	78	0	1	20	0	39	24	69
16	Impact level 2	70	2	98	67	0	22	7	2	31	21	76
17	Maroshi	73	0	100	83	0	9	7	0	35	22	86
18	Komandoo	21	0	87	87	0	0	0	26	26	8	57
19	Maafaru	92	0	100	65	0	35	0	0	23	14	65
20	Naifaru	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
21	Huraa	56	0	100	76	0	10	13	0	28	22	86
22	Guraidhoo	83	9	100	70	0	6	14	0	45	30	96
23	Mathiveri	96	7	100	47	0	53	4	0	21	9	89
24	Fulidhoo	58	0	100	93	0	4	2	0	8	n.a.	9
25	Thinadhoo	51	0	100	73	0	20	7	0	4	4	37
26	Felidhoo	73	0	100	100	0	0	0	0	6	4	39
27	Keyodhoo	70	0	100	97	0	3	0	0	17	17	79
28	Rakeedhoo	83	4	100	62	4	33	3	0	12	n.a.	72
29	Veyvah	66	0	100	54	0	39	7	0	18	n.a.	87
30	Dhiggaru	77	0	100	50	0	50	0	0	33	18	63
31	Hulhudheli	77	0	100	26	0	69	5	0	17	11	50
32	Vaanee	82	8	100	28	8	72	0	0	n.a.	n.a.	43
33	Maeboodhoo	59	6	100	34	6	57	3	0	14	14	67
34	Thimarafushi	50	0	99	58	0	10	31	1	21	12	69
35	Isdhoo-Kalaaidhoo	100	6	95	30	0	54	6	0	26	20	96
36	Maabaidhoo	77	0	96	70	0	19	7	0	54	69	84
37	Fonadhoo	56	0	100	82	0	15	4	0	39	33	95
38	Nilandhoo	86	0	100	89	0	0	11	0	41	44	99
39	Dhaandhoo	92	0	100	82	0	8	9	0	66	28	81



Consumer Goods

194

		2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
	Island name	No sewing machine (%)	No washing machine (%)	No fan (%)	No fridge (%)	No loss due to tsunami	Lost bed	Lost chair	Lost sofa	Lost table	Lost cup-board	Lost mattress	Lost plates	Lost cooking pots
1	Impact level 1	60	30	9	55	8	70	61	35	64	81	83	77	77
2	Filladhoo	36	22	22	75	11	36	17	6	20	34	69	44	54
8	Ribudhoo	46	14	2	74	16	29	24	5	14	59	70	23	33
9	Gemendhoo	52	28	9	85	4	73	68	6	57	78	80	88	88
10	Vilufushi	63	34	0	60	0	86	86	63	86	94	100	86	90
11	Madifushi	60	34	4	87	8	58	60	27	69	81	73	77	82
12	Dhabidhoo	39	6	0	76	7	47	37	8	39	72	73	56	63
13	Mundoo	40	13	5	44	3	76	64	17	70	91	85	97	92
14	Kalhaidhoo	52	32	0	65	14	62	58	13	62	75	77	70	75
15	VILLINGILI	54	12	10	46	25	49	37	13	43	63	64	65	63
16	Impact level 2	56	56	56	56	25	44	38	10	35	59	65	47	49
17	Maroshi	48	17	5	59	28	48	46	5	38	66	55	49	47
18	Komandoo	57	16	1	56	27	52	41	13	37	60	61	62	62
19	Maafaru	62	31	8	89	19	14	19	0	15	72	48	62	62
20	Naifaru	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
21	Huraa	32	0	0	10	25	33	33	10	18	57	69	29	27
22	Guraidhoo	65	17	6	54	8	84	60	20	51	79	92	72	75
23	Mathiveri	49	19	0	41	11	40	26	n.a.	25	75	85	12	24
24	Fulidhoo	38	4	0	23	53	8	29	8	14	13	41	22	22
25	Thinadhoo	31	11	0	51	30	33	3	6	24	46	70	29	37
26	Felidhoo	42	20	0	41	24	44	8	n.a.	13	68	76	15	28
27	Keyodhoo	50	11	0	73	12	36	24	n.a.	38	77	85	46	54
28	Rakeedhoo	31	23	5	56	29	28	15	n.a.	20	51	52	29	29
29	Veyvah	62	6	0	56	5	35	35	14	26	71	83	67	67
30	Dhiggaru	52	18	10	72	42	33	33	13	33	33	58	35	20
31	Hulhudheli	77	16	5	75	44	36	17	0	18	43	37	22	37
32	Vaanee	67	6	0	57	22	13	6	0	13	52	57	35	36
33	Maaeboodhoo	69	22	5	77	8	35	27	4	57	65	70	59	81
34	Thimarafushi	60	16	3	42	49	28	27	11	27	42	41	24	21
35	Isdhoo-Kalaidhoo	52	12	2	50	33	23	22	9	23	42	60	36	41
36	Maabaidhoo	66	14	4	57	14	71	64	7	71	70	77	76	76
37	Fonadhoo	44	12	6	34	7	64	60	14	54	82	77	59	60
38	Nilandhoo	61	39	20	77	25	33	47	4	39	34	52	71	71
39	Dhaandhoo	74	48	32	52	31	56	51	15	32	56	66	55	51



Housing

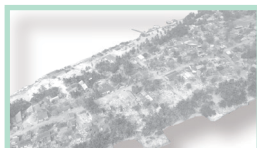
		2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
	Island name	Damages to house due to tsunami	House completely destroyed	Damages to rooms due to tsunami	Damages to water storage due to tsunami	Damages to sanitary system	Damages to toilet septic tank	Households which did any construction on their house after tsunami	Households in which people joined	Households providing shelter	People displaced by tsunami
1	Impact level 1	71	30	32	19	27	18	29	20	13	80
2	Filladhoo	71	4	45	30	25	13	30	23	14	82
3	Kadholhudhoo	86	55	25	21	39	39	21	18	0	99
4	Madifushi	93	93	0	0	0	0	0	17	0	97
5	MULI	57	14	31	22	26	1	47	9	20	72
6	Naalaafushi	39	5	29	12	22	6	43	7	25	61
7	Kolhufushi	77	34	31	21	18	8	11	0	0	89
8	Ribudhoo	23	0	19	7	14	2	23	20	22	26
9	Gemendhoo	92	28	61	7	29	12	0	48	0	95
10	Vilufushi	96	56	25	12	29	8	18	16	5	97
11	Madifushi	34	14	17	2	10	3	4	29	21	37
12	Dhabidhoo	64	19	40	22	12	5	51	33	35	68
13	Mundoo	78	10	65	26	39	24	50	22	26	85
14	Kalhaidhoo	81	22	54	42	26	15	48	31	36	87
15	VILLINGILI	53	13	32	21	21	15	45	25	25	63
16	Impact level 2	61	10	15	14	20	11	45	17	25	51
17	Maroshi	28	0	27	7	22	13	27	0	39	33
18	Komandoo	55	5	41	20	19	7	45	2	18	57
19	Maafaru	279	21	35	12	9	9	48	9	19	62
20	Naifaru	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	9
21	Huraa	62	22	20	5	18	7	48	30	43	31
22	Guraidhoo	29	6	61	21	45	25	30	28	16	86
23	Mathiveri	54	8	48	12	22	18	41	7	7	69
24	Fulidhoo	3	0	8	8	8	8	23	0	27	16
25	Thinadhoo	66	0	19	4	11	0	39	0	26	29
26	Felidhoo	21	0	18	0	0	0	43	6	30	50
27	Keyodhoo	20	1	42	11	26	11	44	0	1	75
28	Rakeedhoo	40	0	26	4	10	2	34	4	25	43
29	Veyvah	576	0	61	18	2	0	35	0	0	72
30	Dhiggaru	16	3	35	23	0	0	55	17	38	53
31	Hulhudheli	21	4	28	3	13	5	53	22	19	62
32	Vaanee	48	0	28	0	5	0	32	0	0	85
33	Maaebodhoo	64	18	19	0	7	7	32	10	13	63
34	Thimarafushi	60	5	31	11	25	13	35	13	17	37
35	Isdhoo-Kalaidhoo	30	7	43	8	28	17	56	28	28	64
36	Maabaidhoo	105	48	39	16	20	10	37	39	39	72
37	Fonadhoo	40	9	60	21	26	14	76	16	25	98
38	Nilandhoo	170	28	42	9	19	14	50	26	43	50
39	Dhaandhoo	31	12	25	25	20	14	31	38	38	44



Environment

196

		2005	2005	2005	2005	2005
	Island name	Damages to breakwater	Damages quaywall	No coastal protection measures after tsunami	Difficulty of accumulated garbage due to tsunami	Still facing difficulties with garbage accumulation
1	Impact level 1	19	29	8	56	86
2	Filladhoo	0	0	100	100	100
3	Kadholhudhoo	0	0	0	89	100
4	Madifushi	0	0	100	0	0
5	MULI	0	0	100	100	100
6	Naalaafushi	0	100	0	100	0
7	Kolhufushi	0	100	0	100	100
8	Ribudhoo	0	0	100	100	100
9	Gemendhoo	0	0	100	0	0
10	Vilufushi	0	0	100	0	100
11	Madifushi	0	0	100	100	100
12	Dhabidhoo	0	0	100	100	100
13	Mundoo	0	0	0	96	69
14	Kalhaidhoo	0	0	0	100	0
15	VILLINGILI	100	100	100	100	100
16	Impact level 2	30	49	71	93	42
17	Maroshi	100	100	100	100	0
18	Komandoo	100	100	0	100	0
19	Maafaru	0	0	100	100	0
20	Naifaru	n.a.	n.a.	n.a.	n.a.	n.a.
21	Huraa	100	100	100	100	0
22	Guraidhoo	0	0	0	100	100
23	Mathiveri	0	100	100	100	0
24	Fulidhoo	0	0	0	100	100
25	Thinadhoo	100	0	100	100	100
26	Felidhoo	0	0	100	100	100
27	Keyodhoo	0	100	100	100	100
28	Rakeedhoo	0	100	100	0	0
29	Veyvah	0	0	0	100	0
30	Dhiggaru	0	0	0	0	0
31	Hulhudheli	0	0	100	100	100
32	Vaanee	0	0	100	100	0
33	Maaebodhoo	0	0	100	100	100
34	Thimarafushi	100	100	100	100	0
35	Isdhoo-Kalaaidhoo	0	0	100	100	0
36	Maabaidhoo	100	100	100	100	0
37	Fonadhoo	0	100	100	100	100
38	Nilandhoo	0	0	0	100	0
39	Dhaandhoo	0	0	100	100	100



Food Security

		2005	2005
	Island name	food crisis	Food crisis due to tsunami
1	Impact level 1	24	20
2	Filladhoo	41	75
3	Kadholhudhoo	23	3
4	Madifushi	30	57
5	MULI	12	18
6	Naalaafushi	16	37
7	Kolhufushi	23	27
8	Ribudhoo	14	14
9	Gemendhoo	5	11
10	Vilufushi	29	8
11	Madifushi	19	19
12	Dhabidhoo	23	23
13	Mundoo	21	21
14	Kalhaidhoo	25	25
15	VILLINGILI	30	30
16	Impact level 2	22	21
17	Maroshi	32	32
18	Komandoo	8	9
19	Maafaru	9	8
20	Naifaru	n.a.	n.a.
21	Huraa	0	0
22	Guraidhoo	56	28
23	Mathiveri	13	39
24	Fulidhoo	8	9
25	Thinadhoo	0	0
26	Felidhoo	21	21
27	Keyodhoo	0	0
28	Rakeedhoo	7	20
29	Veyvah	47	38
30	Dhiggaru	0	0
31	Hulhudheli	26	86
32	Vaanee	0	0
33	Maaebodhoo	11	7
34	Thimarafushi	8	5
35	Isdhoo-Kalaidhoo	51	30
36	Maabaidhoo	22	45
37	Fonadhoo	15	10
38	Nilandhoo	58	58
39	Dhaandhoo	42	42



Employment

198

		2005	2005	2005	2005	2005
	Island name	no work	household head no work but someone in the household works	household head looking for work	People lost or discontinued job due to tsunami (% of labour force)	people still affected due to the tsunami (% of labour force)
1	Impact level 1	5	43	27	44	22
2	Filladhoo	2	39	14	67	24
3	Kadholhudhoo	13	56	56	41	21
4	Madifushi	0	40	25	75	31
5	MULI	0	44	0	35	10
6	Naalaafushi	1	52	13	70	20
7	Kolhufushi	9	22	10	36	24
8	Ribudhoo	10	27	31	45	23
9	Gemendhoo	13	26	7	38	21
10	Vilufushi	4	22	12	40	27
11	Madifushi	1	25	0	31	18
12	Dhabidhoo	8	27	16	36	20
13	Mundoo	0	29	14	51	19
14	Kalhaidhoo	6	24	5	67	30
15	VILLINGILI	9	26	11	49	24
16	Impact level 2	3	32	11	32	11
17	Maroshi	0	47	32	56	5
18	Komandoo	0	30	3	17	7
19	Maafaru	5	30	40	51	3
20	Naifaru	n.a.	n.a.	n.a.	3	0
21	Huraa	0	41	10	46	11
22	Guraidhoo	0	35	8	54	24
23	Mathiveri	0	40	4	36	7
24	Fulidhoo	3	42	24	43	12
25	Thinadhoo	4	59	4	33	15
26	Felidhoo	2	43	28	28	8
27	Keyodhoo	4	42	24	41	10
28	Rakeedhoo	4	40	17	21	2
29	Veyvah	2	40	6	50	11
30	Dhiggaru	10	22	12	35	20
31	Hulhudheli	0	37	17	37	8
32	Vaanee	20	28	0	44	18
33	Maaebodhoo	10	27	14	43	14
34	Thimarafushi	12	29	3	21	9
35	Isdhoo-Kalaidhoo	2	30	0	68	21
36	Maabaidhoo	0	23	22	52	21
37	Fonadhoo	2	39	19	21	8
38	Nilandhoo	4	24	35	63	37
39	Dhaandhoo	11	19	0	27	11

