بسم الله الرحمن الرحيم

FOREWORD

The Maldives witnessed rapid economic growth over the recent period averaging 8 per cent during the last decade. The country has also achieved many of the MDG targets for social development. However, despite high economic growth and social progress the Maldives continues to face major development challenges such as the vulnerability of the island population and the wide disparities in income and access to social services and infrastructure, particularly between the capital, Male', and the outer atolls.

This is the second Vulnerability and Poverty Assessment study conducted by the Government. The first study was undertaken in 1997/8. The purpose of this study is to assess the progress in poverty reduction over the period 1997-2004. The findings of VPA-2 show that considerable progress has been made in this regard over the past seven years. During this period average household income in Maldives as a whole, increased at an average annual growth rate of over 6 per cent per capita, with 7.7 per cent in Male', and 4.6 per cent in the atolls. Overall, both income and non-income poverty has declined significantly throughout the country.

In recognition of the importance of island-specific information, the study was conducted on all of the country's inhabited islands, and provides the most comprehensive assessment to date, both in terms of geographical coverage and range of development concerns, needs and priorities from the perspective of the people themselves. The assessment presents a Vulnerability Index especially tailored for the Maldives, where large distances exist between remote islands and the nearest economic centre and where vulnerability of the island population is extremely critical to overall development.

Part of VPA-2 is a "panel" survey (same households, with similar questions seven years later). The results collected from the panel households in the VPA-2 with the Vulnerability and Poverty Survey conducted in 1997 enabled the comparison of poverty profiles. This unique analysis provides valuable insights in to poverty dynamics in the country, including those who escaped poverty and others who fell back in to it, or new entrants.

The tsunami of 26 December 2004 was an unexpected blow to the country's economy. It affected the livelihoods of a third of the population and destroyed key infrastructure such as harbours, jetties and roads and social service facilities such as health posts, schools and administrative buildings. Since the tragedy occurred just after the completion of VPA 2, its effects on development are not taken in to account in the present study. A separate Tsunami Impact Assessment study is now underway, based on the sample frame of the VPA study.

The analysis and findings of VPA-2 will be valuable in all development planning exercises including the formulation of the 7th National development Plan and in tracking progress towards the further achievement of MDG goals and targets.

Hon. Hamdun Hameed
Minister of Planning and National Development

Patrice Coeur-Bizot
UNDP Resident Representative and Resident
Coordinator of the UN System in Maldives

Acknowledgements

A study of this magnitude cannot be undertaken without the active help and support of a number of individuals and organizations. On request of the Government the former Resident Coordinator of the UN System in Maldives, Minh Pham, initiated the study and was a source of constant encouragement and support.

A team of consultants from the Netherlands under the guidance of Hans de Kruijk and Willem van den Andel supervised the complete project from questionnaires design till data analysis. They were assisted by Karen van der Wiel and Judith Poleon.

The Danish firm Pemconsult contracted by the World Bank carried out the survey fieldwork. Svend Erik Sorensen and David Moore acted as survey managers. Harsha Atrupane, senior economist at the World Bank was instrumental in facilitating the initial phase of the project.

Shyam Upadhyaya made the sample design, Huzaifa Zoomkawala prepared the data entry programme, Annemieke van de Steeg supervised data cleaning, Eric Jager analysed the demographic part, Peter Stalker edited the final document and Najfa Shaheem Razee made the layout of the report.

The Statistics Section of the Ministry of Planning and National Development prepared the questionnaires, enumerator manuals, conducted the training and supervised field work and data processing. Fuwad Thowfeek, Assistant Director General, and Aishath Shahuda, Director, Economic Statistics coordinated the work. Idham Fahumy, Aishath Laila, Mohamed Firshan and Hana Mansoor were in charge of overall survey preparation and management. Fathimath Nihan, Mushthaq Saeed, Yasir Waseem and Mohamed Jawad worked as counterparts in data processing. They were assisted by Aishath Aniya, Aishath Suzy, Fathmath Hashiya, Faheema Abdulla and Ismail Ashwad.

The analysis counterpart team from the Ministry's Development Planning section, including, Aishath Ikram, Sofoora Kausar Usman, Fathmath Inwaza and Khadeeja Majida Hassan from the Regional Development Section as well as Aishath Shifaza from the Statistics Section provided valuable technical support.

Through out the study and during all the field visits, the staff of UNDP Office in Male' especially Abdul Bari Abdulla and Saeeda Umar provided valuable assistance and logistical support. Similarly the staff of the Administration and Finance Section, the Development Planning Section and the Strategic Planning and Research Section of the Ministry of Planning and National Development provided administrative assistance and helped to smoothly implement the study.

Most importantly, the data and information in this report could not have been collected without the complaisant cooperation of thousands of survey respondents including household's heads, island chiefs and island women's and development committees who gave their time generously in answering questions and providing local insights in to the issues addressed by the survey. In addition, a large number of enumerators and data entry operators worked tirelessly to make this report a reality. All their valuable services are gratefully acknowledged.

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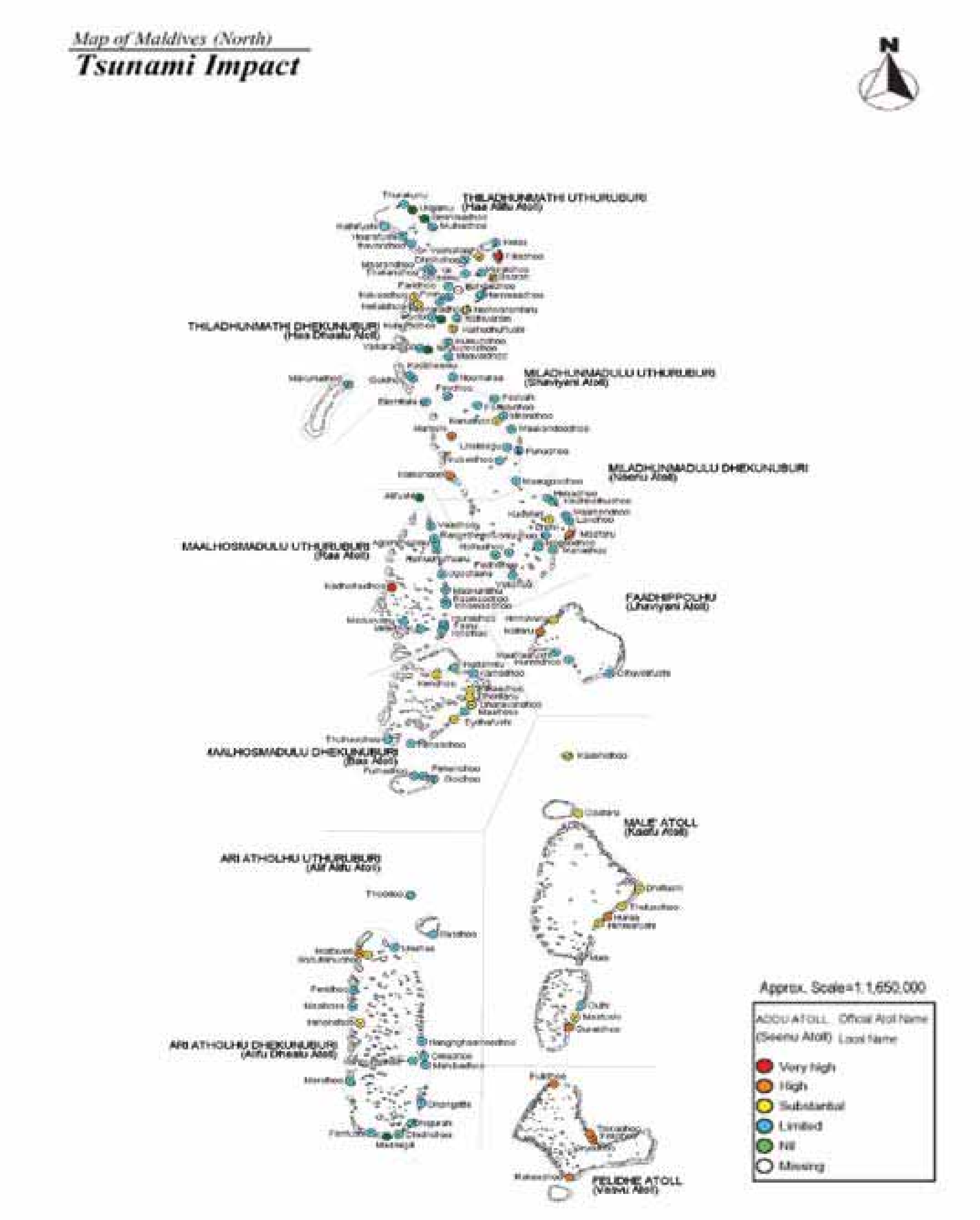
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Tsunami Impact
N
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High
Substantial
Limited
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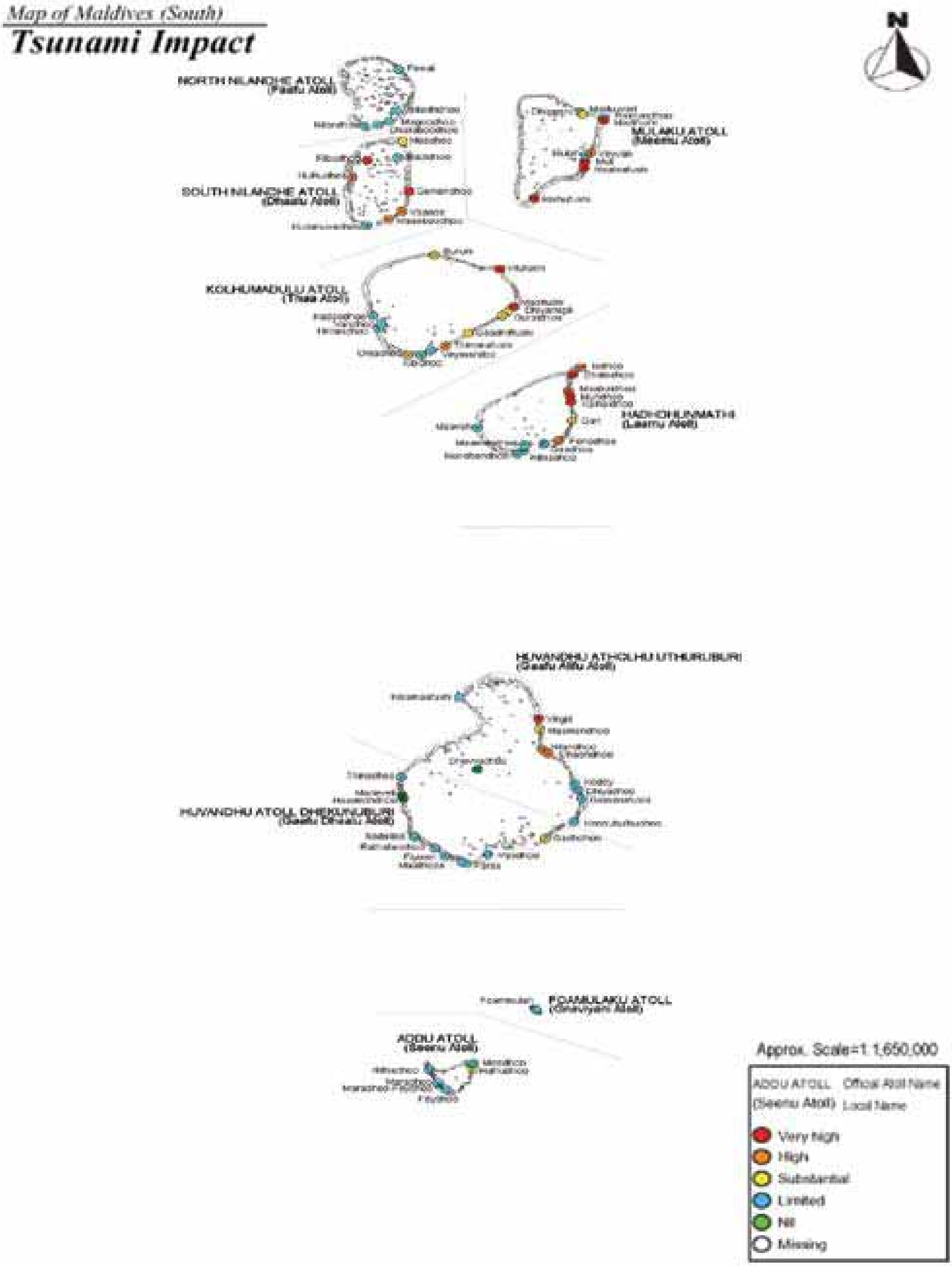
Missing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(Gaafu Dhaalu Atoll)
FOAMULAKU ATOLL
(Gnaviyani Atoll)
ADDU ATOLL
(Seenu Atoll)
Approx. Scale=1:1,650,000
ADDU ATOLL Offical Atoll Name
(Seenu Atoll) Local Name
Very high
High
Substantial
Limited
Nil
Missing

Statistical Profile

Item	Item Description		1977	1987	Source (and year)	1997	Source (and year)	2004
1	**Human development indicators**							
1a	Life expectancy at birth (years)		46.5			69.6		70.0
1b	Population with access to health services (%)	*Total*	39.8					74.0
1b1		*Male'*	100.0					100.0
1b2		*Atolls*	24.2					62.0
1c	Population with access to safe water (%)	*Total*						
1c1		*Male'*						100.0
1c2		*Atolls*	6.9	28.4	1985			97.0
1d	Daily calorie supply (% of requirements)		79.0	91.0	1985			
1e	Adult literacy rate (%)		81.6	93.3		96.0		
1f	GDP per capita (M.Rf, 1995 prices)		4,760	11,369		19,708		28,495
1g	GDP (at 1995 constant prices, $'million)		144	260		426		647
1h	GDP per capita (USD, 1995 prices)		404	966		1,674		2,439
2	**Basic indicators**							
2a	Population ('000s)	*Total*	143.3	200.2		253.0		288.8
2a1		*Male'*	29.5	51.0		64.4		85.6
2a2		*Atolls*	113.8	149.3		188.6		203.2
2b	Average annual growth rate (%)		....	2.7%		2.4%		1.1%
2c	Population density (persons per sq. km)	*Total*	1,231	1,720		2,173		2,481
2c1		*Male'*	15,860	27,402		34,624		46,022
2c2		*Atolls*	993	1,303		1,646		1,774
2d	Area of cultivable land per capita (sq.m)		194.0	169.4		150.7		145.2
3	**Economic indicators**							
3a	GDP (1995 constant prices, M.Rf 'million)		682	2,219		5,011		8,249
3b	Average annual GDP growth rate (%)		....	12.5%		8.5%		7.4%
3c	Composition of GDP (M.Rf ,millions)	*Primary*	192	394		537		755
3c1		*Secondary*	56	263		654		1,234
3c2		*Tertiary*	404	1,501		3,875		6,260
3d	Exchange rate US$ / M.Rf (averages)		8.77	9.22		11.77		12.85
4	**Employment and labour force**							
4a	Working age population (over 14 years of age) ('000s)	*Total*	79,086	98,836	1985	138,999		183,970
4a1		*Male'*	18,429	28,698	1985	42,271		62,262
4a2		*Atolls*	60,657	70,138	1985	96,727		121,707
4a3		*Males*	42,684	51,932	1985	64,135		82,724
4a4		*Females*	36,402	46,904	1985	74,863		101,246
4b	Labour force ('000s)	*Total*	60,903	51,478	1985	80,304		99,917
4b1		*Male'*	10,939	14,895	1985	25,263		33,724
4b2		*Atolls*	49,964	36,583	1985	55,042		66,193
4c	Number of university graduates		56					

Item	Item Description	1977	1987	Source (and year)	1997	Source (and year)	2004
5	Merchandise trade						
5a	Value of exports (f.o.b.) (US$ 'million)	3.4	35.3		70.1		149.2
5a1	Of which: Fish/fish products ('000 mt)	18.2	21.9		55.5		74.6
5b	Average annual export growth rate (%)	....	26.4%		7.1%		11.4%
5c	Value of imports (c.i.f.) (US$ 'million)	11.1	73.9		348.8		407.2
5c1	Of which: consumer goods	7.3			168.8		130.1
5c2	Of which: petroleum products	0.7			38.8		57.5
5c3	Of which: intermediate & capital goods	3.1			141.2		201.8
5d	Average annual import growth rate (%)	....	20.9%		16.8%		2.2%
6	**Balance of Payments (US$ 'million)**						
6a	Trade Balance	-5.1	-38.6		-199.1	KEI'04 **)	-369.9
6b	Current Account Balance	-0.4	9.2		-23.0	KEI'04 **)	90.3
6c	Overall Balance	0.1	10.4		27.4	KEI'04 **)	74.3
7	**Government Finance (M.Rf 'million)**						
7a	Government Revenues	48.9	346.2		1,752.0	KEI'04 **)	3,541.1
7b	Tax Revenues	20.7	142.3		872.8	KEI'04 **)	1,545.4
7c	Non-Tax Revenues	19.8	116.4		748.1	KEI'04 **)	1,083.4
7d	Grants and Loans	8.4	87.5		131.1		912.3
7e	Government Expenditure	38.4	364.2		1,933.4	KEI'04 **)	3,176.1
7f	Current Expenditure	9.3	182.4		1,145.1		
7g	Capital Expenditure	29.1	181.8		788.3		
8	**External Debt (US$ 'million)**						
8a	Total debt outstanding (incl. Undisbursed)				189.4		
8b	Total debt outstanding and disbursed				157.2		289.9
8c	Public Long-Term Debt				156.3		
8d	Public Short-Term Debt				0.9		
8e	Debt outstanding & disbursed as % of GDP				46.0		38.6
8f	DSR as % of exports of goods & services				3.3		3.8
9	**Tourism Indicators**						
9a	Tourist arrivals ('000s)	18.7	131.4		365.0	SYM'04 *)	563.6
9b	Number of resorts	11	57		73	Resort Guide'05	86
9c	Number of beds ('000s)	1.0	6.2		12.0	SYM'04 *)	19.1
9d	Occupancy rate (%)		59.6		77.5	KEI'04 **)	84.0
9e	Tourism earnings (US$ 'million)	3.1	6.5		286.0	SYM'04 *)	2,938.4
10	**Health indicators**						
10a	Crude Birth Rate (per '000)	44.0			24.0		
10b	Crude Death Rate (per '000)	17.0			5.0		
10c	Infant Mortality Rate (per '000)	121.0			27.0	SYM'04 *)	14.0
10d	Population per physician ('000s)	15.9	9.3		1.4	VPA-2	1.0
10e	Population per nurse ('000s)	20.4	10.3		1.4	VPA-2	0.4
10f	Population per hospital bed ('000s)	3.5	2.6		0.7	VPA-2	0.3
11	Social indicators						

Item	Item Description	1977	1987	Source (and year)	1997	Source (and year)	2004
11a	Daily per capita calorie intake (% of requirements)	79.0	91.0	1985			
11b	Daily per capita protein supply (% of requirements)	73.0	81.0	1985			
12	Education indicators						
12a	Primary school enrolment (as % of 5-13 age group)	26.9			70.2		
12b	Secondary school enrolment ('000s)	2.3			47.2		
*)	Statistical Yearbook of Maldives, various editions						
**)	Key Economic Indicators						

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Executive Summary

Executive Summary

This is the second Vulnerability and Poverty Assessment for the Maldives. The survey for the first assessment (VPA-1) was carried out in 1997/98 and covered households on all 200 inhabited islands. The survey for this second assessment (VPA-2), which was carried out during the middle of 2004, had a similar coverage and used broadly speaking the same questions but with the additional feature that half the households in the sample had also been covered in the first survey – providing a unique 'panel' for the analysis of changes over the intervening period.

The information was edited, coded and entered onto computerized databases during the third quarter of 2004. It was analysed for completeness and accuracy, and summary results from the survey were compared with external information to check for inconsistencies. It was then supplemented with information from administrative records of government ministries. Initial analysis of the survey results was completed towards the end of the year and the first presentation of main findings was given shortly before the tsunami of 26th December 2004.

The survey results were used extensively in the response to the tsunami, both for the situation assessment and for emergency planning. The staff involved in the VPA analysis provided the necessary support in this effort.

The estimates derived from the survey were analysed for reliability. They were found to be highly significant at the overall level and for Male' and the atolls, as well as for the country's urban and rural strata. Although these calculations for reliability only covered per capita expenditure, poverty incidence and their changes over time – some of the main characteristics analysed in the report – reliability for the other characteristics is probably similar. Results at the regional level, however, were not so consistent: more accurate for some indicators than others. At the level of individual atolls too there were large variations in quality of the estimates.

This reports analyses the survey results for the subjects of major interest. But it by no means exhausts the information available in the databases for the two surveys. The panel analysis, for example, covers only changes in levels of income poverty; it could be extended to cover other dimensions and may yield valuable insights for various uses. In order to make the datasets available to a wider public, they have been included on the CD-ROM version of this report.

As indicated in the following sections, the second Vulnerability and Poverty Survey shows that the Maldives has made huge progress in reducing both income and none-income poverty.

Incomes and poverty

Over the period, 1997-2004 average per capita household incomes in the atolls increased by about 50 percent and in Male' they almost doubled. The average increased in all regions – whether measured by the mean or the median.

- *Income groups* – In both Male' and the atolls all income groups from the poorest to the richest are better off.
- *Poverty incidence* – Poverty has declined

significantly everywhere, in all regions of the country – for all possible poverty lines, whether measured by the headcount ratio or the poverty gap ratio.

- *Regional differences* – For the atoll population in 2004, when travelling from north to south incomes rose and poverty levels fell.
- *Poverty dynamics* – The poor are not a static group. Between 1997 and 2004, the majority of the poor on the islands escaped poverty – though over the same period a considerable proportion of the non-poor fell into poverty. Using a Rf.10 poverty line, two-thirds of those currently poor were above the line in 1997; using a Rf.15 line, the proportion was around one-third.

These findings are robust and have a high statistical significance. They basically show that across all regions of the country not only are the rich getting richer but also that the poor are getting richer.

If poverty is measured using the international poverty line of one dollar per person per day expressed in purchasing power parity – the basis of the MDG poverty target – the Maldives has no significant poverty. Between 1997 and 2004, the number of people living below this line fell from 8,000 to 2,000 – less than one percent of the population.

The survey also presents a profile of poor households. Compared with the non-poor ones, they live in larger households. They are likely to have a higher proportion of people with bad health, and a larger share of women – and household members are likely to have less education. They are also more likely to be poor if they are female headed. The poorest households tend to be those in which fewer household members are employed and which do not receive remittances from family members working in resorts or in Male'. The probability of belonging to the poorest households is higher when engaged in agriculture, fishing and local manufacturing and lower when working in tourism, trade and transport, and government. The poor households participated less in voluntary community activities than the non-poor. As might be expected, they also made fewer investments. And there are fewer poor households in the South region than elsewhere.

Disparities and inequalities

Compared with neighbouring countries, income distribution in the Maldives is relatively unequal. And over the period 1997-2005 there has been a significant increase in inequality between Male' and the atolls. However there have been some declines in inequality – within Male', within the atolls and within the regions. Within Male', income inequalities have declined significantly: between 1997 and 2004, the Gini coefficient came down from 0.39 to 0.33. They have also come down within the atoll population, with a reduction from 0.40 to 0.36. However, over the same period there was an increase in inequality between Male' and the atolls – with the Gini rising from 0.12 to 0.18. And the median per capita household income in Male' was 2.3 times the average atoll income in 2004, up from 1.7 times in 1997. As a result of these two opposing effects, overall income inequality in the Maldives has remained about the same – with a Gini coefficient of 0.41.

What effect will these inequalities have on migration from the islands to Male'? This is difficult to predict. The fact that the island population is now better off might reduce the incentive to migrate; on the other hand rising inequality might increase the incentive and the higher incomes could enable people to finance their migration.

Education and Health

Educational services in the atolls showed substantial improvements. Between 1997 and 2004 the proportion of the atoll population living on islands with schooling available up to grade 10 increased from one-quarter to two-thirds. And nowadays only 20 percent of the atoll population is living on islands that do not offer education up to grade 7. The survey looked at the availability of libraries, drinking water and toilet facilities in the island schools, as well as at the numbers of qualified teachers and nurseries, all of which have improved. The major concern is not about the quality of education but its quality.

The atolls have also seen significant improvements in health. Many more islands now have clinics and health centres, and medical staff are being stationed further afield. Nonetheless, many of the smaller island communities still have significant problems. Typically they only have one health person, who is not usually replaced during periods of absence. Moreover, one-fifth of the island population cannot always obtain medicines when required – not primarily because of a lack of drugs but because there is no-one to prescribe them.

Infant mortality and life expectancy

Since 1997, the Maldives has seen a sharp decline in infant mortality and a rise in life expectancy. Because there are conflicting data from different sources, the report attempts to reconcile these to come up with plausible estimates. These show that between 1997 and 2004. The overall IMR per thousand live births came down from 62 to 37. Moreover, the difference between Male' and the atolls decreased, with the rate for the atolls coming down from 69 to 42.

Most deaths now take place within the first week after birth. Further improvements will thus be difficult to achieve, since preventing these deaths will require more advanced facilities such as intensive care as well as better and speedier access to them, especially from the islands.

Between 1997 and 2004, life expectancy at birth increased from 62 to 68. Improvements in the atolls were of the same order of magnitude – and in Male' life expectancy currently stands at 70 years.

Nevertheless, there are still substantial regional differences. In the Central and South Central regions infant mortality rates are double those in the South – and also substantially higher than those in the North and North Central regions.

Housing and urbanization

The Maldives is facing rapid urbanization. During the period 1997-2004, the proportion of the population living in Male' increased from 25 to 30 percent, and Male', with around 500 persons per hectare, is becoming overcrowded. As a result, the housing index for Male' deteriorated sharply. On the other hand, the housing situation on the islands has improved: scarcely anyone now lives in a house with thatched walls or a sand floor.

Food security and nutrition

There have been few changes in food security. In the atolls, around seven percent of the population report some problems, though these generally reflect a shortage of money rather than a lack of supply. In Male' the situation seems to have deteriorated somewhat, but again due to the shortage of funds to purchase food. Many households reported more frequent shortages, but these on average these did not last as long.

Though levels of malnutrition have been reduced, malnutrition remains a serious problem. Between 1997 and 2004, the proportion of under-five children who were stunted came down from 36 to 22 percent, though the proportion wasted remained the same at around 20 percent.

Physical infrastructure

The physical infrastructure on the islands has continued to improve at a fast pace. Work on the national telephone system was already underway during the previous VPA and has since been completed: each island now has at least one public telephone, and there are also networks for mobile phones. In 1997 on two-thirds of the islands electricity supply was limited to less than six hours per day; now a 24- hour electricity supply is available to nearly all islands.

Due to the building of new harbours and jetties, two-thirds of the island population now live on islands that are always accessible.

Population growth has, however, put pressure on water supplies. Many households have installed rainwater collection systems, but a large proportion of the island population still report insufficient supplies. Most people in the atolls report the use of untreated, and potentially unsafe, water for drinking.

Transport and communication

The frequency of dhonis to the atoll capital and Male' has been reduced: in some cases there are only a few sailings per month, though often in larger boats. However, the reduction in the frequency of dhonis may be a result of falling demand since people can now get more health and other services locally. There are also other travel options including safari vessels, speed boats (launches), sea planes and regular aeroplanes – though these are beyond the resources of the poor.

Huge progress has been made in communication opportunities. Work on the national telephone system was underway during the previous VPA. Since then, the system has been completed with at least one public telephone on each island, and an entire mobile phone network has been added. A new, second mobile phone operator is presently developing its network for launch later in the year.

Employment

Employment is the one dimension where the overall situation has deteriorated. The Maldives is finding it increasingly difficult to generate sufficient jobs: all areas showed a substantial deterioration in the employment index. Labour force participation rates have increased but there are rising problems of unemployment, particularly among the youth both in Male' and in the atolls.

Consumer durables

The survey showed that many more people now have consumer durables: 85 percent of the island population now have a TV-set, facilitated by the expansion of electricity supplies and the introduction of cable and satellite TV. Other major household durables are now also widely held across all islands.

Gender

The situation of women in Maldives continues to improve. They have achieved parity in both primary and secondary education, and almost all are literate in the Dhivehi language. Women and girls still lag somewhat when it comes to using the English language, but they are making rapid progress.

There has also been progress in nutrition. Girls used to have poorer nutrition than boys; now the situation is the same for both sexes. However, since about one child in five continues to suffer from stunting and more than two in five from some kind of malnutrition the situation is still far from ideal.

Close to half of households were headed by a woman, about half of them because the husband was working in a resort, in Male' or at sea – and one sixth of them as a result of divorce or death. Overall, female-headed households were somewhat poorer than those with male heads: one-third were below the Rf.15 income line, while for those with a male head the proportion was one-quarter.

Environment

Compared with 1997, many more people in 2004 regarded the state of the environment as a pressing problem. Nevertheless, there have been some environmental improvements. Many more people have switched to bottled gas for cooking, rather than using firewood. People are disposing of garbage in a more orderly way and many more households now have toilets: the proportion of the households without toilet facilities fell from one in five to about one in 20.

Of the main environmental problems, some are natural, including the erosion of the beaches, which affects almost all islands; others are man-made and related to a rise in atoll populations.

Human vulnerability index

The VPA has assessed the overall poverty and vulnerability situation using a composite 'human vulnerability index' (HVI). Between 1997 and 2004, the HVI fell from 4.6 to 3.1, an improvement of some 30 percent. In the atolls, major improvements were realized in physical and social infrastructure such as electricity supply, communication opportunities, health and education.

In Male', however, the increase in crowding caused the index to deteriorate by around 15 percent, from 1.8 to 2.1.

Follow up

For the panel survey the analysis was largely restricted to income poverty, as this provides the most insights on economic progress. But the data sets of both surveys also contain extensive information on non-income characteristics of households and communities, and this is information that could be used for a wide range of analytical purposes.

A more immediate use of both VPA data sets, and in particular that from the 2004 survey is for analysing the impact of the tsunami. One assessment that has already been carried out was designed to have many aspects in common with the two VPAs in order to make optimum use all available data. Moreover, as VPA-2 presented a comprehensive status report on a wide variety of socioeconomic characteristics only a few months before the catastrophe, it was valuable in the immediate aftermath and the Disaster Management Centre made extensive use of the data set.

The two VPA surveys have provided the opportunities for a longitudinal assessment based on a panel of around 1,200 households, generating data that could be put to further analytical uses. Some of the information became outdated as a result of the tsunami, nevertheless it still provides valuable insights into poverty dynamics that can be used for long-term planning.

PART 1

The Development Context

Chapter 1

25 Years of Development

The Maldives is an archipelago of nearly 1,200 low-lying islands grouped in 26 natural atolls that vary widely in size, from a single island of a few square kilometres to large lagoons with diameters of more than 70 kilometres. The archipelago, to the south-west of Sri Lanka and the Indian subcontinent in the Indian Ocean, stretches more than 800 kilometres from north to south and at its widest point is about 130 kilometres west to east – encompassing an area of about 90,000 square

The islands, mostly situated at the edges of the atolls, are, however, invariably very small: only 33 have land areas of more than one square kilometre and 80 have less than 25 hectares (0.25 square kilometres). Of the nearly 200 permanently inhabited islands more than 70 have fewer than 500 inhabitants and 20 have fewer than 250. Only a handful has more than 5,000 – the population size that allows for efficient delivery of basic social and economic services.

The small size of the inhabited islands, in terms of both land area and population, and the large distances between them, especially when measured in travel times by the common means of transport, the dhoni, create many problems. These include the severe diseconomies of scale that are felt hardest when delivering social services and providing their infrastructure: nearly all materials need to be imported so construction costs are many times higher than in continental developing countries. Service delivery too is more costly – even at the basic level.

Development potential is constrained by the lack of mineral resources – as well as by the small size of the islands, the lack of rivers and streams, poor soils that are ill-suited for agriculture, and the dependence on rainfall for agriculture and for affordable potable water.

Despite these constraints, the Maldives has made significant progress and has recently graduated from least developed country status – a feat no other country has managed. Economic growth has been impressive, with growth rates averaging more than ten percent during the 1980s and early 1990s[1] – about seven percent per annum between 1997/98 and the middle of 2004, the two measuring points of the Vulnerability and Poverty Surveys. Population growth has also declined – from three percent per year in the late 1970s to below two percent currently. As a result, growth in GDP per capita has also been high – at around five percent per year. In 1995 prices, per capita GDP increased from around \$400 in 1977 to nearly \$1,700 in 1997 – and to more than \$2,400 in 2004.

Increased prosperity in the Maldives also resulted in vast improvements in the provision of social services and in general standards of living. Progress over the past seven years is described in detail in Part II of this report, including improvements in access to education in the islands, the universal availability of electricity and telephone services, and major improvements in access to medical services. Progress has, however, been slower in some

1 For ease of reference the reference base year used in VPA-1, 1977, has been maintained in this report. In general, information is therefore given for 1997 and 2004, when the two VPAs were conducted. When a longer reference period is used it generally goes back to 1987 and 1977 or the closest years for which data are available.

areas than others, and in some respects the situation has deteriorated – for housing in Male' for example, and for the environment on the islands, largely because economic development and population growth have put increasing pressures on the limited land resources.

Rapid economic growth has largely been due to the success of the tourist industry. Between 1997 and 2004 the number of resorts increased from 73 to 86 and the number of annual tourist arrivals from 366,000 to more than 600,000. The Tourism Ministry and the Tourism Promotion Board have contributed to this expansion with active marketing campaigns that depict the Maldives as a favoured holiday destination; the current promotion presents the country as "the sunny side of life".

Further economic growth has come from fishing, primarily for tuna: between 1977 and 2004, exports of marine products increased from 18,000 to 75,000 tons. There have also been exports of garments. For most of the 1990s and the early part of this century the Maldives used expatriate labour and imported materials in foreign-owned plants to take advantage of its textile quota under the Multi-Fibre Arrangement (MFA). Now that the MFA has been abolished, the factories have closed. But since they added little value to the Maldivian economy their closure has had limited impact.

And then came the tsunami

Over a few minutes during the morning of 26th December 2004, developments in the Maldives were drastically affected by the Indian Ocean tsunami. This VPA report is based on data collected about half a year prior to the disaster so even though it may be to some extent outdated it is nevertheless of immense value for the forthcoming impact assessment. Its analysis of the development patterns of different types of household has also helped to indicate optimal recovery strategies and the best ways for households to make fullest use of relief and other support.

Box 1.1 - Atoll Names

The 26 natural atolls that make up the Maldives are grouped into twenty *administrative atolls*. The islands of Male', the nation's capital, constitute another administrative unit. Each of the administrative atolls has an official name as well as a popular name. The popular names are widely used and have been used throughout the report. In the Atlas (Part 3) both names are given for all atolls. The official and popular names of the atolls are:

Code	Official Name	Popular Name
20	North Thiladhunmathi	Haa Alifu Atoll
21	South Thiladhunmathi	Haa Dhaalu Atoll
22	North Miladhunmadulu	Shaviyani Atoll
23	South Miladhunmadulu	Noonu Atoll
24	North Maalhosmadulu	Raa Atoll
25	South Maalhosmadulu	Baa Atoll
26	Faadhippolhu	Lhaviyani Atoll
27	Male' Atoll	Kaafu Atoll
28	North Ari Atoll	Alif Alifu Atoll
29	South Ari Atoll	Alifu Dhaalu Atoll
30	Felidhe Atoll	Vaavu Atoll
31	Mulakatholhu	Meemu Atoll
32	North Nilandhe Atoll	Faafu Atoll
33	South Nilandhe Atoll	Dhaalu Atoll
34	Kolhumadulu Atoll	Thaa Atoll
35	Hadhdhunmathi	Laamu Atoll
36	North Huvandhu Atoll	Gaafu Alifu Atoll
37	South Huvandhu Atoll	Gaafu Dhaalu Atoll
38	Fuvamulah	Gnaviyani Atoll
39	Addu Atoll	Seenu Atoll

The tsunami affected the whole country but its impact was greater on some islands than on others. For example, the capital, Male', and the atolls in the extreme north and south incurred only limited physical damage, while other islands were completely devastated. This report and the accompanying CD-ROM present detailed information at island level making it possible to tabulate information by island on the severity of the impact.

In the map of the 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 mostly on islands on the eastern edges of the atolls, and geographically the heaviest impact was in the Central South region; out of the 14 most severely affected islands, 11 are located in this area.

The second Vulnerability and Poverty Assessment

It is difficult to formulate strategies for the sustainable development of the island populations. Over the past decades, the Government has used several approaches and in the process gained extensive experience. This includes, for example, experience of a strategy concentrating on 'focal points' or 'growth centres', whose successful application relies on 'spread effects' that are hampered by the country's insular structure. Atolls, and islands within an atoll, are often very different and general growth strategies tend to fail if they are not tailored to specific communities.

For some islands the problems are fairly evident – such as small size or overcrowding that limit land-based initiatives – though the development potential of these islands can be improved by the presence of tourist resorts, a good fish collection system or other economic activities. Other obstacles to development can be less obvious, such as difficult access because of the structure of the reef, the lack of bait fish, or the short season for pole-and-line tuna fishing. Many people also find it difficult or expensive to reach social services, since even when these are available on nearby islands, people do not have the options common in continental countries of using a bicycle or simply walking.

For the Maldives it is difficult to apply strategies that work in countries with larger and more homogenous land masses. What is needed instead is a more imaginative approach better tailored to local needs. This in turn, however, demands detailed information on the conditions on the islands and especially on the aspirations of their people.

In the Maldives there have been a large number of surveys on a wide variety of subjects, but often these have restricted to a limited number of atolls, which, given the many differences between and within atolls, make it difficult to extrapolate them nationwide. On the other hand more general surveys such as the regular Population and Housing Census[2] while providing much valuable information may be less suited to gathering more detailed data on livelihoods and living standards.

Recognizing the need for island-specific information the Government, with the assistance of UNDP, in 1998 undertook the first Vulnerability and Poverty Assessment (VPA-1). This included a number of innovations in both data collection and analysis. To overcome the problem of dealing with many different islands, for example, VPA-1 introduced a new methodology for data collection in that it covered all inhabited islands but within each island selected a limited sample of households for more detailed study.

Then for analysis it introduced the concept of the 'human vulnerability index' (HVI). To express the overall situation in each island the HVI combines 12 living standards dimensions into a composite index – using an unweighted average and the standard procedure employed for the human development index (HDI). However the HVI goes further in that it also incorporates the views of local communities. Information gathered from the Island Development Committees, the Women's Development Committees and both spouses in each household, was used as a basis for weighting the significance of different components of the HVI. Since information was gained separately for men and women it was possible to create different indices to reflect the priorities of men and women. And since it was gathered for each island, it was also possible to create indices corresponding to the 90 most vulnerable islands.

2 *The first census in the present series was conducted in 1977. From 1985 onwards, a census was carried out every five years. Due to the tsunami, the census planned for April 2005 was postponed for a year. By that time most of the displaced population should be in permanent residences again.*

VPA-2 updates VPA-1 using, broadly speaking, the same questionnaires and definitions, so the information should be fully consistent between the two surveys[3]. However, the design of the new survey also took into account both the experience gained during VPA-1 and the changes in the nation over the intervening seven years.

In some cases it was also necessary to adjust calculations done in the first survey to ensure full consistency of the data and concepts. This makes it possible to track the direction and magnitude of changes over the past seven years. However VPA-2 was designed to add extra value. For the atoll population its survey sample comprised two halves[4]. The first consisted of 1,100 households that had been enumerated in VPA-1, thus creating a panel. The second consisted of a fresh random sample of the remaining households. The panel data added a new dimension, permitting an in-depth study that could identify the characteristics of households that on average performed better and those that under-performed.

The 2004 tsunami disaster, which devastated whole communities, makes it even more important to discover the characteristics that best enable a household to escape from poverty. With the information from VPA-2 the Government and the international community will be better equipped to design the most suitable package of support and incentives.

3 To the extent that the data were collected in the 2002/03 Household Income and Expenditure Survey, this was also consistent with the VPA. It therefore provides some additional information on developments over the period under study. For ease of reference, the HIES data set has been included on the CD-ROM.

4 Because people in Male' move frequently it was not considered feasible to locate an adequate number of the households covered in VPA-1 for the panel. In the islands, movements are far less frequent as nearly all households own their houses, which could be located easily from the house names in the data set for VPA-1.

Chapter 2

The survey

At the time of conception of VPA-2, the main purpose of the survey was to provide the baseline for the next National Development Plan. Equally important, it was to become the main source for the Maldives' first initiative in MDG tracking and reporting. Finally, as it included a 'panel' survey (same households, with similar questions seven years later), it could indicate successful coping mechanisms and poverty reduction strategies at the household level.

The survey acquired even greater significance as a result of the tsunami on 26th December 2004. The fieldwork that had been completed in July 2004 provided a detailed description of the socioeconomic conditions on the islands only a few months prior to the disaster. The Government was thus able to use the comparative analysis, which was already under way, to make preliminary estimates of the effects of the tsunami on people's livelihoods in the affected islands.

More specifically, VPA-2 aimed to include:

- *The basis for an anti-poverty framework* – An in-depth analysis of living conditions in all parts of the country should form the basis for a strategic anti-poverty framework. This should enable the Government to design pro-poor policies and programmes, as well as monitor and evaluate their impact.
- *The people's perspective* – The VPA was to provide an assessment, both in terms of geographical coverage and the range of development concerns, of the needs and priorities from the perspective of the people themselves. This was to include a human vulnerability index (HVI) tailored for a scattered and extensive island state.
- *A database* – Provide a relational database for poverty and vulnerability diagnostics;
- *An evaluation* – Looking at the effects of development activities upon household living standards.

The VPA-2 would then serve as the cornerstone for actions in a number of areas, including:

- *Millennium Development Goals* – A analysis of Millennium Development Goal (MDG) indicators and the writing of the first Maldives MDG Report;
- *Public finance* – A discussion of the allocative aspect of public finance and budgeting and social spending, arising from the results of the World Bank public expenditure report.
- *Development plans* – Data support for an evaluation of the current Sixth National Development Plan (NDP) and the formulation of the Seventh NDP.

The Government's decision to embark on this exercise reflects the importance it attached to the availability of comprehensive socioeconomic data for policy formulation. VPA-2 would not only highlight continuing problems, but also assess the effects of government policies. The panel data in particular would provide a sample large enough to allow for an in-depth analysis of changes in poverty and living conditions of households across the nation – and indicate why some households had made more progress than others.

Survey methodology

This report is mostly based on a survey conducted during 1997/98 and in mid-2004, supplemented with data obtained from the 2002/03 Household Income and Expenditure

Survey – as well as data from administrative records and surveys conducted by line ministries. Both VPA surveys covered all 200 inhabited[1] islands in the atolls, as well as the capital, Male' – gathering some information from all households and then selecting a number of others randomly for in-depth interviews.

In the atolls, the survey for VPA-2 selected for its sample half the households that had been enumerated in 1997/98 – forming the 'panel' – and the other half from the remaining households. In Male', however, the approach was different. Here, population movements in the intervening seven years had made it unfeasible to locate an acceptable number of households that had been enumerated in the first survey, so a completely new sample was taken. The sampling methodology is detailed in Technical Note 3.

To supplement the household information, questionnaires were also administered at the community level – concerning physical infrastructure and the availability of social services and economic resources. Most of this information was obtained from the office of the island chief. In addition, members of the Island Development Committees and the Women's Development Committees also provided information on the main problems experienced in the intervening seven years and what they saw to be the priorities for further development.

While the second survey questionnaire largely repeated that for VPA-1, often with identical phrasing, it also included a few changes to correct some weaknesses in the earlier questionnaire and to account for structural changes that had made some questions redundant and required some additions to ensure proper coverage in a changed environment. For ease of reference, English-language versions of the survey questionnaires have been included on the CD-ROM, along with the actual Dhivehi-language questionnaires that were administered and the enumerator's manual.

At the start of the survey, the staff of the island offices, with support from the Statistics Section of the MPND, prepared a listing of households. In the atolls, the household listing was split into two parts: the first consisted of those households that had been enumerated in the survey for VPA-1. The second part consisted of all other households on the island. From both parts, five households were selected at random, along with five others to be used as replacements in cases where the original households could not be found or would not co-operate. On islands with larger populations, the sample was increased to include ten additional households for every 1,500 persons. This method of determining the sample size was identical to that used in the first survey.

For Male', however, household listings were prepared only for the selected enumeration areas – ten households in each, along with replacements. In the event, non-response was not a problem in the atolls, though levels of co-operation were somewhat lower in Male', requiring the use of some of the replacements.

Households were selected at random so as to be representative of their islands. This meant that the results could be aggregated and then multiplied. Thus, if on a particular island ten out of 50 households were enumerated, the results were multiplied by five. The estimates for each island could then simply be added to generate aggregates suitable for analysis or comparison at any level, and in any desirable combination.

1 *There are nearly 1,200 islands in the Maldives. Of these, 200 were inhabited at the time of the survey and these are classified as administrative islands. These islands are grouped into 20 administrative atolls. In addition to the inhabited islands, there are now 87 islands in use as tourist resorts. Furthermore, there are a number of industrial, agricultural and official islands. Only the administrative islands were covered in both surveys. Local employees resident on the resort islands during the survey periods were included in the households to which they belonged on the administrative islands.*

Data entry, editing and processing

During data entry a large number of items were checked for consistency and plausibility. If this process suggested errors, the data entry operators were prompted to cross-check the information they had entered with that on the forms – reducing the number of data transcription errors to an acceptable level while allowing obvious errors to be corrected at an early stage. Once all the data had been entered, more checks for consistency and errors were carried out until an acceptable level of accuracy was obtained and only limited data gaps remained. This was an iterative process demanding frequent cross-checks with the original forms.

Data entry was done using Acrobat PDF forms as screen formats – i.e. exact copies of the questionnaire. This was because the data entry software had to be developed before the questionnaires were completed and the package was to be used by untrained staff with little experience. This processing method was cumbersome and complicated, but it kept the user interface very simple and software development could mostly be done in parallel with development of the questionnaire.

However this also meant that no test data were available during the software development phase, so some problems were identified only after processing of the survey had begun. The most difficult problem concerned the slow conversion speeds in posting the data to the various databases, but once this issue had been identified the problem was quickly resolved. Another problem, noticed only at the analysis stage after data entry had been completed, related to errors in the coding that resulted in some data, although captured in the PDF forms, not being converted to the databases. All individual data had, however, also been kept in these PDF forms and, after modifying the data conversion parameters, the solution generally was to rerun the extraction process, which could be done overnight. In a few instances, some data needed to be re-entered, but this was mostly because parts of the questionnaires had been skipped during the data-entry process.

Nevertheless, even after all systematic errors had been taken out, and no more reference was made to the PDF originals, there were still inconsistencies found during the analysis that required adjustments to the database. This also applied at the time of preparation of the panel data and in a few cases the data sets from the first survey were adjusted to correct for inconsistencies. While this might in principle result in changes for the results published earlier in VPA-1, in practice the number of changes was small and did not influence the results. For the panel analysis, however, the corrections were significant. When making one-to-one comparisons even a small number of large changes can significantly influence the outcomes. These data problems did not show up in VPA-1 because this did not involve a longitudinal analysis.

Designing samples means finding an optimum balance between the volume of data that can be gathered with the available resources and the minimum acceptable quality of the results. The likely reliability can be calculated for each data item, though in practice this is not necessary as many of the characteristics move in a similar fashion. Technical Note 4A offers a detailed analysis of the reliability of the estimates for poverty incidence and per capita expenditures, in both VPA-1 and VPA-2, and the change in these characteristics over time. For the incidence of poverty, the analysis has been done for four groupings: the Republic overall, Male', the atolls and the five regions. For per capita expenditures, the estimates have also been given for each of the atolls. The technical note also contains a full description of the methodology.

Limitations

All surveys have limitations that arise from both practical and financial considerations. A population census, for example, covers the whole population but includes a limited number of data items. The VPAs, on the other hand, contain detailed information on an extensive range of characteristics, but are limited in sample size since full coverage would be practically impossible and prohibitively expensive.

The use of a sample survey does, however, to some extent restrict the analysis. While island-level data are representative of the situation on the island generally, as the households have been randomly selected, a very small number of observations will not generate reliable, accurate information. This can be illustrated as follows. If a die is thrown, the chance of a particular number coming up is always the same: one in six. However, if the die is thrown only three times, at most three numbers will show up. Only when a sufficient number of throws has been made, will the result approach the standard one-in-six distribution. Indeed, theoretically, the expected distribution will be obtained only after an infinite number of throws. Similarly, on a small island ten households may be a large proportion of all households, but if on average a particular characteristic is present in, say, only one household in ten, the sample size at this level will not be large enough to obtain reliable data. In statistical terms, at the island level the ten households constitute a sample so small that the variance, or standard deviation, is generally beyond acceptable levels.

There can also be problems related to time periods. The field work for the VPA-1 survey was conducted over six months, between August 1997 and February 1998. The field work for VPA-2 survey, on the other hand, was carried out over a much shorter period – over two months between May and July 2004. This reduced the problems relating to the use of different reference periods for the respondents in different atolls. But as the two surveys took placed at different times of the year, comparisons of the results may be influenced by seasonal fluctuations. These effects are, however, likely to be limited since agriculture does not play an important role in the Maldives and fishing and tourism are not very seasonal.

Another problem observed during the VPA-1 process was the change in living conditions between the time of the survey and the preparation of the report. At that time, for example, one topic of discussion was the availability of telephones. While at the time of the survey, one-third of the atoll population lived on islands that did not have public telephones, by the time the assessment report was completed all islands had been linked to the telephone system. The VPA necessarily measures conditions only at the time of the actual survey and reflects the priority ranking of different livelihood issues at that time: those who have telephones, for example, are likely to be less pre-occupied with communications than those who do not.

This problem has been exacerbated by the tsunami – which has rendered some of the VPA-2 outdated. Nonetheless, the analysis continued, for two main reasons. First, to complete the detailed picture of the pre-tsunami situation in the islands. Second, to offer insights that would assist in the recovery effort.

Chapter 3

Using the Vulnerability and Poverty Assessment

This report is presented in three parts. Part I describes the development context of the Maldives and provides a general introduction to the report. It also summarises the rationale for this second survey and relates the study to the subsequent tsunami disaster.

Part II presents information both by sector and by main theme. It comprises nine chapters, of which the first eight deal with aspects of living standards essential for a better understanding of poverty and vulnerability. The ninth describes the analysis of the household panel data and summarizes the main results.

Succeeding chapters cover income poverty (chapter 4), physical infrastructure (chapter 5), social infrastructure (chapter 6), housing and environment (chapter 7), food security and nutrition (chapter 8), employment (chapter 9) and gender (chapter 10). Each chapter describes the situation in mid-2004 and compares it with that in 1997/98. The chapters analyze the data and in some cases, where information is largely obtained from the household surveys, document the most important reasons for these changes. The chapters also present 12 composite indices that capture the status of an island with respect to each of 12 living standard dimensions:

- Poverty gap
- Electricity access
- Transport services
- Communications
- Educational services and infrastructure
- Health services and infrastructure
- Drinking water
- Recreation and sports activities
- Durable consumer goods
- Housing
- Natural environment quality
- Food insecurity and malnutrition

Each index is based on a number of quantifiable indicators; 40 in total, all of which are presented on a scale from 0 to 1. In the construction of the indices, different weights have been assigned to each indicator based on its relative important which is mostly reflected in terms of 'penalty points'. For instance, the lack of electricity on an island results in a full penalty point, while availability of electricity for fewer than six hours results in half a penalty point. For some indices it is possible for a household (or island) to attract more than one penalty point. In those cases, the total is capped at one.

These 12 living standards indices are then used in Chapter 11 to construct a set of composite human vulnerability indices (HVIs) with the weighting between them determined by the priority rankings of the survey respondents. Weights have been created for three groupings: first, for all responses; second, for male and female respondents; and third for the most vulnerable islands for all and for male and female respondents. The indices and the underlying indicators have been presented for all the 200 islands inhabited at the time of the survey.

Part 3 presents some of this wealth of information in a series of maps. Each of the 16 maps, covering the northern and southern parts of the country on facing pages, deals with one living standard indicator, or one type of composite – colouring each island accordingly. Most maps use only three colours, though some have up to five. Each map allows the user to assess the extent of poverty or vulnerability for that indicator and its geographical distribution. The poorer islands are coloured in red; the non-poor mostly in green.

The underlying indicators are provided in the Statistical Annex. The annex presents the detailed information only for 2004, though it gives the HVIs for both surveys. However, complete details for each indicator are given in the CD-ROM version.

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 – from 8,000 onwards.

In addition, the CD-ROM contains a set of 32 statistical tables for each of the three surveys, covering identical information for each. The HIES included the original set of tables as part of the part of the printed report, but this was not possible for the VPA reports as it would have made them too bulky.

In the VPA-1 report the maps with colour coding for the various living standard indicators that make up the Atlas of Vulnerability and Poverty were produced manually by colouring in each of the circles using CorelDraw software. This time, using the mapping information contained in the ChildInfo and DevInfo[1] packages as a starting point, the process has been mechanized using a simple open-source software application in the Java language. This allowed for the production of useful additional maps. Although these have not been included in the report they are available on the CD-ROM. For each of the maps included in this report, another map has been produced that reflects the changes between 1997/98 and 2004, using a simple pattern of three colours. Changes on the islands are represented by coloured circles: green for improvements; red for declines; and yellow for no change.

1 The DevInfo and ChildInfo packages were both developed by UNICEF in India as display tools to easily assess the status of a country or region. They have been introduced in Maldives some years ago. The maps included in the packages are based on the standards developed by ESRI many years ago. This standard is also used in commercial packages such as MapInfo and MapObject.

PART 2

Main Results of The Vulnerability and Poverty Assessment

Chapter 4

Income poverty

This chapter contains the main findings on income levels and disparities as well as on income trends. It also reports on the panel analysis, describing some of the significant characteristics of the households that have succeeded in climbing out of poverty. This assessment includes 12 living standard indicators, all of which are relevant to poverty and vulnerability. The most significant is income poverty which is not just important for income but also for vulnerability: individuals or households with sufficient income can 'buy themselves out' of vulnerability – for example, by acquiring well equipped houses at proper places including, if necessary, electricity generators, water desalination facilities, and satellite telephone and television receivers when these facilities are not available in the community. They can also afford the most appropriate forms of transport. Thus they are not only non-poor but can also overcome vulnerability or poverty along other living standards dimensions.

Given the importance of income poverty, this chapter, unlike those for the other living standard measures, includes a description of concepts and methodology. In addition, it introduces a theory central to the analysis of this chapter, that of 'poverty dominance'[1].

Concepts

As with VPA-1, although all findings are expressed per capita, the principal unit of analysis is the household. Moving from the household to the individual level simply means dividing the household income by the number of household members. This approach does not, of course, take into account economies of scale within the household, and assumes equal distribution of household income among all members. Diagnosing intra-household inequality it is beyond the scope of this survey which thus takes per capita household income as a proxy for individual incomes.

Income and expenditure

Household income itself is a complex concept and difficult to measure in a developing country where a large part of the labour force are either self-employed or own-account workers. Many respondents to the surveys may not, for example, be fully aware of their income and will tend to over-estimate it by reporting their business turnover without deducting the costs made to generate this output. This was the main reason why, instead of using household income itself, the VPA-1, like most poverty studies in developing countries, instead used household expenditures as a proxy. Correspondingly, and for comparability, this report too uses per capita household expenditure as a proxy for per capita household income.

Since 1997 when the first VPA survey was conducted, household incomes both in Male' and on the islands have been increasing rapidly. So too have purchases of household durables. The latter is clear an indication of large increases in discretionary incomes, which also probably means that rather than using incomes for consumption households are saving more. This creates a problem for analysis since an increase in savings weakens the link between income and expenditure; this publication

1 *This is described in detail in Technical Note 1. Technical Note 4 also includes the methodology for testing the reliability of results for both poverty incidence and levels of expenditure.*

may therefore under-estimate the change in household incomes. While this has to be kept in mind for further research, this report bases its analysis on expenditures.

Imputing own-produced consumption

The household questionnaires of both surveys include a long list of consumption items. Respondents were asked what items they had consumed during the reference period, how much, at what price. They were also asked how they had acquired them: purchased; through own production; through salaries in kind; or as gifts.

When considering household consumption expenditures this report includes in addition to purchased items, those that are own-produced consumption and those purchased from salaries in kind. However, it excludes gifts. Thus, a banana consumed from the household's own yard is treated in the same way as one bought at the local market, giving it an imputed value based on the local market price[2]. In this way, all the bananas consumed are included in household consumption expenditures.

To avoid double counting the survey excludes gifts, since it is assumed that the donors will report these items in their own consumption expenditures. This is in line with procedures for the Maldives' national accounts estimates.

Price differences over time and across regions

When translating nominal consumption expenditures into real consumption expenditures it is important to take into account price differences, over time and between regions. Price adjustment over time is fairly simple, since in the Maldives over the period 1997-2004 the inflation rate was practically zero.

Accounting for price differences between regions is more difficult. For the VPA-1 the analysts tried to estimate regional purchasing power parities (PPPs) based on an average standard consumption basket. But this proved impossible as there were only a few items that met the two essential criteria: homogeneity and availability and use throughout the country. A fish, for example, is not the same from place to place, nor is a banana. The basket also had to exclude luxury goods and consumer durables since the Maldives 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. All these considerations still apply, so the poverty and inequality analysis in this chapter is based on nominal prices, unadjusted for price differences over time and across regions.

Housing rent

For consumption expenditures there is an important practical problem with the treatment of housing rent. From a conceptual point of view, consumption expenditures should include the cost of all accommodation, whether rented by the user, provided free by the employer, or, for people living in their own houses, imputed. However, the absence of a housing market on the islands makes it difficult to arrive at an imputed rent. For this reason VPA-1 excluded all housing rent from consumption expenditures – though later calculations in preparation for this report discovered that what actually happened was that for household consumption expenditures VPA-1 included actual rent but excluded imputed rent.

In principle, not much has changed. In 2004 there was still no housing market on the islands, so to include all housing rents, actual and imputed, would be artificial. The situation is different in Male', however. Here there is indeed

2 *In principle, the price should be the producer price, i.e the price received at the 'farm gate' if the product had been sold, rather than the retail price of the markets and shops which includes trade and transport margins. In practice, such detail is not available. Indeed in small island communities prices for many products may not be available at all.*

a large and increasing market for housing so to exclude housing costs would involve considerably underestimations – of expenditures for renting households and incomes for lessor households.

This report has therefore retained the (accidental) VPA-1 approach, which includes actual rent but excludes imputed rent. As a result, on the islands the report somewhat under-estimates the income of owner-occupiers – nearly the entire population. In Male', on the other hand, where renting households spend a substantial part of their incomes on rent, the report seriously underestimates the incomes of owner-occupiers.

The proxy for income

Taking into account the options described above, for per capita household income this report uses as a proxy the sum of:

~ Per capita household cash expenditure on consumer goods

~ The value of own-produced consumption

~ The value of salaries in kind, including free housing

~ Actual housing rent paid

It excludes gifts received and the imputed rent of owner-occupied housing.

Purchasing-power parity

The Millennium Development Goals (MDGs) include a number of targets. Under Goal 1, the eradication of extreme poverty and hunger, the first target is between 1990 and 2015 to have halved the proportion of people whose income is less than $1 a day. This dollar is defined in terms of its purchasing power of consumption in 1993 international dollars – that is, in relative prices compared to those in New York. As price levels in Maldives are substantially below those in New York, conversion from rufiyaa to dollars against the official exchange rates would under-estimate the purchasing power in the Maldives.

To allow for this difference, 'purchasing power parities' (PPPs) have been calculated for many countries. The methodology was originally developed at the University of Pennsylvania and in its initial phase was actively supported by the United Nations Statistical Office and the United Nations Development Programme. Later, the leading international agency supporting the concept was the World Bank. And over time, an increasing number of countries have participated in the successive rounds of the International Comparison Project (ICP) which has been promoting and improving the methodology. Previously, the Maldives had not been part of the programme, but it has participated in the recently launched round, which for Asia is now co-ordinated by the Asian Development Bank.

Because there have been no direct PPP measurements in the Maldives, estimates have been prepared mainly using information from nearby countries. This information, prepared by the World Bank and available on the website of the UN Statistics Division under the Millennium Indicators, gives a 1993 exchange rate for the rufiyaa of 3.517 per PPP dollar. In other words, in the Maldives 28 dollar cents bought the same basket of goods as one dollar did in New York.

For comparison, one can consider the case of India, which has participated in a number of ICP rounds, and for which the PPP has been calculated from the same data. In 1993, the PPP exchange rate for the period was 7.016 rupees per dollar, implying that 14 dollar cents would buy the same goods in India as one dollar did in New York. This means that Indian price levels were 50 percent lower than those in Maldives.

As the reference year is 1993, the PPP needs to be adjusted to current prices. Price developments in the Maldives, as measured by the Consumer Price Index since 1993, can be split into two distinct periods. From 1993 to the end of 1997, the reference year for VPA-1, price increases were substantial, about 30 percent in total – 6 percent per year. In the subsequent period, however, from the end of 1997 to the middle of 2004, the reference year for VPA-2, prices hardly changed. The information is summarized in table 4.1.

The MDG reference value of one dollar per day in the middle of 2004 is therefore equivalent to Rf. 4.63. This implies that, in the base year, average prices in the Maldives were only about one-third of those in New York. Clearly this will not be true for traded goods, which are mostly imported. However, the price levels cover the complete consumption package, which includes non-traded services, for which prices are generally much lower in the Maldives than in New York; indeed often less in rufiyaa than they are in dollars. Now that the Maldives is participating in the ongoing round of the CPI project it will eventually have direct PPPs that can be used to verify the accuracy of the indirect ones used in this report.

In practice, the poverty MDG, which uses the dollar-a-day measure, is of little relevance for the Maldives. VPA-2 found that only 43 of the 2,730 sample households – less than two percent – had per capita incomes of less than a dollar a day. Over the past seven years the Maldives has already succeeded in meeting this MDG, and by the year 2015 will probably have eliminated extreme poverty.

Population dynamics

Over the period 1997-2004, population growth in Maldives was less than two percent per year. Population estimates for the years 1997 and 2004 are given in Table 4.2. As expected, due to rural-urban migration the population is growing faster in Male' than in the atolls, and over those seven years the urbanization rate, defined as the percentage of the population living in Male', has increased rapidly – from 25 to 30 percent. Nevertheless, the atoll population also continues to grow. Furthermore, across the country, and especially in Male', in spite of a slight decrease, households remain large.

Table 4.1 – Consumer price indices and PPPs, 1993-2004

Period	CPI Price Index (1995 = 100)	Percentage change	Nominal exchange rate	PPP exchange rate
1993 Average	91.55	–	11.01	3.52
1997 year end [1]	118.81	29.6	11.72	4.56
2002 year end [1]	113.29	-4.6	12.85	4.35
2004 mid year [2]	120.75	1.6	12.85	4.63

[1] Average of the December and January indices
[2] Average of the June and July indices

Table 4.2 Population growth, 1997-2004

	Maldives		Male'		Atolls	
	1997	2004	1997	2004	1997	2004
GDP per capita (constant 1995 prices)	23,139	28,611				
average annual growth rate		4.8%				
mean hh expenditures pppd	23	35	34	57	19	28
average annual growth rate		6.2%		7.7%		4.8%
median hh expenditures pppd	17	26	28	43	15	21
average annual growth rate		6.3%		9.5%		5.4%

Table 4.3 – Annual growth of income per capita, 1997-2004

	Maldives		Male'		Atolls	
	1997	2004	1997	2004	1997	2004
GDP per capita (constant 1995 prices)	23,139	28,611				
average annual growth rate		4.8%				
mean hh expenditures pppd	23	35	34	57	19	28
average annual growth rate		6.2%		7.7%		4.8%
median hh expenditures pppd	17	26	28	43	15	21
average annual growth rate		6.3%		9.5%		5.4%

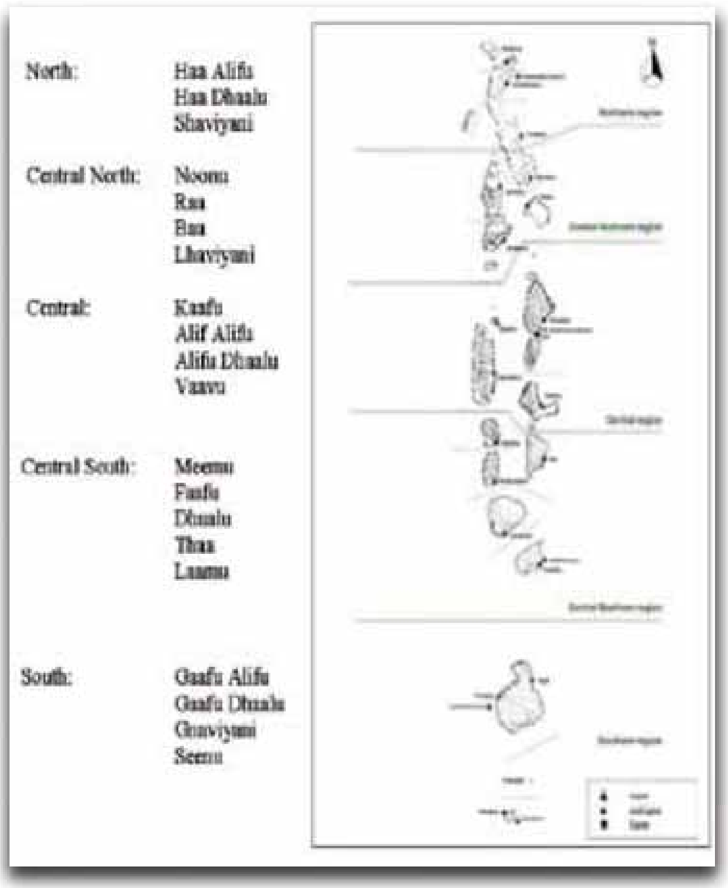
Income levels

Table 4.3 shows that national income has been increasing rapidly: per capita GDP has been growing at almost five percent per year. At two percent population growth, this implies an annual GDP growth rate over the seven-year period between the two VPAs of about seven percent. Over such a long period this is impressive, especially when compared with that in other low-income countries.

Moreover, growth has been even faster in per capita household income: more than six percent annually; close to five percent in the atolls and nearly eight percent in Male'. By 2004 the mean daily household income was Rf. 35 per person – though two-thirds of the population had an income lower than this. In 2004, the median household income, the income where half of the population has less and half of the population has more than this, was Rf. 26 per person per day – Rf. 49 in Male' and Rf. 21 in the atolls. The rufiyaa values here are in nominal terms. For international comparison, it is better to use PPPs. In these terms per capita incomes are about $PPP 7.60 in the Republic, $PPP 12.30 in Male' and $PPP 5.60 in the atolls.

Household incomes are growing rapidly throughout the country, but the growth in Male' is higher than elsewhere, implying an increase in income inequality between Male' and the atolls. On the other hand, inequalities are declining within Male' and within the Atolls – since here the median incomes are growing faster than the mean incomes.

Figure 4.1 – Grouping of atolls by development region



Income levels by region

For a small country like the Maldives, with around 44,000 households, the VPA-2 sample size is relatively large – more than 2,700 households. This means that the survey's findings of per capita household income and income poverty, as well as their changes over time, can be considered very reliable and will pass all statistical tests, not just at the country level, but also at the Male' level and at the level of all atolls combined.

The number of observations is still too small, however, to present reliable estimates at either atoll or island level. But it is possible to offer statistically reliable estimates for development regions[3]. These regions and their constituent atolls, which are the same as those in the Household Income and Expenditure Survey 2002/03, are detailed in Figure 4.1.

3 *For further details on the reliability tests, see Technical Note*

Figure 4.2 shows that, over this seven-year period, average household incomes grew in all regions – and in the two southern regions by more than 50 percent. It is also evident that households get richer from north to south.

Figure 4.3 presents the picture in terms of median incomes. Again, this shows that over those seven years, all regions became richer but that income growth was highest in the southern part of the country. As is the case with the mean income, the median income increases from north to south.

Measuring income poverty

The indicators commonly used to measure income poverty are the headcount ratio and the poverty gap ratio. The headcount ratio is simply the proportion of the population with income below a certain poverty line. The poverty gap ratio, however, takes into account both the incidence of poverty and its depth – not just counting the number of poor people but also considering how poor they are.

Both indicators need a poverty line. Since this is based on value judgements, the choice of a poverty line is always arbitrary and subjective, and moving the line only slightly can significantly change the poverty incidence.

Poverty dominance

Therefore, instead of searching for a single poverty line for the Maldives, this report takes an approach based on the theory of poverty dominance. The theory is described in detail in Technical Note 1, but is illustrated here for income poverty in Figure 4.4. The x-axis shows all per capita incomes; the y-axis shows the percentage of the population below each of these income levels. Thus, in 1997 (the blue line) the proportion of the population having less than Rf. 10 per person per day was a little more than 20 percent; whereas in 2004 (the red line) it had come down to slightly less than 10 percent. Similarly, in 1997 the proportion of the

Figure 4.2 Average household income (mean), Male', atolls and five regions, 1997 and 2004

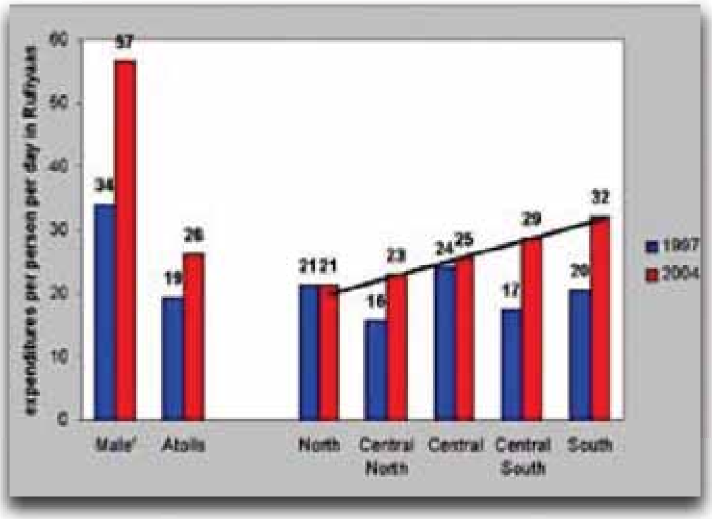
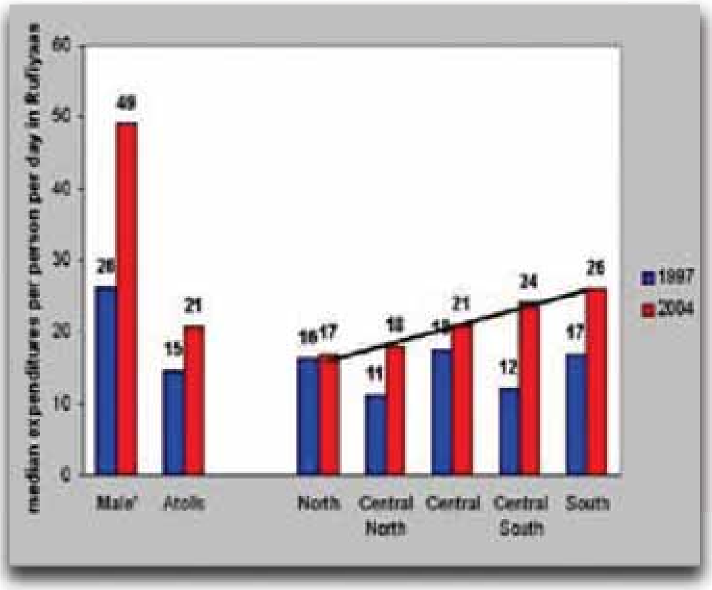


Figure 4.3 – Median household income in Male', atolls and five regions, 1997 and 2004



population having less than Rf. 20 per person per day was around 60 percent, while by 2004 it had come down to around 35 percent.

These charts present a continuum of the headcount ratios for all possible poverty lines. Since the red line is entirely below the blue line, this means that poverty has declined during the period 1997-2004, for all possible poverty lines. The extent of this progress is represented by

Figure 4.4 Cumulative population ranked from poor to rich, Maldives 1997 and 2004

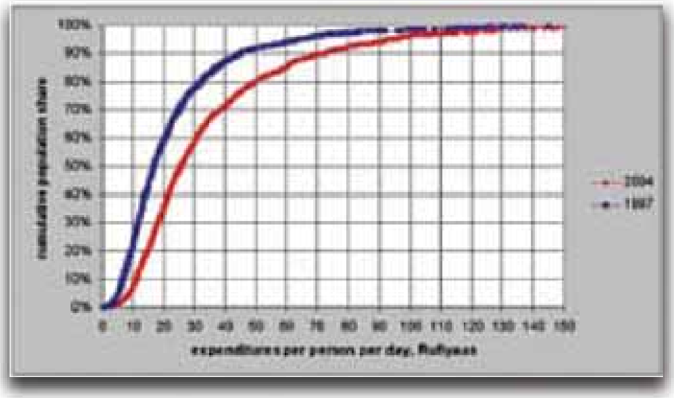
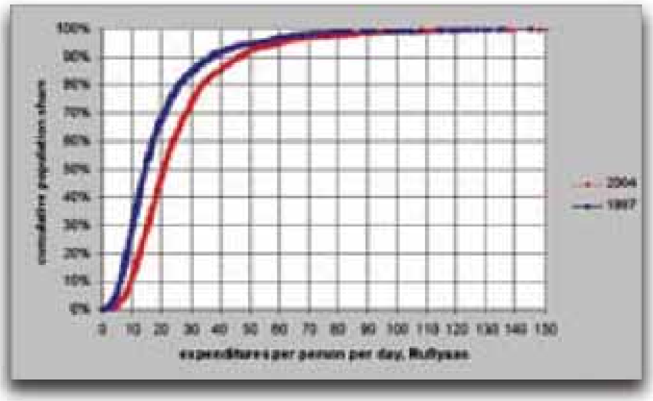


Figure 4.6 Cumulative population ranked from poor to rich, Atolls, 1997 and 2004

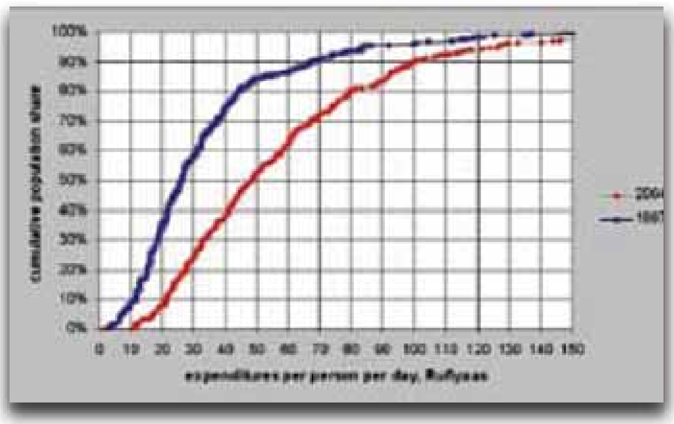


the distance between the red and blue lines; the larger the area between the two, the greater the progress.

Figures 4.5 and 4.6 present the same cumulative frequency distributions, for Male' and the atolls respectively. Again, in both charts the red line is completely below the blue line – indicating that poverty has declined for all possible poverty lines. However the area between the blue and red lines is larger in Male' than in the atolls, indicating that the decline in poverty has been greater in Male'.

The poverty dominance method can also be applied to the non-income dimensions of poverty, and this VPA report uses this approach throughout the following chapters along with corresponding charts.

Figure 4.5 Cumulative population ranked from poor to rich, Male', 1997 and 2004



Headcount ratios

The headcount ratio is the proportion of the population below a particular poverty line. As illustrated in the previous section, over the period 1997-2004 headcount ratios declined for all possible poverty lines. To give an idea of the extent of this decline, Table 4.4 presents the headcount ratios for the three poverty lines that were considered in VPA-1: the median income of the atoll 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.

For all three poverty lines, the headcount ratio has declined – in the atolls and especially in Male' where by 2004 income poverty had virtually disappeared.

Table 4.4 – Headcount ratios, Maldives, Male' and the atolls, 1997 and 2004

Poverty line	Maldives		Male'		Atolls	
	1997	2004	1997	2004	1997	2004
Rf. 7.5	13%	3%	5%	0%	16%	5%
Rf. 10	23%	8%	8%	0%	28%	11%
Rf. 15	44%	21%	19%	3%	52%	28%

Regional distribution of income poverty

Figures 4.4 and 4.5 can be replicated at the regional level. Figures 4.7a-f are a magnification of the most relevant parts of the regional distribution functions for all regions in 1997 and in 2004, focusing on the proportion of the population below a continuum of reasonable income poverty lines, ranging from 7.5 to 15 rufiyaa per person per day.

Figures 4.7 a-f – Cumulative population ranked from poor to rich, 1997 and 2004

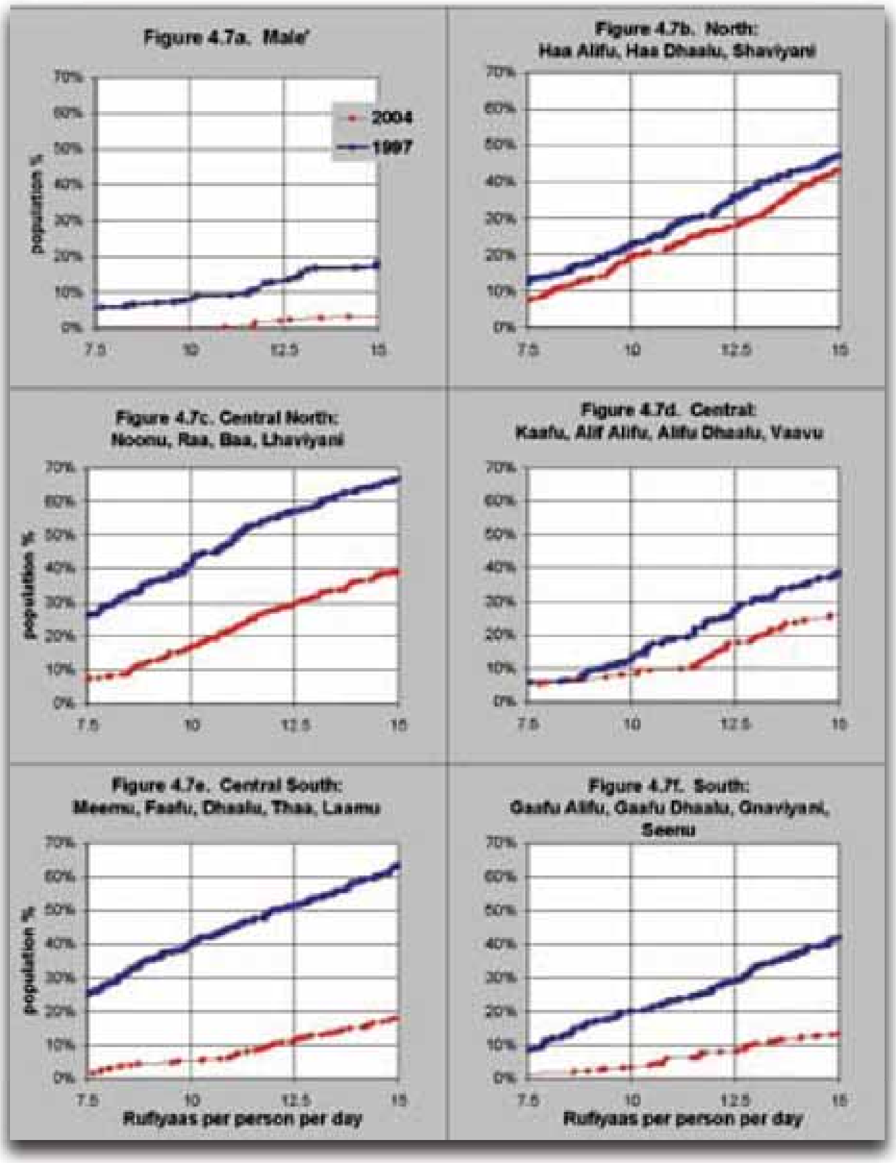


Figure 4.7 clearly shows that income poverty has declined throughout the country: the red line is completely below the blue line in all 6 charts, indicating that for all reasonable poverty lines in all regions income poverty was lower in 2004 than in 1997. The regions that have made the greatest progress, as represented by the area between the two lines, are Central North (Noonu, Raa, Baa, Lhaviyani), Male' and especially the southern part of the country: Central South (Meemu, Faafu, Dhaalu, Thaa, Laamu) and South (Gaafu Alifu, Gaafu Dhaalu, Gnaviyani, Seenu). The data for the three poverty lines in the regions are summarized in Table 4.5.

Table 4.5 Headcount ratios by region, 1997 and 2004

Poverty line	North		Central North		Central		Central South		South	
	1997	2004	1997	2004	1997	2004	1997	2004	1997	2004
Rf. 7.5	12%	8%	26%	7%	6%	5%	25%	2%	9%	2%
Rf. 10	23%	19%	42%	17%	13%	8%	40%	5%	20%	3%
Rf. 15	47%	43%	67%	39%	39%	26%	63%	18%	42%	13%

Figure 4.8 compares the five regions – part a showing the complete income distribution; part b showing a magnification for the range 7.5-15 rufiyaa per person per day.

Income poverty is evidently greatest in the North and Central North, and apart from Male', it is lowest in South and Central South. The Central region lies in between.

Figure 4.8a Cumulative population ranked from poor to rich, five regions & Male', 2004

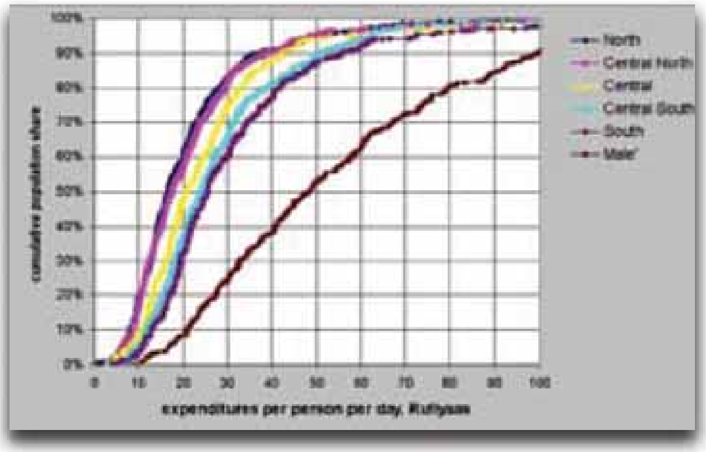
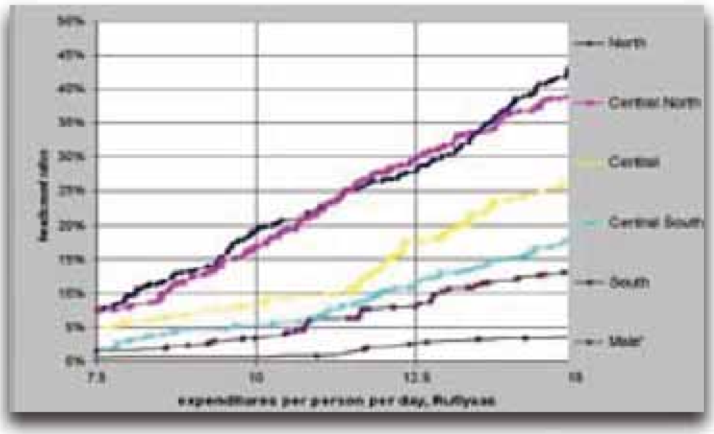


Figure 4.8b - Magnification of figure 4.8a focusing on the range Rf. 7.5-15.



Earlier charts in this chapter, Figures 4.2 and 4.3, showed household incomes in 2004, on average, gradually getting higher from North to South. Figure 4.8b suggests a similar pattern for income poverty, in this case rising from South to North. However, this cannot be concluded yet since the curves of the North and the Central North regions cross several times in the 7.5-15 rufiyaa interval.

The poverty gap ratio

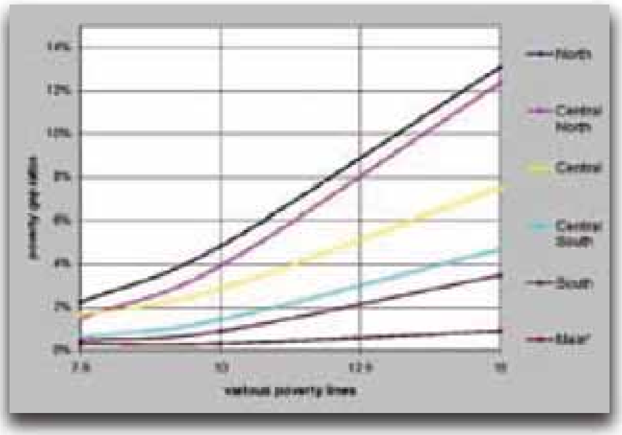
To be able to draw such a conclusion means considering the second-order poverty dominance criterion: the poverty gap ratio. As described in greater detail in Technical Note 1, this takes into account both the incidence and the depth of poverty – not only counting the poor but also considering how poor they are. The poverty gap ratio is obtained by multiplying the headcount ratio for a given poverty line by the distance that the average household's income falls below that poverty line (the latter being expressed as a proportion of the poverty line). In the North region, for instance, in 2004, 7.7% of the population lived on less than Rf. 7.5 per person per day. Moreover, their average expenditures were Rf. 5.3 per person per day – 29% below the poverty line. The poverty gap ratio was thus 7.7% multiplied by 29% – that is 2.2% (Table 4.6).

Table 4.6 shows the poverty gap ratios for the three poverty lines. Figure 4.9 extends this by showing the poverty gap ratios for all reasonable poverty lines. Since these curves do not cross, it is indeed true that income poverty is lowest in Male' and that for all poverty lines income poverty declines from north to south.

Table 4.6 Poverty gap ratio by region, 2004

Poverty line	North	Central North	Central	Central South	South	Male'
Rf. 7.5	2.2%	1.5%	1.6%	0.6%	0.5%	0.3%
Rf. 10	4.8%	3.9%	2.9%	1.4%	0.9%	0.3%
Rf. 15	13.1%	12.3%	7.5%	4.7%	3.5%	0.9%

Figure 4.9 – Poverty gap ratios for all reasonable poverty lines, five regions and Male', 2004



Income inequality

Income inequality can be measured using a number of indicators. The most common are: the income share of the poorest quintile; the Lorenz curves; and the Gini coefficient. These indicators are presented below. An additional indicator, and probably the most appealing, is one that shows the level, and change over time, of the average per capita household income for 10 income groups (deciles).

Share of the poorest quintile

Table 4.7 presents the income shares of the poorest 20 percent of households, which between 1997 and 2004 increased slightly from 6-7 percent to 7-8 percent in all regions. For the Republic overall, however, their share remained constant at 6 percent. Why this difference?

The only possible explanation is that the decline in inequality within regions has been offset by an increase in inequality between regions, especially between Male' and the atolls.

Lorenz curves

To investigate this requires using more sophisticated indicators of inequality, such as the Lorenz curves and the Gini coefficient. The previous section considered the situation of the poorest 20 percent of the population. But why choose 20 percent; not 5 percent, or 10 percent, or 50 percent? This question is very similar to the discussion of where to set a single poverty line. In that case, the solution was to apply the theory of poverty dominance which considers the whole range of possible poverty lines. Lorenz curves do the same for inequality; they show income shares for the complete continuum – from the poorest 0 percent to the poorest 100 percent.

Figure 4.10 presents Lorenz curves for the Maldives for 1997 and 2004 – though in this case the blue and the red lines practically overlap – implying scarcely any change in income distribution.

The total population is sorted from poor to rich along the horizontal axis, starting with the poorest on the left and moving to the

Table 4.7 – Income share of the poorest 20 percent by region, 1997 and 2004

	1997	2004
Maldives	6	6
Male'	6	7
Atolls	6	7
North	6	7
Central North	6	7
Central	7	8
Central South	6	8
South	7	8

richest on the right, cumulatively from 0 to 100 percent. The vertical axis shows their income shares. Thus the chart shows that in both years the poorest 30 percent of the population had 10 percent of household income, and that the poorest 60 percent had 30 percent.

The black 45-degree line represents the hypothetical case that everybody in the country had exactly the same income, implying complete income equality. On the other hand, in the hypothetical case that one person has all the income and everyone else had nothing the Lorenz curve is horizontal till around 99.99% and suddenly becomes vertical at the right hand end. In the real world, of course, the Lorenz curve is always between these two extremes, but the closer it gets to the 45-degree line, the more equal the income distribution.

However, the situation is quite different within Male' and within the atolls. This is clear from Figure 4.11 for Male' and Figure 4.12 for the atolls – in which the red line is always closer to the 45-degree line than the blue line. Inequality within Male' and within the atolls has thus declined over time, which confirms the findings of the previous section.

Gini coefficients

This result can be re-confirmed using another inequality indicator: the Gini coefficient. This is based on the area between the Lorenz curve and the 45-degree line of complete equality. The Gini coefficient is this area expressed as a percentage of the area of the triangle formed by the 45-degree line and the horizontal and vertical lines. Theoretically, it runs from 0 (complete equality) to 1 (complete inequality). In the real world, however, Gini coefficients run from about 0.25 for the most equal countries in the world (Denmark, Sweden, Belgium, Hungary and Japan) to about 0.70 for the most unequal country (Namibia)[4].

4 *Source of Gini coefficients of other countries: UNDP (2004), Human Development Report 2004, New York*

Figure 4.10 Lorenz curves, Maldives 1997 and 2004

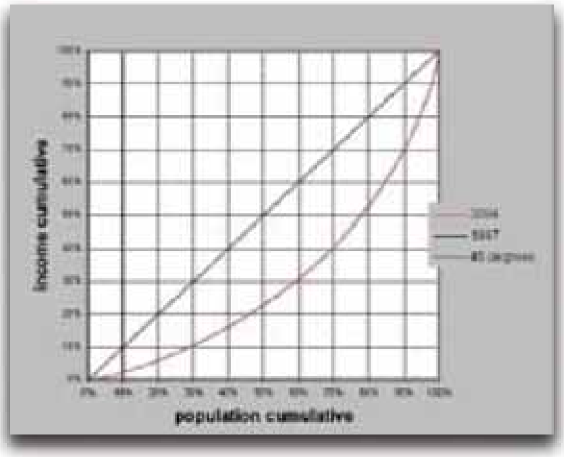


Figure 4.11 – Lorenz curves, Male', 1997 and 2004

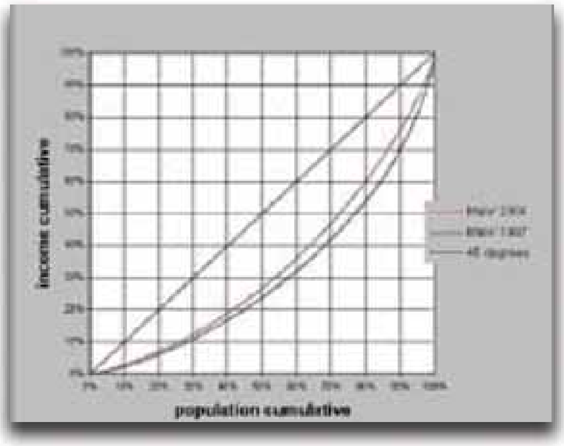


Figure 4.12 – Lorenz curves, atolls, 1997 and 2004

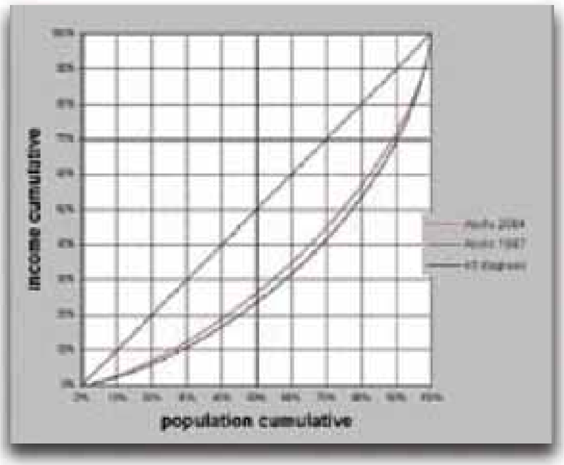


Table 4.8 – Gini Coefficients by region, 1997 and 2004

	1997	2004
Maldives	0.42	0.41
Male'	0.39	0.33
Atolls	0.40	0.36
between Male'-Atolls	0.12	0.18
North	0.39	0.36
Central North	0.41	0.38
Central	0.38	0.33
Central South	0.44	0.31
South	0.34	0.34

The Gini coefficients for the Maldives for 1997 and 2004 were 0.42 and 0.41 respectively (Table 4.8) – levels similar to those in a number of other countries: USA, 0.41; Singapore, 0.43; Trinidad and Tobago, 0.40; and Saint Lucia, 0.43. However the Maldives' figure is notably higher than those in neighbouring countries: Sri Lanka, 0.34; India, 0.33; Pakistan, 0.33; and Bangladesh, 0.32.

Returning to the issue of the change in income inequality between Male' and the atolls, according to VPA-1 in 1997 25 percent of the population lived in Male' and had 38 percent of total household income. In VPA-2 in 2004 30 percent of the population lived in Male' and had 48 percent of total household income. This can be expressed in terms of Gini coefficients: between 1997 and 2004, the Gini coefficient between Male' and the Atolls increased significantly, from 0.12 to 0.18.

The evidence presented in Table 4.8 clearly confirms the earlier findings that during the period 1997-2004 there was a decline in inequality within Male', within the atolls and within all regions. However, over the same period there was an increase in inequality between Male' and the atolls.

Average incomes by decile

Probably the most appealing way to demonstrate the structure of income distribution – and the changes over time – is to use income deciles. Table 4.9 shows average incomes for each decile for Maldives, Male', and the atolls and the changes over the period 1997-2004

Table 4.9 Average expenditures in rufiyaa per person per day, by decile, Maldives, Male' and atolls, 1997 and 2004

	Maldives		Male'		Atolls	
	1997	2004	1997	2004	1997	2004
Poorest 10%	5	8	8	16	4	7
Decile 2	8	13	13	24	7	11
Decile 3	10	16	17	30	9	14
Decile 4	13	20	20	37	11	17
Decile 5	15	25	24	44	13	19
Decile 6	18	28	28	53	16	22
Decile 7	23	34	34	62	19	26
Decile 8	28	44	41	74	23	31
Decile 9	38	59	55	91	31	39
Richest 10%	74	106	105	136	59	73

This table presents some very remarkable findings. First, it shows that during 1997-2004 there was an increase in income for all deciles. Second, it shows that this happened in both Male' and the atolls

Third, the above data clearly support the previous finding that income inequalities are declining within Male' and within the atolls. Over this period, the lower-income classes managed to roughly double their incomes while the upper-income classes saw their incomes rise more slowly. A similar pattern can be observed in the atolls where the lower-income classes increased their incomes by about half while the upper-income classes did so only by about one-third.

Fourth, the fact that the lower-income classes in Male' did better than those in the atolls over this period is further evidence of an increase in inequality between Male' and the atolls.

Income poverty dynamics

Almost half of the households of the VPA-2 survey sample in the islands had also been interviewed in VPA-1, giving a panel of 1,169 households. From this panel it is possible to analyse, with a high degree of statistical significance, the dynamics of poverty. An extensive analysis is presented in Chapter 12.

This section describes some of these changes with respect to income poverty.

Tables 4.10a and 4.10b present the panel households by income class; the first gives the absolute numbers while the second shows the percentage distribution. The tables use five income classes based on the three poverty lines of 7.5, 10 and 15 rufiyaa per person per day, plus the international poverty line used for the MDGs, Rf. 4.34, which is the rufiyaa equivalent of one dollar per person per day in terms of purchasing power parity[5]. The tables confirm that between 1997 and 2004 income poverty was reduced considerably for all poverty lines. For instance, between 1997 and 2004, the proportion of households with less than Rf.15 per person per day fell from around one-half to slightly more than one-quarter.

The panel data can provide valuable insights into the dynamics of poverty. It can, for instance, reveal more about those who are currently poor, showing what proportion were also poor previously and what proportion had fallen back from higher levels of income.

In Table 4.10a, the households along the white diagonal were in the same income class in both 1997 and 2004. This shows just how dynamic the poverty situation is. More than half of households changed their income class: around 40 percent, those in the green cells, graduated to a higher class; while 13 percent, those in the red cells, fell back into a lower income class.

The final row of Table 4.10b shows that in 2004, 73 percent of households had incomes greater than Rf. 15 per person per day; the remaining 27% can be considered poor. Within this figure 17 percent can be classified as chronic poor since their income was also below Rf.15 in 1997; the other 10 percent had been non-poor seven years earlier but had fallen into poverty.

Table 4.10a – Number of panel households by income class, 1997 and 2004

1997 \ 2004	<4.34	4.34-7.5	7.5-10	10-15	>15	
<4.34	0	3	8	16	22	49
4.34-7.5	4	6	13	26	78	127
7.5-10	0	6	9	34	85	134
10-15	4	12	16	47	186	265
>15	10	17	21	66	480	594
	18	44	67	189	851	1169

Table 4.10b – Percentage distribution of panel households by income class, 1997 and 2004

1997 \ 2004	<4.34	4.34-7.5	7.5-10	10-15	>15	
<4.34	0%	0%	1%	1%	2%	4%
4.34-7.5	0%	1%	1%	2%	7%	11%
7.5-10	0%	1%	1%	3%	7%	11%
10-15	0%	1%	1%	4%	16%	23%
>15	1%	1%	2%	6%	41%	51%
	2%	4%	6%	16%	73%	100%

The final column shows the situation in 1997 when 51 percent of the population had incomes greater than Rf. 15 per day. The remaining 49 percent were poor but within these 32 percent managed to escape poverty during the period and were non-poor by 2004. This flow in and out of poverty is shown for the panel sample in Figure 4.13.

Another way to present these movements is given in Figure 4.14. It shows that, during the seven-year period, three out of five of those poor in 1997 managed to escape from income poverty. On the other hand, one in five of the non-poor fell into poverty.

To determine whether these findings are robust, and insensitive to the choice of the poverty line, the poverty dynamics analysis has been repeated using a poverty line of Rf.10 per person per day. Comparing Figures 4.13 and 4.15, it can be observed that the pattern

5 *To ensure a comparable MDG poverty line of $1 per day in Rufiyaa terms for both 1997 and 2004, the PPP exchange rate for the year 2002 has been applied here.*

Figure 4.13 – Income poverty dynamics 1997-2004, island population, Rf.15 poverty line

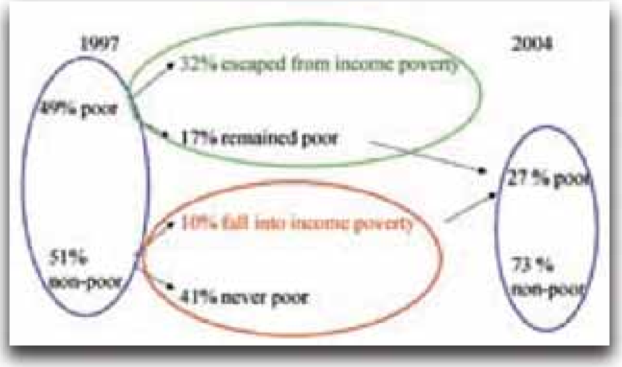


Figure 4.14 – Income poverty dynamics 1997-2004, island population, Rf.15 poverty line

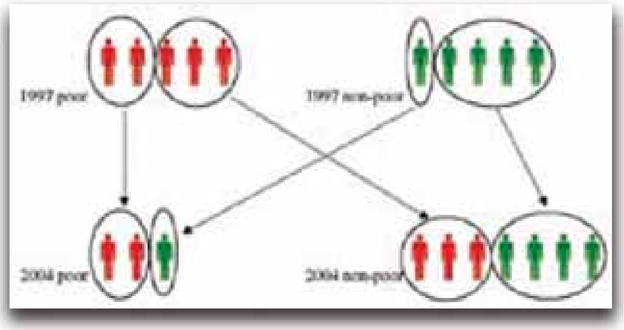
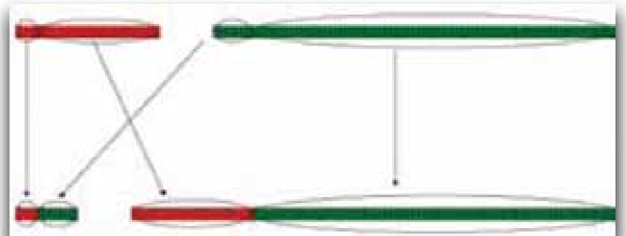


Figure 4.15– Income poverty dynamics 1997-2004, island population, Rf.10 poverty line

Figure 4.16 – Income poverty dynamics 1997-2004, island population, Rf.10 poverty line



of movement in and out of income poverty for the two poverty lines is similar. In both cases, the majority of those who were income poor in 1997 had escaped from poverty. Those who were income poor in 2004 belonged to one of two groups: those who had also been poor in 1997 and, in this case a larger group, those who had been non-poor in 1997 but had subsequently fallen into poverty.

Figure 4.16 presents the same data in bar form. These large movements between income groups clearly indicate that the income poverty situation is more dynamic than usually assumed. It also implies that anti-poverty programmes should be designed not just to lift the poor out of poverty, but also to prevent the non-poor from falling into poverty. The proportion of the poor that had fallen, does however depend somewhat on the choice of poverty line: using the Rf.10 line, two in three; and using the Rf.15 line, one in three.

Policy implications

The second Vulnerability and Poverty Assessment clearly identifies a number of challenges; some persistent, some emerging.

Inequality and unemployment – For the country as a whole, these challenges include the increasing income inequalities between Male' and the atolls as well as rising unemployment, particularly among young people. Many young secondary school graduates, ambitious and with high expectations, are not aiming to return to their island to work in traditional sectors like fisheries. But if they cannot find better work there they are likely to be frustrated and disillusioned – which could lead to social tensions in Male'. Tackling this will mean creating more attractive forms of employment in the modern sectors.

Vulnerability – Since people can not only escape from poverty but also fall into it, efforts at poverty alleviation will need to take into account not just the needs of the poor but also of the vulnerable non-poor.

Chapter 5

Physical infrastructure

This chapter reports on the availability of physical infrastructure on the islands. In general, the better the physical infrastructure the better the standard of living. Similarly, the poorer the physical infrastructure the greater the vulnerability. This applies to many different types of physical infrastructure, but the VPAs consider just three: the availability of electricity, access to transport facilities and the availability of communications facilities.

Access to electricity

In 1997, seven islands had no electricity generation capacity and nine percent of the atoll population had no electricity supply. Other islands, however, also had a limited supply: two-thirds had electricity for fewer than six hours per day. By 2004, however all islands had electricity to some extent. And the limitations were fewer: supply was limited to less than six hours for the entire population on only three islands. Atolls in the North and the South regions made particularly rapid progress, and in the Centre region access is almost 100%.

However, in some islands notably Ihavandhoo in Haa Alifu (pop 2,614) and Maavaidhoo in Haa Dhaalu (pop 399), even in 2004 a substantial part of the population had electricity for fewer than six hours per day. However this has usually been because they could not afford to pay for any more, rather than because of limitations in the supply. Electricity is expensive and many households need to balance utility costs with other necessary expenses. Some have, for example, requested the island office or the power suppliers to offer them a choice of limiting their supply to 6 hours. Other households were getting six hours or fewer simply because they had not paid their bills and had been temporarily disconnected. Table 5.1 summarizes the electricity supply situation by atoll.

Table 5.1 -- Access to electricity, by atoll (percentage of atoll population), 1997 and 2004

	1997	2004	1997	2004
	no electricity	no electricity	6 hours or less electricity per day	6 hours or less electricity per day
Maldives	**7**	**0**	**20**	**1**
Male'	**0**	**0**	**0**	**0**
Atoll average	**9**	**0**	**28**	**2**
Haa Alifu	24	1	62	14
Haa Dhaalu	10	0	25	2
Shaviyani	7	1	44	2
Noonu	6	0	45	0
Raa	6	1	24	1
Baa	4	0	43	0
Lhaviyani	4	0	0	0
Kaafu	0	0	0	0
Alif Alifu	4	0	0	0
Alifu Dhaalu	3	0	18	0
Vaavu	2	0	26	0
Meemu	4	0	44	0
Faafu	10	0	20	2
Dhaalu	0	0	0	0
Thaa	15	0	58	2
Laamu	23	2	55	2
Gaafu Alifu	23	1	48	1
Gaafu Dhaalu	13	0	41	0
Gnaviyani	2	0	0	0
Seenu	0	0	0	0

Although access to electricity has generally improved, the percentage of the population without access has increased on eight islands: Vashafaru (pop 455) and Muraidhoo (pop 441) in Haa Alifu atoll, Fodhodhoo (pop 204) in

Noonu atoll, Rasmaadhoo (pop 533) in Raa atoll, Maabaidhoo (pop 834) in Laamu atoll, Kodey (pop 313) in Gaafu Alifu atoll and Rathafandhoo (pop 503) in Gaafu Dhaalu atoll.

In 2004, 173 islands had electricity for 24 hours. Nevertheless on a few islands that had electricity available for 24 hours a day in even 1997 a significant proportion of the population still have a supply for fewer than six hours: Maduvari in Raa atoll, 4 percent; Feeali in Faafu atoll, 7 percent; and Veymandhoo in Thaa atoll 23 percent. Again, this is probably for financial reasons.

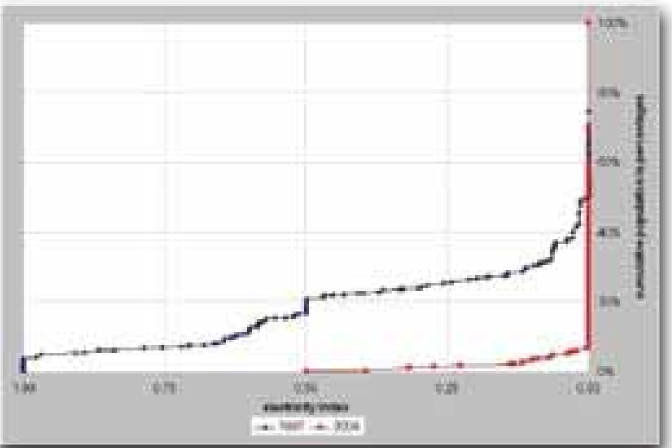
Electricity index

The electricity index is composed as follows:

Indicator	Penalty points
No electricity	1.0
Electricity for 6 hours or fewer per day	0.5

As the index is based on penalty points, a high score corresponds to low access. In 1997, 102 islands had an index greater than 0.25 and 99 islands scored higher than 0.50. By 2004, however, only 7 islands had an index greater than 0.25, and none scored higher than 0.50. The biggest improvement was in Haa Alifu where the score fell from 0.55 to 0.08.

Figure 5.1 – Electricity index, by island, 1997 and 2004



Inter-atoll and inter-island transport

The Maldives has a unique geography, with 200 inhabited island spread out over an area of some 90,000 square kilometres. The population is widely dispersed, and islands are small and sometimes isolated. Because of the diseconomies of scale people on the smaller islands lack many facilities for which they have to travel to other islands. But dhonis are often very costly and may not always be available[1]. In addition their island may be difficult to access either because it lacks harbours or jetties or because of shallow waters or the coral reef. Weather and visibility also play important roles: approaches to most islands do not have markers that are visible at night.

To measure the ways in which transport can pose problems for a specific island, the VPA uses three indicators: the number of people per available vessel; the frequency of transport to the atoll capital; and continuous accessibility. These indicators, summarised by atoll for 2004, are given in table 5.2.

The seven years between the two VPAs saw only limited improvements in inter-atoll and inter-island transport. There are still very few regular ferry or boat services: most are limited to the ward-islands of Male' and a few other islands, primarily atoll capitals. And even though many islands have become more accessible, the frequency of services between the atoll capitals and Male' has decreased, while the number of persons per available vessel has increased.

The decline in the frequency of travel – and the increase in the number of persons per vessel – may of course be due to the use of larger dhonis and boats. Thus while the overall capacity could have remained the same, the number of trips could have been reduced. This, however,

1 *Various companies also provide air transport, either by regular aircraft to the regional airports, or by seaplane to any selected destination. However, the cost of air transport is prohibitive for most common uses. This option was therefore not considered in the VPA, even though it may be used in emergency situations.*

Table 5.2 – Access to transport services, by atoll, 2004

	More than hundred people per vessel	Dhoni going three times a month or less to atoll Capital	Dhoni going less than three times a month to Male'	Island not always accessible
Atoll average	43	26	36	40
Haa Alifu	59	42	40	59
Haa Dhaalu	7	1	34	86
Shaviyani	4	69	25	83
Noonu	24	54	33	49
Raa	51	30	14	39
Baa	41	42	10	24
Lhaviyani	81	4	0	4
Kaafu	51	47	0	18
Alif Alifu	20	18	0	62
Alifu Dhaalu	27	42	0	31
Vaavu	0	10	0	33
Meemu	31	10	6	60
Faafu	0	13	0	29
Dhaalu	0	25	6	40
Thaa	0	36	23	49
Laamu	59	27	66	56
Gaafu Alifu	57	32	31	10
Gaafu Dhaalu	37	0	85	25
Gnaviyani	100	0	100	0
Seenu	94	0	100	0

increases vulnerability since people have fewer transport options in cases of emergency.

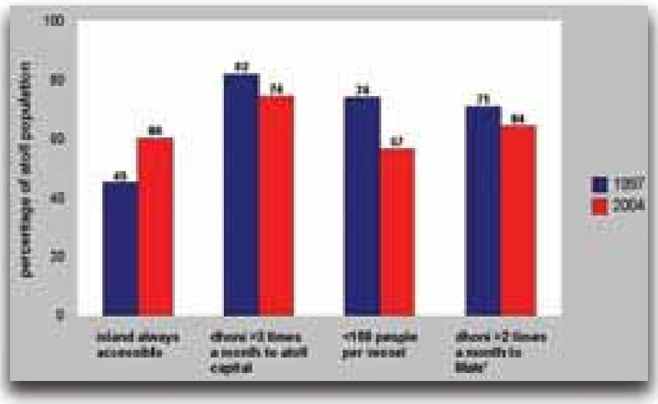
Between 1997 and 2004, the proportion of the atoll population living on islands where services by dhoni or boat to the atoll capital were limited to three or fewer times a month increased from 18 to 26 percent. In Shaviyani and Noonu atoll more than half of the population are unable to travel to the atoll capital at least once a week. This is also true in Kaafu atoll, though for the people of Kaafu, it should be pointed out, the economic and social centre is not the atoll capital, Thulusdhoo, but the country's capital, Male'. Only two atolls have seen an increase in the frequency of transport to their atoll capital, namely Haa Dhaalu and Alif Alifu.

The deterioration in performance is illustrated in Figure 5.2. This shows for each indicator the percentage of the population that lives on islands that are in a satisfactory position[2].

A similar trend is evident for access to Male'. Between 1997, and 2004, the proportion of the atoll population living on islands where transport to Male' was available fewer than three times per month increased from 29 to 36 percent. The worst scores were for the atolls furthest away from Male', both to the south and the north. However it needs to be borne in mind that both northern and southern atolls also have access to other economic centres, such as Hithadhoo in Seenu and Kulhudufushi in Haa Dhaalu.

The situation for emergency transport has also deteriorated. Between 1997 and 2004 the proportion of the atoll population living on islands that had fewer than one vessel for every hundred people increased from 26 to 43. The problem is most acute in Gnaviyani, Seenu and Lhaviyani atolls which, for this indicator, all have penalties of 0.80. Only four atolls have more than one vessel per hundred inhabitants on all islands: Faafu, Vaavu, Dhaalu and Thaa.

Figure 5.2 Changes in island accessibility (percentage of atoll population), 1997 and 2004



2 *Note that this different from HVI calculations, where indicators are shown in a negative way, because the calculations are based on penalty points.*

Island accessibility

There have, however, generally been improvements in accessibility. Virtually no islands now experience transport problems due to a difficult reef. Moreover, between 1997 and 2004, the proportion of people living on islands without a jetty or with harbour problems was reduced by half. These improvements reflect greater government attention and resources. Overall, between 1997 and 2004, the proportion of the atoll population living on islands that are always accessible during daytime has increased from 45 to 60 percent. Even so, as Figure 5.3 indicates, in 2004 about one-third of the atoll population still lived on islands that experienced difficulties with their harbour.

The improved accessibility can also be gauged from the size of vessel that each island can accommodate. The VPA uses three categories: small dhoni; big dhoni; and boat. In 1997, 43 islands could be reached by boat, and another 37 by big dhoni; the other 120 islands were accessible only by small dhoni. Over the next seven years, 36 more islands were made accessible to boats and 14 more could be reached by big dhoni. Thus now 70 islands can be reached only by small dhoni – a reduction of more than 40 percent.

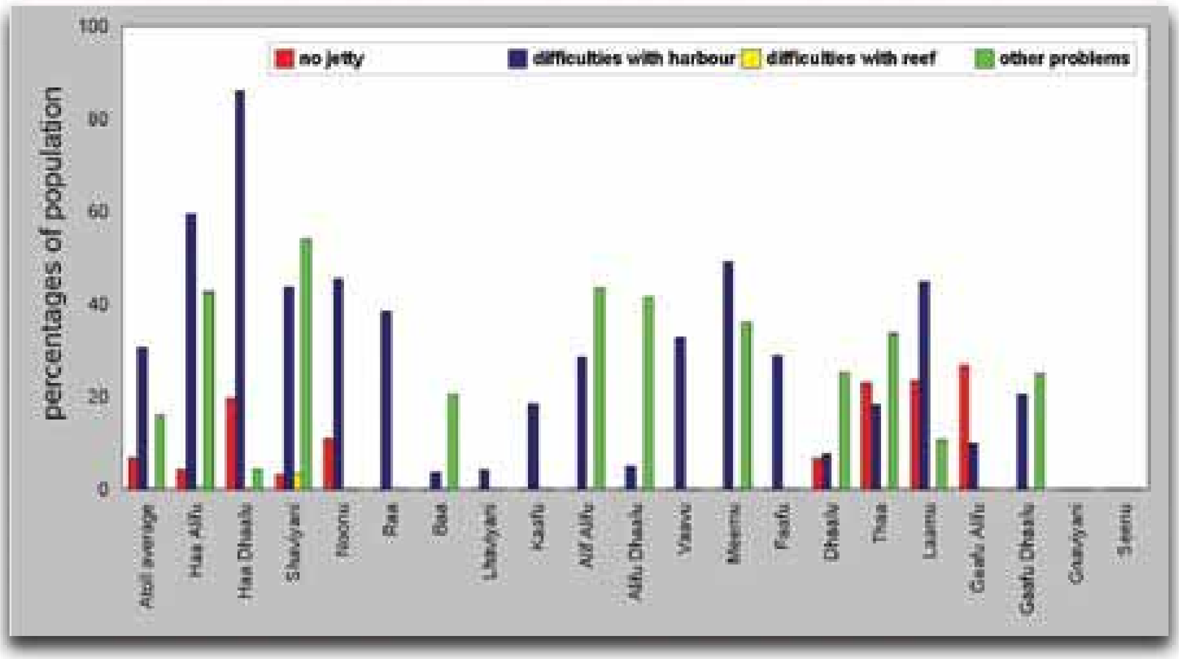
Transport index

The transport index is based entirely on the island questionnaire and has only five possible values – 0.0, 0.25, 0.50, 0.75 or 1. Zero means that an island (or atoll) has no transport problems as captured by these three indicators; the maximum score, a full penalty point, means that the island or atoll is 'transport poor'.

The transport index is composed as follows:

Indicator	Penalty score
More than 100 people per vessel	0.25
A dhoni 3 times or less per month to the atoll capital	0.5
The island is not always accessible	0.5

Figure 5.3 Reasons for poor accessibility (percentage of atoll population), 1997 to 2004

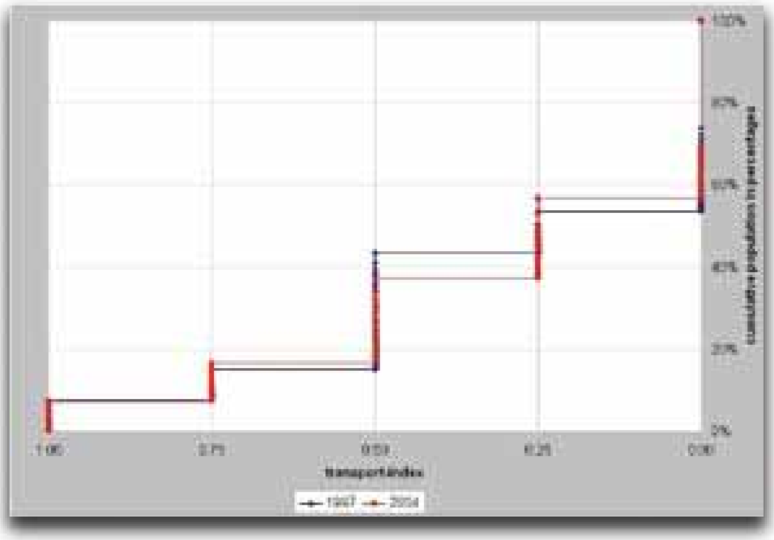


Between 1997 and 2004 the overall index for all the atolls remains unchanged at 0.43. Half the atolls had a higher index score; half had a lower score. At the island level however there were some changes. Between 1997 and 2004 the number of islands with an index of 1 increased from 27 to 35, while the number that scored 0.75 declined from 23 to 19, and the number that scored 0.5 declined from 90 to 72. On the other hand, the number of islands without transport problems decreased from 44 to 38. Overall therefore, although there has been progress in island accessibility, this has been offset by a deterioration in the number of vessels available, as well as in the frequency of transport.

Figure 5.4 shows the cumulative frequency distribution for the transport index – indicating only marginal changes. Transport evidently remains a major challenge for the island population.

One reason for reduced frequency of travel to atoll capitals could be that having better facilities on the islands and improved communications has actually reduced the need for such travel.

Figure 5.4 Transport index by island, 1997 and 2004



It should be noted, however, that this analysis does not cover launches or air transport. Many people live near domestic airports or resorts that have air taxi services with sea planes. Some part of the deterioration in the availability indicators might thus also be due to developments in air transport and the use of speed boats. However these are very expensive, and out of reach of the poor, and for this reason have been excluded from the poverty analysis.

Communications infrastructure and facilities

The Maldives, with its highly dispersed population and insular structure, has over the past decade accorded a high priority to the development of the telephone network. At the time of the 1997/98 survey, a one-third of the island population lived on islands without telephones, and four percent needed to travel more than two hours to reach the nearest public telephone. Now, all islands have public telephones. The earlier survey did not capture connections to the fixed telephone system since out outside Male' these were limited to government facilities. Nor did it capture mobile phones which at that time did not exist on the islands. Both have, however, been included in the current survey and their status, along with some other communication characteristics, is given in Table 5.3.

It may be noted that two-thirds of the Male' population have a regular telephone in their household, while in more than three-quarters of households at least one person has a mobile telephone. While the penetration is far lower in the atolls, where telephone exchanges for land-lines have been installed only on the larger islands, one in six persons in the atolls is now living in a household that has a fixed telephone in the house. Mobile phones have also spread much wider and nearly half the households report at least one. Indeed, penetration rates in Kaafu atoll (outside Male') and Alifu Dhaalu, for example, are similar to those in Male' with only one-quarter of households reporting no mobiles. In Gnaviyani and Seenu more than three-quarters of the households actually have a fixed telephone line which is a much higher penetration rate than Male'. In 1997, by contrast, only 10 to 15 percent of households in those atolls reported a telephone connection.

In addition to the rapid uptake in both mobile and regular telephones, the ownership of radio and television has spread very fast. Seven years ago only about half the population had a radio and one in seven households had a television set, often for use with video equipment as TV Maldives was not within reach, and satellite TV was beyond the financial means of the average islander. By 2004 only 15 percent of the households throughout the atolls reported that it lacked a radio or a television, or both. This development has served to bring the island population out of its near total isolation of a few decades ago.

Communications index

This is composed as follows:

Indicator	Penalty points
No public telephone on the island	0.75
No newspaper available on the island	0.25
No radio in the household	1.0

Table 5.3 Access to communication services, percentage of atoll population, 2004

	no radio	no landline telephone	no mobile telephone	no television	no national newspaper on the island
Maldives	**19**	**69**	**46**	**13**	**37**
Male'	**29**	**35**	**22**	**9**	**0**
Atoll average	**14**	**84**	**56**	**15**	**52**
Haa Alifu	14	98	56	23	44
Haa Dhaalu	8	72	57	15	35
Shaviyani	11	98	63	16	74
Noonu	16	100	58	15	66
Raa	17	99	44	19	80
Baa	8	86	62	20	66
Lhaviyani	16	98	42	17	55
Kaafu	6	97	24	5	68
Alif Alifu	16	100	36	12	100
Alifu Dhaalu	13	100	26	14	42
Vaavu	3	100	42	17	26
Meemu	11	100	64	22	85
Faafu	14	97	72	38	77
Dhaalu	13	100	76	13	38
Thaa	21	100	96	9	49
Laamu	15	99	76	20	78
Gaafu Alifu	21	99	73	9	73
Gaafu Dhaalu	12	78	67	15	32
Gnaviyani	15	22	47	7	0
Seenu	21	21	45	4	6

Figure 5.5 – Communications facilities at atoll level (percentage of atolls population), 1997 and 2004

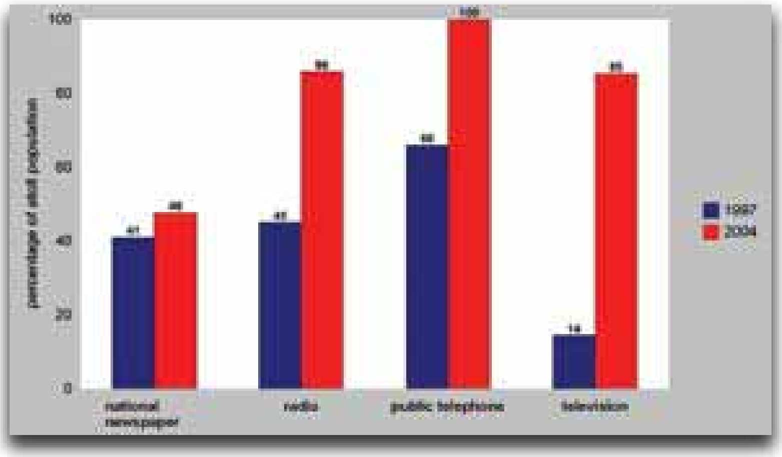
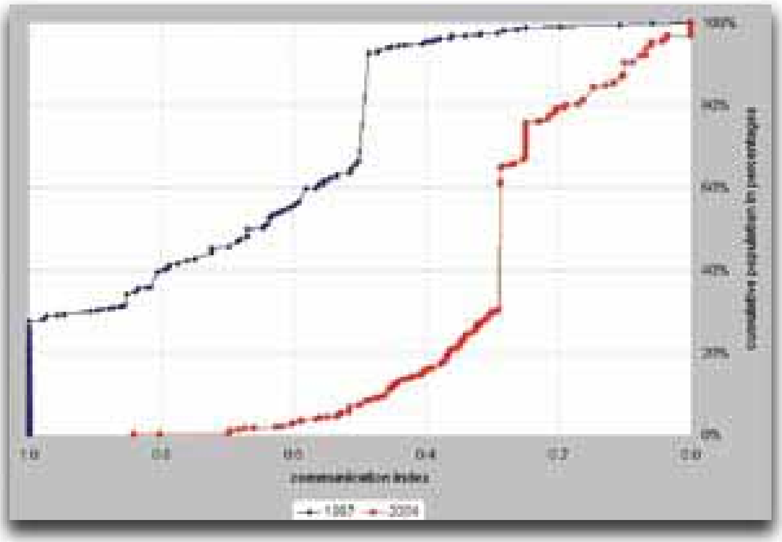


Figure 5.6 Communications index, by island, 1997 and 2004



The availability of newspapers, on the other hand has increased only marginally. In 1997 the proportion of the atoll population living on islands with regular newspapers was slightly more than half. By 2004 it was still less than 60 percent. In some cases the situation has deteriorated: in 1997, all islands in Lhaviyani and Faafu, for instance, received newspapers regularly but now only Naifaru in Lhaviyani and Feeali in Faafu do so.

Nevertheless, overall between 1997 and 2004, there has been a huge improvement in the island-level communications index. No island is 'communications poor', that is with a penalty point of 1.0. The improvement is illustrated in Figure 5.6 by the huge gap between the lines for 1997/98 and 2004. And at the atoll level, some atolls have better scores even than Male' for some communications indicators.

Policy implications

The major remaining challenge in the areas of physical infrastructure covered in this chapter relates to transport. The physical isolation of remote islands often creates intractable transport problems. Reduced frequency of services to the atoll capitals and Male' may increase vulnerability.

Chapter 6

SOCIAL INFRASTRUCTURE

This chapter looks at changes in the status of many types of social infrastructure – including education, health, life expectancy, access to safe drinking water, the possession of major consumer durables and availability of recreational sports facilities. This is a spectrum much broader than is normally used to evaluate well-being but it is considered important to extend it in this way for the Maldives because of the widely dispersed population.

The provision of health and education services, for instance, poses enormous challenges because of the small communities and the difficult transport conditions. Providing even basic services can be four or five times more expensive than in other countries in the region. And on the smallest islands providing more specialized services, such as secondary schools and hospitals, would be prohibitively expensive. As a result, some of the island population will always have to rely for such services on Male', the atoll capitals or regional centres.

On small islands, without streams or rivers and with small freshwater lenses, life is precariously dependent on the availability of drinking water. This is further exacerbated by the seasonal weather pattern, with generally very low rainfall in the first quarter of the year. There are also increasing problems of water pollution. As population densities increase and more households rather than using the beach now have toilet facilities within their compounds, though not connected to a proper sewerage system, the available ground water is becoming increasingly contaminated. And as more people extract ground water this is being replaced by infiltrating sea water, further reducing the availability of useable water. The recent tsunami made matters even worse, damaging much of the water storage capacity and further contaminating the ground water with sea water.

EDUCATIONAL INFRASTRUCTURE AND SERVICES

All inhabited islands have primary schools – a major achievement for a nation with such a widely dispersed population. This type of survey cannot measure the quality of education, though it can gain some impression from indicators such as the number of trained teachers per student.

Number of trained teachers for primary schools

In 1997/98, about two percent of the population lived on islands that had no trained primary school teacher. The problem was concentrated on five atolls: Haa Alifu, Haa Dhaalu, Noonu, Raa and Lhaviyani. By 2004, this proportion had been reduced to one percent. By then, however, the islands without trained primary teachers were more widely dispersed – across nine atolls. This is perhaps because some trained primary teachers had been moved to one of the increasing number of secondary schools.

Student /trained teacher ratio for primary education

Overall, there has also been a big reduction in the ratio of students to trained teachers. This has been evident in almost every atoll – except Alif Alifu and Alifu Dhaalu. Between 1997 and 2004, the proportion of the atoll population living on islands with more than 100 students per trained teacher fell from eight to four percent and the proportion on islands where the ratio was between 50 and 100 fell from 30 to 19 per cent. However the number of islands with high student/trained teacher ratios remained more or less the same: in both years about one-quarter of inhabited islands.

Nursery schools

In 1997, only 45 percent of the atoll population had access to a nursery school, but by 2004 the proportion had increased to more than 60 percent. Most of the atolls showed an improvement, though the situation deteriorated in seven: Haa Dhaalu, Shaviyani, Noonu, Baa, Alifu Dhaalu, Vaavu, and Laamu. Particularly poorly served are Shaviyani and Laamu atolls which have only two islands with a nursery school – and Vaavu, which has none. This indicator is detailed by atoll in Table 6.2.

Highest educational grade

One of the Government's declared policies was to have teaching up to grade 7 on all island schools by the end of 2000. This target was not completely achieved. The 2004 survey found that 12 islands still only provided schooling up to grade 5. However, most of these islands had very few students. In the case of Firubaidhoo in Shaviyani atoll, the objective had been superseded by the ongoing project to transfer the population to Funadhoo. However, every atoll has at least one island that provides teaching up to grade 10, and four atolls provide up to grade 12. In Seenu, islands are connected by road: Meedhoo-Huhudhoo and Hithadhoo-Maradhoo-Feydhoo, meaning that all students in Seenu do have access to a grade 12 school, although the islands do not provide education up to grade 12 separately.

Not only have many schools been teaching higher grades they have also improved their facilities. In 1997, 12 percent of the atoll population lived on islands that had schools with no drinking water; by 2004 this proportion had been reduced to zero.

There has also been an increase in the number of school libraries. Between 1997 and 2004, the proportion of the atoll population that did not have access to school libraries fell from about 50 percent to fewer than 10 percent.

Furthermore, most schools now have toilet facilities. In 1997, one in seven of the atoll population was living on islands where the schools did not have toilets; in 2004, this proportion was down to four percent.

Table 6.1 – Access to education services by atoll, percentage of population, 2004

	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher
Maldives	**1**	**3**	**13**
Male'	**0**	**0**	**0**
Atoll average	**1**	**4**	**19**
Haa Alifu	1	6	18
Haa Dhaalu	7	5	15
Shaviyani	1	3	32
Noonu	0	5	31
Raa	0	3	23
Baa	0	0	3
Lhaviyani	2	0	0
Kaafu	0	0	49
Alif Alifu	0	16	39
Alifu Dhaalu	4	37	16
Vaavu	4	0	29
Meemu	6	0	0
Faafu	16	0	0
Dhaalu	0	0	31
Thaa	0	0	20
Laamu	0	7	26
Gaafu Alifu	1	5	33
Gaafu Dhaalu	0	0	24
Gnaviyani	0	0	0
Seenu	0	0	0

Figure 6.1-- Highest grade in school, by atoll, 2004

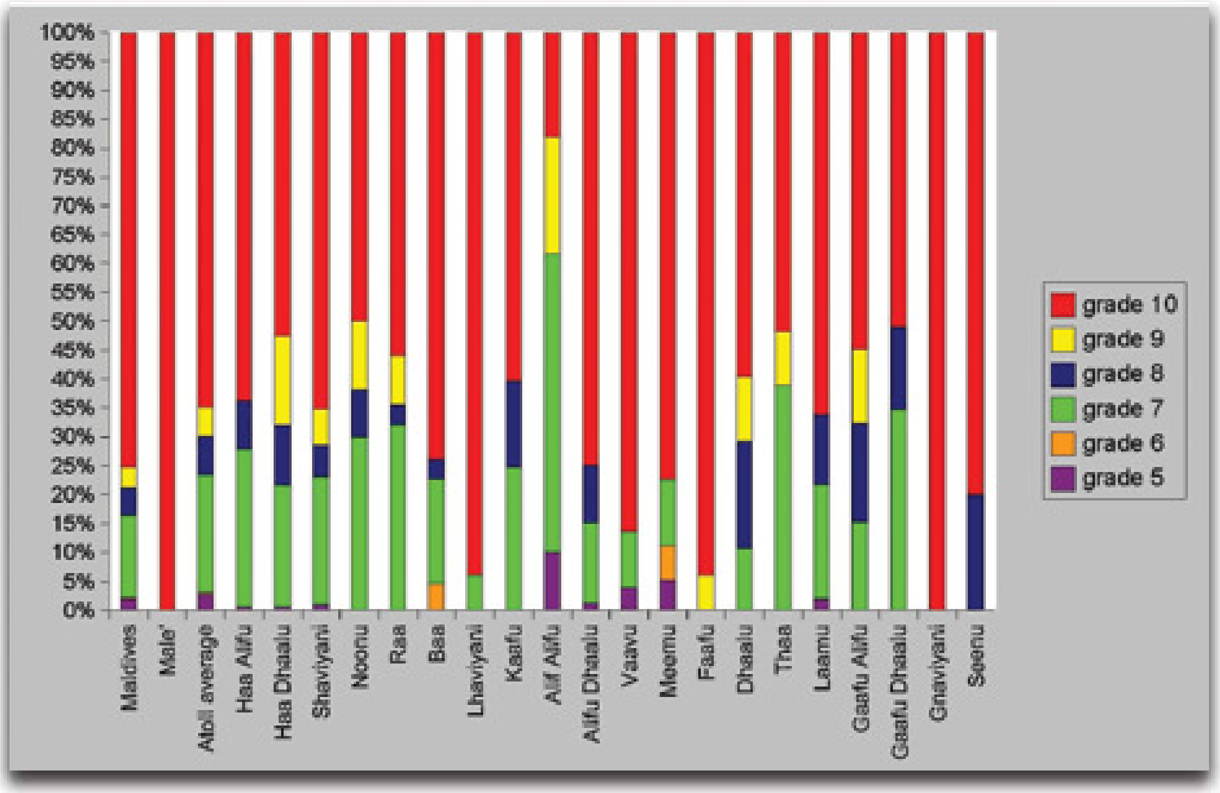


Figure 6.2 Highest grade in school in the atolls (percentage of atolls population), 1997 and 2004

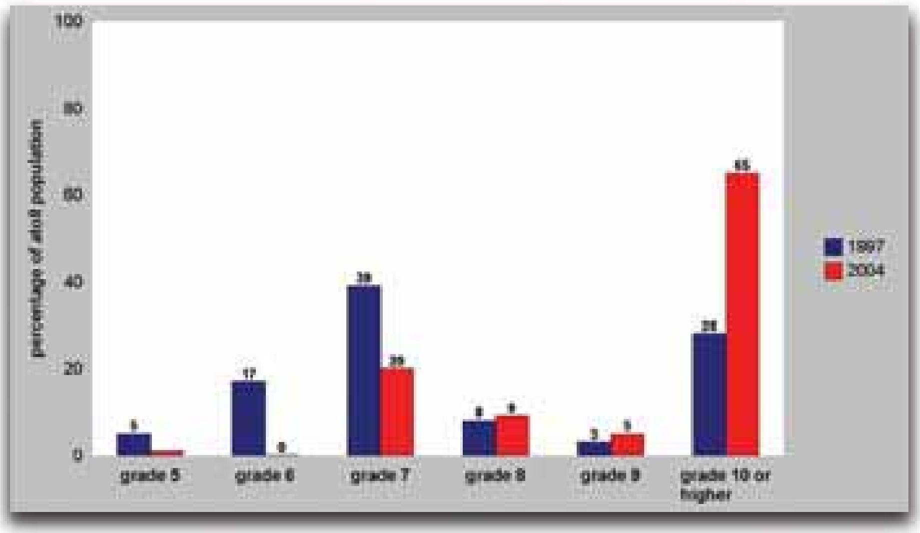
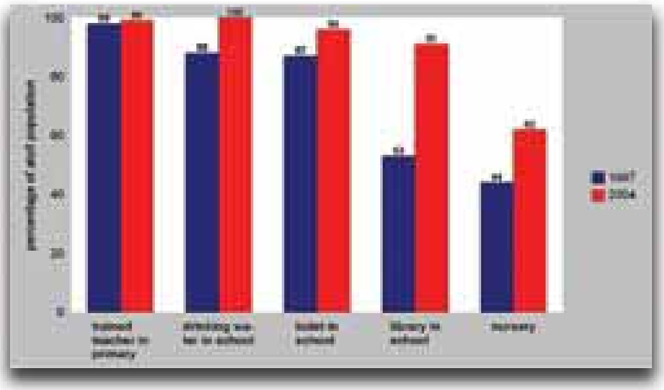


Table 6.2 School facilities, by atoll, 2004

	no drinking water in school	no toilet in school	no library in school	no nursery
Maldives	0	3	6	26
Male'	0	0	0	0
Atoll average	0	4	8	38
Haa Alifu	0	0	5	17
Haa Dhaalu	0	7	10	36
Shaviyani	0	3	8	81
Noonu	0	12	16	34
Raa	0	0	0	53
Baa	0	3	16	44
Lhaviyani	0	0	2	6
Kaafu	0	9	0	34
Alif Alifu	0	0	45	54
Alifu Dhaalu	0	8	9	68
Vaavu	0	0	50	100
Meemu	0	0	8	56
Faafu	0	0	8	31
Dhaalu	0	0	30	73
Thaa	0	0	4	39
Laamu	0	11	8	72
Gaafu Alifu	0	22	17	46
Gaafu Dhaalu	0	0	0	6
Gnaviyani	0	0	0	0
Seenu	0	0	0	0

Figure 6.3 Educational services in the atolls, (percentage of atoll population), 1997 and 2004



Education index

The education index is composed as follows:

Indicators	Penalty Points
No trained teachers in primary school	1.0
More than 100 pupils per trained teacher	0.5
Between 50 and 100 pupils per trained teacher	0.25
Highest grade on the island is grade 5	0.5
Highest grade on the island is grade 6 or 7	0.25
No nursery school	0.25
No drinking water in the school	0.25
No toilet facilities in the school	0.25

Islands without trained teachers attract the maximum penalty (1.0 point). Those with very high ratios between students and trained teachers, and those where schooling is only up to grade 5, get half a penalty point. The penalty for not meeting other indicators is 0.25 points.

For education, the overall situation is fairly positive. The proportion of the population living on islands with a full penalty point has decreased from about 10 percent to less than 4 percent. At the same time, the proportion of the population living on islands that score no penalty points has increased from less than 40 to about 60 percent of the country's total population. As a result, between 1997 and 2004 the average education index in the atolls improved from 0.50 to 0.29 – and the total number of islands that scored more than 0.5 penalty points fell from 83 to 47. In both years, 45 percent of the islands scored a full penalty and could be considered 'education poor'. At the atoll level, the poorest atolls with regard to education were Haa Dhaalu (0.64), Alifu Dhaalu (0.50), and Alif Alifu (0.44).

Adult literacy

The education index measures the present status of education. Another education indicator is literacy. Although this reflects past educational achievements, it still provides useful information. The adult literacy rate is very high. Universal primary education over the past decades has ensured literacy among young adults, while the extensive adult literacy programme over the same period has extended literacy to older adults.

The rate of illiteracy has thus come down to very low levels: between 1997 and 2004 it fell from 3.5 percent to slightly more than two percent of the population In 1997, a higher proportion of men were illiterate than women, though by 2004 the position was reversed. It may be noted, however, that these percentages are very small which in some cases makes it difficult to come to conclusions that are statistically significant. As a result, it is not possible to produce a rate for Male', or for individual atolls.

Literacy in the Maldives, of course, is defined in terms of the national language, Dhivehi, using the Thaana script. Considering the small size of the population and the fact that scarcely anyone outside the country speaks Dhivehi, it is remarkable that the language has flourished.

However the uniqueness of the national language means that Maldivians also need to learn foreign languages – whether to communicate with the outside world, obtain higher education, or to support the tourism industry. The most useful language for this purpose is English. Progress in English-language knowledge is shown in Table 6.3, for both young and other adults.

The atoll population in particular has made rapid progress. In 1997 English was spoken only by around half young adults of the island population but by 2004 by more than three-quarters of them. Among older people, however, the rise has been slower, from 10 to 20 percent. People in Male', have also made progress. In 1997 almost all young adults spoke English but only 55 percent of older adults did so; by 2004 that proportion had risen to around 70 percent.

Figure 6.6 illustrates the progress in English by different adult population groups. This

Figure 6.4 – Education index by island, 1997 and 2004

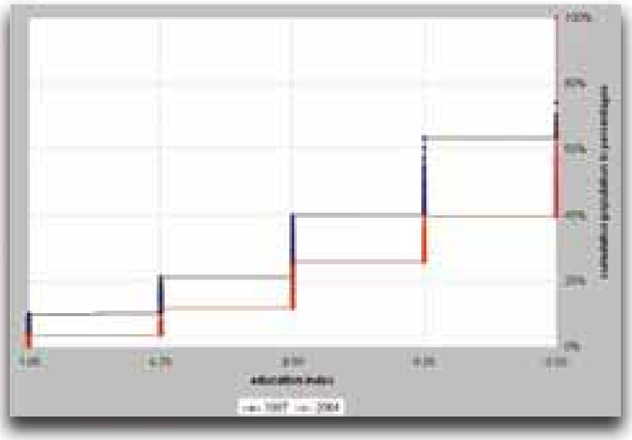
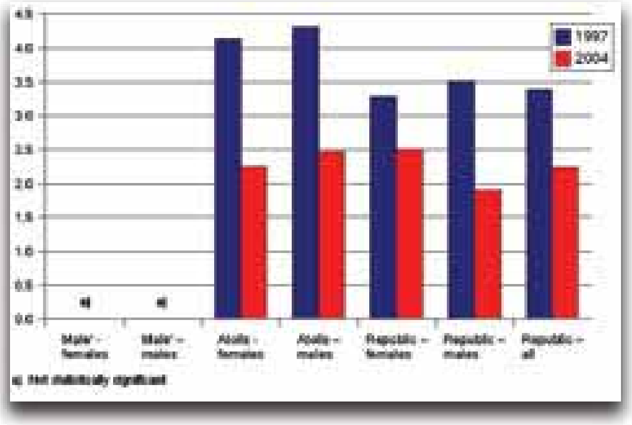


Figure 6.5 Adult illiteracy rates for the Republic, Male' and atolls, by sex, 1997 and 2004

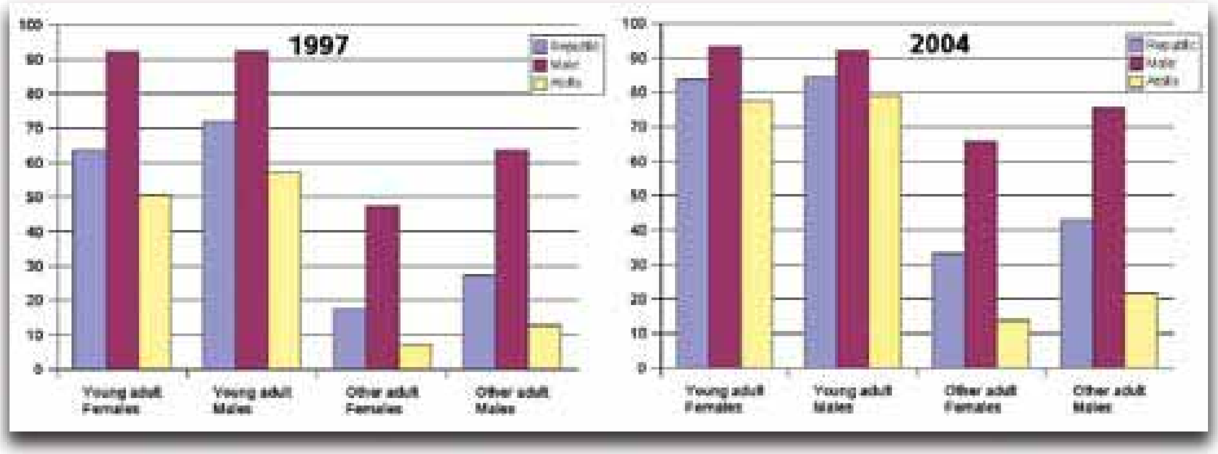


shows, for example, that among young adult males the differences in levels of skills between the sexes have disappeared. For the older age groups, although both sexes have improved, the percentage-point gap between them in persists.

Table 6.3 Percentage of the population with English language skills, by atoll, 1997 and 2004

	1997				2004			
	Young Adults (15 – 24 years)		Other adults (25 years and over)		Young Adults (15 – 24 years)		Other adults (25 years and over)	
	Females	Males	Females	Males	Females	Males	Females	Males
Maldives	**63**	**72**	**17**	**27**	**84**	**84**	**33**	**43**
Male'	**92**	**92**	**47**	**63**	**93**	**92**	**66**	**76**
Atoll Average	**51**	**57**	**7**	**13**	**77**	**79**	**14**	**22**
Haa Alifu	57	76	8	13	79	93	11	15
Haa Dhaalu	55	64	1	9	68	70	8	11
Shaviyani	49	55	4	7	81	91	12	17
Noonu	62	57	6	17	64	82	12	19
Raa	35	34	8	12	68	67	6	19
Baa	23	33	7	8	60	74	10	23
Lhaviyani	59	76	2	10	63	52	12	13
Kaafu	59	45	6	21	81	74	16	29
Alif Alifu	59	64	8	8	75	82	19	27
Alifu Dhaalu	52	60	11	16	69	75	14	23
Vaavu	68	89	15	24	89	63	20	29
Meemu	32	36	8	9	93	97	9	15
Faafu	65	69	15	22	83	86	3	14
Dhaalu	49	65	5	3	71	69	20	24
Thaa	44	64	7	12	86	93	20	29
Laamu	32	56	6	8	79	84	7	16
Gaafu Alifu	53	55	7	9	88	76	9	16
Gaafu Dhaalu	34	27	8	12	84	83	16	29
Gnaviyani	68	82	3	15	80	76	12	20
Seenu	67	72	13	25	94	89	30	39

Figure 6.6 – Percentage of adults with English- language skills, 1997 and 2004



Health Infrastructure and Services

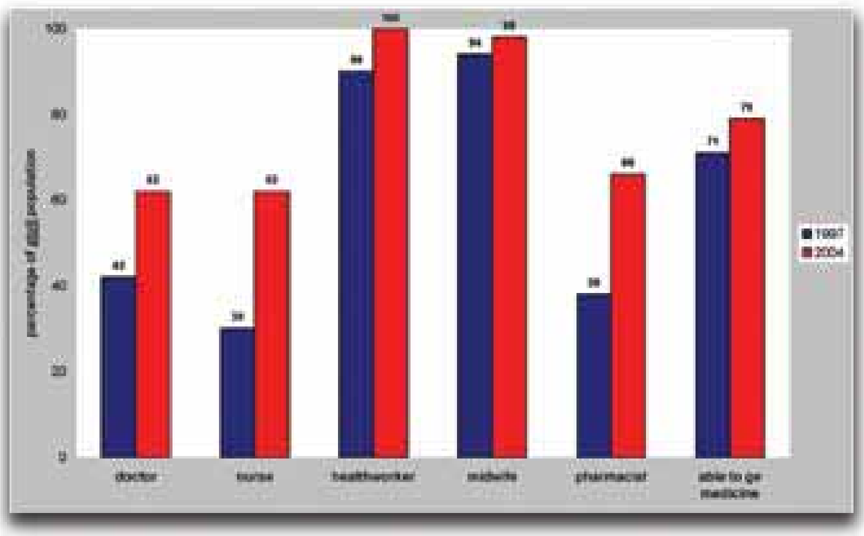
In 2004 the Maldives had six regional hospitals. In addition to the four hospitals that were operating in 1997, namely at Kulhudufushi in Haa Dhaalu, Ungoofaaru in Raa, Muli in Meemu, Hithadhoo in Seenu, two new hospitals had been established: in Gan in Laamu and Thinadhoo in Gaafu Dhaalu. These form the core of the decentralized health care system. For the atolls the lower-level infrastructure is provided by atoll health centres, health posts and clinics, as well as by private clinics. At the island level, the basic services are provided by the community health workers (CHWs) and other trained health personnel including midwives. The availability of health personnel, by type, is shown in Figure 6.7.

Health facilities on the islands have improved considerably though, as always, it is easier to improve the infrastructure in terms of buildings and equipment than to provide continuous health services. Nevertheless, many more people do now have ready access to a hospital, health centre or to a private or community clinic, usually with a doctor and pharmaceutical services. Indeed over seven years the proportion of the island population now living on islands that have such facilities has increased to around two-thirds. Those living on smaller islands, however, often only have access to a clinic that runs for a few days per week, and which does not always have a resident doctor. Indeed, around 40 percent of the island population are still living on islands without a resident doctor or nurse.

Almost everyone, however, has access to basic health care services. Very few islands lack a community health worker and only about two percent of the atoll population live on islands that do not have a midwife[1]. Nevertheless services on the islands are notably inferior to those in Male'.

Without more extensive population consolidation it is extremely hard to ensure that in case of emergencies, or the need for specialist services, the whole of the island population can reach the nearest health centre or hospital in less than two hours because of the difficulties presented by bad weather conditions, or because of the lack of transportation, and especially at night.

Figure 6.7 – Health services on the islands, 1997 and 2004



1 *It should be noted, however, that most small islands only have one person for either position, and if he or she is absent there is generally no replacement.*

There has, however been an improvement in travel times, whether to the nearest health centre or hospital or to Male'. Nearly all of the island population can now reach the nearest health centre or hospital, under normal conditions during daytime, within two hours, but the majority can not reach Male' within less than twelve hours – though because of improvements in the atoll health infrastructure, there is now actually less need to travel to Male'.

Broadly speaking, islands without a doctor also lack a pharmacist. Thus, around one-third of the atoll population do not have access to a pharmacy. As a result, more than 20 percent of the island population report problems in getting access to basic drugs.

Some people in Male' also have problems getting medicines, though usually because they cannot afford them. Indeed, between 1997 and 2004 the proportion of the Male' population reporting an increase in problems rose from two to nine percent.

Health index

The health index is composed as follows:

Indicator	Penalty points
Islands without trained doctor and health personnel	0.25
No access to basic drugs	0.5
Islands without a hospital, health centre or clinic	0.5
Travel time to hospital or health centre more than 2 hours	1.0

Overall, as Figure 6.10 shows, the situation has improved. Between 1997 and 2004, 113 islands saw an increase in health services, though 17 reported no change, and 72 a deterioration. Between 1997 and 2004, the number of islands that scored no penalty points increased from 10 to 31, while the number scoring more than 0.5 decreased from 150 to 130, representing 26 percent of the population.

Figure 6.8 Travel time to medical facilities, island population, 1997 and 2004

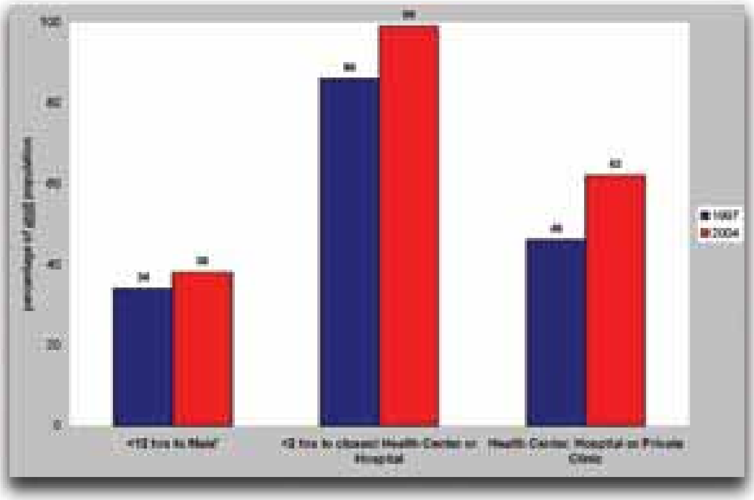
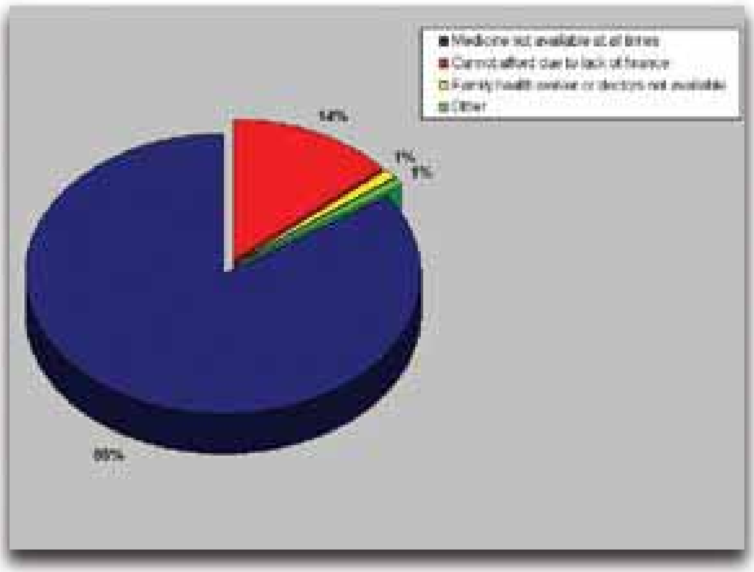


Figure 6.9 Reason for the non-availability of medicines on the islands, 2004

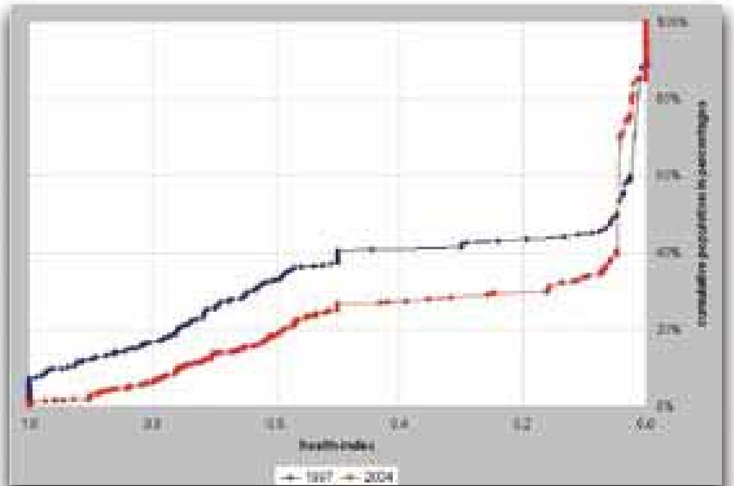


Over the same period the number of islands with 1.0 penalty points decreased from 30 (accounting for seven percent of the population) to nine (accounting for one percent of the population). These nine islands have very limited health services, as they have no health centre, clinic or hospital and residents have to travel for more than two hours to reach the nearest health centre or hospital. A number of

Table 6.4 Percentage of the population with health service problems, by atoll, 2004

	no doctor	no nurse	no health worker	no midwife	no pharmacist	problems getting medicine
Maldives	**26**	**27**	**0**	**1**	**24**	**17**
Male'	**0**	**0**	**0**	**0**	**0**	**9**
Atoll average	**38**	**38**	**0**	**2**	**34**	**21**
Haa Alifu	36	56	0	0	36	20
Haa Dhaalu	40	33	0	0	31	16
Shaviyani	54	54	1	4	48	23
Noonu	42	42	0	4	42	23
Raa	53	53	0	0	53	17
Baa	48	30	0	3	31	17
Lhaviyani	18	18	0	2	6	10
Kaafu	26	26	0	0	34	46
Alif Alifu	62	42	0	19	52	26
Alifu Dhaalu	40	57	5	5	25	20
Vaavu	71	71	0	4	71	24
Meemu	59	59	0	0	42	14
Faafu	55	55	0	0	33	23
Dhaalu	59	59	5	0	55	31
Thaa	39	48	0	0	48	13
Laamu	27	27	0	0	39	24
Gaafu Alifu	47	42	0	0	48	31
Gaafu Dhaalu	42	35	0	0	30	28
Gnaviyani	0	0	0	0	0	6
Seenu	9	15	0	0	11	15

Figure 6.10 – Health index by island, 1997 and 2004



islands appear to be particularly disadvantaged: Firubaidhoo (pop 129) in Shaviyani atoll, Vaadhoo (pop 350) in Raa atoll, Dhonafanu (pop 332) in Baa atoll, Mandhoo (pop 312) in Alif Dhaalu atoll, Dhiyamigili (pop 482) in Thaa atoll, Mundoo (pop 550) in Laamu atoll, Kodey (pop 313) in Gaafu Alifu atoll and Fares (pop 483) and Dhiyadhoo (pop 100) in Gaafu Dhaalu atoll. The worst situation is on Firubaidhoo in Shaviyani atoll (pop 129) where the population is being transferred to the islands of Funadhoo and Milandhoo in Shaviyani atoll; although this resettlement programme has not been entirely completed, the health services have already been terminated.

Infant mortality and life expectancy at birth

VPA-2 is the latest source of information on child mortality and life expectancy. The primary purpose of this section is to present the findings of VPA-2, but because of important questions of comparability with other date sources this overview has also been broadened to include results from the Population and Housing Census of 2000.

Two important, and complementary, indicators for health are infant mortality and life expectancy. Whereas the infant mortality rate (IMR), is often used as a measure of the effectiveness of the health system in preventing the deaths of babies in their first year of life, the life expectancy at birth, (e(0)), covers the entire age range. Because death is a relatively rare it is not possible for the VPAs to estimate either the IMR or the life expectancy at the island level, though they can do so at the atoll level.

This can help resolve some of the issues surrounding mortality statistics – which often differ between various sources, international and national. International organisations such as the United Nations and the World Bank have used 'methods and data of their own' when publishing data on the Maldives – and have commonly arrived at estimates of infant mortality and life expectancy considerably higher than those coming from the Maldives itself. Within the country too, there have been some differences of opinion over the true level of mortality: the IMR calculated from birth and death records, is often lower than that derived from census or survey data.

Available evidence from various sources and methods

In order to provide a better understanding of these issues, this section will provide an overview and analysis of the available information from different sources and methods and discuss the discrepancies or inconsistencies. Full details are given in Technical Note 2.

Table 6.5 gives an overview of the methods and sources of data generally used for measuring or estimating mortality. All have their own peculiar strengths and weaknesses. The sources of data used here are the censuses of 1985, 1990, 1995 and 2000 (C85, C90, C95 and C00 respectively) and the two VPA studies (VPA-1 and VPA-2). A shaded area in Table 6.5 means that appropriate data are available from that source, while a tick-mark √ in the shaded area means that the data are analysed in this report.

Table 6.5 Data sources, methods and data requirements for calculating or estimating infant mortality and life expectancy

Method and data type	Sources of mortality data						
	VRS	C85	C90	C95	VPA-1	C00	VPA-2
Direct methods - calculation							
A. Continuous recording of births and deaths	√						
B. Deaths by age in households in the year prior to data collection						√	
C. Survival status (alive or dead) of infants born in the year prior to the census				√		√	√
Indirect methods – estimation							
D. Children ever born to women 15 years and over, and whether still alive		√	√		√	√	√
E Survival status of mother or father, based on responses from adults 15 years or over in a census or survey							

The 'direct methods' referred to in the table gather data that can be used to arrive at the number of infant deaths and the number of live births in the same period – usually a year; these are direct calculations. The table also covers 'indirect methods', which are used to arrive at the IMR in situations where the data needed for direct calculations are unavailable or of insufficient quality; these however are estimations.

The main source of data for calculations is the vital registration system (VRS). Unlike censuses and surveys, the VRS continuously collects population information through the registering of births and deaths (data type A).

Censuses and specific demographic surveys typically ask households whether one of their members died in the previous year, and if so at what age (data type B). This provides the number of deaths at age 0 years, which can be divided by the number of live births during the same period to calculate the IMR.

In censuses, women are usually also asked whether they gave birth to a child in the previous year and whether or not that infant is still alive (data type C). This information does not, strictly speaking, generate an IMR, as many of the children born in the year prior to the census are still zero years-old and on average have nearly six months to go until their first birthday. It, does however, allow for the estimation of a lower limit of the IMR.

Indirect methods, on the other hand, are based on a question to women 15 years and older about whether each of the children born to them is still alive. Using certain assumptions, this information can be used to estimate infant mortality (data type D). Technical Note 2, section 2 describes the methodology, the 'Brass technique', and assesses the validity of its underlying assumptions for the Maldives.

Another source of information used to estimate adult mortality is derived from questioning adults 15 years and over about whether their mother or father is still alive (date type E). The three sources mentioned do collect these data but these have not been tabulated or analysed for this report.

The results will be presented and discussed from perspectives of time and geography.

The time perspective

Table 6.6 shows data ranked by source and year from four different data types and seven sources. The VRS (data type A) calculates the IMR from the birth and death records that have been routinely collected for decades. According to these data, between 1984 and 2003, the IMR per 1,000 live births declined from 66 to 14. The latter is a very low figure indeed, and given that the figure for the previous year was 18, the sudden drop may be a fluke. Indeed, since the deaths in 2004 should also have included those of tsunami victims, the rate might even have been expected to increase. In the case of life expectancy the data indicate that over the decade 1985-95 life expectancy increased from around 60 to 70 years. But subsequently there was little progress: by 2003 life expectancy for both sexes had only reached 71.

Information from women about births in the year prior to the two latest censuses (data type B) also indicates a huge decline in IMR from 85 in 1995 to 32 in 2000. This last finding is consistent with the IMR information data on household deaths by age from the same 2000 Census (data type C). However, both 2000 census infant mortality rates are rather higher than that computed from the VRS in 2000: 21 deaths per thousand live births. See Technical Note 2, section 3, for an analysis of these two data sources.

A third data source also shows a decline in infant mortality, but a final rate that is even women (data type D) indicates an estimated decline in infant mortality between 1985 and 2004 from 121 to 41 deaths per thousand live

Table 6.6 Infant mortality and life expectancy over the years, various sources

Source	Method/ data type	Year	IMR Maldives	IMR Male	IMR Atolls	Life expectancy, Maldives, both sexes
VRS	A	1984	66	47	70	
VRS	A	1985	60	48	63	61
VRS	A	1986	58	53	59	
VRS	A	1987	50	47	50	
VRS	A	1988	48	53	48	
VRS	A	1989	43	42	43	
VRS	A	1990	34	35	33	65
VRS	A	1991	38	33	39	66
VRS	A	1992	31	38	29	67
VRS	A	1993	34	33	34	
VRS	A	1994	30	36	28	69
VRS	A	1995	32	36	31	71
VRS	A	1996	30	21	32	
VRS	A	1997	27	15	31	70
VRS	A	1998	20	21	20	71
VRS	A	1999	20	13	23	73
VRS	A	2000	21	17	22	71
VRS	A	2001	17	13	19	
VRS	A	2002	18	15	20	73
VRS	A	2003	14	8	18	71
Census	B	1995	85			
Census	B	2000	9-32			
VPA	B	2004	45-59			
Census	C	2000	32-40	38	30	
Census	D	1985	121	95	127	50
Census	D	1990	88	73	91	56
Census	D	1995	72	55	76	60
VPA	D	1997	62	37	69	62
Census	D	2000	45	34	48	66
VPA	D	2004	41	32	47	67

births. Over the same period, these data also show life expectancy at birth increasing from 55 to 67 years. Technical Note 2, sections 4 and 5, details the methodology for these estimates.

To sum up, the most striking mortality trends in the last decades are:

1. An enormous decline IMR over the past 20 years, regardless of data source.
2. A slowing of the decline in recent years.
3. Considerable differences in the levels of mortality measured or estimated from different data sources.

Reasons for mortality decline and its pattern

In most respects the pattern of mortality decline in the Maldives matches that in other countries. It takes time to alleviate the worst of poverty and to build up a health system that can tackle disease and early death, while also improving living conditions. Once these core-conditions are met, however, and deaths from easily preventable diseases are avoided, the decline in mortality can be fast. It is common therefore for a population to move from life expectancy at birth of 45 years to a rate of 60 to 65 years relatively quickly. Subsequently progress will, however, be slower because this will depend on introducing more advance medical care and achieving higher standards of living. The same is true of infant mortality: once the easily preventable deaths are prevented, a hard core remain, caused by factors such as genetic malfunctions that are virtually beyond human control. Figure 6.11 shows that this is indeed the trend in the Maldives; nowadays the remaining infant deaths tend to take place soon after birth. Between 1980 and 2003, the proportion of deaths that were 'early neo-natal', in the first 6 days of life increased from 25 to 60 percent.

The higher this percentage becomes the less scope there is for further reductions in infant mortality that could raise life expectancy still further. Countries with high levels of medical care and high standards of living that permit life expectancies to rise to 80 years or more tend to have an even higher proportion of their deaths in the early neo-natal period.

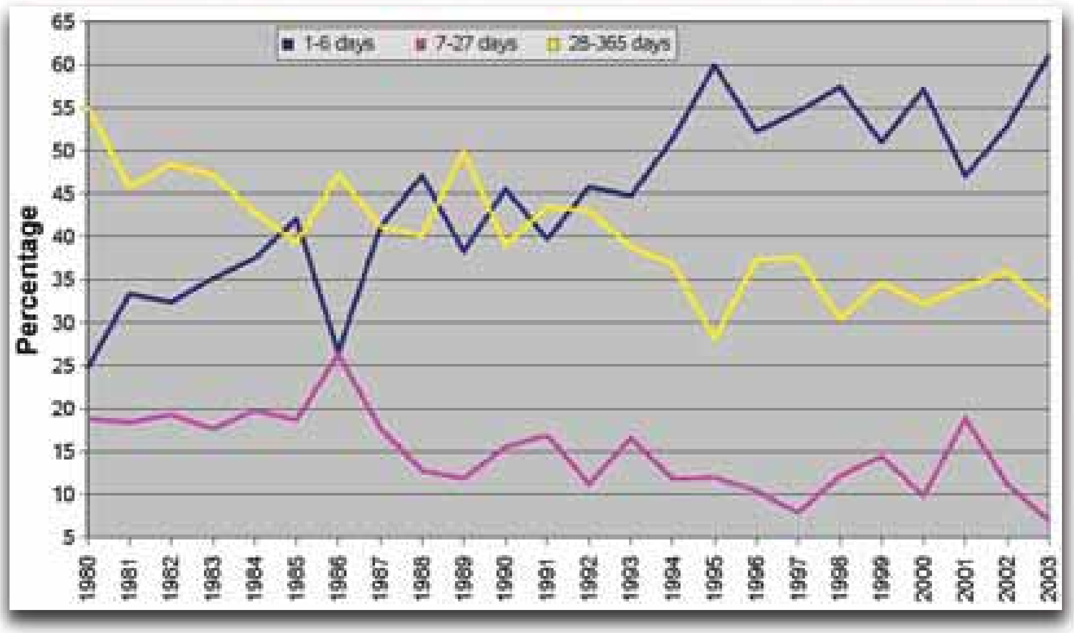
Discrepancies in reported levels of mortality between different sources

But why the gap in estimates between different sources? Although the gap is narrowing, the VRS system still produces IMR estimates half those estimated from indirect methods. When it comes to life expectancy, however, the difference between the two sources is smaller: 71 years from VRS in 2003 compared to 67 years from the VPA-2 in 2004. The trends for both sources and indicators are shown in Figure 6.12.

What could account for the large discrepancy in IMR and the small difference in life expectancy if measured by both sources? There is no definite answer to this though it is possible to discuss some contributing factors

First, coverage of the birth registration and death registration might not yet be perfect, in spite of improvements made to the VRS by the Ministry of Health and the Ministry of

Figure 6.11 Infant deaths by age, 1980 - 2004



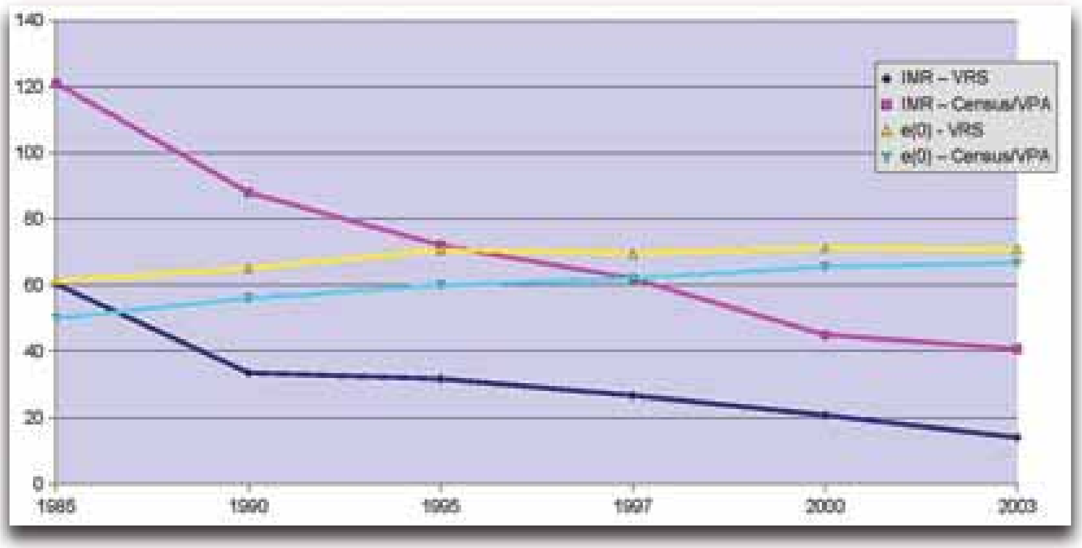
Source: Death-by age statistics compiled from the VRS and reported in the annual statistical yearbooks, MPND

Planning and National Development in recent years. Omissions to records of births or deaths are more likely than double-registration these vital events. Any VRS system therefore tends to give a favourable picture of mortality (lower than real IMR, higher than real life expectancy). This could be true for Maldives where the VRS data show that the IMR has declined from relatively low to exceptionally low levels -- which do not seem to correspond with levels and trends in other VPA health indicators like general malnutrition, stunting and wasting. Under-registering deaths does not, however, quite explain why the IMR gap is so much wider than the life expectancy gap, as we would have expected the opposite[1].

A second possibility is a miss-classification of death events that take place around the moment of birth: it is not always easy to distinguish between foetal loss (miscarriage), stillbirth, live birth and infant death. There are, for example, many more still births than expected. The analysis of data from the 2000 population indicated three times as many stillbirths as there were infant deaths. However, this was inconsistent with other data from the same census on records of household deaths by age. As a result, depending on how the deaths are classified, the IMR estimated from this source could vary between 10 and 32. This analysis, described in detail in Technical Note 2, section 3, is not solid proof, but at least shows that misclassification can result in substantial differences in measured infant mortality – and at least raises the question whether the very low infant mortality rates derived from the VRS system can be explained by relatively high rates of stillbirth.

A final, if minor, cause of the discrepancies could be differences in reference years. Estimates of IMR from censuses or surveys are based on reports from women in various age groups and tend to be weighted towards women in the 25-29 age group. However, the average age of these women's children is three years, so the derived estimate of the IMR from these women refers not to the time of the survey, but to three years previously.

Figure 6.12 Discrepancies in infant mortality and life expectancy obtained from VRS and census/survey data



[1] *The IMR computed from VRS uses registration figures for both births and deaths. If births and deaths are omitted from the records by the same percentage, the computed IMR will be nonetheless be accurate as under-registration of deaths is offset by the under-registration of births. This compensating mechanism does not work for life expectancy which does not use birth registration data.*

Geographical perspective 1: mortality gap between Male' and the atolls

In Table 6.6 the mortality rates for the atolls from estimation techniques are consistently less favourable than those for Male'. Based on the VPA-2 data, the estimated life expectancy in 2004 was 69 for Male', and 65 for the atolls – a gap consistent with census data. Data from the VRS, however, are far less consistent: indeed for several years during the 1990s the IMR for the atolls was lower than that for Male'.

What has actually been happening? Is it likely that the gap between Male' and the atolls has been narrowing, or might even close in the near future? Some factors point in this direction. First, Male', already having had better facilities and having made the easier health gains is now making slower progress – especially when pressure on these facilities increases due to increased urbanization by migration into Male' from the atolls. Meanwhile, facilities in the atolls have continued to improve, resulting in a reduction in easily-preventable communicable diseases and deaths.

Second, it is also possible that there has been some diffusion of ideas across the country as a result of greater travel and better telecommunications. There is, in fact, some evidence that atolls are quick to absorb 'mortality-reducing ideas', which also include practising contraception to reduce family size.

Third, people living on most islands also have the advantage of facing less stress than those Male' where average living space per household member has steadily decreased. Overall therefore, there is reason to believe that health standards in the atolls have been converging with those on Male'.

These geographical considerations will also have been affected by the tsunami – though it is too early to evaluate the effects. By damaging the health system and people's livelihoods on the atolls the tsunami could lead to an increase in mortality. On the other hand it could also accelerate migration of people from the least viable islands to Male' and elsewhere, where they will be able to take advantage of better health facilities.

Geographical perspective 2: differentials between atolls

In addition to showing the differences between the atolls as a whole and Male', the data available from the 2000 Population and Housing Census and the VPA-2 now also make it possible to study trends in mortality for individual atolls. All sources of data available at the atoll level are shown in Table 6.7.

Evidence from VPA-1 and VPA-2 data

Between VPA-1 and VPA-2, almost all atolls saw a decline in infant mortality, and a rise in life expectancy. In atolls where the IMR was 60 or above in 1997, this had been at least halved by 2004. This applied to all atolls in the South Central region as well as most in the North and North Central regions. Least progress was made in the Central Region, where Alif Alifu and Kaafu stagnated. On the other hand atolls that in 1997 already had lower IMRs made slower progress – having reached the stage where further mortality declines will depend heavily on access to advanced medical facilities and higher standards of living. As a result of this differential progress the differences in mortality between regions and atolls have become much smaller.

This trend towards greater equality in levels of mortality had already been apparent from the 2000 census. Based on this, the estimated IMR in the five regions varied between 42 (North Central) and 54 (North) and estimated life expectancy varied between 64 and 66 years.

According to the VPA-2 estimates, the areas with the lowest mortalities are now the North and South regions – and all atolls in these regions reduced mortality further after

Table 6.7 Estimates for life expectancy and IMR from various sources, 1997-2004

	Life expectancy at birth (both sexes)			Infant mortality rate (both sexes)			
	VPA-1 indirect	Census 2000 indirect	VPA-2 indirect	VPA-1 indirect	Census 2000 indirect	Census 2000 direct	VPA-2 indirect
MALDIVES	**62**	**66**	**67**	**62**	**45**	**32**	**41**
Male	**68**	**68**	**69**	**37**	**34**	**38**	**32**
Atolls	**60**	**65**	**65**	**69**	**48**	**30**	**47**
NORTH	**60**	**64**	**69**	**71**	**54**		**34**
Haa Alifu	58	64	70	79	50	34	32
Haa Dhaalu	62	64	70	63	53	24	38
Shaviyani	53	62	68	102	59	32	36
NORTH CENTRAL	**55**	**66**	**66**	**93**	**42**		**47**
Noonu	56	65	66	88	41	17	45
Raa	52	66	65	110	42	55	55
Baa	66	70	69	43	37	20	35
Lhaviyani	58	68	67	81	37	15	42
CENTRAL	**63**	**65**	**61**	**59**	**46**		**64**
Kaafu	66	67	66	47	42	36	50
Alif Alifu	58	64	51	74	50	23	60
Alif Dhaalu	65	65	74	49	47	39	18
Vaavu	61	70	73	66	37	81	42
SOUTH CENTRAL	**57**	**64**	**61**	**83**	**51**		**50**
Meemu	62	66	75	61	38	9	37
Faafu	54	61	67	99	65	19	46
Dhaalu	58	65	71	78	44	25	43
Thaa	54	66	64	99	43	59	48
Laamu	59	63	63	76	50	36	49
SOUTH	**69**	**66**	**72**	**33**	**46**		**26**
Gaafu Alifu	62	63	71	60	65	27	20
Gaafu Dhaalu	58	65	72	81	49	20	27
Gnaviyani	69	69	75	34	29	21	15
Seenu	69	66	72	32	44	30	27

Note: In some cases the rates given for the regions are outside the range for the atolls within those regions. This can be caused by the fact that they are derived separately from different models. The atoll rates are sometimes based on few observations with wide error margins.

Sources: Ministry of Planning and National Development: Population and Housing Census of Maldives 2000; Vulnerability and Poverty Assessments 1997 and 2004

2000. In the South life expectancy is now above 70 years.

The situation is not so good in other regions – North Central, Central and South Central. Most atolls only just maintained the 2000 levels of mortality or even saw a deterioration in IMR and life expectancy. The highest mortality rates are now in the Central region. This is somewhat surprising because this is also the region closest to Male' which has the country's best medical facilities. Have the atolls in this region been given less support to improve their own health facilities?

Evidence from census 2000 data

The indirect estimate of IMR from the 2000 census (data type D) is 45. The direct estimate from the same census (data types Band C; see Technical Note 2, section 3) is 32. Why the difference, and which is the more accurate? The following two arguments suggest that the 'true' IMR in 2000 will have been closer to 32 than to 45:

1. The IMR calculated from reported deaths in households (data type C) are based on a total of 176 infant deaths reported for the entire Republic. It would have needed over 80 additionally reported infant deaths for the IMR for the Republic to increase to the level of 45 estimated from the indirect method. It is hard to imagine that the census missed so many infant deaths.
2. Indirect methods do not have a clear reference year and unlike the directly measured data types refer to at least one year before the date of the census or survey. This explains part of the gap in figures. This also implies that in a situation of mortality decline the indirect estimate is likely to have an upward bias.

Conclusions and final estimates of life expectancy and IMR for atolls

All data sources show a considerable decline in mortality in the period between the two VPA studies – a decline consistent with VPA-2 findings of improvements in virtually all dimensions of socioeconomic development.

In particular, the analysis showed that:

1. Mortality has declined very rapidly in recent decades, especially in the period 1985-2000.
2. Since 2000 the decline in mortality has been slowing.
3. The differences in levels of mortality between the 20 atolls have been narrowing.
4. The gap in mortality levels between Male' and the atolls is not very large. Life expectancy in Male' in 2004 was only 4 years longer than in the atolls – a gap substantially smaller than that in 1997 when the gap was 8 years, but about the same as that in 2000.

These trends indicate that the Maldives has reached a stage of development where standards of living and access to medical care are such that easily preventable deaths are indeed mostly being prevented. Further improvements will be harder to achieve; they will be more expensive, depending on access to the advanced medical care needed to prolong life for patients suffering from degenerative diseases of 'old-age', including cardiovascular ailments and cancers.

However, different data sources and methods have suggested different IMRs and life expectancies. Which is correct? Table 6.8 shows plausible estimates using evidence from different sources and types of data. These are based on the following considerations:

1. Life expectancy estimates from VPA-2 are probably accurate, since they suggest figures consistent with the Census 2000 as well as

the VRS system. However, one year has been added to the VPA-2 estimate to take into account the fact that the reference date was two years prior to the survey of July 2004.

2. Indirect estimates of IMR are likely to be upwardly biased. This is evident from the latest census data for which the direct method suggested 32, and the indirect method 45. It is assumed that the VPA-2 estimates of the IMR are similarly upwardly biased by approximately ten percent. The estimated IMR levels for 2004 have therefore been lowered by ten percent to compensate for the assumed upward bias, as well for as the difference in the reference date.

3. Imperfections in the VRS system are causing a downward bias in the IMR figures. The estimates in Table 6.8, on the other hand are not only fairly consistent with several sources and types of data, they are also consistent with the pace of improvements in standards of living.

Table 6.8 -- Plausible estimates for life expectancy at birth and the IMR, 2004

AREA	IMR (both sexes)	e(o) (both sexes)	AREA	IMR (both sexes)	e(o) (both sexes)
Maldives	37	68	**CENTRAL**	44	64
Male	29	70	Kaafu	45	64
Atolls	42	66	Alif Alifu	54	60
			Alif Dhaalu	30	62
			Vaavu	38	73
NORTH	31	64	**SOUTH CENTRAL**	40	66
Haa Alifu	29	68	Meemu	34	73
Haa Dhaalu	34	61	Faafu	41	60
Shaviyani	32	57	Dhaalu	39	72
			Thaa	42	64
			Laamu	44	65
NORTH CENTRAL	31	68	**SOUTH**	22	70
Noonu	29	70	Gaafu Alifu	18	73
Raa	34	67	Gaafu Dhaalu	25	68
Baa	32	74	Gnaviyani	14	69
Lhaviyani	38	73	Seenu	24	69

Source: Derived from results presented in this section

Availability of Drinking Water

For drinking water, people have traditionally relied on wells that provide access to the freshwater 'lenses' formed by rainwater that accumulates above the salt-water table. However these lenses are often shallow and prone to pollution – vulnerable to the percolation of human wastes downwards and from seawater intrusion upwards when people have over-extracted the fresh water.

Because of the declining quality of well-water many more people now rely for drinking water on harvested rainwater channelled from roofs into tanks. As a result, between 1997 and 2004 the proportion of the island population obtaining its drinking water from wells fell from 13 to 5 percent. The Government is also engaged in several projects to raise awareness on proper methods of collecting and storing this water since it is vulnerable to contamination from materials on the roofs that can pose serious health threats – asbestos, for example, or dead birds.

Moreover, rather than relying on community rainwater tanks, or getting their water from tanks run by the private sector many more people have systems in their own compounds. Between 1997 and 2004, the proportion of people obtaining their drinking water from their own rainwater tank increased from 42 percent to around two thirds. The changes are shown in Figure 6.14. In Male', however, the situation is very different: 76 percent of the population use desalinated water from the public piped supply.

In the atolls in 2004 there were desalination plants on only two islands: Kandholhudhoo[2] in Raa atoll and Komandhoo in Shaviyani atoll. Even there, however, many people were not using these sources. In Kandholhudhoo 36 percent of the population obtained drinking water from the desalination plant, while 35 percent of the population used rainwater from the compound. In Komandhoo 88 percent still used rainwater from the own compound and only eight percent of the population obtained drinking water from the desalination plant, probably because the cost of the desalinated water was so high. Similar behaviour can also be observed in Male': although piped water is available everywhere many people continue to get water from the public taps at the mosques, and 20 percent of the population use rainwater for drinking, though this proportion is down from 41 percent in 1997.

Table 6.9 Drinking water situation by atoll (percentage of atoll population), 2004

	Insufficient drinking water	Unsafe drinking water	Rain water
Maldives	**21**	**2**	**51**
Male'	**0**	**0**	**20**
Atoll average	**30**	**3**	**64**
Haa Alifu	2	2	67
Haa Dhaalu	13	1	75
Shaviyani	43	2	71
Noonu	40	0	59
Raa	41	6	44
Baa	22	3	54
Lhaviyani	48	5	47
Kaafu	18	5	39
Alif Alifu	34	0	76
Alifu Dhaalu	28	0	90
Vaavu	56	0	79
Meemu	55	0	66
Faafu	70	0	45
Dhaalu	56	0	30
Thaa	54	0	62
Laamu	66	2	66
Gaafu Alifu	4	3	83
Gaafu Dhaalu	10	0	76
Gnaviyani	11	0	64
Seenu	16	17	68

Note: The definition of 'unsafe' drinking water is given in the text.

2 *Kandholhudhoo was one of the most affected islands during the tsunami and was completely evacuated. At present, it is not inhabited.*

Figure 6.13 – Main source of drinking water, percentages of population, 2004

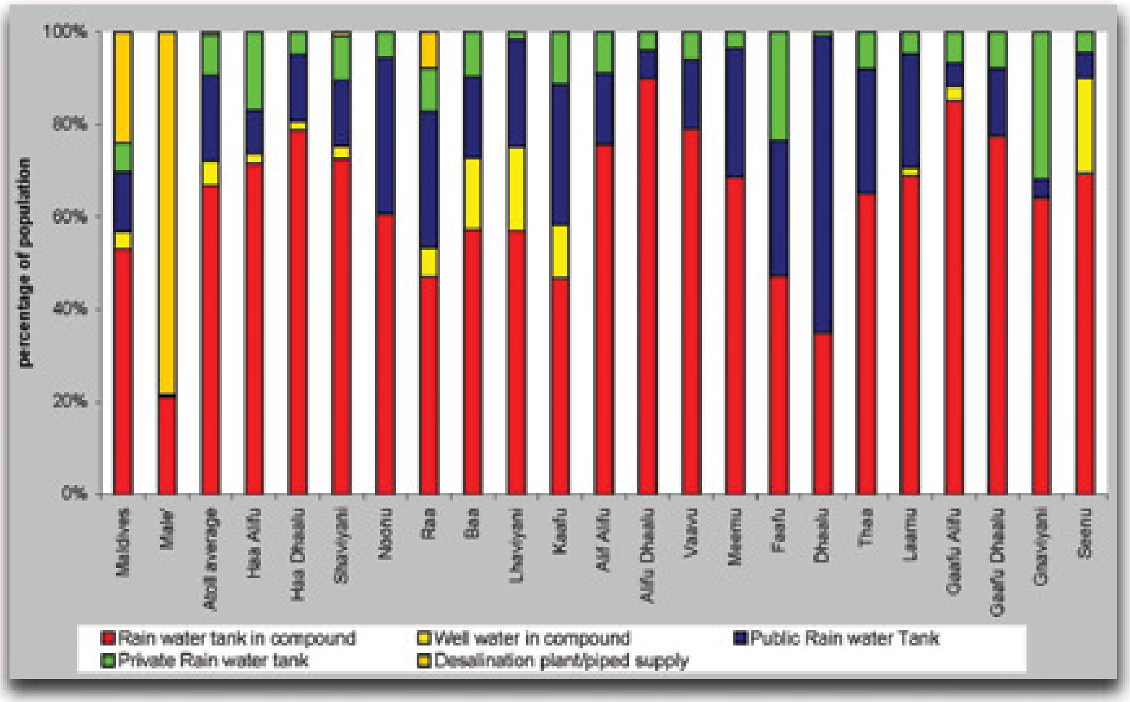
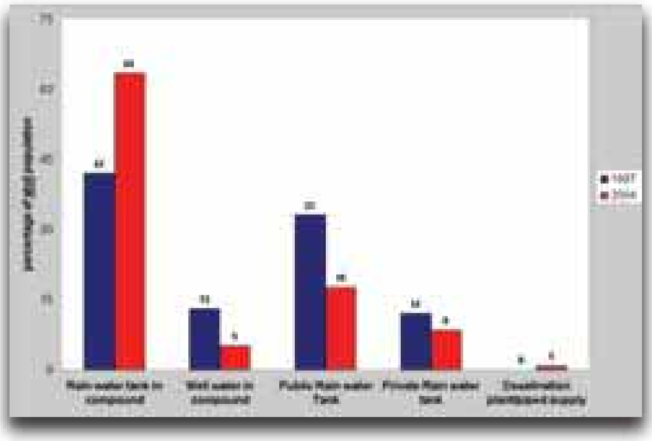


Table 6.10 Main source of drinking water, by atoll, (percentages of population), 2004

	2004	2004	2004	2004	2004
	Rain water tank in compound	**Well water in compound**	**Public Rain water Tank**	**Private Rain water tank**	**Desalination plant/ piped supply**
Maldives	**51**	**4**	**12**	**6**	**23**
Male'	**20**	**0**	**0**	**0**	**76**
Atoll average	**64**	**5**	**18**	**8**	**1**
Haa Alifu	67	2	9	16	0
Haa Dhaalu	75	2	14	5	0
Shaviyani	71	3	14	9	1
Noonu	59	0	33	5	0
Raa	44	6	28	9	7
Baa	54	15	17	9	0
Lhaviyani	47	15	19	1	0
Kaafu	39	9	25	9	0
Alif Alifu	76	0	15	9	0
Alifu Dhaalu	90	0	6	4	0
Vaavu	79	0	15	6	0
Meemu	66	0	27	3	0
Faafu	45	0	28	23	0
Dhaalu	30	0	55	1	0
Thaa	62	0	26	8	0
Laamu	66	2	23	5	0
Gaafu Alifu	83	3	5	7	0
Gaafu Dhaalu	76	0	14	8	0
Gnaviyani	64	0	4	32	0
Seenu	68	20	5	5	0

Figure 6.14 Source of drinking water in the atolls (percentage of atoll population), 1997 and 2004



In the international context, drinking water that is not either bottled or from the piped supplies is considered unsafe if not treated in the household before use. In the Maldives, however, rainwater has traditionally been considered safe, whether or not is has been treated by the user. In order to provide information corresponding to the two definitions, the data on drinking water have been presented in both ways.

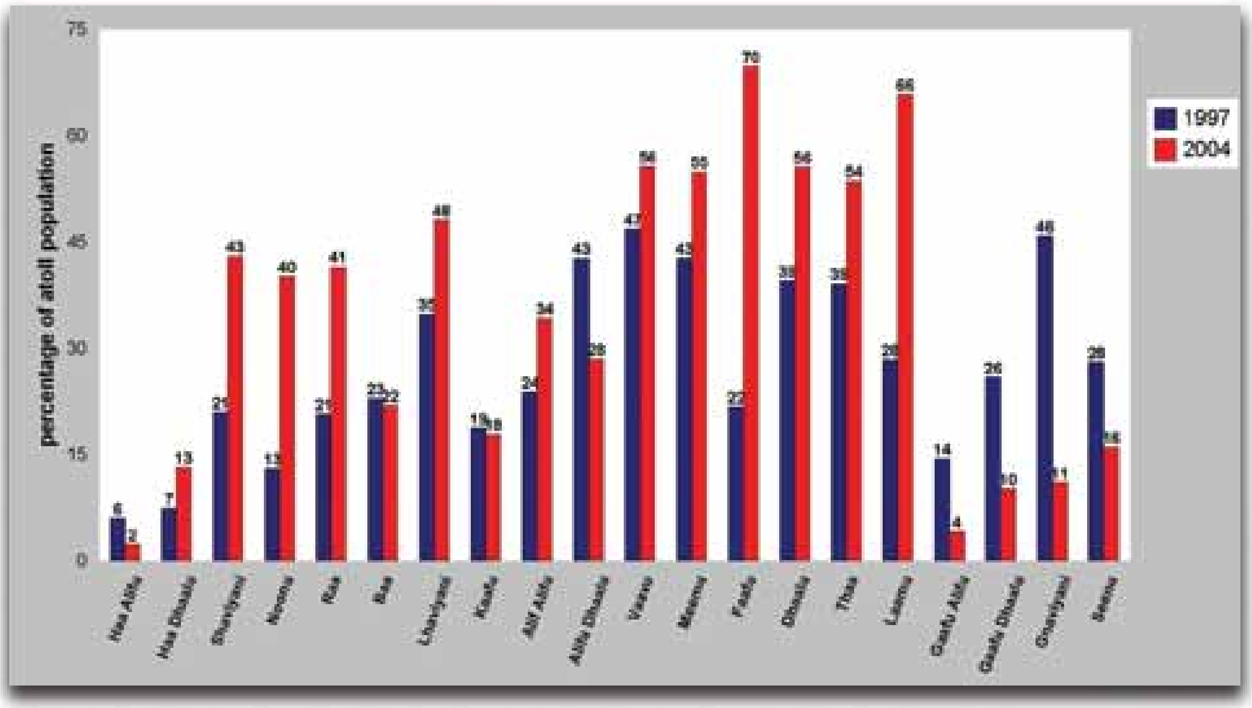
Using the Maldives' definition, between 1997 and 2004 the proportion of the population using unsafe water (usually untreated well water) fell from nine to two percent. Most of these are in the atolls where the proportion fell from 12 to three percent.

Using the international standard, which considers untreated rainwater to be unsafe, 66 percent of the population in Maldives use unsafe drinking water: in Male', 16 percent; in the atolls 88 percent.

Despite the increasing use of rainwater, in almost all atolls the percentage of the population experiencing drinking water shortages has increased. At the atoll level the increase was from 24 percent of the population in 1997 to 30 percent in 2004. The most pronounced deterioration were in Shaviyani, Noonu, Raa, Kaafu and Gaafu Alifu atolls. Improvements, however, were made in Haa Alifu, Gaafu Dhaalu, Gnaviyani and Seenu atolls.

In Male' too, some households reported a shortage of drinking water. But since in Male'

Figure 6.15 Water shortages reported in the previous year, by atoll (percentage of atoll population), 1997 and 2004



free desalinated water is available through public taps these reports have been disregarded.

Drinking water index

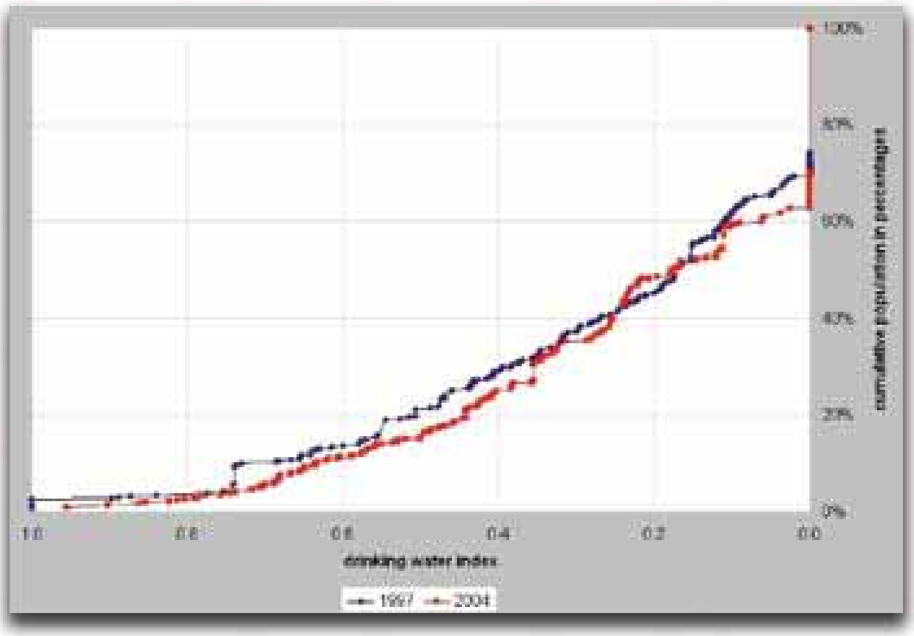
The drinking water index is composed as follows.

Indicator	Penalty points
Drinking water shortage in previous year	1.0
No access to safe drinking water	1.0

As Figure 6.16 shows the indices for 1997 and 2004 largely overlap, indicating little change over the intervening seven years. The improvements obtained by having more rain water tanks in the compounds have been offset by the increased frequency of drinking water shortages reported by the island populations.

One island, Gamu in Laamu atoll, scored almost the maximum penalty points (0.96) – having no access to safe water and also prolonged water shortages. It was closely followed by Kurendhoo in Lhaviyani atoll, Nilandhoo in Faafu atoll and Maakandoodhoo in Shaviyani atoll, all with penalty points between 0.85 and 0.90. On the other hand, a number of islands saw substantial improvements: in 1997 Kadholhudhoo in Raa atoll scored maximum penalty points but by 2004 its score was down to 0.25, largely because the Government had provided a desalination plant. Two islands in Seenu atoll, Hulhudhoo and Meedhoo that also scored the maximum in 1997 have also seen improvements.

Figure 6.16 – Drinking water index by island, 1997 and 2004



Recreation and Sport

As can be seen from Table 6.11, the variation of recreational and sport facilities among the atolls is high.

In general, the island population now has greater access to all types of clubs and enjoys more social events. Between 1997 and 2004, the proportion of the population without access to clubs fell from 25 to 10 percent, and the proportion of the atoll population now living on islands where some events had been organized during the year increased from 29 to 87 percent.

As Figure 6.17 shows, there were improvements in three of the four indicators. The only deterioration was in the space available for recreation and sports activities. In 1997, 86 percent of the islanders reported adequate space, but by 2004 this proportion had fallen to less than three-quarters.

Recreation index

The recreation index is composed as follows.

Indicator	Penalty points
No youth programmes or sports club	0.25
No organized public events	0.25
Insufficient space for recreational sports	0.75

Figure 6.18 shows the recreation index by island. As this is entirely composed of island-level information, the changes can only be in increments of 0.25 penalty points. This shows a similarity between the lines for 1997 and 2004: overall progress has been modest, largely because the significant improvements in the number of events and programmes have been cancelled out by the space problem. Altogether, for recreational and sports facilities 71 islands registered an increase, and 68 a decrease, while the other 61 showed no significant change.

Table 6.11 – Lack of recreation and sport facilities, by atoll, (percentage of atoll population) 2004

	no clubs	no events	not enough space	less than twenty percent open space
Maldives	**7**	**9**	**18**	**17**
Male'	**0**	**0**	**0**	**0**
Atoll average	**10**	**13**	**26**	**25**
Haa Alifu	8	20	9	21
Haa Dhaalu	7	0	2	46
Shaviyani	24	43	31	12
Noonu	12	0	26	46
Raa	2	17	53	31
Baa	1	14	35	56
Lhaviyani	6	0	37	95
Kaafu	0	11	33	27
Alif Alifu	0	10	9	0
Alifu Dhaalu	32	26	9	31
Vaavu	0	0	29	0
Meemu	2	8	58	0
Faafu	0	0	0	0
Dhaalu	18	0	42	0
Thaa	3	3	55	16
Laamu	5	10	38	0
Gaafu Alifu	31	57	34	14
Gaafu Dhaalu	14	7	35	0
Gnaviyani	0	0	0	0
Seenu	22	11	11	33

Figure 6.17– Recreation on the islands(percentage of atoll population), 1997 and 2004

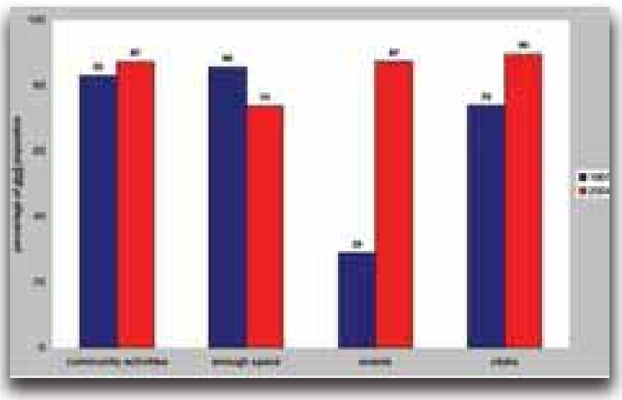
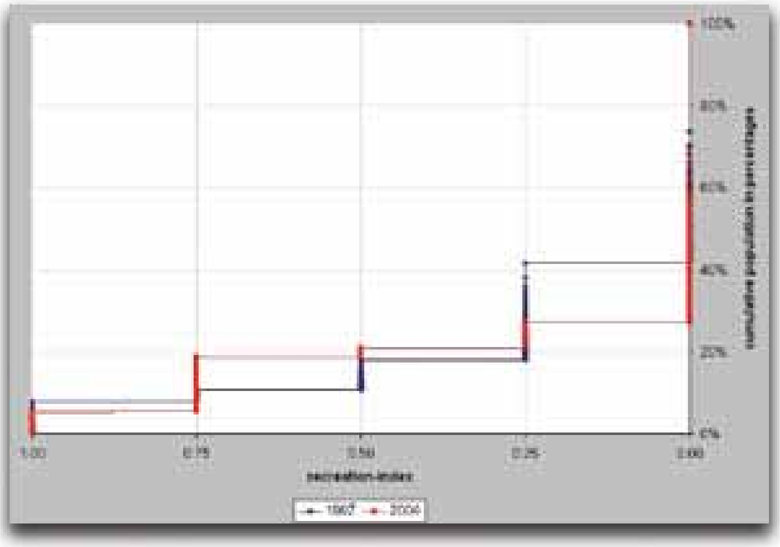


Figure 6.18 – Recreation index, by island, 1997 and 2004



Consumer durables

Changes in the ownership of consumer durables are a good indication of changes in overall levels of household well-being. Four consumer durables were selected as indicators: sewing machines, washing machines, electrical fans and refrigerators. The percentage of population with access to those four items is summarized in Table 6.12. Since 1997 there have been significant improvements: by 2004 most households had one or more. For example, there are now only two atolls where more than half of households to not have a sewing machine. Exceptionally large changes were observed in Lhaviyani, Laamu and Gaafu Dhaalu atolls.

Even more rapid has been in the increase in household ownership of washing machines. Almost nine people in ten have a washing machine in their home compared with only 30 percent seven years previously. It is also interesting to note that when it comes to washing machines Gnaviyani and Kaafu atolls even outperform Male'.

Furthermore most households have fans. Nowadays only four percent of the atoll population live in a household without a fan, compared with 53 percent in 1997. There are even four atolls that report fans in all households.

Another area where progress has been registered, albeit less dramatic, is in the possession of refrigerators. In 1997, 78 percent of people lived without a refrigerator; by 2004 that proportion had been reduced to 43 percent.

It is also noteworthy that with regard to most of these consumer goods the differences between Male' and the Atolls have virtually disappeared: ownership of fans, washing machines and sewing machines are almost at the same level. For refrigerators, however, there remain significant contrasts, probably because refrigerators need a continuous, reliable supply of electricity that many islands cannot offer.

Consumer Goods Index

The consumer goods index is composed as follows.

Indicator	Penalty Points
More than 100 persons per shop	0.5
No sewing machine	0.5

The sewing machine was selected as an indicator, because this can be used as a tool to enlarge households' income-generating

Table 6.12 Lack of access to consumer durables, by atoll, (percentage of atoll population), 2004

	more than hundred people per shop	no sewing machine	no washing machine	no fan	no fridge
Maldives	**6**	**40**	**11**	**4**	**43**
Male'	**0**	**33**	**9**	**5**	**15**
Atoll average	**8**	**43**	**12**	**4**	**55**
Haa Alifu	3	42	16	10	69
Haa Dhaalu	8	43	18	5	64
Shaviyani	27	45	10	6	59
Noonu	7	39	7	9	59
Raa	18	47	16	7	59
Baa	11	42	15	3	54
Lhaviyani	0	23	10	1	57
Kaafu	10	44	5	1	37
Alif Alifu	0	43	15	0	31
Alifu Dhaalu	10	43	8	0	33
Vaavu	0	42	17	0	53
Meemu	19	38	11	3	54
Faafu	33	69	13	1	76
Dhaalu	17	48	10	3	61
Thaa	5	36	7	1	60
Laamu	0	33	11	7	60
Gaafu Alifu	1	40	23	3	48
Gaafu Dhaalu	6	45	20	5	55
Gnaviyani	0	59	4	0	64
Seenu	0	49	9	3	43

capacity, especially for women. Figure 6.21 shows a considerable improvement in the index compared to 1997. It should also be noted that there has been an explosion in the ownership of televisions, thanks to better electricity supplies as well as to the arrival of satellite television and cable networks.

Figure 6.19 – Availability of main consumer durable, Male',(percentage of atoll population), 1997 and 2004

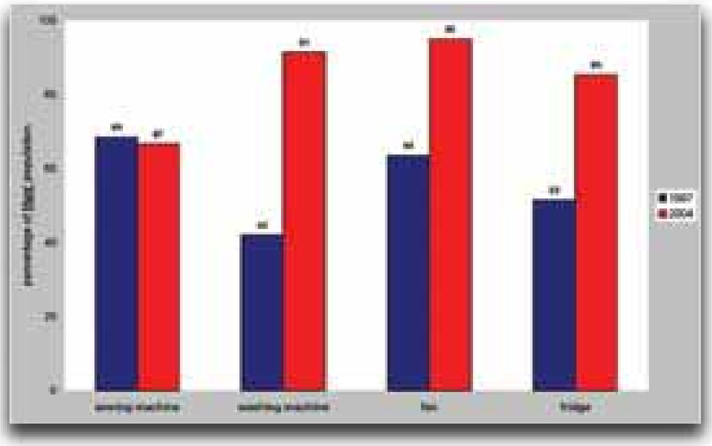


Figure 6.20 – Availability of main consumer durables in the atolls(percentage of atoll population, 1997 and 2004

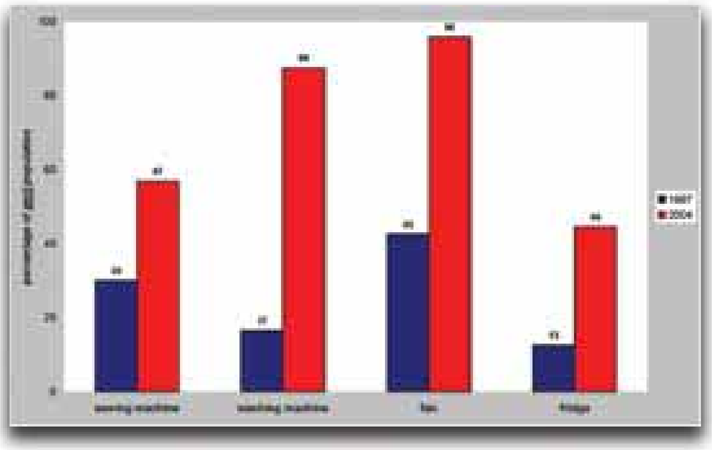
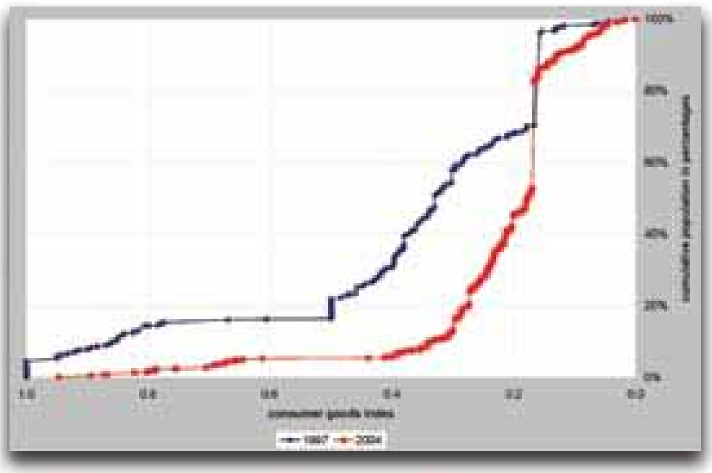


Figure 6.21 Consumer goods index by island, 1997 and 2004



Policy implications

The social infrastructure in the country, as described above, has improved significantly over the past seven years. In addition to substantial improvements in the indices for education and health, this is reflected in the ten percent increase in life expectancy and the reduction of infant mortality by about one quarter. Major remaining issues in this area on the islands are:

Education – Here the main task is to improve the quality, reflecting the priorities expressed by most survey respondents in both 1997 and 2004.

Health – One significant issue, related to the diseconomies of small scale, is the difficulty that people on small islands face in getting medicines.

Water supplies – Many islands face drinking water shortages from time to time. While technical solutions are available in the form of desalination plants, the operation of such facilities may not be economically possible on all islands.

Chapter 7

Housing and environment

Over the seven years between the two VPAs the quality of housing has improved substantially. This can be observed from various indicators, such as the percentage of houses that still have thatch walls, or a sand floor, or that lack a compound. Between 1997 and 2004 the proportion of houses with thatched walls fell from three to one percent, and the proportion with a sand floor from seven to one percent. Progress has been fairly widespread – though slower in Alif Alifu and Alifu Dhaalu atolls. In Male' in 1997 there were three percent of houses with sand floors; now there are none.

Other important housing indicators are the number of persons per room and the average living space per person. In this case, those living in Male', are much worse off as the capital has become much more crowded. Between 1997 and 2004, the proportion of people living in houses with 40 square feet or fewer of housing area per person has increased from 17 to 22 percent, and the percentage of houses with a compound has decreased from 57 to 39 percent

This situation is unlikely to improve, given the high rates of migration into Male' whose share of the country's population increased between 1997 and 2004 from 25 to 30 percent – though in the future the newly developed island of Hulhemale' - may provide some relief.

Between the two VPAs, the proportion of people living in houses with five or more people per room decreased from 14 to 9 percent – though the improvement was in the islands rather than Male'.

Housing Index

The housing index is composed as follows.

Indicator	Penalty points
Thatched wall or sand floor	1.0
Living space of less than 40 square feet per person	1.0
No compound	0.5

Between 1997 and 2004, the housing index for the atolls improved from 0.16 to 0.12 points – though for Male' it deteriorated, from 0.42 to 0.53 points.

Figure 7.1 – Change in housing characteristics in the atolls (percentage of atoll population), 1997 and 2004

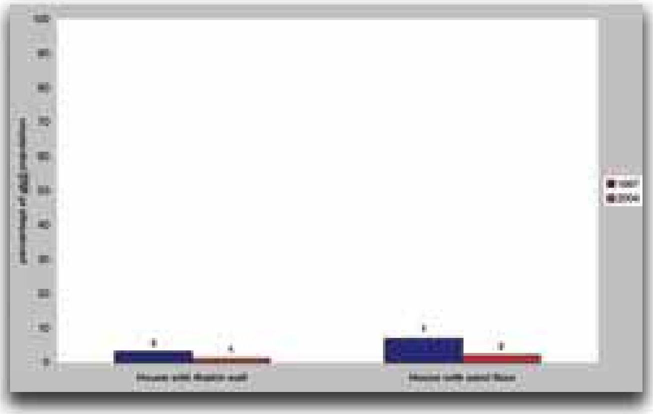


Figure 7.2 – Changes in housing characteristics in Male' (percentage of atoll population), 1997 and 2004

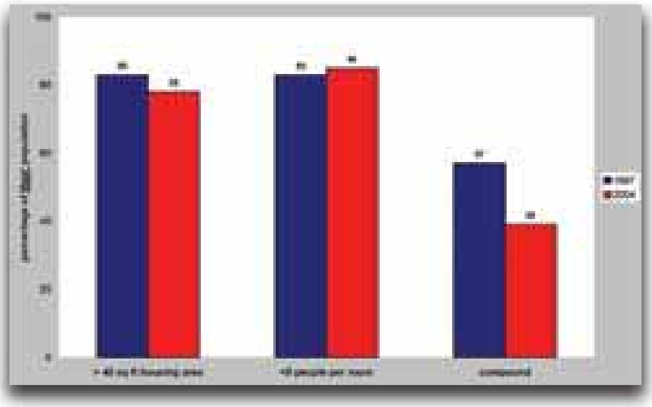
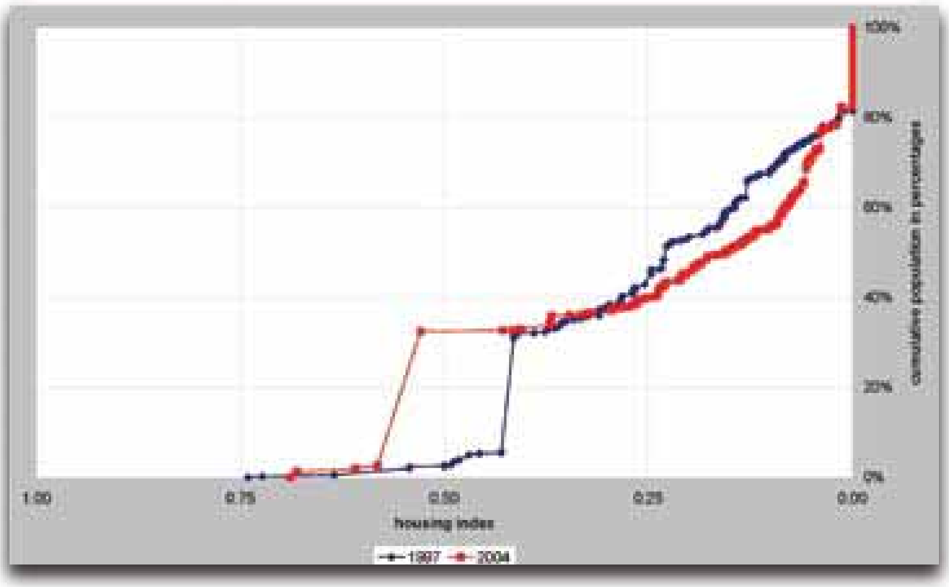


Table 7.1 – Housing conditions by atoll (percentage of atoll population), 1997 and 2004

	house with thatch wall	House with sand floor	House with thatch wall and sand floor	forty square feet or less housing-area	five or more people per room	no compound
Maldives	**1**	**1**	**0**	**10**	**9**	**24**
Male'	**0**	**0**	**0**	**22**	**15**	**61**
Atoll average	**1**	**2**	**1**	**5**	**6**	**9**
Haa Alifu	1	2	0	8	7	1
Haa Dhaalu	5	3	2	2	2	1
Shaviyani	1	1	0	1	2	11
Noonu	2	2	1	3	7	3
Raa	3	1	1	12	9	28
Baa	1	3	1	10	2	22
Lhaviyani	1	2	0	2	6	53
Kaafu	1	2	1	3	4	5
Alif Alifu	0	2	0	1	6	12
Alifu Dhaalu	0	5	0	2	2	11
Vaavu	0	3	0	0	3	8
Meemu	0	2	0	0	9	2
Faafu	0	0	0	8	15	0
Dhaalu	0	1	0	1	11	11
Thaa	0	0	0	4	5	6
Laamu	2	5	0	8	1	1
Gaafu Alifu	4	2	2	14	14	2
Gaafu Dhaalu	2	1	1	4	10	3
Gnaviyani	0	0	0	0	16	3
Seenu	0	1	0	0	5	4

Figure 7.3 Housing index, by island, 1997 and 2004



Environment

Due to its geography, the Maldives is extremely vulnerable to environmental pressures – as a result of human activities as well as the natural factors of winds, waves and temperature. The VPAs looked at various aspects of environmental degradation, including population density, beach erosion, sanitation, solid waste disposal and the use of fuel wood for cooking. A summary of the findings is presented in Table 7.2.

Population density

Male' is one of the world's smallest capitals – with an area of less than two square kilometres (two hundred hectares). It is also very crowded. Between 1997 and 2004 the population density of Maldivians in Male' increased from 344 to 458 persons per hectare. In addition, thousands of foreign workers reside in Male'.

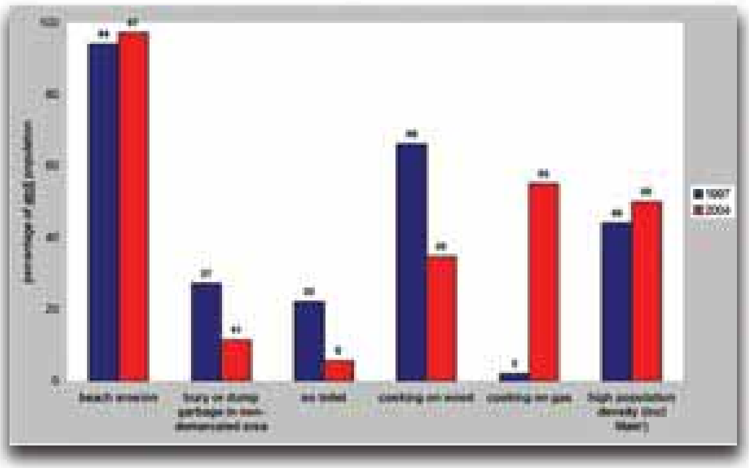
Other than the capital, 35 other islands have high population densities – with more than 50 persons per hectare. The most crowded are: Thulhaadhoo (pop 2,097) in Baa, with 422 persons per hectare, Kadholhudhoo[1] (3,445) in Raa with 307 persons per hectare and Naifaru (4,003) in Lhaviyani with 280 persons per hectare.

Overall, between 1997 and 2004 the proportion of the atoll population living on islands with a high population density (more than 50 persons per hectare) increased from one-quarter to nearly 30 percent. However, this average disguises some quite diverse trends. The population of Male' has increased substantially, as people have migrated there in search of work or to take advantage of better facilities such as education and health care. And overall the proportion of the population living on high density islands has increased from 44 to around 50 percent. In some places, however, population density has decreased,

Table 7.2 – Environmental problems, by atoll, (percentage of atoll population), 2004

	beach erosion	bury or dump garbage in non-demarcated area	no toilet	cooking on wood	high population density
Maldives	**68**	**8**	**4**	**24**	**50**
Male'	**0**	**0**	**1**	**0**	**100**
Atoll average	**97**	**11**	**6**	**35**	**29**
Haa Alifu	100	6	6	39	20
Haa Dhaalu	98	5	12	50	46
Shaviyani	100	15	6	37	12
Noonu	100	11	6	40	16
Raa	78	26	3	42	41
Baa	100	9	1	43	56
Lhaviyani	100	2	1	47	94
Kaafu	100	2	3	29	41
Alif Alifu	80	8	4	33	27
Alifu Dhaalu	100	2	4	43	31
Vaavu	100	0	0	14	36
Meemu	100	8	9	47	27
Faafu	100	1	18	33	23
Dhaalu	100	1	17	23	24
Thaa	100	11	2	16	29
Laamu	98	39	14	73	8
Gaafu Alifu	96	33	5	10	28
Gaafu Dhaalu	100	16	2	49	15
Gnaviyani	100	1	6	0	0
Seenu	100	4	0	0	16

Figure 7.4 – Changes in major environmental problems in the atolls (percentage of atoll population), 1997 and 2004



1 *Evacuated after the tsunami with the population temporarily dispersed over the other islands in Raa.*

partly as a result of emigration, but also because the land area has increased following land reclamation schemes, as on Hinnavaru in Lhaviyani atoll and Kadholhudhoo in Raa atoll.

Beach erosion

Beach erosion remains a serious problem all over the Maldives. Mostly this is a natural phenomenon, but can also be exacerbated by human activities. For example, as boats and ships increase in size they can damage the reef, leading to erosion. The severity of the problem differs from place to place and over time, but is evident in all but six islands.

Sanitation

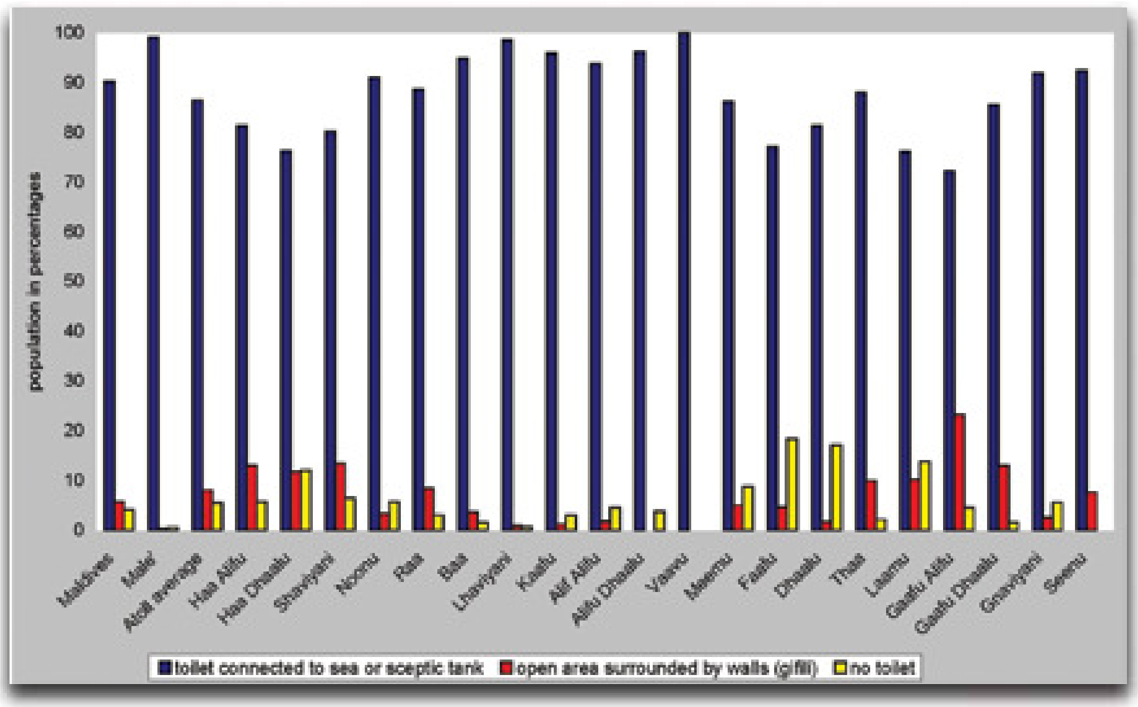
On the other hand, when it comes to sanitation there have been major improvements. Between 1997 and 2004, the proportion of households without toilet facilities in the house or compound fell from 22 to 6 percent of the total atoll population. However for around six percent of the islanders the toilet is a traditional 'gifili', an open space surrounded by four walls. Moreover, there are still substantial differences between the atolls: more than one in six people in Faafu and Dhaalu atolls remain without toilet facilities, while in Seenu and Vaavu atolls all the reporting households had some type of toilet. In Male', by 2004 only one percent of the population did not have toilet facilities at home.

Solid waste disposal

Previously for Male' there used to be serious problems with the disposal of garbage, which was typically buried or dumped in the open. This issue has largely been resolved since the Government designated an island for garbage disposal: all the material from Male' and the nearby islands is dumped in Thilafushi and partially processed.

The situation is different in the atolls, which use various methods. On some islands waste is discarded on a secluded area on the beach, while on others most of the trash is burned. Many also continue to have problems of garbage disposal in non-demarcated areas. In Raa, Laamu and Ghaafu Alifu atolls, for example, this issue

Figure 7.5 – Types of toilet facility by island (population in percentage), 1997 and 2004



affects between one-quarter and one-third of the atoll population. In the other atolls it has become less troublesome, with on average under ten percent of the population affected – and in Lhaviyani and Gaafu Dhaalu atolls, this problem has largely been resolved.

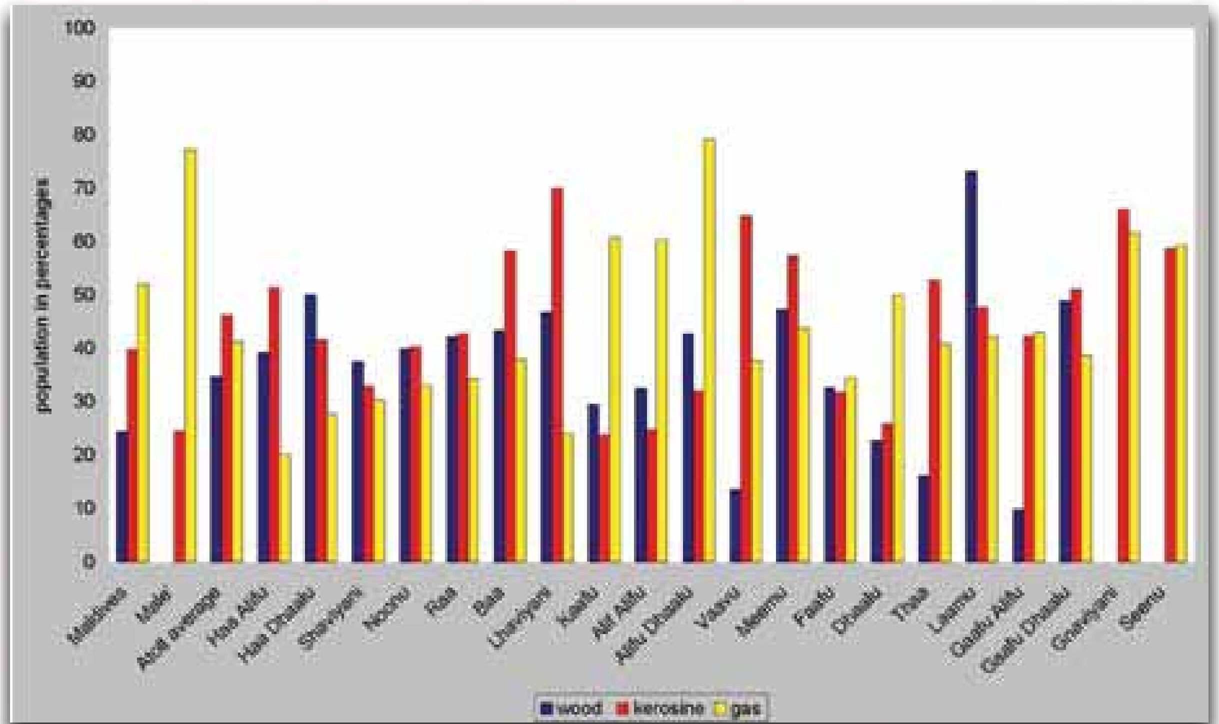
However, introducing more organized methods of disposal deals with only one aspect of the problem. The Maldives is now seeing waste material on an increasing scale. With greater use of imported consumer goods, the volume of discarded packaging, such as cans, is growing continually. Much of this waste cannot be burned, while many islands will soon run out of space for burying it. Furthermore, to ensure the safety of water supplies on the islands, waste products should be buried in such a way as to avoid leakage of toxic materials – something that is not happening at present.

Deforestation

In the past in the atolls the most important source of energy for cooking was fuel wood. Over the years, however, people have switched to other energy sources, first to kerosene and more recently, following the establishment of gas bottling plants in Kaafu atoll, to gas. Between 1997 and 2004, as indicated in Figure 7.4, the share of fuel wood in total energy use fell from two-thirds to around one-third while the share of bottled gas increased from 2 to 41 percent. This remarkable turnaround has brought substantial environment benefits as the use of firewood for cooking – along with its use for fish smoking – had been a major cause of deforestation.

Kerosene still remains important, however: in 2004 it was used by around 46 percent of

Figure 7.6 Energy sources for cooking, by island (population in percentage), 2004



Note: Multiple answers were possible; the totals therefore can be higher than 100%

the atoll population – a slight increase from 43 percent in 1997. In Male', around three-quarters of the population uses gas for cooking while the remainder uses kerosene.

Environment index

The environment index is composed as follows:

Indicator	Penalty points
High population density	0.0 – 1.0
Coastal erosion	0.5
No toilet facilities in house	1.0
Uncontrolled solid-waste disposal	0.5
Use of fuel-wood for cooking	0.0 – 1.0

Penalty points were given to the islands according to their environmental vulnerability. The resulting environment index is shown in Figure 7.7. Many islands still score above 0.5, largely due to widespread beach erosion. Although not a component of the index, another sign of progress, discussed in Chapter 10, is that people now attach much more importance to environmental issues.

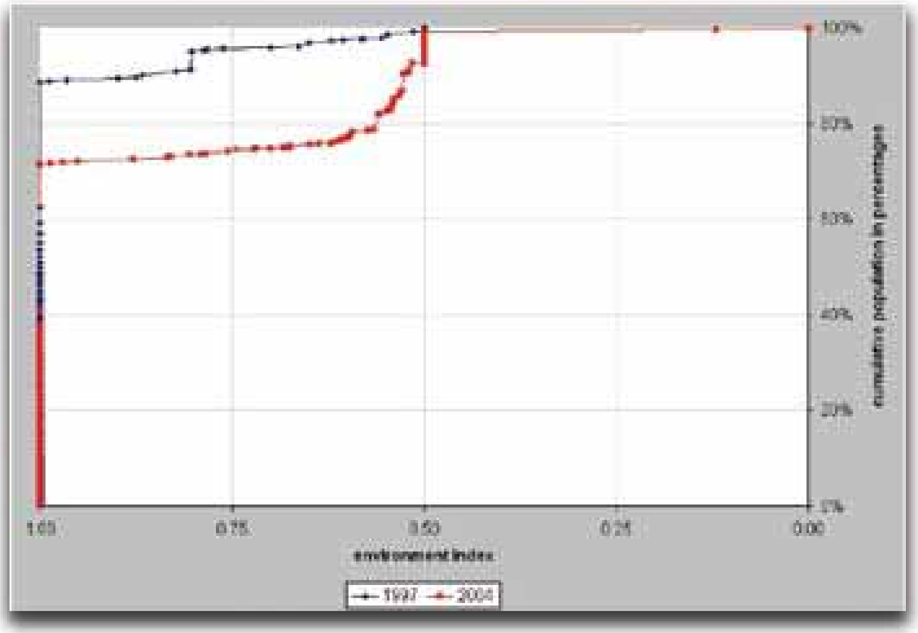
Policy implications

Environmental challenges, both due to the insular nature of the country as well as the lack of land resources for its increasing population, may become the main concern of the people over the coming years. This is evident from the major change in the ranking of the environment in the priorities of the population. In 1997 it had the lowest priority of twelve areas of concern. In VPA-2, it had moved up to sixth position.

Environment – Beach erosion is increasing vulnerability on practically all islands. This and the anticipated sea-level rises present unprecedented challenges.

Urbanization – The rapid pace of migration to Male' is making the capital very crowded. Some much-needed relief may come from the development of Hulhemale', but for the longer term more efforts should be put into regional growth centres in the North and in the South.

Figure 7.7 – Environment index, by island, 1997 and 2004



Chapter 8

Food security and nutrition

Information on food security was obtained in two ways: from interviews with island chiefs and from household questionnaires. Information on nutrition, however, came from measuring height, weight and upper-arm circumference of children aged one to four years in the sample households. The results show that although there is relatively little food insecurity there are still serious nutritional problems. The survey did not find a link between income and the nutrition status of the children. This points to cultural background, dietary preferences and weaning practices as more important causes of malnutrition.

Food Insecurity

Food insecurity is not a major issue, though some people do occasionally have problems. Table 8.1 shows that in 2004, during the preceding 12 months seven percent of the population had experienced some form of food crisis. This is roughly the same proportion as in 1977 but the distribution has changed. Some places have shown considerable improvement: in Thaa atoll the proportion experiencing a crisis came down from one in six to one in sixteen. In Faafu and Laamu atolls, on the other hand, the proportion went up. In Male' too, the situation deteriorated, the percentage of people experiencing a food crisis increasing from three to seven percent.

Figure 8.1 shows the average duration of the food crises. For nearly half the population with a crisis it lasted less than 10 days – a similar result to 1997. And in both years around ten percent of the affected population experienced problems for more than two months. There were however some changes within the other groups.

Table 8.1 – Food insecurity by atoll (percentage of atoll population), 2004

	food crisis	height for age (stunting)
Maldives	7	22
Male'	7	17
Atoll average	7	23
Haa Alifu	6	11
Haa Dhaalu	7	11
Shaviyani	3	32
Noonu	3	37
Raa	10	31
Baa	4	25
Lhaviyani	6	39
Kaafu	3	20
Alif Alifu	2	22
Alifu Dhaalu	4	13
Vaavu	7	28
Meemu	7	7
Faafu	12	15
Dhaalu	9	4
Thaa	6	19
Laamu	12	12
Gaafu Alifu	6	55
Gaafu Dhaalu	8	26
Gnaviyani	2	15
Seenu	10	18

Figure 8.2. shows the number of food shortages during the year – indicating that for those who do experience shortages these crises seem to have become more frequent.

Figure 8.1 – Duration of food Insecurity in the atolls (percentage of atoll population), 1997 and 2004

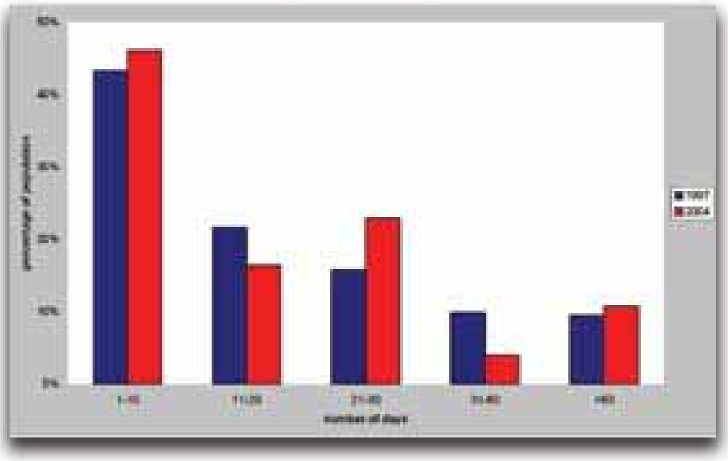


Figure 8.2 Frequency of food crises, in the atolls (percentage of atoll population), 1997 and 2004

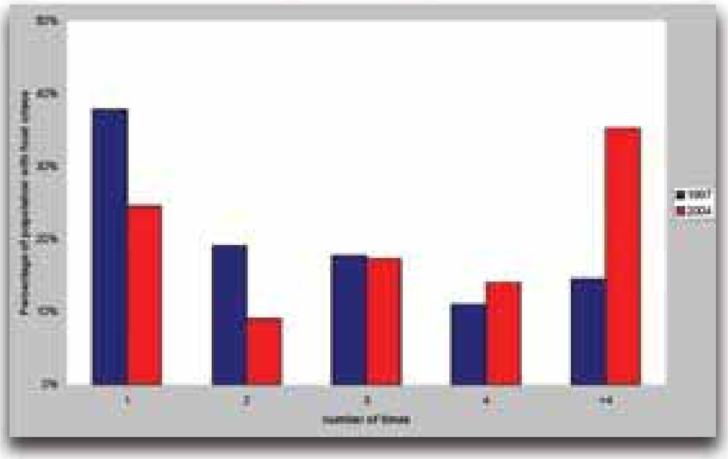
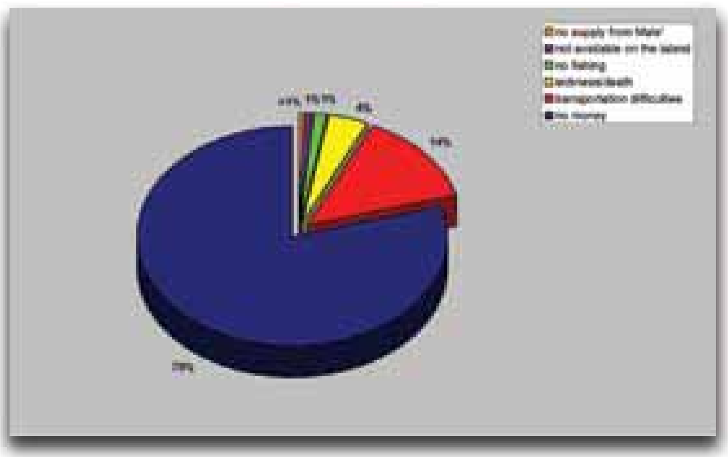


Figure 8.3 Reasons for food shortages in the atolls (percentage of atoll population), 2004



Between 1997 and 2004 the proportion of the affected population experiencing a single crisis fell from around one-third to around one-quarter. However, while in 1997 only 14% of the affected population experienced five or more crises during the year, by 2004 this proportion had risen to one-third. As the average length of all the crises taken together shows no increase, this means that the people were exposed to more crises, but shorter ones.

Though shorter crises could be considered an improvement, overall in the atolls there has been little change in the food security situation. In Male', however, where the situation got substantially worse the crises were both shorter and more numerous than in the atolls.

As indicated in Figure 8.3, by far the most important reason for food shortages on the atolls was the lack of money, which accounted for about four out of five cases. The next major reason was the lack of transport, to which might be added its equivalent: the non-availability of supplies on the island. On Male', where there are no problems of supply, nearly all cases of food shortages will be caused by lack of money.

Nutrition

The nutrition information came from anthropometric assessments of all children aged one to four years present in the survey households – measuring their height, weight and upper-arm circumference. These measurements – in VPA-2 of 1,161 children – were then compared with international standards using a computer program and database developed by UNICEF to derive the indicators for the different categories of malnutrition:

- General malnutrition, or low weight-for-age;
- Chronic malnutrition, or low height-for-age (stunting);
- Acute malnutrition or low weight-for-height (wasting).

The results for 1997 and 2004 are summarized in Figure 8.4.

Of the three indicators, probably the most useful is that for stunting – which is caused by inadequate nutrition over a long period of time. Underweight, on the other hand, may be a more short-term problem and wasting may be due to a recent illness. Table 8.2 gives a summary of the prevalence of stunting and wasting.

This shows that when it came to stunting the atolls had made significant improvements. Another sign of progress is that previous differences between boys and girls had disappeared. The situation with regard to wasting also shows major improvements, especially in the atolls and, in this case too, sex differences disappeared. In Male', however, the situation remained much the same – but the prevalence of stunting became greater in boys than in girls.

Despite the improvements in the atolls, a high proportion of children in the Maldives are still malnourished. Why? It does not appear to be a result of food shortages since these are infrequent. Nor does it appear to be a consequence of poverty. This is clear from Figure 8.5, which gives the proportion of children stunted by income decile, and shows no clear trend. The causes of malnutrition would appear to lie in the limited range of food available, eating habits and in particular in how, and how often, young children are being fed.

Malnutrition by atoll

Although the situation in the atolls has improved overall, and the gap between boys and girls has been eliminated, there do appear to be substantial differences between the atolls. The VPA-2 survey did not collect sufficient observations to make estimates at the atoll level sufficiently reliable. Nevertheless, to give a general impression the results are shown in Figure 8.6. These data should be considered not as conclusive but only indicative.

Figure 8.4 – Incidence of food crises and extent of malnutrition (percentage of children 1-4 years), 1997 and 2004

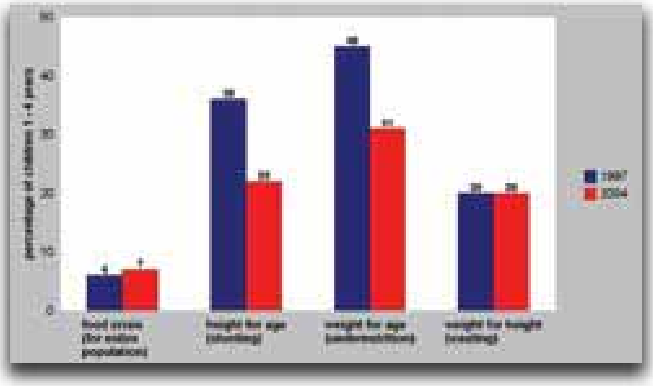
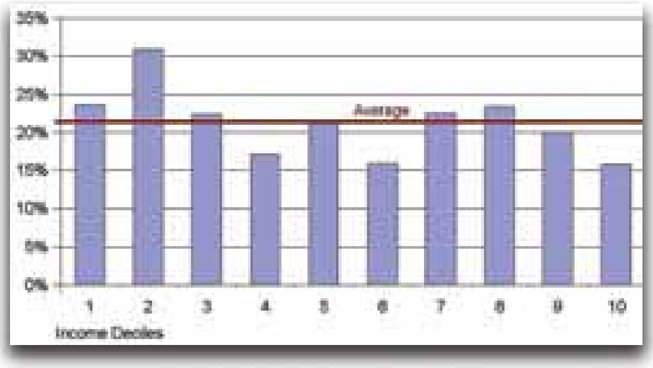


Table 8.2 Extent of stunting and wasting in 1-4 year-old children (percentage of children), 1997 and 2004

	Stunting			Wasting		
1997	**Boys**	**Girls**	**Average**	**Boys**	**Girls**	**Average**
Male'	14	18	16	22	42	30
Atolls	37	49	43	39	63	50
Republic	31	41	36	35	58	45
2004	**Boys**	**Girls**	**Average**	**Boys**	**Girls**	**Average**
Male'	22	13	17	22	24	23
Atolls	23	22	23	18	21	19
Republic	23	17	22	18	22	20

Figure 8.5 – Extent of stunting by income group, 2004



Index of food insecurity and malnutrition

The index for food insecurity is composed as below.

Indicator	Penalty points
Food insecurity in the previous year	1.0
Significant incidence of stunting	1.0

For stunting, the score depends on the proportion of the child population affected: e.g., a 30 percent stunting rate results in a penalty of 0.30 points.

The index is shown in Figure 8.7 and for most of the population indicates major improvements between 1997 and 2004.

Figure 8.6 – Extent of stunting among children aged 1-4, by atoll and by sex, 2004

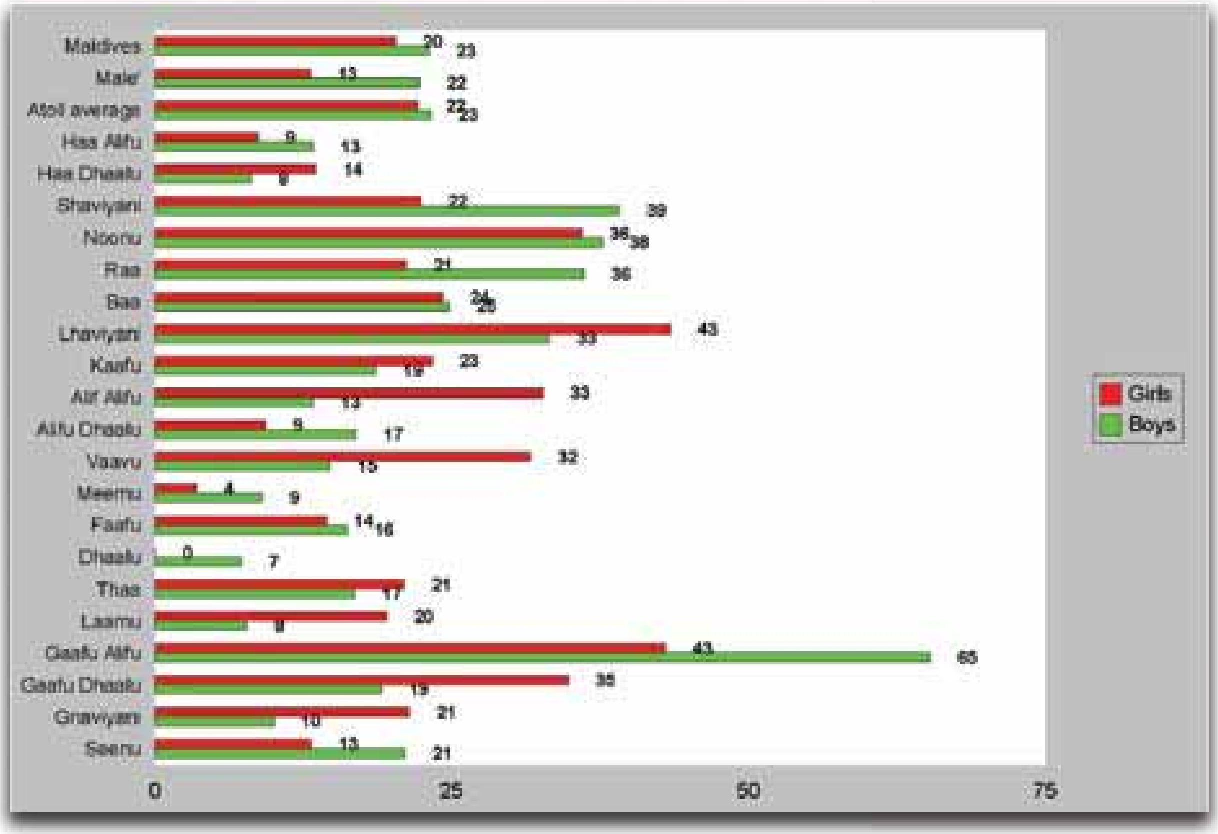
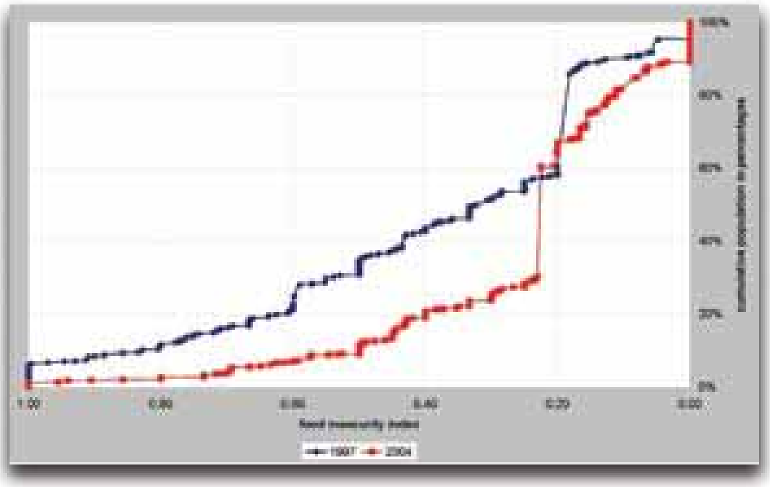


Figure 8.7 – Food insecurity and malnutrition index, by atoll, 1997 and 2004



Chapter 9

Employment

The Maldives faces major challenges in providing its workforce with sufficient employment. The society has been changing fast and in particular a higher proportion of new job entrants have a reasonable standard of education. In the past most school leavers would have been absorbed by the Government. Nowadays this is no longer feasible. However, they will also find it difficult to move to higher education since the country offers few such opportunities. Thus they may refuse to take some manual jobs, many of which are done instead by expatriate workers.

At the same time the general rise in prosperity means that fewer young people are under pressure from their families to take any available job. These and other factors are resulting in high levels of youth unemployment which in turn can lead to social problems, particularly in Male'.

Labour force, employment and unemployment

The labour force consists of people aged 15 or over who are employed or who are unemployed but who wish to work. The unemployed, according to the international definition are people who are willing to work, available to do so at short notice and 'actively looking for work'. On this basis, unemployment rates in the Maldives are very low. This is because although many people who are not currently working they are not 'actively seeking work'. They may not be doing so for two very practical reasons. First, on a very small island they already know about all job opportunities so seeking is redundant. Second, it is very difficult for them to seek work elsewhere on a weekly basis – in Male' or in the resorts – due to the high cost and the travel time involved[1].

For this reason, the VPA uses a slightly different definition of unemployment. It does not apply the 'actively seeking work' criterion. As a result it registers much higher rates for unemployment – and labour force participation – than publications that use the standard definition.

As is evident from Table 9.1, labour force participation is much lower for women, 43 percent, than for men, nearly 70 percent. This is partly a reflection of the traditional sex division of labour which allocates household responsibilities primarily to women and which, along with the responsibilities of motherhood, keeps many women occupied with activities that are defined as outside the economy[2]. However women in the Maldives are also less likely to work for other cultural and historical reasons.

Labour force participation also varies by age. It is highest in the 30 to 50 age group, but lower among younger people since more are now attending full-time education as well as among older people who may be incapacitated due to age and related illness. The same age pattern is evident for both sexes, though at a lower level for women.

Figures 9.1 and 9.2, show that participation rates are similar in Male and the atolls and that in both cases there have been significant increases – and among most age groups. Figure 9.3 gives a more detailed picture at the atoll level; in this case 'young' people are defined as between 15 and 24, and the 'older' as 25 years and above. This

1 Travel in the Maldives is largely by boat, at a speed of about ten kilometres per hour. As described earlier, in the communications chapter, the frequency of travel opportunities from many islands is also very restricted, often only a few times per month.

2 The 'production boundary' used in the national accounts includes, broadly, all production for sale in the market as well as the production of goods for own consumption. Services produced for own consumption, except for the imputed rents of owner-occupied houses, are outside this production boundary since fair prices for such services cannot be established.

Table 9.1 – Labour force participation, employment and unemployment, by atoll (percentage of population), 2004

	Labour force participation rate	female labour force participation rate	male labour force participation rate	employed	females employed	males employed	unemployed (additional domestic potential labour supply)	females unemployed (female additional domestic potential labour supply)	males unemployed (male additional domestic potential labour supply)	underemployment
Maldives	**55**	**43**	**69**	**86**	**77**	**93**	**14**	**23**	**7**	**33**
Male'	**55**	**38**	**74**	**91**	**87**	**94**	**9**	**13**	**6**	**28**
Atoll average	**55**	**45**	**66**	**83**	**73**	**92**	**17**	**27**	**8**	**35**
Haa Alifu	47	43	53	66	47	89	34	53	11	33
Haa Dhaalu	58	53	66	83	76	91	17	24	9	36
Shaviyani	52	43	65	89	83	96	11	17	4	47
Noonu	54	48	63	89	85	94	11	15	6	46
Raa	53	45	64	87	79	94	13	21	6	41
Baa	57	50	64	88	80	94	12	20	6	29
Lhaviyani	50	40	62	78	66	87	22	34	13	20
Kaafu	56	43	71	88	76	95	12	24	5	24
Alif Alifu	64	52	76	92	90	94	8	10	6	23
Alifu Dhaalu	50	37	65	89	78	97	11	22	3	37
Vaavu	58	56	61	92	85	100	8	15	0	44
Meemu	64	56	74	81	71	90	19	29	10	33
Faafu	61	53	72	90	89	90	10	11	10	45
Dhaalu	59	55	62	85	76	93	15	24	7	46
Thaa	60	58	64	72	55	92	28	45	8	30
Laamu	59	47	72	84	70	94	16	30	6	33
Gaafu Alifu	53	36	73	87	76	93	13	24	7	26
Gaafu Dhaalu	54	43	65	81	68	91	19	32	9	42
Gnaviyani	47	36	65	80	71	89	20	29	11	37
Seenu	52	39	71	78	70	85	22	30	15	35

Figure 9.1 – Labour force participation rates by age group, Male', 1997 and 2004

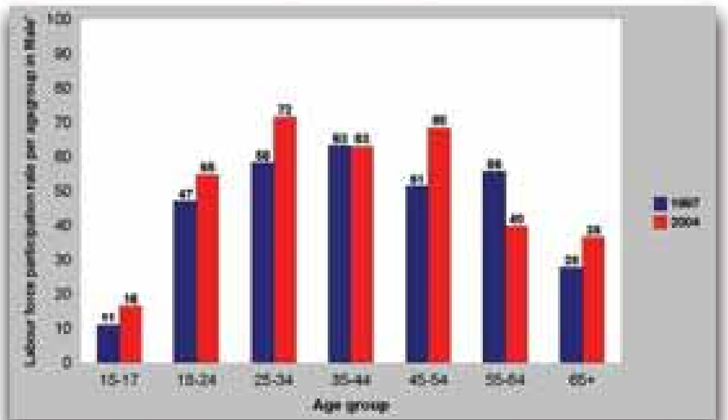
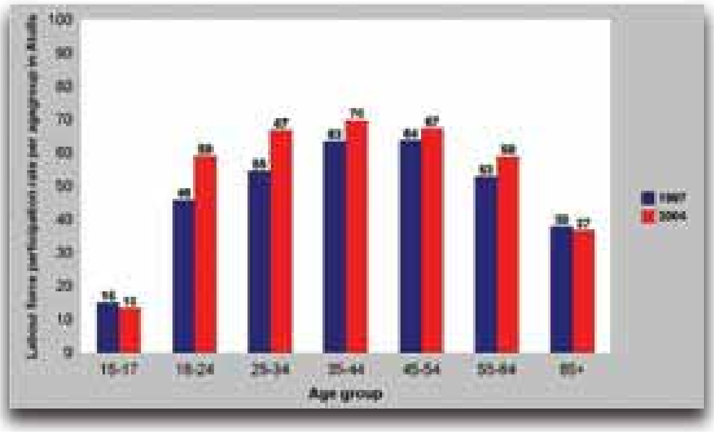


Figure 9.2 – Labour force participation rates by age group, atolls, 1997 and 2004

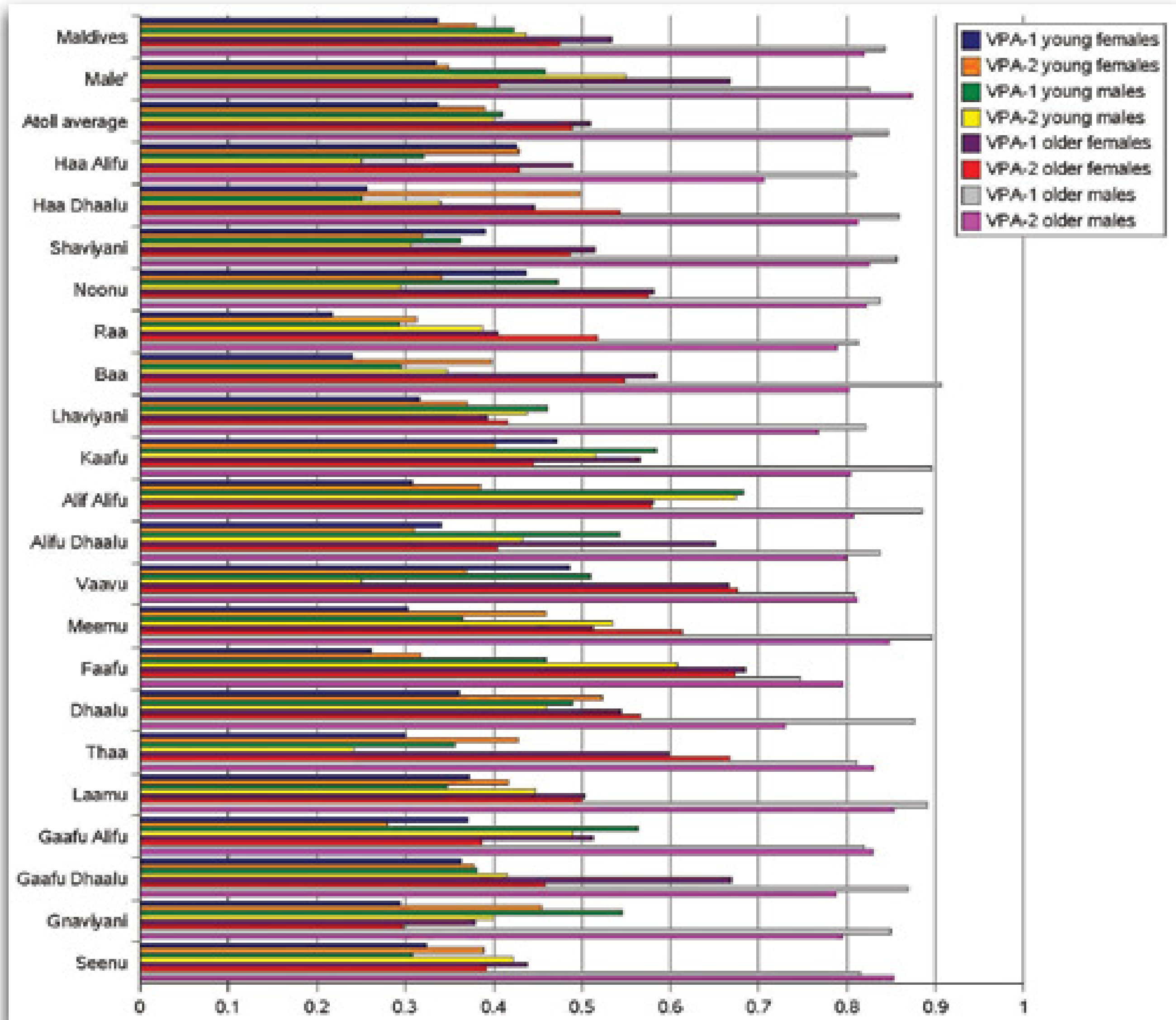


shows large differences between Male' and the atolls in the participation rates of older males, though for the other three groups there are no clear patterns.

Employment by sector

Table 9.2. indicates the distribution of employment over various broad activities. For both men and women, around one-third are employed in financial, business, social and community services, which includes government.

Figure 9.3 – Labour force participation rates by broad age group and atoll, 1997 and 2004



However there are also large differences in the employment patterns for men and women. For men, the second-largest activity is fishing, which employs about one-fifth of all men. For women the second category, employing one-third of the women, is manufacturing, which includes, in addition to modern industrial work, such important traditional activities as fish preparation, weaving and rope making.

Table 9.2 from the data collected for VPA-2, which is based on the International Standard Classification of Industries, does not have a separate category for tourism – whose workforce is distributed across hotels, transport, trade and services. VPA-1 did include resort workers as a separate category. This was because it was able to use census data that were only two years old, and for which by chance there was also supplementary information. For VPA-2, however, the census was too old to use and the supplementary information was unavailable.

Nor can the VPA get much direct information on resort workers, since this is a household-based survey and most such workers live on the resort islands. It does, however, include their incomes as part of the household's income.

In Male' the largest share of employment is still provided by the government – with education and health increasing substantially – even though government's overall share has been falling. Hotel, business and transport activities, many of which are tourism related, have also expanded. The share of construction employment also increased, but not by as much, because most construction workers are expatriates and thus not covered by the VPA (Figure 9.4).

Figure 9.5 shows similar information for the atolls. This indicates a fall in the share of employment for fishing and agriculture, and a rise for manufacturing[3] which became the largest activity. As in Male', the provision of education, health and social services became

Table 9.2 Employment by industry and sex, all workers and young people, 2004

Maldives	Total Labour Force			Youngsters (15-24 years)		
	Total	Women	Men	Total	Women	Men
Agriculture, Forestry	4	5	3	2	1	3
Fishing	11	0	17	7	0	12
Mining, Quarrying	0	0	0	0	0	0
Manufacturing	20	37	9	12	18	8
Electricity,Gas, Water	2	1	3	2	1	3
Construction	5	1	9	5	0	8
Wholesale, Retail Trade	10	6	13	12	10	13
Hotels, Restaurants	6	4	7	9	8	10
Transport, Storage, Communication	6	3	8	8	7	8
Finance, Business Services	2	1	2	3	3	3
Public Administration and Defence	15	12	17	16	13	17
Community, Social Services	20	30	13	26	38	15
Total All Activities	100	100	100	100	100	100

3 *Manufacturing included a number of large garment factories that were established in Maldives to take advantage of the textile quotas available under the Multi-Fibre Arrangement. While these units often employed mostly expatriate labour, they also had local employees. Their recent closure had a large impact on some island communities due to the small size of their labour forces.*

Figure 9.4 Employment by industry, Male',(percentage of population), 1997 and 2004

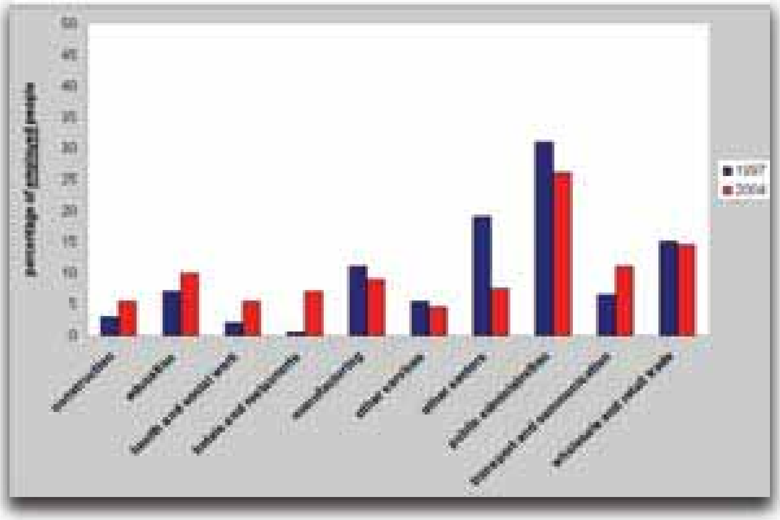
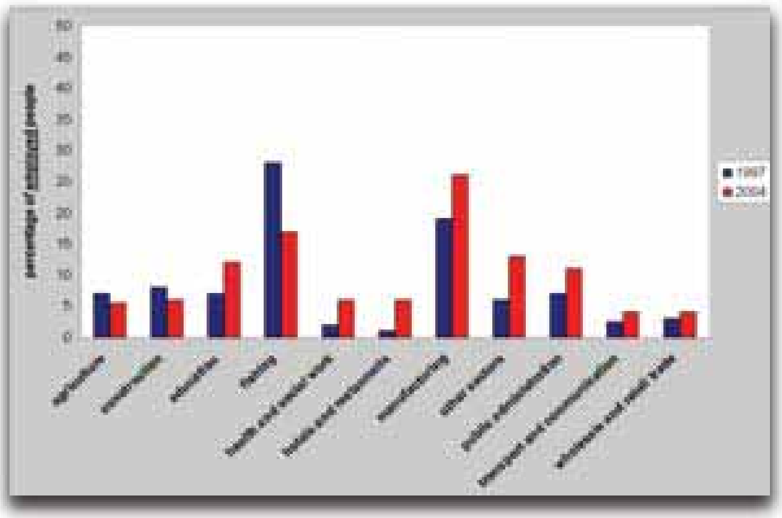


Figure 9.5 Employment by industry, atolls, (percentage of atoll population), 1997 and 2004



more important but, in contrast to Male', overall government employment also expanded.

Table 9.3 gives more detailed information on employment by atoll. This underlines the significant changes over time as well as the differences between Male' and the atolls. However, as it also shows, there are often even greater differences between atolls.

Fishing, for example, which in 2004 employed one in three workers in Ghaafu Alifu, employed fewer than one 12 workers in Haa Dhaalu, Shaviyani, Noonu or Gnaviyani. Agriculture employs one in five workers in Alif Alifu but scarcely any in Raa, Vaavu, Faafu or Seenu. Other activities show similar large fluctuations from atoll to atoll. Community and other services, however – which include government, education and health – are important everywhere: in all atolls they employ 20 to 40 percent of the labour force.

Occupations

Corresponding to these changes in industrial structure there have also been shifts in the distribution of occupations – as indicated in Figure 9.6. Between 1997 and 2004, the share of agricultural and fisheries workers dropped from 28 percent to 14 percent, while that of manufacturing workers, captured under the heading of 'craft workers', increased. Many more people are also working as officials, managers, professionals, clerks and service workers.

Unemployment

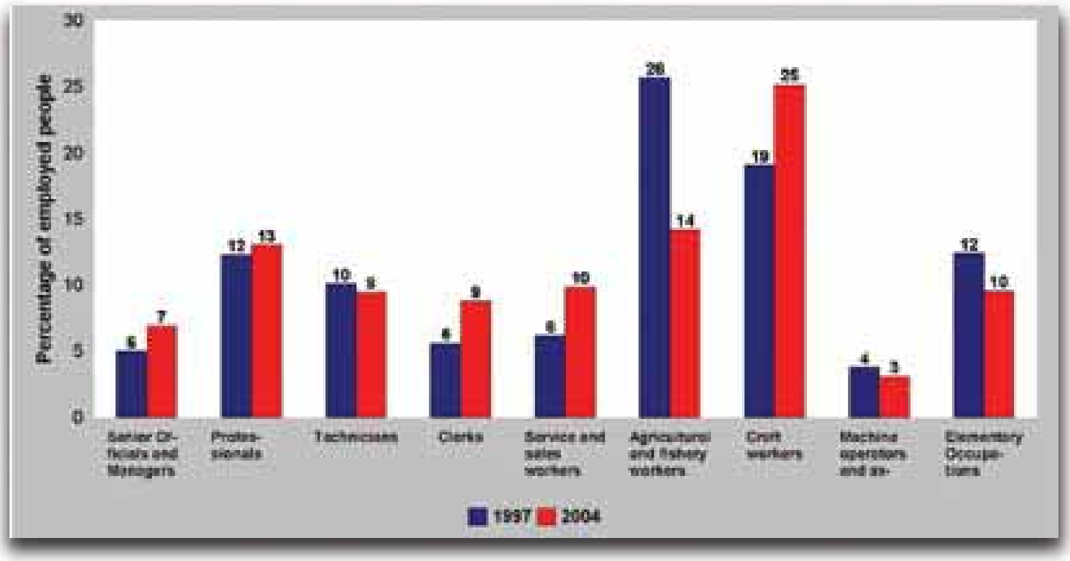
As explained earlier, the definitions of labour force and unemployment have been modified in the VPA for practical reasons. Thus, a person who is not working but is available for work and willing to work is considered as unemployed even when he or she is not always actively looking for work. A further modification concerns the age group. Internationally, the workforce is usually considered to be limited to people between 15 and 65 years of age. In the Maldives, however, there is no general old-age pension, which makes it more difficult for workers to retire – as a result one-third of people aged 65 years and over are reported to be working. For this reason, the VPA applies no upper age limit.

The distribution of the labour force over different age groups, along with its division into employed and unemployed, is depicted in Figure 9.7. This highlights the high rates of unemployment among the younger age groups:

Table 9.3 Employment by activity and atoll (percentage of population), 2004

	Agriculture, Forestry	Fishing	Mining, Quarrying	Manufacturing	Electricity, Gas, Water	Construction	Wholesale, Retail Trade	Hotels, Restaurants	Transport, Storage, Communication	Finance, Business Services	Public Administration and Defense	Community, Social
Maldives	**4**	**10**	**0**	**20**	**2**	**5**	**10**	**6**	**6**	**2**	**15**	**20**
Male'	**0**	**1**	**0**	**10**	**2**	**5**	**18**	**6**	**10**	**4**	**24**	**19**
Atoll Average	**5**	**16**	**0**	**25**	**2**	**6**	**6**	**5**	**4**	**1**	**10**	**20**
Haa Alifu	8	18	0	19	2	8	3	3	5	1	13	21
Haa Dhaalu	7	7	1	30	2	8	7	3	3	0	11	22
Shaviyani	6	9	0	32	1	6	9	6	4	1	8	18
Noonu	5	7	0	36	1	6	3	7	4	1	12	18
Raa	1	24	0	33	1	7	3	2	3	0	6	21
Baa	3	15	0	27	2	5	4	14	3	0	10	16
Lhaviyani	8	13	0	21	1	6	6	12	4	3	7	13
Kaafu	9	19	0	14	2	5	5	7	1	0	9	28
Alif Alifu	19	16	0	17	3	1	6	7	1	0	8	20
Alif Dhaalu	2	12	2	17	2	4	10	18	4	0	14	15
Vaavu	1	14	0	28	5	5	7	2	0	0	18	21
Meemu	3	24	0	26	1	2	5	6	0	1	10	23
Faafu	1	12	1	39	2	7	7	9	0	0	7	15
Dhaalu	2	20	0	30	3	4	3	3	2	0	7	26
Thaa	4	20	0	25	1	4	4	2	4	1	10	25
Laamu	11	19	0	18	3	5	4	3	3	0	12	21
Gaafu Alifu	2	36	1	28	2	1	4	1	3	1	7	14
Gaafu Dhaalu	10	21	1	18	2	3	8	1	7	0	11	19
Gnaviyani	2	8	0	24	3	12	12	2	8	0	11	20
Seenu	1	10	1	19	0	8	11	6	7	1	14	22

Figure 9.6 Employment by occupation,(percentage of employed people), 1997 and 2004

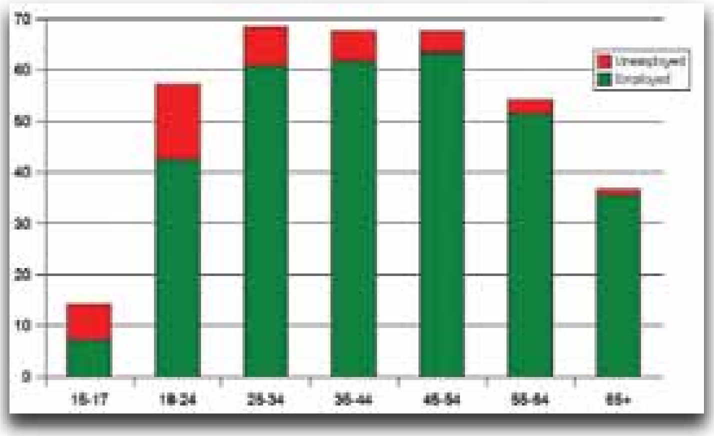


roughly half of 15-17 year-olds and one quarter of 18-24 year-olds are out of work – though the rates are much lower for the older groups.

Youth unemployment

Youth unemployment is a substantial and growing problem – and one of the most important that the country faces. The situation is acute in Male': two out of five adolescents that are neither studying nor working are willing to work but unable to find a job, and for young adults, the proportion is one in six. And as Figure 9.8 shows this represents a sharp rise since 1997.

Figure 9.7 – Labour force participation, employment and unemployment by age group (in percentages), 2004



Many young people remain unemployed because they reject many of the jobs on offer. Having had a better education than their parents they are unwilling to do manual work, and as many, in a more affluent society, receive support from their families they have less inceptive to settle for unattractive jobs. At the same time, however, they may not have sufficient education to qualify them for higher-level employment.

As Figure 9.9, shows, the problem is even worse in the atolls. More than half of adolescents, and one-third of young adults, are without work. Here too, the situation has deteriorated since 1997 – even for the 25-34 year age group, of whom one in six are out of work.

Another disturbing finding is that the unemployment situation for women is worse than that for men – in Male' as well as in the atolls and for the younger and older age groups. This is evident from Table 9.4 and from Figure 9.10. As well as presenting a breakdown by sex, this table uses somewhat broader age groups: the younger group are those aged 15-24, while

Figure 9.8 – Unemployment by age group in Male' (percentage of population), 1997 and 2004

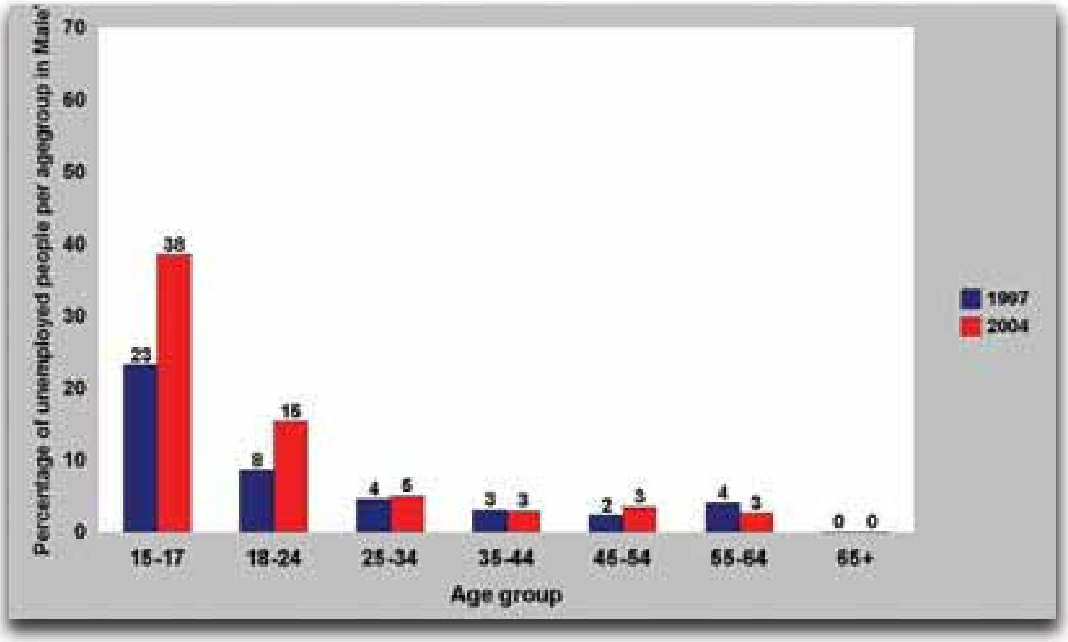
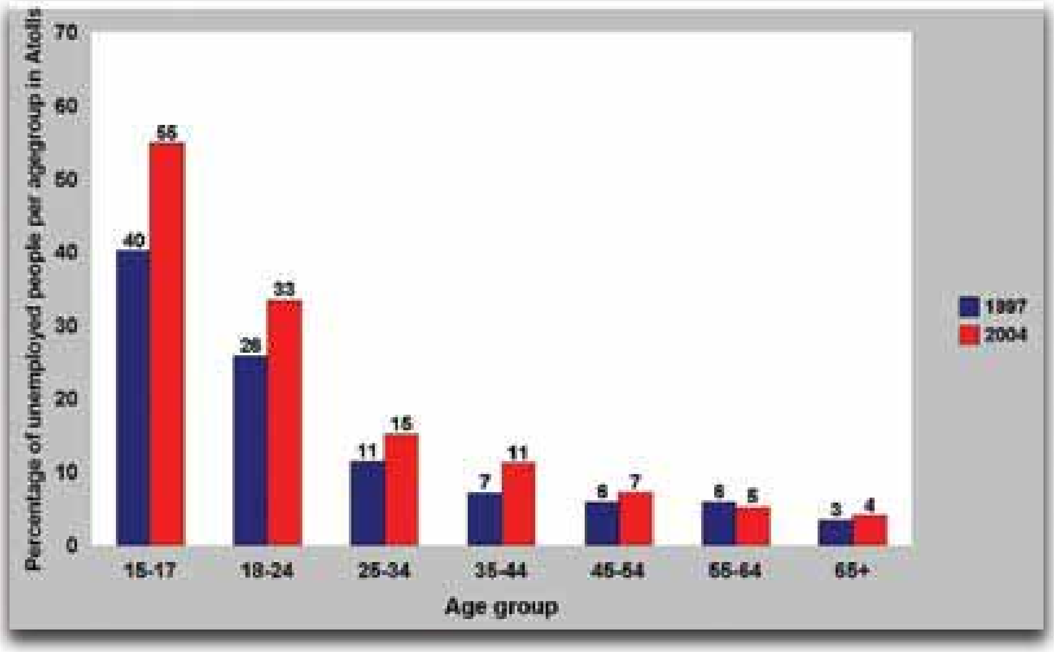


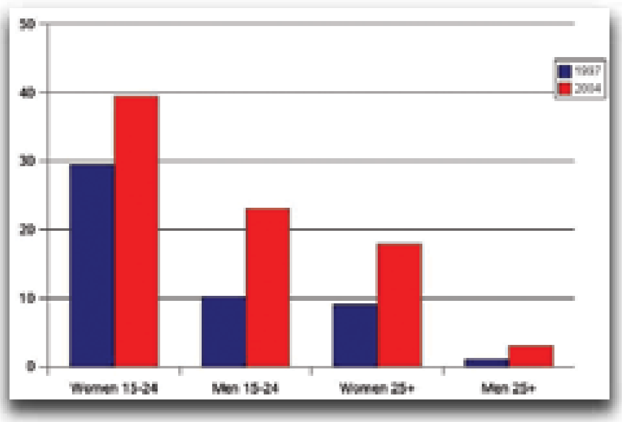
Figure 9.9 – Unemployment, by age group, in the atolls (percentages), 1997 and 2004,



the older are above 25 years or older. However, it should also be noted that the deterioration in the situation from 1997 to the present is much worse for young males than for young females.

Between 1997 and 2004, the percentage of unemployed young adults more or less doubled in Male' (Figure 9.11) where some 5,000 adolescents and young adults are no longer in school and are out of work. The situation in the atolls is summarized in Figure 9.12.

Figure 9.10 Unemployment by age group and sex (percentage), 1997 and 2004



Underemployment

An underemployed person is defined as one who is employed but who is working either fewer than 35 hours per week or fewer than 11 months per year, or both. The person also needs to be looking for more work. In the Maldives, underemployment appears to be a relatively minor problem, reported by only around 10 percent of the labour force – see Table 9.5 in the column 'looking for more work'. The rates are similar for Male' and the atolls.

Another category is part-time work. If a person is not working full time but not looking for more work they are considered to have deliberately chosen part-time work. Both groups could, of course, add to the national output by working more.

Employment status

Both VPAs, and the population censuses, classify workers into one of five types, according to status: (i) employer, (ii) employee, (iii) self-employed, (iv) family worker or (v) group worker. As Figure 9.13 shows, there have been

Table 9.4 – Unemployment by broad age group and sex, by atoll (percentage of population), 1997 and 2004

	VPA-1 Young Females	VPA-1 Young Males	VPA-1 Older Females	VPA-1 Older Males	VPA-2 Young Females	VPA-2 Young Males	VPA-2 Older Females	VPA-2 Older Males
Maldives	**30**	**10**	**9**	**1**	**39**	**23**	**18**	**3**
Male'	**9**	**6**	**3**	**1**	**20**	**16**	**8**	**2**
Atoll average	**34**	**12**	**10**	**1**	**45**	**26**	**19**	**3**
Haa Alifu	69	34	15	3	75	40	42	4
Haa Dhaalu	27	0	5	1	51	43	13	2
Shaviyani	16	0	17	0	32	7	12	4
Noonu	21	9	9	0	36	24	7	2
Raa	10	23	11	0	21	25	21	1
Baa	27	15	4	2	52	20	9	2
Lhaviyani	51	14	19	0	43	38	31	1
Kaafu	23	2	3	0	36	11	17	3
Alif Alifu	11	4	4	1	14	13	9	4
Alifu Dhaalu	31	8	9	1	48	10	9	1
Vaavu	29	14	21	2	17	0	15	0
Meemu	4	0	9	0	51	29	21	4
Faafu	16	0	16	0	30	20	4	5
Dhaalu	20	9	1	1	53	8	11	7
Thaa	21	6	6	0	75	47	32	2
Laamu	67	24	11	0	45	21	23	2
Gaafu Alifu	53	26	22	0	31	27	21	2
Gaafu Dhaalu	59	17	15	2	52	31	22	3
Gnaviyani	30	17	5	0	30	40	27	3
Seenu	25	15	11	3	41	39	25	9

Figure 9.11 – Unemployment by age group and sex, Male´(percentage of population),1997 and 2004

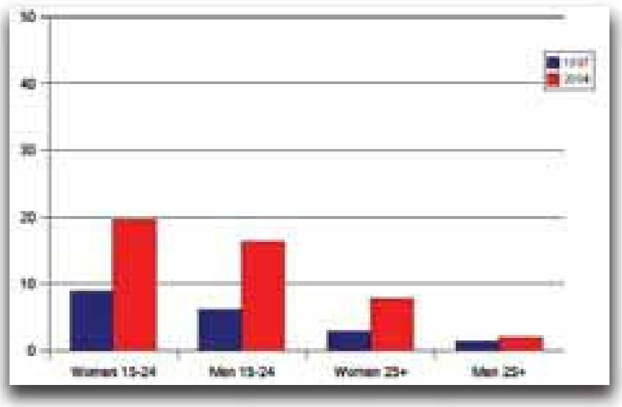
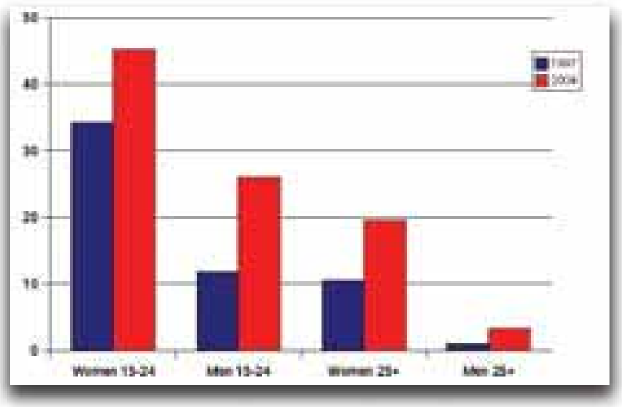


Figure 9.12 – Unemployment by age group and sex, atolls, (percentage of atoll population), 1997 and 2004



some shifts between these categories. Between 1997 and 2004, the proportion of all workers who were employees rose from 45 to 56 percent, while the self-employed fell from 37 to 30 percent.

These developments are in line with expectations. As the economy becomes more developed people tend to shift from informal self-employment, in agriculture and fishing, for example, to formal employment, which in the Maldives is often in health or education or in many tourism-related activities. Over the same period, there has also been an increase in income – by about five percent per capita per year.

Employment index

The employment index is composed as follows:

Indicator	Penalty points
Nobody in household works	1
The head of household does not work, but at least one other member works	0.5
At least one member of the household is underemployed and looking for work	0.5
No income generating community activities on the island	0.25

The status in respect to each of these indicators is given in Table 9.5 for all atolls separately. In the resulting chart of the employment index in Figure 9.14, the red line is always above the blue one, and by some distance – indicating that the employment situation has deteriorated, and by a considerable extent.

Figure 9.13– Employment by status (percentage of employed people), 1997 and 2004

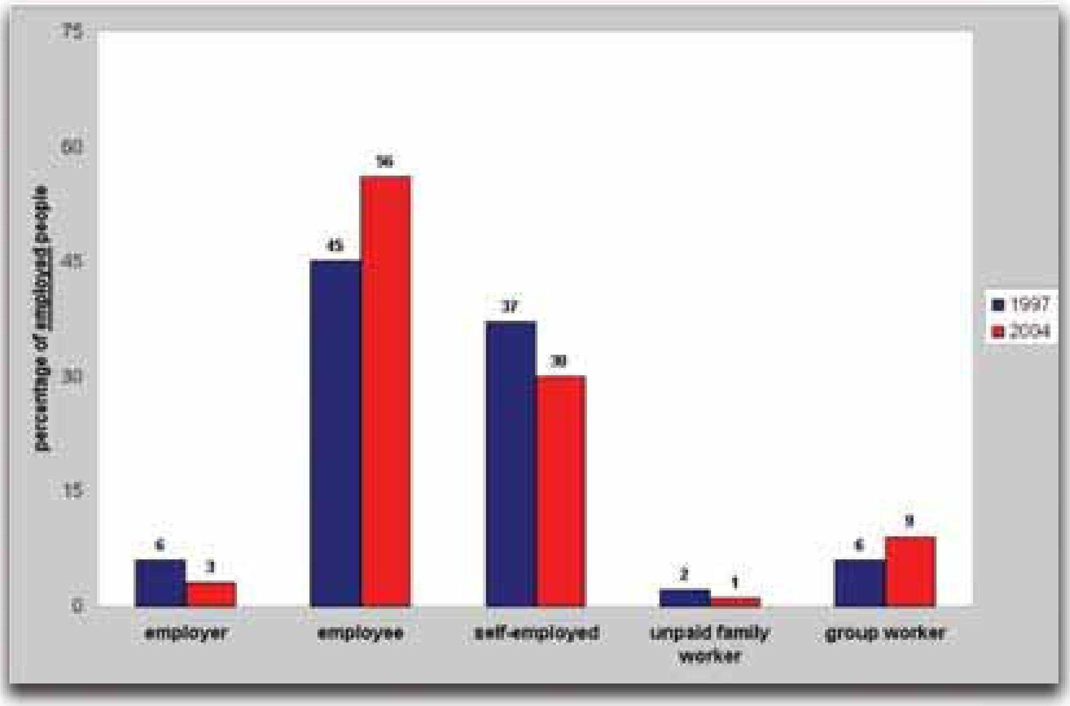
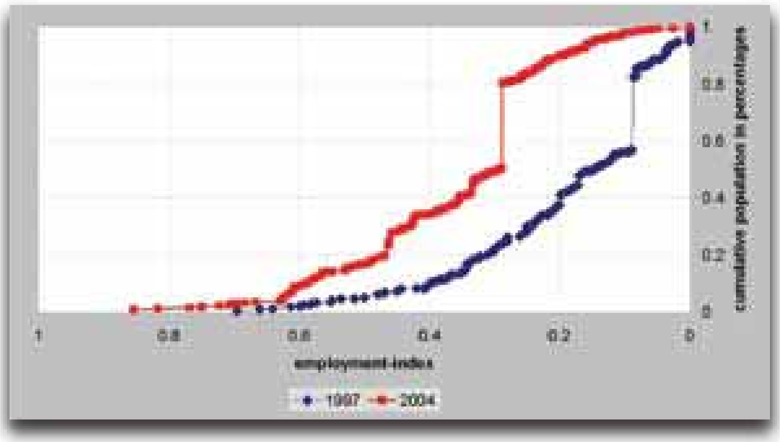


Table 9.5 – Indicators of employment, by atoll (percentage of population), 2004

	Nobody in the household works	Head of Household has no work but someone else works	Looking for more work	No volunteer activities
Maldives	**9**	**28**	**10**	**32**
Male'	**3**	**40**	**11**	**0**
Atoll average	**11**	**23**	**10**	**45**
Haa Alifu	23	27	6	41
Haa Dhaalu	10	25	9	59
Shaviyani	14	14	5	43
Noonu	11	12	3	50
Raa	16	17	11	34
Baa	8	24	5	80
Lhaviyani	14	30	2	60
Kaafu	7	27	10	55
Alif Alifu	4	28	8	28
Alifu Dhaalu	6	40	5	44
Vaavu	6	16	20	0
Meemu	4	21	20	25
Faafu	6	17	20	0
Dhaalu	18	18	15	89
Thaa	13	19	23	13
Laamu	9	10	23	11
Gaafu Alifu	8	27	8	44
Gaafu Dhaalu	10	23	10	43
Gnaviyani	18	26	5	0
Seenu	9	30	10	84

Figure 9.14 Employment index, by island, 1997 and 2004 Youth unemployment



Chapter 10

Gender

This study has taken gender into account throughout earlier chapters. For ease of reference, however, this chapter aims to summarize the main gender issues. The first VPA report covered a number of these issues in some detail. These descriptions have not therefore been repeated unless required to understand more recent developments.

Education and literacy

The Maldives has made impressive advances in education. It has now achieved universal primary education which, by definition, means achieving gender equality. Drop-out rates are also generally low, and not gender-related. There has also been rapid progress at the secondary level, and in this case there are slightly more girls enrolled than boys.

The greatest educational differences are for the older groups, who went to school at a time when education was more closely linked with job opportunities, and thus favoured men. Over time, however, as succeeding generations are educated these differences are likely to disappear.

The Maldives has also achieved universal literacy in Divehi, which again implies gender equality. When it comes to the ability to communicate in English, however, females still lag behind males, especially in the atolls. But even this gap is narrowing – starting from the younger generation. In Male', the rates for English speaking among young adults are already the same for men and women and in the atolls they are converging fast.

Marriage and divorce

Under Sharia law, men are allowed to marry more than one woman, though no more than four at the same time. Even so, not many men choose to do so. In the 1995 population census[1], only one married man in eleven reported more than one wife, and by 2004, the proportion of married men with more than one wife was down to one percent[2]. The low number of observations leaves room for a large margin of error but it does seem clear that polygamy is on the decline.

However another aspect of multiple marriage – divorce – has traditionally been very common in the Maldives, and remains so. In the 2000 population census, more than one-quarter of all adults of 35 years and older had been married five times or more. Recent changes in the laws relating to marriage and divorce have substantially reduced divorce rates, but they remain relatively high.

Female-headed households

Nearly half of all households are headed by women. These will include those divorced or widowed women who did not remarry. Some will move in with their parents, but most maintain separate households. For these groups, about one sixth of all female-headed households, the main problem is the lack of income and the difficulty in providing for their children.

However, the female headed households will also include, according to international definitions, those whose male breadwinner is working and residing away from home, for example, in a resort[3]. These households, which are in fact larger in number, may, however, be

1 *The question was not asked in the 2000 census.*

2 *A similar percentage of men with more than one wife in the same household was found in the 2000 population census, but that is of course not the total number of men with more than one wife because some maintain separate households for the different spouses.*

3 *About one in four workers in Seenu atoll, for instance, was employed on a resort during the 2000 census and therefore non-resident. For Gnaviyani atoll this applied to about one in six workers.*

more prosperous than those headed by males who have lower-paid jobs in their own localities. Even so, the women left behind are likely to face many of the same personal and social problems as other female heads of household.

Only about 15 percent of the female household heads interviewed indicated that they faced problems. For widowed and divorced women these were likely to be financial. But many women actually cited potential rather than actual problems that might occur in the absence of an adult male.

Overall it seems that female-headed households are somewhat more likely to be poorer. This is evident from Figure 10.1 which shows that in the atolls, about one in three of the households with female heads fall under the Rf.15 poverty line. For households with a male as head, the proportion is one in four. There is also a difference in Male', though based on small numbers since very few households of either type are living under this poverty line.

Nutrition

The nutrition differences between girls and boys, noted in VPA-1, have now more or less disappeared, along with a fall in the overall incidence of malnutrition. Indeed the overall rates for malnutrition for boys are now slightly higher than those for girls. It should be emphasized, however, that the rates for both are still unacceptably high: around 44 percent of all children suffered from malnutrition of one form or another.

Access to productive employment

In many societies women find it harder than men to find employment and earn an income – a bias reflected in labour force participation rates. As is evident from Figure 10.2, between 1997 and 2004 women's labour force participation in the atolls increased sharply, from 38 to 48 percent. Even so, this is still lower than the male rate. In Male', the situation is now worse: women's participation rate has actually fallen slightly, and at 39 percent, stands at about half the male rate.

Figure 10.1 – Percentage of population under Rf.15 poverty line, by sex of household head, 2004

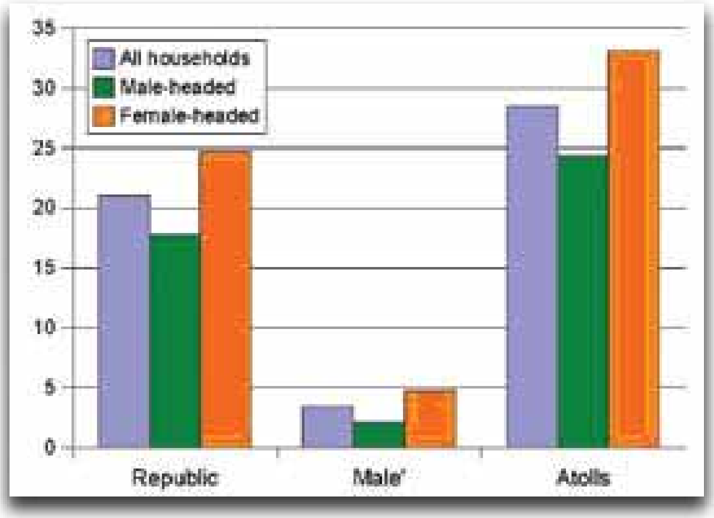


Figure 10.2 – Labour force participation rates by sex, 1997 and 2004

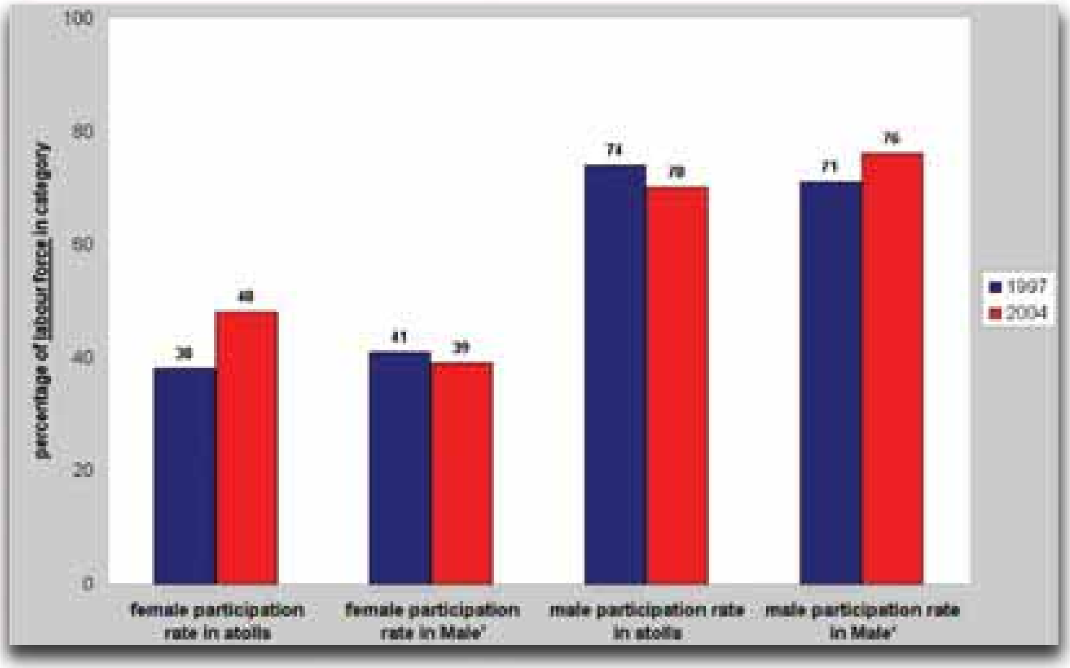
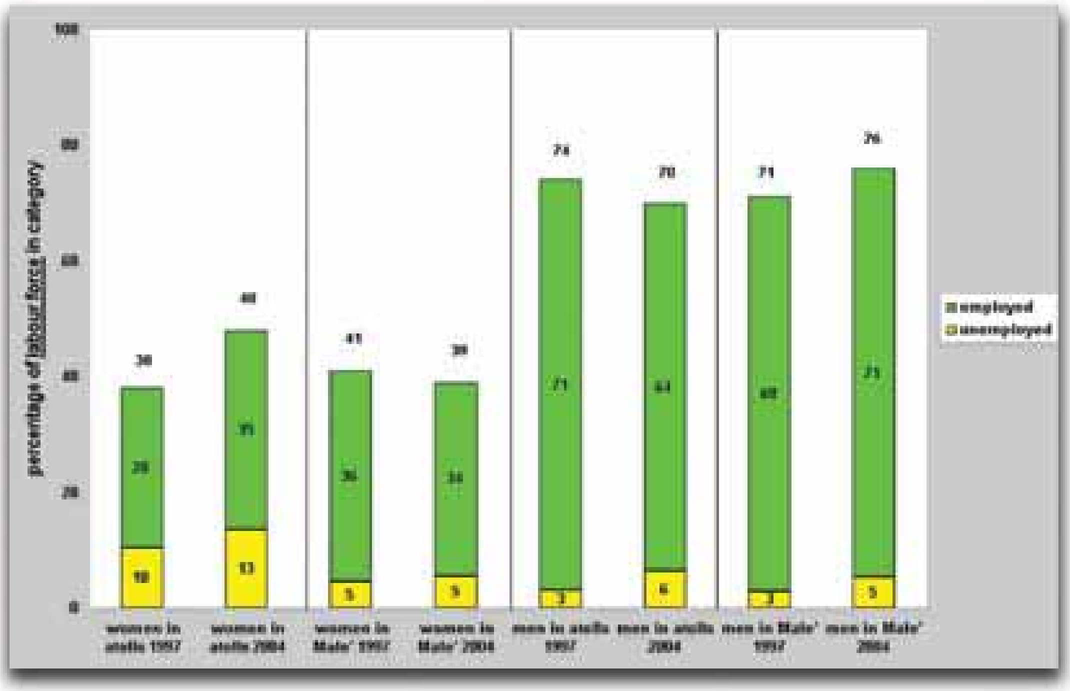


Figure 10.3 Employment and unemployment, by sex, 1997 and 2004



An assessment of the relative earning capacities of men and women must also take into account their relative levels of unemployment. These are indicated in Figure 10.3.

In the atolls, for example, this shows that the increase in participation rate has in fact resulted in an increase in both unemployment and employment, so as a whole women are better off now. In Male', however, where women's unemployment rate has stayed more or less the same, the drop in their labour force participation rate means that women's employment has declined by two percentage points.

Women's priorities

As part of the survey, all heads of households and their spouses were asked[4] to select their five most pressing problems from a list of twelve, and rank them in order of priority giving the most important problem ranking number one, the second most important ranking number two, etc. The results are presented in Table 10.1

It is remarkable that women and men gave practically identical overall rankings. Comparing these results to the responses obtained in 1997 shows that the top three priorities were identical. Electricity, however, which had been the fourth priority in 1997, slipped to eighth position, because many islands had since received electricity. Also, employment and income generation switched rankings.

The most striking change, however, was the rise in prominence of concern about the environment. Bottom of the list in 1997, it rose to number six, for both men and women. And this, it may be noted, was before the tsunami. As described in Chapter 7, the environment index remains the worst of all, with many islands scoring the maximum penalty point of one.

Table 10.1 – Female and male priorities (percentage of sex group), 1997 and 2004

	1997		2004	
Description	Females	Males	Females	Males
Education	3.9	4.2	3.8	4.4
Health	5.1	4.9	4.2	4.5
Housing	5.2	4.9	5.2	4.8
Employment	6.5	6.4	5.3	5.1
Income	6.3	6.3	5.9	5.8
Environment	8.3	8.4	7.3	7.3
Drinking water	6.7	6.9	7.2	7.5
Electricity	5.7	5.8	7.6	7.6
Transport	7.3	6.9	7.8	7.5
Communication	7.4	7.5	7.9	7.8
Food security	7.3	7.4	7.9	8.0
Consumer goods	8.3	8.2	8.3	8.2

4 As per instructions, the questions were generally asked independently to the men and women, without the other's presence. In some cases this was not possible or practicable and the responses were obtained simultaneously from the spouses.

Chapter 11

THE HUMAN VULNERABILITY INDEX

The previous chapters have described the development and status of twelve dimensions of vulnerability and poverty along with corresponding indices. The underlying indicators and the values for the indices are also shown in the statistical annex to this report. In Part IV, they are also in represented on a series of colour-coded maps. Not included in the printed version of the report, but contained on the accompanying CD-ROM is a further set of maps that show the change for each poverty dimension for each island between 1997 and 2004.

Using a methodology akin to that for UNDP's human development index[1] (HDI), the 12 individual indices are combined into a composite 'human vulnerability index' (HVI). This could be done in a variety of ways. As each of the individual indices ranges between 0 and 1, the 12 indices can simply be averaged – the procedure used for the HDI. The results of this approach have been included in Statistical Annex 15.

HVI weighting system

For the HVI, however a more elaborate system has been followed. This involves weighting the component indices according to their average priority ranking, as described in Chapter 10. Based on these, two different sets of HVI rankings have been prepared. The first uses as weights the average of all islands. The second uses only the weights derived from the 90 most vulnerable islands. But because in both cases this has been done for both female and male priorities there are four combinations. The statistical annex gives only the overall priority weights, while the CDROM gives the full details.

The values of each index range between 1 for the worst possible situation to 0 for the perfect situation. In reality, of course, the indices will fall somewhere in between. A value of 0.4 for an index, for example, means that for that dimension, the position is 60 percent from the worst situation and 40 percent from the ideal.

Table 11.1 summarizes the composite HVIs for the atolls, for Male' and for the Maldives, in total; one using female priorities, the other using the male ones. As the male and female rankings were rather similar (see Table 10.1) the two sets of HVIs do not differ greatly. Nonetheless, the approach is an important improvement on equal weights as it takes explicitly into account the aspirations of the population.

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1 *The methodology used in constructing the Human Vulnerability Index is described in Chapter 11 of the first VPA report: MPND/UNDP, Vulnerability and Poverty Assessment 1998, Male', 1999. ISBN 99915-55-29-3.*

Table 11.1 – Composite human vulnerability indices, with male and female priority weights, 2004

Atoll name	Composite HVI 2004 – Female Priority Weights	Composite HVI 2004 – Male Priority Weights
Maldives	**2.77**	**2.78**
Male'	**2.05**	**2.09**
Atoll average	**3.07**	**3.07**
Haa Alifu Atoll	3.04	3.06
Haa Dhaalu Atoll	2.90	2.91
Shaviyani Atoll	3.63	3.63
Noonu Atoll	3.33	3.33
Raa Atoll	3.75	3.75
Baa Atoll	3.14	3.15
Lhaviyani Atoll	2.97	2.99
Kaafu Atoll	2.98	2.98
Alif Alifu Atoll	3.32	3.30
Alifu Dhaalu Atoll	3.26	3.25
Vaavu Atoll	3.02	2.97
Meemu Atoll	3.02	3.01
Faafu Atoll	3.28	3.25
Dhaalu Atoll	3.37	3.35
Thaa Atoll	3.05	3.04
Laamu Atoll	3.37	3.35
Gaafu Alifu Atoll	3.22	3.22
Gaafu Dhaalu Atoll	2.64	2.63
Gnaviyani Atoll	1.46	1.48
Seenu Atoll	2.13	2.14

Chapter 12

POVERTY DYNAMICS

VPA-2 was designed to be comparable with VPA-1 – using a similar questionnaire. And because almost half of households had also been interviewed in VPA-1 they formed a panel that could be used to track changes over time – generating a dataset unique for the Maldives and rare in the region, and making the VPAs an extremely valuable source of information.

Analysis of the panel data can provide insights into poverty dynamics. Not only can it show who was poor and at what times, it can also suggest why some households escaped poverty between the two surveys and why others fell into poverty. This is useful for a number of reasons. First, discovering which household strategies were most successful in escaping poverty – what households can do for themselves to improve their own situation – can help in the selection of the most appropriate policies. Second, identifying the characteristics of the poor makes for much more precise targeting[1].

THE DATASETS

The mobility of households in Male' would have made it very difficult to rediscover the VPA-1 households. The panel survey was therefore limited to the atolls, where people move less frequently and even if they do move the population is usually sufficiently small that island officials, relatives or neighbours will know where they went to.

For VPA-2 half the sample households on the islands were selected from the VPA-1 list as panel households – producing a dataset from 1,169 households. The rest of the households, for the overall analysis were new, non-panel households, included to ensure that VPA-2 fully captured new developments. In the event the panel made up slightly less than half of the VPA-2 sample – 48.3 percent – since some of the survey forms from the panel households were lost when a boat overturned.

As can be seen in Table 12.1 the geographical dispersion of panel households is wide[2] – ensuring that the results apply to all atolls and regions[3].

Table 12.1 Number of panel households by atoll

Region	Atoll	Panel
North	Haa Alifu, Haa Dhaalu, Shaviyani	262
Central North	Noonu, Raa, Baa, Lhaviyani	274
Central	Kaafu, Alifu Alifu, Alifu Dhaalu, Vaavu	167
Central South	Meemu, Faafu, Dhaalu, Thaa, Laamu	250
South	Gaafu Alifu, Gaafu Dhaalu, Gnaviyani, Seenu	216

Table 12.2 summarizes some characteristics of both surveys. The full datasets and the panel subsets for both periods are alike, indicating that the panels offered good representations of the entire population. There were, however, changes between 1997 and 2004. The average household size decreased, the households had larger percentage of women, and both expenditures per capita and average levels of education were higher.

1 *A detailed description of the methodology and results of the analysis is given in Technical Note 5*

2 *Details by atoll are given in TableA5.6 in Appendix 5*

3 *One of the islands not covered in the panel was Milandhoo in Shaviyani atoll which was uninhabited in 1997 and only received settlers subsequently to relieve population pressures on other islands*

Table 12.2 Summary information on the sample and panel dataset (unraised)

	Atoll sample VPA-1	Panel sample VPA-1	Atoll sample VPA-2	Panel sample VPA-2
Number of households in the sample	2,286	1,169	2,421	1,169
Total number of persons in the sample	14,203	7,616	14,603	7,180
Average household size (persons)	6.2	6.5	6.0	6.1
Percentage of women in the household	52	52	53	53
Average age of the sample population	21	21	25	25
Average level of education* of the adult population	1.47	1.47	1.62	1.63
Average expenditures per person per day, including actual rent (rufiyaa)	19	19	26	25

1=low, 2=middle, 3=high (see Table A5.7 in Appendix 5 for classification details)

Methodology and approach

The analysis was an iterative procedure. First, a broad impression of poverty dynamics was obtained and as knowledge of the topic was being accumulated the results were fine-tuned. At the start, a model was formulated including using theoretical determinants that might be expected to play a role in the creation of well-being (see Technical Note 5, Tables A5.1 and A5.5). This model was then translated into an empirical one for testing. At the same time, the survey data from the panel households were converted into variables suitable for the model and then further adapted to satisfy the conditions of regression techniques. The prepared data were then imported into the statistical analysis programme[4] to do an initial assessment of the relationships between the dependent variable and the theoretical determinants.

Then a systematic procedure was used to select the indicators that from the model results appeared to have significant relation to the dependent variables[5]. Determinants without significant regression coefficients were omitted from the regression one by one to see how this influenced the other explanatory variables. In this way, the most significant and stable regression specifications are chosen. It should be noted however that for comparison reasons some insignificant variables have been retained in the models. The presence of such redundant variables is not harmful as long as there are sufficient observations in the dataset. The fourth step also included general statistical tests on the validity of the model. Corrections were consequently made to satisfy various conditions of estimation techniques.

The knowledge obtained through the initial assessment on which variables are correlated and how was subsequently used to adapt the underlying model for poverty dynamics. These modified assumptions then made it necessary to change some variables as well as the way they were included. The regressions were then run again and various statistical tests applied to validate the results. This iterative process was repeated until there were no further improvements in the determination coefficients of the regressions.

4 *E-views 3.1 was the software package used for the analysis*

5 *In the static analysis, the per capita consumption in the two surveys is explained by the theoretical drivers which are treated as independent variables. For the dynamic analysis, logit regressions are run with as dependent variables the four possible poverty status of the households in the two surveys. (always poor, escaped, fallen back and never-poor).*

Main findings of the static analysis

Figure 12.1 summarises the most important factors along with their relative importance in the two periods. This is a 'static' analysis since it simply shows the situation for the two dates rather than the changes between them. The factors in sections coloured in green tend to have improved household well-being, as represented by household expenditures[6]; those in pink have tended to reduce it. The larger the section, the greater the significance of that factor. Details of the regression results are given in Table A5.2 in Technical Note 5.

Factors that can be influenced by households

The analysis confirms many expected relationships. For instance, that poorer household are likely to be larger, and have a higher proportion of household members younger than 15 years. On the other hand, households will be better off if higher proportion their household members are employed – a factor that has become more important over time. Remittances from family members working in Male', on a resort or abroad, also increase a household's well-being. Higher levels of education help too, although since 1997 the returns to education seem to have decreased slightly.

The analysis also assessed how well-being was affected by the employment sector in which household members worked. Though the order changed somewhat between 1997 and 2004, the sectors associated with higher well-being were trade and transport, tourism and government, while those associated with lower incomes were agriculture, fisheries and traditional manufacturing.

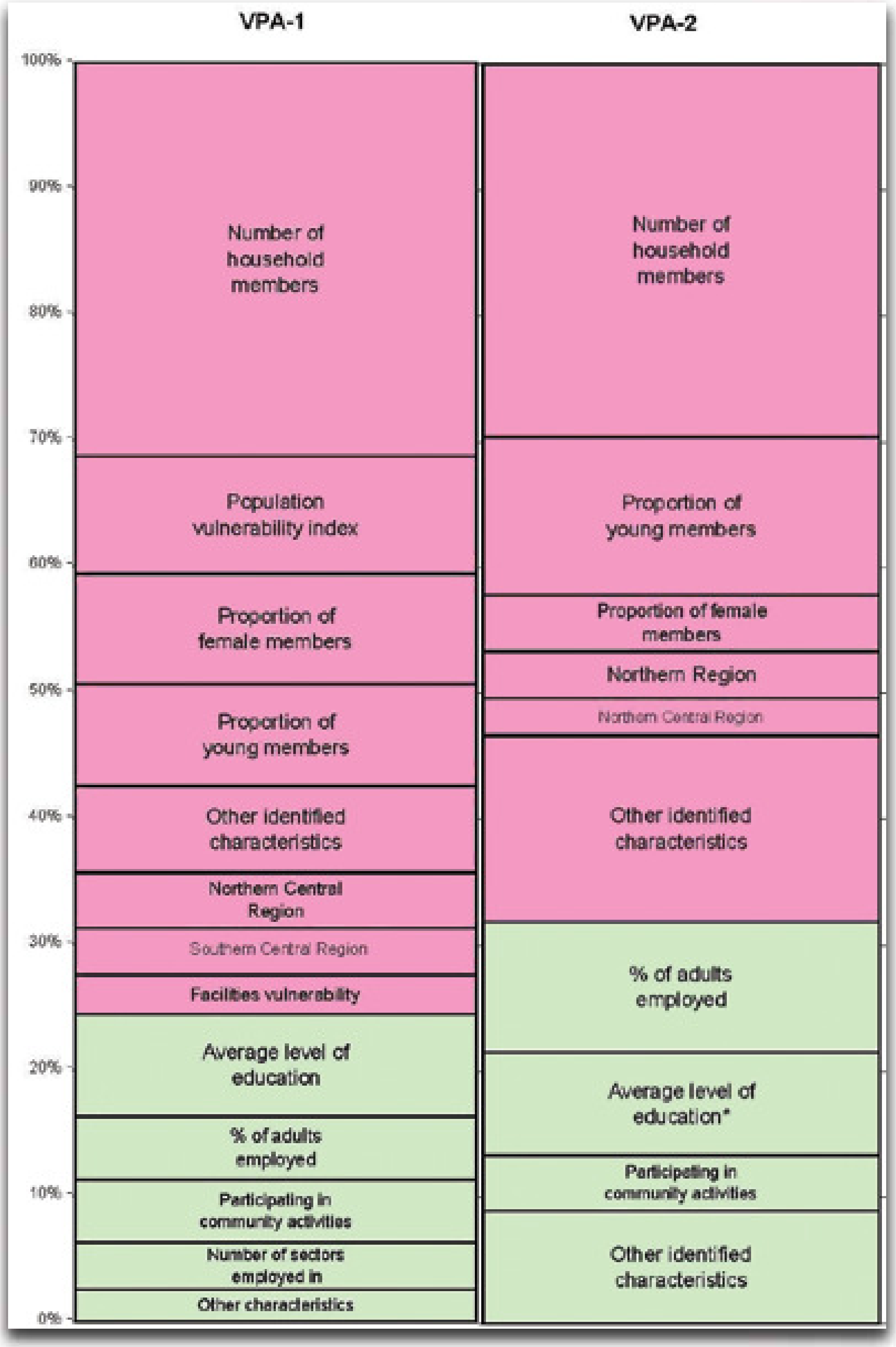
It is also an advantage to be diversified – to have different household members employed in a range of sectors, though this seems less important than in 1997. Not surprisingly it is better to be an employer than an employee.

Another important contribution to household well-being is investment – particularly in productive assets – whether by taking out loans or investing the household's own funds. The effect is large and significant in both time periods.

Households that do better are also likely to be actively engaged in community activities. This is probably because they get better access to the available social capital: they will be better informed than others and benefit most from facilities on the island. They should also be able to fall back on a large social network in case anything happens to them. It could also be of course that households active in the community are also predisposed to be more active generally and thus more successful. On the other hand the causation could work in the other direction – better-off households simply have more time for community activities, while the poor cannot afford to spend time on unpaid work.

6 *In fact, the natural logarithms of these variables have been used, thereby assuming a diminishing marginal utility. Expenditures include actual rents but exclude imputed rents*

Figure 12.1 – Relationship of major factors with well-being, 1997 and 2004



Other household factors

The well-being of the household will also be affected by age and gender factors. Households are more likely to be poor if they have more people aged 64 and older, and if they have more women – though the latter seems to be less significant than before. Households with a female household head are also likely to be worse off than those with a male household head[7].

Bad health too undermines household income, a factor that is becoming more important. One might expect too that some external crisis that affects the household would be damaging. This appeared to be true for VPA-2, though not for VPA-1. The latter result could be because an external crisis causes the household to spend more funds – which, since expenditure is taken to reflect income, would make the household look richer. However, there is no fully satisfactory rationale for this counterintuitive finding.

Factors related to the society

Household well-being is also greater when there are better facilities on an island – health education, and transport facilities – particularly for the most vulnerable families. People were also likely to be better off on the most populous islands though by VPA-2 this effect had become much less significant.

Well-being also seems have a regional character – though a changeable one. In 1997 the better-off households were more likely to be in the Central region while in 2004 they lived in the South. Those likely to be worst off in 2004 were in the North. Note that this refers to households that in all other respects are equal. Households in the South are not necessarily richer than other households, but households with comparable characteristics do better there.

Main findings of the dynamic analysis

This section looks at the characteristics of two important groups within the panel – those who between 1997 and 2004 escaped from poverty, and those who over the same period fell into poverty. Figure 12.2 summarize the most important factors along with their relative importance. The ones shade in green are likely to be helpful, those in red are likely to be damaging[8]. As this shows, most of the same factors that affect well being will also be associated with movements in and out of poverty.

Size of household and ages of members – Large households, and those with many young members, are less likely to escape from poverty and more likely to fall into it.

Employment – Employment in trade, transport or tourism facilitates an escape from poverty and prevents a fall back. Those working in government are also less likely to fall into poverty. Having a high proportion of household members working in agriculture has a more mixed effect. It can prevent an escape from poverty, but does not increase the chances of falling into poverty. Receiving remittances from a household member working elsewhere is understandably beneficial.

7 This conventional comparison suffers a methodological weakness in that it generally links single-parent households with two-parent households. Only about 15 percent of the households with a male head are single-parent, but most female-headed households are. When considering female-headed households with the husband working/living away as two-parent households, half the female-headed households are still also single-parent households.

8 Table A5.4 in Technical Note 5 shows the details of the regression coefficients, the z-values and the products of the means of the variables and the coefficients of these regressions. The analysis was carried out in two parts, namely an "escape" and a "fall" regression. The first one includes all households that were poor (spent less than Rf.15 per person per day) in 1997, while the second one includes all the others, that is, the non-poor. The dependent variable is binary. It takes on the value 1 if the position of a household in 2004 was different from the position in 1997 and 0 if no change had occurred. The regression models are then used to predict the likelihood that households will escape from or fall back into poverty.

Education – A high initial level, or an improvement in the level, will help an escape but not help prevent a fall.

Investment – When a household takes on a loan to invest this increases the chance that it will escape poverty and to an even greater extent reduces the chances of a fall into poverty – probably because those likely to make the loans profitable are probably those with a higher initial level of expenditure. Investing without taking a loan also has a positive effect on escape but it does not influence poverty fall.

Community activity – If a high proportion of its members are voluntarily active in community the household is more likely to escape and less likely to fall into poverty.

Gender – A high proportion of women in a household significantly impedes escaping from poverty, but does not influence falling into poverty. Having a female household head also slightly diminishes the chances of escaping poverty. Having a female household head does not, however, affect the probability of falling into poverty.

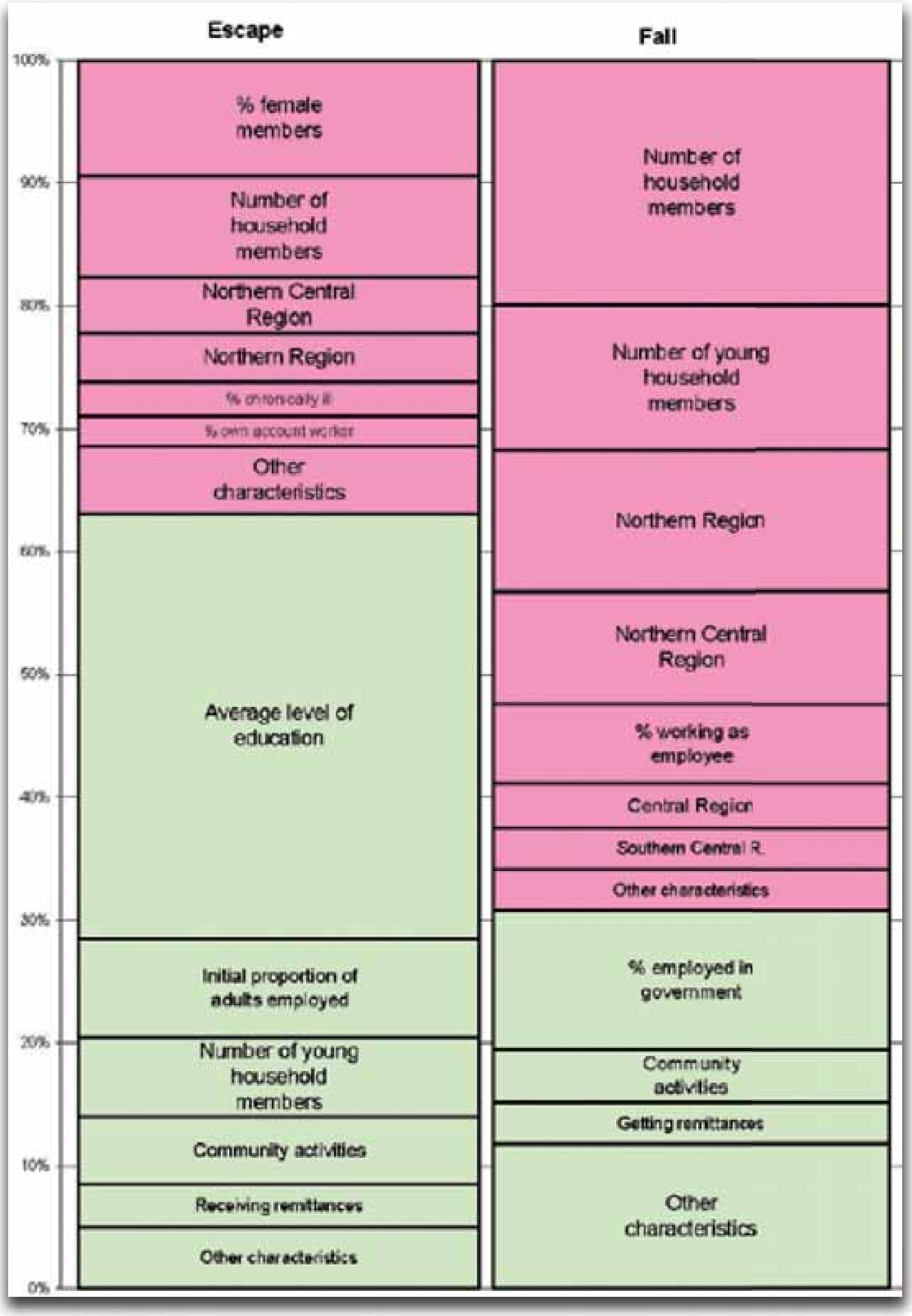
Health – A high proportion of family members unable to work in 2004 due to bad health decreases the chances of escaping poverty and increases the likelihood that a family will end up in poverty.

Regional factors – This provides an interesting picture. Households living in the South had the best chance of escaping poverty and the lowest probability of falling back. Households in the North region faced the highest probability of remaining in, or falling into, poverty. Households living in the Central region were also disadvantaged, though less so.

The factors that had the largest impact on whether or not a household escaped poverty were, (i) the initial level of education, (ii) the proportion of female household members in 2004, (iii) the initial number of household members, (iv) the initial proportion of adults employed, (v) the initial proportion of young household members and (vi) the initial proportion of household members engaged in voluntary community activities.

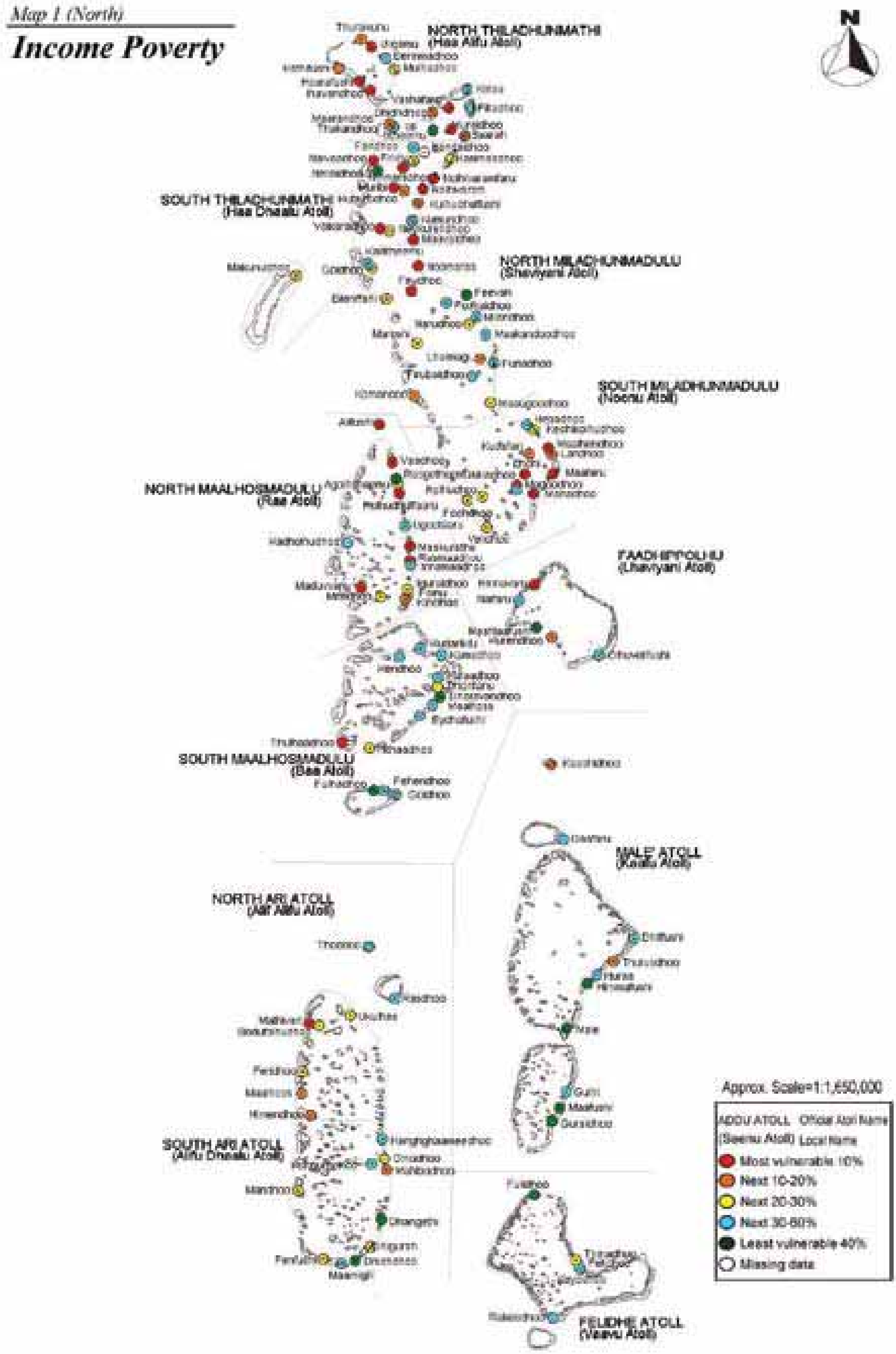
The factors most important with respect to a fall into poverty were, in order of decreasing importance: (i) the initial number of household members, (ii) the initial number of young household members, (iii) living in the North region, (iv) the proportion of adults employed in government in 2004, (v) living in the North Central region and (vi) the initial proportion of household members working as employees.

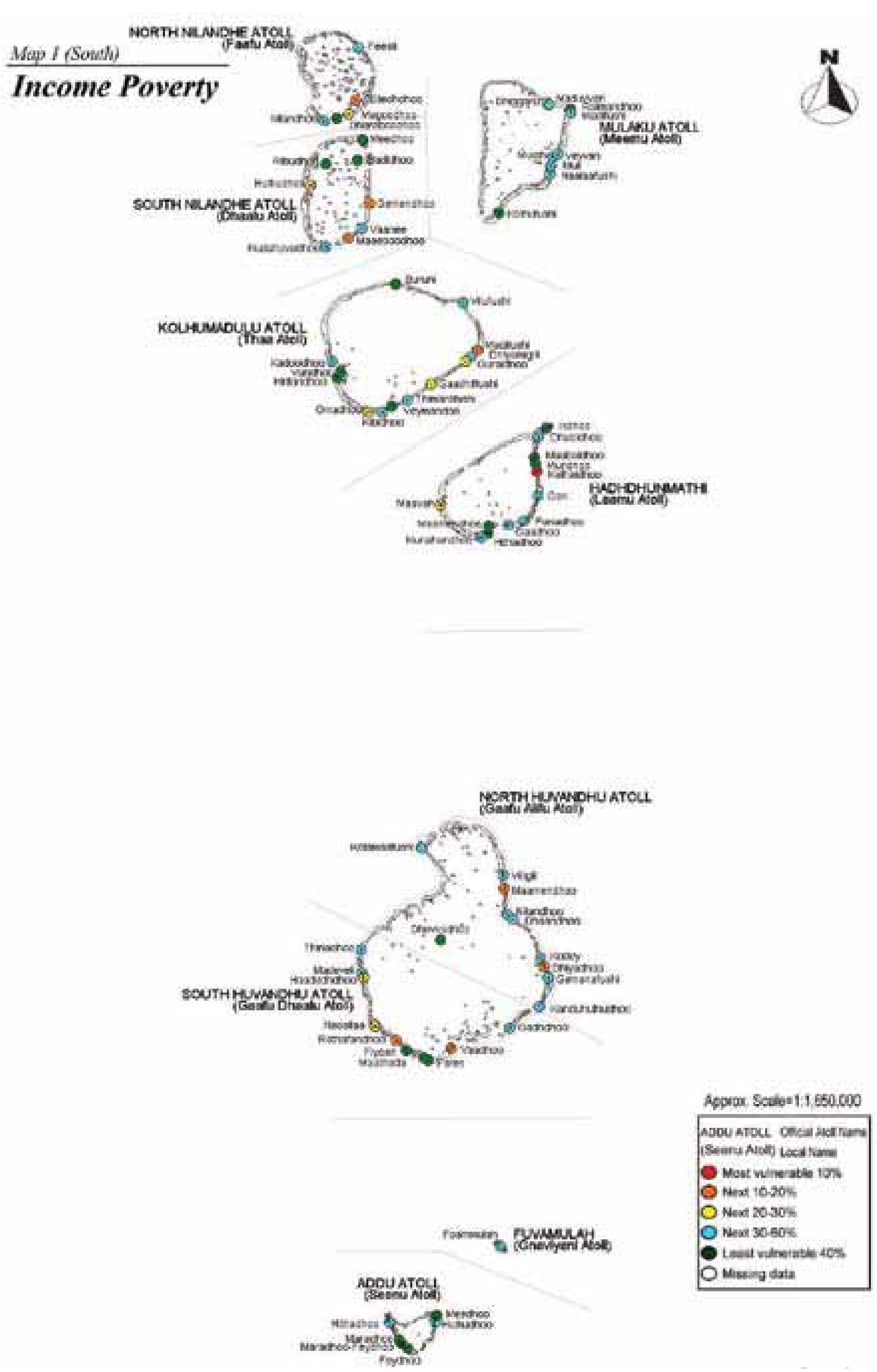
Figure 12.2 Relationship of major factors with poverty dynamics, between 1997 and 2004



PART 3

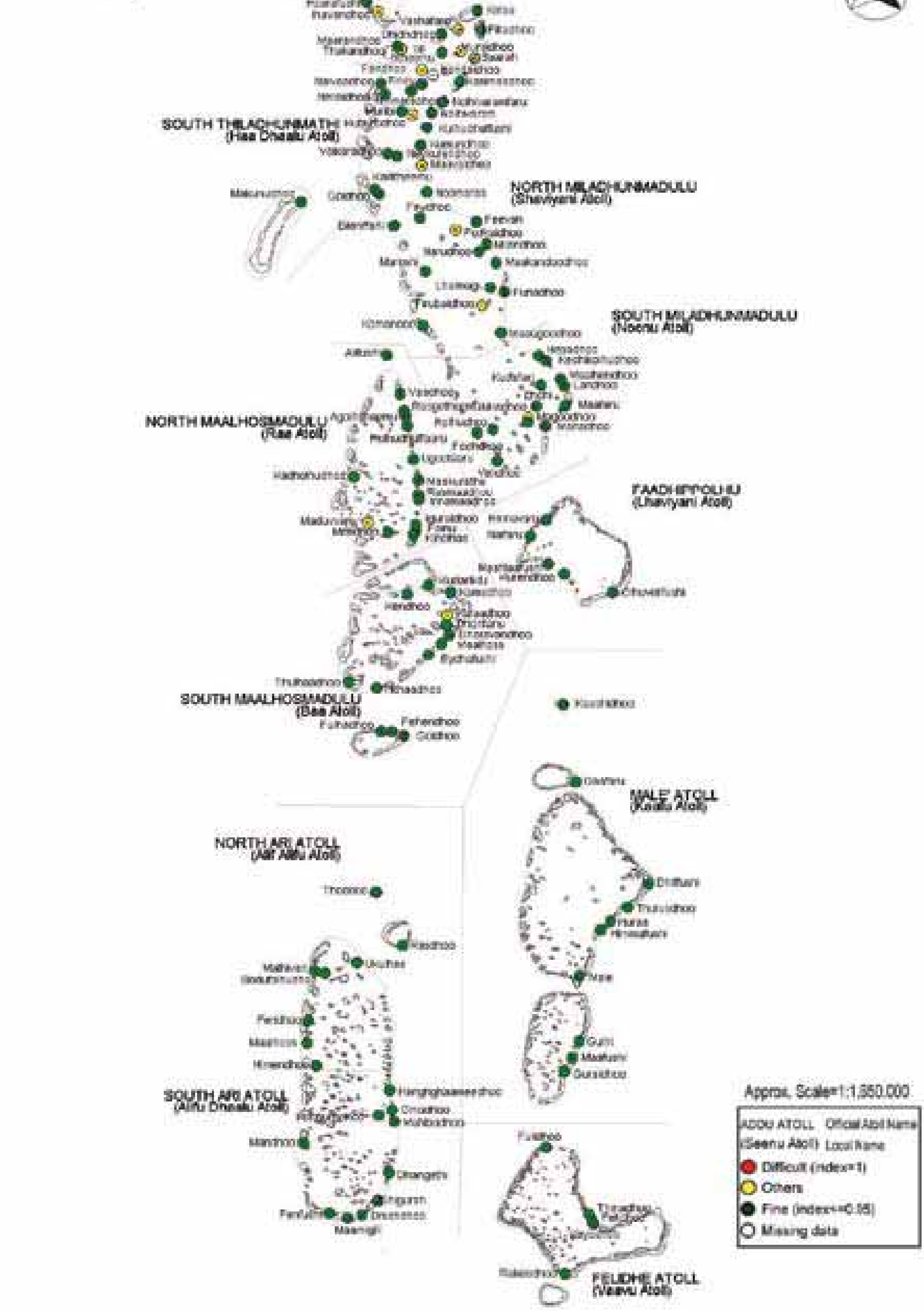
Atlas of Vulnerability and Poverty in Maldives


Map 1 (North)
Income Poverty
N
NORTH THILADHUNMATHI (Haa Alifu Atoll)
SOUTH THILADHUNMATHI (Haa Dhaalu Atoll)
NORTH MILADHUNMADULU (Shaviyani Atoll)
SOUTH MILADHUNMADULU (Noonu Atoll)
NORTH MAALHOSMADULU (Raa Atoll)
FAADHIPPOLHU (Lhaviyani Atoll)
SOUTH MAALHOSMADULU (Baa Atoll)
MALE' ATOLL (Kaafu Atoll)
NORTH ARI ATOLL (Alif Alifu Atoll)
SOUTH ARI ATOLL (Alifu Dhaalu Atoll)
FELIDHE ATOLL (Vaavu Atoll)
Approx. Scale=1:1,650,000
ADDU ATOLL Official Atoll Name
(Seenu Atoll) Local Name
Most vulnerable 10%
Next 10-20%
Next 20-30%
Next 30-60%
Least vulnerable 40%
Missing data


Map 1 (South)
Income Poverty
N
NORTH NILANDHE ATOLL
(Faafu Atoll)
SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
ADDU ATOLL
(Seenu Atoll)
Approx. Scale=1:1,650,000
ADDU ATOLL Official Atoll Name
(Seenu Atoll) Local Name
Most vulnerable 10%
Next 10-20%
Next 20-30%
Next 30-60%
Least vulnerable 40%
Missing data

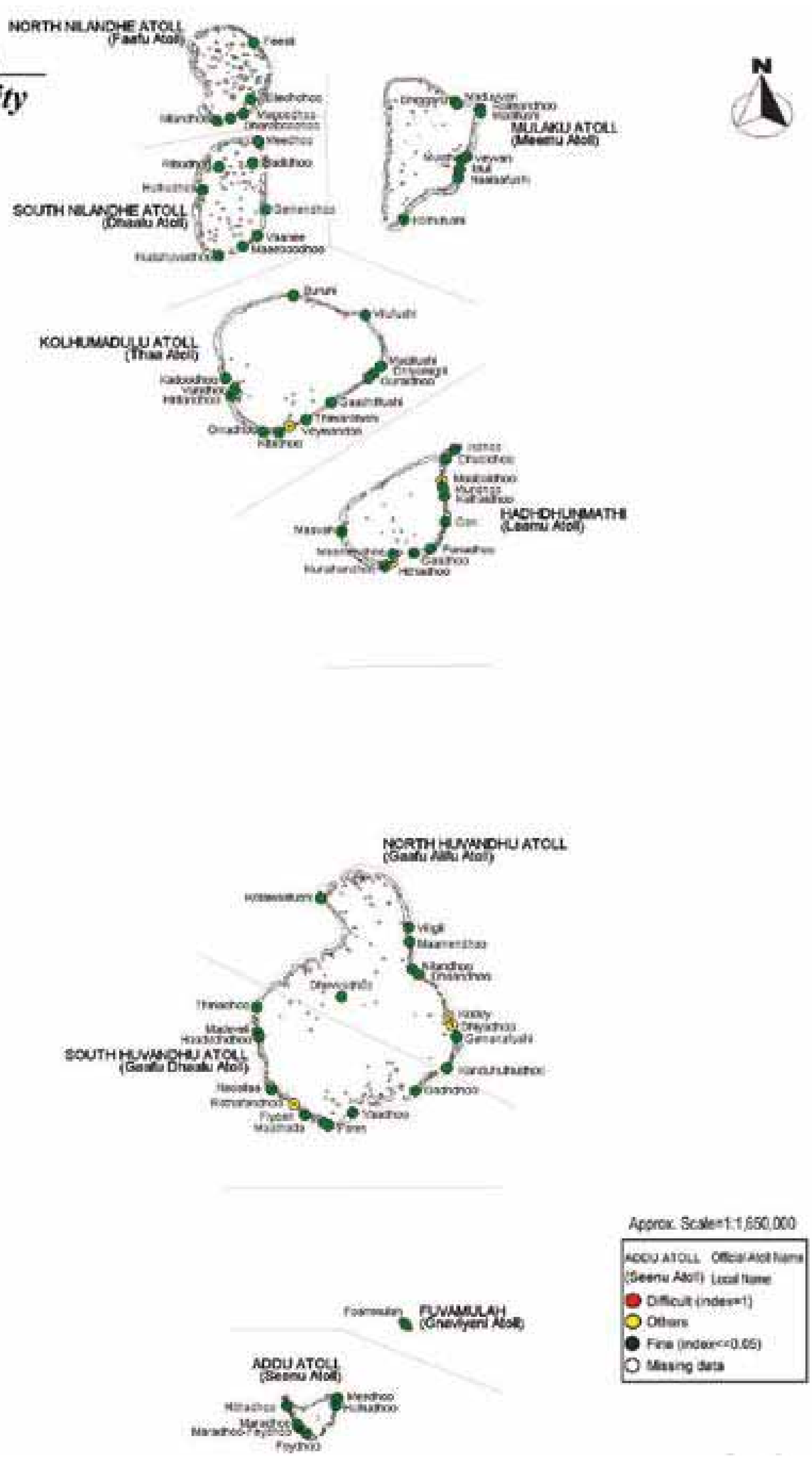
Map 2 (North)

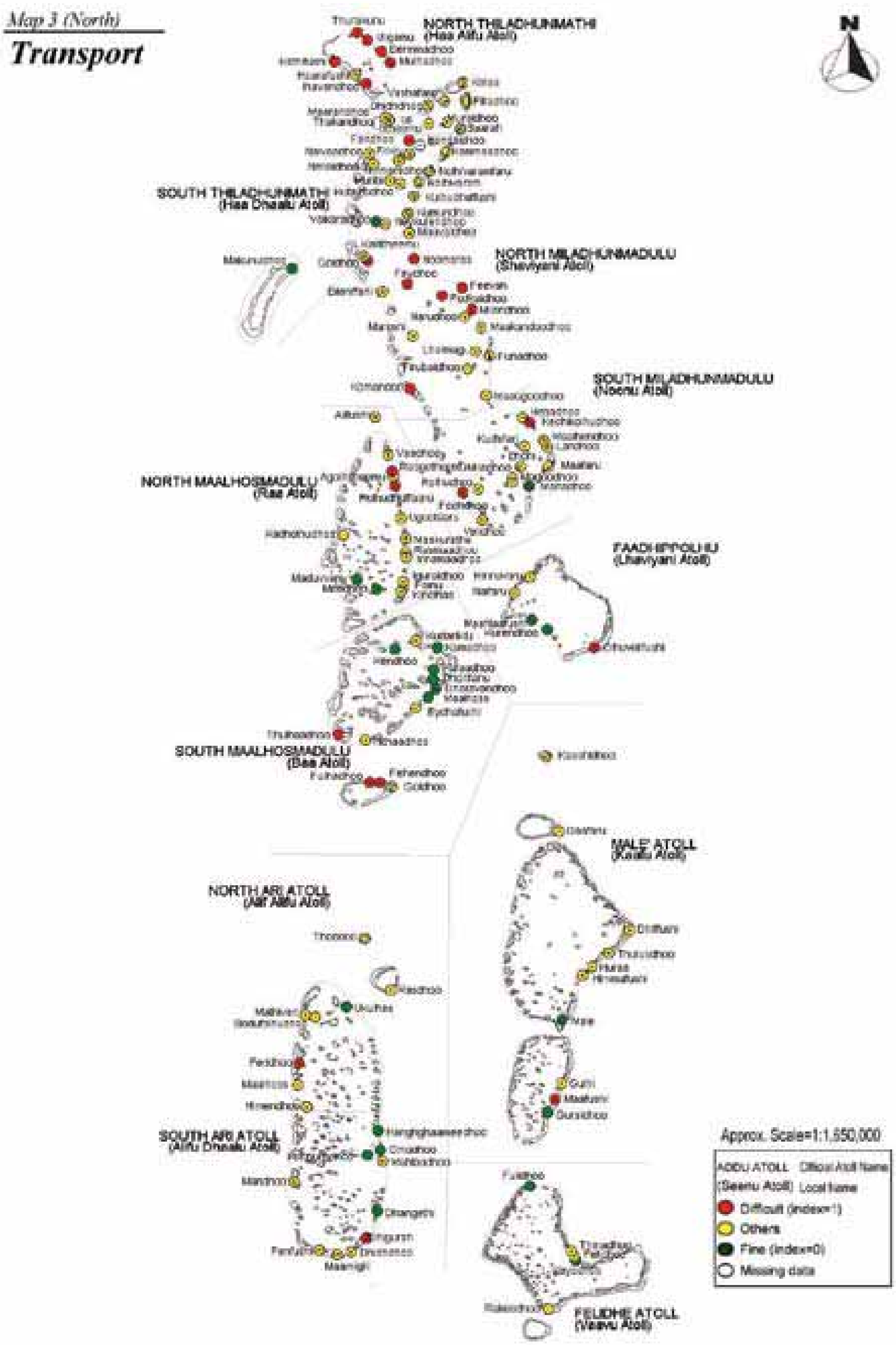
Electricity



Map 2 (South)

Electricity




Map 3 (North)
Transport
N
NORTH THILADHUNMATHI (Haa Alifu Atoll)
SOUTH THILADHUNMATHI (Haa Dhaalu Atoll)
NORTH MILADHUNMADULU (Shaviyani Atoll)
SOUTH MILADHUNMADULU (Noonu Atoll)
NORTH MAALHOSMADULU (Raa Atoll)
FAADHIPPOLHU (Lhaviyani Atoll)
SOUTH MAALHOSMADULU (Baa Atoll)
MALE' ATOLL (Kaafu Atoll)
NORTH ARI ATOLL (Alif Alifu Atoll)
SOUTH ARI ATOLL (Alifu Dhaalu Atoll)
FELIDHE ATOLL (Vaavu Atoll)
Approx. Scale=1:1,550,000
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Difficult (index=1)
Others
Fine (index=0)
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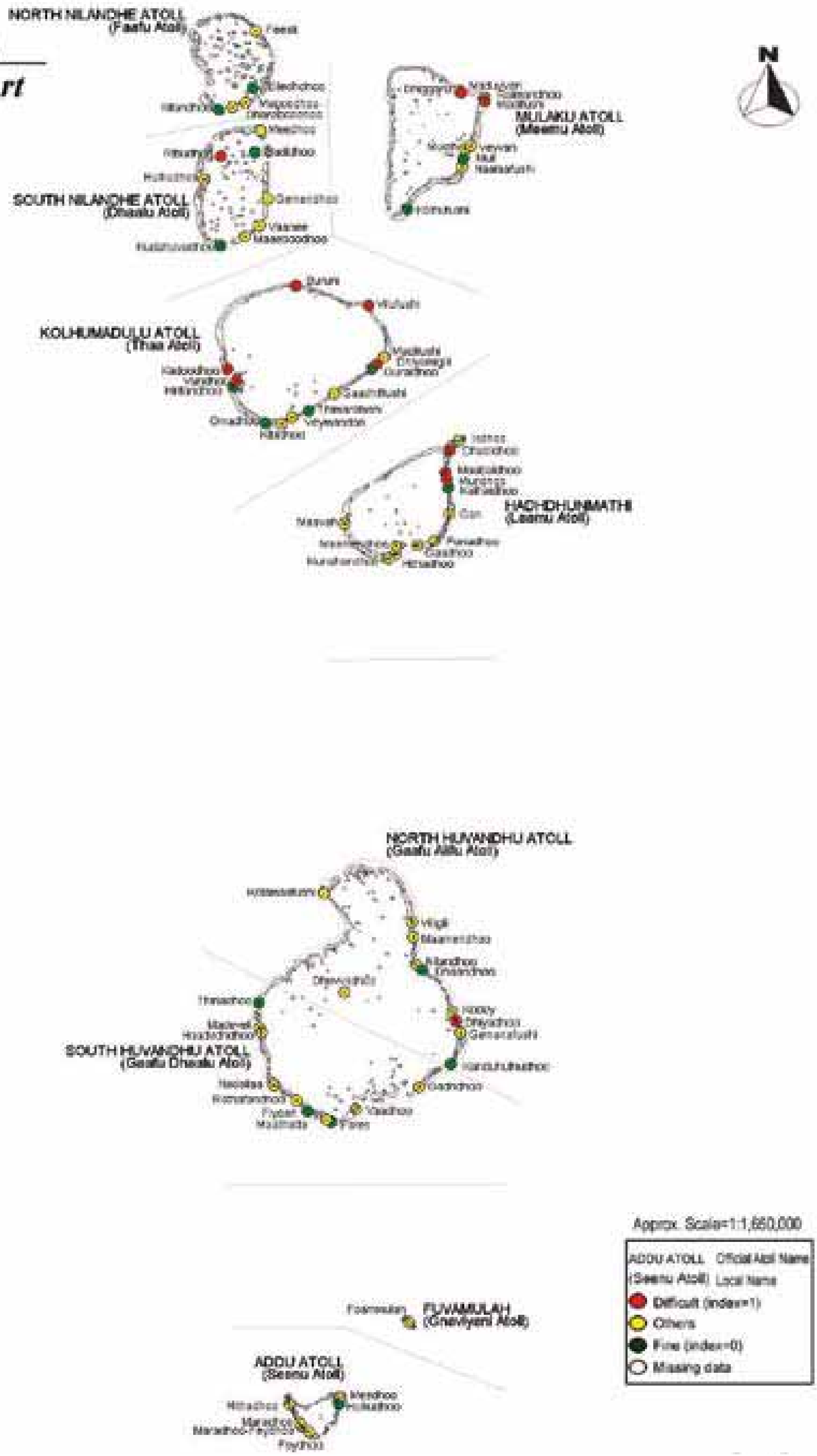
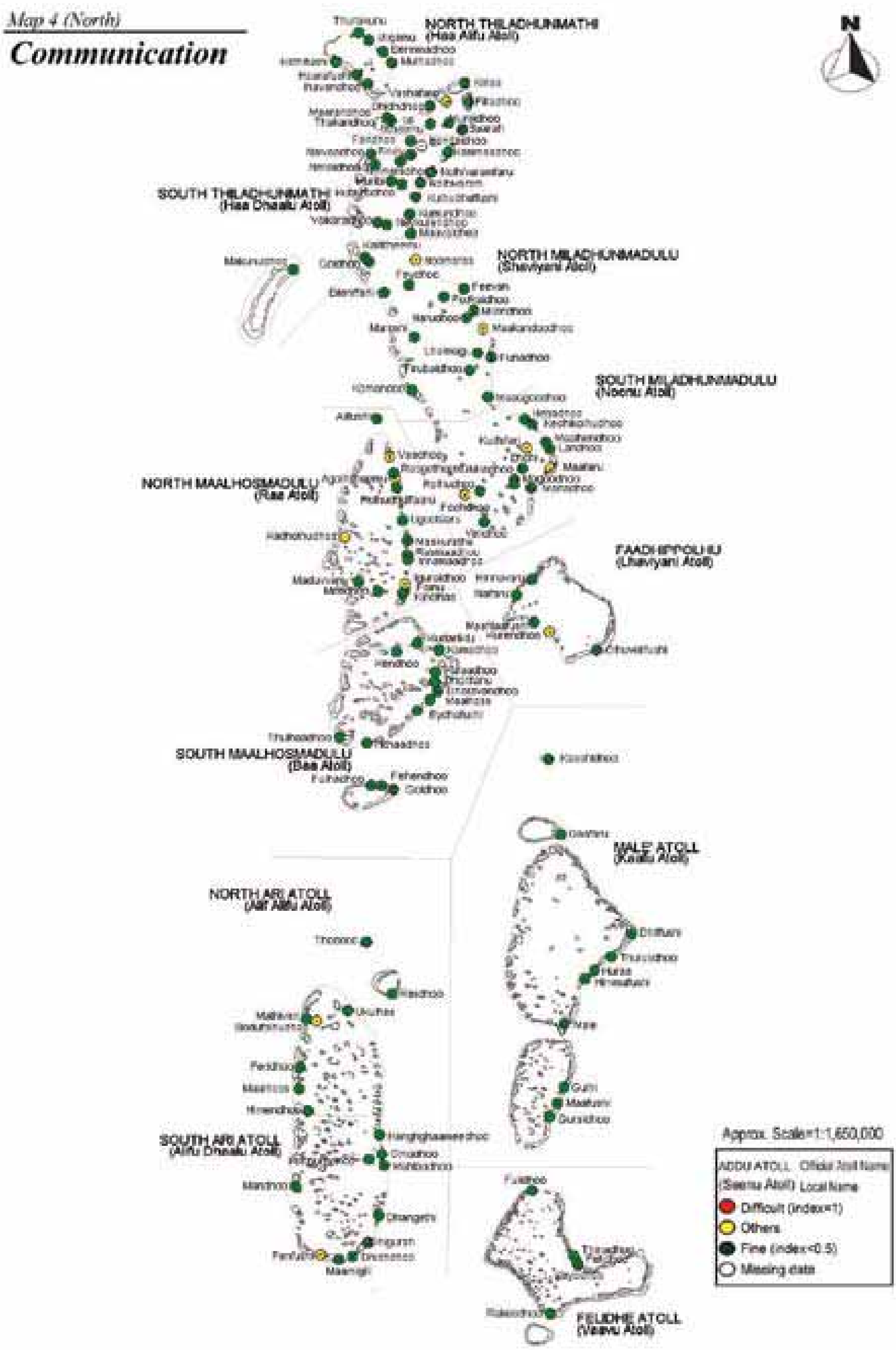
Map 3 (South)

Transport




Map 4 (North)
Communication
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SOUTH THILADHUNMATHI (Haa Dhaalu Atoll)
NORTH MILADHUNMADULU (Shaviyani Atoll)
SOUTH MILADHUNMADULU (Noonu Atoll)
NORTH MAALHOSMADULU (Raa Atoll)
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SOUTH MAALHOSMADULU (Baa Atoll)
MALE' ATOLL (Kaafu Atoll)
NORTH ARI ATOLL (Alif Alifu Atoll)
SOUTH ARI ATOLL (Alifu Dhaalu Atoll)
FELIDHE ATOLL (Vaavu Atoll)
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Fine (index<0.5)
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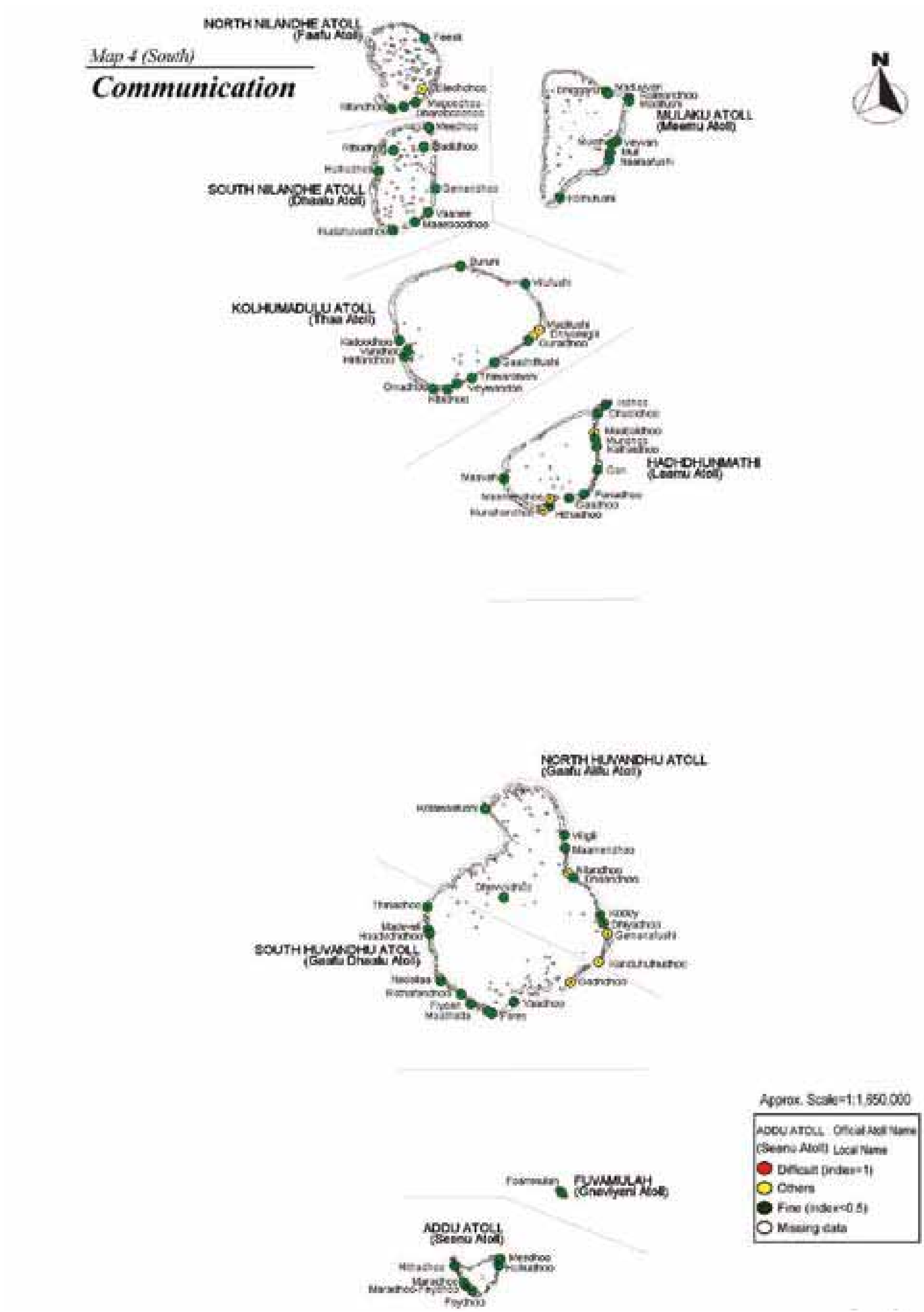
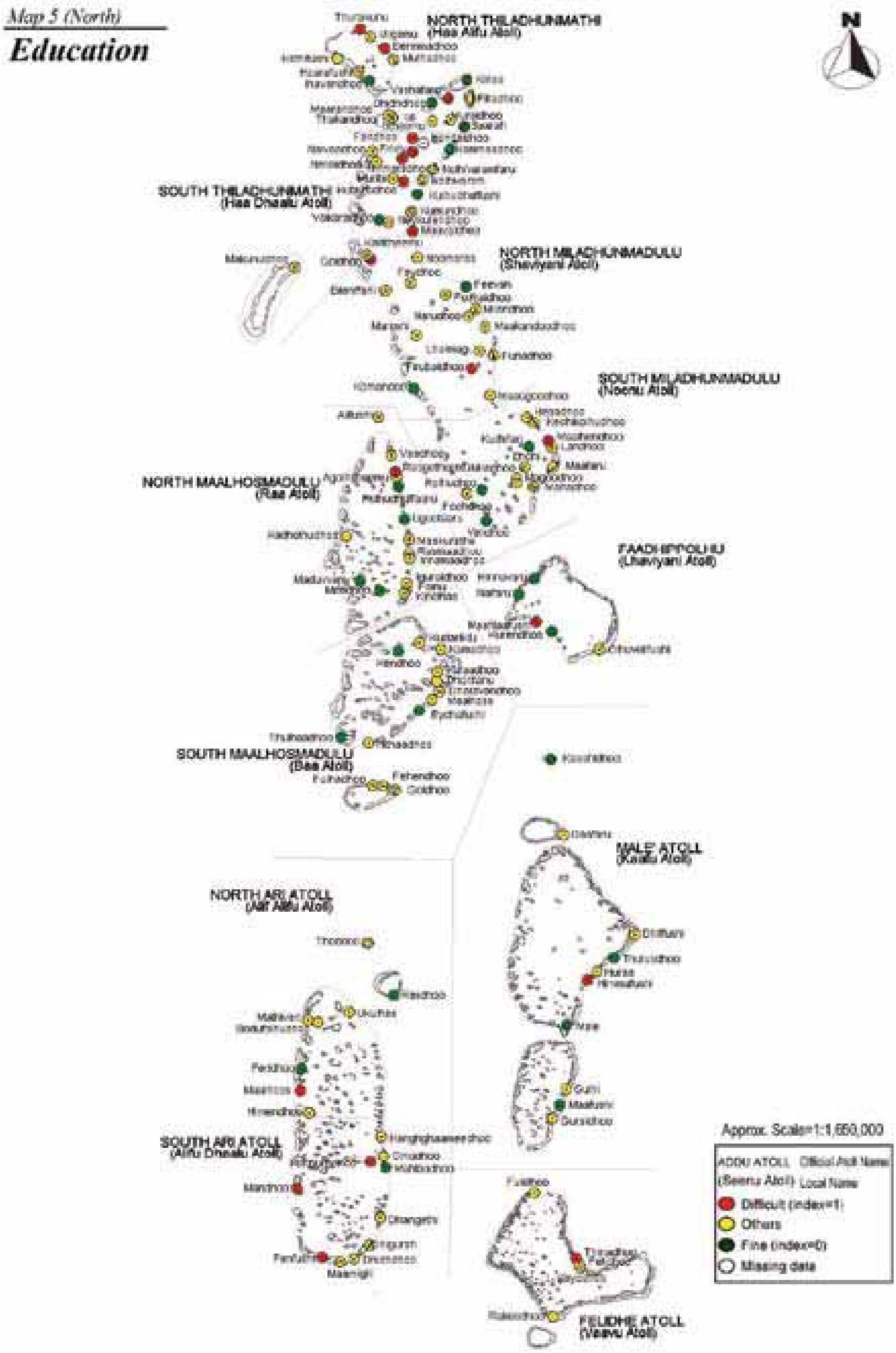
Map 4 (South)

Communication




Map 5 (North)
Education
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SOUTH THILADHUNMATHI (Haa Dhaalu Atoll)
NORTH MILADHUNMADULU (Shaviyani Atoll)
SOUTH MILADHUNMADULU (Noonu Atoll)
NORTH MAALHOSMADULU (Raa Atoll)
FAADHIPPOLHU (Lhaviyani Atoll)
SOUTH MAALHOSMADULU (Baa Atoll)
MALE' ATOLL (Kaafu Atoll)
NORTH ARI ATOLL (Alif Alifu Atoll)
SOUTH ARI ATOLL (Alifu Dhaalu Atoll)
FELIDHE ATOLL (Vaavu Atoll)
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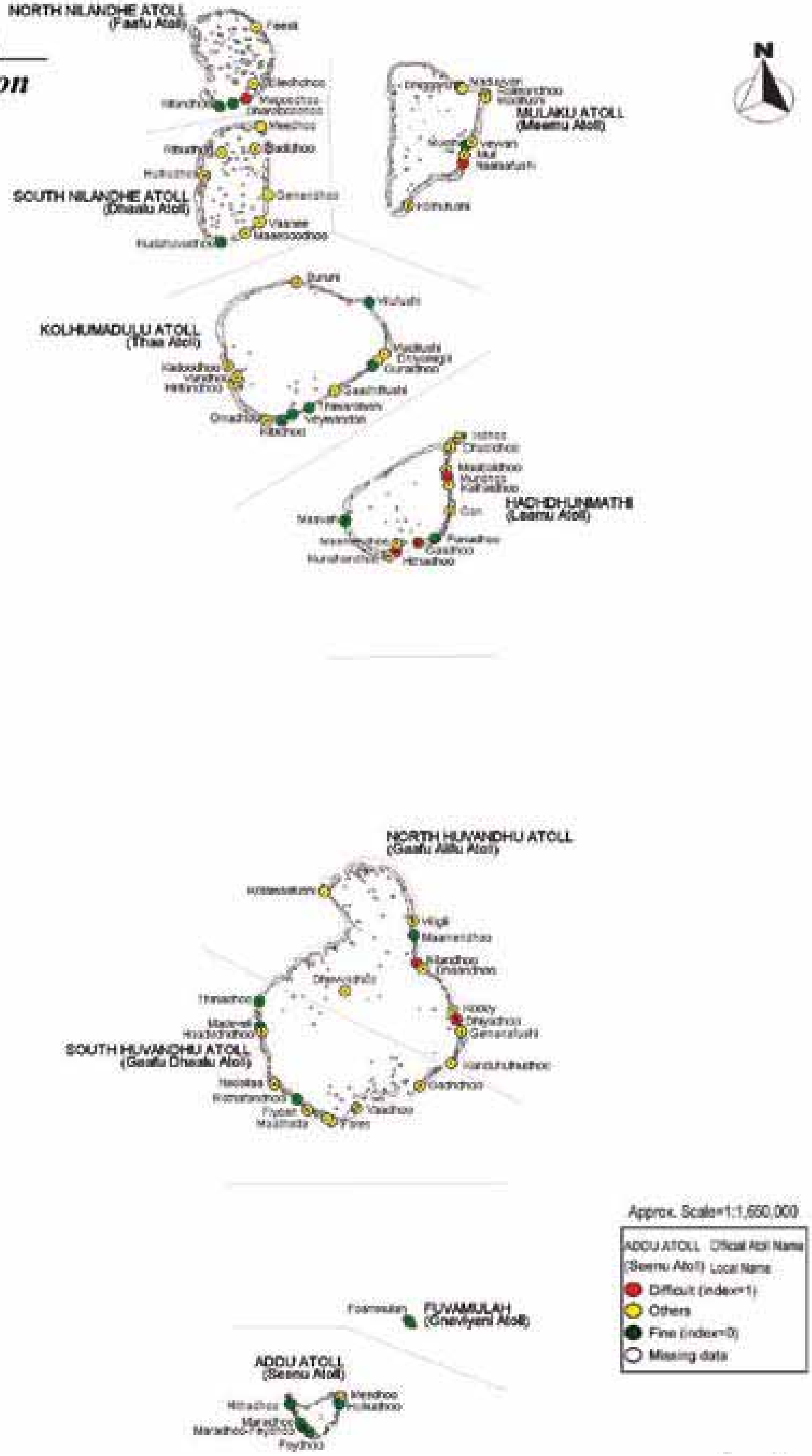
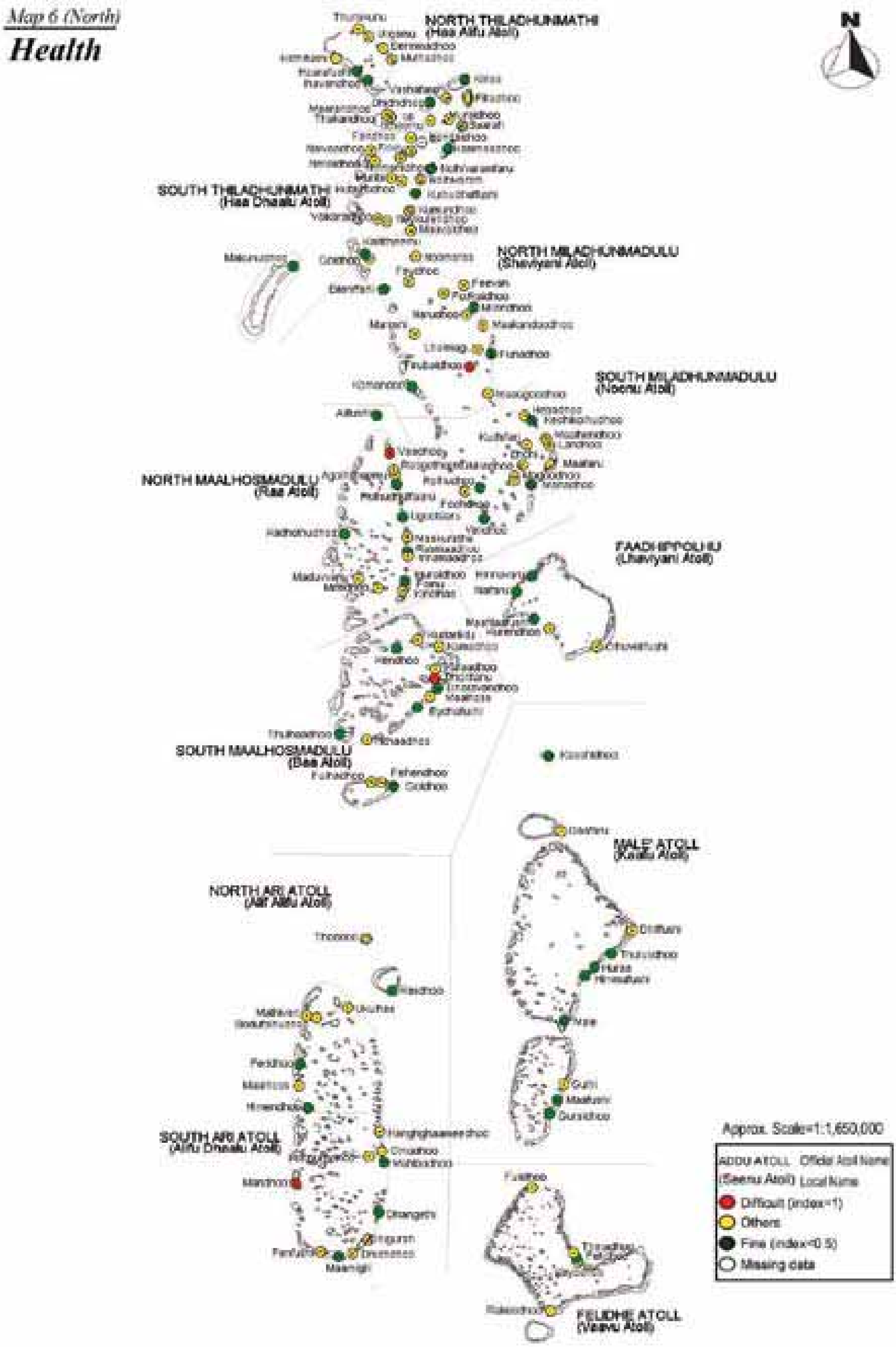
Map 5 (South)

Education




Map 6 (North)
Health
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SOUTH THILADHUNMATHI
(Haa Dhaalu Atoll)
NORTH MILADHUNMADULU
(Shaviyani Atoll)
SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
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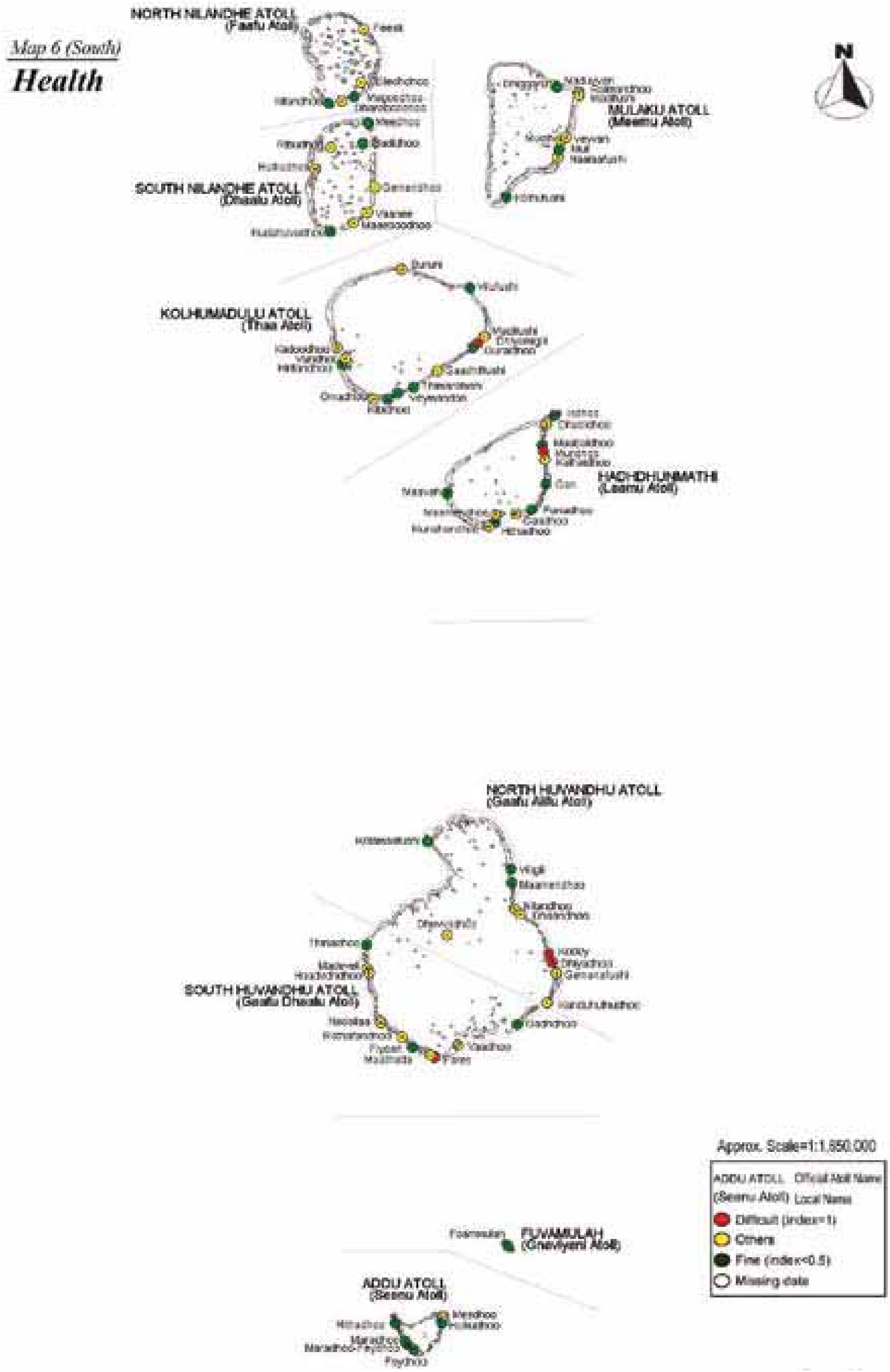
Map 6 (South)
Health
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SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
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(Seenu Atoll)
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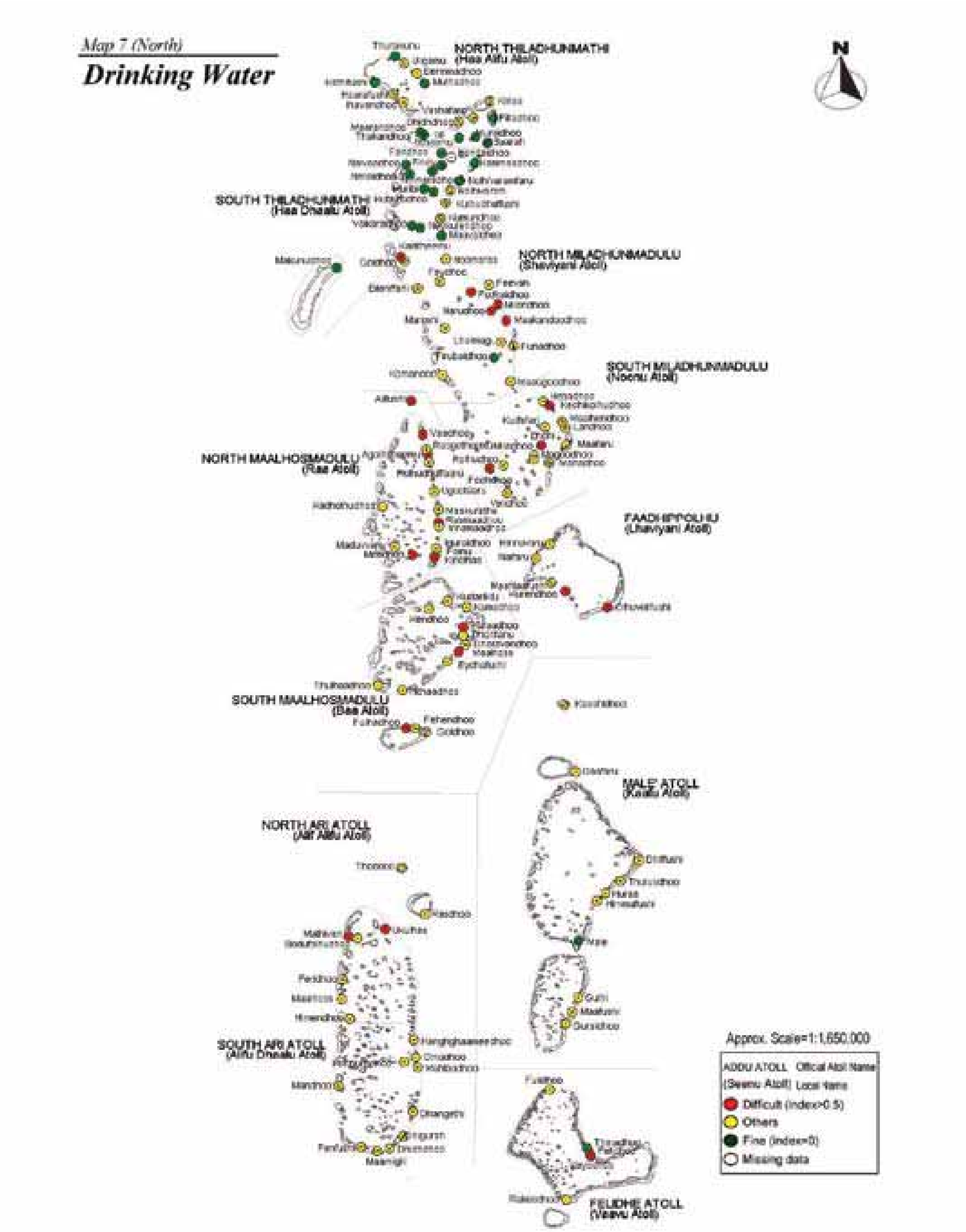
Map 7 (North)
Drinking Water
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(Haa Alifu Atoll)
SOUTH THILADHUNMATHI
(Haa Dhaalu Atoll)
NORTH MILADHUNMADULU
(Shaviyani Atoll)
SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
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NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
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(Vaavu Atoll)
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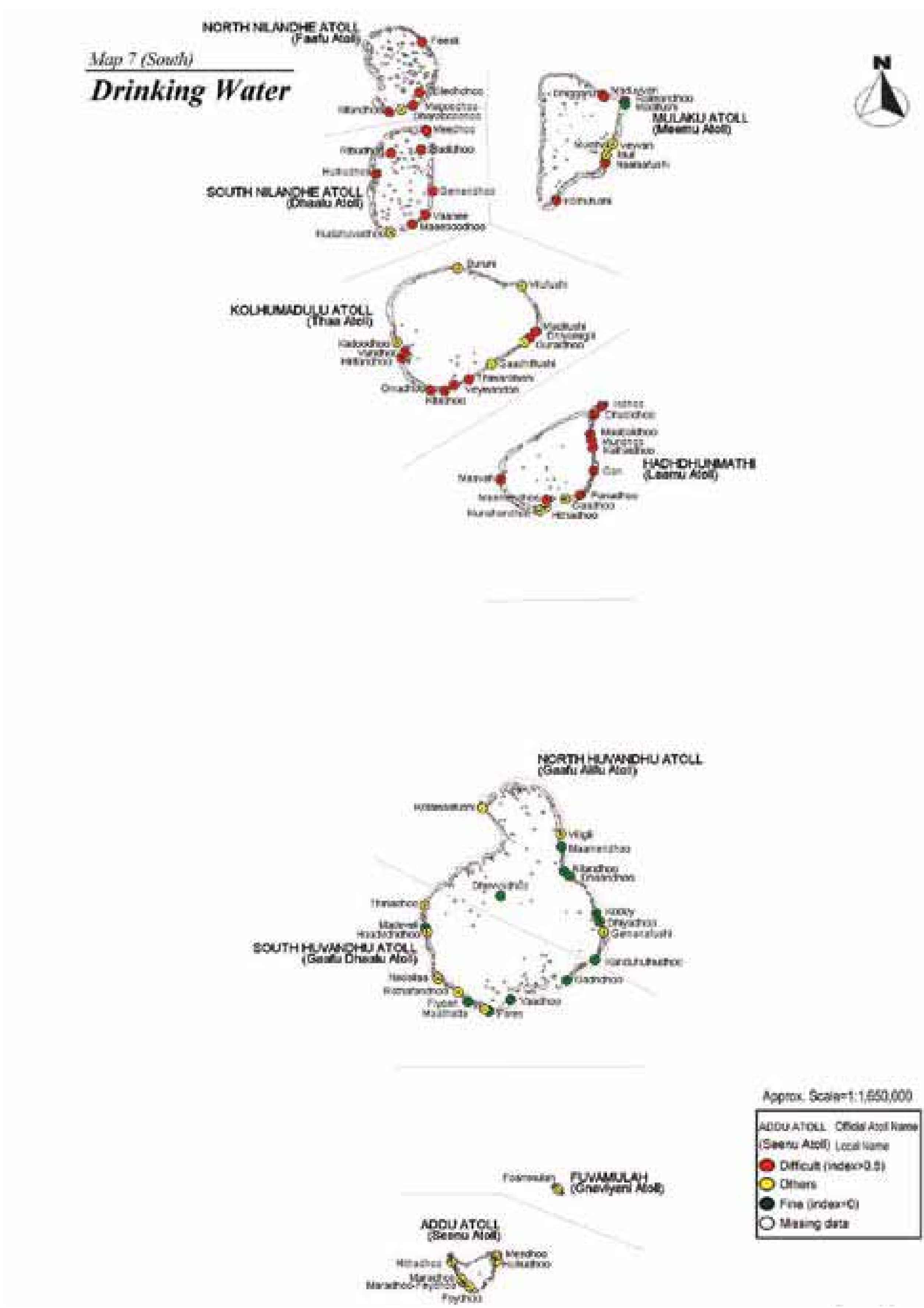
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Drinking Water
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(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
ADDU ATOLL
(Seenu Atoll)
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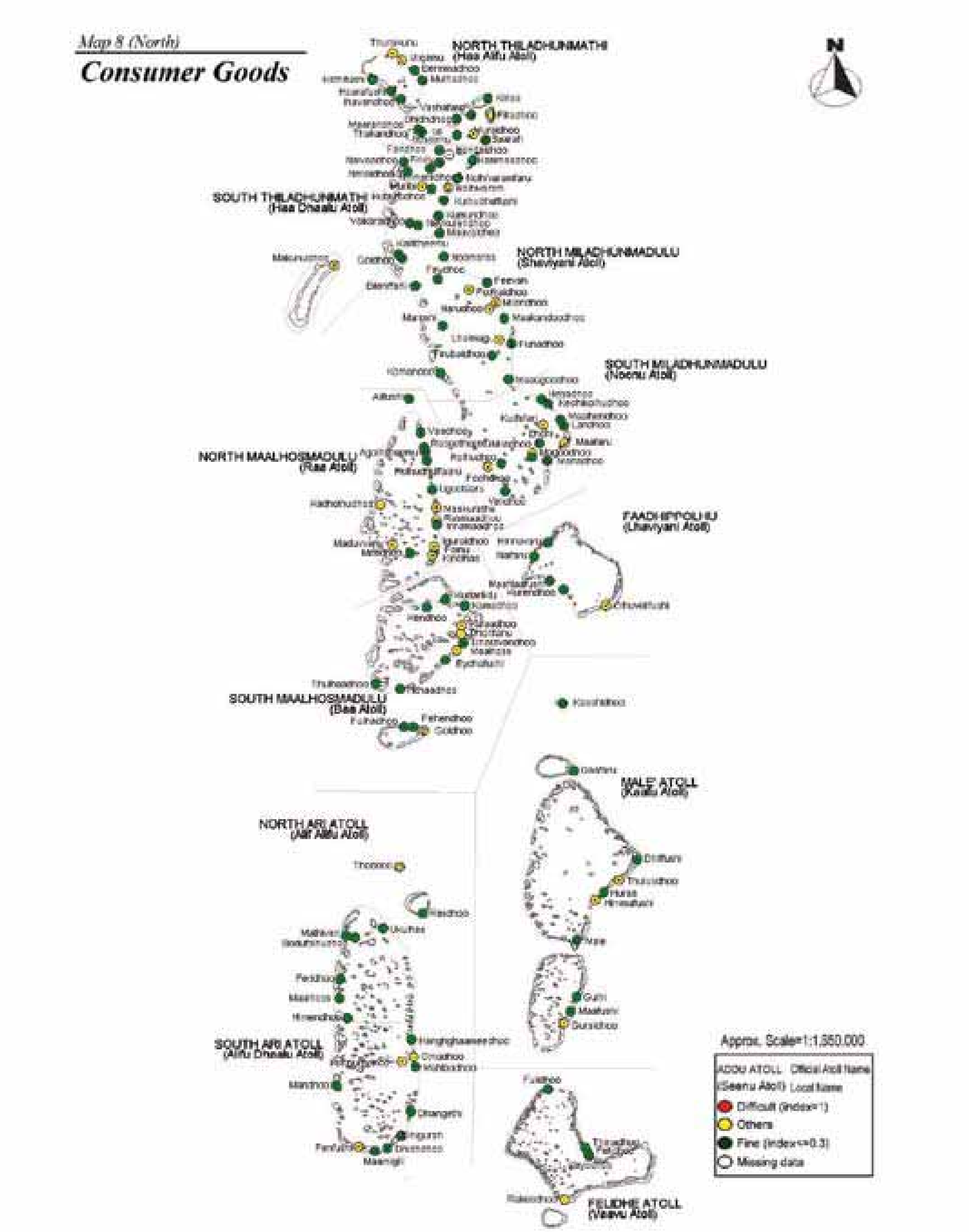
Map 8 (North)
Consumer Goods
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SOUTH THILADHUNMATHI
(Haa Dhaalu Atoll)
NORTH MILADHUNMADULU
(Shaviyani Atoll)
SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
(Alifu Dhaalu Atoll)
FELIDHE ATOLL
(Vaavu Atoll)
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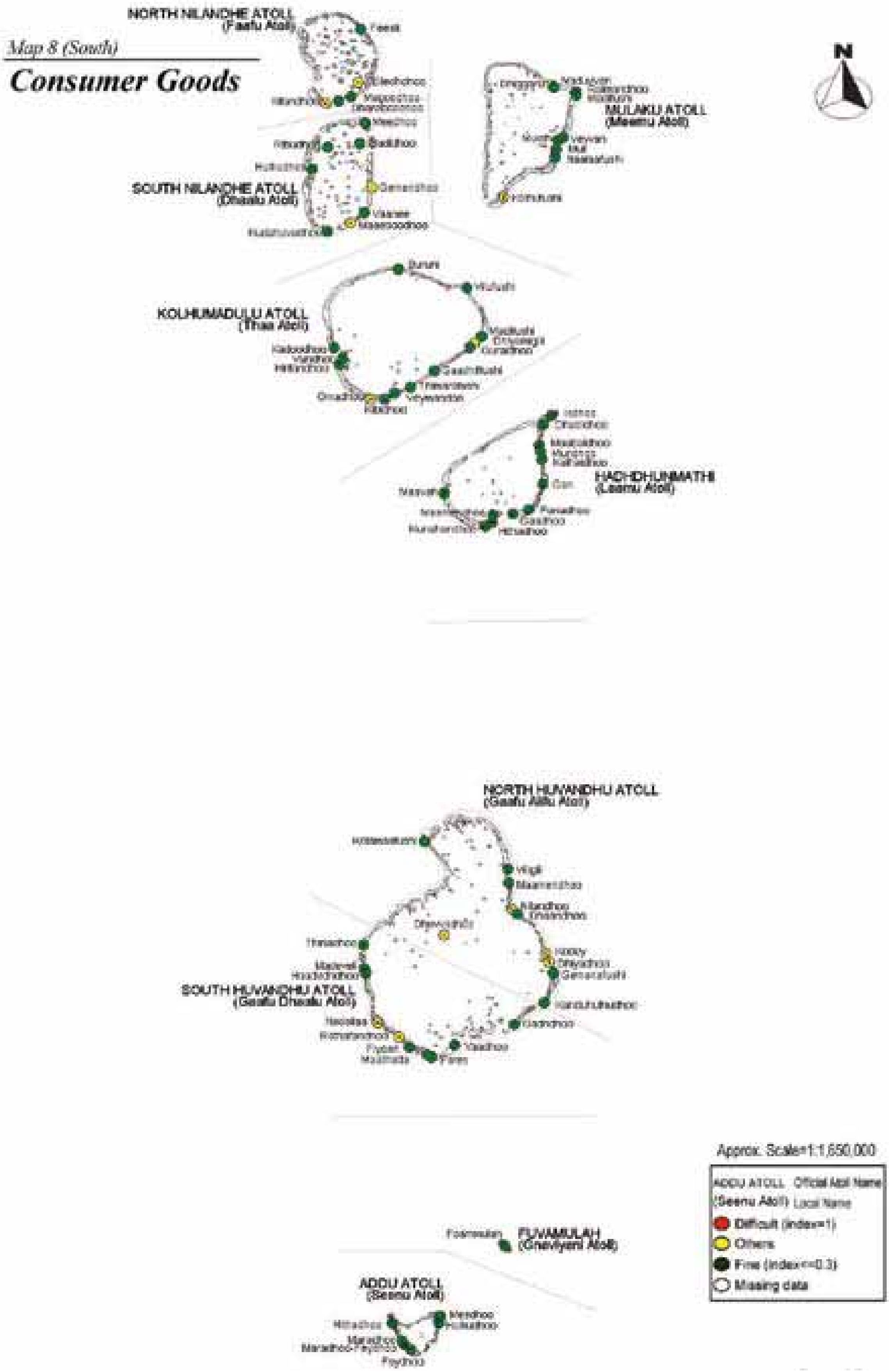
Map 8 (South)
Consumer Goods
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(Faafu Atoll)
SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
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(Seenu Atoll)
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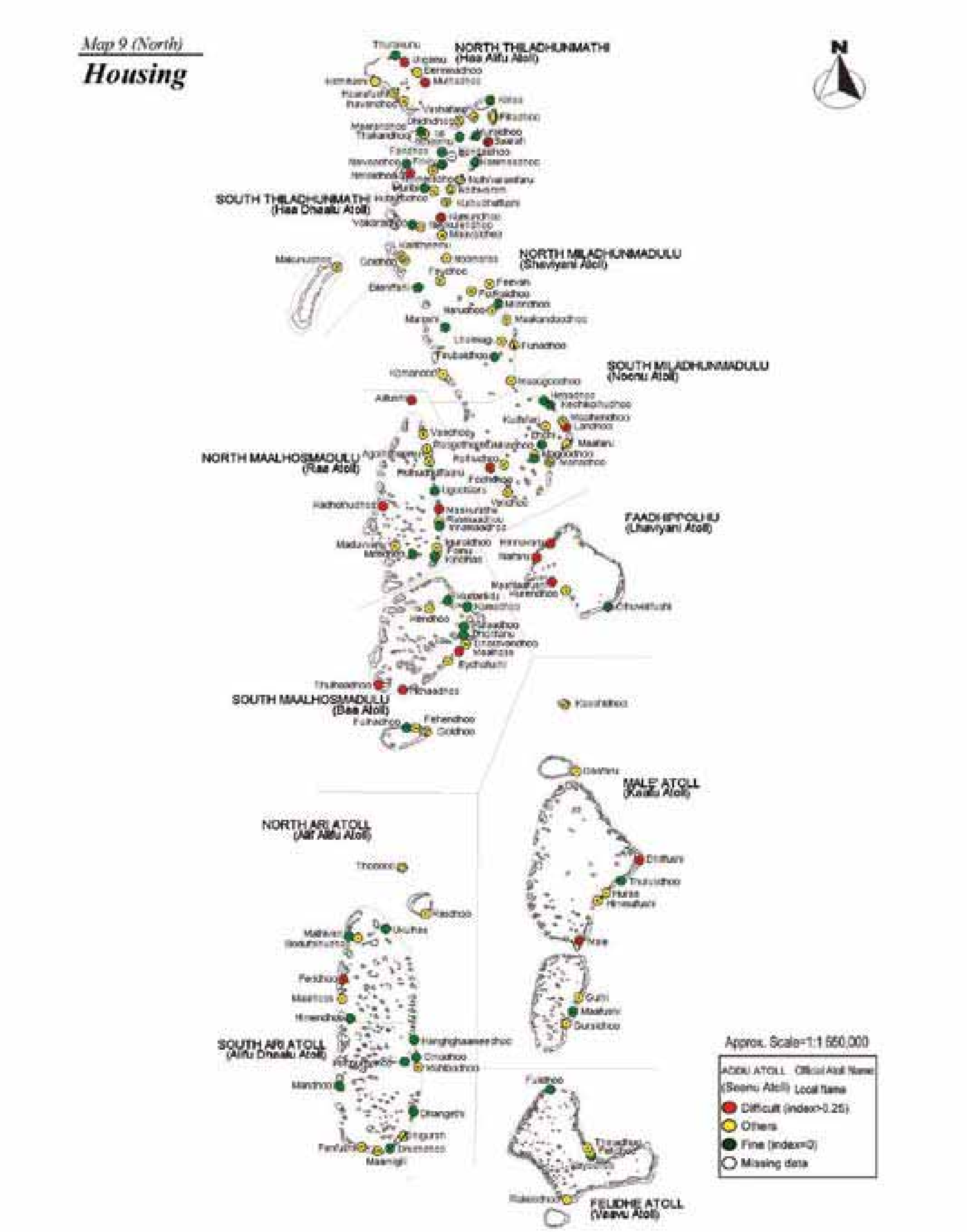
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SOUTH THILADHUNMATHI
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NORTH MILADHUNMADULU
(Shaviyani Atoll)
SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
(Alifu Dhaalu Atoll)
FELIDHE ATOLL
(Vaavu Atoll)
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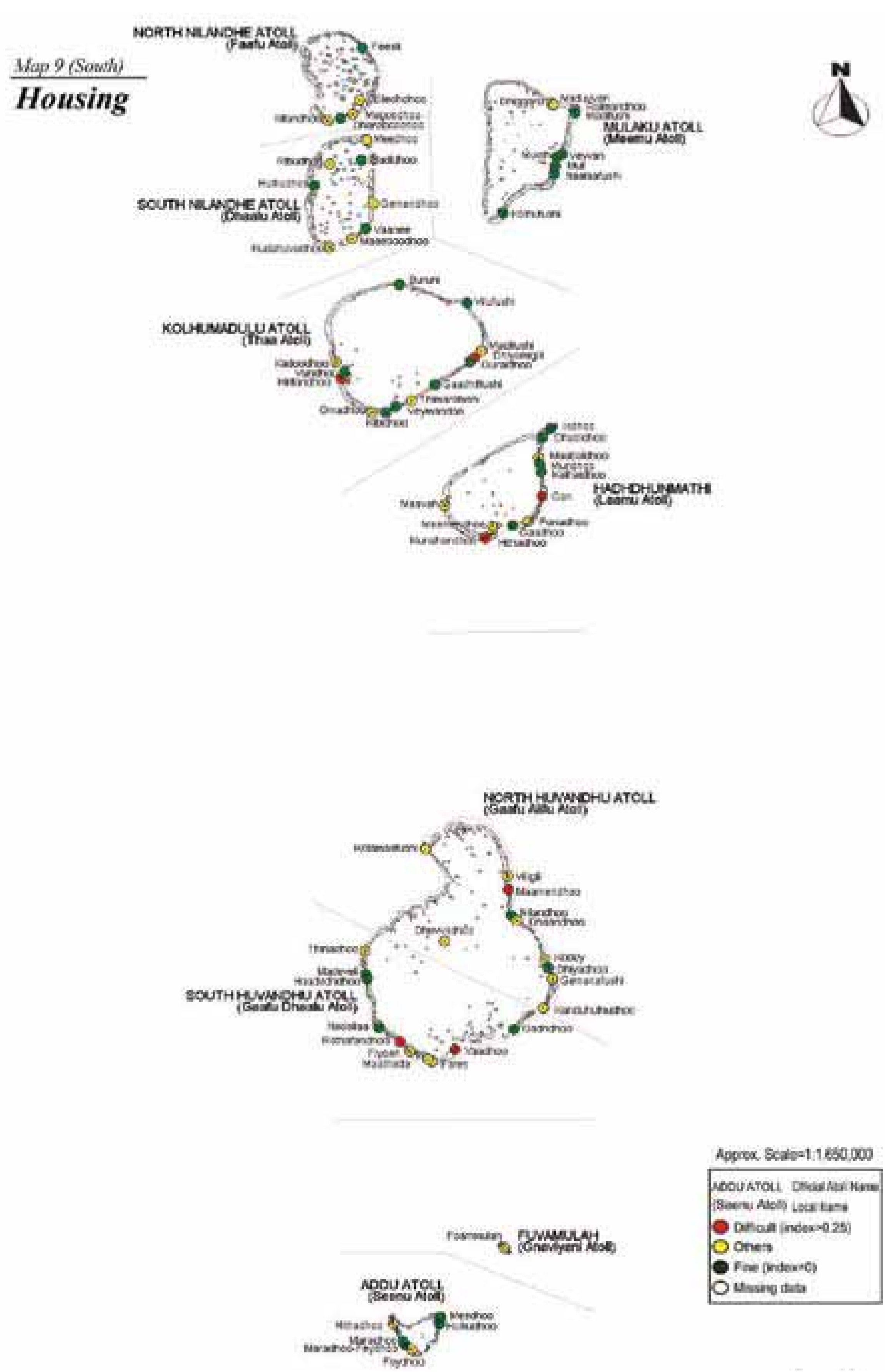
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Housing
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SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
ADDU ATOLL
(Seenu Atoll)
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(Seenu Atoll) Local Name
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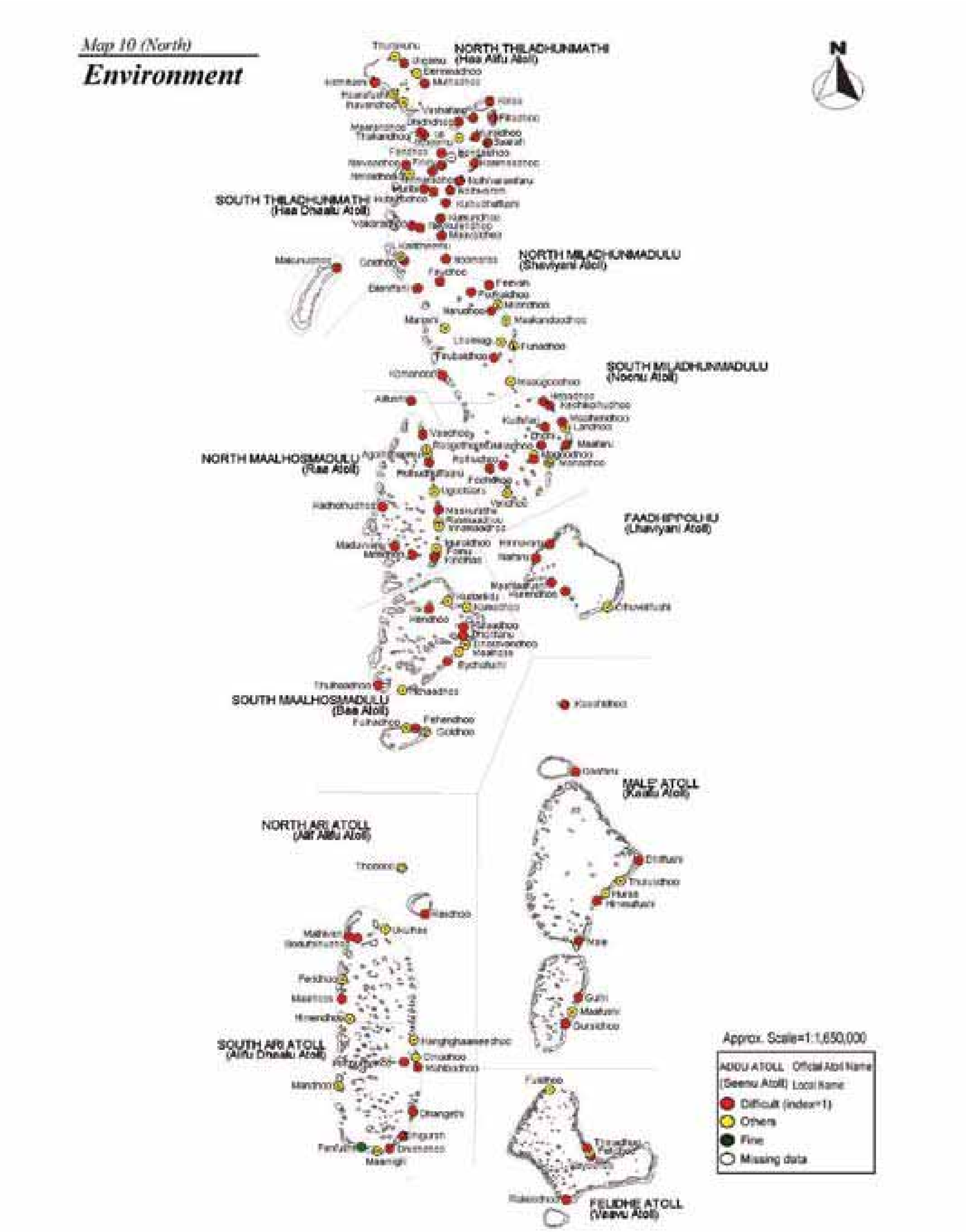
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Environment
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SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
(Alifu Dhaalu Atoll)
FELIDHE ATOLL
(Vaavu Atoll)
Approx. Scale=1:1,650,000
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Difficult (index=1)
Others
Fine
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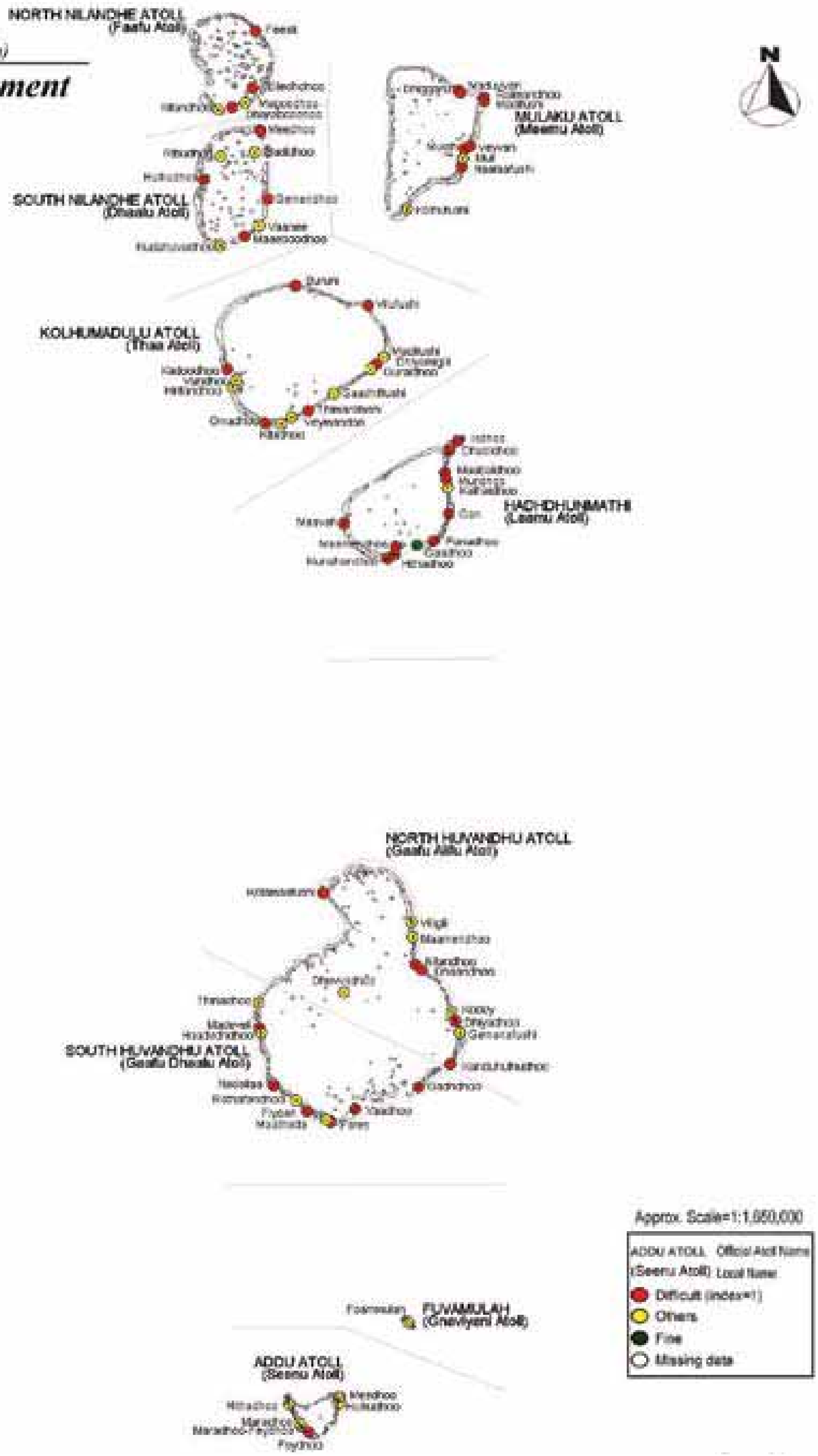
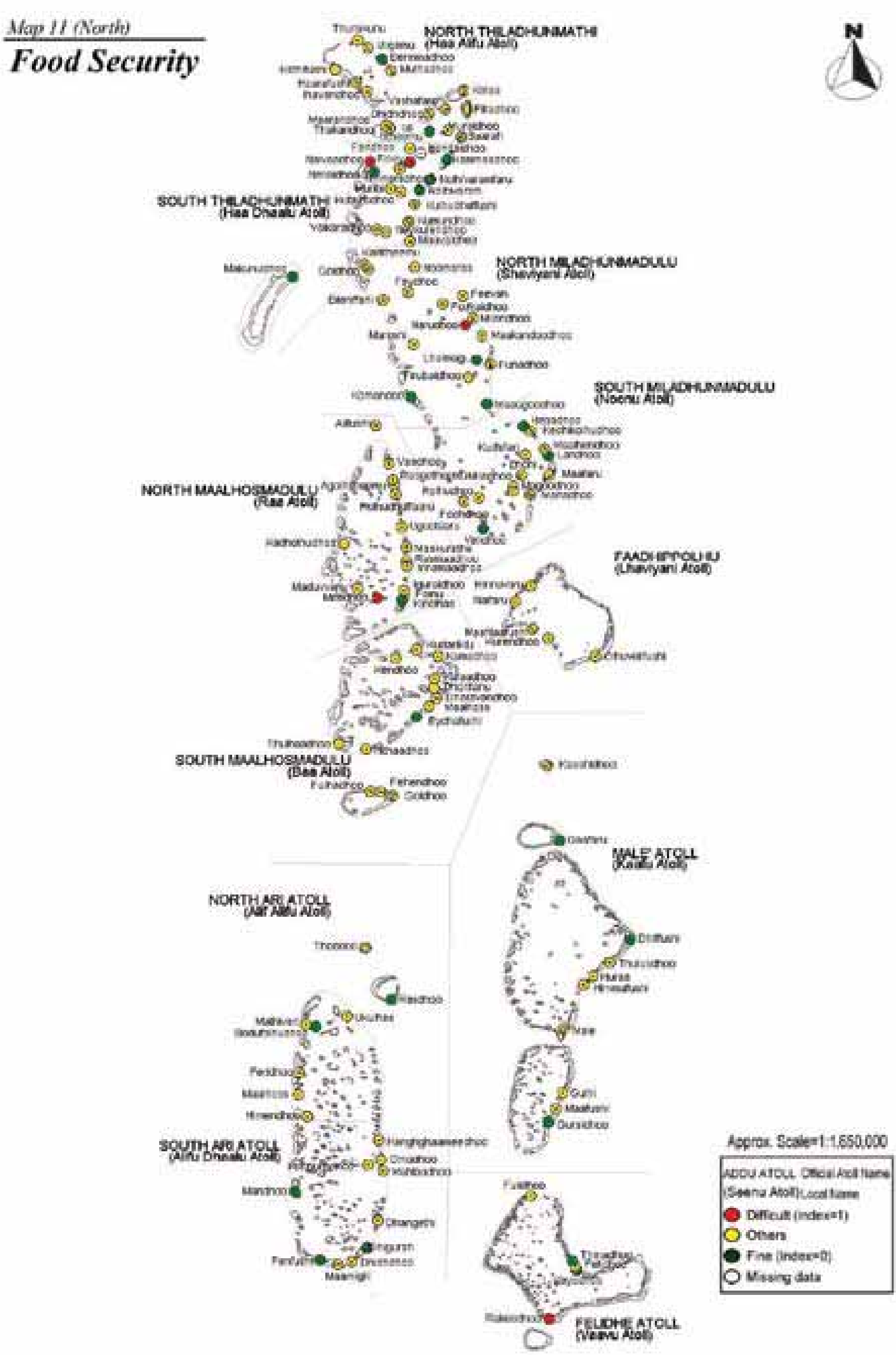
Map 10 (South)

Environment

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Food Security
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(Haa Alifu Atoll)
SOUTH THILADHUNMATHI
(Haa Dhaalu Atoll)
NORTH MILADHUNMADULU
(Shaviyani Atoll)
SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
(Alifu Dhaalu Atoll)
FELIDHE ATOLL
(Vaavu Atoll)
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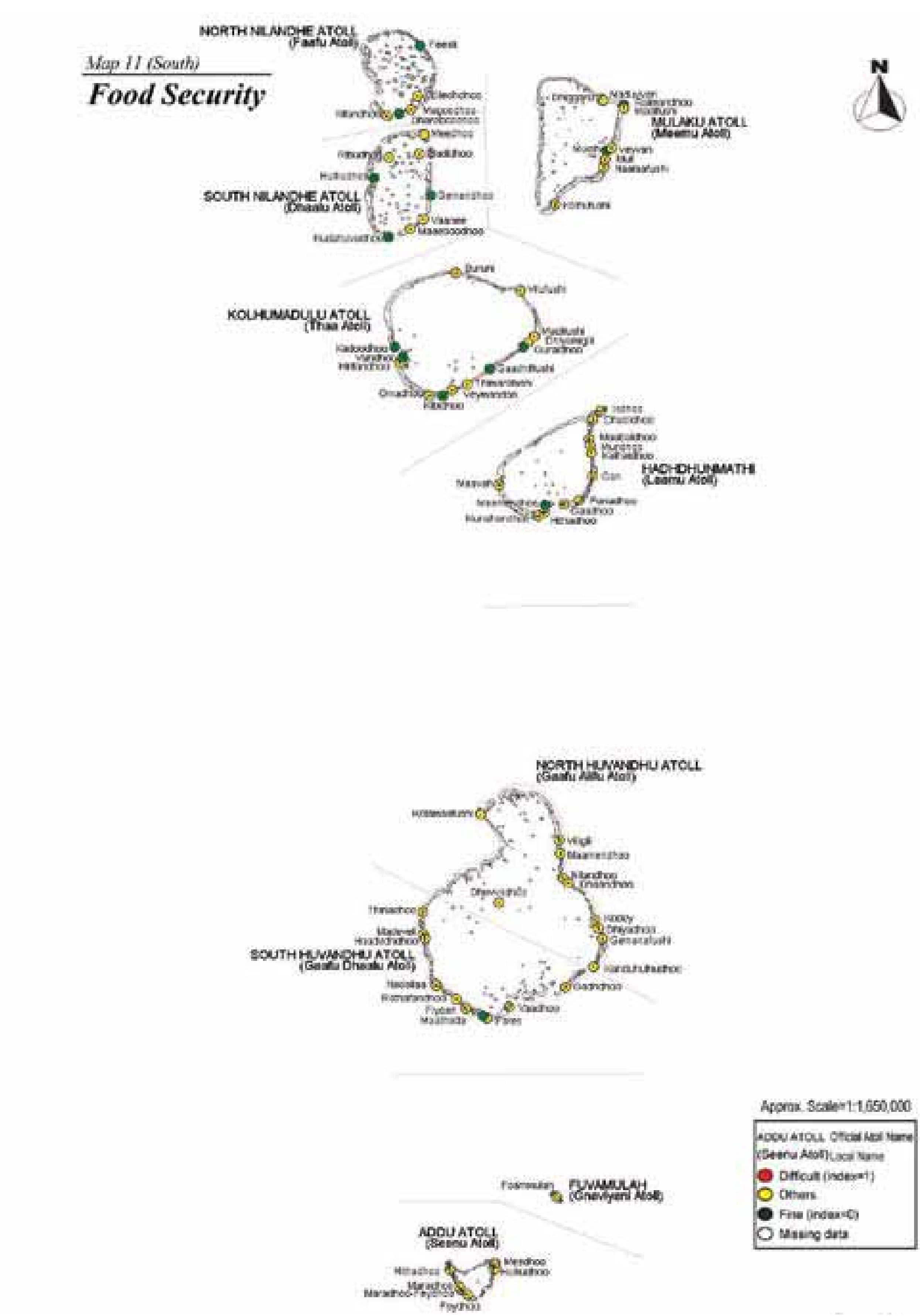
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Food Security
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MULAKU ATOLL
(Meemu Atoll)
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(Dhaalu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
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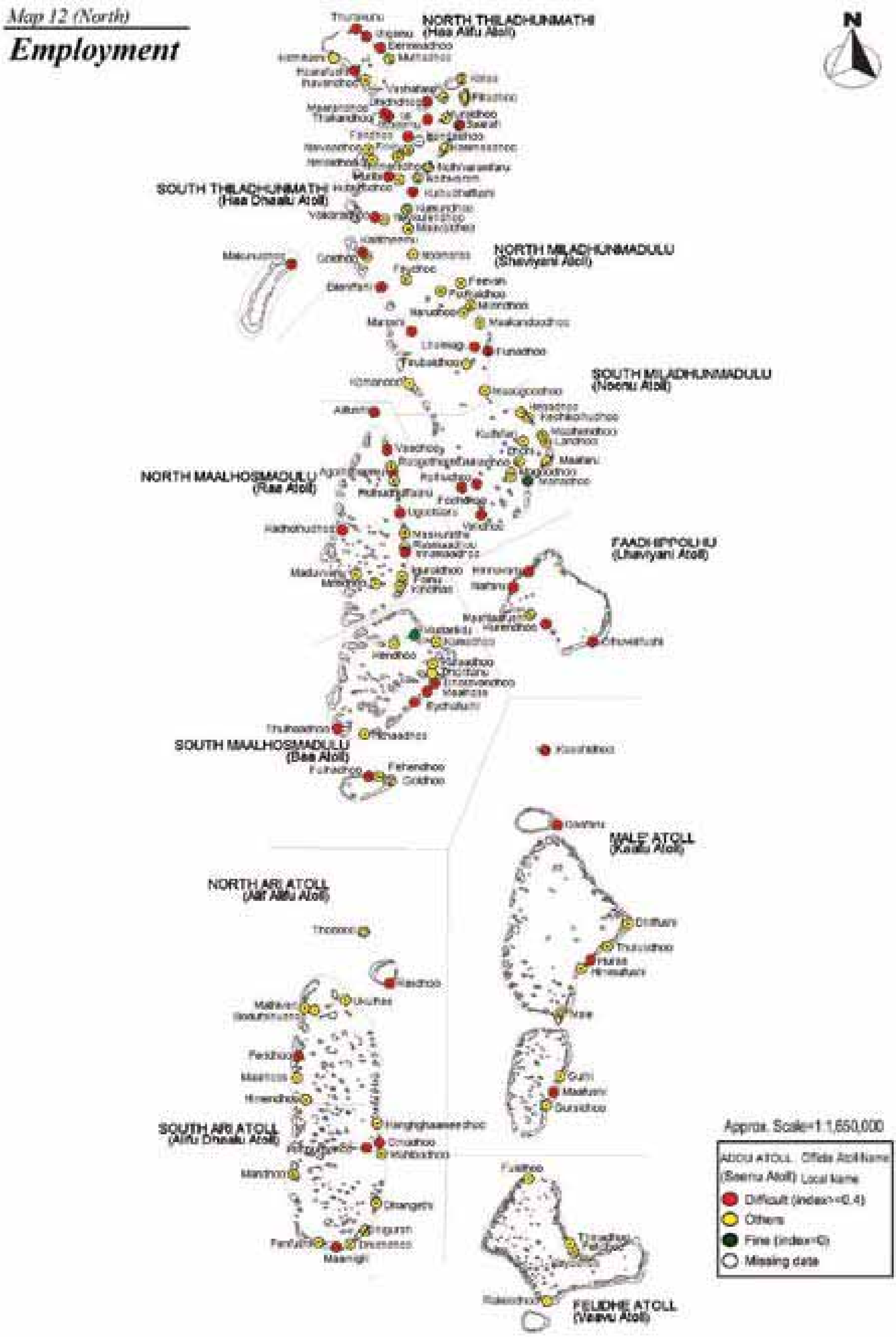

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Employment
N
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(Haa Alifu Atoll)
SOUTH THILADHUNMATHI
(Haa Dhaalu Atoll)
NORTH MILADHUNMADULU
(Shaviyani Atoll)
SOUTH MILADHUNMADULU
(Noonu Atoll)
NORTH MAALHOSMADULU
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
SOUTH MAALHOSMADULU
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
NORTH ARI ATOLL
(Alif Alifu Atoll)
SOUTH ARI ATOLL
(Alifu Dhaalu Atoll)
FELIDHE ATOLL
(Vaavu Atoll)
Male
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Difficult
Others
Fine
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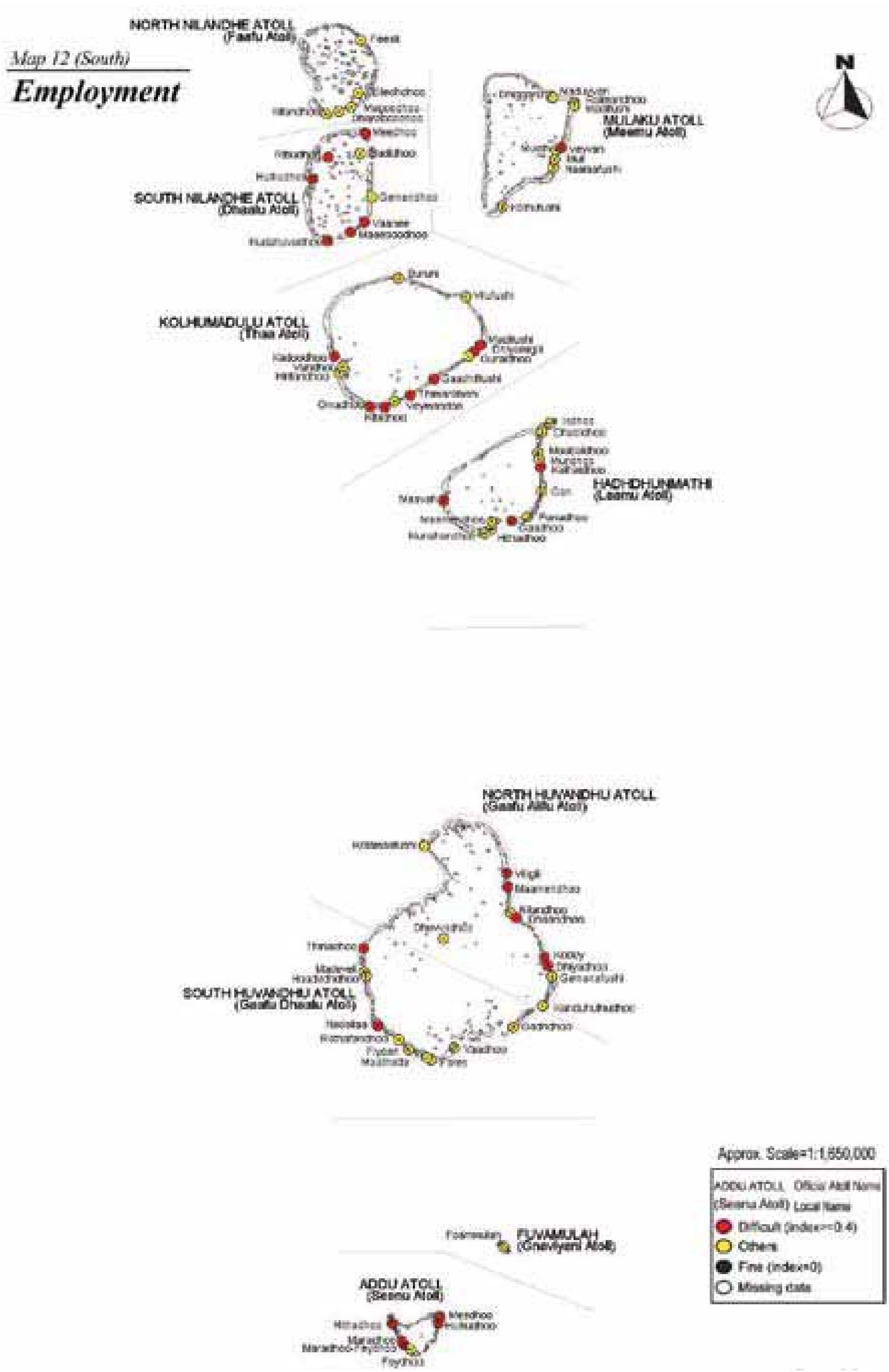
Map 12 (South)
Employment
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SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
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(Seenu Atoll)
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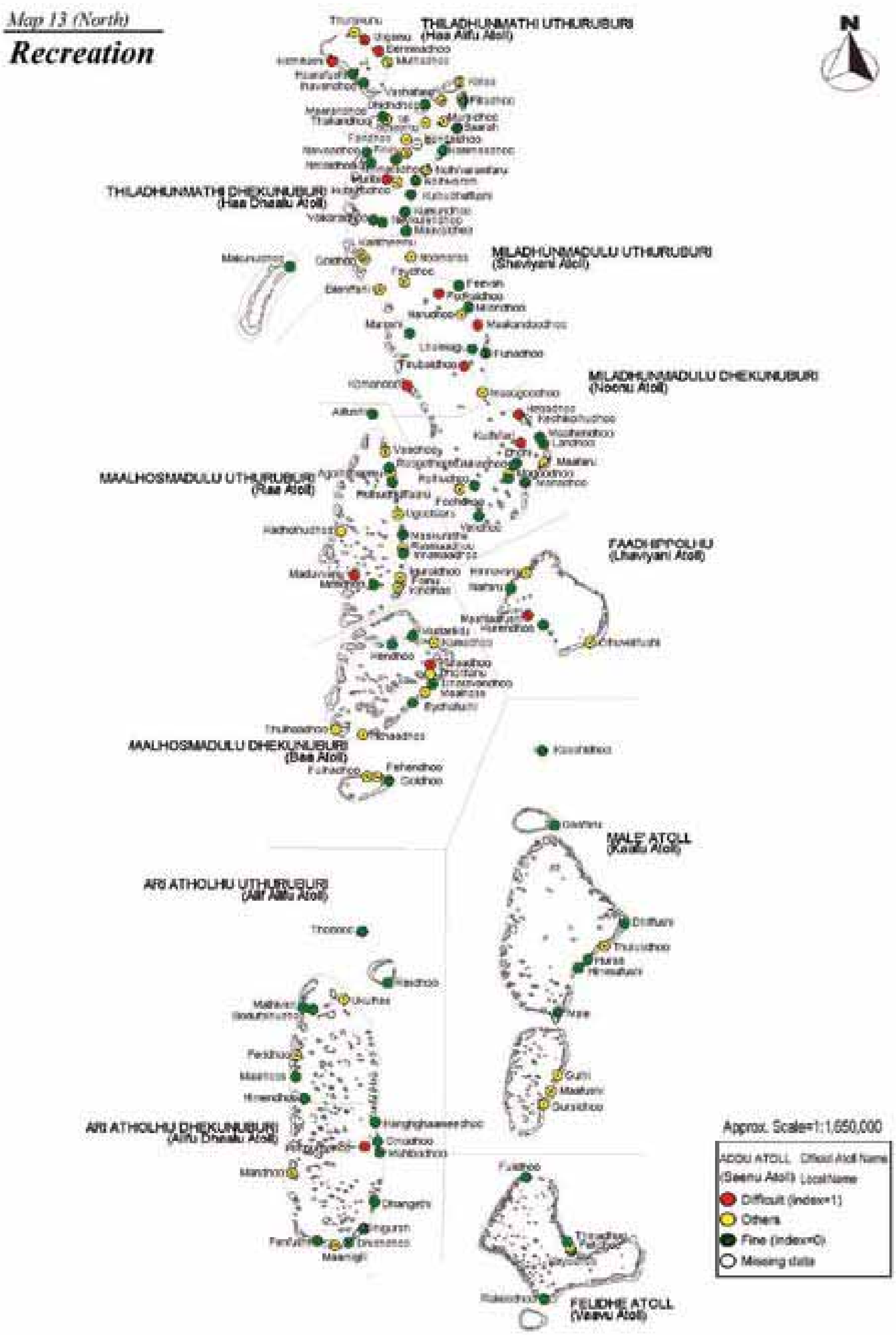
Map 13 (North)
Recreation
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(Haa Alifu Atoll)
THILADHUNMATHI DHEKUNUBURI
(Haa Dhaalu Atoll)
MILADHUNMADULU UTHURUBURI
(Shaviyani Atoll)
MILADHUNMADULU DHEKUNUBURI
(Noonu Atoll)
MAALHOSMADULU UTHURUBURI
(Raa Atoll)
FAADHIPPOLHU
(Lhaviyani Atoll)
MAALHOSMADULU DHEKUNUBURI
(Baa Atoll)
MALE' ATOLL
(Kaafu Atoll)
ARI ATHOLHU UTHURUBURI
(Alif Alifu Atoll)
ARI ATHOLHU DHEKUNUBURI
(Alifu Dhaalu Atoll)
FELIDHE ATOLL
(Vaavu Atoll)
Approx. Scale=1:1,650,000
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Others
Fine (index=0)
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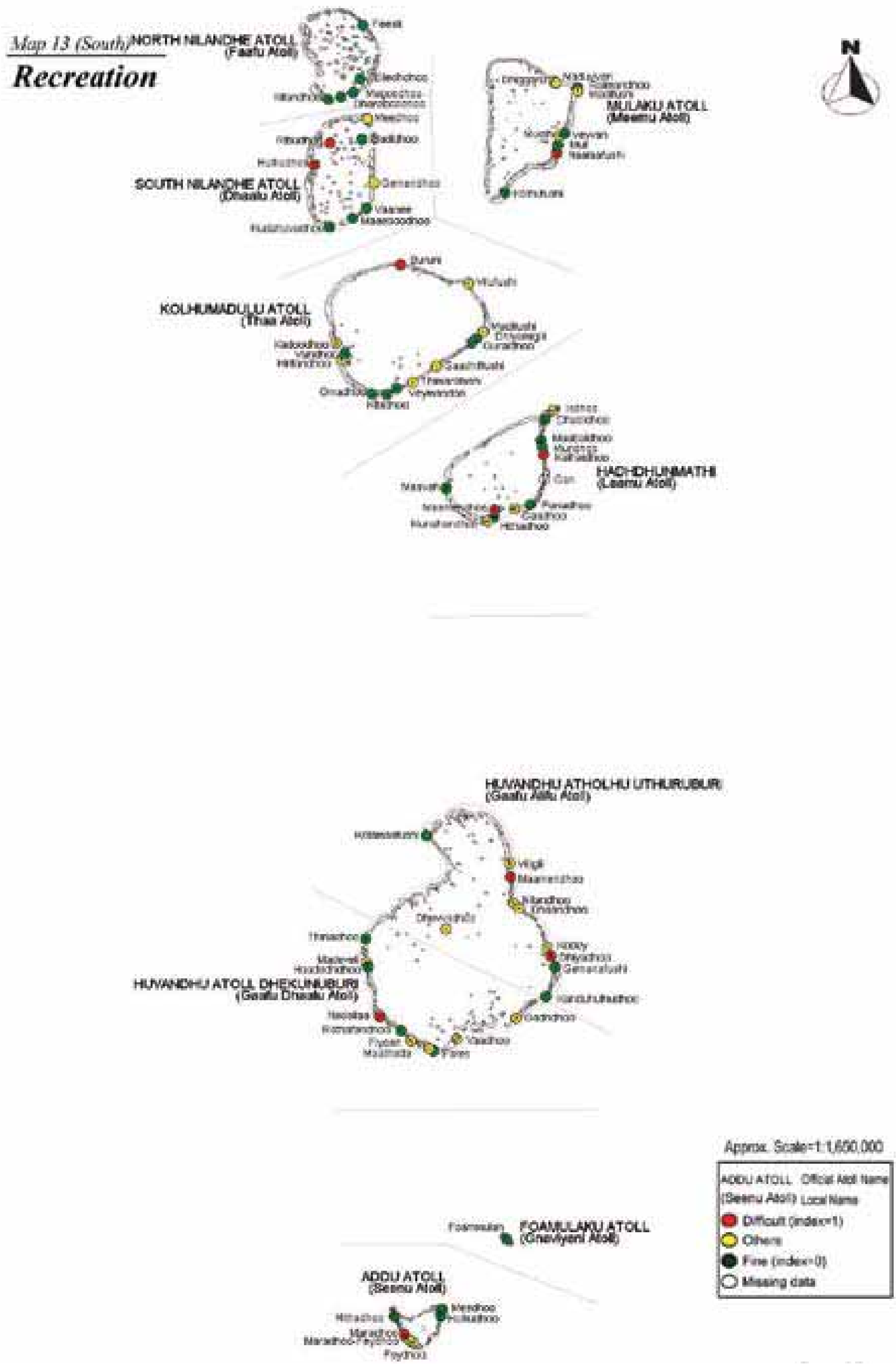
Map 13 (South)
Recreation
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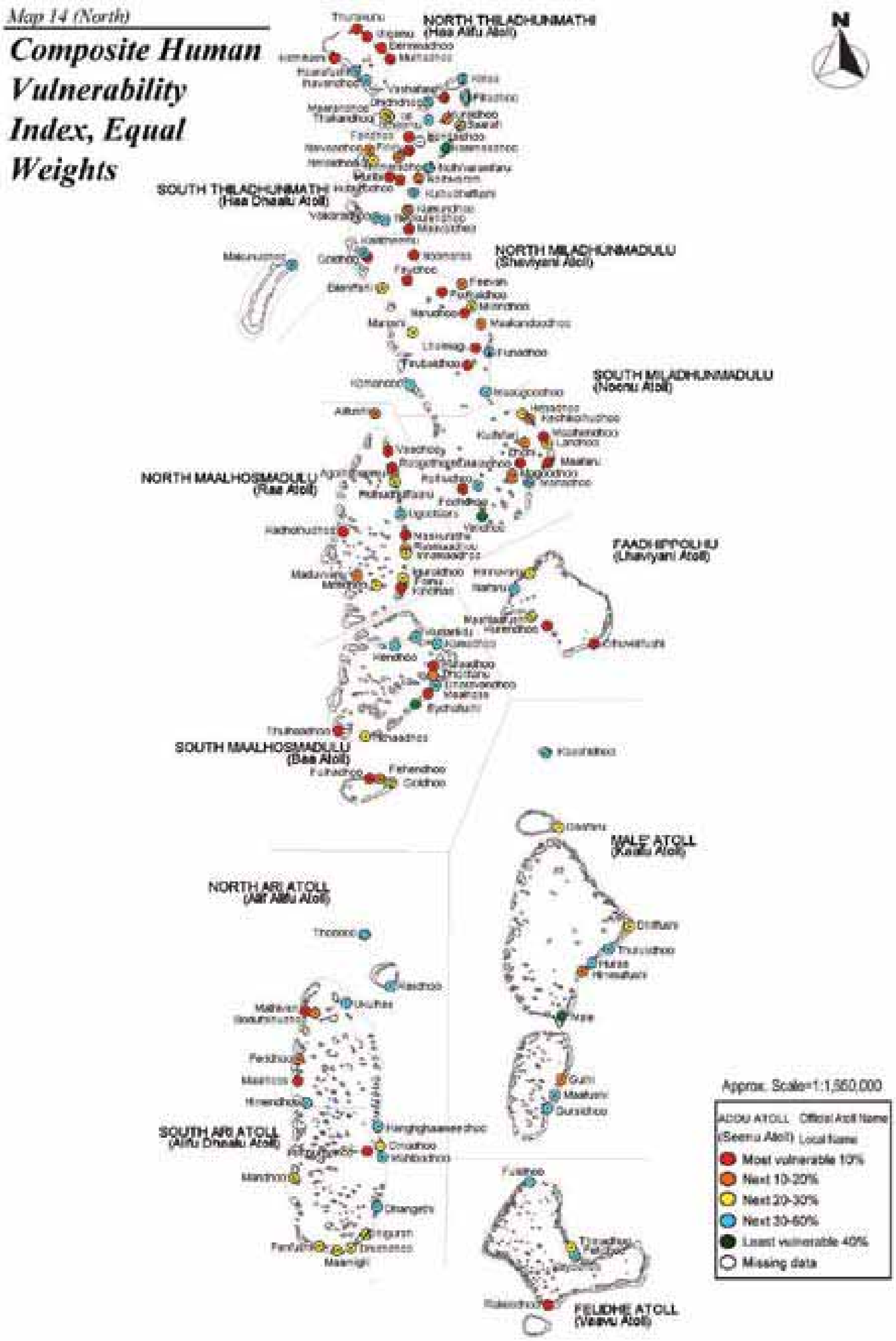
MULAKU ATOLL
(Meemu Atoll)
SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
HUVANDHU ATHOLHU UTHURUBURI
(Gaafu Alifu Atoll)
HUVANDHU ATOLL DHEKUNUBURI
(Gaafu Dhaalu Atoll)
FOAMULAKU ATOLL
(Gnaviyani Atoll)
ADDU ATOLL
(Seenu Atoll)
Approx. Scale=1:1,650,000
ADDU ATOLL Official Atoll Name
(Seenu Atoll) Local Name
Difficult (index=1)
Others
Fine (index=0)
Missing data


Map 14 (North)
Composite Human Vulnerability Index, Equal Weights
N
NORTH THILADHUNMATHI (Haa Alifu Atoll)
SOUTH THILADHUNMATHI (Haa Dhaalu Atoll)
NORTH MILADHUNMADULU (Shaviyani Atoll)
SOUTH MILADHUNMADULU (Noonu Atoll)
NORTH MAALHOSMADULU (Raa Atoll)
FAADHIPPOLHU (Lhaviyani Atoll)
SOUTH MAALHOSMADULU (Baa Atoll)
MALE' ATOLL (Kaafu Atoll)
NORTH ARI ATOLL (Alif Alifu Atoll)
SOUTH ARI ATOLL (Alifu Dhaalu Atoll)
FELIDHE ATOLL (Vaavu Atoll)
Approx. Scale=1:1,560,000
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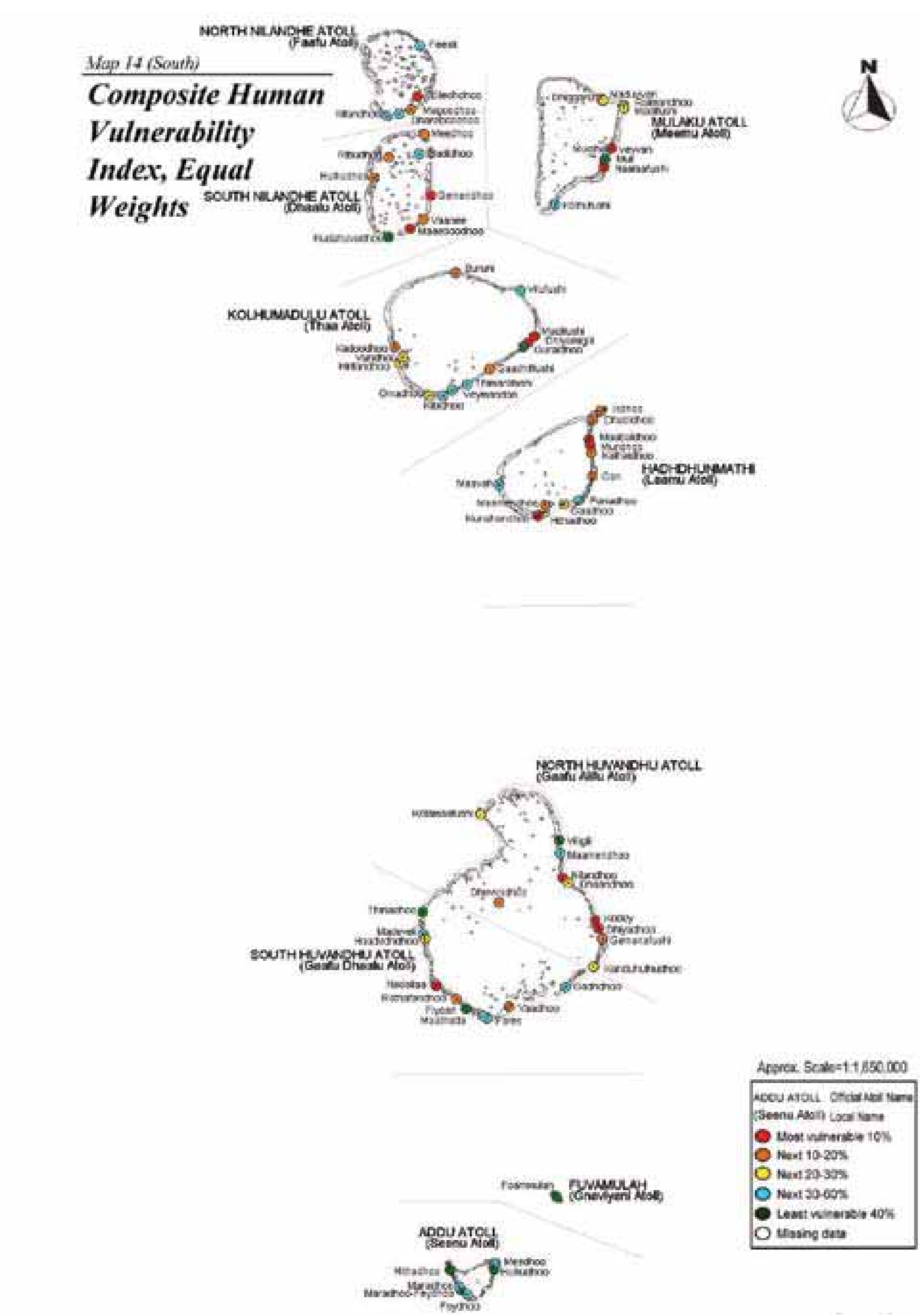
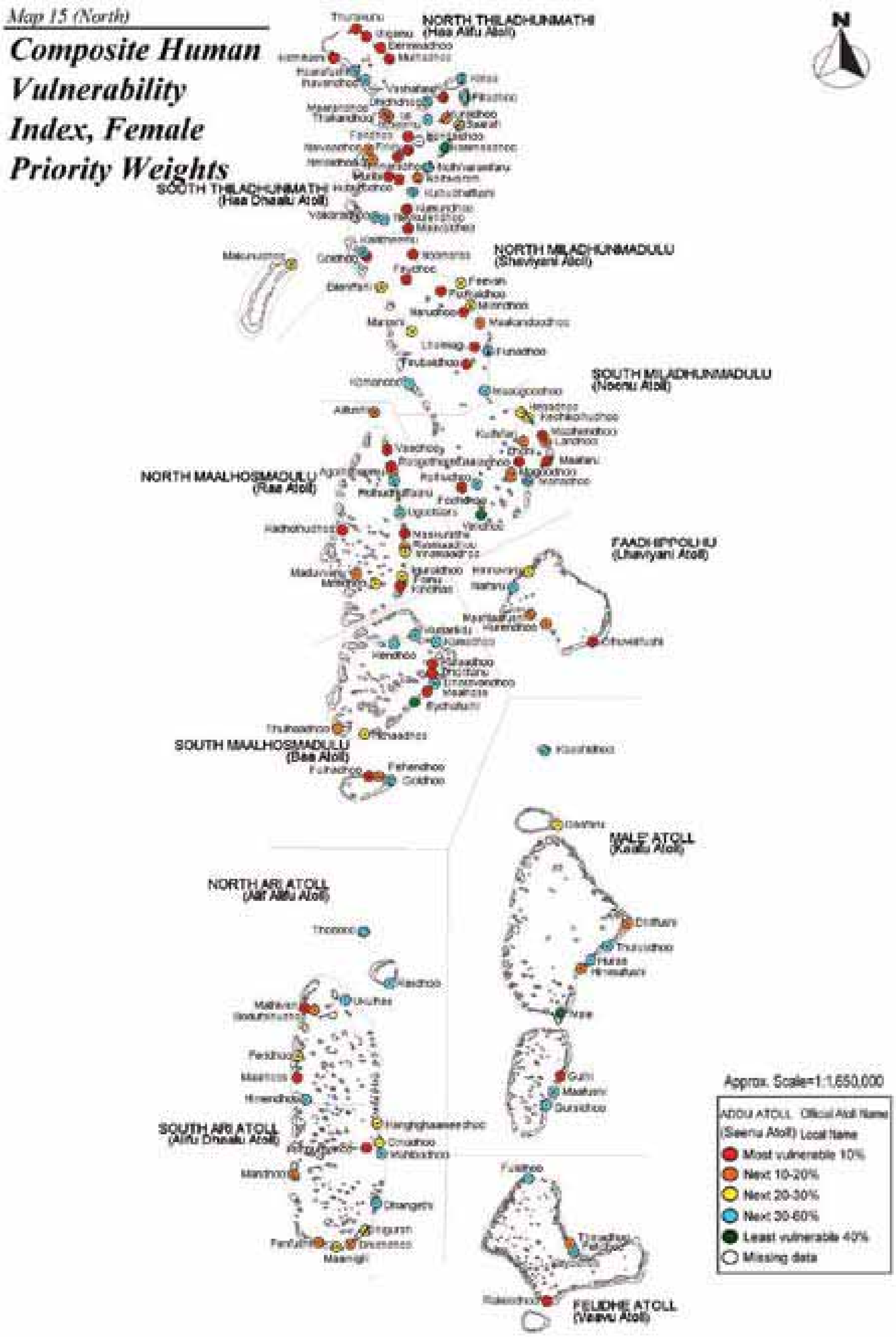
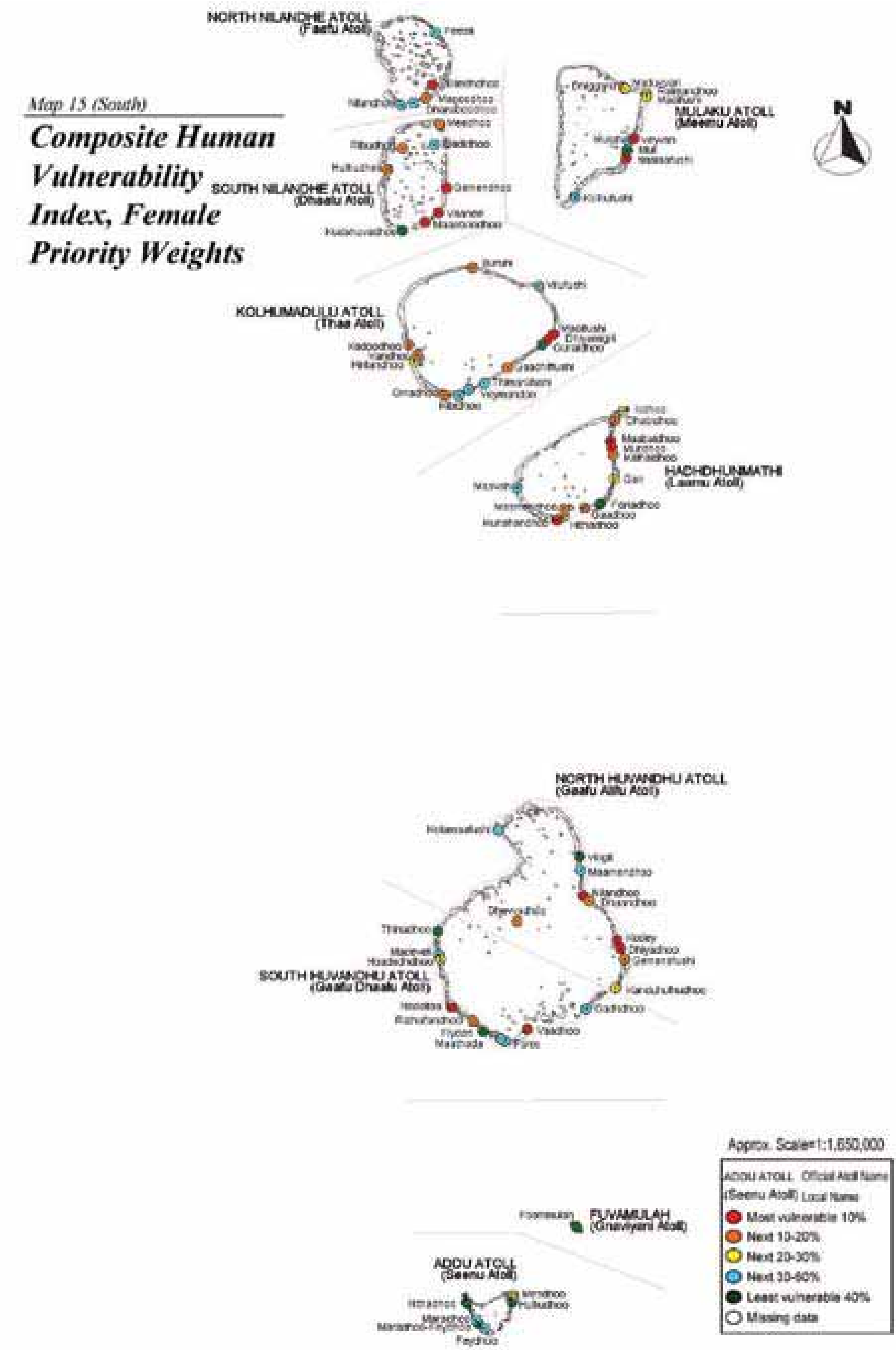
(Seenu Atoll) Local Name
Most vulnerable 10%
Next 10-20%
Next 20-30%
Next 30-60%
Least vulnerable 40%
Missing data


Map 14 (South)
Composite Human Vulnerability Index, Equal Weights
NORTH NILANDHE ATOLL
(Faafu Atoll)
SOUTH NILANDHE ATOLL
(Dhaalu Atoll)
MULAKU ATOLL
(Meemu Atoll)
KOLHUMADULU ATOLL
(Thaa Atoll)
HADHDHUNMATHI
(Laamu Atoll)
NORTH HUVANDHU ATOLL
(Gaafu Alifu Atoll)
SOUTH HUVANDHU ATOLL
(Gaafu Dhaalu Atoll)
FUVAMULAH
(Gnaviyani Atoll)
ADDU ATOLL
(Seenu Atoll)
N
ADDU ATOLL Official Atoll Name
(Seenu Atoll) Local Name
Most vulnerable 10%
Next 10-20%
Next 20-30%
Next 30-60%
Least vulnerable 40%
Missing data


Map 15 (North)
Composite Human Vulnerability Index, Female Priority Weights
N
NORTH THILADHUNMATHI (Haa Alifu Atoll)
SOUTH THILADHUNMATHI (Haa Dhaalu Atoll)
NORTH MILADHUNMADULU (Shaviyani Atoll)
SOUTH MILADHUNMADULU (Noonu Atoll)
NORTH MAALHOSMADULU (Raa Atoll)
FAADHIPPOLHU (Lhaviyani Atoll)
SOUTH MAALHOSMADULU (Baa Atoll)
MALE' ATOLL (Kaafu Atoll)
NORTH ARI ATOLL (Alif Alifu Atoll)
SOUTH ARI ATOLL (Alifu Dhaalu Atoll)
FELIDHE ATOLL (Vaavu Atoll)
Approx. Scale=1:1,650,000
ADDU ATOLL Offical Atoll Name
(Seenu Atoll) Local Name
Most vulnerable 10%
Next 10-20%
Next 20-30%
Next 30-60%
Least vulnerable 40%
Missing data

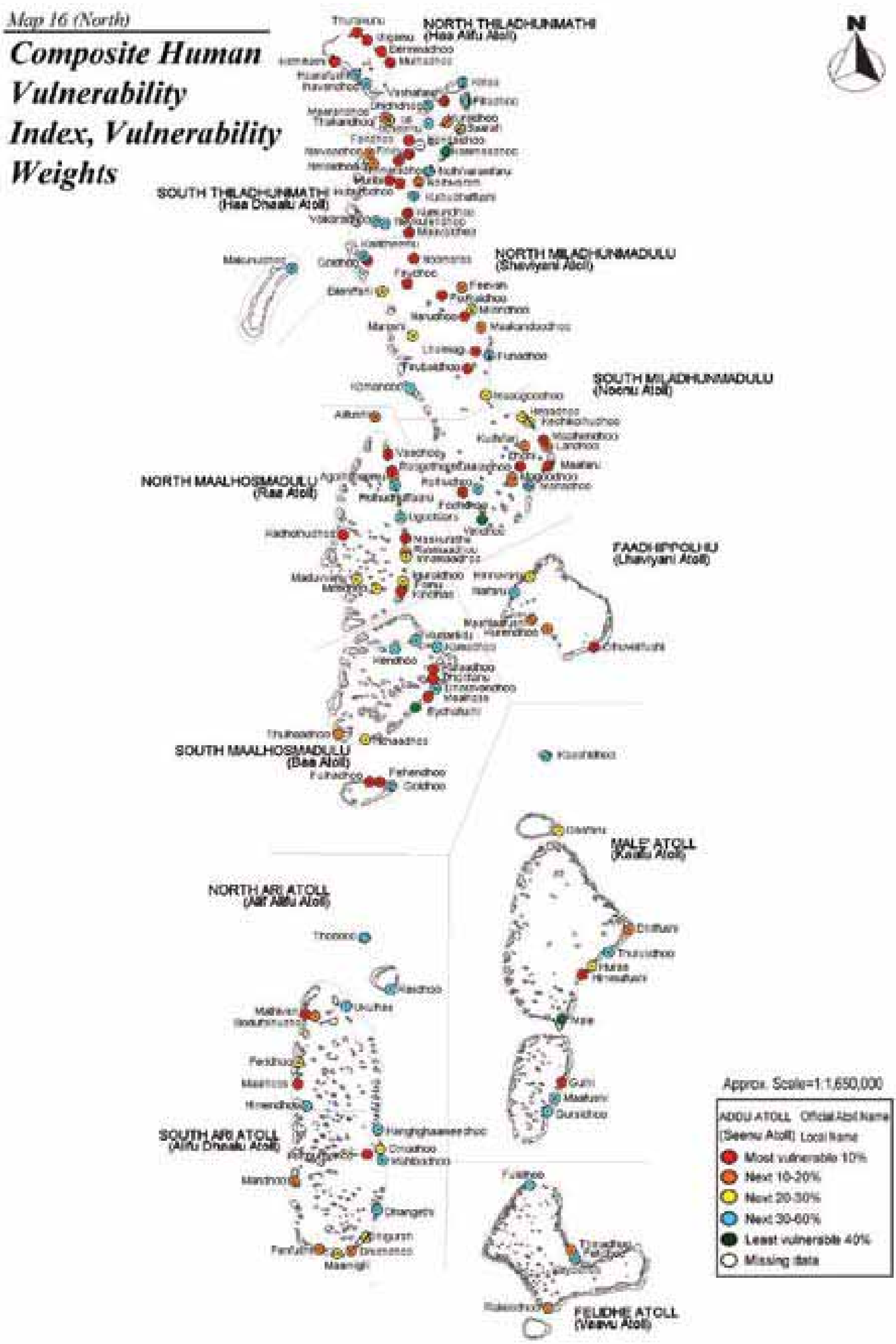
Map 15 (South)

Composite Human Vulnerability Index, Female Priority Weights



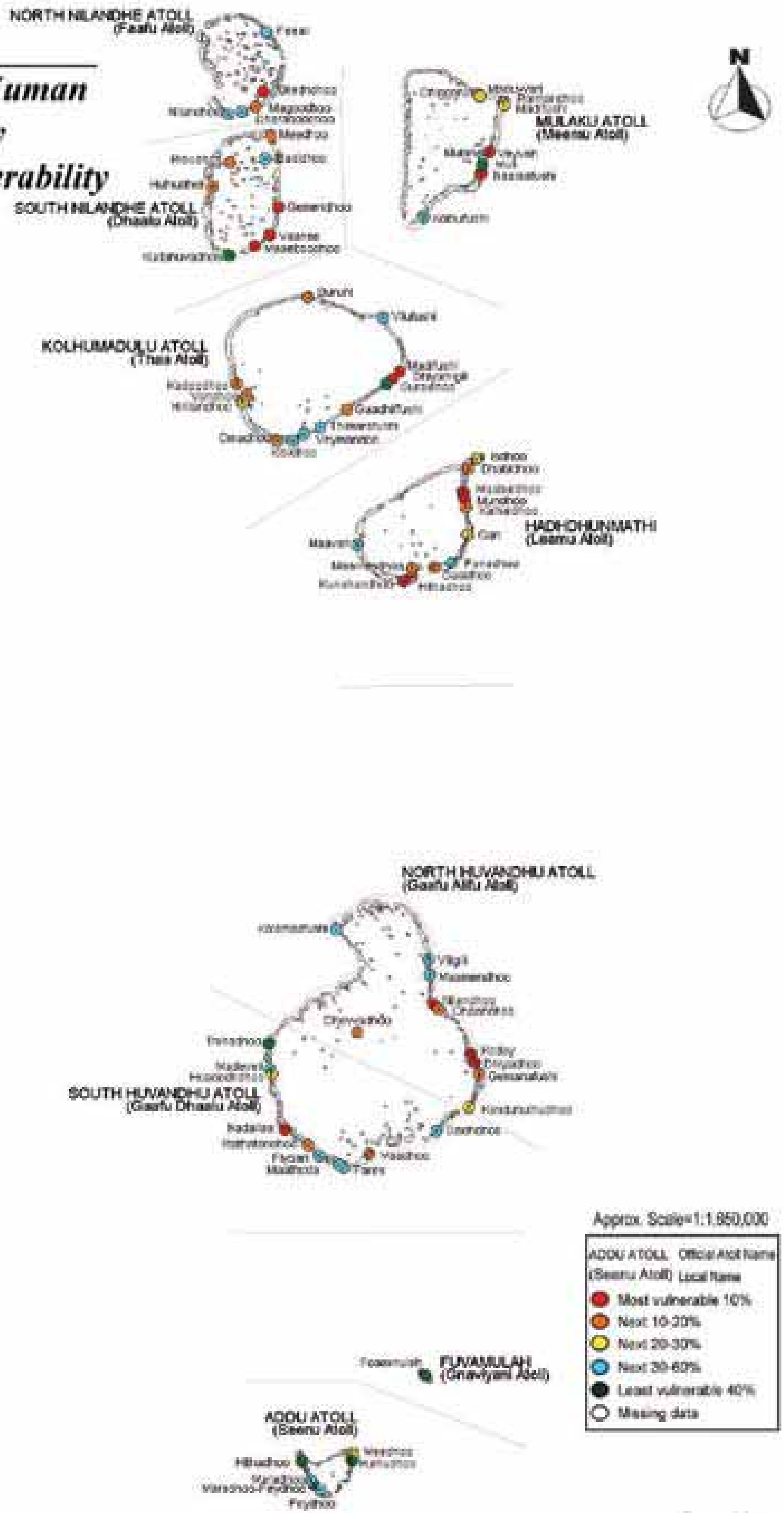
Map 16 (North)

Composite Human Vulnerability Index, Vulnerability Weights



Map 16 (South)

Composite Human Vulnerability Index, Vulnerability Weights



PART 4

Technical Notes

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 Indicators[1]

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

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.

1.2.2 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.

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

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

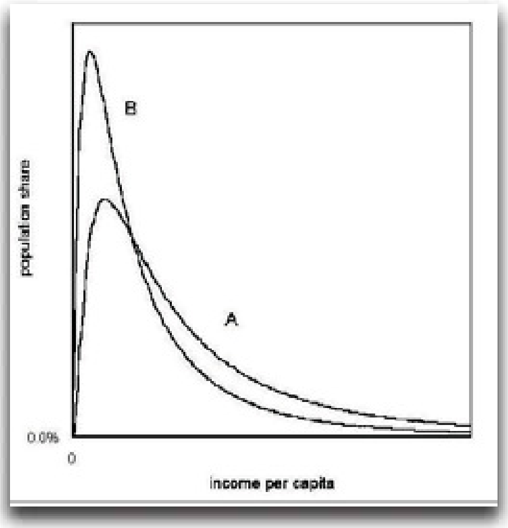
The previous sections have shown that the choice of the poverty line and the choice of the poverty indicator are not straightforward, but subject to uncertainties and arbitrariness. However, that does not mean that nothing can be said about poverty comparisons between regions. The new and rapidly developing 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 Atkinson[2], Foster and Ravallion[3] , and Jenkins[4] 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.

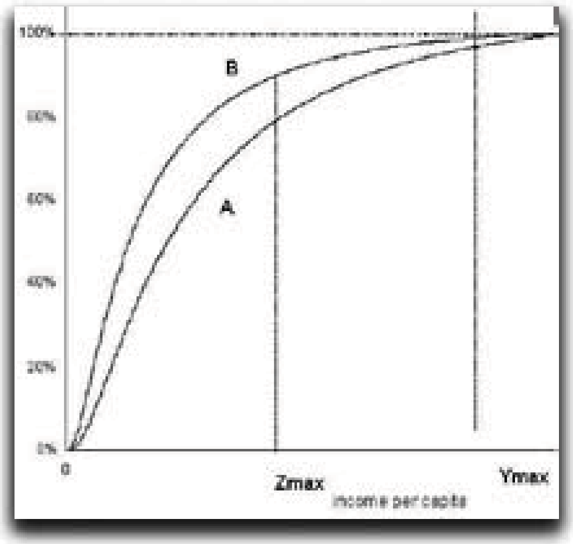
Figure 1. Frequency distributions for two regions A and B

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 2. Cumulative frequency distributions for two regions A and B



The cumulative frequency distributions in

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

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

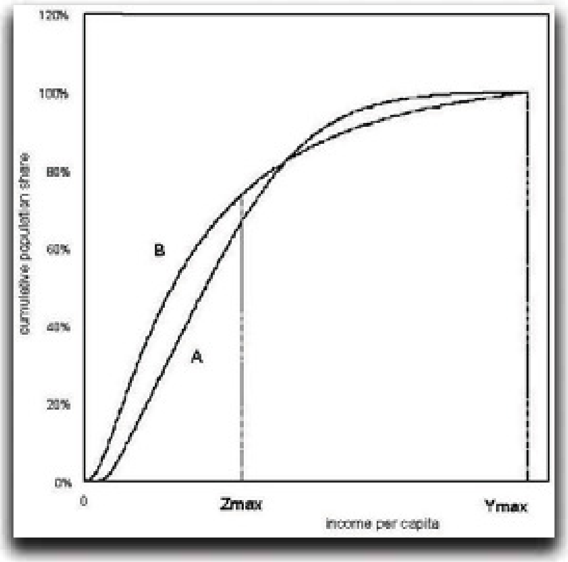
4 *Stephen P. Jenkins and Peter J. Lambert, Three I's of Poverty Curves: TIPs for Poverty Analysis, forthcoming.*

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 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.

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 $z < zmax$, where zmax 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*I), the y-axis of Figure 4, is actually the area under the curve of Figure 3 (normalised by z).

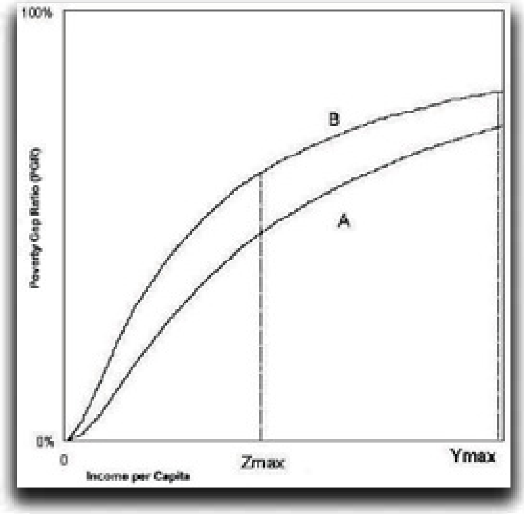
Figure 3. Intersecting cumulative frequency distributions for regions A and B



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 $z > zmax$.

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.

Figure 4 Poverty gap ratio for two regions A and B



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:

Estimates of Life Expectancy and Infant Mortality

This Technical Note describes details of methods and computational procedures used in deriving measures of infant mortality and life expectancy referred to in the main report, Chapter 6, section "Infant mortality and Life expectancy at Birth.

Section 1 describes the qualities of different data sources and methods, , while section 2 describes the assumptions underlying the indirect method of estimating infant mortality, the Brass technique. Section 3 deals with the procedure to measure the Infant Mortality Rate from census 2000 data on (i) survival status (alive, not alive) of children born to women 15 years and older in the year preceding the 2000 Census and (ii) data on reported household deaths by age during the same period. In the sections 4 and 5 a description is given of the procedure used in estimating infant mortality rate (IMR) and life expectancy at birth (e(0)) from respectively the VPA-2 data and the Census 2000 data.

1. Qualities of different data sources and methods

1.1 Continuous recording of births and deaths (VRS) – direct method

The much lower statistics for the IMR derived from birth and death records compared to all other sources of data raises the question about the accuracy of the VRS system in Maldives is. The following play a part in the assessment the VRS accuracy:

· The VRS-system is a continuous reporting system where recording of births and deaths is guided by rules that prescribe that reporting and recording should take place within a short defined period after the occurrence of the event. This reduces the possibility that events are not registered. Typical for Maldives is that births or deaths cannot go unnoticed in any of the small island communities where local authorities are responsible for keeping the population registers.

- By law no person can be buried without a death certificate.
- Most parents realise the importance of getting a birth certificate for use later in life, so that there is incentive in being registered.
- The VRS system does not need to be perfect to produce unbiased IMRs. As long as live births are under-recorded by the same percentage as the infant deaths, the IMR computed from the available records will still be unbiased and present a true picture of the real level.
- Like anywhere else in the world, under-recording of deaths remains more probable than under-recording of births. This would result in a downward bias to the IMRs.
- Double-recording of births or deaths is far less probable than non-recording, although incidental double-counting cannot entirely be ruled out.
- The number of cases of infant deaths in Maldives is small because (i) the population is small; (ii) mortality is declining; (iii) fertility is declining. This would explain fluctuations in IMRs computed from annual data, but it does not explain why IMRs

computed from the VRS are systematically lower than IMRs obtained from other sources.

- In the VPA 1998 report mention was made of a then recent assessment of the quality of the VRS system in Maldives that highlighted several weaknesses[1] of the system. Although this study was not officially published the authorities did take the points raised seriously and were quick in improving the administrative system by introducing a triplicate recording form which is said to have led to a decrease in "record loss" within the system. Partly based on sample spot checks, senior staff of the Ministry of Planning and National Development claim that the VRS now covers virtually all births ands deaths.

- The coverage may have improved, but other issues remain problematic. These include delays in having records of deaths of islanders that occur in Male' sent back to the island authorities to update their population bookkeeping.

- Finally, the officially published figures of the life expectancy at birth (e(0)), are computed from two different sources of data. The e(0) is computed from a set of age-specific death rates (ASDRs), defined as number of deaths in a specific age group (numerator) divided by the number of people of that age at the mid-point of a year (denominator). The data for the numerator is obtained from the VRS, those for the denominator from census data or from projected population figures based on census data. If the census data are more complete than the death records, which is likely, the ASDRs will have downward bias resulting in upward biased estimates of e(0).

1 *Please refer to section 6.4 in the VPA 1998 report*

1.2 Data on deaths in the household in the year before data collection – direct method

- In general, recent deaths tend to be reported accurately. In some societies it has been observed that people are reluctant to report very recent deaths (e.g. as they are still in deep grief, or due to cultural taboos against talking about recent deaths). There is no evidence that Maldives is prone to systematic underreporting of deaths for such reasons.

- The reference period of 12 months prior to the census can cause difficulty for respondents because few people have a very accurate sense of time. A period of 12 months might be perceived either as shorter or longer, which would result in respectively underreporting or over-reporting of the number of deaths. The Maldives census date (1st April 2000) did not coincide with a convenient date like the first day or the mid-point of the year. It is possible that that some respondents in the census perceived the "12 months before the census" as "since the beginning of 2003", but there is no real proof for a systematic bias.

- Infant death statistics from a census can be affected by incorrect applying by the enumerator of definitions of "peri-natal" events (= events surrounding birth) like foetal death, still births, live births and infant deaths.

1.3 Survival status (alive, dead) of births occurring in the year before data collection

- This source of data (data type C) is affected by one other source of systematic downward bias compared to the data source discussed in section 1.2 above. If information on the number of dead infants is used as the numerator of the computation of the IMR, the IMR is not entirely accurate. This is because many of the births in the 12 months before the census have not yet reached the first birthday and are still exposed to the risk of dying after the census date. However, the fact that an increasing proportion of infant deaths take place in the first week or month after birth reduces this potential downward-bias because a vast majority of children born in the previous twelve months will already be past the most vulnerable period of the first week and month at the time of the census.

1.4 Children ever born and still alive to women 15-64 years old

- Women usually report their number of children accurately as this is an easy question.
- Children that died very soon after birth are more prone to be under-reported, especially in older women who might have given birth to a large number of children and who are more likely to have forgotten details about their early births (memory lapse).
- Evidence from women aged 15-19 is less reliable as (i) the number of births to teenagers is small, and (ii) these cases of birth or possible infant death are often a-typical.
- This information is used to estimate infant mortality based on certain assumptions regarding fertility and mortality patterns. The validity of these assumptions cannot always be easily established. (See section 3 in this Technical Note 2 for details).. In addition, reports on child survival from older women results in estimates of infant- and child mortality that refer to a date that can be several years before the date at which data is collected. This reference date can be estimated, depending on similar assumptions.

2. Procedure to Directly Measure the IMR from Census 2000 Data

The data used in this section have not been tabulated or analysed before and are of two different types, namely: (i) survival status (alive, dead) of children born to women 15 years and older in the year preceding the 2000 census and (ii) data on reported household deaths by age, also in the year before the 2000 census.. Comparing the IMRs based on these two different sources helps to assess the internal consistency of the 2000 population census data.

In Table 2.1 data from the first data type, data on number of children ever born and surviving to women 15 years and older, are given for both sexes and for each of the 20 atolls.

The total births (column 1) consist of total the live births (column 2) and the total still births(column 4). The total live births are divided into those who are still alive (column 3) and those who died in infancy (column 5). 55 infant deaths where reported by Maldivian women, resulting in an IMR (computed in column 7) of 10 for the Republic, 11 for the atolls and 4 for Male'.

These statistics are low, even lower than the ones derived from the VRS in 2003. Two factors account for this. First, a high percentage of the children born in the year before the census will not have reached the first birthday, they will still be exposed to mortality risk for several months; those who might die after the census date but before their 1st birthday would increase the 'true' IMR. But as on average 11/12 = 92% will have lived beyond the most vulnerable first month of life, this factor is relatively small. Secondly, the number of still births, that technically should be included in rates of pregnancy wastage and not in the IMR, is more than double the number of infant deaths. For example, the still birth ratio in column 9, which relates the still births to the live births for Maldives, is 21, much higher than the

Table A2.1. IMR based on survival status births from women's reports in year prior to census 2000; Maldives, Male', and each of the atolls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total births	Total live births	Total still alive	Total still births	Total infant deaths	Total infant deaths + still births	IMR(b)	% still births = col5/ col6	Still birth ratio =col5/ col2	IMR (max)
Republic	**5664**	**5544**	**5489**	**120**	**55**	**175**	**9.9**	**69**	**21**	**31.6**
Male'	**997**	**962**	**958**	**35**	**4**	**39**	**4.2**	**90**	**35**	**40.5**
Atolls	**4667**	**4582**	**4531**	**85**	**51**	**136**	**11.1**	**63**	**18**	**29.7**
Haa Alifu	360	356	353	4	3	7	8.4	57	11	19.7
Haa Dhaalu	455	450	445	5	5	10	11.1	50	11	22.2
Shaviyani	314	308	305	6	3	9	9.7	67	19	29.2
Noonu	241	239	237	2	2	4	8.4	50	8	16.7
Raa	387	382	378	5	4	9	10.5	56	13	23.6
Baa	204	200	198	4	2	6	10.0	67	20	30.0
Lhaviyani	210	204	198	6	6	12	29.4	50	29	58.8
Kaafu	200	197	195	3	2	5	10.2	60	15	25.4
Alif Alifu	138	130	128	8	2	10	15.4	80	58	76.9
Alif Dhaalu	162	155	154	7	1	8	6.5	88	43	51.6
Vaavu	38	37	37	1	0	1	0.0	100	26	27.0
Meemu	118	108	108	10	0	10	0.0	100	85	92.6
Faafu	105	105	104	0	1	1	9.5	0	0	9.5
Dhaalu	123	121	119	2	2	4	16.5	50	16	33.1
Thaa	186	185	182	1	3	4	16.2	25	5	21.6
Laamu	284	279	275	5	4	9	14.3	56	18	32.3
Gaafu Alifu	270	264	263	6	1	7	3.8	86	22	26.5
Gaafu Dhaalu	308	304	303	4	1	5	3.3	80	13	16.4
Gnaviyani	191	189	187	2	2	4	10.6	50	10	21.2
Seenu	373	369	362	4	7	11	19.0	36	11	29.8

Table A2.1. IMR based on survival status births from women's reports in year prior to census 2000; Maldives, Male', and each of the atolls

IMR. This phenomenon is very unusual and it is *likely that several births reported as still births are actually infant deaths*. This might be a reflection of difficulty in understanding the definitions of still births and infant deaths by census enumerators and respondents. If all children reported as dead before birth are actually infant deaths who died shortly after child birth, the IMR for the Republic would have been 32, see column 10.

Now we turn to Table A2.2 compiled from recorded deaths that occurred in households in the year before the 200 census.

For each of the deaths occurring in the household in the year before the census the age at death in years was reported. For infants additional information was asked about the number of months and days that they lived before dying. There were about 50 cases of people reported dead at the age of 99 years, x months and y days, where x and y are not 0. It was assumed that these were infant deaths. Cases where only 99 was reported for "year" without entries for "months" or "days" were excluded from the infants as it was assumed that the age of death was unknown (=code 99). Deaths classified as 0 years 0 months and 0 days were assumed to be still births. Having made these assumptions the IMR was calculated taking the reported number of live births as the denominator. The IMR for the Republic of Maldives is then 32, the same as the maximum IMR in Table A2.1 If we were to make the unrealistic assumption that all 0 years, 0 months and 0 days are infant deaths, the IMR would have been as high as 40 per 1000 live births.

The total number of reported infant deaths for Maldives in the year prior to the 2000 census in Table A2.2 is 176, much higher than the 55 infants in Table A2.1, but this is expected because it includes all infants, also the ones who were born before 12 months prior to the census. The still birth ratio implied in Table A2.2 (= 47/5544 live births = 8.5 per 1000) is more realistic, so we can adopt IMR = 32 for Maldives as the best plausible estimate of the IMR from the 2000 census data on reported births and deaths.

Table A2.2. IMR computed from reported infant deaths in household in the year before the 2000 census: Maldives, Male' and all atolls

	(1)	(2)	(3)	(4)	(5)	(6)
	Total live births	Assumed deaths and still births	Assumed still births [1]	Assumed Infant deaths[2]	IMR(b)	IMR(max)
Republic	**5544**	**223**	**47**	**176**	**31.7**	**40.2**
Male'	**962**	**44**	**7**	**37**	**38.5**	**45.7**
Atolls	**4582**	**179**	**40**	**139**	**30.3**	**39.1**
Haa Alifu	356	14	2	12	33.7	39.3
Haa Dhaalu	450	19	8	11	24.4	42.2
Shaviyani	308	14	4	10	32.5	45.5
Noonu	239	6	2	4	16.7	25.1
Raa	382	21	0	21	55.0	55.0
Baa	200	6	2	4	20.0	30.0
Lhaviyani	204	4	1	3	14.7	19.6
Kaafu	197	9	2	7	35.5	45.7
Alif Alifu	130	8	5	3	23.1	61.5
Alif Dhaalu	155	7	1	6	38.7	45.2
Vaavu	37	3	0	3	81.1	81.1
Meemu	108	2	1	1	9.3	18.5
Faafu	105	2	0	2	19.0	19.0
Dhaalu	121	4	1	3	24.8	33.1
Thaa	185	13	2	11	59.5	70.3
Laamu	279	14	4	10	35.8	50.2
Gaafu Alifu	264	8	1	7	26.5	30.3
Gaafu Dhaalu	304	8	2	6	19.7	26.3
Gnaviyani	189	5	1	4	21.2	26.5
Seenu	369	12	1	11	29.8	32.5
Notes1,2	*Assumed infant deaths are all who died at age 0 minus the assumed still births plus those reported to have died at age 99, x months and y days assumed still births are those reported having died at age 0 years, 0 months, 0 days*					

Source: Computed from data from the Population and Housing Census of Maldives 2000, Ministry of Planning and National Development

3. The Brass Technique for Indirectly Estimating Child Mortality

3.1 Description of the technique

The purpose of this technique is to estimate early age mortality from data on the average number of children ever born and the average number of children surviving, tabulated by age group of mother.

Brass (Brass and others, 1968) has shown that the probability of dying between birth and age a (denoted as q(a)) can be estimated as q(a) = K(x,5) * D(x,5) where D(x,5) refers to the *proportion of children dead to women in age group (x,x+5)* and Kx,5) is an age-specific factor, called a multiplier, which depends on indices of the age pattern of fertility. Under this system, the proportion of children dead to women in age groups 15-20, 20-25, 25-30,..., 45-50 are used to calculate the probability of dying q(a) between birth and 1st, 2nd, 3rd , 5th. 5, 10th , 15th and 20th birthdays, respectively. Through simulations, regression equations have been developed which relate the multipliers K(x,5) to indices of the fertility schedule. Nine separate sets of regression equations have been estimated, the first five for each of the United Nations models (see Palloni and Heligman, 1985) and the last four for each of the Coale and Demeny models (the Trussell regressions, see United Nations, 1983). The independent variables that estimate the q(a) values, as well as the time references, are calculated from the input data to the procedure. In addition to the proportion of dead children by age group other parameters needed are the ratio of average number of children ever born for women in the first age group to that in the second age group (P1/P2), the ratio of average number of children ever born for women in the second group to that in the third group (P2/P3), and the mean age of mother at childbearing in the population (M'). The last variable is used only for the calculations based on the United Nations models.

The Trussell regressions use P1/P2 and P2/P3 in the regression equations that take the form of K(x,5) = a(x,5) + b(x,5) * P1/P2 + c(x,5) * P2/P3 where x =age 15,20,25,30,35, 40 and 45 and a, b and c are constants that only vary with each of the four model mortality patterns in the set of Coale and Demeny models called North, East, South and West. Tables of the constants a, b, and c used for each of the age groups of mothers and for each of the four Coale and Demeny models are published in United Nations; Indirect Techniques for demographic estimation; Manual X; New York, 1983; page 76. The West pattern was adopted as the best model to fit Maldives age pattern of mortality.

Through a second set of simulations, regression equations have also been developed, from the same set of independent variables (D(x,5), P1/P2 P2/P3) which estimate the time reference to which these q(a) values refer. Regression equations are used to calculate estimates of the infant mortality rate (q(0,1)), the probability of dying between ages 1 and 5 (q(1,4)), and the life expectancy at birth corresponding to the q(a) values within each model life table pattern (both sexes combined).

3.2 Implied Assumptions of the Brass Technique and Consequences of Non-Validity

All demographic estimation techniques are based on assumptions of which the analyst needs to be aware in order to avoid drawing conclusions that cannot stand the test of plausibility. The ideal laboratory conditions under which the Brass technique would yield 'perfect' results rarely exist, and Maldives is no exception. We will discuss the main assumptions underlying the Brass technique and conclude that the Brass technique can reasonably be applied to the Maldives demographic situation, and if used critically will give results that are within a reasonable margin of 'reality'.

Assumption 1: The mortality risk of a child is a function of the age of the child, and is not related to mother's age or birth order.

In practice, children born to very young or older mothers are at higher risk of dying for well-known social and mainly biological reasons. The same applies to first-borns or children of a high birth-order, especially in populations where levels of fertility are high and where birth spacing is little practised.

In the interpretation of results of the Brass estimation technique little weight is given to reports on survival of their children from very young (15-19) and older women (40+). Response by women aged group 15-19 was totally discarded for Maldives because the number of mothers in this age group was just too small. Reports from older women were ignored for other reasons: reports from older women usually suffer from recall lapse problems; moreover, their evidence refers to the not so recent mortality conditions and is therefore of less interest for the estimation of current mortality levels. Most weight was given to the response from women in the age groups 20-24, 25-29 and 30-34.

Assumption 2: Fertility has been constant in the recent past.

Rapid fertility decline could imply that the P1/P2 and the P2/P3 ratios are no longer a reliable indicator of the age pattern of fertility. In the analysis of the data from the VPA-2 survey, the estimates were made for Maldives, both sexes using multipliers K(x,5) that were computed using three different methods. The Trussell equations using West model were compared with an older method suggested by Brass that derived K(x,5) from an equation using the mean age of fertility, and a newer method (Palloni/Heligman, South Asian pattern) that also used the mean age of fertility. The results were so close that there was no reason to discard the Trussell equations that were also used in the analysis of the VPA97 data.

Assumption 3: Childhood mortality has been constant in recent past

Constant mortality in the recent past cannot be generally assumed, in particular in populations (like the Maldivian) that have enjoyed political stability and economic growth during the last decade and where mortality declined quite rapidly. In the original Brass method, conflicting estimates based on different age groups of mothers could have been problematic. But the more recent the Trussell refinements allowed, in conditions of relatively smooth mortality change, for computation of time reference periods to which the various estimates based on reports from mothers in various age groups refer. In the Maldives mortality decline may not have been all that gradual and smooth. This implies that the child mortality estimates obtained from reports from mothers 25-29 and 30-34 will reflect mortality conditions less good than the current ones, and bias, if any, might be up rather than down, presenting a less favourable picture based of current mortality.

Assumption 4: Estimates of life expectancy at birth are accurate only when the assumed mortality pattern matches the real Maldives mortality pattern.

The Brass technique is NOT designed to estimate adult mortality. Nonetheless the technique is often used to derive estimates of life expectancy at birth that results from evidence of the force of mortality over the entire age range. Without any real evidence of age-specific mortality for the population 20 years and older, estimates of e(0) can only be accurate as long as the model used in the estimates fairly accurately fits the real population. There is some doubt that the best fit (Coale and Demeny West model) might not have been the best model to fit the recent Maldives pattern of mortality and that this may have resulted in underestimates of the life expectancy at birth for Maldives.

4. Procedure of Estimating IMR and E(0) from VPA-2 Data

The analysis of the VPA-2 data is by and large a repeat of the analysis carried out on the data of the 1997 Vulnerability and Poverty Assessment (VPA-1), the results of which were reported in the VPA Report 1998. Estimation from the VPA-2 was more difficult because due to mortality and fertility decline the occurrence of infants dying in small atoll populations was so rare that the statistical base for the estimates became very narrow. The difficulties that this presented are discussed in section 4.1. Section 4.2 focuses on explaining specific choices that inevitably had to be made in the procedure for estimating infant mortality and life expectancy for Maldives and its administrative subdivisions.

4.1 Statistical base of the estimates

Estimating life expectancy and infant mortality in Maldives at the atoll level is far from straightforward. First, Maldives' population is small. The total atoll population, (entire country excluding the capital island of Male'), totals just over 200,000 spread out over 20 administrative atolls. The most populated atoll is Seenu (18,515 persons in the 2000 census), and the smallest is Vaavu atoll (1,753). Secondly, death is an increasingly rare event. Table A2.3 shows that according to vital registration data the infant mortality rate has declined from 27 in 1997 to 14 in 2003, a decline by almost 50%. Thirdly, the level of fertility has declined: also shown in Table A2.3 is that the number of annual births taking place in Maldives declined by more than 1,000 from 6,184 in 1997 to 5,154 in 2003. The combined effect of fertility and mortality decline more than halved the number of infant deaths over the 1997-2003 period to a recorded number of a mere 72 infant deaths in 2003, that is on average about 3.5 infant deaths per atoll per year, or about 1 infant death for every three inhabited islands.

Indirect estimation techniques are based on evidence from women on the survival status of their children of any age. This enlarges the statistical basis for the estimates somewhat, but even then the numbers at atoll level become critically low from a statistical perspective. As was outlined above, the evidence of mothers in the age groups 20-24, 25-29 and 30-34 is particularly important in estimation procedure. Thanks to VPA-2's large sample of about 3000 households a total of 1554 women aged 20-34 were included in the VPA-2 sample, and they reported the death of 123 female and 171 male children. These numbers are reasonable at the national level, but for the atolls the numbers become very small indeed, as is shown in Table A2.4.

In Table A2.4 figures are shown in red if less than 50 women were included in the sample in the atoll, or if less than 5 male or less than 5 female deaths were reported by the women in the age group 20-35. For these atolls, stable estimates of infant mortality should not be expected. Vaavu, Meemu, Faafu, Dhaalu and Gnaviyani atolls are problematic because of a small number of women in the sample.

Table A2.3. Births, Infant Deaths and IMR, Maldives, Both sexes, 1997-2003

Year	Number of Infant deaths	Number of births	IMR(b)
1997	165	6,184	26.7
1998	115	5,689	20.2
1999	104	5,225	19.9
2000	112	5,399	20.7
2001	85	4,897	17.4
2002	89	5,003	17.8
2003	72	5,154	14.0

Source: MPND, Annual Statistical Yearbooks; data derived from vital registration system

Table A2.4. Statistical basis for the VPA 2004 estimates of Infant Mortality and Life Expectancy

AREA	Women aged 20-34 in sample	Deaths of daughters to women 20-34	Deaths of sons to women 20-34	AREA	Women aged 20-34 in sample	Deaths of daughters to women 20-34	Deaths of sons to women 20-34
MALDIVES	**1554**	**123**	**171**				
MALE	**175**	**6**	**12**				
ALL ATOLLS	**1379**	**117**	**159**				
NORTH	298	20	49	**SOUTH CENTRAL**	272	25	36
Haa Alifu	80	2	19	Meemu	41	1	5
Haa Dhaalu	109	9	19	Faafu	34	4	4
Shaviyani	109	9	11	Dhaalu	40	4	3
NORTH CENTRAL	311	24	27	Thaa	74	4	8
Noonu	85	8	6	Laamu	83	12	16
Raa	102	4	13				
Baa	71	7	6				
Lhaviyani	53	5	2				
CENTRAL	257	20	24	**SOUTH**	241	28	23
Kaafu	79	9	3	Gaafu Alifu	54	8	5
Alif Alifu	68	3	12	Gaafu Dhaalu	77	15	14
Alifu Dhaalu	89	2	7	Gnaviyani	29	2	1
Vaavu	21	6	2	Seenu	81	3	3

Source: Vulnerability and Poverty Assessment 2004

4.1.1 Not enough basis for separate estimates for females and males

Comparing female and male infant deaths in Table A2.4 brings out another aspect of methodological difficulty. One would expect the sex ratio of the reported deaths of sons to daughters to lie between at least a wide range of 80 to 120 deaths of sons to 100 deaths of daughters. Only Baa, Faafu , Gaafu Dhaalu and Seenu atolls have a sex ratio of the reported children's deaths within that range. This implies that separate estimates for male and female mortality are likely to fluctuate for statistical reasons that have little bearing in reality.

The same conclusion was also reached by sex ratio analysis of (i) children ever born (CEB) (ii) children surviving and (iii) children death by age group of mothers. The overall sex ratio at birth for all age groups was very plausible (105.4 male births to 100 female births) well within the biologically expected range of 102 to 107 male to 100 female births. But the same sex ratio at birth for the 1st four age groups of women revealed a very erratic pattern of 49, 103 and 135 and 110 male births for 100 female births. This evidence supports the conclusion that it is not recommended to make separate estimates for male and female mortality on the basis of the data reported in the VPA-2.

4.2 Methodological choices made in the analysis of the VPA 2004 data

4.2.1 Fertility pattern and adopted values for P1/P2 and P2/P3

Older women will on average have older children who have been exposed longer to mortality risk and they can therefore, at the same level of mortality, be expected to have a lower proportion of surviving children than younger women. Even within the same age group of the mother mortality risk of their children varies depending on the timing of the mothers' births. If in a population child-bearing starts at a very early age, the children born to women in each age group will on average be older than when child-bearing start late, resulting in longer exposure to the risk of dying. Consequently, in a population with an early start to childbearing one would expect higher proportions of children dead in each age group of mothers than when child-bearing starts at a higher age.

The Trussell regression equations were used in the estimation procedure and in these equations the effect of early or late age at child-bearing is incorporated by values of P1/P2 and P2/P3 as discussed in section 2.1 of this Technical Note 2. Before applying the estimation technique we analysed whether the P1/P2 and the P2/P3 values obtained from VPA-2 for Maldives, Male' and the atolls were plausible by comparing them with the same ratios for the VPA-1 and Census 2000. The comparison is tabulated in Table A2.5.

Table A2.5. Parity ratios P1/P2 and P2/P3 from different sources, Maldives, Male' and Atolls

Source	P1/P2 (in %)			P2/P3 (in %)		
	Republic	Male	Atolls	Republic	Male	Atolls
	both sexes	both sexes	both sexes	both sexes	both sexes	both sexes
VPA 1997	6.0	6.0	6.5	42.2	24.6	45.6
Census 2000	3.1	1.9	3.7	37.2	29.0	41.1
VPA 2004	3.5	6.7	2.9	31.5	18.4	38.5

Source: Computed from the original sources

Comparing the two VPA studies conducted in 1997 and 2004 we observe a clear trend toward later child-bearing. At the national level very early childbearing became less prominent: in 2004only 3.5% of children born to women in the age group 15-24 take place to 15-19 year oldst compared to 6% in 1997. Similarly, whereas in 1997 over 40% of children ever born to women in the age group 20-29 were born to women in the age group 20-24, this percentage has dropped to 31.5% in 2004. In other words, a higher proportion of births to women in the age group 20-29 took place among the older 25-29 year olds. As expected, childbearing starts later in Male' compared to the atolls.

Comparison of parity ratios between Census 2000 and VPA-2 gives a less clear picture. The P1/P2 ratios for both sources are approximately the same, whereas the P2/P3 ratio for the VPA-2 is lower (indicating a trend toward later childbearing). No evidence of childbearing of women 30 years or over is included in either of the two parity ratios. Computation of the mean age of childbearing M' can determine which of the two has the earlier age at childbearing: M' = 29.8 years for Maldives in 2000, and 29.3 in 2004, thus a slight drop in mean age at childbearing. This is possibly explained by a general drop in the level of fertility: a smaller proportion of births are high-parity births occurring to older women.

Analysis of the parity ratios gives confidence in their use in estimation of infant mortality and life expectancy.

4.2.1 Choosing the best model mortality pattern

The Brass technique is designed to provide estimates of infant and child mortality, not for mortality at higher ages, and is therefore not the obvious tool to estimate life expectancy at birth, which is a statistic resulting from the force of mortality at all ages. However, if a mortality pattern can be found that accurately describes the relationship between child mortality and mortality at higher ages in the studied population, this model mortality pattern can then beused to estimate all mortality measures, including the life expectancy at birth.

4.2.1.1 Choosing the best model mortality pattern

Two sets of model life tables are/have been widely used, namely:

1. Coale and Demeny Region Model Life tables with four patterns called North, East, South and West
2. UN Life Tables, also with 4 patterns: Latin American, Chilean, Far Eastern and South Asian

The Coale and Demeny Regional Model life tables consisting of 96 life tables, laid out in the four patterns (or regions) consisting of 24 tables that each represent a different level of mortality in such a way that an increase by one level adds 2.5 years of female life expectancy at birth. Within this system Mortality Level 1 coincides with female liefe expectancy at birth = = 20 years, and ML 24 = 77.5 years. These models were developed nearly 50 years ago and at that time they reasonably represented the variety of real mortality patterns in populations in Europe and Africa. But they have been criticized as not being so suited to describe the mortality experience in Asian countries.

The UN life tables are not only of a more recent date, they are also based on a larger number of life tables from real populations including many Asian countries. It is believed that the South Asian pattern is the best suited to Maldives. Unfortunately at the time of writing these UN life tables were not accessible so that it was not possible to directly assess whether the South Asian model in the UN life tables is indeed the best fitting model for Maldives.

4.2.1.2 Three approaches to determine the best fit

Three approaches were used to determine which of the accessible patterns are best used in the estimation of e(0) and IMR for Maldives.

The first approach to selecting the best-fitting model was to use all four Coale and Demeny patterns to estimate for Maldives the probabilities of dying from birth up to age 1,2,3,5,10,15 and 20 based on reports by women in 7 age groups on the survival status of their children. Each model produced 7 estimates of probabilities of dying between birth and the mentioned ages. Next, the Coale and Demeny mortality levels (ML) that corresponded to each of the 28 estimates were determined through intrapolation. The results are shown in Table A2.6. The higher the value of ML, the lower the IMR and the higher the eo.

A perfect fitting model applied to perfect data in a situation of a constant level of mortality over time would have resulted in a constant value of ML for each of the age groups of the mother. Higher ML values at lower ages of the mother could be interpreted as an improvement of the health conditions in the population with subsequent improvement in the values of all mortality parameters. Although none of the 4 patterns show a particularly smooth progression in ML values, which is a sign of the narrow statistical base,, the West pattern shows least fluctuation. We can therefore conclude that "West is best" among these 4 patterns.

The second approach takes a recent life table for the Maldives as its starting point, namely the 2003 life table for Maldivian females, reproduced below in Table A2.7.

This life table gives the best possible picture of the Maldives mortality pattern as it incorporates the recorded age-specific mortality for all age groups ranging from 0-1, 1-4, 5-9, 10-14, etc. to 65-69 and 70 years and older. Usually the age-specific death rates shown in the nMx-column in the life table are adjusted to correct for chance fluctuations that are inevitable given Maldives' small population and rarity of the occurrence of deaths. A life table also shows other death or survival parameters: the infant mortality rate (IMR) is the first entry in the qx-column: 0.01257, or 12.57 per 1000 female

Table A2.6. Mortality Levels (MLs) in North, South, East and West patterns, Maldives, VPA 04

Age	Index (i)	ML North	MLSouth	ML East	ML West
15-19	1	18.49	19.77	20.03	19.01
20-24	2	20.60	23.07	21.34	20.49
25-29	3	19.00	21.11	19.72	18.85
30-34	5	19.03	20.84	19.49	18.70
35-39	10	17.48	18.82	17.91	17.11
40-44	15	16.79	17.88	17.07	16.26
45-49	20	17.33	18.16	17.36	16.72

Source: VPA-2

TableA2.7. Abridged Life Table for Maldives, Females, 2003

Age	nMx	lx	ndx	nqx	nLx	Tx	ex
0	0.0127	100,000	1,257	0.01257	98,853	7,128,548	71.29
1	0.0012	98,743	480	0.00487	393,771	7,029,695	71.19
5	0.0003	98,262	167	0.00170	490,894	6,635,924	67.53
10	0.0003	98,095	157	0.00160	490,085	6,145,030	62.64
15	0.0002	97,939	118	0.00120	489,399	5,654,945	57.74
20	0.0003	97,821	166	0.00170	488,723	5,165,547	52.81
25	0.0006	97,655	312	0.00320	487,547	4,676,823	47.89
30	0.0008	97,343	374	0.00384	485,828	4,189,276	43.04
35	0.0012	96,969	585	0.00603	483,469	3,703,448	38.19
40	0.0016	96,384	768	0.00797	480,105	3,219,980	33.41
45	0.0024	95,616	1,137	0.01189	475,534	2,739,875	28.66
50	0.0057	94,479	2,682	0.02838	466,361	2,264,341	23.97
55	0.0084	91,798	3,779	0.04117	450,464	1,797,981	19.59
60	0.0202	88,018	8,505	0.09663	420,194	1,347,517	15.31
65	0.0222	79,513	8,402	0.10567	378,303	927,323	11.66
70+	0.1295	71,111	71,111	1	549,020	549,020	7.72

Source: Statistical Yearbook of Maldives 2004, MPND, Table 3.7, page 61

birth who die before 1st birthday. Female life expectancy at birth is shown as the first entry in the ex-column and is eo(f) = 71.29 years.

Once again we need to establish which of the four models (North, South, East, West) at the same Mortality Level corresponding to level of eo(f) = 71.29 years is the best fit. We do this by comparing the nQx column in the Maldives female life table with the corresponding values in each of the four regional patterns. (The nQx is the probabilities of dying between age x and x+n and is like the nMx an indicator of age-specific mortality.) In order to make the comparison meaningful the nQx values for the regional pattern were calculated to match e(0) = 71.29 years. The results are shown in Table A2.8.

The striking feature here is that the Maldives pattern is quite different from any of the four patterns. Maldives has lower probabilities of

Table A2.8 Probabilities of dying (Q) between age (x) and age (x+n) in model and Maldives life tables, e(0)f = 71.29 years

Age (x)	NQx NORTH	nQx SOUTH	nQx EAST	nQx WEST	nQx MALDIVES
0	0.0282	0.0542	0.0356	0.0266	0.0126
1	0.0100	0.0144	0.0061	0.0061	0.0049
5	0.0045	0.0026	0.0024	0.0028	0.0017
10	0.0035	0.0019	0.0019	0.0022	0.0016
15	0.0053	0.0028	0.0030	0.0036	0.0012
20	0.0074	0.0039	0.0042	0.0051	0.0017
25	0.0086	0.0047	0.0050	0.0087	0.0032
30	0.0095	0.0057	0.0063	0.0052	0.0038
35	0.0110	0.0070	0.0085	0.0100	0.0060
40	0.0155	0.0098	0.0118	0.0139	0.0080
45	0.0195	0.0135	0.0179	0.0208	0.0119
50	0.0294	0.0208	0.0272	0.0311	0.0284
55	0.0398	0.0303	0.0413	0.0468	0.0412
60	0.0634	0.0501	0.0678	0.0737	0.0966
65	0.1045	0.0870	0.1163	0.1208	0.1057
70	1.0000	1.0000	1.0000	1.0000	1.0000

Source: Statistical Yearbook of Maldives 2004, MPND, Table 3.7, page 61. nQx-values for the regional patterns computed from Coale and Demeny Regional Model Life Tables

Table A2.9: Comparison of mortality patterns in the estimation of Infant Mortality and Life Expectancy using child survival data for Maldives, 2004, both sexes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Age group women	Proportion Dead	Age	q(x) South Asian pattern	q(x) West pattern	Reference Date	IMR South Asian pattern	IMR West pattern	e(0) South Asian pattern	e(0) West pattern
15-19	0.06349	1	0.07284	0.08180	Jun 2003	73	82	64.4	57.6
20-24	0.04001	2	0.04582	0.04619	Sep 2002	40	41	72.7	66.7
25-29	0.06923	3	0.07409	0.07308	Jun 2001	58	59	67.9	62.6
30-34	0.07730	5	0.08180	0.08081	Jul 1999	60	60	67.5	62.3
35-39	0.11191	10	0.11889	0.11828	Feb 1997	77	77	63.2	58.5
40-44	0.13725	15	0.14261	0.14318	Mar 1994	88	87	60.8	56.6
45-49	0.14074	20	0.14416	0.14570	Dec 1990	86	82	61.2	57.6

Note: mean age at childbearing = 29.3

Source: Computed from VPA-2 data

dying compared to all model patterns from birth up to 50th birthday. Only after that, some nQx values for Maldives are higher than those for some of the model patterns. Although an analysis of the deviations of the models from the Maldives pattern showed again that the *West model is the best fit, we must conclude that the best fit is not a good fit.*

It is disconcerting to discover that each of the four model patterns are closer to each other than they are to the Maldives life table pattern that ought to be fitted. It raises the issue whether the Coale and Demeny model patterns should all be discarded or whether the age pattern of mortality implicit in the life table for Maldives is not "real" The latter is possible as the Maldives life table was generated on the basis of nMx values computed from death-by-age records of the less-than-perfect Vital Registration System.

The third approach is to compare estimated levels of IMR and e(0) for Maldives using the Coale and Demeny West and the UN South Asian patterns. The results of the computations are shown in Table A2.9.

Data from the VPA-2 survey on the average number of children ever born and the average number of children surviving were used to compute the proportion of children dead given in column 1 for each of the seven age groups of mothers. The proportion dead was then multiplied by an adjustment factor that varies with mortality pattern and fertility pattern which results in an estimated probability of dying (q(x)) from birth up to age 1,2,3,5,10,15, and 20 shown in columns 3 and 4. Given the q(x)-values and the assumed mortality pattern, the IMR and e(0) are implied, and their levels for each of the 2 patterns shown in columns 6 to 9.

The results show a strong decline in mortality, irrespective of whether we use the South Asian or the West model. According to the South model the IMR must have declined from 86 in December 1990 to 40 in September 2002. West shows decline from 82 to 41 over the same period[2]. The IMR estimates between the Coale and Demeny West and the UN South Asian models are very close. However, this does not apply to the estimates of the e(0) which is 72.7 for South and 66.7 for West.

From the available evidence presented above we cannot conclude that the South Asian model necessarily provides a better fit to the Maldives data. In fact, the statistics seems to suggest the opposite. Taking the child survival status reports of women aged 20-24 as the basis, the South Asian model suggests that Maldives e(0) = 72.7 years and the IMR = 40. In the Maldives life table for females the e(0)=71.29 combined with a much lower IMR of 12.6. the South Asian model when applied to the Maldives data seems to overestimate the life expectancy at birth.

The above analysis is not entirely conclusive, but it supports the following conclusions:

- The choice of model has a far less strong impact on estimates of child mortality than it does on the estimates of life expectancy at birth.
- As there is some doubt about a suitable model mortality pattern to fit the Maldives data, extra caution is required when interpreting the estimation results for life expectancy.
- Albeit not perfect, there is no evidence to discard the Coale and Demeny West pattern as the model mortality pattern in deriving estimates from the VPA-2 data. This choice has at least the advantage that the results of the VPA-2 study can be compared with those from the VPA-1 study that used the same West pattern.

2 *For reasons explained elsewhere the estimates based on reports from women aged 15-19 are ignored*

The first conclusion, that is that the choice of model mortality pattern has a stronger impact on the estimated e(0)s compared to IMR is not surprising, because the Brass technique is specifically designed fro estimation of child mortality. For estimates of the e(0) we need to assume a relationship between child mortality and mortality at higher ages. Because model mortality patterns differ in their relationship between the force of mortality in various age groups, a 'wrong' model could affect the accuracy of the estimates for mortality at higher ages, and therefore also of the e(0).

4.2.2 Deriving estimates of IMR and e(0)

The Trussell variation of the Brass technique was carried out for Maldives, Male', atolls as a whole, atoll regions and the twenty atolls using the Coale and Demeny West model mortality pattern. The results are shown in Table A2.10.

Reports from the seven age groups of women (W(15-19), ... W(45-49)) generate 7 different estimates of the IMR in column 3 and the e(0) in column 4 for 7 different reference dates which are given in column 2. Of course the reference date for estimates based on reports from younger mothers is of a more recent date than the ones from older women. The estimates based on reports from the youngest age group 15-19 gives the most recent estimates, usually for a date less than a year before the survey.

Having a series of estimates presents the analyst with a problem how to derive plausible single estimates for a date not too far from the survey date. Although the W(15-19) estimates are desirable because of their recent reference date, in practice these estimates ought to be ignored, because teenage mothers usually live in circumstances not representative for the group of mothers as a whole. Moreover, it is very common in small populations (like Maldives) that (i) none of the children born to women in a certain age group have died (=all of them have so far survived) or (ii) none of the women in a certain age group has given birth yet. In these situations a level of mortality cannot be estimated. Such situations did occur in many of the atolls, of course most often to women aged 15-19, but also to women aged 20-24 in some instances. In Table A2.10 situations like this are indicated with symbols that have the following meaning:

#B #B(f) #B(m)	No births (total, male, female) occurred to women in specified age group
#D, #D(f),#D(m)	All children (total, male, female) in specified age group have survived, i.e. no deaths have occurred.

Given that birth and child death to women aged 15-19 is relatively rare and often a-typical, analysts prefer using reports of W(20-24) as the best most recent estimate. Moreover, women of that age have no problem remembering their number of children accurately. Here we have adopted the W(20-24) based estimates if these estimates were fairly consistent with estimates from other women's reports. If the sequence of estimates from older to younger women shows a consistent downward trend in mortality that seems to reflect reality we can adopt the W(20-24) estimates with a certain degree of confidence. However, if the W(20-24) estimate is out-of-line, or part of a up-and-down very fluctuating pattern with big jumps, obviously we are dealing with a statistical phenomenon, not a real phenomenon, and we should consider adopting a different estimate.

The type of problem of very fluctuating estimates from reports of women in different age groups is common for the VPA-2 data. As we wanted to derive the most plausible estimate we also looked at estimates based on reports of women aged 25-29. If this estimate was more in-line and typical than the W(20-24) based estimate, then we sometimes adopted the W (25-29) value.

Table A2.10 Interpretation of indirect estimates of e(0) and IMR for both sexes Maldives, Male', Atolls, Atoll regions and individual atolls, VPA 2004

(1)	(2)	(3)	(4)	(5)
MALDIVES	**Reference date**	IMR(b)	e(0)b	A smooth mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Nov 03	63.2	63.3	
W(20-24)	Dec-02	40.7	66.7	
W(25-29)	May-01	58.2	62.7	
W(30-34)	Apr-99	59.9	62.3	
W(35-39)	Oct-96	77.2	58.6	
W(40-44)	Mar-94	88.2	56.5	
W(45-49)	Jan-91	82.0	57.5	
.5*(W(20-24)+W(25-29)		49.5	64.7	
MALE'	**Reference date**	IMR(b)	e(0)b	The trend for Male is erratic, unlike the ones for Maldives and atools. Based on proportion dead to women 15-64 in Male'relative to Maldives, we estimate IMR = 32 and e(0) = 69.
W(15-19)	Jun-03	#D	#D	
W(20-24)	Oct-02	#D	#D	
W(25-29)	Dec-01	58.6	62.6	
W(30-34)	Oct-00	43.8	66.1	
W(35-39)	May-99	86.7	56.5	
W(40-44)	May-97	92.2	55.4	
W(45-49)	Apr-94	53.4	66.3	
.5*(W(20-24)+W(25-29)		NA	NA	
%15-64		31.6	69.2	
ALL ATOLLS	**Reference date**	IMR(b)	e(0)b	A smooth mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Jan-04	91.4	58.1	
W(20-24)	Dec-02	47.0	65.1	
W(25-29)	Jan-01	57.4	62.9	
W(30-34)	Jul-98	63.1	61.5	
W(35-39)	Sep-95	73.8	58.3	
W(40-44)	Sep-92	85.1	57.0	
W(45-49)	Aug-89	88.1	56.3	
.5*(W(20-24)+W(25-29)		52.2	64.0	
NORTH	**Reference date**	IMR(b)	e(0)b	A rapid mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted confirmed by no deaths to W(15-19)
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	34.1	69.2	
W(25-29)	Jan-01	54.8	63.7	
W(30-34)	Jul-98	70.7	59.9	
W(35-39)	Sep-95	85.4	57.7	
W(40-44)	Sep-92	89.9	56.3	
W(45-49)	Aug-89	81.0	57.6	
.5*(W(20-24)+W(25-29)		44.5	66.5	

(1)	(2)	(3)	(4)	(5)
HAA ALIFU	Reference date	IMR(b)	e(0)b	A rapid mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted confirmed by no deaths to W(15-19)
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	31.7	69.7	
W(25-29)	Jan-01	52.3	67.0	
W(30-34)	Jul-98	53.0	64.4	
W(35-39)	Sep-95	76.8	58.4	
W(40-44)	Sep-92	97.2	54.7	
W(45-49)	Aug-89	75.0	58.9	
.5*(W(20-24)+W(25-29)		42.0	68.3	
HAA DHAALU	Reference date	IMR(b)	e(0)b	A rapid mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	37.8	69.9	
W(25-29)	Jan-01	66.6	61.3	
W(30-34)	Jul-98	75.3	58.7	
W(35-39)	Sep-95	103.6	53.3	
W(40-44)	Sep-92	97.9	55.3	
W(45-49)	Aug-89	73.3	59.2	
.5*(W(20-24)+W(25-29)		52.2	65.6	
%15-64		50.8	60.1	
SHAVIYANI	Reference date	IMR(b)	e(0)b	A rapid mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Jan-04	#D(f) #B(m)	#D(f) #B(m)	
W(20-24)	Dec-02	36.1	68.0	
W(25-29)	Jan-01	51.8	63.9	
W(30-34)	Jul-98	80.2	58.5	
W(35-39)	Sep-95	68.7	60.2	
W(40-44)	Sep-92	65.8	60.9	
W(45-49)	Aug-89	102.5	54.3	
.5*(W(20-24)+W(25-29)		44.0	66.0	
%15-64		54.8	55.8	
NORTH CENTRAL	Reference date	IMR(b)	e(0)b	A smooth mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	46.6	65.8	
W(25-29)	Jan-01	53.9	63.7	
W(30-34)	Jul-98	47.7	65.3	
W(35-39)	Sep-95	61.7	62.1	
W(40-44)	Sep-92	78.0	58.2	
W(45-49)	Aug-89	71.3	59.6	
.5*(W(20-24)+W(25-29)		50.3	64.8	
NOONU	Reference date	IMR(b)	e(0)b	Mortality decline is not smooth. We adopt estimates for W(20-24) as this is consistent with %D(15-64), and consistent with the method used for North Central atoll region.
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	44.6	65.9	
W(25-29)	Jan-01	33.9	69.5	
W(30-34)	Jul-98	47.5	65.1	
W(35-39)	Sep-95	64.7	61.0	
W(40-44)	Sep-92	87.6	56.2	
W(45-49)	Aug-89	72.9	59.2	
.5*(W(20-24)+W(25-29)		39.3	67.7	

(1)	(2)	(3)	(4)	(5)
RAA	Reference date	IMR(b)	e(o)b	A smooth mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	55.4	64.8	
W(25-29)	Jan-01	65.4	64.6	
W(30-34)	Jul-98	37.9	68.9	
W(35-39)	Sep-95	67.4	61.7	
W(40-44)	Sep-92	81.9	57.5	
W(45-49)	Aug-89	79.8	58.0	
.5*(W(20-24)+W(25-29))		60.4	64.7	
BAA	Reference date	IMR(b)	e(o)b	Mortality declines but with jerks. Adoption of the average of the estimates on basis of reports W(20-24) and W(25-29) is most plausible and adopted here therefore.
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	47.6	66.5	
W(25-29)	Jan-01	23.3	72.2	
W(30-34)	Jul-98	66.0	61.5	
W(35-39)	Sep-95	69.8	60.0	
W(40-44)	Sep-92	63.1	61.5	
W(45-49)	Aug-89	39.6	67.0	
.5*(W(20-24)+W(25-29))		35.4	69.3	
LHAVIYANI	**Reference date**	IMR(b)	e(o)b	Mortality declines but with jerks. Adoption of the average of the estimates on basis of reports W(20-24) and W(25-29) is most plausible and adopted here therefore.
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	25.2	71.7	
W(25-29)	Jan-01	59.2	62.2	
W(30-34)	Jul-98	38.8	65.7	
W(35-39)	Sep-95	41.8	66.8	
W(40-44)	Sep-92	52.7	66.9	
W(45-49)	Aug-89	85.7	56.6	
.5*(W(20-24)+W(25-29))		42.2	67.0	
CENTRAL	**Reference date**	IMR(b)	e(o)b	Central Region experiences a stagnation if not a rise in its mortality. As there is at present no real evidence that this is indeed happening, (there are no deaths to W(15-19), we adopt the estimates of W(25-29).
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	69.4	60.1	
W(25-29)	Jan-01	63.6	61.4	
W(30-34)	Jul-98	56.1	63.5	
W(35-39)	Sep-95	60.4	62.1	
W(40-44)	Sep-92	103.2	53.6	
W(45-49)	Aug-89	110.0	52.0	
.5*(W(20-24)+W(25-29))		66.5	60.7	
KAAFU	**Reference date**	IMR(b)	e(o)b	Stagnation in Central region shows in Kaafu data. Estimates for W(30-34) are approximately the same as the ones for W(20-24). We adopt the latter.
W(15-19)	Jan-04	#D(f) #B(m)	#D(f) #B(m)	
W(20-24)	Dec-02	50.1	65.9	
W(25-29)	Jan-01	69.7	60.1	
W(30-34)	Jul-98	42.3	66.2	
W(35-39)	Sep-95	69.0	60.2	
W(40-44)	Sep-92	120.5	49.9	
W(45-49)	Aug-89	103.8	35.9	
.5*(W(20-24)+W(25-29))		59.9	63.0	

(1)	(2)	(3)	(4)	(5)
ALIF ALIFU	**Reference date**	IMR(b)	e(o)b	The trend is highly erratic. We adopt the estimates based on the proportion of children reported dead to women aged 15-64
W(15-19)	Jan-04	#B(f) #D(m)	#B(f) #D(m)	
W(20-24)	Dec-02	84.8	56.7	
W(25-29)	Jan-01	95.5	56.0	
W(30-34)	Jul-98	59.6	65.7	
W(35-39)	Sep-95	48.0	65.5	
W(40-44)	Sep-92	121.6	50.1	
W(45-49)	Aug-89	161.5	43.7	
.5*(W(20-24)+W(25-29)		90.1	56.4	
%15-64		59.6	51.3	
ALIFU DHAALU	**Reference date**	IMR(b)	e(o)b	The drop in mortality is very sudden and hard to explain. Estimates based on reports of women 20-29 years are suddenly very low compared to W(30+). We adopt estimates for W(20-24) which are probably too high.
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	18.0	74.4	
W(25-29)	Jan-01	17.2	74.6	
W(30-34)	Jul-98	53.1	64.7	
W(35-39)	Sep-95	54.4	63.5	
W(40-44)	Sep-92	94.6	55.9	
W(45-49)	Aug-89	100.0	53.7	
.5*(W(20-24)+W(25-29)		17.6	74.5	
%15-64		53.3	57.4	
VAAVU	**Reference date**	IMR(b)	e(o)b	The trend is highly erratic. We adopt the estimates based on the proportion of children reported dead to women aged 15-64. The e(o) is probably too high.
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	147.8	41.8	
W(25-29)	Jan-01	24.5	71.9	
W(30-34)	Jul-98	48.6	65.1	
W(35-39)	Sep-95	55.8	58.0	
W(40-44)	Sep-92	65.0	64.7	
W(45-49)	Aug-89	32.2	69.1	
.5*(W(20-24)+W(25-29)		86.2	56.9	
%15-64		42.1	72.7	
SOUTH CENTRAL	**Reference date**	IMR(b)	e(o)b	Mortality decline appears tohave come to a standstill at relatively high levels of mortality and there is also death to W(15-19). Rise in mortality is difficult to explain. We adopt %D(15-64)
W(15-19)	Jan-04	194.2	49.1	
W(20-24)	Dec-02	81.6	57.5	
W(25-29)	Jan-01	83.8	57.0	
W(30-34)	Jul-98	62.4	61.7	
W(35-39)	Sep-95	70.3	59.8	
W(40-44)	Sep-92	89.9	56.2	
W(45-49)	Aug-89	70.9	60.0	
.5*(W(20-24)+W(25-29)		82.7	57.3	
%15-64		49.9	61.2	
MEEMU	**Reference date**	IMR(b)	e(o)b	Meemu shows slow improvement in mortality levels. Evidence from W(25-29) shows IMR = 44.5, but it could be lower in later years as wome aged 20-24 suffered no child loss. We adopt %D(15-64)
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	#D	#D	
W(25-29)	Jan-01	44.5	68.5	
W(30-34)	Jul-98	41.6	66.6	
W(35-39)	Sep-95	66.6	61.1	
W(40-44)	Sep-92	42.3	65.0	
W(45-49)	Aug-89	46.9	65.2	
.5*(W(20-24)+W(25-29)		NA	NA	
%15-64		37.5	>75	

(1)	(2)	(3)	(4)	(5)
FAAFU	**Reference date**	IMR(b)	e(0)b	The trend is highly erratic. We adopt the estimates based on the proportion of children reported dead to women aged 15-64 given there is no child loss among women aged 20-24.
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	#D	#D	
W(25-29)	Jan-01	170.6	41.7	
W(30-34)	Jul-98	37.5	66.3	
W(35-39)	Sep-95	92.1	55.7	
W(40-44)	Sep-92	47.4	60.6	
W(45-49)	Aug-89	121.3	49.8	
.5*(W(20-24)+W(25-29)		NA	NA	
%15-64		45.6	67.0	
DHAALU	**Reference date**	IMR(b)	e(0)b	The trend is highly erratic. We adopt the estimates based on the proportion of children reported dead to women aged 15-64 given there is no child loss among women aged 20-24.
W(15-19)	Jan-04	3.6	39.4	
W(20-24)	Dec-02	#D	#D	
W(25-29)	Jan-01	146.9	47.8	
W(30-34)	Jul-98	46.7	65.6	
W(35-39)	Sep-95	77.4	58.4	
W(40-44)	Sep-92	82.2	58.8	
W(45-49)	Aug-89	77.4	60.2	
.5*(W(20-24)+W(25-29)		NA	NA	
%15-64		43.2	70.8	
THAA	**Reference date**	IMR(b)	e(0)b	Thaa data are very erratic. We adopt the estimates based on the proportion of children reported dead to women aged 15-64 given there is no child loss among women aged 20-24.
W(15-19)	Jan-04	%D(f) = 100; #D(m)	%D(f) = 100; #D(m)	
W(20-24)	Dec-02	#D	#D	
W(25-29)	Jan-01	70.9	59.7	
W(30-34)	Jul-98	56.1	64.0	
W(35-39)	Sep-95	67.3	60.6	
W(40-44)	Sep-92	75.1	58.8	
W(45-49)	Aug-89	72.7	59.6	
.5*(W(20-24)+W(25-29)		NA	NA	
%15-64		47.5	64.3	
LAAMU	**Reference date**	IMR(b)	e(0)b	The trend is highly erratic. We adopt the estimates based on the proportion of children reported dead to women aged 15-64
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	78.2	62.5	
W(25-29)	Jan-01	48.8	67.7	
W(30-34)	Jul-98	89.2	55.8	
W(35-39)	Sep-95	68.3	60.2	
W(40-44)	Sep-92	127.2	49.6	
W(45-49)	Aug-89	70.8	60.0	
.5*(W(20-24)+W(25-29)		63.5	65.1	
%15-64		48.6	62.9	
SOUTH	**Reference date**	**IMR(b)**	**e(0)b**	Drop in mortality from estimates based on W(25-29) to W(20-24) too sudden. We adopt the average.
W(15-19)	Jan-04	#B(f) #D(m)	#B(f) #D(m)	
W(20-24)	Dec-02	13.7	75.6	
W(25-29)	Jan-01	40.6	66.8	
W(30-34)	Jul-98	79.8	57.8	
W(35-39)	Sep-95	83.4	57.2	
W(40-44)	Sep-92	71.8	59.6	
W(45-49)	Aug-89	107.9	52.7	
.5*(W(20-24)+W(25-29)		27.2	71.2	

(1)	(2)	(3)	(4)	(5)
GAAFU ALIFU	**Reference date**	**IMR(b)**	**e(0)b**	With no deaths to W(20-24) and W(15-19) we can assume further decline in mortality levels to approximately e(0) = 71 and IMR = around 20
W(15-19)	Jan-04	#B(f) #D(m)	#B(f) #D(m)	
W(20-24)	Dec-02	#D; 20.0	#D 71.0	
W(25-29)	Jan-01	33.7	69.6	
W(30-34)	Jul-98	84.1	56.9	
W(35-39)	Sep-95	133.5	47.6	
W(40-44)	Sep-92	65.6	60.9	
W(45-49)	Aug-89	52.4	64.3	
.5*(W(20-24)+W(25-29)		NA	NA	
GAAFU DHAALU	**Reference date**	**IMR(b)**	**e(0)b**	A rapid mortality decline appears from reports of older to younger women. Estimates for W(20-24) are adopted
W(15-19)	Jan-04	#D	#D	
W(20-24)	Dec-02	27.2	72.2	
W(25-29)	Jan-01	52.7	64.0	
W(30-34)	Jul-98	123.4	49.4	
W(35-39)	Sep-95	58.2	60.4	
W(40-44)	Sep-92	80.9	58.2	
W(45-49)	Aug-89	133.6	48.2	
.5*(W(20-24)+W(25-29)		40.0	68.1	
GNAVIYANI	**Reference date**	**IMR(b)**	**e(0)b**	With no deaths to W(20-24) we can assume further decline in mortality levels to approximately e(0) = 75 and IMR = around 15
W(15-19)	Jan-04	#D(f) #B(m)	#D(f) #B(m)	
W(20-24)	Dec-02	#D 15	#D 75	
W(25-29)	Jan-01	26.8	72.3	
W(30-34)	Jul-98	49.9	66.0	
W(35-39)	Sep-95	30.8	69.4	
W(40-44)	Sep-92	96.7	54.5	
W(45-49)	Aug-89	138.3	49.2	
.5*(W(20-24)+W(25-29)		NA	NA	
SEENU	**Reference date**	**IMR(b)**	**e(0)b**	With no deaths to W(20-24) we can assume further decline in mortality levels to approximately e(0) = 72 and IMR = around 27
W(15-19)	Jan-04	#B	#B	
W(20-24)	Dec-02	#D 27	#D 72	
W(25-29)	Jan-01	47.9	65.4	
W(30-34)	Jul-98	29.2	69.8	
W(35-39)	Sep-95	87.2	56.2	
W(40-44)	Sep-92	63.6	61.3	
W(45-49)	Aug-89	89.9	55.8	
.5*(W(20-24)+W(25-29)		NA	NA	

Note: based on survival status reports from women in age groups 15-19 up to 45-49

Source : Computed from VPA 2004 data

A third alternative for adopting of a single estimate was to take the arithmetic average of the W(20-24) and W(25-29) based estimates. This was in particular indicated if (i) both the W(20-24) and W(25-29) indicated decline in mortality (= lower estimates than those based on reports of older women) and if (ii) there was a inexplicable gap in the W(20-24) and W(25-29) estimates. This method is often used as the standard

For several atolls none of the three methods gave a plausible estimate as the data were obviously so affected by chance fluctuations that an estimate could not really be made with any degree of confidence. We then resorted to estimate the levels of IMR and e(0) for the atoll almost entirely independent of recent child survivors ship data, by simply estimating these levels for the atoll with reference to the estimated levels for the group of all atolls combined using information from the atoll and all atolls on the proportion of children dead to women in the age group 20-64. These proportions, the adjustment factors and the derived estimates of e(0) and IMR are given in Table A2.11.

This method worked as follows:

- For each area the percentage of children dead to mothers in the age group 20-64 was computed, (column (1)
- Then an adjustment factor was calculated for each atoll on the basis of the proportion of children dead to women 20-64 in the atoll to this proportion for the group of all atolls, column (2).

For example: the adjustment factor for Laamu atoll is:

% children dead to W(20-64) Laamu / % children dead to W(20-64) All atolls =

0.15882/ 0.15330 = **1.03602.**

Finally, this adjustment factor is used in estimating infant mortality for the atoll as follows:

IMR(atoll i) = IMR(all atolls) * adjustment factor atoll i

The IMR for Laamu is approximately 3.6% higher than the IMR for all atolls, i.e.

IMR(Laamu) = IMR(All atolls) * 1.03602 = 47.0 * 1.03602 = 48.7

Estimates for life expectancy are obtained by dividing by the adjustment factor:

e(0)(atoll i) = e(0)(all atolls) / adjustment factor atoll i

For Laamu the derived estimate of e(0)Laamu = 65.1/ 1.03602 = 62.8

The advantages of this procedure are that (i) data on proportion of children dead can be assumed to be a fairly reliable indicator of mortality if the age distribution of the various population groups is similar; (ii) this proportion takes the child loss experience of mothers of all age groups into account which increases the number of cases used in the computation of the ratio, adds stability to the statistic and reduces the effects of age misreporting and chance fluctuations. However, the estimates obtained this way can hardly be called recent estimates of mortality and the reference date cannot be derived. It is therefore a method that should only be used if no other source of reliable information is available.

We had to resort to this least desirable method of estimation for Baa and Lhaviyani atolls (North Central region), Alif Alifu and Vaavu atolls (Central region) and the South Central region and all the 5 atolls.

Table A2.11. Proportion of children dead to women aged 20-64, adjustment factor and estimated IMR and e(0) for both sexes

	(1)	(2)	(3)	(4)
	Proportion dead in age group 20-64 females	**Adjustment factor**	**IMR(b)**	**e(0)(b)**
ALL ATOLLS	0.15330	1.00000	47.0	65.1
NORTH	0.15801	1.03076	48.4	63.2
Haa Alifu	0.14905	0.97229	45.7	67.0
Haa Dhaalu	0.16600	1.08284	50.9	60.1
Shaviyani	0.17879	1.16628	54.8	55.8
NORTH CENTRAL	0.15003	0.97865	46.0	66.5
Noonu	W0.14498	0.94576	44.5	68.8
Raa	0.15122	0.98642	46.4	66.0
Baa	0.13140	0.85715	40.3	75.9
Lhaviyani	0.13151	0.85790	40.3	75.9
CENTRAL	0.17081	1.11426	52.4	58.4
Kaafu	0.15802	1.03078	48.4	63.2
Alif Alifu	0.19469	1.27000	59.7	51.3
Alifu Dhaalu	0.17405	1.13534	53.4	57.3
Vaavu	0.13739	0.89621	42.1	72.6
SOUTH CENTRAL	0.16304	1.06355	50.0	61.2
Meemu	0.12238	0.79831	37.5	81.5
Faafu	0.14893	0.97152	45.7	67.0
Dhaalu	0.14101	0.91983	43.2	70.8
Thaa	0.15518	1.01229	47.6	64.3
Laamu	0.15882	1.03602	48.7	62.8
SOUTH	0.11771	0.76782	36.1	84.8
Gaafu Alifu	0.17236	1.12438	52.8	57.9
Gaafu Dhaalu	0.19806	1.29196	60.7	50.4
Gnaviyani	0.11677	0.76169	35.8	85.5
Seenu	0.11807	0.77018	36.2	84.5

Source: computed from VPA 2004 data

5. Procedure of Estimating IMR and 3(0) from Census 2000 Data

The analysis of the life expectancy and infant mortality from reports of women on the survival status of their children computed from data from the Population and Housing Census for Maldives in 2000 was uncomplicated compared to the VPA 2002 data.

5.1 Statistical base of the estimates

The statistical basis for the estimates was satisfactory as in principle all women in Maldives were incorporated in the census and statistical sampling error could therefore not occur. The number of reported children dead to women in the key age-groups 20-24, 25-29 and 30-34 was as shown in Table A2.12.

Obviously the number of reported deaths to women in the age group 20-24 is smaller than these in any of the other two age groups. Only in six atolls the number of child deaths reported by women in the 20-24 age group was less than 10. This statistical base proofed strong enough for consistent results based on reports from women in different age groups, and standard procedures could be followed in deriving IMR and e(0) estimates.

5.2 Fertility pattern

For the 2000 Population Census 2000 the mean age of fertility M' was taken as 29.8 years for Maldives, M' = 30 years for Male' and M'= 29.5 for all atolls.

5.3 Model mortality pattern

To maintain comparability between the VPA 1997 and the VPA 2004 estimates, we adopted the Coale and Demeny West pattern as the choice to derive estimates for the IMR and e(0). The choice of model had a very insignificant impact on the estimates of the IMR, a bigger impact on the estimates of the e(0).

5.4 Deriving final estimates of IMR and e(0)

Given this statistical base it was not surprising that the estimates based on the reports of women in the various age groups was remarkably smooth with a very consistent trend of mortality decline. In line with standard practice, the estimates for e(0) and IMR of both sexes based on the reports of women 20-24 and 25-29 were averaged and adopted as the final estimates. Any inconsistency or chance fluctuation that could have resulted by using survival status reports of children to women in the age group 20-24 were smoothed out by adopting the average of the two age groups. The reference date of the Census 2000 estimates is therefore somewhere in between the reference dates for each of the estimates from 20-24 and 25-29 year old women, or approximately 2 years before the census, that is April 1998.

Table A2.12. Statistical Base For Estimation of IMR from Census 2000 Data on Survival Status of Children to Women in Different Age Groups

AREA	Children Reported Dead to Women Aged		
	20-24	25-29	30-34
Republic	**433**	**1230**	**2587**
Male	**57**	**164**	**332**
Atolls	**376**	**1066**	**2255**
NORTH	94	270	530
Haa Alifu	27	77	146
Haa Dhaalu	34	102	219
Shaviyani	33	91	165
NORTH CENTRAL	56	211	457
Noonu	18	71	133
Raa	24	83	168
Baa	8	19	60
Lhaviyani	6	38	96
CENTRAL	60	119	272
Kaafu	15	56	102
Alif Alifu	18	30	69
Alif Dhaalu	26	26	78
Vaavu	1	7	23
SOUTH CENTRAL	77	214	447
Meemu	8	17	47
Faafu	13	26	73
Dhaalu	8	38	93
Thaa	16	43	98
Laamu	32	90	136
SOUTH	89	252	549
Gaafu Alifu	25	60	129
Gaafu Dhaalu	29	81	167
Gnaviyani	8	32	60
Seenu	27	79	193

Sources: MPND, Population and Housing Census of Maldives 2000; Vulnerability and Poverty Assessments 1997 and 2004

Technical Note 3:

Sampling design

Background

The Vulnerability and poverty assessment survey (VPA) was conducted in 1997/98 to collect the wide range of data measure the poverty, deprivation and vulnerability of population arising from geographical, social and economic conditions of Maldives. The survey was the most comprehensive statistical investigation in terms of its geographical coverage and statistical data items. Major findings and results of the survey were presented in a report that provided among others a composite index of human vulnerability (HVI) at the national, atoll and island level. Results of the survey helped government formulate policy of regional development. Unlike for other countries of the sub-continent, income poverty was a matter of lesser importance for Maldives than its vulnerability caused mainly by geographical isolation of islands, where opportunities of population for job as well as for essential public services are severely limited.

Results of VPA-97 provided important information for formulation of development strategy in the past years. Much have changed in Maldives since 1998. The country enjoyed higher economic growth, tourism industry was flourishing all these years and construction sector boomed. How far economic development has been successful to change the living condition of Maldivian population at large? Answer to this question can be obtained from a statistical survey that is compatible in terms of methodology and coverage to that of VPA-97. The Ministry of Planning and National Development has decided to conduct a follow up survey this year with technical assistance of UNDP and the World Bank.

Objectives of the survey

VPA-2 will be conducted with the main objective of producing wide range of statistics on various aspects of poverty and vulnerability of households. The survey will provide the comparative data with VPA-97 that facilitates the analysis of social and economic impact of recent development on the living conditions of population. The survey results will allow to measure the changes occurred in individual islands, in atolls and in country in general since the last survey. The survey will be conducted in close cooperation of international experts and national staffs of the Statistics section of MPND. Since 1997 MPND/Stats has been successfully conducting the series of statistical surveys to improve the national database in different areas. The co-operation under VPA will further enhance its technical capability of undertaking complex statistical operations.

The VPA questionnaire comprises different components. Being the largest survey in terms of its geographical coverage, it will produce a new area frame with the recent number of households, labour force statistics, household income and expenditure and other information thereby update the current national database.

The frame

The main database for the frame of VPA sampling comes from the Population census 2000. The VPA sampling design uses different selection approaches for Male' and atolls to be described later in this paper. In case of atolls, the frame for the VPA is the list of inhabited islands.

Since all the inhabited islands are to be surveyed, listing will provide the most recent and accurate data of households by islands. According to the Census 2000 there are 200 inhabited islands excluding Male, industrial and resort islands. However, this number may change due to the pre-planned internal migration. The government has made efforts to bring the inhabitants closer by vacating islands with the smaller number of inhabitants and building larger settlements in new islands. The effect of this process on the survey will be minimal, because there are only 2 or 3 islands where movement of inhabitants is underway.

The frame for Male consists of 5 wards and 317 enumeration blocks. Household data for enumeration blocks are 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 provides the possibility of taking these blocks as the primary sampling units in VPA sample design for Male.

Sampling strategy

VPA-97/98 report does not provide the information about the variance but an approximation can be made for the standard error of estimate of one of the key variables. The main indicator of VPA was the Human vulnerability index calculated from the poverty incidence indices at different income levels: such as the percentage of population with less than MRF 7.5, MRF 10 and MRF15. For the sampling design purpose we take the Poverty index estimated from the sample data (p) for MRF 10 which was computed as the proportion of the population with the per-capita income less than MRF 10 per day to the total population. The standard error of this estimate $se(p)$ is given by:

$$se(p) = \sqrt{deff.(1-f)\frac{p(100-p)}{n-1}} \qquad (1)$$

where:

$se(p)$ – standard error of the estimated poverty index from the sample data

$deff$ – design effect, inflation of variance due to stratification, unequal probability sampling and clustering in complex designs and

$(1-f)$ – factor of finite population correction $f = \frac{n}{N}$

Estimated standard error of the VPA for the poverty index is given in Table 1 assuming that the design effect was 2. For the national level estimate of p we can define the 95% confidence interval between 19.9 to 24.1 [22 ± $t.se$; where t = 1.96 for the precision level of 95%].

Table 1: Estimated poverty index and its standard error for VPA-97

	p in %	n	1-f	se(p) in %
Maldives	22	2778	0.919	1.07
Male'	10	300	0.954	2.40
Atolls	26	2478	0.910	1.19

The above formulae is not the most appropriate one to compute the standard error for the systematic selection method used in VPA. Better approximation of the standard error for the survey of VPA type can be obtained from linearisation using Taylor series expansion or replication methods. However, at this stage computation is made to examine whether the same sample size can be adopted for VPA-04. The level of precision of VPA-97 results shows that the same sample size can be retained also for VPA-04.

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 all 200 inhabited islands. These islands are different in population sizes. A minimum sample of 10 households will be allocated for each island with less than 1500 inhabitants or approximately 200 households (average household size in atolls is around 7 persons according to the last population census). For larger islands, sampling rate will be increased by 10 households for every 1500 inhabitants. Such distribution fairly satisfies the proportional allocation scheme thereby reduces the variance of results arising from disproportionate allocation. The total number of households to be sampled from all atolls will be 2480 households.

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 below.

Table 2: Size and allocation of samples in atolls

Size-group	Number of islands	Population	Number of households	Sampling rate per island	Number of households to be sampled
1500 and less	168	103116	19446	10	1680
1501-3000	26	49748	6740	20	520
3001-4500	2	6919	1053	30	60
4501-6000	1	4893	179	40	40
6001-7500	1	6581	1018	50	50
7501-9000	1	7528	1251	60	60
More than 9000	1	9461	1408	70	70
Grand Total	200	188246	31095		2480

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

1.1 Partial overlapping sample

In order to ensure the data comparability of two surveys half of the samples in all islands will be retained from those selected for VPA-97. Partial overlapping of samples for successive surveys has certain advantages. A completely repeated panel can give the information

Table 3: Number of households to be sampled by islands

	Number sample households per island
Hithadhoo	70
Fuvammulah	60
Kulhudhuffushi	50
Thinadhoo	40
Naifaru Hinnavaru	30
Feydhoo, Dhidhdhoo, Kadholhudhoo, Eydhafushi, Viligili, Gamu, Hoarafushi, Maradhoo, Ihavandhoo, Thulhaadhoo, Velidhoo, Maafushi, Fonadhoo, Alifushi, Mahibadhoo, Gadhdhoo, Meedhoo, Maakadoodhoo, Kaashidhoo, Holhudhoo, Nolhivaramu, Maamigili, Thimarafushi, Maduvvari, Komandoo, Nilandhoo	20
All other inhabited islands	10

about the changes of 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 $\sigma_d^2 = p_1 - p_2$ is given by:

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

where σ_p^2, is the variance of estimates, suffix 1, 2 stands for period and 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 appears as,

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

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. ρ =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:

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

It means with the value of ρ=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 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.

1.2 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 Finey island, which had 71 households in the Census 2000. Suppose, we get 74 households from the listing this time. First, we identify 10 households selected in VPA-97 and select 5 of them at random. From remaining 64 households we select 5 households systematically. Because, 64 cannot be divided by 5 we can take k=12 so that N > nk or 64>60. So we take the random start between 1 to 12 and select every twelfth household into sample.

If a household selected in VPA-97 does not exist any more

Some households of the panel from the sample of VPA-97 may not exist any more in the island. First, households in the panel of the VPA-97 should be identified in the new list. If all households are found then sampling procedure may begin. If there are the cases when "old household" could not be found we have to apply different rules of replacement.

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 of 5 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 more than half of the households from the earlier sample does not exist. If so happens, number of new samples should be increased so that the total number of households selected from an island is 10 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-97, and new household from the rest.

If the households records of VPA-97 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.

Sampling in Male'

Sampling in Male' will be different for many reasons from those in atolls. First of all, there will be no panel in Male' and a completely new set of samples will be taken. Second, in order to avoid the listing of all households, a two-stage self-weighting design will be applied. Male will be stratified by 5 wards and selection will be 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 will be selected using systematic sampling from each selected block. In such case, block will be a primary sampling unit (PSU) and the household – the secondary sampling unit or elements.

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:

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

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 wards of Male' is given in Annex-1.

Table 3: 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	80
Galolhu	13878	1813	59	6	60
Machchangolhi	13589	1748	57	6	60
Maafannu	22372	2928	108	10	100
Viligili	4291	601	17	2	20
Total	**72230**	**9578**	**317**	**32**	**320**

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

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
		a	*b*	*a.b*	
Henveyru	2488	8	10	80	31.10
Galolhu	1813	6	10	60	30.22
Machchangolhi	1748	6	10	60	29.13
Maafannu	2928	10	10	100	29.28
Viligili	601	2	10	20	30.05
Total	**9578**	**32**		**320**	

Compiled from Table 2.

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:

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

Estimation weight for each island is computed as the total number of households in an island divided by 10. The value of the estimation weight by island is given in Annex-2.

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

hence the design weight is computed as $w_0 = \frac{1}{f_{0h}}$

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.

How representative is the VPA 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 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 estimation[1] …" (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 serve 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

1 *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*

often fixed at the PSU level. VPA sampling has two domains Male' and Atolls and each of these domains have independent sampling scheme. A standard design described above is applied to Male' but the design for Atoll 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 the 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 the number of inhabitants more than 3000. Segmentation in few islands would have not reduced the time and cost of the survey, because the cost of travelling within the island is very negligible in compare to 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 without sub-sampling that ensured full representation of islands.

The second question of representative sample arose from the sample size within an island. Sampling rate within the island applied in the design was 10 households for every 1500 inhabitants. Since 168 islands had less than 1500 inhabitants, there was only 10 households selected from these islands. So the question was if such size could be considered as a representative sample to assess the poverty and vulnerability situation of an island? And the answer was affirmative but depending on the variables 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. 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 first 40 islands 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).

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.

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

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.

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.

New sample households			
Implicit stratum	**HH no. in sample**	**Selection process**	
1	1		
	2		
	3		
	4	Sample	
	5		
2	6		
	7		
	8		
	9	Sample	
	10		
3	11		
	12		
	13		
	14	Sample	
	15		
4	16		
	17		Substitute
	18		
	19	Sample	Failure
	20		
5	21		
	22		
	23	Sample	
	24		
	25		
	26		

Panel households from VPA-97		
Implicit stratum	**HH no. in sample**	
1	1	
	2	
2	3	Failure
	4	Substitution
	5	
	6	
4	7	
	8	
5	9	
	10	

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.

Annex 3: Estimation weights for Atolls

SN	Atoll	Island	Number of households in:			Estimation weight
			Census	VPA listing	VPA sample	
1	Haa alif	Thuraakunu	61	67	10	6.70
2	Ha	Uligamu	57	55	10	5.50
3	Ha	Berinmadhoo	21	23	10	2.30
4	Ha	Hathifushi	32	32	10	3.20
5	Ha	Mulhadhoo	63	58	10	5.80
6	Ha	Hoarafushi	341	393	20	19.65
7	Ha	Ihavandhoo	253	306	20	15.30
8	Ha	Kelaa	245	261	10	26.10
9	Ha	Vashafaru	86	82	10	8.20
10	Ha	Dhidhdhoo	438	500	20	25.00
11	Ha	Filladhoo	120	119	10	11.90
12	Ha	Maarandhoo	94	101	10	10.10
13	Ha	Thakandhoo	114	107	10	10.70
14	Ha	Utheemu	99	95	10	9.50
15	Ha	Muraidhoo	98	91	10	9.10
16	Ha	Baarah	228	229	10	22.90
17	Haa dhaal	Faridhoo	36	34	10	3.40
18	Hdh	Hanimaadhoo	198	219	10	21.90
19	Hdh	Finey	71	70	10	7.00
20	Hdh	Naivaadhoo	108	97	10	9.70
21	Hdh	Hirimaradhoo	59	63	10	6.30
22	Hdh	Nolhivaranfaru	72	68	10	6.80
23	Hdh	Nellaidhoo	136	147	10	14.70
24	Hdh	Nolhivaramu	271	297	20	14.85
25	Hdh	Kurnibi	82	78	10	7.80
26	Hdh	Kunburudhoo	50	37	10	3.70
27	Hdh	Kulhudhuffushi	1,018	1027	50	20.54
28	Hdh	Kumundhoo	181	174	10	17.40
29	Hdh	Neykurendhoo	190	187	10	18.70
30	Hdh	Vaikaradhoo	206	214	10	21.40
31	Hdh	Maavaidhoo	71	78	10	7.80
32	Hdh	Makunudhoo	185	205	10	20.50
33	Shaviyani	Kanditheemu	157	191	10	19.10
34	Sh	Noomaraa	87	88	10	8.80
35	Sh	Goidhoo	88	77	10	7.70
36	Sh	Feydhoo	142	141	10	14.10
37	Sh	Feevah	131	143	10	14.30
38	Sh	Billeffahi	93	88	10	8.80
39	Sh	Foakaidhoo	172	186	10	18.60
40	Sh	Narudhoo	65	67	10	6.70
41	Sh	Maakan'doodhoo	239	84	10	8.40
42	Sh	Maroshi	118	120	10	12.00
43	Sh	Lhaimagu	88	102	10	10.20
44	Sh	Firun'baidhoo	67	23	10	2.30
45	Sh	Komandhoo	261	263	20	13.15
46	Sh	Maaun'goodhoo	143	151	10	15.10
47	Sh	Funadhoo	141	195	10	19.50

48	Sh	Milandhoo	-	162	10	16.20
49	Noonu	Hen'badhoo	81	79	10	7.90
50	N	Ken'dhikolhudhoo	191	209	10	20.90
51	N	Maalhendhoo	100	107	10	10.70
52	N	Kudafari	78	79	10	7.90
53	N	Landhoo	126	124	10	12.40
54	N	Maafaru	120	135	10	13.50
55	N	Lhohi	88	87	10	8.70
56	N	Miladhoo	138	150	10	15.00
57	N	Magoodhoo	36	43	10	4.30
58	N	Manadhoo	191	219	10	21.90
59	N	Holhudhoo	257	286	20	14.30
60	N	Fodhdhoo	54	45	10	4.50
61	N	Velidhoo	304	328	20	16.40
62	Raa	Alifushi	286	289	20	14.45
63	R	Vaadhoo	64	68	10	6.80
64	R	Rasgetheemu	124	125	10	12.50
65	R	An'golhitheemu	65	65	10	6.50
66	R	Un'goofaaru	153	184	10	18.40
67	R	Kandolhudhoo	413	422	20	21.10
68	R	Maakurathu	138	151	10	15.10
69	R	Rasmaadhoo	116	116	10	11.60
70	R	Innamaadhoo	101	104	10	10.40
71	R	Maduvvari	233	265	20	13.25
72	R	In'guraidhoo	198	216	10	21.60
73	R	Fainu	42	42	10	4.20
74	R	Meedhoo	210	244	10	24.40
75	R	Kinolhas	62	71	10	7.10
76	R	Hulhudhuffaaru	184	209	10	20.90
77	Baa	Kudarikilu	63	65	10	6.50
78	B	Kamadhoo	56	70	10	7.00
79	B	Kendhoo	116	134	10	13.40
80	B	Kihaadhoo	47	47	10	4.70
81	B	Dhonfanu	68	60	10	6.00
82	B	Daravandhoo	128	138	10	13.80
83	B	Maalhos	67	69	10	6.90
84	B	Eydhafushi	345	372	20	18.60
85	B	Thulhaadhoo	284	298	20	14.90
86	B	Hithaadhoo	161	162	10	16.20
87	B	Fulhadhoo	44	44	10	4.40
88	B	Fehendhoo	30	30	10	3.00
89	B	Goidhoo	69	76	10	7.60
90	Lhaviyani	Hinnavaru	456	458	30	15.27
91	Lh	Naifaru	597	609	30	20.30
92	Lh	Kurendhoo	229	222	10	22.20
93	Lh	Olhuvelifushi	73	75	10	7.50
94	Lh	Maafilaafushi	35	43	10	4.30
95	kaafu	Kaashidhoo	261	273	20	13.65
96	K	Gaafaru	136	141	10	14.10
97	K	Dhiffushi	135	151	10	15.10
98	K	Thulusdhoo	135	156	10	15.60

99	K	Huraa	111	125	10	12.50
100	K	Himmafushi	120	130	10	13.00
101	K	Gulhi	94	95	10	9.50
102	K	Maafushi	147	136	20	6.80
103	K	Guraidhoo	209	211	10	21.10
104	Alif alif	Thoddoo	179	188	10	18.80
105	Aa	Rasdhoo	145	141	10	14.10
106	Aa	Ukulhas	86	91	10	9.10
107	Aa	Mathiveri	66	64	10	6.40
108	Aa	Bodufolhudhoo	50	50	10	5.00
109	Aa	Feridhoo	90	91	10	9.10
110	Aa	Maalhos	75	76	10	7.60
111	Aa	Himandhoo	77	75	10	7.50
112	Alif dhaal	Hangn'aameedhoo	75	85	10	8.50
113	Adh	Omadhoo	84	88	10	8.80
114	Adh	Kun'burudhoo	51	51	10	5.10
115	Adh	Mahibadhoo	211	218	20	10.90
116	Adh	Mandhoo	41	46	10	4.60
117	Adh	Dhn'agethi	102	120	10	12.00
118	Adh	Dhigurah	81	80	10	8.00
119	Adh	Fenfushi	86	93	10	9.30
120	Adh	Dhidhdhoo	26	20	10	2.00
121	Adh	Maamigili	204	243	20	12.15
122	Vaavu	Fulidhoo	50	56	10	5.60
123	V	Thinadhoo	32	21	10	2.10
124	V	Felidhoo	75	82	10	8.20
125	V	Keyodhoo	83	79	10	7.90
126	V	Rakeedhoo	38	35	10	3.50
127	Meemu	Raiymandhoo	33	27	10	2.70
128	M	Madifushi	24	22	10	2.20
129	M	Veyvah	28	31	10	3.10
130	M	Mulah	165	192	10	19.20
131	M	Muli	119	134	10	13.40
132	M	Naalaafushi	47	61	10	6.10
133	M	Kolhufushi	150	153	10	15.30
134	M	Dhiggaru	140	159	10	15.90
135	M	Maduvvari	79	79	10	7.90
136	Faafu	Feeali	128	124	10	12.40
137	F	Biledhhdhoo	136	151	10	15.10
138	F	Magoodhoo	73	81	10	8.10
139	F	Dharn'aboodhoo	38	45	10	4.50
140	F	Nilandhoo	177	197	20	9.85
141	Dhaal	Meedhoo	124	137	10	13.70
142	Dh	Ban'didhoo	77	85	10	8.50
143	Dh	Rin'budhoo	92	76	10	7.60
144	Dh	Hulhudeli	97	99	10	9.90
145	Dh	Gemendhoo	62	63	10	6.30
146	Dh	Vaani	59	57	10	5.70
147	Dh	Maaen'boodhoo	99	105	10	10.50
148	Dh	Kudahuvadhoo	199	227	10	22.70
149	Thaa	Buruni	70	59	10	5.90

150	Th	Vilufushi	186	193	10	19.30
151	Th	Madifushi	104	104	10	10.40
152	Th	Dhiyamigili	97	94	10	9.40
153	Th	Guraidhoo	198	199	10	19.90
154	Th	Kan'doodhoo	81	78	10	7.80
155	Th	Vandhoo	47	45	10	4.50
156	Th	Hirilandhoo	123	136	10	13.60
157	Th	Gaadhiffushi	61	48	10	4.80
158	Th	Thimarafushi	250	231	20	11.55
159	Th	Veymandoo	137	150	10	15.00
160	Th	Kinbidhoo	138	150	10	15.00
161	Th	Omadhoo	78	83	10	8.30
162	Laamu	Ishdhoo	257	258	10	25.80
163	L	Dhan'bidhoo	106	99	10	9.90
164	L	Maabaidhoo	113	123	10	12.30
165	L	Mundoo	80	81	10	8.10
166	L	Kalhaidhoo	71	71	10	7.10
167	L	Gamu	337	367	20	18.35
168	L	Maavah	222	250	10	25.00
169	L	Fonadhoo	262	280	20	14.00
170	L	Gaadhoo	65	59	10	5.90
171	L	Maamendhoo	151	166	10	16.60
172	L	Hithadhoo	135	143	10	14.30
173	L	Kunahandhoo	88	92	10	9.20
174	Gaafu alif	Kolamaafushi	184	185	10	18.50
175	Ga	Viligili	364	386	20	19.30
176	Ga	Maamendhoo	160	174	10	17.40
177	Ga	Nilandhoo	82	86	10	8.60
178	Ga	Dhaandhoo	189	191	10	19.10
179	Ga	Devvadhoo	124	103	10	10.30
180	Ga	Kodey	49	50	10	5.00
181	Ga	Dhiyadhoo	27	26	10	2.60
182	Ga	Gemanafushi	163	185	10	18.50
183	Ga	Kandhuhulhudhoo	69	74	10	7.40
184	Gaafu dhaal	Madaveli	186	202	10	20.20
185	Gdh	Hoadhedhdhoo	127	126	10	12.60
186	Gdh	Nadallaa	134	119	10	11.90
187	Gdh	Gadhdhoo	343	328	20	16.40
188	Gdh	Rathafandhoo	134	128	10	12.80
189	Gdh	Vaadhoo	146	134	10	13.40
190	Gdh	Fiyoari	168	169	10	16.90
191	Gdh	Maathodaa	98	88	10	8.80
192	Gdh	Fares	97	94	10	9.40
193	Gdh	Thinadhoo	742	594	40	14.85
194	Gnaviyani	Fuvahmulah	1,251	1207	60	20.12
195	Seenu	Meedhoo	318	337	20	16.85
196	S	Hithadhoo	1,408	1448	70	20.69
197	S	Maradhoo	323	346	20	17.30
198	S	Feydhoo	464	518	20	25.90
199	S	Maradhoofeydhoo	179	200	10	20.00
200	S	Hulhudhoo	289	271	10	27.10

Technical Note 4:
VPA Estimation procedure

Estimation of total and mean

Sampling for VPA was made separately for Atolls and Male'. In Atolls all islands were taken into sample at the first stage. At the second stage a minimum sample of 10 households was taken for each island up to 1500 inhabitants (approximately 200 households) and additional 10 households for every 1500 inhabitants thereafter. Such scheme effectively regarded the island as a stratum and resulted in a single weight for each island for estimation.

Male' comprises 5 wards and each ward is divided into several enumeration blocks. In each ward, allocated number of enumeration blocks in sampling design were selected probability proportional to the number of households and at the second stage fixed number of 10 households per-block, which resulted in a self-weighting design at the stratum level. In both cases of Atolls and Male' sampling was made after a fresh listing of households, so there was no effect of the usual difference between the number of units in the frame and actual number in the survey period. Thus, design weights could be used directly in estimation procedure.

In Atolls, total of the variable of interest **y** for each island could be estimated as;

$$\hat{Y}_j = \frac{N_j}{n_j}\sum_{i=1}^{n_j} y_{ij} \qquad (1)$$

where,

$\hat{Y}_j$ - estimated total value of y characteristics for j^{th} island

N_j - total number of households in j^{th} island

n_j - number of households in sample in j^{th} island

y_{ij} - value of y characteristics from i-th household of j-th island

As the estimation weight was given by $W_j = N_j / n_j$ and sample total of y for j^{th} island by $y_j = \sum_{i=1}^{n_j} y_{ij}$ value of y variable in total for j^{th} island was estimated as:

$$\hat{Y}_j = W_j y_j \qquad (2)$$

Similarly, mean of y variable for j^{th} island was estimated as;

$$\bar{Y}_j = \frac{W_j y_j}{N_j} \qquad (3)$$

Total and mean of Atolls was computed from the island estimates.

In Male', sampling was made at two stages with the enumeration block as primary sampling unit (PSU) and households as secondary sampling unit (SSU). At the first stage selection probability of an enumeration block was $f_1 = a\frac{m_j}{\sum m_j}$ where, a denoted the number of blocks selected and m_j – number of households in selected j^{th} cluster. Similarly, selection equation of a household was: $f_2 = \frac{b}{m_j}$ where, b denoted the number of households selected in a PSU. The overall selection rate in a stratum was $f_0 = f_1 \times f_2 = \frac{a \cdot b}{\sum m_j}$, hence the design weight for h^{th} stratum (ward) was computed as; $W_h = \frac{1}{f_{0h}}$. Since the design was a self-weighting all units within the stratum had single weight, the total value of y variable for each stratum was computed by applying the estimation weights similarly as in formulae (2) i.e.

$$\hat{Y}_h = W_h \sum_j y_j \tag{4}$$

The sample mean of *y* variable was calculated as; $\bar{y}_i = \frac{\sum_{j=1}^{b} y_j}{b}$ at the PSU level and $\bar{y}_h = \frac{\sum_{i=1}^{a} \bar{y}_i}{a}$ at stratum level.

As the *b* is constant for all PSU's, sample mean at the stratum level could be directly calculated as;

$$\bar{Y}_h = \frac{\sum_{j=1}^{m} y_j}{ab} \tag{5}$$

The total and mean of Male' was computed from the stratum estimates, while national level total and mean was estimated as weighted mean of Male and Atolls.

Estimation of the standard error

Standard error of key variables of VPA was estimated to examine the overall reliability of survey results. VPA survey was based on the complex design (different from the simple random sampling) involving unequal probabilities, stratification and clustering. Estimation of variance for complex design is different from the one for SRS. Instead of calculating the variance as deviation of elements of θ characteristics from the mean given by:

$$var(\theta) = \frac{\sum(\theta_j - \bar{\theta})^2}{n(n-1)} \tag{6}$$

we take the deviation of θ characteristics of sub-samples from its full sample expressed as:

$$var(\theta) = \frac{\sum(\hat{\theta}_{k\alpha} - \hat{\theta}_{\alpha})^2}{k(k-1)} \tag{7}$$

where, θ is estimated value of any characteristics such as mean ratio or proportion and *k* denotes the number of sub-samples.

Computation of standard error was made using Balanced repeated replication (BRR) method in *Wesvar 32*. While estimating standard error fpc (1–*f*) was ignored. Estimated proportion and mean are given in the confidence interval at the 95% level of precision for which value of *t* equals 1.96. In the complex design, the variance of estimates can be inflated by the magnitude of design effect (Deff) that occurs due to unequal probability, stratification and clustering. Therefore, estimated value of key variables are presented with the relative standard error (RSE) and Deff.

Overall assessment of variance for the survey results is made for 3 key variables; headcount ratio, average expenditure per person per day and the average size of households as per survey observation. Since the headcount ratio has significantly fallen by 2004 and there was a very small number of households observed under the poverty line, the variance was estimated rather for its inverse indicator that is proportion of population not affected by income poverty.

Headcount ratio:

It is estimated as the proportion of those living below the lowest poverty line to total population. The lowest poverty line designated for the first VPA at the level of expenditure of MRF 7.50 per capita per day was applied without any adjustment for VPA-II as the effect of consumer price changes since 1998 was very marginal.

Average expenditure:

There were different expenditure figures produced in VPA depending on how the rent of dwelling units and gifts were treated. Average expenditure per person per day for variance estimation purpose is taken excluding imputed rent and gifts but including actually paid rent.

Above estimates are presented with relatively lower degree of relative standard error (margin of sampling error of all 3 estimates is below 5%). While stratification of sample into Male and Atolls has been reflected in the overall design effect at the national level for all 3 estimates (below 2), intra-cluster correlation was not found important in case of Male.

Table 1: Overall estimates of variance for key variables in results of VPA II

Variables	Domain	Mean/ proportion	RSE (in%)	Deff
Percentage of population not affected by income poverty	National	96.25	0.52	1.87
	Male	99.69	0.31	1.00
	Atolls	95.14	0.68	2.21
Expenditure per person per day MRF	National	38.28	2.38	1.34
	Male	66.22	0.15	0.01
	Atolls	29.26	4.11	2.89
Average household size	National	6.55	0.71	1.70
	Male	7.96	1.86	0.35
	Atolls	6.10	0.60	1.64

Standard error of poverty indices

Estimation of standard error is made for the rate of decline of headcount ratio in VPA II (2004) in compare to VPA I (1998). Standard error of poverty indices for two periods was estimated from the data set of respective surveys. In estimation of standard error of difference of the poverty indices, partial overlap of samples was taken into consideration. The variance of the estimated change of headcount ratio in two periods $s_d^2 = p_1 - p_2$ is given by:

$$s_d^2 = s_{p1}^2 + s_{p2}^2 - 2\rho s_{p1} s_{p2} \qquad (8)$$

In case of the partial overlap and assuming that the variance of headcount ratio in both period is approximately same the above formula turns to be

$$s_d^2 = 2s_p^2(1 - F\rho) \qquad (9)$$

where, ρ - coefficient of correlation and F - proportion of overlapping sample.

Standard error of the difference of headcount ratio is given by:

$$se_{d(\hat{P})} = \sqrt{2s_p^2(1 - F\rho)}$$

VPA II had 50% overlapping sample with VPA I, so the value of F was 0.5. and the value of ρ from the survey results was found 0.6. Standard errors of difference presented in the table below were calculated from the actual figures i.e. $\left(s_{p1}^2 + s_{p2}^2\right)$ instead of $2s_p^2$.

Notation in Table 2:

$\hat{P}_1$ and $\hat{P}_2$: Estimated value of poverty indices in period 1 (1998) and period 2 (2004)

$d(\hat{P})$: Estimated rate of decline

RSE: Estimated relative standard error of the decline rate

Table 2: Estimated Decline of the Headcount ratio 1998-2004

	VPA I $\hat{P}_1$	VPA II $\hat{P}_2$	$d(\hat{P})$	RSE in %	Confidence interval	
					$d(\hat{P})_{max}$	$d(\hat{P})_{min}$
Male	6.86	0.61	6.25	7.16	6.79	5.71
Atolls	14.75	4.30	10.45	5.85	11.51	9.39
Overall Maldives	13.22	3.41	9.81	5.28	10.87	8.75

The above table suggests that the headcount ratio in 2004 in the Maldives has reduced by 9.81% since 1998. This inference is subject to sampling error of 5.28%. If we like to test this change at the 95% of the precision level then we find that the headcount ratio could have been decreased by 8.75% at minimum and by 10.87% at maximum. Relative standard error of the poverty decline was less for Atolls than for Male' probably because the income range of households was more homogeneous in Atolls.

Technical Note 5: Panel Analysis

A5.1 Analysis Performed

This paragraph deals with some general issues regarding the empirical analysis performed. It has to be mentioned that in this empirical investigation the household is the unit of analysis. There are two reasons for this. Firstly, the reliability and availability of VPA data is larger for household level data. The fact that expenditures information does not exist for individuals is most importantly in this respect. Secondly, taking the household as the focal point of the analysis reflects the decision-making practices in Maldivian families best. In VPA-2 88% of atoll households report pooling their income and are thus at least taking joint decisions on expenditures.

The purpose of the equations estimated in the static ordinary least squares regressions is to explain household poverty and well-being in both time periods. The regression coefficients can be compared to see how these drivers have evolved. Since the static assessment scrutinises data of one time period alone, estimation results are improved by using household members as the level of analysis instead of households. Hence, the relationships between dependent and independent variables are weighted for the size of households. In the regression on static poverty for VPA-1 originally, 7,616 individual cases were included and for VPA-2 there were 7,180 individual cases originally. It should be noted however that no individual information is added; per household all member cases were identical. As a result of the absence of several indicators for some households, the number of households actually included were somewhat lower (see Table A5.3).

The equations estimated in the dynamic analysis component are furthermore explained. The purpose of these regressions is to investigate which households escaped from and which households fell into expenditures poverty over the last seven years. Logit regression techniques are used to estimate the equations. Logit regressions differ from least square 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 or falls into expenditures and income poverty. The series that need to be explained are dummy variables, taking on a value of one if a household experienced expenditures per person per day in VPA-2 above a certain threshold and taking on a value of zero if not. Only households that reported expenditures below 15 Rufiyaa per person per day in VPA-1 entered the expenditure escape calculation (560 households). Only households that reported escape above 15 Rufiyaa per person per day in VPA-1 were allowed to enter the fall regression (563 households).

Three aspects of the dependent variables need to be dealt with here. First, the poverty line of Rf.15 per day is deployed as a threshold for the dummy variables. Out of the poverty lines discussed in this report, the lower poverty lines cannot be used as there are too few observations below these lines in the second VPA. Second, the dummy variables are constructed with expenditures data including actual rent as that variable is used in relation to the poverty line in the entire VPA report. Note that the logit regressions differ in this aspect with the OLS regressions. Thirdly, logit instead of probit regressions were employed, since the logit probability distribution fitted the data better than the probit one.

A5.2 Methodology and Approach

The methodology of the analysis was designed as an iterative procedure. First, a broad impression of poverty dynamics was obtained and subsequently the results were fine-tuned as knowledge of the topic was being accumulated.

- The first step of the panel data analysis was to formulate a model for the creation of well-being in Maldives and to identify theoretical determinants that play a part in this model. It was imperative to make assumptions about relationships in advance to be able to analyse the data;
- The translation of the theoretical model into a model that could be tested empirically was step number two. The step furthermore included selecting relevant information from the comprehensive VPA-1 and VPA-2 datasets and conversion of this data into useful variables. Various adaptations were necessary in order to satisfy the conditions of regression techniques such as corrections for multi-collinearity. Some theoretical determinants could not be inserted because of the lack of information.
- The available data was then imported into the statistical analysis programme[1] to do an initial assessment of the relationships between the dependent variable and the theoretical determinants. In the static analysis, the per capita consumption in the two surveys is explained by the theoretical drivers which are treated as independent variables. For the dynamic analysis, logit regressions are run with as dependent variables the poverty status of the households in the surveys. (always poor, escaped, regressed and non-poor).
- In the fourth step a systematical procedure was used to select the indicators with a significant relation to monetary well-being or change in poverty status from the model results. Determinants without significant regression coefficients were omitted from the regression one by one to see how other coefficients and t-values reacted. As such, the most significant and stable regression specifications are chosen. It should be noted however that for comparison reasons some insignificant variables have been retained in the models. The presence of such redundant variables is not harmful as long as there are sufficient observations in the dataset. The fourth step also included general statistical tests on the validity of the model. Corrections were consequently made to satisfy the conditions of estimation techniques such as for heteroskedasticity.
- Then the first up to the fourth steps of the procedure are repeated. The knowledge obtained through the initial assessment on which and how variables are correlated was subsequently used to adapt the underlying model for poverty dynamics. The altered assumptions then made it necessary to change which and how variables are included. Afterwards these are imported into the statistical analysis programme and the ordinary least squares and logit regressions are run again. Statistical tests helped to validate the results. This iterative process is repeated until determination coefficients of the regressions did not improve any longer.

Currently the highest determination coefficient of regressions performed is 28%. This means that both the VPA-1 and the VPA-2 regression is able to explain 28% of the consumption in that period. However, the regression in which poverty escape is presented has a maximum determination coefficient of only 18%.

1 E-views 3.1 was the software package used for the analysis

Table A5.1 Theoretical Determinants of Poverty (Escape)

Determinants	What is hypothesised to have a positive effect on well-being in Maldives?	Variable used in panel data analysis
Determinants that can be influenced by households		
Human capital		
Household size	Small size	Number of members
Children	Few children	Proportion of members young (<15 years)
Employment and hours worked	All members employed and working many hours	Proportion of members employed (of relevant age category)
Employment sector	Tourism, trade and transport and government	Proportion of members employed in trade and transport, government, tourism, agriculture, fishing and manufacturing (of total employed)
Occupational diversification	More sectors	Number of sectors per employed member
Employment status	Employers and employees	Proportion of members employed as employers, employees and own account workers (of total employed)
Migration and remittances	Receiving remittances	Dummy for receiving remittances from household member abroad, in Male' or on a resort
Education	Higher level of education	Average level of education in the household (see appendix for explanation)
Experience	More years of experience but not too many	(Not included because of lack of data)
Other capital		
Physical capital	More physical assets	Dummy for taking a loan to invest and dummy for investing with private financial capital
Natural capital	More natural assets	(Not included because of low relevance and a lack of data)
Financial capital	More financial assets	(Not included because of lack of data)
Access to social capital	Better access to social capital	Proportion of household members voluntarily engaged in community activities
External determinants		
Household-specific factors		
Elderly	Few elderly	Proportion of members old (>64)
Women	Few women	Proportion of household members female
Female-headed households	Male-headed	Dummy for female-headed household
Stage in the household's life cycle	Not relevant (well-being equal during lifetime of household)	(Not included because of lack of data)
Health status	Good health status for all members	Proportion of adults not able to work because of bad health
Crisis	No crisis	Dummy for the occurrence of a household-specific crisis
Society-specific factors		
Returns to capital	Higher returns	(Not included because of lack of data)
Social capital	More social assets	(Not included because of lack of variance across sample)
Government goods	High quantity and quality of facilities	Composite index of education, health and transport facilities (see appendix for explanation)
Size of and distance to market	Large towns or easy access to large towns	Index of population size (1=smallest island, 0=biggest island, all other islands have a pro rata index in between)
Geography	Beautiful and natural asset abundant and invulnerable to environmental risks	Dummies for region North, North Central, Central, South Central (South is omitted)

It goes beyond the scope of this report to thoroughly discuss the specific theoretical determinants of poverty and well-being. Table A5.1 gives an overview of the relevant determinants and there supposed effect. Moreover, the variables used to represent them in the panel data analysis are introduced. In the following paragraph on the main results of the analysis the relationships will be discussed somewhat more.

A5.3 Main Findings

A5.3.1 Main findings static analysis

The results of the statistical regressions explaining static poverty and well-being in Maldives are discussed in this section. The details of the regression coefficients, t-values and the products of the means of the variables and the regressions coefficients for the two dependent variables are contained in Table A5.1.

The dependent variables are the natural logarithm of expenditures per person per day in VPA-1 and VPA-2. This variable is used as it is a reasonable proxy for well-being in the country. The regression coefficients indicate the size and sign of the relationships between a specific explanatory variable and the variable that is to be explained. The t-values represent the reliability of the regression coefficients. The higher the t-value the more reliable is the estimate of the effect of the variable on the dependent. The products of the means of the variables and their regression coefficients present an indication of the size of the effect of the indicator on well-being. The determination coefficients of the regressions show that the model fits VPA-1 and-2 data equally well: the R2 for both OLS regressions is 28%. The following relationships between the theoretical drivers from last chapter and the financial well-being of households in Maldives could be determined.

Determinants that can be influenced by households - Human capital

Firstly, the number of household members negatively and very significantly affects household well-being in both periods. The detrimental influence of a large family has gone down since 1997. The proportion of household members that are younger than 15 years has a strong negative impact on well-being. Having many children in the household seems more detrimental in 2004 than in 1997. The proportion of household members employed has an important positive effect on well-being and this effect has increased considerably over time in size and significance.

The proportion of household members working in trade and transport currently has a positive influence on household's consumption. The height and reliability of the regression coefficient for trade has increased since last VPA; its was insignificant and negative in 1997. Compared to the other sectors trade and transport improved its position; the sector was the second most beneficial in 1997 but is now the most beneficial to well-being. A high proportion of members working for the government has become more advantageous to households. In spite of this increase in the regression coefficient and t-value, the relative position of the government indicator has decreased. Working for the government is the best sector to work in VPA-1 and the third best sector in VPA-2. Having many household members employed in the tourism sector has become much more beneficial over the last seven years and currently has the second largest impact on well-being. In VPA-1 this was the most negative impact. This strong increase in pay-off might be due to a lack of observations of tourism employment in VPA-1. The coefficient of agriculture was negative, but the third largest of all sectors, in 1997. A high proportion of household members working in agriculture in VPA-2 does however has the worst influence on households' well-

Table A5.2 Summary of Results of the Static Analysis

	VPA-1			VPA-2		
Number of Observations Included	7,604			7,180		
Mean of dependent variable*	3.04			3.41		
Independent variables	**Coeffi-cient**	**t-value**	**Mean* Coeffi-cient**	**Coeffi-cient**	**t-value**	**Mean* Coeffi-cient**
Fixed Term	3.828	61.1		3.898	62.8	
Determinants that can be influenced by households						
Human capital						
Number of household members	-0.064	-31.6	-0.50	-0.052	-27.0	-0.40
Proportion of members young	-0.263	-6.1	-0.13	-0.434	-10.3	-0.17
Proportion of adults employed	0.156	5.8	0.08	0.271	11.6	0.14
Proportion employed in the trade and transport sector	-0.005	-0.2	0.00	0.178	4.6	0.02
Proportion employed in (semi) government	0.042	1.4	0.01	0.065	2.0	0.01
Proportion employed in the tourism sector	-0.273	-4.1	-0.01	0.136	2.9	0.01
Proportion employed in the agriculture sector	-0.058	-1.5	0.00	-0.147	-3.6	-0.01
Proportion employed in the fishing sector	-0.080	-3.5	-0.02	-0.122	-4.3	-0.02
Proportion employed in manufacturing sector	-0.114	-4.5	-0.03	-0.104	-3.3	-0.03
Number of sectors per employed member	0.082	5.3	0.06	0.018	1.1	0.01
Proportion employed working as employer	0.195	5.2	0.01	0.178	3.4	0.00
Proportion employed working as employee	-0.058	-2.8	-0.02	-0.087	-3.7	-0.03
Proportion working as own-account worker	0.029	1.4	0.01	0.019	0.9	0.01
Dummy for receiving remittances	0.010	0.6	0.00	0.095	6.7	0.03
Average level of education*	0.090	3.9	0.13	0.066	2.5	0.11
Other capital						
Dummy for taking a loan to invest	0.161	2.2	0.00	0.246	11.3	0.02
Dummy for investing without taking a loan	0.021	0.7	0.00	0.230	9.2	0.01
Proportion of members voluntary participating in community activities	0.364	11.0	0.08	0.304	9.5	0.06
External determinants						
Household-specific						
Proportion of members old	0.118	1.2	0.00	-0.185	-2.3	-0.01
Proportion of members female	-0.278	-7.2	-0.14	-0.105	-2.9	-0.06
Dummy for female-headed household	-0.083	-5.8	-0.02	-0.034	-2.6	-0.01
Proportion of members not working because of bad health	-0.287	-3.0	-0.01	-0.342	-4.4	-0.02
Dummy for occurrence of a crisis	0.167	10.7	0.03	-0.005	-0.3	0.00
Society-specific						
Composite government facilities vulnerability index**	-0.116	-5.0	-0.05	-0.065	-2.6	-0.02
Population vulnerability index***	-0.178	-5.5	-0.15	-0.007	-0.2	-0.01
Dummy for Northern region	0.013	0.6	0.00	-0.237	-11.5	-0.05
Dummy for Northern Central region	-0.300	-15.1	-0.07	-0.190	-9.4	-0.04
Dummy for Central region	0.128	5.8	0.02	-0.144	-6.4	-0.02
Dummy for Southern Central region	-0.246	-11.4	-0.06	-0.080	-3.9	-0.02
Dummy for Southern region						
Determination coefficient	28%			28%		
Adjusted determination coefficient	28%			28%		

** 1=low, 2=middle, 3=high (see Table A5.8 in Appendix 5 for classification)*

*** 0=excellent situation, 1=bad situation (see Table A5.9 in Appendix 5 for classification)*

**** 0=largest population, 1=smallest population* being; the coefficient is much more negative. The absolute value of the coefficient for fishing and its relative position have diminished too. The coefficient for fishing in VPA-1 was the fourth largest of all sectors, but it is the second lowest in VPA-2. The negative impact of being employed in the manufacturing sector on expenditures has decreased somewhat over time. The manufacturing sector used to be the second least beneficial to well-being in VPA-1, but is the third least beneficial in VPA-2. The most striking conclusions on employment sector that can be drawn from table 4 is that tourism and the trade and transport sector are currently the most advantageous sectors to work in and that government is in addition of stable value to well-being.

Occupational diversification (employing household members in different economic sectors) seems to pay-off to Maldivian households. Nevertheless, the positive effect of the number of sectors per labourer has decreased considerably in significance and importance since 1997. With respect to employment status, a high proportion of employers in a household turns out to be very good for that household's well-being. In VPA-1 the positive and significant effect of being an employer was a little larger than in VPA-2. The negative and significant coefficient for the effect of the proportion employees on well-being is more negative in 2004. Having a high proportion of own account workers still impacted consumption significantly positively in VPA-1, but this influence has become insignificant in VPA-2. On employment status it can be concluded that employers are best off and employees are worst off.

If a household received remittances from family members working in Male', on a resort or abroad this has logically increased its well-being in both years although the effect was insignificant in 1997. This can probably be explained by the larger number of families receiving remittances from household members elsewhere in 2004. The average level of education obviously increases households' well-being. The returns to education seem to have decreased slightly since 1997, but are still highly important and significant for the VPA-2 data. Investing in human capital apparently pays off in Maldives.

Determinants that can be influenced by households - Other capital

Both taking a loan to make an investment and investing without taking a loan show a positive relation to households' consumption levels. Investing in physical capital is thus beneficial. Especially investing in productive assets by taking a loan helps families improve their economic status. The effect is large and significant in both time periods. The coefficient is larger in 2004, indicating that investment has become more beneficial. It should be noted however that few households took on a loan in 1997; this might have rendered the coefficient less reliable. In VPA-1 investing with your own capital does not have a significant effect on well-being, probably because the number of households who reported to have invested without taking a loan were very limited. In 2004 the coefficient for investing 'from your own pocket' is significant and positive. Households that are actively engaged in community activities - and are thus believed to have better access to the available social capital on an island - do better than households that are not actively involved in the community. It could be that these families can fall back on a large social network in case anything happens to them, are better informed than others and benefit most from facilities on the island. Another explanation of this positive coefficient could be the active predisposition of these households, which leads to success in other, economic areas. The size and significance of the effect of voluntary work is slightly decreasing.

External household-specific determinants

The coefficients furthermore indicate that the more old people (those above 64 years of age) live in a household, the poorer that household is in 2004. This relationship shows an increase in size and significance over time; the proportion of older household members even had a small, positive effect on well-being in VPA-1. The proportion of women in a household seems to have a strong negative impact on the logarithm of expenditures, although the magnitude of this relationship is decreasing over time. Households with a female household head are also worse off than those with a male household head in both time periods, but this relation has become less strong.

The proportion of household members not working because of bad health (an indicator of the health situation in a family) consequently has a negative impact on household's well-being. The influence of household members with a bad health status is now more negative and more significant to that in 1997.

The regression coefficients in Table A5.3 indicate an unexpected, strange relationship between the occurrence of an exogenous crisis in a household and that household's income and expenditure; all regression coefficients show a positive correlation. A satisfying rationale for this result is not yet provided. The positive effect seems to be largest for expenditure data and does show a decline over time. The larger effect on expenditures might have to do with the extra costs a household incurs after having faced a crisis such as a sick household member or damage to property.

External society-specific determinants

The government facilities vulnerability island index (a sum of the VPA vulnerability indexes on education facilities, health facilities and transport facilities on an island) has the expected negative effect on household's well-being. The index is larger when the islanders are more vulnerable to poverty in these areas so this indicates that problems in the delivery of public and collective goods apparently impede families' consumption levels. The negative influence of a high government vulnerability index is smaller in 2004 than in 1997. The population index, which is one for the largest island and zero for the smallest, also has an expected negative impact on households well-being in VPA-1 and II, although the effect is not significant for VPA-2.

Whether living in a certain region, ceteris paribus, influences household poverty and well-being is also investigated. It turns out that households living in the Central region are best off in the first time period and households in the Southern region are best-off in VPA-2. Households from the Northern and Southern region did not suffer or benefit from their respective geographical locations in 1997. The dummy for the Southern region is omitted from the regression and the other coefficient did not have a significant t-value. Households living in the Northern Central region did, all other things being equal, experience a significant negative effect of their location in 1997. The effect of their residential region on well-being is the second most negative in 2004. Living in the Northern region is most detrimental to household well-being at the moment. This is a very significant result. The Southern Central region was the second worst region to live in, ceteris paribus, in 1997. The effect of the dummy for the Southern Central region on consumption was much better however in 2004. The Southern Central region was the second best to live in for VPA-2. Note that these conclusions are all based on the ceteris paribus principle; when all other things remain equal. Households in the Southern region are not necessarily richer than other households, but households with comparable characteristics do better in the Southern region.

The most significant drivers of household well-being in VPA-1 are (i) the number of household members, (ii) living in the Northern Central region or the (iii) Southern Central region, (iv) the proportion of members voluntarily participating in community activities and (v) the occurrence of a crisis. In 2004, household well-being was influenced most significantly by (i) the number of household members, (ii) the proportion of adults employed, (iii) living in the Northern region, (iv) investing by taking a loan, (v) the proportion of young household members, (vi) the proportion of members voluntarily participating in community activities and (vii) living in the Northern Central region. These indicators are ranked in order of reliability for both regressions.

The relative influences of the regression coefficients were furthermore scrutinised by comparing the product of the means of the variables and the regressions coefficients (threshold at product>0.10). The results indicate that the following variables are respectively most influential for well-being in VPA-1: the number of household members, the population vulnerability index, the proportion of female household members, the average level of education and the proportion of young household members. In the VPA-2 one-period OLS regression the relative influences of the next indicators were highest: the number of household members, the proportion of young household members, the proportion of adults employed and the average level of education in the family. The indicators mentioned are ranked in order of importance.

A5.3.2 Main findings dynamic analysis

In this section the logit regressions on whether a household escapes or falls into poverty will be discussed. Table A5.4 shows the details of the regression coefficients, the z-values and the products of the means of the variables and the coefficients of these regressions. The coefficients indicate the size and sign of the relationships between the listed explanatory variables and the variables escape and fall. The z-values represent the reliability of the regression coefficients. Z-values instead of t-values are reported since the estimation of logit regressions is based upon the cumulative distribution function for the logistic distribution, not the standard normal distribution. Like for the t-values in Table A5.2, the higher the z-value the more significant is the estimate. The products of the means of the indicators and their coefficients show the relative size of the effects of the different variables on poverty escape and poverty fall.

The escape regression is run on a sample of households who spent less than 15 Rufiyaa per person per day in the base period. The dependent variable takes on the value one if a household managed to pull its expenditures per person per day over the 15 Rufiyaa threshold. 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 expenditure poverty escape regression 71% of the cases were predicted correctly using this model. Together with an overall determination coefficient of 18% this indicates a moderate to weak fit of the model. The fall regression is run on a sample of households who spent more than 15 Rufiyaa per person per day in the base period. The dependent variable takes on the value one if a household's expenditures in VPA-2 fell under the 15 Rufiyaa threshold. If the estimated outcome of the regression is a value higher than 0.5 (the outcome will be between zero and one by definition) the specific household is predicted to fall into poverty. 83% of the expenditure fall cases were predicted correctly using this model. Since the determination coefficient of the regression is 19% the fit between the expenditure data and the fall model is stronger than between the data and the escape model.

The results of the logit regressions will be discussed here. It soon becomes clear that some theoretical determinants of poverty and well-being do not feature in these equations. This is because these indicators did not pas the z-test of significance. Some insignificant but important

Table A5.4 Summary of Results of the Dynamic Analysis

	Escape			Fall		
Number of Observations Included	560			563		
Mean of dependent variable*	0.64			0.20		
Independent variables	**Coeffi-cient**	**z-values**	**Mean* Coeffi-cient**	**Coeffi-cient**	**z-values**	**Mean* Coeffi-cient**
Fixed Term	-0.53	-0.85		-3.390	-4.9	
Determinants that can be influenced by the household						
Human capital						
Initial number of household members	-0.051	-1.9	-0.33	0.128	2.5	0.83
Change in number of household members	-0.095	-3.5	0.04	0.216	4.5	-0.08
Initial number of young household members	0.568	1.3	0.26	1.063	1.4	0.49
Change in number of young household members	-0.475	-1.2	0.04	0.595	0.9	-0.05
Initial proportion of adults employed	0.610	2.1	0.32			
Change in proportion of adults employed	0.728	3.2	0.01			
Proportion employed in trade and transport VPA-2	0.460	1.2	0.04	-1.059	-1.8	-0.10
Proportion employed in (semi) government VPA-2	-0.172	-0.6	-0.03	-2.369	-3.7	-0.47
Proportion employed in the tourism sector VPA-2	0.432	1.0	0.01	-2.734	-2.0	-0.08
Proportion employed in the agriculture sector VPA-2	-0.671	-1.8	-0.03	-0.166	-0.3	-0.01
Proportion employed in the fishing sector VPA-2	-0.086	-0.3	-0.01	-0.147	-0.3	-0.02
Proportion employed in manufacturing sector VPA-2	0.033	0.1	0.01	-0.167	-0.4	-0.05
Initial proportion employed working as employee				0.829	1.6	0.27
Change in proportion of working as employee				0.640	1.5	0.00
Initial proportion of working as own account worker	-0.278	-1.1	-0.10			
Change in proportion of own account workers	-0.333	-1.6	-0.01			
Dummy for receiving remittances	0.452	3.1	0.14	-0.446	-1.5	-0.14
Initial average level of education	0.907	3.1	1.33			
Change in average level of education	0.437	2.0	0.06			
Other capital						
Dummy for taking a loan to invest VPA-2	0.428	1.7	0.04	-1.098	-1.9	-0.10
Dummy for investing without taking a loan VPA-2	0.260	0.8	0.01			
Initial proportion of members voluntary participating in community activities	0.866	2.0	0.22	-0.735	-1.0	-0.18
Change in proportion of members voluntary participating in community activities	0.408	1.3	-0.01	-0.873	-1.5	0.03
External determinants						
Household-specific						
Proportion of household members female VPA-2	-0.700	-2.0	-0.38			
Dummy for female-headed household VPA-2	-0.082	-0.6	-0.04			
Proportion of members not working because of bad health VPA-2	-1.345	-2.9	0.11	1.419	1.8	0.11
Society-specific						
Dummy for Northern region	-0.731	-3.4	-0.16	2.161	5.0	0.48
Dummy for Northern Central region	-0.803	-3.7	-0.18	1.664	3.6	0.38
Dummy for Central region	-0.353	-1.3	-0.04	1.278	2.6	0.15
Dummy for Southern Central region	-0.216	-1.0	-0.05	0.574	1.1	0.14
Dummy for Southern region	0.000			0.000		
Determination coefficient (McFadden)		0.18			0.19	

**A dummy that takes on the value1 if a household's expenditures pppd rose from under to above Rf.15 from 1997 to 2004 or if a household's expenditures pppd fell from over to under Rf.15 from 1997 to 2004*

*** 1=low, 2=middle, 3=high (see Table A5.8 in Appendix 5 for classification)* indicators were maintained however in order to compare results. The main outcomes of the escape and fall regressions are similar to the results of both static analyses.

Determinants that can be influenced by households – Human capital

First of all, a high initial level of and positive change in the number of household members keeps households in poverty and pushes households below the poverty line. Escape seems to be hampered less than that fall is being promoted by a big household. The initial proportion of and change in the proportion of young household members also negatively affects the escape out of poverty and positively affects the fall into poverty. Particularly the probability that a family falls below the income poverty line is large with a high proportion or change in the number of young household members. The poverty fall dummy is however not significantly influenced by the change in proportion of household members below 15. The base level and change in proportion of adults employed have a strong positive effect on the odds of escaping poverty, but do not significantly affect the probability of falling into poverty. The coefficient of the change in the proportion of adults employed in largest.

In which industry household members are employed in VPA-2 also influences the probabilities that households escape poverty or fall into poverty. For comparison reasons all industries' proportions are included even though the coefficients are not always significant. This is the case for government, fishing and manufacturing in the escape regression and for agriculture, fishing and manufacturing in the fall regression. The fact that the categories incorporate many types of occupations might have to do with this apparent lack of relation. A high proportion of household members in the trade sector does positively influence the escape from poverty, as it does prohibit poverty fall. In fact, a high proportion of adults employed in trade and transport increases the odds of escaping poverty the most of all sectors. A high proportion of household members employed in government has an ambiguous influence; it both (insignificantly) hampers escape from poverty and it significantly and strongly prohibits fall into poverty. The level of household members working in tourism in VPA-2 has the expected effect; it is positively correlated to poverty escape and to remaining out of expenditures poverty. The proportion of household members in tourism has the highest coefficient in the poverty fall regression. The proportion household members in agriculture has the strongest negative effect on the poverty escape dummy, but shows no significant relation to poverty fall. The initial proportion employed in fishing has an insignificant influence on both the dummy whether a household escaped poverty and the dummy whether a household fell into poverty. The same applies to the indicator for the proportion of members employed in manufacturing; it renders no significant, noteworthy results. The most interesting conclusions on employment sector and poverty escape or fall are that employment in the trade and transport sector especially promotes poverty escape, working in the tourism sector especially promotes staying out of poverty and that government employment both promotes remaining in poverty and remaining out of poverty.

The initial and change in proportion employees prevents poverty fall, but does not significantly influence poverty escape. Having a high proportion own account workers on the other hand is significantly hampering the escape from poverty, but doesn't influence the dummy for poverty fall. Receiving remittances from household members elsewhere has the expected, positive effect on the odds to escape poverty and the expected negative effect on the odds to fall into poverty. The initial level of and change in the average level of education in a household furthermore are positively related to escape, while no apparent relation exists with the poverty fall dummy. The coefficient for the base level of education present in a family is largest. A high degree of human capital obviously affects the odds of escaping poverty but not the odds of falling into poverty.

Determinants that can be influenced by households – Other capital

When a households takes on a loan to invest this increases the chance that it will escape poverty or it decreases the chance that the household will fall into poverty (whether the escape or fall regression is applicable depends off course on the household's initial level of well-being). The effect of a loan to invest on the fall into poverty is largest. It can be assumed that people with a higher initial level of expenditure find it easier to make loans profitable. The dummy for investing without taking a loan also has a nearly significant, positive coefficient in the poverty escape regression. Investment from you own pocket does not influence poverty fall. A clear positive relation exists between the initial proportion of and development in household members voluntarily active in community activities and the probability that a household escapes poverty. More community involvement accordingly prevents households from falling into poverty.

External household-specific determinants

The proportion of women in a household significantly impedes escaping from poverty, but does not influence falling into poverty. Having a female household head also slightly diminish the chances of escaping poverty. A female household head however does not affect the probability of falling into poverty. The proportion of family members unable to work in VPA-2 due to bad health decreases the chances of escaping poverty and increases the likelihood that a family will wind up in poverty. Both indicators have large coefficients and z-values, indicating that this is an important determinant.

External society-specific determinants

The influence of the regions in which households live on the odds of escaping or falling into poverty furthermore provides an interesting image. All dummies included in the regressions decreased the odds of escaping poverty and increased the chances of falling. This means that living in the omitted region, the Southern region in this case, was best for households. The coefficients for the Northern Central region and Northern region are the two most negative in the poverty escape regression and the two most positive for the Northern region. This indicates that households in this region faced the highest probability to remain in poverty or to fall into poverty. Households living in the Central region are also disadvantaged in these terms, albeit less than their neighbours to the north. When a household lives in the Southern Central region this slightly affected the odds to escape poverty negatively. Fall into poverty was somewhat promoted by the Southern Central dummy. Note that the coefficients for different regions in the poverty escape and fall logit regressions show a different picture than those in the OLS regressions. The influence of the region in which a household lives is apparently different at the bottom of the expenditures distribution.

Based on the z-values reported (threshold $z>3.0$), the most significant drivers of escape are the dummy for the Northern Central region, the change in number of household members, the dummy for the Northern region, the change in proportion of adults employed, the dummy for receiving remittances and the initial average level of education. The z-values of the fall regression indicate that the dummy for the Northern region, the change in the number of household members, the proportion of household members in the government sector and the dummy for the Northern Central region. Like for the other regressions, the indicators are ranked in order of reliability.

The relative influences of the regression coefficients were furthermore scrutinised by comparing the product of the means of the variables and the coefficients (threshold at product > 0.20). The ranking of indicators is according to their relative importance. The indicators that have the largest impact on whether a household escapes poverty or not are the initial level of education, the proportion of household members female in VPA-2, the initial number of household members, the initial proportion of adults employed, the initial proportion of young household members and the initial proportion of household members voluntarily engaged in community activities. The following variables were most influential in the poverty fall regression: the initial number of household members, the initial number of young household members, the dummy for the Northern region, the proportion of employed in government in VPA-2, the dummy for the Northern Central region and the initial proportion of employed working as an employee. Like before, initial levels of assets play the largest role in explaining the dependent variables.

A5.4 Conclusions

The most significant and important effects on household well-being, on poverty escape and on poverty fall will be discussed in this section. The sign of the effects of the determinants is given in brackets.

The following variables are most influential for the static regressions on the natural logarithm of consumption. The well-being of households in both 1997 and 2004 is, in decreasing order of importance, mostly influenced by the number of household members (-), the proportion of young household members (-), the proportion of household members employed (+), the average level of education (+) and the proportion of female household members (-). Most of the influential variables mentioned above are thus similar to those found in the static analysis for the two years. The population vulnerability index (-) is the only determinant of well-being that shows an influence in the VPA-1 analysis, but it no such effect is seen for VPA-2.

Most of the important determinants in the static regressions were also highly influential for the dynamic regressions. The logit regressions that predict the escape from poverty and the fall into poverty in addition contain other influential determinants. The indicators that have the largest impact on whether a household escapes poverty or not are the initial level of education (+), the proportion of household members female in VPA-2 (-), the initial number of household members (-), the initial proportion of adults employed (+), the initial proportion of young household members (-) and the initial proportion of household members voluntarily engaged in community activities (+). The latter indicator is not present in the group of most important determinants for the other regressions.

The following variables were most influential in the poverty fall regression: the initial number of household members (+), the initial number of young household members (+), the dummy for the Northern region (+), the proportion of employed in government in VPA-2 (-), the dummy for the Northern Central region (+) and the initial proportion of employed working as an employee (+). Note that a positive effect in the poverty fall regression indicates that that determinant promotes the fall into poverty of a household. The average level of education in the household, the proportion of female household members and the proportion of household members employed, important indicators for the other regressions, apparently do not tremendously hamper or promote fall into poverty.

Table A5.5 Effects of Various Determinants on Poverty

Determinants	Theoretical positive effect	Empirical positive effect (* and **)
Determinants that can be influenced by the household –Human capital		
Household size	Small size	Small size
Children	Few children	Few children
Employment and hours worked	All members employed and working many hours	Many members employed
Employment sector	Tourism, trade and transport and government	Trade: positive **Government: positive for poverty fall***** Tourism: positive Agriculture: negative Fishing: negative Manufacturing: negative
Occupational diversification	More sectors	More sectors
Employment status	Employers and employees	Employers: positive Employees: positive for poverty fall*** Own account workers: negative
Migration and remittances	Receiving remittances	Receiving remittances for general well-being
Education	Higher level of education	High level of education
Experience	More years of experience but not too many	
Determinants that can be influenced by the household –Other capital		
Physical capital	More physical assets	**Investment by taking a loan for general well-being** and investment with own capital
Natural capital	More natural assets	
Financial capital	More financial assets	
Access to social capital	Better access to social capital	Better access to social capital
External household-specific determinants		
Elderly	Few elderly	Few elderly
Women	Few women	Few women
Female-headed households	Not female-headed	Not female-headed
Stage in the household's life cycle	Well-being equal during lifetime of household	
Health status	Good health status for all members	Good health status for all members
Crisis	No crisis	Negative for VPA-2
External society-specific determinants		
Returns to capital	Higher returns	
Social capital	More social assets	
Government goods	High quantity and quality of facilities	High quantity and quality of facilities
Size of and distance to market	Large towns or easy access to large towns	Larger towns
Geography	Beautiful and natural asset abundant, but invulnerable landscape	North: negative **North Central: negative** South Central: negative South: positive

** Bold: highly significant*

*** Italic: highly influential*

**** Positive in terms of well-being, not in terms of promoting a fall in well-being*

Table A5.6 Number of panel households by atoll

Atoll/ Region	Number of Households	Atoll/ Region	Number of Households
Total Panel	**1169**		
Total Region North	**262**	**Total Region South Central**	**250**
Haa Alifu Atoll	93	Meemu Atoll	45
Haa Dhaalu Atoll	95	Faafu Atoll	26
Shaviyani Atoll	74	Dhaalu Atoll	40
		Thaa Atoll	69
Total Region North Central	**274**	Laamu Atoll	70
Noonu Atoll	77		
Raa Atoll	83	**Total Region South**	**216**
Baa Atoll	74	Gaafu Alifu Atoll	54
Lhaviyani Atoll	40	Gaafu Dhaalu Atoll	64
		Gnaviyani Atoll	30
Total Region Central	**167**	Seenu Atoll	68
Kaafu Atoll	51		
Alifu Alifu Atoll	40		
Alifu Dhaalu Atoll	51		
Vaavu Atoll	25		

Table A5.7 Classification of Education Categories by Level

Answer to Q17 in the questionnaire	Category	Answer to Q17 in the questionnaire	Category
0	Low/None		
1	Low	11	High
2	Low	12	High
3	Low	13	High
4	Low	14	High
5	Low	15	High
6	Medium	16	High
7	Medium	17	Medium
8	Medium	18	Medium
9	Medium	19	Low
10	Medium	20	Low/None

Table A5.8 Calculation of the composite island vulnerability index

Weight	The Index ranges from 0 to 1 and is composed of:	
0.33 *	Education Vulnerability Index VPA	+
0.33 *	Health Vulnerability Index VPA	+
0.33 *	Transport Vulnerability Index VPA	

PART 5

Statistical Annex

	STATISTICAL ANNEX 1:	GENERAL					
		1997	2004	1997-2004	2004	2004	2004
	Atoll / Island name	*population size*	population size	population change	population distribution	area in hectares	population density (persons per hectare)
1	**Maldives**	***253,054***	**288,838**	**14.1%**	**100.00%**	**11546**	**25**
2	**Male'**	***64,401***	**85,665**	**33.0%**	**29.66%**	**187**	**458**
3	**Atoll average**	***188,653***	**203,173**	**7.7%**	**70.34%**	**11359**	**18**
4	**HAA ALIFU ATOLL**	***14,235***	**14,987**	**5.3%**	**5.19%**	**1348**	**11**
5	Thurakunu	*510*	407	-20.2%	0.14%	22	19
6	Uligamu	*384*	301	-21.6%	0.10%	113	3
7	Berinmadhoo	*163*	100	-38.7%	0.03%	15	7
8	Hathifushi	*201*	132	-34.3%	0.05%	4	32
9	Mulhadhoo	*258*	220	-14.7%	0.08%	118	2
10	Hoarafushi	*2,113*	2,458	16.3%	0.85%	63	39
11	Ihavandhoo	*1,980*	2,614	32.0%	0.90%	61	43
12	Kelaa	*1,286*	1,495	16.3%	0.52%	213	7
13	Vashafaru	*594*	455	-23.4%	0.16%	31	14
14	DHIDHDHOO	*2,468*	2,985	20.9%	1.03%	51	59
15	Filladhoo	*708*	634	-10.5%	0.22%	226	3
16	Maarandhoo	*635*	485	-23.6%	0.17%	41	12
17	Thakandhoo	*609*	445	-26.9%	0.15%	45	10
18	Utheemu	*615*	557	-9.4%	0.19%	47	12
19	Muraidhoo	*505*	441	-12.7%	0.15%	50	9
20	Baarah	*1,206*	1,258	4.3%	0.44%	249	5
21	**HAA DHAALU ATOLL**	***16,911***	**18,705**	**10.6%**	**6.48%**	**1651**	**11**
22	Faridhoo	*218*	124	-43.1%	0.04%	23	5
23	Hondaidhoo	*135*	0	-100.0%	0.00%		
24	Hanimaadhoo	*919*	1,199	30.5%	0.42%	259	5
25	Finey	*367*	290	-21.0%	0.10%	118	2
26	Naivaadhoo	*642*	418	-34.9%	0.14%	26	16
27	Hirimaradhoo	*409*	301	-26.4%	0.10%	43	7
28	Nolhivaranfaru	*421*	306	-27.3%	0.11%	150	2
29	Nellaidhoo	*838*	690	-17.7%	0.24%	30	23
30	Nolhivaramu	*1,508*	1,665	10.4%	0.58%	221	8
31	Kuribi	*499*	442	-11.4%	0.15%	32	14
32	Kuburudhoo	*292*	155	-46.9%	0.05%	42	4
33	KULHUDHUFFUSHI	*5,987*	8,654	44.5%	3.00%	172	50
34	Kumundhoo	*1,037*	931	-10.2%	0.32%	178	5
35	Neykurendhoo	*991*	827	-16.5%	0.29%	163	5
36	Vaikaradhoo	*1,201*	1,179	-1.8%	0.41%	97	12
37	Maavaidhoo	*352*	399	13.4%	0.14%	36	11
38	Makunudhoo	*1,095*	1,125	2.7%	0.39%	61	19
39	**SHAVIYANI ATOLL**	***11,287***	**13,021**	**15.4%**	**4.51%**	**962**	**14**
40	Kaditheemu	*1,014*	1,193	17.7%	0.41%	90	13
41	Noomaraa	*460*	445	-3.3%	0.15%	35	13
42	Goidhoo	*465*	413	-11.2%	0.14%	106	4
43	Feydhoo	*759*	762	0.4%	0.26%	82	9
44	Feevah	*719*	823	14.5%	0.29%	79	10
45	Bilehffahi	*442*	418	-5.4%	0.14%	58	7
46	Foakaidhoo	*1,011*	1,476	46.0%	0.51%	56	27
47	Narudhoo	*389*	413	6.2%	0.14%	42	10
48	Maakandoodhoo	*1,524*	435	-71.5%	0.15%	91	5

	STATISTICAL ANNEX 1:	GENERAL					
		1997	2004	1997-2004	2004	2004	2004
	Atoll / Island name	*population size*	**population size**	**population change**	**population distribution**	**area in hectares**	**population density (persons per hectare)**
49	Maroshi	*604*	613	1.5%	0.21%	27	23
50	Lhaimagu	*508*	703	38.4%	0.24%	37	19
51	Firubaidhoo	*681*	129	-81.1%	0.04%	14	9
52	Komandoo	*1,441*	1,589	10.3%	0.55%	6	267
53	Maaugoodhoo	*772*	808	4.7%	0.28%	27	30
54	FUNADHOO	*498*	1,494	200.0%	0.52%	86	17
55	Milandhoo	*0*	1,307		0.45%	126	10
56	**NOONU ATOLL**	***10,715***	**10,963**	**2.3%**	**3.80%**	**750**	**15**
57	Hebadhoo	*469*	425	-9.4%	0.15%	20	22
58	Kedhikolhudhoo	*1,123*	1,293	15.1%	0.45%	219	6
59	Maalhendhoo	*630*	509	-19.2%	0.18%	34	15
60	Kudafari	*477*	438	-8.2%	0.15%	23	19
61	Landhoo	*703*	631	-10.2%	0.22%	81	8
62	Maafaru	*746*	725	-2.8%	0.25%	114	6
63	Lhohi	*558*	560	0.4%	0.19%	35	16
64	Miladhoo	*930*	903	-2.9%	0.31%	18	50
65	Magoodhoo	*261*	227	-13.0%	0.08%	31	7
66	MANADHOO	*1,104*	1,314	19.0%	0.45%	92	14
67	Holhudhoo	*1,642*	1,734	5.6%	0.60%	17	101
68	Fodhdhoo	*278*	204	-26.6%	0.07%	25	8
69	Velidhoo	*1,794*	2,000	11.5%	0.69%	43	47
70	**RAA ATOLL**	***14,692***	**16,729**	**13.9%**	**5.79%**	**499**	**34**
71	Alifushi	*1,804*	1,911	5.9%	0.66%	46	42
72	Vaadhoo	*349*	350	0.3%	0.12%	31	11
73	Rasgetheemu	*601*	545	-9.3%	0.19%	30	18
74	Agolhitheemu	*354*	291	-17.8%	0.10%	32	9
75	Hulhudhuffaaru	*946*	1,110	17.3%	0.38%	49	23
76	UGUFAARU	*1,094*	1,387	26.8%	0.48%	28	49
77	Kadholhudhoo	*2,783*	3,445	23.8%	1.19%	11	307
78	Maakurathu	*841*	913	8.6%	0.32%	43	21
79	Rasmaadhoo	*559*	533	-4.7%	0.18%	23	23
80	Innamaadhoo	*513*	576	12.3%	0.20%	28	21
81	Maduvvari	*1,543*	1,693	9.7%	0.59%	16	103
82	Iguraidhoo	*1,279*	1,498	17.1%	0.52%	36	42
83	Fainu	*273*	301	10.3%	0.10%	50	6
84	Meedhoo	*1,397*	1,741	24.6%	0.60%	31	57
85	Kinolhas	*356*	435	22.2%	0.15%	45	10
86	**BAA ATOLL**	***8,857***	**10,198**	**15.1%**	**3.53%**	**373**	**27**
87	Kudarikilu	*409*	346	-15.4%	0.12%	14	25
88	Kamadhoo	*295*	465	57.6%	0.16%	16	29
89	Kendhoo	*794*	942	18.6%	0.33%	15	65
90	Kihaadhoo	*280*	291	3.9%	0.10%	26	11
91	Dhonfanu	*409*	332	-18.8%	0.11%	13	26
92	Dharavandhoo	*675*	814	20.6%	0.28%	46	18
93	Maalhos	*407*	347	-14.7%	0.12%	23	15
94	EYDHAFUSHI	*1,942*	2,702	39.1%	0.94%	22	122
95	Thulhaadhoo	*1,792*	2,097	17.0%	0.73%	5	422
96	Hithaadhoo	*944*	977	3.5%	0.34%	28	34

	STATISTICAL ANNEX 1:	GENERAL					
		1997	2004	1997-2004	2004	2004	2004
	Atoll / Island name	*population size*	population size	population change	population distribution	area in hectares	population density (persons per hectare)
97	Fulhadhoo	*228*	230	0.9%	0.08%	32	7
98	Fehendhoo	*172*	143	-16.9%	0.05%	21	7
99	Goidhoo	*510*	512	0.4%	0.18%	114	5
100	**LHAVIYANI ATOLL**	***8,783***	**8,903**	**1.4%**	**3.08%**	**116**	**77**
101	Hinnavaru	*3,483*	3,165	-9.1%	1.10%	13	252
102	NAIFARU	*3,725*	4,002	7.4%	1.39%	14	280
103	Kurendhoo	*1,112*	1,196	7.6%	0.41%	20	61
104	Olhuvelifushi	*394*	380	-3.6%	0.13%	20	19
105	Maafilaafushi	*69*	160	131.9%	0.06%	49	3
106	**KAAFU ATOLL**	***8,245***	**9,351**	**13.4%**	**3.24%**	**429**	**22**
107	Kaashidhoo	*1,535*	1,925	25.4%	0.67%	276	7
108	Gaafaru	*875*	827	-5.5%	0.29%	10	83
109	Dhiffushi	*858*	941	9.7%	0.33%	19	50
110	THULUSDHOO	*805*	935	16.1%	0.32%	34	28
111	Huraa	*687*	774	12.7%	0.27%	19	41
112	Himmafushi	*820*	832	1.5%	0.29%	25	34
113	Gulhi	*576*	656	13.9%	0.23%	6	119
114	Maafushi	*953*	1,065	11.8%	0.37%	23	46
115	Guraidhoo	*1,136*	1,396	22.9%	0.48%	18	77
116	**ALIF ALIFU ATOLL**	***5,154***	**5,998**	**16.4%**	**2.08%**	**286**	**21**
117	Thoddoo	*1,115*	1,216	9.1%	0.42%	142	9
118	RASDHOO	*758*	1,083	42.9%	0.38%	17	66
119	Ukulhas	*583*	553	-5.1%	0.19%	17	32
120	Mathiveri	*591*	508	-14.0%	0.18%	20	25
121	Bodufolhudhoo	*509*	515	1.2%	0.18%	7	75
122	Feridhoo	*534*	601	12.5%	0.21%	43	14
123	Maalhos	*533*	930	74.5%	0.32%	23	40
124	Himendhoo	*531*	592	11.5%	0.21%	16	36
125	**ALIFU DHAALU ATOLL**	***7,263***	**7,707**	**6.1%**	**2.67%**	**259**	**30**
126	Hangnameedhoo	*517*	506	-2.1%	0.18%	17	29
127	Omadhoo	*716*	765	6.8%	0.27%	21	36
128	Kuburudhoo	*459*	384	-16.3%	0.13%	5	78
129	MAHIBADHOO	*1,642*	1,992	21.3%	0.69%	18	113
130	Mandhoo	*291*	312	7.2%	0.11%	29	11
131	Dhagethi	*696*	826	18.7%	0.29%	21	39
132	Dhigurah	*423*	383	-9.5%	0.13%	43	9
133	Fenfushi	*635*	638	0.5%	0.22%	16	39
134	Dhidhdhoo	*125*	93	-25.6%	0.03%	13	7
135	Maamigili	*1,759*	1,808	2.8%	0.63%	75	24
136	**VAAVU ATOLL**	***1,692***	**1,725**	**2.0%**	**0.60%**	**42**	**41**
137	Fulidhoo	*305*	371	21.6%	0.13%	10	38
138	Thinadhoo	*149*	69	-53.7%	0.02%	9	8
139	FELIDHOO	*436*	499	14.4%	0.17%	12	42
140	Keyodhoo	*537*	622	15.8%	0.22%	7	85
141	Rakeedhoo	*265*	164	-38.1%	0.06%	4	41
142	**MEEMU ATOLL**	***4,993***	**5,288**	**5.9%**	**1.83%**	**249**	**21**
143	Raimandhoo	*200*	190	-5.0%	0.07%	22	9
144	Madifushi	*179*	108	-39.7%	0.04%	11	10

	STATISTICAL ANNEX 1:	GENERAL					
		1997	2004	1997-2004	2004	2004	2004
	Atoll / Island name	***population size***	**population size**	**population change**	**population distribution**	**area in hectares**	**population density (persons per hectare)**
145	Veyvah	*156*	168	7.7%	0.06%	35	5
146	Mulah	*1,180*	1,307	10.8%	0.45%	58	23
147	MULI	*641*	819	27.8%	0.28%	29	28
148	Naalaafushi	*341*	318	-6.7%	0.11%	9	36
149	Kolhufushi	*854*	958	12.2%	0.33%	76	13
150	Dhiggaru	*917*	1,011	10.3%	0.35%	7	139
151	Maduvvari	*525*	409	-22.1%	0.14%	4	110
152	**FAAFU ATOLL**	***3,658***	**4,218**	**15.3%**	**1.46%**	**146**	**29**
153	Feeali	*736*	956	29.9%	0.33%	14	70
154	Biledhdhoo	*898*	1,118	24.5%	0.39%	30	38
155	Magoodhoo	*519*	502	-3.3%	0.17%	18	28
156	Dharaboodhoo	*285*	258	-9.5%	0.09%	37	7
157	NILANDHOO	*1,220*	1,384	13.4%	0.48%	49	28
158	**DHAALU ATOLL**	***4,995***	**5,391**	**7.9%**	**1.87%**	**161**	**34**
159	Meedhoo	*899*	981	9.1%	0.34%	9	110
160	Badidhoo	*593*	784	32.2%	0.27%	20	39
161	Ribudhoo	*549*	372	-32.2%	0.13%	16	23
162	Hulhudheli	*478*	606	26.8%	0.21%	16	39
163	Gemendhoo	*370*	317	-14.3%	0.11%	5	67
164	Vaanee	*362*	262	-27.6%	0.09%	11	24
165	Maaeboodhoo	*666*	623	-6.5%	0.22%	18	35
166	KUDAHUVADHOO	*1,078*	1,446	34.1%	0.50%	67	22
167	**THAA ATOLL**	***9,482***	**9,292**	**-2.0%**	**3.22%**	**369**	**25**
168	Buruni	*387*	229	-40.8%	0.08%	31	8
169	Vilufushi	*1,220*	1,262	3.4%	0.44%	14	93
170	Madifushi	*768*	728	-5.2%	0.25%	18	41
171	Dhiyamigili	*530*	482	-9.1%	0.17%	24	20
172	Guraidhoo	*1,367*	1,267	-7.3%	0.44%	27	47
173	Kadoodhoo	*398*	359	-9.8%	0.12%	78	5
174	Vandhoo	*291*	277	-4.8%	0.10%	23	12
175	Hirilandhoo	*717*	873	21.8%	0.30%	25	35
176	Gaadhiffushi	*361*	239	-33.8%	0.08%	11	22
177	Thimarafushi	*1,499*	1,409	-6.0%	0.49%	15	97
178	VEYMANDOO	*764*	877	14.8%	0.30%	41	21
179	Kibidhoo	*777*	869	11.8%	0.30%	31	28
180	Omadhoo	*403*	421	4.5%	0.15%	33	13
181	**LAAMU ATOLL**	***11,078***	**12,351**	**11.5%**	**4.28%**	**1414**	**9**
182	Isdhoo	*1,524*	1,497	-1.8%	0.52%	294	5
183	Dhabidhoo	*611*	506	-17.2%	0.18%	47	11
184	Maabaidhoo	*630*	834	32.4%	0.29%	43	19
185	Mundoo	*580*	550	-5.2%	0.19%	20	28
186	Kalhaidhoo	*567*	498	-12.2%	0.17%	25	20
187	Gamu	*1,831*	2,346	28.1%	0.81%	517	5
188	Maavah	*1,317*	1,579	19.9%	0.55%	32	50
189	FONADHOO	*1,440*	1,921	33.4%	0.66%	159	12
190	Gaadhoo	*319*	252	-21.0%	0.09%	69	4
191	Maamendhoo	*948*	990	4.4%	0.34%	19	53
192	Hithadhoo	*751*	817	8.8%	0.28%	109	8

STATISTICAL ANNEX 1: GENERAL

		1997	2004	1997-2004	2004	2004	2004
	Atoll / Island name	population size	population size	population change	population distribution	area in hectares	population density (persons per hectare)
193	Kunahandhoo	560	561	0.2%	0.19%	81	7
194	**GAAFU ALIFU ATOLL**	**8,219**	**8,935**	**8.7%**	**3.09%**	**439**	**20**
195	Kolamaafushi	1,136	1,220	7.4%	0.42%	20	60
196	VILLINGILI	2,147	2,393	11.5%	0.83%	55	44
197	Maamendhoo	840	1,144	36.2%	0.40%	49	24
198	Nilandhoo	486	466	-4.1%	0.16%	57	8
199	Dhaandhoo	1,154	1,286	11.4%	0.45%	13	102
200	Dhevvadhoo	632	487	-22.9%	0.17%	21	24
201	Kodey	276	313	13.4%	0.11%	104	3
202	Dhiyadhoo	115	100	-13.0%	0.03%	49	2
203	Gemanafushi	906	1,034	14.1%	0.36%	47	22
204	Kanduhulhudhoo	527	492	-6.6%	0.17%	25	20
205	**GAAFU DHAALU ATOLL**	**11,765**	**11,473**	**-2.5%**	**3.97%**	**602**	**19**
206	Madeveli	1,054	1,163	10.3%	0.40%	34	34
207	Hoadedhdhoo	638	628	-1.6%	0.22%	88	7
208	Nadallaa	735	693	-5.7%	0.24%	41	17
209	Gadhdhoo	1,718	1,684	-2.0%	0.58%	22	76
210	Rathafandhoo	623	503	-19.3%	0.17%	35	14
211	Vaadhoo	826	793	-4.0%	0.27%	167	5
212	Fiyoari	888	803	-9.6%	0.28%	73	11
213	Maathodaa	454	529	16.5%	0.18%	16	34
214	Fares	480	483	0.6%	0.17%	22	22
215	THINADHOO	4,349	4,194	-3.6%	1.45%	104	40
216	**GNAVIYANI ATOLL**	**7,917**	**8,322**	**5.1%**	**2.88%**	**420**	**20**
217	FOAMMULAH	7,917	8,322	5.1%	2.88%	420	20
218	**SEENU ATOLL**	**18,712**	**19,616**	**4.8%**	**6.79%**	**845**	**23**
219	Meedhoo	1,818	1,682	-7.5%	0.58%	166	10
220	HITHADHOO	8,973	10,124	12.8%	3.50%	467	22
221	Maradhoo	1,939	2,236	15.3%	0.77%	75	30
222	Feydhoo	3,174	3,140	-1.1%	1.09%	49	64
223	Maradhoo-Feydhoo	1,047	1,185	13.2%	0.41%	31	38
224	Hulhudhoo	1,761	1,249	-29.1%	0.43%	56	22

	STATISTICAL ANNEX 2:	INCOME POVERTY							
		2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	headcount ratio, percentage of the population with less than Rf.7.5 per person per day	headcount ratio, percentage of the population with less than Rf.10 per person per day	headcount ratio, percentage of the population with less than Rf.15 per person per day	average income of the population with less than Rf.15 per person per day (Rf)	income shortfall of the the population with less than Rf.15 per person per day (%)	poverty gap index of the population with less than Rf.15 per person per day	*Human Vulne-rability Index*	Income Poverty Index
1	**Maldives**	**3**	**8**	**21**	**10.6**	**29**	**0.06**	***0.25***	**0.10**
2	**Male'**	**0**	**0**	**3**	**11.0**	**27**	**0.01**	***0.11***	**0.01**
3	**Atoll average**	**5**	**11**	**28**	**10.6**	**30**	**0.08**	***0.29***	**0.14**
4	**HAA ALIFU ATOLL**	**14**	**23**	**49**	**10.1**	**33**	**0.16**	***0.15***	**0.26**
5	Thurakunu	0	17	62	11.4	24	0.15	*0.42*	0.24
6	Uligamu	24	24	24	4.0	73	0.18	*0.39*	0.29
7	Berinmadhoo	0	0	15	11.2	26	0.04	*0.40*	0.06
8	Hathifushi	0	15	49	10.8	28	0.14	*0.14*	0.22
9	Mulhadhoo	0	0	44	12.1	19	0.08	*0.47*	0.14
10	Hoarafushi	30	30	40	7.3	52	0.20	*0.02*	0.33
11	Ihavandhoo	23	40	74	9.5	37	0.27	*0.01*	0.44
12	Kelaa	4	12	28	11.8	21	0.06	*0.14*	0.10
13	Vashafaru	8	45	57	9.3	38	0.21	*0.44*	0.35
14	DHIDHDHOO	8	20	59	11.2	25	0.15	*0.11*	0.24
15	Filladhoo	3	3	20	11.8	21	0.04	*0.19*	0.07
16	Maarandhoo	24	24	24	4.9	67	0.16	*0.05*	0.26
17	Thakandhoo	0	0	27	11.7	22	0.06	*0.12*	0.10
18	Utheemu	0	0	0			0.00	*0.03*	0.00
19	Muraidhoo	24	30	48	8.7	42	0.20	*0.48*	0.32
20	Baarah	7	17	74	11.8	21	0.16	*0.24*	0.25
21	**HAA DHAALU ATOLL**	**6**	**22**	**44**	**10.3**	**31**	**0.14**	***0.27***	**0.22**
22	Faridhoo	0	0	21	13.8	8	0.02	*0.26*	0.03
23	Hondaidhoo							*0.26*	
24	Hanimaadhoo	0	16	55	11.8	21	0.12	*0.41*	0.19
25	Finey	0	3	47	11.3	24	0.12	*0.19*	0.19
26	Naivaadhoo	15	32	49	9.1	40	0.19	*0.17*	0.31
27	Hirimaradhoo	2	32	81	9.6	36	0.29	*0.15*	0.47
28	Nolhivaranfaru	19	31	48	8.4	44	0.21	*0.22*	0.34
29	Nellaidhoo	0	0	31	14.4	4	0.01	*0.17*	0.02
30	Nolhivaramu	11	43	66	9.9	34	0.23	*0.53*	0.37
31	Kuribi	0	20	82	11.7	22	0.18	*0.24*	0.29
32	Kuburudhoo	4	11	74	11.7	22	0.16	*0.11*	0.26
33	KULHUDHUFFUSHI	3	23	36	10.0	33	0.12	*0.22*	0.19
34	Kumundhoo	0	10	40	12.8	14	0.06	*0.21*	0.09
35	Neykurendhoo	13	13	41	10.9	28	0.11	*0.37*	0.18
36	Vaikaradhoo	31	31	65	8.6	43	0.28	*0.33*	0.44
37	Maavaidhoo	11	11	53	8.6	43	0.22	*0.21*	0.36
38	Makunudhoo	2	18	18	8.4	44	0.08	*0.34*	0.13
39	**SHAVIYANI ATOLL**	**3**	**11**	**35**	**11.3**	**24**	**0.09**	***0.35***	**0.14**
40	Kaditheemu	0	0	19	13.2	12	0.02	*0.49*	0.04
41	Noomaraa	17	40	52	9.0	40	0.21	*0.32*	0.34
42	Goidhoo	2	10	48	12.2	18	0.09	*0.24*	0.14
43	Feydhoo	2	18	82	10.7	29	0.24	*0.53*	0.38
44	Feevah	0	0	0			0.00	*0.18*	0.00

	STATISTICAL ANNEX 2:	INCOME POVERTY						
		2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	headcount ratio, percentage of the population with less than Rf.7.5 per person per day	headcount ratio, percentage of the population with less than Rf.10 per person per day	headcount ratio, percentage of the population with less than Rf.15 per person per day	average income of the population with less than Rf.15 per person per day (Rf)	income shortfall of the the population with less than Rf.15 per person per day (%)	poverty gap index of the population with less than Rf.15 per person per day	*Human Vulne-rability Index*	Income Poverty Index
45	Bilehffahi	0	2	30	10.5	30	0.09	*0.69*	0.15
46	Foakaidhoo	0	11	36	11.9	20	0.07	*0.69*	0.12
47	Narudhoo	10	10	19	8.5	43	0.08	*0.38*	0.13
48	Maakandoodhoo	0	0	16	13.1	13	0.02	*0.29*	0.03
49	Maroshi	15	15	42	11.1	26	0.11	*0.37*	0.17
50	Lhaimagu	0	22	37	9.6	36	0.13	*0.28*	0.22
51	Firubaidhoo	0	0	24	10.9	27	0.07	*0.32*	0.11
52	Komandoo	7	33	49	10.3	32	0.16	*0.22*	0.25
53	Maaugoodhoo	12	12	25	9.1	39	0.10	*0.01*	0.16
54	FUNADHOO	0	0	22	13.8	8	0.02	*0.21*	0.03
55	Milandhoo	0	0	49	13.3	12	0.06		0.09
56	**NOONU ATOLL**	**9**	**24**	**46**	**9.9**	**34**	**0.16**	***0.38***	**0.25**
57	Hebadhoo	0	0	39	12.6	16	0.06	*0.46*	0.10
58	Kedhikolhudhoo	0	7	63	12.3	18	0.11	*0.37*	0.18
59	Maalhendhoo	5	50	65	9.9	34	0.22	*0.57*	0.36
60	Kudafari	17	31	31	7.9	47	0.15	*0.84*	0.24
61	Landhoo	14	26	30	7.7	49	0.15	*0.13*	0.23
62	Maafaru	46	68	71	7.5	50	0.36	*0.03*	0.58
63	Lhohi	13	55	64	8.3	45	0.29	*0.20*	0.46
64	Miladhoo	34	50	50	6.8	55	0.27	*0.27*	0.44
65	Magoodhoo	0	0	28	12.2	18	0.05	*0.20*	0.08
66	MANADHOO	0	23	68	10.8	28	0.19	*0.47*	0.30
67	Holhudhoo	5	6	34	10.8	28	0.09	*0.42*	0.15
68	Fodhdhoo	0	0	36	11.0	27	0.10	*0.52*	0.15
69	Velidhoo	0	13	23	9.9	34	0.08	*0.43*	0.13
70	**RAA ATOLL**	**8**	**17**	**41**	**10.4**	**31**	**0.13**	***0.32***	**0.20**
71	Alifushi	20	33	56	9.7	35	0.20	*0.45*	0.32
72	Vaadhoo	30	48	80	9.1	39	0.31	*0.14*	0.51
73	Rasgetheemu	0	0	18	14.4	4	0.01	*0.08*	0.01
74	Agolhitheemu	0	0	36	11.5	24	0.08	*0.00*	0.14
75	Hulhudhuffaaru	0	46	50	8.8	41	0.21	*0.14*	0.33
76	UGUFAARU	0	0	34	12.6	16	0.05	*0.33*	0.09
77	Kadholhudhoo	0	0	33	12.3	18	0.06	*0.16*	0.10
78	Maakurathu	31	36	51	8.1	46	0.23	*0.23*	0.38
79	Rasmaadhoo	28	57	57	7.2	52	0.30	*0.15*	0.48
80	Innamaadhoo	0	0	17	12.3	18	0.03	*0.14*	0.05
81	Maduvvari	11	31	68	10.8	28	0.19	*0.81*	0.30
82	Iguraidhoo	0	14	29	9.8	35	0.10	*0.44*	0.16
83	Fainu	0	0	36	11.3	25	0.09	*0.88*	0.14
84	Meedhoo	8	8	22	9.2	39	0.08	*0.21*	0.14
85	Kinolhas	13	13	65	11.8	21	0.14	*0.44*	0.22
86	**BAA ATOLL**	**2**	**9**	**33**	**10.9**	**27**	**0.09**	***0.51***	**0.15**
87	Kudarikilu	0	0	27	11.1	26	0.07	*0.45*	0.11
88	Kamadhoo	0	10	10	9.4	38	0.04	*0.72*	0.06

	STATISTICAL ANNEX 2:	INCOME POVERTY							
		2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	headcount ratio, percentage of the population with less than Rf.7.5 per person per day	headcount ratio, percentage of the population with less than Rf.10 per person per day	headcount ratio, percentage of the population with less than Rf.15 per person per day	average income of the population with less than Rf.15 per person per day (Rf)	income shortfall of the the population with less than Rf.15 per person per day (%)	poverty gap index of the population with less than Rf.15 per person per day	*Human Vulne-rability Index*	Income Poverty Index
89	Kendhoo	0	3	28	10.9	27	0.08	*0.49*	0.12
90	Kihaadhoo	0	14	14	7.8	48	0.07	*0.70*	0.11
91	Dhonfanu	0	0	43	11.6	23	0.10	*0.38*	0.16
92	Dharavandhoo	0	0	6	14.0	7	0.00	*0.15*	0.01
93	Maalhos	0	0	26	12.0	20	0.05	*0.07*	0.08
94	EYDHAFUSHI	0	5	16	10.8	28	0.04	*0.60*	0.07
95	Thulhaadhoo	10	28	70	9.9	34	0.24	*0.49*	0.38
96	Hithaadhoo	0	5	63	12.7	15	0.10	*0.61*	0.16
97	Fulhadhoo	0	2	2	7.8	48	0.01	*0.78*	0.02
98	Fehendhoo	0	0	8	11.0	27	0.02	*0.73*	0.04
99	Goidhoo	0	0	29	13.8	8	0.02	*0.61*	0.04
100	**LHAVIYANI ATOLL**	**9**	**17**	**33**	**9.7**	**35**	**0.12**	***0.57***	**0.19**
101	Hinnavaru	15	30	49	9.4	37	0.18	*0.70*	0.30
102	NAIFARU	7	7	16	9.3	38	0.06	*0.42*	0.09
103	Kurendhoo	0	25	57	10.9	28	0.16	*0.68*	0.25
104	Olhuvelifushi	6	6	22	9.9	34	0.08	*0.67*	0.12
105	Maafilaafushi	0	0	0			0.00	*0.06*	0.00
106	**KAAFU ATOLL**	**5**	**7**	**23**	**10.5**	**30**	**0.07**	***0.11***	**0.11**
107	Kaashidhoo	16	16	47	9.5	37	0.17	*0.24*	0.28
108	Gaafaru	7	7	22	11.1	26	0.06	*0.16*	0.09
109	Dhiffushi	0	0	32	12.4	18	0.06	*0.22*	0.09
110	THULUSDHOO	7	24	37	9.5	37	0.14	*0.10*	0.22
111	Huraa	0	0	14	11.6	23	0.03	*0.00*	0.05
112	Himmafushi	0	0	18	14.2	6	0.01	*0.00*	0.02
113	Gulhi	11	11	11	7.4	51	0.05	*0.13*	0.09
114	Maafushi	0	0	7	13.1	12	0.01	*0.02*	0.01
115	Guraidhoo	0	0	0			0.00	*0.05*	0.00
116	**ALIF ALIFU ATOLL**	**5**	**12**	**36**	**10.8**	**28**	**0.10**	***0.13***	**0.16**
117	Thoddoo	0	15	15	9.4	37	0.06	*0.17*	0.09
118	RASDHOO	0	0	36	11.8	21	0.08	*0.01*	0.12
119	Ukulhas	11	11	21	8.5	43	0.09	*0.10*	0.15
120	Mathiveri	22	22	54	9.5	37	0.20	*0.09*	0.32
121	Bodufolhudhoo	0	12	39	11.4	24	0.09	*0.14*	0.15
122	Feridhoo	0	12	32	10.9	28	0.09	*0.13*	0.14
123	Maalhos	8	12	72	12.5	17	0.12	*0.30*	0.19
124	Himendhoo	13	20	20	5.0	66	0.13	*0.13*	0.21
125	**ALIFU DHAALU ATOLL**	**4**	**7**	**24**	**10.5**	**30**	**0.07**	***0.18***	**0.12**
126	Hangnameedhoo	2	2	28	11.8	21	0.06	*0.28*	0.09
127	Omadhoo	0	0	35	11.3	25	0.09	*0.46*	0.14
128	Kuburudhoo	10	10	30	11.2	25	0.08	*0.35*	0.12
129	MAHIBADHOO	12	20	38	9.4	37	0.14	*0.16*	0.23
130	Mandhoo	6	6	26	10.5	30	0.08	*0.23*	0.13
131	Dhagethi	0	0	2	12.1	19	0.00	*0.00*	0.01

	STATISTICAL ANNEX 2:	INCOME POVERTY							
		2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	headcount ratio, percentage of the population with less than Rf.7.5 per person per day	headcount ratio, percentage of the population with less than Rf.10 per person per day	headcount ratio, percentage of the population with less than Rf.15 per person per day	average income of the population with less than Rf.15 per person per day (Rf)	income shortfall of the the population with less than Rf.15 per person per day (%)	poverty gap index of the population with less than Rf.15 per person per day	*Human Vulne-rability Index*	Income Poverty Index
132	Dhigurah	7	7	29	10.5	30	0.09	*0.01*	0.14
133	Fenfushi	0	0	28	10.1	32	0.09	*0.12*	0.15
134	Dhidhdhoo	0	0	0			0.00	*0.08*	0.00
135	Maamigili	0	4	12	12.6	16	0.02	*0.14*	0.03
136	**VAAVU ATOLL**	**4**	**4**	**15**	**11.4**	**24**	**0.04**	***0.33***	**0.06**
137	Fulidhoo	0	0	0			0.00	*0.45*	0.00
138	Thinadhoo	13	13	13	2.3	85	0.11	*0.45*	0.17
139	FELIDHOO	0	0	22	13.4	11	0.02	*0.29*	0.04
140	Keyodhoo	9	9	17	10.0	33	0.06	*0.38*	0.09
141	Rakeedhoo	0	0	26	11.2	25	0.07	*0.10*	0.11
142	**MEEMU ATOLL**	**2**	**4**	**15**	**10.5**	**30**	**0.04**	***0.63***	**0.07**
143	Raimandhoo	0	0	0			0.00	*0.71*	0.00
144	Madifushi	5	5	18	11.0	26	0.05	*1.00*	0.08
145	Veyvah	0	0	21	12.0	20	0.04	*0.81*	0.07
146	Mulah	0	10	10	8.7	42	0.04	*0.26*	0.06
147	MULI	0	0	13	12.2	19	0.02	*0.61*	0.04
148	Naalaafushi	0	0	23	10.9	27	0.06	*0.43*	0.10
149	Kolhufushi	0	0	0			0.00	*1.00*	0.00
150	Dhiggaru	7	7	39	10.5	30	0.12	*0.74*	0.19
151	Maduvvari	2	2	7	9.4	38	0.03	*0.62*	0.04
152	**FAAFU ATOLL**	**1**	**8**	**36**	**11.9**	**21**	**0.07**	***0.45***	**0.12**
153	Feeali	0	0	24	13.1	12	0.03	*0.36*	0.05
154	Biledhdhoo	0	15	65	12.1	19	0.12	*0.18*	0.20
155	Magoodhoo	0	24	24	8.8	41	0.10	*0.37*	0.16
156	Dharaboodhoo	0	0	0			0.00	*0.38*	0.00
157	NILANDHOO	2	2	31	11.7	22	0.07	*0.73*	0.11
158	**DHAALU ATOLL**	**3**	**6**	**16**	**10.5**	**30**	**0.05**	***0.24***	**0.08**
159	Meedhoo	0	0	0			0.00	*0.09*	0.00
160	Badidhoo	0	0	0			0.00	*0.43*	0.00
161	Ribudhoo	0	0	9	14.9	1	0.00	*0.34*	0.00
162	Hulhudheli	0	0	45	12.0	20	0.09	*0.20*	0.14
163	Gemendhoo	17	28	36	8.3	44	0.16	*0.48*	0.26
164	Vaanee	11	11	11	5.6	63	0.07	*0.32*	0.11
165	Maaeboodhoo	12	20	47	10.8	28	0.13	*0.41*	0.21
166	KUDAHUVADHOO	0	7	7	8.0	47	0.03	*0.03*	0.06
167	**THAA ATOLL**	**0**	**7**	**17**	**10.8**	**28**	**0.05**	***0.48***	**0.08**
168	Buruni	0	0	0			0.00	*0.45*	0.00
169	Vilufushi	0	8	8	7.6	49	0.04	*0.59*	0.06
170	Madifushi	0	16	39	9.8	34	0.14	*0.39*	0.22
171	Dhiyamigili	0	11	11	8.0	46	0.05	*0.47*	0.08
172	Guraidhoo	0	17	17	7.8	48	0.08	*0.64*	0.13
173	Kadoodhoo	0	0	29	13.4	11	0.03	*0.77*	0.05
174	Vandhoo	0	0	10	14.2	5	0.01	*0.68*	0.01
175	Hirilandhoo	0	0	11	13.6	9	0.01	*0.63*	0.02

STATISTICAL ANNEX 2:	INCOME POVERTY							
		2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	headcount ratio, percentage of the population with less than Rf.7.5 per person per day	headcount ratio, percentage of the population with less than Rf.10 per person per day	headcount ratio, percentage of the population with less than Rf.15 per person per day	average income of the population with less than Rf.15 per person per day (Rf)	income shortfall of the the population with less than Rf.15 per person per day (%)	poverty gap index of the population with less than Rf.15 per person per day	*Human Vulne-rability Index*	Income Poverty Index
176	Gaadhiffushi	12	12	12	5.3	65	0.08	*0.31*	0.13
177	Thimarafushi	0	0	8	11.9	21	0.02	*0.37*	0.03
178	VEYMANDOO	0	0	23	14.9	1	0.00	*0.20*	0.00
179	Kibidhoo	0	18	18	9.4	38	0.07	*0.28*	0.11
180	Omadhoo	0	0	38	11.6	23	0.09	*0.50*	0.14
181	**LAAMU ATOLL**	**2**	**3**	**15**	**11.2**	**25**	**0.04**	***0.26***	**0.06**
182	Isdhoo	0	0	11	14.4	4	0.00	*0.00*	0.01
183	Dhabidhoo	0	0	23	13.8	8	0.02	*0.00*	0.03
184	Maabaidhoo	0	0	6	12.7	15	0.01	*0.24*	0.01
185	Mundoo	0	0	15	14.6	3	0.00	*0.19*	0.01
186	Kalhaidhoo	24	24	43	7.5	50	0.22	*0.47*	0.35
187	Gamu	0	5	12	10.8	28	0.03	*0.35*	0.06
188	Maavah	8	8	29	9.3	38	0.11	*0.23*	0.18
189	FONADHOO	0	0	11	12.4	17	0.02	*0.36*	0.03
190	Gaadhoo	0	0	18	13.4	11	0.02	*0.12*	0.03
191	Maamendhoo	0	0	0			0.00	*0.53*	0.00
192	Hithadhoo	0	0	0			0.00	*0.12*	0.00
193	Kunahandhoo	0	0	44	12.3	18	0.08	*0.44*	0.12
194	**GAAFU ALIFU ATOLL**	**3**	**4**	**14**	**10.8**	**28**	**0.04**	***0.14***	**0.06**
195	Kolamaafushi	3	3	18	12.8	14	0.03	*0.01*	0.04
196	VILLINGILI	1	1	7	11.9	21	0.01	*0.08*	0.02
197	Maamendhoo	17	17	43	9.2	39	0.17	*0.09*	0.27
198	Nilandhoo	0	12	12	9.8	35	0.04	*0.30*	0.07
199	Dhaandhoo	0	0	11	12.6	16	0.02	*0.26*	0.03
200	Dhevvadhoo	0	0	0			0.00	*0.19*	0.00
201	Kodey	0	0	10	11.7	22	0.02	*0.17*	0.03
202	Dhiyadhoo	24	24	26	5.6	63	0.17	*0.18*	0.27
203	Gemanafushi	0	0	7	10.8	28	0.02	*0.11*	0.03
204	Kanduhulhudhoo	0	0	14	12.5	17	0.02	*0.32*	0.04
205	**GAAFU DHAALU ATOLL**	**3**	**6**	**16**	**10.8**	**28**	**0.05**	***0.29***	**0.07**
206	Madeveli	0	8	21	11.0	27	0.06	*0.40*	0.09
207	Hoadedhdhoo	0	10	50	11.9	20	0.10	*0.58*	0.16
208	Nadallaa	14	14	31	11.0	27	0.08	*0.77*	0.13
209	Gadhdhoo	0	0	10	12.8	15	0.01	*0.09*	0.02
210	Rathafandhoo	14	23	23	7.0	53	0.12	*0.32*	0.20
211	Vaadhoo	19	19	33	8.6	43	0.14	*0.19*	0.22
212	Fiyoari	0	0	0			0.00	*0.23*	0.00
213	Maathodaa	0	0	7	13.0	14	0.01	*0.19*	0.01
214	Fares	0	4	4	10.0	34	0.01	*0.38*	0.02
215	THINADHOO	0	3	11	11.0	26	0.03	*0.24*	0.05
216	**GNAVIYANI ATOLL**	**1**	**1**	**10**	**10.9**	**27**	**0.03**	***0.21***	**0.04**
217	FOAMMULAH	1	1	10	10.9	27	0.03	*0.21*	0.04
218	**SEENU ATOLL**	**0**	**3**	**13**	**11.6**	**23**	**0.03**	***0.18***	**0.05**

STATISTICAL ANNEX 2: INCOME POVERTY

		2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**headcount ratio, percentage of the population with less than Rf.7.5 per person per day**	**headcount ratio, percentage of the population with less than Rf.10 per person per day**	**headcount ratio, percentage of the population with less than Rf.15 per person per day**	**average income of the population with less than Rf.15 per person per day (Rf)**	**income shortfall of the the population with less than Rf.15 per person per day (%)**	**poverty gap index of the population with less than Rf.15 per person per day**	***Human Vulne-rability Index***	**Income Poverty Index**
219	Meedhoo	0	0	6	13.5	10	0.01	*0.18*	0.01
220	HITHADHOO	0	5	18	11.0	27	0.05	*0.17*	0.08
221	Maradhoo	2	2	2	5.4	64	0.01	*0.22*	0.02
222	Feydhoo	0	0	1	14.1	6	0.00	*0.09*	0.00
223	Maradhoo-Feydhoo	0	0	15	14.1	6	0.01	*0.40*	0.02
224	Hulhudhoo	0	0	26	13.1	13	0.03	*0.27*	0.05

	STATISTICAL ANNEX 3:	ELECTRICITY			
		2004	2004	*1997*	2004
	Atoll / Island name	**no electricity**	**6 hours or less electricity per day**	***Human Vulnerability Index***	**Electricity Index**
1	**Maldives**	**0**	**1**	***0.14***	**0.01**
2	**Male'**	**0**	**0**	***0.00***	**0.00**
3	**Atoll average**	**0**	**2**	***0.23***	**0.01**
4	**HAA ALIFU ATOLL**	**1**	**14**	***0.55***	**0.08**
5	Thurakunu	0	0	*1.00*	0.00
6	Uligamu	7	7	*1.00*	0.10
7	Berinmadhoo	6	6	*1.00*	0.09
8	Hathifushi	0	100	*0.47*	0.50
9	Mulhadhoo	0	0	*0.70*	0.00
10	Hoarafushi	0	1	*0.64*	0.00
11	Ihavandhoo	0	64	*0.97*	0.32
12	Kelaa	0	0	*0.08*	0.00
13	Vashafaru	8	8	*0.52*	0.11
14	DHIDHDHOO	0	0	*0.04*	0.00
15	Filladhoo	0	0	*0.60*	0.00
16	Maarandhoo	0	0	*0.00*	0.00
17	Thakandhoo	15	15	*1.00*	0.23
18	Utheemu	0	0	*0.50*	0.00
19	Muraidhoo	9	9	*0.57*	0.13
20	Baarah	4	4	*0.79*	0.07
21	**HAA DHAALU ATOLL**	**0**	**2**	***0.23***	**0.01**
22	Faridhoo	0	100	*0.50*	0.50
23	Hondaidhoo			*1.00*	
24	Hanimaadhoo	0	0	*0.00*	0.00
25	Finey	0	0	*1.00*	0.00
26	Naivaadhoo	0	0	*0.00*	0.00
27	Hirimaradhoo	0	0	*0.52*	0.00
28	Nolhivaranfaru	0	0	*0.50*	0.00
29	Nellaidhoo	0	0	*0.59*	0.00
30	Nolhivaramu	0	0	*0.29*	0.00
31	Kuribi	0	0	*0.58*	0.00
32	Kuburudhoo	15	15	*1.00*	0.23
33	KULHUDHUFFUSHI	0	0	*0.01*	0.00
34	Kumundhoo	0	0	*0.91*	0.00
35	Neykurendhoo	0	0	*0.06*	0.00
36	Vaikaradhoo	0	0	*0.00*	0.00
37	Maavaidhoo	0	63	*0.51*	0.32
38	Makunudhoo	0	0	*0.00*	0.00
39	**SHAVIYANI ATOLL**	**1**	**2**	***0.29***	**0.02**
40	Kaditheemu	0	0	*0.06*	0.00
41	Noomaraa	0	0	*1.00*	0.00
42	Goidhoo	0	0	*0.00*	0.00
43	Feydhoo	0	0	*0.63*	0.00
44	Feevah	0	0	*0.18*	0.00
45	Bilehffahi	0	0	*0.00*	0.00
46	Foakaidhoo	7	7	*0.60*	0.10
47	Narudhoo	0	0	*0.57*	0.00
48	Maakandoodhoo	0	0	*0.11*	0.00
49	Maroshi	0	4	*0.43*	0.02

STATISTICAL ANNEX 3: ELECTRICITY

		2004	2004	*1997*	2004
	Atoll / Island name	**no electricity**	**6 hours or less electricity per day**	***Human Vulnerability Index***	**Electricity Index**
50	Lhaimagu	0	0	*0.50*	0.00
51	Firubaidhoo	0	100	*0.50*	0.50
52	Komandoo	0	0	*0.00*	0.00
53	Maaugoodhoo	0	0	*0.50*	0.00
54	FUNADHOO	0	0	*0.00*	0.00
55	Milandhoo	0	0		0.00
56	**NOONU ATOLL**	**0**	**0**	***0.29***	**0.01**
57	Hebadhoo	0	0	*0.60*	0.00
58	Kedhikolhudhoo	0	0	*0.00*	0.00
59	Maalhendhoo	0	0	*0.62*	0.00
60	Kudafari	0	0	*0.09*	0.00
61	Landhoo	0	0	*0.20*	0.00
62	Maafaru	0	0	*0.00*	0.00
63	Lhohi	0	0	*0.52*	0.00
64	Miladhoo	5	5	*0.66*	0.07
65	Magoodhoo	0	0	*0.66*	0.00
66	MANADHOO	0	0	*0.14*	0.00
67	Holhudhoo	0	0	*0.01*	0.00
68	Fodhdhoo	3	3	*0.52*	0.04
69	Velidhoo	0	0	*0.47*	0.00
70	**RAA ATOLL**	**1**	**1**	***0.19***	**0.01**
71	Alifushi	0	0	*0.00*	0.00
72	Vaadhoo	0	0	*0.50*	0.00
73	Rasgetheemu	0	0	*0.30*	0.00
74	Agolhitheemu	0	0	*0.68*	0.00
75	Hulhudhuffaaru	0	0	*0.00*	0.00
76	UGUFAARU	0	0	*0.58*	0.00
77	Kadholhudhoo	0	0	*0.01*	0.00
78	Maakurathu	0	0	*0.60*	0.00
79	Rasmaadhoo	2	2	*0.50*	0.03
80	Innamaadhoo	0	0	*0.18*	0.00
81	Maduvvari	4	4	*0.26*	0.06
82	Iguraidhoo	0	0	*0.00*	0.00
83	Fainu	0	0	*0.00*	0.00
84	Meedhoo	0	0	*0.02*	0.00
85	Kinolhas	2	2	*0.63*	0.03
86	**BAA ATOLL**	**0**	**0**	***0.25***	**0.00**
87	Kudarikilu	0	0	*0.50*	0.00
88	Kamadhoo	0	0	*0.50*	0.00
89	Kendhoo	0	0	*0.41*	0.00
90	Kihaadhoo	6	6	*0.50*	0.09
91	Dhonfanu	0	0	*0.72*	0.00
92	Dharavandhoo	0	0	*0.59*	0.00
93	Maalhos	0	0	*0.52*	0.00
94	EYDHAFUSHI	0	0	*0.00*	0.00
95	Thulhaadhoo	0	0	*0.10*	0.00
96	Hithaadhoo	0	0	*0.00*	0.00
97	Fulhadhoo	0	0	*0.40*	0.00
98	Fehendhoo	0	0	*0.45*	0.00

	STATISTICAL ANNEX 3: ELECTRICITY				
		2004	2004	*1997*	2004
	Atoll / Island name	**no electricity**	**6 hours or less electricity per day**	***Human Vulnerability Index***	**Electricity Index**
99	Goidhoo	0	0	*0.36*	0.00
100	**LHAVIYANI ATOLL**	**0**	**0**	***0.04***	**0.00**
101	Hinnavaru	0	0	*0.06*	0.00
102	NAIFARU	0	0	*0.03*	0.00
103	Kurendhoo	0	0	*0.04*	0.00
104	Olhuvelifushi	0	0	*0.02*	0.00
105	Maafilaafushi	0	0	*0.07*	0.00
106	**KAAFU ATOLL**	**0**	**0**	***0.00***	**0.00**
107	Kaashidhoo	0	0	*0.00*	0.00
108	Gaafaru	0	0	*0.00*	0.00
109	Dhiffushi	0	0	*0.00*	0.00
110	THULUSDHOO	0	0	*0.00*	0.00
111	Huraa	0	0	*0.00*	0.00
112	Himmafushi	0	0	*0.00*	0.00
113	Gulhi	0	0	*0.00*	0.00
114	Maafushi	0	0	*0.00*	0.00
115	Guraidhoo	0	0	*0.00*	0.00
116	**ALIF ALIFU ATOLL**	**0**	**0**	***0.04***	**0.00**
117	Thoddoo	0	0	*0.11*	0.00
118	RASDHOO	0	0	*0.00*	0.00
119	Ukulhas	0	0	*0.00*	0.00
120	Mathiveri	0	0	*0.00*	0.00
121	Bodufolhudhoo	0	0	*0.00*	0.00
122	Feridhoo	0	0	*0.15*	0.00
123	Maalhos	0	0	*0.00*	0.00
124	Himendhoo	0	0	*0.00*	0.00
125	**ALIFU DHAALU ATOLL**	**0**	**0**	***0.12***	**0.00**
126	Hangnameedhoo	0	0	*0.03*	0.00
127	Omadhoo	0	0	*0.09*	0.00
128	Kuburudhoo	0	0	*0.30*	0.00
129	MAHIBADHOO	0	0	*0.07*	0.00
130	Mandhoo	0	0	*0.52*	0.00
131	Dhagethi	0	0	*0.00*	0.00
132	Dhigurah	0	0	*0.00*	0.00
133	Fenfushi	0	0	*0.50*	0.00
134	Dhidhdhoo	0	0	*0.50*	0.00
135	Maamigili	0	0	*0.00*	0.00
136	**VAAVU ATOLL**	**0**	**0**	***0.15***	**0.00**
137	Fulidhoo	0	0	*0.08*	0.00
138	Thinadhoo	0	0	*0.59*	0.00
139	FELIDHOO	0	0	*0.33*	0.00
140	Keyodhoo	0	0	*0.00*	0.00
141	Rakeedhoo	0	0	*0.00*	0.00
142	**MEEMU ATOLL**	**0**	**0**	***0.26***	**0.00**
143	Raimandhoo	0	0	*0.47*	0.00
144	Madifushi	0	0	*0.50*	0.00
145	Veyvah	0	0	*0.50*	0.00
146	Mulah	0	0	*0.12*	0.00
147	MULI	0	0	*0.00*	0.00

	STATISTICAL ANNEX 3:	ELECTRICITY			
		2004	2004	*1997*	2004
	Atoll / Island name	no electricity	6 hours or less electricity per day	*Human Vulnerability Index*	Electricity Index
148	Naalaafushi	0	0	*0.50*	0.00
149	Kolhufushi	0	0	*0.24*	0.00
150	Dhiggaru	0	0	*0.57*	0.00
151	Maduvvari	0	0	*0.00*	0.00
152	**FAAFU ATOLL**	**0**	**2**	***0.20***	**0.01**
153	Feeali	0	7	*0.00*	0.03
154	Biledhdhoo	0	0	*0.75*	0.00
155	Magoodhoo	0	0	*0.00*	0.00
156	Dharaboodhoo	0	0	*0.20*	0.00
157	NILANDHOO	0	0	*0.07*	0.00
158	**DHAALU ATOLL**	**0**	**0**	***0.00***	**0.00**
159	Meedhoo	0	0	*0.00*	0.00
160	Badidhoo	0	0	*0.00*	0.00
161	Ribudhoo	0	0	*0.00*	0.00
162	Hulhudheli	0	0	*0.00*	0.00
163	Gemendhoo	0	0	*0.06*	0.00
164	Vaanee	0	0	*0.00*	0.00
165	Maaeboodhoo	0	0	*0.00*	0.00
166	KUDAHUVADHOO	0	0	*0.00*	0.00
167	**THAA ATOLL**	**0**	**2**	***0.44***	**0.01**
168	Buruni	0	0	*0.00*	0.00
169	Vilufushi	0	0	*0.59*	0.00
170	Madifushi	0	0	*1.00*	0.00
171	Dhiyamigili	0	0	*0.33*	0.00
172	Guraidhoo	0	0	*0.00*	0.00
173	Kadoodhoo	0	0	*0.00*	0.00
174	Vandhoo	0	0	*0.54*	0.00
175	Hirilandhoo	0	0	*0.50*	0.00
176	Gaadhiffushi	0	0	*0.89*	0.00
177	Thimarafushi	0	0	*0.87*	0.00
178	VEYMANDOO	0	23	*0.00*	0.12
179	Kibidhoo	0	0	*0.50*	0.00
180	Omadhoo	0	0	*0.47*	0.00
181	**LAAMU ATOLL**	**2**	**2**	***0.51***	**0.03**
182	Isdhoo	0	0	*1.00*	0.00
183	Dhabidhoo	0	0	*0.37*	0.00
184	Maabaidhoo	9	9	*0.50*	0.14
185	Mundoo	0	0	*0.14*	0.00
186	Kalhaidhoo	0	0	*0.61*	0.00
187	Gamu	0	0	*0.21*	0.00
188	Maavah	0	0	*0.06*	0.00
189	FONADHOO	0	0	*0.60*	0.00
190	Gaadhoo	0	0	*0.84*	0.00
191	Maamendhoo	0	0	*0.00*	0.00
192	Hithadhoo	18	18	*1.00*	0.27
193	Kunahandhoo	0	0	*1.00*	0.00
194	**GAAFU ALIFU ATOLL**	**1**	**1**	***0.47***	**0.01**
195	Kolamaafushi	0	0	*0.06*	0.00
196	VILLINGILI	0	0	*0.06*	0.00

STATISTICAL ANNEX 3: ELECTRICITY

		2004	2004	*1997*	2004
	Atoll / Island name	**no electricity**	**6 hours or less electricity per day**	***Human Vulnerability Index***	**Electricity Index**
197	Maamendhoo	0	0	*0.36*	0.00
198	Nilandhoo	0	0	*1.00*	0.00
199	Dhaandhoo	0	0	*0.98*	0.00
200	Dhevvadhoo	0	0	*1.00*	0.00
201	Kodey	8	8	*0.50*	0.12
202	Dhiyadhoo	26	26	*1.00*	0.39
203	Gemanafushi	0	0	*0.50*	0.00
204	Kanduhulhudhoo	0	0	*0.71*	0.00
205	**GAAFU DHAALU ATOLL**	**0**	**0**	***0.34***	**0.01**
206	Madeveli	0	0	*0.65*	0.00
207	Hoadedhdhoo	0	0	*0.60*	0.00
208	Nadallaa	0	0	*0.64*	0.00
209	Gadhdhoo	0	0	*0.00*	0.00
210	Rathafandhoo	9	9	*0.56*	0.14
211	Vaadhoo	0	0	*1.00*	0.00
212	Fiyoari	0	0	*0.50*	0.00
213	Maathodaa	0	0	*1.00*	0.00
214	Fares	0	0	*1.00*	0.00
215	THINADHOO	0	0	*0.02*	0.00
216	**GNAVIYANI ATOLL**	**0**	**0**	***0.02***	**0.00**
217	FOAMMULAH	0	0	*0.02*	0.00
218	**SEENU ATOLL**	**0**	**0**	***0.00***	**0.00**
219	Meedhoo	0	0	*0.00*	0.00
220	HITHADHOO	0	0	*0.00*	0.00
221	Maradhoo	0	0	*0.00*	0.00
222	Feydhoo	0	0	*0.00*	0.00
223	Maradhoo-Feydhoo	0	0	*0.00*	0.00
224	Hulhudhoo	0	0	*0.00*	0.00

	STATISTICAL ANNEX 4:	TRANSPORT									
		2004	2004	2004	*1997*	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**more than 100 people per vessel**	**Dhoni <4 times per month to atoll capital**	**island not always acces-sible**	***Human Vulne-rability Index***	**Trans-port Index**	**Dhoni <3 times per month to Male'**	**no jetty**	**Diffi-culties with harbour**	**Diffi-culties with reef**	**other prob-lems**
1	**Maldives**	**30**	**18**	**28**	***0.32***	**0.31**	**25**	**5**	**21**	**0**	**11**
2	**Male'**	**0**	**0**	**0**	***0.00***	**0.00**	**0**	**0**	**0**	**0**	**0**
3	**Atoll average**	**43**	**26**	**40**	***0.43***	**0.44**	**36**	**7**	**31**	**0**	**16**
4	**HAA ALIFU ATOLL**	**59**	**42**	**59**	***0.40***	**0.65**	**40**	**4**	**59**	**1**	**43**
5	Thurakunu	0	100	100	*0.50*	1.00	100	0	100	0	0
6	Uligamu	0	100	100	*0.50*	1.00	n.a.	0	100	0	0
7	Berinmadhoo	0	100	100	*1.00*	1.00	n.a.	100	100	100	0
8	Hathifushi	0	100	100	*1.00*	1.00	0	0	100	0	0
9	Mulhadhoo	0	100	100	*0.50*	1.00	0	0	100	0	0
10	Hoarafushi	100	100	0	*0.00*	0.75	100	0	0	0	0
11	Ihavandhoo	0	100	100	*n.a.*	1.00	0	0	100	0	100
12	Kelaa	100	0	100	*0.50*	0.75	100	0	100	0	100
13	Vashafaru	0	0	100	*0.25*	0.50	0	0	100	0	100
14	DHIDHDHOO	100	0	0	*0.00*	0.25	0	0	0	0	0
15	Filladhoo	100	0	0	*0.00*	0.25	100	0	0	0	0
16	Maarandhoo	0	0	100	*0.75*	0.50	0	0	100	0	0
17	Thakandhoo	0	0	100	*0.50*	0.50	100	0	100	0	0
18	Utheemu	0	0	100	*0.50*	0.50	0	100	100	0	100
19	Muraidhoo	0	0	100	*0.75*	0.50	100	0	100	0	0
20	Baarah	100	0	100	*1.00*	0.75	0	0	100	0	100
21	**HAA DHAALU ATOLL**	**7**	**1**	**86**	***0.56***	**0.45**	**34**	**20**	**86**	**0**	**4**
22	Faridhoo	0	100	100	*0.50*	1.00	100	100	100	0	0
23	Hondaidhoo				*0.75*						
24	Hanimaadhoo	0	0	100	*0.25*	0.50	0	100	100	0	0
25	Finey	n.a.	0	100	*0.50*	0.50	n.a.	0	100	0	0
26	Naivaadhoo	0	0	100	*0.50*	0.50	0	0	100	0	0
27	Hirimaradhoo	0	0	100	*1.00*	0.50	n.a.	0	100	0	0
28	Nolhivaranfaru	100	0	0	*0.25*	0.25	n.a.	0	0	0	0
29	Nellaidhoo	0	0	100	*0.50*	0.50	0	100	100	0	0
30	Nolhivaramu	0	0	100	*0.75*	0.50	100	0	100	0	0
31	Kuribi	0	0	100	*0.75*	0.50	0	100	100	0	0
32	Kuburudhoo	0	0	100	*0.75*	0.50	0	0	100	0	0
33	KULHUDHUFFUSHI	0	0	100	*0.50*	0.50	0	0	100	0	0
34	Kumundhoo	100	0	100	*0.75*	0.75	100	0	100	0	0
35	Neykurendhoo	0	0	100	*0.50*	0.50	100	100	100	0	100
36	Vaikaradhoo	0	0	0	*0.50*	0.00	100	0	0	0	0
37	Maavaidhoo	n.a.	0	100	*0.50*	0.50	n.a.	100	100	0	0
38	Makunudhoo	0	0	0	*0.50*	0.00	100	0	0	0	0
39	**SHAVIYANI ATOLL**	**4**	**69**	**83**	***0.60***	**0.77**	**25**	**3**	**44**	**3**	**54**
40	Kaditheemu	0	100	0	*1.00*	0.50	0	0	0	0	0
41	Noomaraa	0	100	100	*0.50*	1.00	100	0	100	100	0
42	Goidhoo	0	100	100	*0.50*	1.00	100	0	100	0	0
43	Feydhoo	0	100	100	*1.00*	1.00	100	0	100	0	0
44	Feevah	0	100	100	*1.00*	1.00	0	0	100	0	0
45	Bilehffahi	0	100	0	*0.50*	0.50	n.a.	0	0	0	0
46	Foakaidhoo	0	100	100	*1.00*	1.00	0	0	0	0	100

STATISTICAL ANNEX 4: TRANSPORT

		2004	2004	2004	*1997*	2004	2004	2004	2004	2004	2004
	Atoll / Island name	more than 100 people per vessel	Dhoni <4 times per month to atoll capital	island not always acces-sible	*Human Vulne-rability Index*	Trans-port Index	Dhoni <3 times per month to Male'	no jetty	Diffi-culties with harbour	Diffi-culties with reef	other prob-lems
47	Narudhoo	100	0	100	*0.75*	0.75	0	100	100	0	100
48	Maakandoodhoo	0	0	100	*0.50*	0.50	0	0	0	0	100
49	Maroshi	0	100	0	*0.50*	0.50	0	0	0	0	0
50	Lhaimagu	0	0	100	*0.00*	0.50	100	0	100	0	100
51	Firubaidhoo	0	0	100	*0.50*	0.50	n.a.	0	0	0	100
52	Komandoo	0	100	100	*0.00*	1.00	0	0	0	0	100
53	Maaugoodhoo	n.a.	0	100	*0.50*	0.50	100	0	100	0	100
54	FUNADHOO	0	0	100	*0.75*	0.50	0	0	0	0	100
55	Milandhoo	n.a.	100	100		1.00	n.a.	0	100	0	0
56	**NOONU ATOLL**	**24**	**54**	**49**	***0.63***	**0.58**	**33**	**11**	**45**	**0**	**0**
57	Hebadhoo	0	n.a	100	*0.50*	0.50	0	100	0	0	0
58	Kedhikolhudhoo	0	100	100	*1.00*	1.00	0	0	100	0	0
59	Maalhendhoo	0	100	0	*0.50*	0.50	n.a.	0	0	0	0
60	Kudafari	0	0	100	*0.50*	0.50	0	0	100	0	0
61	Landhoo	0	0	100	*0.50*	0.50	100	0	100	0	0
62	Maafaru	0	0	100	*0.50*	0.50	0	0	100	0	0
63	Lhohi	0	0	100	*1.00*	0.50	0	100	100	0	0
64	Miladhoo	100	0	100	*0.50*	0.75	100	0	100	0	0
65	Magoodhoo	0	0	100	*0.50*	0.50	n.a.	100	100	0	0
66	MANADHOO	0	0	0	*0.00*	0.00	0	0	0	0	0
67	Holhudhoo	100	100	0	*1.00*	0.75	100	0	0	0	0
68	Fodhdhoo	0	100	100	*0.50*	1.00	n.a.	0	100	0	0
69	Velidhoo	0	100	0	*0.50*	0.50	0	0	0	0	0
70	**RAA ATOLL**	**51**	**30**	**39**	***0.36***	**0.47**	**14**	**0**	**39**	**0**	**0**
71	Alifushi	100	0	0	*0.50*	0.25	0	0	0	0	0
72	Vaadhoo	0	0	100	*0.50*	0.50	0	0	100	0	0
73	Rasgetheemu	0	100	100	*0.75*	1.00	100	0	100	0	0
74	Agolhitheemu	0	0	100	*0.50*	0.50	n.a.	0	100	0	0
75	Hulhudhuffaaru	0	100	100	*0.50*	1.00	0	0	100	0	0
76	UGUFAARU	100	0	100	*0.00*	0.75	0	0	100	0	0
77	Kadholhudhoo	100	100	0	*0.00*	0.75	0	0	0	0	0
78	Maakurathu	0	0	100	*0.50*	0.50	0	0	100	0	0
79	Rasmaadhoo	n.a.	0	100	*0.75*	0.50	n.a.	0	100	0	0
80	Innamaadhoo	0	0	100	*0.75*	0.50	0	0	100	0	0
81	Maduvvari	0	0	0	*0.50*	0.00	100	0	0	0	0
82	Iguraidhoo	100	0	0	*0.50*	0.25	0	0	0	0	0
83	Fainu	0	0	100	*1.00*	0.50	0	0	100	0	0
84	Meedhoo	0	0	0	*0.00*	0.00	0	0	0	0	0
85	Kinolhas	0	0	100	*0.50*	0.50	0	0	100	0	0
86	**BAA ATOLL**	**41**	**42**	**24**	***0.39***	**0.43**	**10**	**0**	**4**	**0**	**21**
87	Kudarikilu	0	100	0	*0.50*	0.50	0	0	0	0	0
88	Kamadhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
89	Kendhoo	0	0	0	*0.50*	0.00	100	0	0	0	0
90	Kihaadhoo	0	0	0	*0.50*	0.00	n.a.	0	0	0	0
91	Dhonfanu	0	0	0	*0.50*	0.00	0	0	0	0	0
92	Dharavandhoo	0	0	0	*0.00*	0.00	0	0	0	0	0

	STATISTICAL ANNEX 4:	TRANSPORT									
		2004	2004	2004	*1997*	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**more than 100 people per vessel**	**Dhoni <4 times per month to atoll capital**	**island not always acces-sible**	***Human Vulne-rability Index***	**Trans-port Index**	**Dhoni <3 times per month to Male'**	**no jetty**	**Diffi-culties with harbour**	**Diffi-culties with reef**	**other prob-lems**
93	Maalhos	0	0	0	*0.50*	0.00	0	0	0	0	0
94	EYDHAFUSHI	100	0	0	*0.00*	0.25	0	0	0	0	0
95	Thulhaadhoo	0	100	100	*0.00*	1.00	0	0	0	0	100
96	Hithaadhoo	100	100	0	*1.00*	0.75	0	0	0	0	0
97	Fulhadhoo	0	100	100	*1.00*	1.00	0	0	100	0	0
98	Fehendhoo	0	100	100	*1.00*	1.00	0	0	100	0	0
99	Goidhoo	100	100	0	*1.00*	0.75	0	0	0	0	0
100	**LHAVIYANI ATOLL**	**81**	**4**	**4**	***0.40***	**0.24**	**0**	**0**	**4**	**0**	**0**
101	Hinnavaru	100	0	0	*0.50*	0.25	0	0	0	0	0
102	NAIFARU	100	0	0	*0.25*	0.25	0	0	0	0	0
103	Kurendhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
104	Olhuvelifushi	0	100	100	*0.75*	1.00	0	0	100	0	0
105	Maafilaafushi	0	0	0	*n.a.*	0.00	n.a.	0	0	0	0
106	**KAAFU ATOLL**	**51**	**47**	**18**	***0.46***	**0.46**	**0**	**0**	**18**	**0**	**0**
107	Kaashidhoo	100	0	0	*n.a.*	0.25	0	0	0	0	0
108	Gaafaru	0	100	0	*0.50*	0.50	0	0	0	0	0
109	Dhiffushi	0	100	0	*0.00*	0.50	0	0	0	0	0
110	THULUSDHOO	100	0	0	*0.50*	0.25	0	0	0	0	0
111	Huraa	0	100	0	*0.50*	0.50	0	0	0	0	0
112	Himmafushi	100	100	0	*0.50*	0.75	0	0	0	0	0
113	Gulhi	0	0	100	*0.00*	0.50	0	0	100	0	0
114	Maafushi	100	100	100	*1.00*	1.00	0	0	100	0	0
115	Guraidhoo	0	0	0	*0.00*	0.00	0	0	0	0	0
116	**ALIF ALIFU ATOLL**	**20**	**18**	**62**	***0.79***	**0.45**	**0**	**0**	**28**	**0**	**43**
117	Thoddoo	100	0	0	*1.00*	0.25	0	0	0	0	0
118	RASDHOO	0	0	100	*0.00*	0.50	0	0	0	0	100
119	Ukulhas	0	0	0	*0.50*	0.00	0	0	0	0	0
120	Mathiveri	0	100	0	*0.50*	0.50	0	0	0	0	0
121	Bodufolhudhoo	0	0	100	*1.00*	0.50	0	0	100	0	0
122	Feridhoo	0	100	100	*1.00*	1.00	0	0	100	0	0
123	Maalhos	0	0	100	*1.00*	0.50	0	0	0	0	100
124	Himendhoo	0	0	100	*1.00*	0.50	0	0	100	0	100
125	**ALIFU DHAALU ATOLL**	**27**	**42**	**31**	***0.52***	**0.43**	**0**	**0**	**5**	**0**	**42**
126	Hangnameedhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
127	Omadhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
128	Kuburudhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
129	MAHIBADHOO	0	0	100	*0.00*	0.50	0	0	0	0	100
130	Mandhoo	n.a.	100	0	*0.25*	0.50	0	0	0	0	0
131	Dhagethi	0	0	0	*0.00*	0.00	0	0	0	0	100
132	Dhigurah	0	100	100	*0.50*	1.00	0	0	100	0	100
133	Fenfushi	n.a.	100	0	*0.50*	0.50	0	0	0	0	0
134	Dhidhdhoo	0	100	0	*0.75*	0.50	0	0	0	0	0
135	Maamigili	100	100	0	*1.00*	0.75	0	0	0	0	0
136	**VAAVU ATOLL**	**0**	**10**	**33**	***0.40***	**0.21**	**0**	**0**	**33**	**0**	**0**
137	Fulidhoo	0	0	0	*0.00*	0.00	0	0	0	0	0
138	Thinadhoo	0	0	100	*0.75*	0.50	0	0	100	0	0

STATISTICAL ANNEX 4: TRANSPORT

		2004	2004	2004	1997	2004	2004	2004	2004	2004	2004
	Atoll / Island name	more than 100 people per vessel	Dhoni <4 times per month to atoll capital	island not always acces-sible	*Human Vulne-rability Index*	Trans-port Index	Dhoni <3 times per month to Male'	no jetty	Diffi-culties with harbour	Diffi-culties with reef	other prob-lems
139	FELIDHOO	0	0	100	*0.00*	0.50	0	0	100	0	0
140	Keyodhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
141	Rakeedhoo	0	100	0	*1.00*	0.50	0	0	0	0	0
142	**MEEMU ATOLL**	**31**	**10**	**60**	***0.29***	**0.43**	**6**	**0**	**49**	**0**	**36**
143	Raimandhoo	0	0	100	*0.50*	0.50	0	0	0	0	100
144	Madifushi	0	100	100	*0.50*	1.00	0	0	100	0	0
145	Veyvah	0	0	100	*0.75*	0.50	0	0	100	0	0
146	Mulah	100	0	100	*0.00*	0.75	0	0	100	0	100
147	MULI	0	0	0	*0.00*	0.00	0	0	0	0	0
148	Naalaafushi	100	0	0	*0.00*	0.25	100	0	0	0	0
149	Kolhufushi	0	0	0	*0.50*	0.00	0	0	0	0	0
150	Dhiggaru	0	0	100	*0.50*	0.50	0	0	100	0	0
151	Maduvvari	0	100	100	*0.50*	1.00	0	0	0	0	100
152	**FAAFU ATOLL**	**0**	**13**	**29**	***0.43***	**0.21**	**0**	**0**	**29**	**0**	**0**
153	Feeali	0	0	100	*0.50*	0.50	0	0	100	0	0
154	Biledhdhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
155	Magoodhoo	0	100	0	*0.00*	0.50	0	0	0	0	0
156	Dharaboodhoo	0	n.a	100	*0.50*	0.50	0	0	100	0	0
157	NILANDHOO	0	0	0	*0.50*	0.00	0	0	0	0	0
158	**DHAALU ATOLL**	**0**	**25**	**40**	***0.42***	**0.33**	**6**	**7**	**8**	**0**	**25**
159	Meedhoo	0	100	0	*0.50*	0.50	0	0	0	0	0
160	Badidhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
161	Ribudhoo	0	100	100	*0.50*	1.00	n.a.	0	100	0	0
162	Hulhudheli	0	0	100	*0.50*	0.50	0	n.a.	n.a.	n.a.	n.a.
163	Gemendhoo	0	0	100	*0.50*	0.50	100	100	0	0	100
164	Vaanee	0	0	100	*0.00*	0.50	0	0	0	0	100
165	Maaeboodhoo	0	0	100	*0.00*	0.50	0	0	0	0	100
166	KUDAHUVADHOO	0	0	0	*0.50*	0.00	0	0	0	0	0
167	**THAA ATOLL**	**0**	**36**	**49**	***0.20***	**0.43**	**23**	**23**	**18**	**0**	**34**
168	Buruni	0	100	100	*0.75*	1.00	100	0	100	0	0
169	Vilufushi	0	100	100	*0.00*	1.00	100	100	0	0	100
170	Madifushi	0	100	0	*0.00*	0.50	0	0	0	0	0
171	Dhiyamigili	0	100	100	*0.00*	1.00	0	0	0	0	100
172	Guraidhoo	0	0	0	*0.50*	0.00	0	0	0	0	0
173	Kadoodhoo	n.a.	100	100	*0.50*	1.00	0	0	100	0	0
174	Vandhoo	0	100	100	*0.00*	1.00	0	0	0	0	100
175	Hirilandhoo	0	0	0	*0.00*	0.00	0	0	0	0	0
176	Gaadhiffushi	0	0	100	*0.50*	0.50	100	0	100	0	100
177	Thimarafushi	n.a.	0	0	*0.00*	0.00	0	0	0	0	0
178	VEYMANDOO	0	0	100	*0.00*	0.50	0	100	100	0	0
179	Kibidhoo	0	0	100	*0.50*	0.50	0	0	0	0	100
180	Omadhoo	0	0	0	*0.50*	0.00	100	0	0	0	0
181	**LAAMU ATOLL**	**59**	**27**	**56**	***0.36***	**0.56**	**66**	**23**	**45**	**0**	**11**
182	Isdhoo	100	100	0	*0.00*	0.75	100	0	0	0	0
183	Dhabidhoo	0	100	100	*0.50*	1.00	100	0	0	0	100
184	Maabaidhoo	0	100	100	*0.00*	1.00	100	0	100	0	0

STATISTICAL ANNEX 4: TRANSPORT

		2004	2004	2004	*1997*	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**more than 100 people per vessel**	**Dhoni <4 times per month to atoll capital**	**island not always acces-sible**	***Human Vulne-rability Index***	**Trans-port Index**	**Dhoni <3 times per month to Male'**	**no jetty**	**Diffi-culties with harbour**	**Diffi-culties with reef**	**other prob-lems**
185	Mundoo	0	100	100	*0.50*	1.00	0	100	100	0	0
186	Kalhaidhoo	0	0	0	*0.50*	0.00	100	0	0	0	0
187	Gamu	100	0	100	*0.50*	0.75	100	100	100	0	0
188	Maavah	100	0	0	*0.00*	0.25	0	0	0	0	0
189	FONADHOO	100	0	0	*0.25*	0.25	100	0	0	0	0
190	Gaadhoo	0	0	100	*0.75*	0.50	0	0	100	0	0
191	Maamendhoo	0	0	100	*0.50*	0.50	0	0	100	0	0
192	Hithadhoo	0	0	100	*0.50*	0.50	0	0	0	0	100
193	Kunahandhoo	0	0	100	*0.75*	0.50	100	0	100	0	0
194	**GAAFU ALIFU ATOLL**	**57**	**32**	**10**	***0.29***	**0.35**	**31**	**27**	**10**	**0**	**0**
195	Kolamaafushi	0	100	0	*0.00*	0.50	100	0	0	0	0
196	VILLINGILI	100	0	0	*0.00*	0.25	0	100	0	0	0
197	Maamendhoo	100	0	0	*0.50*	0.25	n.a.	0	0	0	0
198	Nilandhoo	0	0	100	*0.50*	0.50	100	0	100	0	0
199	Dhaandhoo	0	0	0	*0.00*	0.00	0	0	0	0	0
200	Dhevvadhoo	100	100	0	*1.00*	0.75	n.a.	0	0	0	0
201	Kodey	0	0	100	*0.75*	0.50	n.a.	0	100	0	0
202	Dhiyadhoo	0	100	100	*1.00*	1.00	n.a.	0	100	0	0
203	Gemanafushi	100	100	0	*0.00*	0.75	n.a.	0	0	0	0
204	Kanduhulhudhoo	0	0	0	*1.00*	0.00	n.a.	0	0	0	0
205	**GAAFU DHAALU ATOLL**	**37**	**0**	**25**	***0.21***	**0.22**	**85**	**0**	**21**	**0**	**25**
206	Madeveli	100	0	100	*0.25*	0.75	0	0	100	0	100
207	Hoadedhdhoo	100	0	0	*0.75*	0.25	n.a.	0	0	0	0
208	Nadallaa	0	n.a	100	*0.75*	0.50	n.a.	0	100	0	100
209	Gadhdhoo	100	0	0	*0.00*	0.25	n.a.	0	0	0	0
210	Rathafandhoo	0	0	100	*0.50*	0.50	100	0	100	0	0
211	Vaadhoo	100	0	0	*0.25*	0.25	n.a.	0	0	0	0
212	Fiyoari	0	0	0	*0.25*	0.00	100	0	0	0	0
213	Maathodaa	0	0	100	*0.50*	0.50	100	0	0	0	100
214	Fares	0	0	0	*0.50*	0.00	100	0	0	0	100
215	THINADHOO	0	0	0	*0.00*	0.00	100	0	0	0	0
216	**GNAVIYANI ATOLL**	**100**	**0**	**0**	***0.75***	**0.25**	**100**	**0**	**0**	**0**	**0**
217	FOAMMULAH	100	0	0	*0.75*	0.25	100	0	0	0	0
218	**SEENU ATOLL**	**94**	**0**	**0**	***0.22***	**0.23**	**100**	**0**	**0**	**0**	**0**
219	Meedhoo	100	0	0	*n.a.*	0.25	100	0	0	0	0
220	HITHADHOO	100	0	0	*0.25*	0.25	100	0	0	0	0
221	Maradhoo	100	0	0	*0.00*	0.25	100	0	0	0	0
222	Feydhoo	100	0	0	*0.25*	0.25	100	0	0	0	0
223	Maradhoo-Feydhoo	100	0	0	*0.25*	0.25	n.a.	0	0	0	0
224	Hulhudhoo	0	0	0	*0.25*	0.00	100	0	0	0	0

	STATISTICAL ANNEX 5:	COMMUNICATION						
		2004	2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	**no public phone on the island**	**no national news-paper on the island**	**no radio**	***Human Vulne-rability Index***	**Commu-nication Index**	**no landline tele-phone**	**no mobile tele-phone**	**no tele-vision**
1	**Maldives**	**0**	**37**	**19**	***0.92***	**0.28**	**69**	**46**	**13**
2	**Male'**	**0**	**0**	**29**	***0.49***	**0.29**	**35**	**22**	**9**
3	**Atoll average**	**0**	**52**	**14**	***1.00***	**0.27**	**84**	**56**	**15**
4	**HAA ALIFU ATOLL**	**0**	**44**	**14**	***1.00***	**0.25**	**98**	**56**	**23**
5	Thurakunu	0	0	12	*1.00*	0.12	100	65	29
6	Uligamu	0	100	9	*1.00*	0.34	96	64	76
7	Berinmadhoo	0	100	0	*1.00*	0.25	100	85	26
8	Hathifushi	0	100	15	*1.00*	0.40	100	100	36
9	Mulhadhoo	0	100	9	*1.00*	0.34	100	73	53
10	Hoarafushi	0	0	25	*1.00*	0.25	97	60	25
11	Ihavandhoo	0	0	15	*n.a.*	0.15	100	74	10
12	Kelaa	0	100	4	*1.00*	0.29	100	50	22
13	Vashafaru	0	100	28	*1.00*	0.53	100	32	21
14	DHIDHDHOO	0	0	21	*0.51*	0.21	91	45	12
15	Filladhoo	0	100	10	*1.00*	0.35	100	67	47
16	Maarandhoo	0	100	0	*1.00*	0.25	100	69	14
17	Thakandhoo	0	100	0	*1.00*	0.25	100	85	15
18	Utheemu	0	100	6	*0.75*	0.31	100	16	6
19	Muraidhoo	0	100	15	*1.00*	0.40	100	52	65
20	Baarah	0	100	0	*1.00*	0.25	100	33	35
21	**HAA DHAALU ATOLL**	**0**	**35**	**8**	***1.00***	**0.17**	**72**	**57**	**15**
22	Faridhoo	0	100	9	*1.00*	0.34	91	47	30
23	Hondaidhoo				*1.00*				
24	Hanimaadhoo	0	0	0	*1.00*	0.00	100	57	7
25	Finey	0	100	0	*1.00*	0.25	100	32	61
26	Naivaadhoo	0	100	7	*1.00*	0.32	100	54	22
27	Hirimaradhoo	0	100	0	*1.00*	0.25	100	26	2
28	Nolhivaranfaru	0	100	0	*1.00*	0.25	100	46	29
29	Nellaidhoo	0	100	11	*1.00*	0.36	100	43	3
30	Nolhivaramu	0	100	6	*1.00*	0.31	100	44	21
31	Kuribi	0	100	9	*1.00*	0.34	100	71	32
32	Kuburudhoo	0	100	0	*1.00*	0.25	100	83	48
33	KULHUDHUFFUSHI	0	0	10	*0.85*	0.10	39	58	10
34	Kumundhoo	0	100	10	*1.00*	0.35	100	56	42
35	Neykurendhoo	0	100	0	*1.00*	0.25	100	85	13
36	Vaikaradhoo	0	0	0	*1.00*	0.00	100	48	15
37	Maavaidhoo	0	100	0	*1.00*	0.25	100	63	32
38	Makunudhoo	0	0	32	*1.00*	0.32	100	80	9
39	**SHAVIYANI ATOLL**	**0**	**74**	**11**	***1.00***	**0.30**	**98**	**63**	**16**
40	Kaditheemu	0	0	0	*1.00*	0.00	100	71	18
41	Noomaraa	0	100	29	*1.00*	0.54	100	71	17
42	Goidhoo	0	100	2	*1.00*	0.27	100	18	13
43	Feydhoo	0	100	20	*1.00*	0.45	100	78	34
44	Feevah	0	0	30	*1.00*	0.30	100	78	20
45	Bilehffahi	0	100	0	*1.00*	0.25	100	30	2
46	Foakaidhoo	0	100	16	*1.00*	0.41	87	60	33
47	Narudhoo	0	100	21	*1.00*	0.46	100	69	32
48	Maakandoodhoo	0	100	27	*1.00*	0.52	100	13	4

	STATISTICAL ANNEX 5:	COMMUNICATION							
		2004	2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	no public phone on the island	no national news-paper on the island	no radio	*Human Vulne-rability Index*	Commu-nication Index	no landline tele-phone	no mobile tele-phone	no tele-vision
49	Maroshi	0	100	25	*1.00*	0.50	100	81	15
50	Lhaimagu	0	100	8	*1.00*	0.33	100	80	55
51	Firubaidhoo	0	100	0	*1.00*	0.25	100	32	7
52	Komandoo	0	100	12	*1.00*	0.37	100	70	3
53	Maaugoodhoo	0	100	16	*1.00*	0.41	100	86	0
54	FUNADHOO	0	100	0	*0.64*	0.25	100	51	0
55	Milandhoo	0	0	0		0.00	100	55	10
56	**NOONU ATOLL**	**0**	**66**	**16**	***1.00***	**0.32**	**100**	**58**	**15**
57	Hebadhoo	0	100	10	*1.00*	0.35	100	100	22
58	Kedhikolhudhoo	0	100	11	*0.40*	0.36	100	68	4
59	Maalhendhoo	0	100	8	*1.00*	0.33	100	78	33
60	Kudafari	0	100	45	*1.00*	0.70	100	88	31
61	Landhoo	0	100	18	*1.00*	0.43	100	72	48
62	Maafaru	0	100	34	*1.00*	0.59	100	83	10
63	Lhohi	0	100	0	*1.00*	0.25	100	100	45
64	Miladhoo	0	100	0	*0.54*	0.25	100	63	26
65	Magoodhoo	0	100	0	*1.00*	0.25	100	66	7
66	MANADHOO	0	100	9	*0.79*	0.34	100	32	0
67	Holhudhoo	0	0	4	*0.59*	0.04	100	43	12
68	Fodhdhoo	0	100	41	*1.00*	0.66	100	100	26
69	Velidhoo	0	0	35	*0.46*	0.35	100	29	6
70	**RAA ATOLL**	**0**	**80**	**17**	***0.67***	**0.37**	**99**	**44**	**19**
71	Alifushi	0	0	19	*0.64*	0.19	100	35	13
72	Vaadhoo	0	100	59	*0.63*	0.84	100	70	41
73	Rasgetheemu	0	100	6	*0.87*	0.31	100	35	4
74	Agolhitheemu	0	100	28	*0.82*	0.53	100	83	19
75	Hulhudhuffaaru	0	100	21	*0.78*	0.46	100	58	0
76	UGUFAARU	0	0	0	*0.11*	0.00	100	15	0
77	Kadholhudhoo	0	100	27	*0.69*	0.52	97	45	15
78	Maakurathu	0	100	0	*0.56*	0.25	100	74	43
79	Rasmaadhoo	0	100	0	*0.51*	0.25	100	83	47
80	Innamaadhoo	0	100	10	*1.00*	0.35	100	10	17
81	Maduvvari	0	100	7	*0.51*	0.32	100	29	13
82	Iguraidhoo	0	100	35	*0.80*	0.60	100	40	49
83	Fainu	0	100	0	*1.00*	0.25	100	55	30
84	Meedhoo	0	100	20	*0.55*	0.45	100	48	22
85	Kinolhas	0	100	2	*1.00*	0.27	100	67	18
86	**BAA ATOLL**	**0**	**66**	**8**	***0.88***	**0.25**	**86**	**62**	**20**
87	Kudarikilu	0	100	0	*0.39*	0.25	100	43	10
88	Kamadhoo	0	100	8	*0.38*	0.33	100	85	35
89	Kendhoo	0	100	0	*0.36*	0.25	100	57	45
90	Kihaadhoo	0	100	20	*0.57*	0.45	100	67	35
91	Dhonfanu	0	100	0	*0.65*	0.25	100	40	8
92	Dharavandhoo	0	0	4	*1.00*	0.04	100	21	8
93	Maalhos	0	100	7	*0.75*	0.32	100	62	0
94	EYDHAFUSHI	0	0	6	*0.91*	0.06	46	68	11
95	Thulhaadhoo	0	100	24	*0.61*	0.49	100	68	23
96	Hithaadhoo	0	100	0	*1.00*	0.25	100	71	29

STATISTICAL ANNEX 5: COMMUNICATION

		2004	2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	no public phone on the island	no national news-paper on the island	no radio	*Human Vulne-rability Index*	Commu-nication Index	no landline tele-phone	no mobile tele-phone	no tele-vision
97	Fulhadhoo	0	100	10	*1.00*	0.35	100	27	20
98	Fehendhoo	0	100	0	*1.00*	0.25	100	90	4
99	Goidhoo	0	100	0	*0.95*	0.25	100	81	24
100	**LHAVIYANI ATOLL**	**0**	**55**	**16**	***1.00***	**0.30**	**98**	**42**	**17**
101	Hinnavaru	0	100	21	*0.72*	0.46	94	41	22
102	NAIFARU	0	0	7	*1.00*	0.07	100	29	9
103	Kurendhoo	0	100	34	*0.79*	0.59	100	72	25
104	Olhuvelifushi	0	100	22	*1.00*	0.47	100	100	35
105	Maafilaafushi	0	100	0	*n.a.*	0.25	100	31	17
106	**KAAFU ATOLL**	**0**	**68**	**6**	***0.73***	**0.23**	**97**	**24**	**5**
107	Kaashidhoo	0	0	0	*n.a.*	0.00	100	30	12
108	Gaafaru	0	100	0	*0.84*	0.25	100	30	0
109	Dhiffushi	0	100	8	*0.72*	0.33	100	34	8
110	THULUSDHOO	0	100	7	*1.00*	0.32	82	26	0
111	Huraa	0	100	0	*1.00*	0.25	100	0	0
112	Himmafushi	0	100	5	*0.45*	0.30	100	8	3
113	Gulhi	0	100	12	*0.56*	0.37	100	20	0
114	Maafushi	0	0	12	*0.98*	0.12	100	12	12
115	Guraidhoo	0	100	15	*0.67*	0.40	91	38	0
116	**ALIF ALIFU ATOLL**	**0**	**100**	**16**	***0.62***	**0.41**	**100**	**36**	**12**
117	Thoddoo	0	100	13	*0.54*	0.38	100	20	0
118	RASDHOO	0	100	17	*1.00*	0.42	100	22	0
119	Ukulhas	0	100	9	*0.62*	0.34	100	34	0
120	Mathiveri	0	100	24	*0.32*	0.49	100	38	0
121	Bodufolhudhoo	0	100	37	*0.43*	0.62	100	58	9
122	Feridhoo	0	100	20	*0.29*	0.45	100	73	44
123	Maalhos	0	100	12	*0.55*	0.37	100	42	28
124	Himendhoo	0	100	5	*0.97*	0.30	100	30	21
125	**ALIFU DHAALU ATOLL**	**0**	**42**	**13**	***0.65***	**0.23**	**100**	**26**	**14**
126	Hangnameedhoo	0	100	20	*0.36*	0.45	100	56	31
127	Omadhoo	0	100	12	*0.25*	0.37	100	38	0
128	Kuburudhoo	0	100	12	*0.00*	0.37	100	43	55
129	MAHIBADHOO	0	0	6	*0.72*	0.06	100	16	14
130	Mandhoo	0	n.a.	4	*0.86*	0.04	100	10	6
131	Dhagethi	0	100	4	*0.26*	0.29	100	2	2
132	Dhigurah	0	0	0	*0.56*	0.00	100	59	21
133	Fenfushi	0	100	28	*0.50*	0.53	100	28	15
134	Dhidhdhoo	0	0	10	*0.34*	0.10	100	33	14
135	Maamigili	0	0	21	*1.00*	0.21	100	28	11
136	**VAAVU ATOLL**	**0**	**26**	**3**	***1.00***	**0.10**	**100**	**42**	**17**
137	Fulidhoo	0	100	0	*1.00*	0.25	100	40	0
138	Thinadhoo	0	100	4	*1.00*	0.29	100	67	13
139	FELIDHOO	0	0	9	*0.20*	0.09	100	22	6
140	Keyodhoo	0	0	0	*1.00*	0.00	100	56	35
141	Rakeedhoo	0	0	7	*1.00*	0.07	100	50	21
142	**MEEMU ATOLL**	**0**	**85**	**11**	***1.00***	**0.32**	**100**	**64**	**22**
143	Raimandhoo	0	100	0	*0.89*	0.25	100	68	34
144	Madifushi	0	100	0	*1.00*	0.25	100	77	5

	STATISTICAL ANNEX 5:	COMMUNICATION							
		2004	2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	no public phone on the island	no national news-paper on the island	no radio	*Human Vulne-rability Index*	Commu-nication Index	no landline tele-phone	no mobile tele-phone	no tele-vision
145	Veyvah	0	100	15	*1.00*	0.40	100	62	13
146	Mulah	0	100	19	*0.63*	0.44	100	41	3
147	MULI	0	0	27	*0.86*	0.27	100	56	7
148	Naalaafushi	0	100	9	*1.00*	0.34	100	69	34
149	Kolhufushi	0	100	0	*1.00*	0.25	100	86	47
150	Dhiggaru	0	100	3	*1.00*	0.28	100	59	33
151	Maduvvari	0	100	6	*1.00*	0.31	100	100	19
152	**FAAFU ATOLL**	**0**	**77**	**14**	***1.00***	**0.34**	**97**	**72**	**38**
153	Feeali	0	0	10	*1.00*	0.10	100	93	34
154	Biledhdhoo	0	100	32	*1.00*	0.57	100	73	38
155	Magoodhoo	0	100	9	*0.32*	0.34	100	49	9
156	Dharaboodhoo	0	100	14	*1.00*	0.39	100	58	12
157	NILANDHOO	0	100	5	*1.00*	0.30	91	68	55
158	**DHAALU ATOLL**	**0**	**38**	**13**	***1.00***	**0.22**	**100**	**76**	**13**
159	Meedhoo	0	0	22	*1.00*	0.22	100	48	0
160	Badidhoo	0	100	12	*1.00*	0.37	100	44	21
161	Ribudhoo	0	100	0	*1.00*	0.25	100	76	11
162	Hulhudheli	0	100	16	*1.00*	0.41	100	90	4
163	Gemendhoo	0	0	19	*1.00*	0.19	100	100	19
164	Vaanee	0	100	9	*1.00*	0.34	100	89	11
165	Maaeboodhoo	0	0	23	*1.00*	0.23	100	100	21
166	KUDAHUVADHOO	0	0	4	*0.61*	0.04	100	87	17
167	**THAA ATOLL**	**0**	**49**	**21**	***1.00***	**0.33**	**100**	**96**	**9**
168	Buruni	0	100	0	*1.00*	0.25	100	100	38
169	Vilufushi	0	0	13	*0.98*	0.13	100	86	15
170	Madifushi	0	100	38	*1.00*	0.63	100	87	18
171	Dhiyamigili	0	100	55	*1.00*	0.80	100	100	11
172	Guraidhoo	0	100	25	*1.00*	0.50	100	100	0
173	Kadoodhoo	0	100	0	*1.00*	0.25	100	100	11
174	Vandhoo	0	0	25	*1.00*	0.25	100	100	18
175	Hirilandhoo	0	100	8	*1.00*	0.33	100	100	11
176	Gaadhiffushi	0	100	7	*1.00*	0.32	100	100	17
177	Thimarafushi	0	0	35	*0.52*	0.35	100	96	6
178	VEYMANDOO	0	0	23	*0.41*	0.23	100	100	0
179	Kibidhoo	0	0	0	*1.00*	0.00	100	100	5
180	Omadhoo	0	100	15	*1.00*	0.40	100	100	0
181	**LAAMU ATOLL**	**0**	**78**	**15**	***0.71***	**0.34**	**99**	**76**	**20**
182	Isdhoo	0	100	11	*0.28*	0.36	100	74	31
183	Dhabidhoo	0	100	9	*0.88*	0.34	86	82	0
184	Maabaidhoo	0	100	30	*0.44*	0.55	100	93	24
185	Mundoo	0	100	0	*0.55*	0.25	100	77	0
186	Kalhaidhoo	0	100	0	*0.82*	0.25	100	73	24
187	Gamu	0	100	13	*0.84*	0.38	100	76	7
188	Maavah	0	100	0	*0.70*	0.25	100	100	37
189	FONADHOO	0	0	25	*0.56*	0.25	100	35	8
190	Gaadhoo	0	100	18	*0.39*	0.43	100	87	36
191	Maamendhoo	0	100	28	*1.00*	0.53	100	72	11
192	Hithadhoo	0	0	7	*1.00*	0.07	100	100	45

STATISTICAL ANNEX 5: COMMUNICATION

		2004	2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	no public phone on the island	no national news-paper on the island	no radio	*Human Vulne-rability Index*	Commu-nication Index	no landline tele-phone	no mobile tele-phone	no tele-vision
193	Kunahandhoo	0	100	31	*0.96*	0.56	100	100	45
194	**GAAFU ALIFU ATOLL**	**0**	**73**	**21**	***0.80***	**0.39**	**99**	**73**	**9**
195	Kolamaafushi	0	100	0	*0.06*	0.25	100	100	3
196	VILLINGILI	0	0	16	*1.00*	0.16	100	39	8
197	Maamendhoo	0	100	22	*0.63*	0.47	88	58	8
198	Nilandhoo	0	100	43	*0.86*	0.68	100	100	25
199	Dhaandhoo	0	100	23	*1.00*	0.48	100	94	9
200	Dhevvadhoo	0	100	17	*0.67*	0.42	100	100	0
201	Kodey	0	100	0	*0.39*	0.25	100	94	25
202	Dhiyadhoo	0	100	11	*0.63*	0.36	100	66	39
203	Gemanafushi	0	100	42	*0.84*	0.67	100	80	0
204	Kanduhulhudhoo	0	100	35	*0.86*	0.60	100	70	23
205	**GAAFU DHAALU ATOLL**	**0**	**32**	**12**	***0.64***	**0.20**	**78**	**67**	**15**
206	Madeveli	0	0	0	*0.65*	0.00	100	68	20
207	Hoadedhdhoo	0	0	16	*0.79*	0.16	100	79	23
208	Nadallaa	0	100	0	*0.60*	0.25	100	88	24
209	Gadhdhoo	0	100	45	*0.68*	0.70	100	57	0
210	Rathafandhoo	0	100	11	*0.47*	0.36	100	100	25
211	Vaadhoo	0	100	0	*0.90*	0.25	100	87	48
212	Fiyoari	0	0	0	*0.47*	0.00	100	100	9
213	Maathodaa	0	0	20	*0.38*	0.20	100	90	7
214	Fares	0	0	17	*0.36*	0.17	100	100	6
215	THINADHOO	0	0	8	*0.67*	0.08	39	46	13
216	**GNAVIYANI ATOLL**	**0**	**0**	**15**	***0.58***	**0.15**	**22**	**47**	**7**
217	FOAMMULAH	0	0	15	*0.58*	0.15	22	47	7
218	**SEENU ATOLL**	**0**	**6**	**21**	***0.85***	**0.23**	**21**	**45**	**4**
219	Meedhoo	0	0	8	*n.a.*	0.08	20	58	0
220	HITHADHOO	0	0	29	*0.81*	0.29	24	39	4
221	Maradhoo	0	0	21	*0.76*	0.21	27	51	0
222	Feydhoo	0	0	10	*0.64*	0.10	1	30	10
223	Maradhoo-Feydhoo	0	0	12	*0.60*	0.12	0	55	3
224	Hulhudhoo	0	100	19	*0.50*	0.44	50	93	0

	STATISTICAL ANNEX 6.1:	EDUCATION 1									
		2004	2004	2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	no drinking water in school	no toilet in school	no nur-sery	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	*Human Vulne-rability Index*	Edu-cation Index
1	**Maldives**	**0**	**3**	**26**	**1**	**15**	**1**	**3**	**13**	***0.37***	**0.17**
2	**Male'**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	***0.00***	**0.00**
3	**Atoll average**	**0**	**4**	**38**	**1**	**21**	**1**	**4**	**19**	***0.50***	**0.24**
4	**HAA ALIFU ATOLL**	**0**	**0**	**17**	**1**	**27**	**1**	**6**	**18**	***0.55***	**0.19**
5	Thurakunu	0	0	100	0	100	0	100	0	*1.00*	1.00
6	Uligamu	0	0	100	0	100	0	0	0	*1.00*	0.50
7	Berinmadhoo	0	0	100	100	0	100	0	0	*1.00*	1.00
8	Hathifushi	0	0	100	0	100	0	0	0	*1.00*	0.50
9	Mulhadhoo	0	0	100	0	100	0	0	100	*0.50*	0.75
10	Hoarafushi	0	0	0	0	0	0	0	100	*0.50*	0.25
11	Ihavandhoo	0	0	0	0	0	0	0	0	*n.a.*	0.00
12	Kelaa	0	0	0	0	0	0	0	0	*0.25*	0.00
13	Vashafaru	0	0	100	0	100	0	100	0	*0.50*	1.00
14	DHIDHDHOO	0	0	0	0	0	0	0	0	*0.00*	0.00
15	Filladhoo	0	0	0	0	100	0	0	0	*1.00*	0.25
16	Maarandhoo	0	0	100	0	100	0	0	0	*1.00*	0.50
17	Thakandhoo	0	0	0	0	100	0	0	0	*0.25*	0.25
18	Utheemu	0	0	0	0	100	0	0	0	*0.50*	0.25
19	Muraidhoo	0	0	100	0	100	0	0	0	*1.00*	0.50
20	Baarah	0	0	0	0	0	0	0	0	*0.50*	0.00
21	**HAA DHAALU ATOLL**	**0**	**7**	**36**	**1**	**21**	**7**	**5**	**15**	***0.53***	**0.29**
22	Faridhoo	0	100	100	100	0	100	0	0	*1.00*	1.00
23	Hondaidhoo									*0.75*	
24	Hanimaadhoo	0	0	0	0	0	0	0	0	*1.00*	0.00
25	Finey	0	0	100	0	100	100	0	0	*0.50*	1.00
26	Naivaadhoo	0	0	100	0	100	0	0	0	*0.50*	0.50
27	Hirimaradhoo	0	0	100	0	100	100	0	0	*0.75*	1.00
28	Nolhivaranfaru	0	0	100	0	100	0	0	0	*0.25*	0.50
29	Nellaidhoo	0	0	100	0	100	0	0	0	*0.25*	0.50
30	Nolhivaramu	0	0	100	0	0	0	0	100	*0.50*	0.50
31	Kuribi	0	0	100	0	100	0	0	0	*0.75*	0.50
32	Kuburudhoo	0	0	100	0	100	100	0	0	*1.00*	1.00
33	KULHUDHUFFUSHI	0	0	0	0	0	0	0	0	*0.25*	0.00
34	Kumundhoo	0	0	0	0	100	0	100	0	*1.00*	0.75
35	Neykurendhoo	0	0	100	0	0	0	0	0	*0.50*	0.25
36	Vaikaradhoo	0	0	0	0	0	0	0	0	*0.00*	0.00
37	Maavaidhoo	0	0	100	0	100	100	0	0	*1.00*	1.00
38	Makunudhoo	0	100	100	0	0	0	0	100	*0.50*	0.75
39	**SHAVIYANI ATOLL**	**0**	**3**	**81**	**0**	**22**	**1**	**3**	**32**	***0.46***	**0.37**
40	Kaditheemu	0	0	100	0	0	0	0	0	*0.50*	0.25
41	Noomaraa	0	0	100	0	100	0	0	100	*0.50*	0.75
42	Goidhoo	0	0	100	0	100	0	100	0	*0.50*	1.00
43	Feydhoo	0	0	100	0	100	0	0	100	*1.00*	0.75
44	Feevah	0	0	0	0	0	0	0	0	*0.75*	0.00
45	Bilehffahi	0	0	100	0	100	0	0	0	*0.50*	0.50
46	Foakaidhoo	0	0	100	0	0	0	0	0	*0.50*	0.25

STATISTICAL ANNEX 6.1:		EDUCATION 1									
		2004	2004	2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	no drinking water in school	no toilet in school	no nur-sery	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	*Human Vulne-rability Index*	Edu-cation Index
47	Narudhoo	0	100	100	0	100	0	0	0	*0.50*	0.75
48	Maakandoodhoo	0	0	100	0	100	0	0	0	*0.25*	0.50
49	Maroshi	0	0	100	0	0	0	0	0	*0.00*	0.25
50	Lhaimagu	0	0	100	0	0	0	0	100	*0.50*	0.50
51	Firubaidhoo	0	0	100	0	0	100	0	0	*0.50*	1.00
52	Komandoo	0	0	0	0	0	0	0	0	*0.25*	0.00
53	Maaugoodhoo	0	0	100	0	0	0	0	100	*0.75*	0.50
54	FUNADHOO	0	0	100	0	0	0	0	100	*0.25*	0.50
55	Milandhoo	0	0	100	0	0	0	0	0		0.25
56	**NOONU ATOLL**	**0**	**12**	**34**	**0**	**30**	**0**	**5**	**31**	***0.45***	**0.29**
57	Hebadhoo	0	0	0	0	100	0	0	0	*0.75*	0.25
58	Kedhikolhudhoo	0	100	0	0	0	0	0	0	*0.25*	0.25
59	Maalhendhoo	0	0	100	0	100	0	100	0	*1.00*	1.00
60	Kudafari	0	0	0	0	0	0	0	0	*0.75*	0.00
61	Landhoo	0	0	0	0	100	0	0	100	*1.00*	0.50
62	Maafaru	0	0	0	0	100	0	0	100	*0.50*	0.50
63	Lhohi	0	0	100	0	100	0	0	100	*0.75*	0.75
64	Miladhoo	0	0	100	0	0	0	0	0	*1.00*	0.25
65	Magoodhoo	0	0	100	0	100	0	0	0	*1.00*	0.50
66	MANADHOO	0	0	100	0	0	0	0	100	*0.25*	0.50
67	Holhudhoo	0	0	0	0	0	0	0	0	*0.00*	0.00
68	Fodhdhoo	0	0	100	0	100	0	0	100	*0.25*	0.75
69	Velidhoo	0	0	0	0	0	0	0	0	*0.00*	0.00
70	**RAA ATOLL**	**0**	**0**	**53**	**0**	**32**	**0**	**3**	**23**	***0.78***	**0.29**
71	Alifushi	0	0	0	0	0	0	0	100	*0.50*	0.25
72	Vaadhoo	0	0	100	0	100	0	0	0	*0.75*	0.50
73	Rasgetheemu	0	0	100	0	100	0	100	0	*0.75*	1.00
74	Agolhitheemu	0	0	100	0	100	0	0	0	*1.00*	0.50
75	Hulhudhuffaaru	0	0	0	0	0	0	0	0	*0.75*	0.00
76	UGUFAARU	0	0	0	0	0	0	0	0	*1.00*	0.00
77	Kadholhudhoo	0	0	100	0	100	0	0	0	*0.75*	0.50
78	Maakurathu	0	0	100	0	0	0	0	100	*1.00*	0.50
79	Rasmaadhoo	0	0	100	0	0	0	0	100	*1.00*	0.50
80	Innamaadhoo	0	0	100	0	0	0	0	0	*1.00*	0.25
81	Maduvvari	0	0	0	0	0	0	0	0	*0.50*	0.00
82	Iguraidhoo	0	0	100	0	0	0	0	0	*0.75*	0.25
83	Fainu	0	0	100	0	100	0	0	0	*1.00*	0.50
84	Meedhoo	0	0	0	0	0	0	0	0	*0.00*	0.00
85	Kinolhas	0	0	100	0	100	0	0	100	*1.00*	0.75
86	**BAA ATOLL**	**0**	**3**	**44**	**0**	**23**	**0**	**0**	**3**	***0.37***	**0.18**
87	Kudarikilu	0	0	100	0	0	0	0	0	*0.25*	0.25
88	Kamadhoo	0	0	100	0	100	0	0	0	*0.50*	0.50
89	Kendhoo	0	0	0	0	0	0	0	0	*0.25*	0.00
90	Kihaadhoo	0	100	100	0	100	0	0	0	*0.50*	0.75
91	Dhonfanu	0	0	100	0	100	0	0	100	*1.00*	0.75
92	Dharavandhoo	0	0	100	0	0	0	0	0	*0.25*	0.25

	STATISTICAL ANNEX 6.1:	EDUCATION 1									
		2004	2004	2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	no drinking water in school	no toilet in school	no nur-sery	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	*Human Vulne-rability Index*	Edu-cation Index
93	Maalhos	0	0	100	0	100	0	0	0	*0.75*	0.50
94	EYDHAFUSHI	0	0	0	0	0	0	0	0	*0.00*	0.00
95	Thulhaadhoo	0	0	0	0	0	0	0	0	*0.25*	0.00
96	Hithaadhoo	0	0	100	0	0	0	0	0	*0.50*	0.25
97	Fulhadhoo	0	0	100	0	100	0	0	0	*1.00*	0.50
98	Fehendhoo	0	0	100	0	100	0	0	0	*0.75*	0.50
99	Goidhoo	0	0	100	0	100	0	0	0	*1.00*	0.50
100	**LHAVIYANI ATOLL**	**0**	**0**	**6**	**0**	**6**	**2**	**0**	**0**	***0.37***	**0.05**
101	Hinnavaru	0	0	0	0	0	0	0	0	*0.25*	0.00
102	NAIFARU	0	0	0	0	0	0	0	0	*0.25*	0.00
103	Kurendhoo	0	0	0	0	0	0	0	0	*0.50*	0.00
104	Olhuvelifushi	0	0	100	0	100	0	0	0	*1.00*	0.50
105	Maafilaafushi	0	0	100	0	100	100	0	0	*n.a.*	1.00
106	**KAAFU ATOLL**	**0**	**9**	**34**	**0**	**25**	**0**	**0**	**49**	***0.49***	**0.29**
107	Kaashidhoo	0	0	0	0	0	0	0	0	*n.a.*	0.00
108	Gaafaru	0	0	0	0	100	0	0	0	*0.75*	0.25
109	Dhiffushi	0	0	100	0	0	0	0	100	*0.25*	0.50
110	THULUSDHOO	0	0	0	0	0	0	0	0	*0.25*	0.00
111	Huraa	0	0	100	0	0	0	0	100	*0.25*	0.50
112	Himmafushi	0	100	100	0	100	0	0	100	*0.75*	1.00
113	Gulhi	0	0	100	0	100	0	0	100	*0.25*	0.75
114	Maafushi	0	0	0	0	0	0	0	0	*1.00*	0.00
115	Guraidhoo	0	0	0	0	0	0	0	100	*0.25*	0.25
116	**ALIF ALIFU ATOLL**	**0**	**0**	**54**	**0**	**52**	**0**	**16**	**39**	***0.47***	**0.44**
117	Thoddoo	0	0	100	0	0	0	0	100	*0.50*	0.50
118	RASDHOO	0	0	0	0	0	0	0	0	*0.50*	0.00
119	Ukulhas	0	0	100	0	100	0	0	0	*0.25*	0.50
120	Mathiveri	0	0	0	0	100	0	0	100	*0.75*	0.50
121	Bodufolhudhoo	0	0	100	0	100	0	0	0	*0.50*	0.50
122	Feridhoo	0	0	0	0	0	n.a.	0	0	*0.50*	0.00
123	Maalhos	0	0	100	0	100	0	100	0	*0.25*	1.00
124	Himendhoo	0	0	0	0	100	0	0	100	*0.50*	0.50
125	**ALIFU DHAALU ATOLL**	**0**	**8**	**68**	**1**	**14**	**4**	**37**	**16**	***0.49***	**0.50**
126	Hangnameedhoo	0	0	0	0	0	0	0	100	*0.25*	0.25
127	Omadhoo	0	0	100	0	0	0	0	100	*0.50*	0.50
128	Kuburudhoo	0	0	100	0	100	0	100	0	*0.75*	1.00
129	MAHIBADHOO	0	0	0	0	0	0	0	0	*0.25*	0.00
130	Mandhoo	0	0	100	0	100	100	0	0	*0.50*	1.00
131	Dhagethi	0	0	100	0	0	0	0	0	*0.25*	0.25
132	Dhigurah	0	0	100	0	100	0	0	0	*0.25*	0.50
133	Fenfushi	0	100	100	0	0	0	100	0	*0.75*	1.00
134	Dhidhdhoo	0	0	100	100	0	0	0	0	*0.75*	0.75
135	Maamigili	0	0	100	0	0	0	100	0	*0.75*	0.75
136	**VAAVU ATOLL**	**0**	**0**	**100**	**0**	**10**	**4**	**0**	**29**	***0.50***	**0.39**
137	Fulidhoo	0	0	100	0	0	0	0	0	*0.25*	0.25
138	Thinadhoo	0	0	100	0	0	100	0	0	*0.50*	1.00

STATISTICAL ANNEX 6.1: EDUCATION 1

		2004	2004	2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no drinking water in school**	**no toilet in school**	**no nur-sery**	**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**	***Human Vulne-rability Index***	**Edu-cation Index**
139	FELIDHOO	0	0	100	0	0	0	0	100	*0.50*	0.50
140	Keyodhoo	0	0	100	0	0	0	0	0	*0.75*	0.25
141	Rakeedhoo	0	0	100	0	100	0	0	0	*0.25*	0.50
142	**MEEMU ATOLL**	**0**	**0**	**56**	**3**	**17**	**6**	**0**	**0**	***0.56***	**0.26**
143	Raimandhoo	0	0	100	0	100	0	0	0	*0.50*	0.50
144	Madifushi	0	0	100	0	0	0	0	0	*0.50*	0.25
145	Veyvah	0	0	100	100	0	0	0	0	*0.75*	0.75
146	Mulah	0	0	0	0	0	0	0	0	*0.50*	0.00
147	MULI	0	0	100	0	0	0	0	0	*0.25*	0.25
148	Naalaafushi	0	0	100	0	100	100	0	0	*0.50*	1.00
149	Kolhufushi	0	0	100	0	0	0	0	0	*0.75*	0.25
150	Dhiggaru	0	0	0	0	0	0	0	0	*0.75*	0.00
151	Maduvvari	0	0	100	0	100	0	0	0	*0.50*	0.50
152	**FAAFU ATOLL**	**0**	**0**	**31**	**0**	**0**	**16**	**0**	**0**	***0.44***	**0.24**
153	Feeali	0	0	100	0	0	0	0	0	*0.50*	0.25
154	Biledhdhoo	0	0	0	0	0	0	100	0	*0.50*	0.50
155	Magoodhoo	0	0	0	0	0	100	0	0	*0.50*	1.00
156	Dharaboodhoo	0	0	0	0	0	0	0	0	*0.75*	0.00
157	NILANDHOO	0	0	0	0	0	0	0	0	*0.25*	0.00
158	**DHAALU ATOLL**	**0**	**0**	**73**	**0**	**11**	**0**	**0**	**31**	***0.63***	**0.29**
159	Meedhoo	0	0	100	0	0	0	0	0	*0.25*	0.25
160	Badidhoo	0	0	100	0	0	0	0	100	*1.00*	0.50
161	Ribudhoo	0	0	100	0	0	0	0	0	*0.50*	0.25
162	Hulhudheli	0	0	100	0	0	0	0	0	*0.75*	0.25
163	Gemendhoo	0	0	100	0	100	0	0	0	*1.00*	0.50
164	Vaanee	0	0	100	0	100	0	0	100	*0.25*	0.75
165	Maaeboodhoo	0	0	100	0	0	0	0	100	*1.00*	0.50
166	KUDAHUVADHOO	0	0	0	0	0	0	0	0	*0.25*	0.00
167	**THAA ATOLL**	**0**	**0**	**39**	**0**	**39**	**0**	**0**	**20**	***0.50***	**0.24**
168	Buruni	0	0	100	0	100	0	0	0	*1.00*	0.50
169	Vilufushi	0	0	0	0	0	0	0	0	*0.25*	0.00
170	Madifushi	0	0	100	0	100	0	0	100	*1.00*	0.75
171	Dhiyamigili	0	0	100	0	100	0	0	0	*1.00*	0.50
172	Guraidhoo	0	0	0	0	0	0	0	0	*0.00*	0.00
173	Kadoodhoo	0	0	100	0	100	0	0	0	*0.25*	0.50
174	Vandhoo	0	0	100	0	100	0	0	0	*0.75*	0.50
175	Hirilandhoo	0	0	100	0	100	0	0	100	*0.50*	0.75
176	Gaadhiffushi	0	0	100	0	100	0	0	100	*1.00*	0.75
177	Thimarafushi	0	0	0	0	0	0	0	0	*0.25*	0.00
178	VEYMANDOO	0	0	0	0	0	0	0	0	*0.50*	0.00
179	Kibidhoo	0	0	0	0	0	0	0	0	*0.50*	0.00
180	Omadhoo	0	0	100	0	100	0	0	0	*0.75*	0.50
181	**LAAMU ATOLL**	**0**	**11**	**72**	**2**	**20**	**0**	**7**	**26**	***0.75***	**0.36**
182	Isdhoo	0	0	100	0	0	0	0	0	*0.50*	0.25
183	Dhabidhoo	0	0	100	0	100	0	0	0	*0.50*	0.50
184	Maabaidhoo	0	100	100	0	0	0	0	100	*0.75*	0.75

	STATISTICAL ANNEX 6.1:	EDUCATION 1									
		2004	2004	2004	2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no drinking water in school**	**no toilet in school**	**no nur-sery**	**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**	***Human Vulne-rability Index***	**Edu-cation Index**
185	Mundoo	0	100	100	0	100	0	0	100	*1.00*	1.00
186	Kalhaidhoo	0	0	100	0	0	0	0	0	*1.00*	0.25
187	Gamu	0	0	100	0	0	0	0	0	*0.75*	0.25
188	Maavah	0	0	0	0	0	0	0	0	*0.50*	0.00
189	FONADHOO	0	0	0	0	0	0	0	0	*0.25*	0.00
190	Gaadhoo	0	0	100	100	0	0	0	100	*1.00*	1.00
191	Maamendhoo	0	0	100	0	0	0	0	100	*1.00*	0.50
192	Hithadhoo	0	0	100	0	100	0	100	0	*0.75*	1.00
193	Kunahandhoo	0	0	100	0	100	0	0	100	*1.00*	0.75
194	**GAAFU ALIFU ATOLL**	**0**	**22**	**46**	**0**	**15**	**1**	**5**	**33**	***0.54***	**0.33**
195	Kolamaafushi	0	0	100	0	0	0	0	100	*0.00*	0.50
196	VILLINGILI	0	81	0	0	0	0	0	0	*0.50*	0.20
197	Maamendhoo	0	0	0	0	0	0	0	0	*0.50*	0.00
198	Nilandhoo	0	0	100	0	100	0	100	0	*1.00*	1.00
199	Dhaandhoo	0	0	0	0	0	0	0	100	*0.75*	0.25
200	Dhevvadhoo	0	0	100	0	0	0	0	100	*0.50*	0.50
201	Kodey	0	0	100	0	100	0	0	0	*1.00*	0.50
202	Dhiyadhoo	0	0	100	0	100	100	0	0	*0.75*	1.00
203	Gemanafushi	0	0	100	0	0	0	0	0	*0.50*	0.25
204	Kanduhulhudhoo	0	0	100	0	100	0	0	0	*0.75*	0.50
205	**GAAFU DHAALU ATOLL**	**0**	**0**	**6**	**0**	**36**	**0**	**0**	**24**	***0.36***	**0.16**
206	Madeveli	0	0	0	0	0	0	0	0	*0.50*	0.00
207	Hoadedhdhoo	0	0	100	0	0	0	0	100	*0.50*	0.50
208	Nadallaa	0	0	0	0	100	0	0	100	*1.00*	0.50
209	Gadhdhoo	0	0	0	0	100	0	0	0	*0.25*	0.25
210	Rathafandhoo	0	0	0	0	0	0	0	0	*0.50*	0.00
211	Vaadhoo	0	0	0	0	100	0	0	100	*0.50*	0.50
212	Fiyoari	0	0	0	0	100	0	0	0	*0.50*	0.25
213	Maathodaa	0	0	0	0	0	0	0	100	*1.00*	0.25
214	Fares	0	0	0	0	0	0	0	100	*1.00*	0.25
215	THINADHOO	0	0	0	0	0	0	0	0	*0.00*	0.00
216	**GNAVIYANI ATOLL**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	***0.25***	**0.00**
217	FOAMMULAH	0	0	0	0	0	0	0	0	*0.25*	0.00
218	**SEENU ATOLL**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	***0.34***	**0.04**
219	Meedhoo	0	0	0	100	0	0	0	0	*0.25*	0.50
220	HITHADHOO	0	0	0	0	0	0	0	0	*0.00*	0.00
221	Maradhoo	0	0	0	0	0	0	0	0	*0.25*	0.00
222	Feydhoo	0	0	0	0	0	0	0	0	*0.75*	0.00
223	Maradhoo-Feydhoo	0	0	0	0	0	0	0	0	*0.50*	0.00
224	Hulhudhoo	0	0	0	0	0	0	0	0	*0.25*	0.00

	STATISTICAL ANNEX 6.2:	EDUCATION 2		
		2004	2004	2004
	Atoll / Island name	**no library in school**	**highest grade in school**	**Student/ trained teacher ratio**
1	**Maldives**	**6**		**0**
2.0	**Male'**	**0**	**12**	**30**
3	**Atoll average**	**8**		
4	**HAA ALIFU ATOLL**	**5**		
5	Thurakunu	100	7	125
6	Uligamu	100	7	37
7	Berinmadhoo	100	5	0
8	Hathifushi	0	7	36
9	Mulhadhoo	0	7	73
10	Hoarafushi	0	10	61
11	Ihavandhoo	0	10	48
12	Kelaa	0	10	20
13	Vashafaru	0	7	109
14	DHIDHDHOO	0	10	23
15	Filladhoo	0	7	33
16	Maarandhoo	0	7	26
17	Thakandhoo	0	7	34
18	Utheemu	0	7	17
19	Muraidhoo	0	7	48
20	Baarah	0	8	47
21	**HAA DHAALU ATOLL**	**10**		
22	Faridhoo	0	5	0
23	Hondaidhoo			
24	Hanimaadhoo	0	9	42
25	Finey	0	7	0
26	Naivaadhoo	0	7	49
27	Hirimaradhoo	100	7	0
28	Nolhivaranfaru	0	7	47
29	Nellaidhoo	0	7	29
30	Nolhivaramu	0	9	65
31	Kuribi	0	7	41
32	Kuburudhoo	0	7	0
33	KULHUDHUFFUSHI	0	12	27
34	Kumundhoo	0	7	132
35	Neykurendhoo	0	8	34
36	Vaikaradhoo	0	10	17
37	Maavaidhoo	100	7	0
38	Makunudhoo	100	8	52
39	**SHAVIYANI ATOLL**	**8**		
40	Kaditheemu	0	10	46
41	Noomaraa	100	7	54
42	Goidhoo	100	7	120
43	Feydhoo	0	7	53
44	Feevah	0	10	35
45	Bilehffahi	0	7	24
46	Foakaidhoo	0	10	19
47	Narudhoo	0	7	30
48	Maakandoodhoo	0	7	30
49	Maroshi	0	10	39

	STATISTICAL ANNEX 6.2:	EDUCATION 2		
		2004	2004	2004
	Atoll / Island name	no library in school	highest grade in school	Student/ trained teacher ratio
50	Lhaimagu	0	8	68
51	Firubaidhoo	100	3	0
52	Komandoo	0	10	20
53	Maaugoodhoo	0	9	51
54	FUNADHOO	0	10	57
55	Milandhoo	0	10	25
56	**NOONU ATOLL**	**16**		
57	Hebadhoo	100	7	44
58	Kedhikolhudhoo	100	9	42
59	Maalhendhoo	0	7	181
60	Kudafari	0	10	27
61	Landhoo	0	7	72
62	Maafaru	0	7	76
63	Lhohi	0	7	57
64	Miladhoo	0	8	32
65	Magoodhoo	0	7	39
66	MANADHOO	0	10	55
67	Holhudhoo	0	10	24
68	Fodhdhoo	0	7	53
69	Velidhoo	0	10	35
70	**RAA ATOLL**	**0**		
71	Alifushi	0	10	91
72	Vaadhoo	0	7	48
73	Rasgetheemu	0	7	159
74	Agolhitheemu	0	7	31
75	Hulhudhuffaaru	0	10	42
76	UGUFAARU	0	10	29
77	Kadholhudhoo	0	7	40
78	Maakurathu	0	9	74
79	Rasmaadhoo	0	9	92
80	Innamaadhoo	0	8	32
81	Maduvvari	0	10	47
82	Iguraidhoo	0	10	48
83	Fainu	0	7	38
84	Meedhoo	0	10	20
85	Kinolhas	0	7	88
86	**BAA ATOLL**	**16**		
87	Kudarikilu	100	8	47
88	Kamadhoo	100	6	27
89	Kendhoo	0	10	30
90	Kihaadhoo	100	7	14
91	Dhonfanu	0	7	93
92	Dharavandhoo	0	10	28
93	Maalhos	100	7	18
94	EYDHAFUSHI	0	12	16
95	Thulhaadhoo	0	10	23
96	Hithaadhoo	0	10	15
97	Fulhadhoo	0	7	18
98	Fehendhoo	100	7	14

	STATISTICAL ANNEX 6.2:	EDUCATION 2		
		2004	2004	2004
	Atoll / Island name	no library in school	highest grade in school	Student/ trained teacher ratio
99	Goidhoo	0	7	21
100	**LHAVIYANI ATOLL**	**2**		
101	Hinnavaru	0	10	21
102	NAIFARU	0	10	19
103	Kurendhoo	0	10	22
104	Olhuvelifushi	0	7	46
105	Maafilaafushi	100	7	0
106	**KAAFU ATOLL**	**0**		
107	Kaashidhoo	0	10	26
108	Gaafaru	0	7	31
109	Dhiffushi	0	10	65
110	THULUSDHOO	0	10	17
111	Huraa	0	10	52
112	Himmafushi	0	7	61
113	Gulhi	0	7	69
114	Maafushi	0	10	17
115	Guraidhoo	0	8	58
116	**ALIF ALIFU ATOLL**	**45**		
117	Thoddoo	0	9	52
118	RASDHOO	0	10	29
119	Ukulhas	100	7	39
120	Mathiveri	0	7	53
121	Bodufolhudhoo	0	7	37
122	Feridhoo	100	10	8
123	Maalhos	100	7	100
124	Himendhoo	100	7	55
125	**ALIFU DHAALU ATOLL**	**9**		
126	Hangnameedhoo	0	10	70
127	Omadhoo	0	8	53
128	Kuburudhoo	0	7	107
129	MAHIBADHOO	0	10	26
130	Mandhoo	0	7	0
131	Dhagethi	0	10	27
132	Dhigurah	0	7	17
133	Fenfushi	100	10	101
134	Dhidhdhoo	100	5	17
135	Maamigili	0	10	155
136	**VAAVU ATOLL**	**50**		
137	Fulidhoo	0	10	41
138	Thinadhoo	100	4	0
139	FELIDHOO	0	10	51
140	Keyodhoo	100	10	17
141	Rakeedhoo	100	7	47
142	**MEEMU ATOLL**	**8**		
143	Raimandhoo	0	7	14
144	Madifushi	100	4	12
145	Veyvah	0	5	32
146	Mulah	0	10	25
147	MULI	0	10	19

	STATISTICAL ANNEX 6.2:	EDUCATION 2		
		2004	2004	2004
	Atoll / Island name	no library in school	highest grade in school	Student/ trained teacher ratio
148	Naalaafushi	100	6	0
149	Kolhufushi	0	10	43
150	Dhiggaru	0	10	33
151	Maduvvari	0	7	38
152	**FAAFU ATOLL**	**8**		
153	Feeali	0	10	19
154	Biledhdhoo	0	10	188
155	Magoodhoo	0	10	188
156	Dharaboodhoo	100	9	38
157	NILANDHOO	0	10	22
158	**DHAALU ATOLL**	**30**		
159	Meedhoo	0	10	28
160	Badidhoo	0	10	61
161	Ribudhoo	100	8	27
162	Hulhudheli	100	9	15
163	Gemendhoo	0	7	39
164	Vaanee	0	7	54
165	Maaeboodhoo	100	8	68
166	KUDAHUVADHOO	0	10	21
167	**THAA ATOLL**	**4**		
168	Buruni	0	7	28
169	Vilufushi	0	10	29
170	Madifushi	0	7	147
171	Dhiyamigili	0	7	25
172	Guraidhoo	0	10	22
173	Kadoodhoo	100	7	17
174	Vandhoo	0	7	47
175	Hirilandhoo	0	7	62
176	Gaadhiffushi	0	7	61
177	Thimarafushi	0	10	23
178	VEYMANDOO	0	9	31
179	Kibidhoo	0	10	27
180	Omadhoo	0	7	49
181	**LAAMU ATOLL**	**8**		
182	Isdhoo	0	8	46
183	Dhabidhoo	0	7	43
184	Maabaidhoo	0	10	68
185	Mundoo	0	7	59
186	Kalhaidhoo	0	10	46
187	Gamu	0	10	35
188	Maavah	0	10	20
189	FONADHOO	0	10	18
190	Gaadhoo	0	5	86
191	Maamendhoo	100	10	53
192	Hithadhoo	0	7	213
193	Kunahandhoo	0	7	59
194	**GAAFU ALIFU ATOLL**	**17**		
195	Kolamaafushi	100	10	60
196	VILLINGILI	0	10	33

	STATISTICAL ANNEX 6.2:	EDUCATION 2		
		2004	2004	2004
	Atoll / Island name	no library in school	highest grade in school	Student/ trained teacher ratio
197	Maamendhoo	0	9	41
198	Nilandhoo	0	7	146
199	Dhaandhoo	0	10	76
200	Dhevvadhoo	0	8	82
201	Kodey	100	7	36
202	Dhiyadhoo	0	7	0
203	Gemanafushi	0	8	45
204	Kanduhulhudhoo	0	7	34
205	**GAAFU DHAALU ATOLL**	**0**		
206	Madeveli	0	10	26
207	Hoadedhdhoo	0	8	53
208	Nadallaa	0	7	88
209	Gadhdhoo	0	7	26
210	Rathafandhoo	0	10	20
211	Vaadhoo	0	7	51
212	Fiyoari	0	7	45
213	Maathodaa	0	8	73
214	Fares	0	8	73
215	THINADHOO	0	10	15
216	**GNAVIYANI ATOLL**	**0**		
217	FOAMMULAH	0	10	22
218	**SEENU ATOLL**	**0**		
219	Meedhoo	0	5	18
220	HITHADHOO	0	12	37
221	Maradhoo	0	4	30
222	Feydhoo	0	10	26
223	Maradhoo-Feydhoo	0	10	24
224	Hulhudhoo	0	10	38

STATISTICAL ANNEX 7.1: HEALTH-1

		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no personnel**	**problems getting medicine**	**no health centre, hospital or private clinic**	**more then two hours to nearest health centre or hospital**	***Human Vulne-rability Index***	**Health Index**
1	**Maldives**	**0**	**17**	**26**	**1**	***0.42***	**0.23**
2	**Male'**	**0**	**9**	**0**	**0**	***0.01***	**0.04**
3	**Atoll average**	**0**	**21**	**38**	**1**	***0.57***	**0.30**
4	**HAA ALIFU ATOLL**	**0**	**20**	**36**	**0**	***0.51***	**0.28**
5	Thurakunu	0	30	100	0	*0.59*	0.65
6	Uligamu	0	73	100	0	*0.73*	0.87
7	Berinmadhoo	0	32	100	0	*0.92*	0.66
8	Hathifushi	0	45	100	0	*0.86*	0.72
9	Mulhadhoo	0	38	100	0	*0.89*	0.69
10	Hoarafushi	0	20	0	0	*0.03*	0.10
11	Ihavandhoo	0	27	0	0	*0.92*	0.14
12	Kelaa	0	0	0	0	*0.50*	0.00
13	Vashafaru	0	19	100	0	*0.86*	0.59
14	DHIDHDHOO	0	4	0	0	*0.30*	0.02
15	Filladhoo	0	30	100	0	*0.58*	0.65
16	Maarandhoo	0	19	100	0	*0.68*	0.60
17	Thakandhoo	0	21	100	0	*0.65*	0.61
18	Utheemu	0	18	100	0	*0.66*	0.59
19	Muraidhoo	0	41	100	0	*0.04*	0.71
20	Baarah	0	26	100	0	*0.59*	0.63
21	**HAA DHAALU ATOLL**	0	16	40	0	***0.57***	0.28
22	Faridhoo	0	33	100	0	*0.60*	0.66
23	Hondaidhoo					*0.63*	
24	Hanimaadhoo	0	0	0	0	*0.97*	0.00
25	Finey	0	8	100	0	*0.63*	0.54
26	Naivaadhoo	0	15	100	0	*0.19*	0.57
27	Hirimaradhoo	0	26	100	0	*0.71*	0.63
28	Nolhivaranfaru	0	6	0	0	*0.98*	0.03
29	Nellaidhoo	0	71	100	0	*0.69*	0.86
30	Nolhivaramu	0	22	100	0	*1.00*	0.61
31	Kuribi	0	55	100	0	*0.77*	0.78
32	Kuburudhoo	0	57	100	0	*0.81*	0.78
33	KULHUDHUFFUSHI	0	4	0	0	*0.03*	0.02
34	Kumundhoo	0	52	100	0	*0.63*	0.76
35	Neykurendhoo	0	41	100	0	*0.76*	0.70
36	Vaikaradhoo	0	17	100	0	*0.50*	0.58
37	Maavaidhoo	0	53	100	0	*0.70*	0.76
38	Makunudhoo	0	0	0	0	*1.00*	0.00
39	**SHAVIYANI ATOLL**	**1**	**23**	**54**	**0**	***0.81***	**0.39**
40	Kaditheemu	0	0	0	0	*0.82*	0.00
41	Noomaraa	0	62	100	0	*0.66*	0.81
42	Goidhoo	0	33	100	0	*1.00*	0.67
43	Feydhoo	0	50	100	0	*0.70*	0.75
44	Feevah	0	78	100	0	*0.74*	0.89
45	Bilehffahi	0	19	0	0	*1.00*	0.09
46	Foakaidhoo	0	24	100	0	*0.71*	0.62
47	Narudhoo	0	76	100	0	*0.69*	0.88
48	Maakandoodhoo	0	13	100	0	*0.65*	0.57

STATISTICAL ANNEX 7.1:	HEALTH-1						
		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	no personnel	problems getting medicine	no health centre, hospital or private clinic	more then two hours to nearest health centre or hospital	*Human Vulne-rability Index*	Health Index
49	Maroshi	0	4	100	0	*0.54*	0.52
50	Lhaimagu	0	53	100	0	*0.63*	0.76
51	Firubaidhoo	100	100	100	0	*0.61*	1.00
52	Komandoo	0	0	0	0	*1.00*	0.00
53	Maaugoodhoo	0	24	100	0	*0.50*	0.62
54	FUNADHOO	0	0	0	0	*0.00*	0.00
55	Milandhoo	0	0	0	0		0.00
56	**NOONU ATOLL**	**0**	**23**	**42**	**0**	***0.65***	**0.33**
57	Hebadhoo	0	57	100	0	*1.00*	0.79
58	Kedhikolhudhoo	0	0	0	0	*0.72*	0.00
59	Maalhendhoo	0	28	100	0	*0.97*	0.64
60	Kudafari	0	78	100	0	*0.81*	0.89
61	Landhoo	0	60	100	0	*0.91*	0.80
62	Maafaru	0	68	100	0	*0.53*	0.84
63	Lhohi	0	64	100	0	*0.98*	0.82
64	Miladhoo	0	19	100	0	*0.78*	0.60
65	Magoodhoo	0	81	100	0	*0.74*	0.91
66	MANADHOO	0	0	0	0	*0.00*	0.00
67	Holhudhoo	0	5	0	0	*0.65*	0.03
68	Fodhdhoo	0	74	100	0	*0.74*	0.87
69	Velidhoo	0	0	0	0	*0.50*	0.00
70	**RAA ATOLL**	**0**	**17**	**53**	**2**	***0.39***	**0.37**
71	Alifushi	0	14	0	0	*0.00*	0.07
72	Vaadhoo	0	37	100	100	*0.59*	1.00
73	Rasgetheemu	0	18	100	0	*0.58*	0.59
74	Agolhitheemu	0	53	100	0	*0.58*	0.76
75	Hulhudhuffaaru	0	13	0	0	*0.24*	0.07
76	UGUFAARU	0	0	0	0	*0.00*	0.00
77	Kadholhudhoo	0	12	0	0	*0.06*	0.06
78	Maakurathu	0	10	100	0	*0.69*	0.55
79	Rasmaadhoo	0	0	100	0	*0.78*	0.50
80	Innamaadhoo	0	53	100	0	*0.75*	0.76
81	Maduvvari	0	40	100	0	*0.62*	0.70
82	Iguraidhoo	0	0	100	0	*0.57*	0.50
83	Fainu	0	48	100	0	*0.62*	0.74
84	Meedhoo	0	13	100	0	*0.79*	0.57
85	Kinolhas	0	44	100	0	*0.62*	0.72
86	**BAA ATOLL**	**0**	**17**	**48**	**3**	***0.73***	**0.36**
87	Kudarikilu	0	35	100	0	*0.68*	0.67
88	Kamadhoo	0	58	100	0	*0.59*	0.79
89	Kendhoo	0	0	100	0	*1.00*	0.50
90	Kihaadhoo	0	67	100	0	*0.95*	0.84
91	Dhonfanu	0	37	100	100	*0.85*	1.00
92	Dharavandhoo	0	0	100	0	*1.00*	0.50
93	Maalhos	0	59	100	0	*1.00*	0.79
94	EYDHAFUSHI	0	0	0	0	*0.00*	0.00
95	Thulhaadhoo	0	0	0	0	*0.06*	0.00
96	Hithaadhoo	0	59	100	0	*0.93*	0.79

STATISTICAL ANNEX 7.1: HEALTH-1

		2004	2004	2004	2004	1997	2004
	Atoll / Island name	no personnel	problems getting medicine	no health centre, hospital or private clinic	more then two hours to nearest health centre or hospital	*Human Vulne-rability Index*	Health Index
97	Fulhadhoo	0	41	100	0	*0.70*	0.71
98	Fehendhoo	0	46	100	0	*0.71*	0.73
99	Goidhoo	0	15	0	0	*0.75*	0.07
100	**LHAVIYANI ATOLL**	**0**	**10**	**18**	**0**	***0.14***	**0.14**
101	Hinnavaru	0	3	0	0	*0.00*	0.01
102	NAIFARU	0	0	0	0	*0.04*	0.00
103	Kurendhoo	0	32	100	0	*0.72*	0.66
104	Olhuvelifushi	0	63	100	0	*0.70*	0.82
105	Maafilaafushi	0	86	0	0	*0.44*	0.43
106	**KAAFU ATOLL**	**0**	**46**	**26**	**0**	***0.92***	**0.36**
107	Kaashidhoo	0	9	0	0	*0.72*	0.05
108	Gaafaru	0	56	100	0	*1.00*	0.78
109	Dhiffushi	0	47	100	0	*0.77*	0.73
110	THULUSDHOO	0	84	0	0	*0.04*	0.42
111	Huraa	0	78	0	0	*0.08*	0.39
112	Himmafushi	0	49	0	0	*0.76*	0.25
113	Gulhi	0	57	100	0	*0.74*	0.79
114	Maafushi	0	14	0	0	*0.76*	0.07
115	Guraidhoo	0	63	0	0	*0.29*	0.32
116	**ALIF ALIFU ATOLL**	**0**	**26**	**62**	**0**	***0.93***	**0.44**
117	Thoddoo	0	7	100	0	*0.09*	0.54
118	RASDHOO	0	0	0	0	*0.00*	0.00
119	Ukulhas	0	41	100	0	*1.00*	0.71
120	Mathiveri	0	24	100	0	*0.81*	0.62
121	Bodufolhudhoo	0	49	100	0	*1.00*	0.75
122	Feridhoo	0	0	0	0	*1.00*	0.00
123	Maalhos	0	80	100	0	*0.98*	0.90
124	Himendhoo	0	24	0	0	*0.87*	0.12
125	**ALIFU DHAALU ATOLL**	**0**	**20**	**40**	**4**	***0.56***	**0.34**
126	Hangnameedhoo	0	59	100	0	*0.67*	0.80
127	Omadhoo	0	10	100	0	*0.63*	0.55
128	Kuburudhoo	0	95	100	0	*0.74*	0.98
129	MAHIBADHOO	0	0	0	0	*0.00*	0.00
130	Mandhoo	0	35	100	100	*1.00*	1.00
131	Dhagethi	0	32	0	0	*0.00*	0.16
132	Dhigurah	0	14	100	0	*1.00*	0.57
133	Fenfushi	0	52	100	0	*0.89*	0.76
134	Dhidhdhoo	0	76	100	0	*1.00*	0.88
135	Maamigili	0	0	0	0	*0.11*	0.00
136	**VAAVU ATOLL**	**0**	**24**	**71**	**0**	***0.31***	**0.47**
137	Fulidhoo	0	34	100	0	*0.75*	0.67
138	Thinadhoo	0	13	100	0	*0.91*	0.56
139	FELIDHOO	0	0	0	0	*0.00*	0.00
140	Keyodhoo	0	43	100	0	*0.00*	0.71
141	Rakeedhoo	0	7	100	0	*0.61*	0.54
142	**MEEMU ATOLL**	**0**	**14**	**59**	**0**	***0.64***	**0.36**
143	Raimandhoo	0	39	100	0	*0.58*	0.70
144	Madifushi	0	21	100	0	*0.83*	0.60

	STATISTICAL ANNEX 7.1:	HEALTH-1					
		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	no personnel	problems getting medicine	no health centre, hospital or private clinic	more then two hours to nearest health centre or hospital	*Human Vulne-rability Index*	Health Index
145	Veyvah	0	40	100	0	*0.99*	0.70
146	Mulah	0	3	100	0	*0.63*	0.51
147	MULI	0	0	0	0	*0.00*	0.00
148	Naalaafushi	0	31	100	0	*0.89*	0.65
149	Kolhufushi	0	22	0	0	*0.59*	0.11
150	Dhiggaru	0	18	100	0	*0.88*	0.59
151	Maduvvari	0	6	0	0	*0.50*	0.03
152	**FAAFU ATOLL**	**0**	**23**	**55**	**0**	***0.81***	**0.39**
153	Feeali	0	14	100	0	*1.00*	0.57
154	Biledhdhoo	0	43	100	0	*0.64*	0.72
155	Magoodhoo	0	0	0	0	*0.03*	0.00
156	Dharaboodhoo	0	68	100	0	*1.00*	0.84
157	NILANDHOO	0	13	0	0	*0.05*	0.06
158	**DHAALU ATOLL**	**0**	**31**	**59**	**0**	***0.79***	**0.45**
159	Meedhoo	0	0	100	0	*0.76*	0.50
160	Badidhoo	0	0	0	0	*0.97*	0.00
161	Ribudhoo	0	57	100	0	*1.00*	0.78
162	Hulhudheli	0	86	100	0	*0.73*	0.93
163	Gemendhoo	0	62	100	0	*0.96*	0.81
164	Vaanee	0	89	100	0	*0.76*	0.94
165	Maaeboodhoo	0	80	100	0	*0.82*	0.90
166	KUDAHUVADHOO	0	0	0	0	*0.00*	0.00
167	**THAA ATOLL**	**0**	**13**	**39**	**5**	***0.50***	**0.31**
168	Buruni	0	62	100	0	*0.60*	0.81
169	Vilufushi	0	0	0	0	*0.50*	0.00
170	Madifushi	0	51	100	0	*0.58*	0.75
171	Dhiyamigili	0	40	100	100	*0.89*	1.00
172	Guraidhoo	0	0	0	0	*0.00*	0.00
173	Kadoodhoo	0	22	100	0	*0.74*	0.61
174	Vandhoo	0	50	100	0	*1.00*	0.75
175	Hirilandhoo	0	0	0	0	*0.59*	0.00
176	Gaadhiffushi	0	44	100	0	*0.56*	0.72
177	Thimarafushi	0	8	0	0	*0.50*	0.04
178	VEYMANDOO	0	0	0	0	*0.00*	0.00
179	Kibidhoo	0	0	100	0	*0.90*	0.50
180	Omadhoo	0	13	100	0	*0.72*	0.57
181	**LAAMU ATOLL**	**0**	**24**	**27**	**4**	***0.50***	**0.30**
182	Isdhoo	0	70	0	0	*0.30*	0.35
183	Dhabidhoo	0	22	100	0	*0.83*	0.61
184	Maabaidhoo	0	11	0	0	*0.70*	0.06
185	Mundoo	0	64	100	100	*0.74*	1.00
186	Kalhaidhoo	0	75	100	0	*0.92*	0.87
187	Gamu	0	5	0	0	*0.00*	0.03
188	Maavah	0	8	0	0	*0.84*	0.04
189	FONADHOO	0	5	0	0	*0.00*	0.02
190	Gaadhoo	0	21	100	0	*0.88*	0.60
191	Maamendhoo	0	23	100	0	*0.94*	0.61
192	Hithadhoo	0	11	0	0	*0.50*	0.06

STATISTICAL ANNEX 7.1: HEALTH-1

		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no personnel**	**problems getting medicine**	**no health centre, hospital or private clinic**	**more then two hours to nearest health centre or hospital**	***Human Vulne-rability Index***	**Health Index**
193	Kunahandhoo	0	51	100	0	*0.97*	0.75
194	**GAAFU ALIFU ATOLL**	**0**	**31**	**47**	**0**	***0.93***	**0.39**
195	Kolamaafushi	0	0	0	0	*0.98*	0.00
196	VILLINGILI	0	0	0	0	*0.07*	0.00
197	Maamendhoo	0	32	0	0	*0.51*	0.16
198	Nilandhoo	0	92	100	0	*0.78*	0.96
199	Dhaandhoo	0	80	100	0	*0.72*	0.90
200	Dhevvadhoo	0	77	100	0	*0.82*	0.88
201	Kodey	0	100	100	0	*1.00*	1.00
202	Dhiyadhoo	0	100	100	0	*1.00*	1.00
203	Gemanafushi	0	10	100	0	*1.00*	0.55
204	Kanduhulhudhoo	0	14	100	0	*1.00*	0.57
205	**GAAFU DHAALU ATOLL**	**0**	**28**	**42**	**4**	***0.99***	**0.39**
206	Madeveli	0	52	100	0	*0.76*	0.76
207	Hoadedhdhoo	0	68	100	0	*0.86*	0.84
208	Nadallaa	0	41	100	0	*1.00*	0.70
209	Gadhdhoo	0	0	0	0	*0.13*	0.00
210	Rathafandhoo	0	45	100	0	*1.00*	0.73
211	Vaadhoo	0	67	100	0	*1.00*	0.84
212	Fiyoari	0	19	0	0	*1.00*	0.09
213	Maathodaa	0	77	100	0	*1.00*	0.88
214	Fares	0	38	100	100	*1.00*	1.00
215	THINADHOO	0	10	0	0	*0.00*	0.05
216	**GNAVIYANI ATOLL**	**0**	**6**	**0**	**0**	***0.01***	**0.03**
217	FOAMMULAH	0	6	0	0	*0.01*	0.03
218	**SEENU ATOLL**	**0**	**15**	**9**	**0**	***0.03***	**0.12**
219	Meedhoo	0	15	100	0	*0.05*	0.57
220	HITHADHOO	0	5	0	0	*0.04*	0.02
221	Maradhoo	0	51	0	0	*0.03*	0.26
222	Feydhoo	0	31	0	0	*0.00*	0.16
223	Maradhoo-Feydhoo	0	0	0	0	*0.00*	0.00
224	Hulhudhoo	0	15	0	0	*0.06*	0.07

STATISTICAL ANNEX 7.2: HEALTH

		2004	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**no doctor**	**no nurse**	**no health worker**	**no midwife**	**no phar-macist**	**no health center**	**no hospital or private clinic**	**more then twelve hours to Male'**
1	**Maldives**	**26**	**27**	**0**	**1**	**24**	**46**	**49**	**40**
2	**Male'**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
3	**Atoll average**	**38**	**38**	**0**	**2**	**34**	**66**	**70**	**62**
4	**HAA ALIFU ATOLL**	**36**	**56**	**0**	**0**	**36**	**36**	**100**	**100**
5	Thurakunu	100	100	0	0	100	100	100	n.a.
6	Uligamu	100	100	0	0	100	100	100	n.a.
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	0	0	100	100
13	Vashafaru	100	100	0	0	100	100	100	100
14	DHIDHDHOO	0	100	0	0	0	0	100	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	n.a.
18	Utheemu	100	100	0	0	100	100	100	100
19	Muraidhoo	100	100	0	0	100	100	100	100
20	Baarah	100	100	0	0	100	100	100	100
21	**HAA DHAALU ATOLL**	**40**	**33**	**0**	**0**	**31**	**86**	**54**	**100**
22	Faridhoo	100	100	0	0	100	100	100	100
23	Hondaidhoo		0						
24	Hanimaadhoo	0	0	0	0	0	0	100	100
25	Finey	100	100	0	0	100	100	100	n.a.
26	Naivaadhoo	100	100	0	0	100	100	100	100
27	Hirimaradhoo	100	100	0	0	100	100	100	n.a.
28	Nolhivaranfaru	0	0	0	0	100	0	100	100
29	Nellaidhoo	100	100	0	0	0	100	100	100
30	Nolhivaramu	100	100	0	0	100	100	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	n.a.
35	Neykurendhoo	100	100	0	0	100	100	100	100
36	Vaikaradhoo	100	0	0	0	0	100	100	100
37	Maavaidhoo	100	100	0	0	100	100	100	100
38	Makunudhoo	0	0	0	0	0	0	100	100
39	**SHAVIYANI ATOLL**	**54**	**54**	**1**	**4**	**48**	**65**	**89**	**89**
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	100	100	0	0	100	100	100	100
47	Narudhoo	100	100	0	0	100	100	100	100
48	Maakandoodhoo	100	100	0	100	100	100	100	100

	STATISTICAL ANNEX 7.2: HEALTH								
		2004	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**no doctor**	**no nurse**	**no health worker**	**no midwife**	**no phar-macist**	**no health center**	**no hospital or private clinic**	**more then twelve hours to Male'**
49	Maroshi	100	100	0	0	100	100	100	100
50	Lhaimagu	100	100	0	0	100	100	100	100
51	Firubaidhoo	100	100	100	100	100	100	100	100
52	Komandoo	0	0	0	0	0	0	100	100
53	Maaugoodhoo	100	100	0	0	0	100	100	100
54	FUNADHOO	0	0	0	0	0	100	0	0
55	Milandhoo	0	0	0	0	0	0	100	100
56	**NOONU ATOLL**	**42**	**42**	**0**	**4**	**42**	**54**	**88**	**50**
57	Hebadhoo	100	100	0	0	100	100	100	0
58	Kedhikolhudhoo	0	0	0	0	0	0	100	100
59	Maalhendhoo	100	100	0	0	100	100	100	0
60	Kudafari	100	100	0	100	100	100	100	0
61	Landhoo	100	100	0	0	100	100	100	0
62	Maafaru	100	100	0	0	100	100	100	0
63	Lhohi	100	100	0	0	100	100	100	0
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	100
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	100
70	**RAA ATOLL**	**53**	**53**	**0**	**0**	**53**	**61**	**71**	**35**
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	0
74	Agolhitheemu	100	100	0	0	100	100	100	n.a.
75	Hulhudhuffaaru	0	0	0	0	0	0	100	0
76	UGUFAARU	0	0	0	0	0	100	0	0
77	Kadholhudhoo	0	100	0	0	0	0	0	n.a.
78	Maakurathu	100	100	0	0	100	100	100	0
79	Rasmaadhoo	100	100	0	0	100	100	100	0
80	Innamaadhoo	100	100	0	0	100	100	100	0
81	Maduvvari	100	0	0	0	100	100	100	n.a.
82	Iguraidhoo	100	100	0	0	100	100	100	0
83	Fainu	100	100	0	0	100	100	100	0
84	Meedhoo	100	0	0	0	100	100	100	100
85	Kinolhas	100	100	0	0	100	100	100	0
86	**BAA ATOLL**	**48**	**30**	**0**	**3**	**31**	**74**	**74**	**3**
87	Kudarikilu	100	100	0	100	100	100	100	0
88	Kamadhoo	100	100	0	0	100	100	100	0
89	Kendhoo	100	100	0	0	0	100	100	0
90	Kihaadhoo	100	100	0	0	100	100	100	n.a.
91	Dhonfanu	100	100	0	0	100	100	100	100
92	Dharavandhoo	100	0	0	0	0	100	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	100	0	0	0	100	100	100	0

	STATISTICAL ANNEX 7.2: HEALTH								
		2004	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**no doctor**	**no nurse**	**no health worker**	**no midwife**	**no phar-macist**	**no health center**	**no hospital or private clinic**	**more then twelve hours to Male'**
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	0	0	100	0
100	**LHAVIYANI ATOLL**	**18**	**18**	**0**	**2**	**6**	**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	100	100	0	0	0	100	100	0
104	Olhuvelifushi	100	100	0	0	100	100	100	0
105	Maafilaafushi	0	0	0	100	100	0	100	n.a.
106	**KAAFU ATOLL**	**26**	**26**	**0**	**0**	**34**	**26**	**100**	**0**
107	Kaashidhoo	0	0	0	0	0	0	100	0
108	Gaafaru	100	100	0	0	100	100	100	0
109	Dhiffushi	100	100	0	0	100	100	100	0
110	THULUSDHOO	0	0	0	0	0	0	100	0
111	Huraa	0	0	0	0	100	0	100	0
112	Himmafushi	0	0	0	0	0	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	0	0	0	0	0	0	100	0
116	**ALIF ALIFU ATOLL**	**62**	**42**	**0**	**19**	**52**	**72**	**90**	**0**
117	Thoddoo	100	0	0	0	0	100	100	0
118	RASDHOO	0	0	0	0	0	0	100	0
119	Ukulhas	100	100	0	0	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	100	100	0	100	0
123	Maalhos	100	100	0	0	100	100	100	0
124	Himendhoo	0	0	0	0	0	100	0	0
125	**ALIFU DHAALU ATOLL**	**40**	**57**	**5**	**5**	**25**	**77**	**63**	**0**
126	Hangnameedhoo	100	100	0	0	100	100	100	0
127	Omadhoo	100	100	0	0	0	100	100	0
128	Kuburudhoo	100	100	100	0	100	100	100	0
129	MAHIBADHOO	0	100	0	0	0	100	0	0
130	Mandhoo	100	0	0	100	100	100	100	0
131	Dhagethi	0	0	0	0	0	100	0	0
132	Dhigurah	100	0	0	0	0	100	100	0
133	Fenfushi	100	100	0	0	100	100	100	n.a.
134	Dhidhdhoo	100	100	0	100	100	100	100	0
135	Maamigili	0	0	0	0	0	0	100	n.a.
136	**VAAVU ATOLL**	**71**	**71**	**0**	**4**	**71**	**71**	**100**	**0**
137	Fulidhoo	100	100	0	0	100	100	100	0
138	Thinadhoo	100	100	0	100	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**	**59**	**59**	**0**	**0**	**42**	**74**	**85**	**0**
143	Raimandhoo	100	100	0	0	100	100	100	0
144	Madifushi	100	100	0	0	100	100	100	n.a.

STATISTICAL ANNEX 7.2: HEALTH

		2004	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**no doctor**	**no nurse**	**no health worker**	**no midwife**	**no phar-macist**	**no health center**	**no hospital or private clinic**	**more then twelve hours to Male'**
145	Veyvah	100	100	0	0	100	100	100	0
146	Mulah	100	100	0	0	0	100	100	0
147	MULI	0	0	0	0	0	100	0	0
148	Naalaafushi	100	100	0	0	100	100	100	0
149	Kolhufushi	0	0	0	0	0	0	100	0
150	Dhiggaru	100	100	0	0	100	100	100	0
151	Maduvvari	0	0	0	0	100	0	100	0
152	**FAAFU ATOLL**	**55**	**55**	**0**	**0**	**33**	**55**	**100**	**0**
153	Feeali	100	100	0	0	0	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**	**59**	**59**	**5**	**0**	**55**	**85**	**73**	**0**
159	Meedhoo	100	100	0	0	0	100	100	0
160	Badidhoo	0	0	0	0	100	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	100	100	0	0	100	100	100	0
164	Vaanee	100	100	100	0	100	100	100	0
165	Maaeboodhoo	100	100	0	0	100	100	100	0
166	KUDAHUVADHOO	0	0	0	0	0	100	0	0
167	**THAA ATOLL**	**39**	**48**	**0**	**0**	**48**	**39**	**100**	**95**
168	Buruni	100	100	0	0	100	100	100	100
169	Vilufushi	0	0	0	0	0	0	100	100
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	0	0	100	100
173	Kadoodhoo	100	100	0	0	100	100	100	0
174	Vandhoo	100	100	0	0	100	100	100	100
175	Hirilandhoo	0	0	0	0	100	0	100	100
176	Gaadhiffushi	100	100	0	0	100	100	100	100
177	Thimarafushi	0	0	0	0	0	0	100	n.a.
178	VEYMANDOO	0	100	0	0	0	0	100	100
179	Kibidhoo	100	100	0	0	100	100	100	100
180	Omadhoo	100	100	0	0	100	100	100	100
181	**LAAMU ATOLL**	**27**	**27**	**0**	**0**	**39**	**62**	**65**	**100**
182	Isdhoo	0	0	0	0	100	0	100	100
183	Dhabidhoo	100	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	n.a.
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	0	0	0	0	0	100	0	100
190	Gaadhoo	100	100	0	0	100	100	100	100
191	Maamendhoo	100	100	0	0	100	100	100	n.a.
192	Hithadhoo	0	0	0	0	0	0	100	100

STATISTICAL ANNEX 7.2: HEALTH

		2004	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**no doctor**	**no nurse**	**no health worker**	**no midwife**	**no phar-macist**	**no health center**	**no hospital or private clinic**	**more then twelve hours to Male'**
193	Kunahandhoo	100	100	0	0	100	100	100	100
194	**GAAFU ALIFU ATOLL**	**47**	**42**	**0**	**0**	**48**	**86**	**60**	**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	0	100
198	Nilandhoo	100	100	0	0	100	100	100	100
199	Dhaandhoo	100	100	0	0	100	100	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	100	0	0	0	0	100	100	100
204	Kanduhulhudhoo	100	0	0	0	100	100	100	100
205	**GAAFU DHAALU ATOLL**	**42**	**35**	**0**	**0**	**30**	**78**	**63**	**90**
206	Madeveli	100	100	0	0	100	100	100	0
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	100	100	0	0	0	100	100	100
211	Vaadhoo	100	0	0	0	0	100	100	100
212	Fiyoari	0	0	0	0	0	0	100	100
213	Maathodaa	100	100	0	0	100	100	100	100
214	Fares	100	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**	**9**	**15**	**0**	**0**	**11**	**66**	**42**	**100**
219	Meedhoo	100	100	0	0	0	100	100	n.a.
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
223	Maradhoo-Feydhoo	0	100	0	0	0	100	0	n.a.
224	Hulhudhoo	0	0	0	0	0	0	100	100

STATISTICAL ANNEX 8: DRINKING WATER

		2004	2004	*1997*	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**Insuf-ficient drinking water**	**unsafe drinking water**	***Human Vulnera-bility Index***	**Drinking Water Index**	**Un-treated 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**
1	**Maldives**	**21**	**2**	***0.27***	**0.23**	**66**	**51**	**4**	**12**	**6**	**23**
2	**Male'**	**0**	**0**	***0.00***	**0.00**	**16**	**20**	**0**	**0**	**0**	**76**
3	**Atoll average**	**30**	**3**	***0.36***	**0.33**	**88**	**64**	**5**	**18**	**8**	**1**
4	**HAA ALIFU ATOLL**	**2**	**2**	***0.44***	**0.04**	**83**	**67**	**2**	**9**	**16**	**0**
5	Thurakunu	0	0	*0.40*	0.00	77	88	0	0	12	0
6	Uligamu	35	0	*0.35*	0.35	73	36	0	56	9	0
7	Berinmadhoo	10	0	*0.43*	0.10	79	91	0	3	0	0
8	Hathifushi	0	0	*0.00*	0.00	43	98	0	2	0	0
9	Mulhadhoo	0	0	*0.15*	0.00	76	64	0	36	0	0
10	Hoarafushi	0	4	*0.17*	0.04	73	67	4	10	4	0
11	Ihavandhoo	0	6	*0.23*	0.06	85	63	6	4	16	0
12	Kelaa	10	0	*0.69*	0.10	87	64	0	12	24	0
13	Vashafaru	0	13	*0.41*	0.13	68	49	13	0	30	0
14	DHIDHDHOO	3	0	*0.46*	0.03	87	69	0	7	20	0
15	Filladhoo	0	0	*0.30*	0.00	93	73	0	0	27	0
16	Maarandhoo	0	0	*0.26*	0.00	100	57	0	24	19	0
17	Thakandhoo	0	0	*0.00*	0.00	76	64	0	36	0	0
18	Utheemu	0	0	*0.16*	0.00	52	68	0	0	20	0
19	Muraidhoo	0	0	*0.42*	0.00	100	46	0	7	48	0
20	Baarah	0	0	*0.44*	0.00	93	87	0	2	11	0
21	**HAA DHAALU ATOLL**	**13**	**1**	***0.13***	**0.14**	**93**	**75**	**2**	**14**	**5**	**0**
22	Faridhoo	0	0	*0.35*	0.00	91	84	0	0	16	0
23	Hondaidhoo			*0.13*							
24	Hanimaadhoo	0	0	*0.08*	0.00	89	100	0	0	0	0
25	Finey	0	0	*0.15*	0.00	89	42	0	55	3	0
26	Naivaadhoo	0	0	*0.38*	0.00	90	63	0	37	0	0
27	Hirimaradhoo	0	0	*0.00*	0.00	100	38	0	62	0	0
28	Nolhivaranfaru	0	0	*0.00*	0.00	90	46	0	42	13	0
29	Nellaidhoo	0	0	*0.05*	0.00	89	80	0	11	9	0
30	Nolhivaramu	23	0	*0.22*	0.23	92	69	0	4	27	0
31	Kuribi	0	0	*0.09*	0.00	100	75	0	25	0	0
32	Kuburudhoo	0	0	*0.14*	0.00	100	37	0	63	0	0
33	KULHUDHUFFUSHI	22	2	*0.15*	0.24	95	82	4	2	2	0
34	Kumundhoo	15	0	*0.05*	0.15	81	38	0	52	10	0
35	Neykurendhoo	0	0	*0.00*	0.00	100	46	0	44	9	0
36	Vaikaradhoo	0	0	*0.21*	0.00	96	91	0	9	0	0
37	Maavaidhoo	0	0	*0.00*	0.00	100	0	0	100	0	0
38	Makunudhoo	0	0	*0.00*	0.00	80	98	0	2	0	0
39	**SHAVIYANI ATOLL**	**43**	**2**	***0.26***	**0.45**	**83**	**71**	**3**	**14**	**9**	**1**
40	Kaditheemu	58	0	*0.03*	0.58	68	55	0	34	11	0
41	Noomaraa	0	36	*0.76*	0.36	93	17	36	19	5	0
42	Goidhoo	26	0	*0.18*	0.26	73	77	0	0	15	0
43	Feydhoo	33	0	*0.12*	0.33	52	40	0	40	10	0
44	Feevah	28	0	*0.05*	0.28	91	66	0	11	14	0
45	Bilehffahi	49	0	*0.41*	0.49	93	70	0	28	2	0
46	Foakaidhoo	78	0	*0.29*	0.78	93	82	0	7	11	0

STATISTICAL ANNEX 8: DRINKING WATER

		2004	2004	1997	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	Insufficient drinking water	unsafe drinking water	*Human Vulnerability Index*	Drinking Water Index	Untreated drinking water	Rainwater tank in compound	well water in compound	public rainwater tank	private rainwater tank	Desalination plant/ piped supply
47	Narudhoo	82	0	*0.28*	0.82	100	54	0	22	10	0
48	Maakandoodhoo	85	0	*0.43*	0.85	84	84	0	0	16	0
49	Maroshi	17	0	*0.39*	0.17	94	58	6	35	0	0
50	Lhaimagu	41	0	*0.62*	0.41	92	49	0	22	29	0
51	Firubaidhoo	0	0	*0.00*	0.00	100	88	0	12	0	0
52	Komandoo	17	0	*0.35*	0.17	74	88	0	0	4	8
53	Maaugoodhoo	18	0	*0.08*	0.18	88	100	0	0	0	0
54	FUNADHOO	42	0	*0.00*	0.42	80	78	0	14	8	0
55	Milandhoo	63	12		0.75	90	78	12	0	10	0
56	**NOONU ATOLL**	**40**	**0**	***0.26***	**0.40**	**90**	**59**	**0**	**33**	**5**	**0**
57	Hebadhoo	6	0	*0.00*	0.06	94	71	0	29	0	0
58	Kedhikolhudhoo	57	0	*0.40*	0.57	92	53	0	47	0	0
59	Maalhendhoo	33	0	*0.32*	0.33	73	48	0	53	0	0
60	Kudafari	50	0	*0.48*	0.50	82	38	0	62	0	0
61	Landhoo	18	0	*0.11*	0.18	86	62	0	38	0	0
62	Maafaru	44	0	*0.41*	0.44	100	75	0	25	0	0
63	Lhohi	68	0	*0.30*	0.68	83	16	0	71	13	0
64	Miladhoo	32	0	*0.77*	0.32	100	42	0	42	0	0
65	Magoodhoo	34	0	*0.08*	0.34	100	81	0	19	0	0
66	MANADHOO	22	0	*0.20*	0.22	100	78	0	9	13	0
67	Holhudhoo	45	0	*0.03*	0.45	83	74	0	12	8	0
68	Fodhdhoo	76	0	*0.21*	0.76	79	0	0	100	0	0
69	Velidhoo	43	0	*0.19*	0.43	91	60	0	29	11	0
70	**RAA ATOLL**	**41**	**6**	***0.27***	**0.47**	**81**	**44**	**6**	**28**	**9**	**7**
71	Alifushi	49	23	*0.03*	0.72	93	72	23	5	0	0
72	Vaadhoo	80	0	*0.16*	0.80	81	48	0	46	6	0
73	Rasgetheemu	49	0	*0.00*	0.49	90	49	0	51	0	0
74	Agolhitheemu	49	11	*0.22*	0.60	77	70	11	11	8	0
75	Hulhudhuffaaru	33	13	*0.02*	0.46	92	46	13	31	10	0
76	UGUFAARU	46	0	*0.35*	0.46	84	58	4	35	3	0
77	Kadholhudhoo	25	0	*1.00*	0.25	64	35	0	24	5	36
78	Maakurathu	42	5	*0.09*	0.47	87	25	5	70	0	0
79	Rasmaadhoo	56	0	*0.28*	0.56	100	37	0	14	49	0
80	Innamaadhoo	40	8	*0.00*	0.49	100	60	8	26	6	0
81	Maduvvari	40	0	*0.17*	0.40	89	17	0	28	30	0
82	Iguraidhoo	35	0	*0.00*	0.35	82	35	0	25	17	0
83	Fainu	50	0	*0.00*	0.50	90	30	0	49	0	0
84	Meedhoo	52	13	*0.10*	0.65	58	53	13	33	0	0
85	Kinolhas	62	0	*0.00*	0.62	100	71	0	0	7	0
86	**BAA ATOLL**	**22**	**3**	***0.27***	**0.25**	**82**	**54**	**15**	**17**	**9**	**0**
87	Kudarikilu	11	0	*0.23*	0.11	84	51	0	49	0	0
88	Kamadhoo	24	0	*0.10*	0.24	80	68	0	33	0	0
89	Kendhoo	27	0	*0.64*	0.27	100	63	0	13	24	0
90	Kihaadhoo	57	0	*0.35*	0.57	92	47	0	53	0	0
91	Dhonfanu	43	0	*0.10*	0.43	100	43	0	35	22	0
92	Dharavandhoo	36	0	*0.04*	0.36	73	73	10	4	4	0

STATISTICAL ANNEX 8: DRINKING WATER

		2004	2004	*1997*	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**Insuf-ficient drinking water**	**unsafe drinking water**	***Human Vulnera-bility Index***	**Drinking Water Index**	**Un-treated 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**
93	Maalhos	53	0	*0.00*	0.53	83	62	17	16	5	0
94	EYDHAFUSHI	10	7	*0.24*	0.17	79	48	23	18	6	0
95	Thulhaadhoo	26	0	*0.12*	0.26	78	68	22	0	4	0
96	Hithaadhoo	0	9	*0.52*	0.09	72	18	21	25	21	0
97	Fulhadhoo	67	0	*0.39*	0.67	85	63	0	37	0	0
98	Fehendhoo	14	13	*0.12*	0.26	88	67	25	6	0	0
99	Goidhoo	14	10	*0.57*	0.23	100	48	10	15	27	0
100	**LHAVIYANI ATOLL**	**48**	**5**	***0.50***	**0.53**	**85**	**47**	**15**	**19**	**1**	**0**
101	Hinnavaru	41	8	*0.74*	0.50	94	58	11	2	0	0
102	NAIFARU	42	2	*0.47*	0.44	75	39	20	23	0	0
103	Kurendhoo	90	0	*0.00*	0.90	94	36	6	51	8	0
104	Olhuvelifushi	41	22	*0.00*	0.63	100	51	22	16	10	0
105	Maafilaafushi	34	6	*0.22*	0.40	79	68	6	26	0	0
106	**KAAFU ATOLL**	**18**	**5**	***0.31***	**0.23**	**77**	**39**	**9**	**25**	**9**	**0**
107	Kaashidhoo	5	13	*0.11*	0.18	75	11	13	13	21	0
108	Gaafaru	13	11	*0.14*	0.24	80	39	11	50	0	0
109	Dhiffushi	22	0	*0.32*	0.22	63	49	41	0	0	0
110	THULUSDHOO	12	0	*0.12*	0.12	91	18	0	66	7	0
111	Huraa	24	0	*0.19*	0.24	89	55	0	45	0	0
112	Himmafushi	15	18	*0.18*	0.33	66	23	18	15	10	0
113	Gulhi	29	0	*0.90*	0.29	89	60	0	31	0	0
114	Maafushi	33	0	*0.19*	0.33	87	56	0	15	17	0
115	Guraidhoo	22	0	*0.65*	0.22	66	60	0	18	10	0
116	**ALIF ALIFU ATOLL**	**34**	**0**	***0.27***	**0.34**	**95**	**76**	**0**	**15**	**9**	**0**
117	Thoddoo	44	0	*0.10*	0.44	100	44	0	35	21	0
118	RASDHOO	14	0	*0.10*	0.14	100	97	0	0	3	0
119	Ukulhas	54	0	*0.00*	0.54	91	88	0	0	12	0
120	Mathiveri	62	0	*0.67*	0.62	100	55	0	34	10	0
121	Bodufolhudhoo	25	0	*0.63*	0.25	100	85	0	15	0	0
122	Feridhoo	22	0	*0.19*	0.22	90	75	0	6	19	0
123	Maalhos	38	0	*0.36*	0.38	88	91	0	9	0	0
124	Himendhoo	24	0	*0.38*	0.24	91	75	0	21	4	0
125	**ALIFU DHAALU ATOLL**	**28**	**0**	***0.44***	**0.28**	**95**	**90**	**0**	**6**	**4**	**0**
126	Hangnameedhoo	24	0	*0.27*	0.24	93	85	0	15	0	0
127	Omadhoo	33	0	*0.63*	0.33	100	90	0	10	0	0
128	Kuburudhoo	35	0	*0.40*	0.35	100	100	0	0	0	0
129	MAHIBADHOO	34	0	*0.64*	0.34	100	100	0	0	0	0
130	Mandhoo	21	0	*0.68*	0.21	100	52	0	34	14	0
131	Dhagethi	38	0	*0.11*	0.38	75	89	0	11	0	0
132	Dhigurah	12	0	*0.41*	0.12	100	79	0	12	9	0
133	Fenfushi	23	0	*0.38*	0.23	100	100	0	0	0	0
134	Dhidhdhoo	10	0	*0.89*	0.10	100	31	0	69	0	0
135	Maamigili	23	0	*0.32*	0.23	92	86	0	1	13	0
136	**VAAVU ATOLL**	**56**	**0**	***0.47***	**0.56**	**80**	**79**	**0**	**15**	**6**	**0**
137	Fulidhoo	44	0	*0.24*	0.44	90	100	0	0	0	0
138	Thinadhoo	0	0	*0.19*	0.00	79	46	0	54	0	0

STATISTICAL ANNEX 8: DRINKING WATER

		2004	2004	*1997*	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**Insuf-ficient drinking water**	**unsafe drinking water**	***Human Vulnera-bility Index***	**Drinking Water Index**	**Un-treated 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**
139	FELIDHOO	56	0	*0.30*	0.56	78	64	0	36	0	0
140	Keyodhoo	70	0	*0.87*	0.70	72	83	0	0	17	0
141	Rakeedhoo	48	0	*0.35*	0.48	93	74	0	26	0	0
142	**MEEMU ATOLL**	**55**	**0**	***0.43***	**0.55**	**85**	**66**	**0**	**27**	**3**	**0**
143	Raimandhoo	61	0	*0.36*	0.61	89	48	0	52	0	0
144	Madifushi	0	0	*0.31*	0.00	87	13	0	87	0	0
145	Veyvah	49	0	*0.66*	0.49	88	40	0	60	0	0
146	Mulah	33	0	*0.15*	0.33	82	86	0	0	14	0
147	MULI	42	0	*0.16*	0.42	65	100	0	0	0	0
148	Naalaafushi	65	0	*0.61*	0.65	100	11	0	63	0	0
149	Kolhufushi	71	0	*0.58*	0.71	100	49	0	44	0	0
150	Dhiggaru	74	0	*0.58*	0.74	84	51	0	49	0	0
151	Maduvvari	70	0	*0.74*	0.70	93	94	0	6	0	0
152	**FAAFU ATOLL**	**70**	**0**	***0.23***	**0.70**	**96**	**45**	**0**	**28**	**23**	**0**
153	Feeali	64	0	*0.13*	0.64	100	67	0	16	17	0
154	Biledhdhoo	67	0	*0.10*	0.67	93	40	0	48	12	0
155	Magoodhoo	53	0	*0.29*	0.53	91	46	0	46	9	0
156	Dharaboodhoo	49	0	*0.09*	0.49	84	7	0	93	0	0
157	NILANDHOO	86	0	*0.41*	0.86	100	41	0	2	45	0
158	**DHAALU ATOLL**	**56**	**0**	***0.47***	**0.56**	**87**	**30**	**0**	**55**	**1**	**0**
159	Meedhoo	70	0	*0.32*	0.70	87	65	0	35	0	0
160	Badidhoo	55	0	*0.46*	0.55	91	21	0	79	0	0
161	Ribudhoo	59	0	*0.43*	0.59	93	61	0	26	13	0
162	Hulhudheli	53	0	*0.74*	0.53	92	14	0	69	0	0
163	Gemendhoo	68	0	*0.11*	0.68	87	6	0	94	0	0
164	Vaanee	69	0	*0.11*	0.69	100	29	0	71	0	0
165	Maaeboodhoo	56	0	*0.53*	0.56	85	6	0	94	0	0
166	KUDAHUVADHOO	41	0	*0.58*	0.41	80	26	0	30	0	0
167	**THAA ATOLL**	**54**	**0**	***0.42***	**0.54**	**92**	**62**	**0**	**26**	**8**	**0**
168	Buruni	18	0	*0.14*	0.18	88	53	0	47	0	0
169	Vilufushi	38	0	*0.28*	0.38	96	96	0	4	0	0
170	Madifushi	57	0	*0.73*	0.57	100	45	0	55	0	0
171	Dhiyamigili	79	0	*0.66*	0.79	100	38	0	11	43	0
172	Guraidhoo	27	0	*0.31*	0.27	87	91	0	0	9	0
173	Kadoodhoo	45	0	*0.30*	0.45	100	13	0	87	0	0
174	Vandhoo	67	0	*0.22*	0.67	91	22	0	78	0	0
175	Hirilandhoo	81	0	*0.49*	0.81	100	64	0	36	0	0
176	Gaadhiffushi	34	0	*0.00*	0.34	100	12	0	88	0	0
177	Thimarafushi	62	0	*0.32*	0.62	74	42	0	18	24	0
178	VEYMANDOO	68	0	*0.47*	0.68	85	77	0	9	0	0
179	Kibidhoo	56	0	*0.75*	0.56	100	72	0	28	0	0
180	Omadhoo	52	0	*0.65*	0.52	100	44	0	40	15	0
181	**LAAMU ATOLL**	**66**	**2**	***0.31***	**0.68**	**85**	**66**	**2**	**23**	**5**	**0**
182	Isdhoo	69	0	*0.56*	0.69	69	56	0	31	0	0
183	Dhabidhoo	74	0	*0.35*	0.74	43	100	0	0	0	0
184	Maabaidhoo	66	0	*0.60*	0.66	78	58	0	42	0	0

STATISTICAL ANNEX 8: DRINKING WATER

		2004	2004	*1997*	2004	2004	2004	2004	2004	2004	2004
	Atoll / Island name	**Insuf-ficient drinking water**	**unsafe drinking water**	***Human Vulnera-bility Index***	**Drinking Water Index**	**Un-treated 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**
185	Mundoo	57	0	*0.24*	0.57	89	93	0	7	0	0
186	Kalhaidhoo	79	0	*0.51*	0.79	72	100	0	0	0	0
187	Gamu	86	9	*0.04*	0.96	93	66	9	15	6	0
188	Maavah	63	0	*0.33*	0.63	95	51	0	42	8	0
189	FONADHOO	68	0	*0.07*	0.68	79	71	0	11	9	0
190	Gaadhoo	10	0	*0.00*	0.10	87	67	0	33	0	0
191	Maamendhoo	59	0	*0.47*	0.59	100	39	0	61	0	0
192	Hithadhoo	48	0	*0.44*	0.48	100	70	0	0	18	0
193	Kunahandhoo	25	0	*0.37*	0.25	93	76	0	24	0	0
194	**GAAFU ALIFU ATOLL**	**4**	**3**	***0.18***	**0.07**	**99**	**83**	**3**	**5**	**7**	**0**
195	Kolamaafushi	20	0	*0.10*	0.20	90	96	0	0	4	0
196	VILLINGILI	0	11	*0.15*	0.11	100	81	11	0	8	0
197	Maamendhoo	0	0	*0.27*	0.00	100	73	0	25	2	0
198	Nilandhoo	0	0	*0.32*	0.00	100	100	0	0	0	0
199	Dhaandhoo	0	0	*0.00*	0.00	100	77	0	5	8	0
200	Dhevvadhoo	0	0	*0.14*	0.00	100	94	0	0	6	0
201	Kodey	0	0	*0.51*	0.00	100	88	0	4	8	0
202	Dhiyadhoo	0	0	*0.23*	0.00	100	62	0	9	0	0
203	Gemanafushi	12	0	*0.27*	0.12	100	81	0	0	12	0
204	Kanduhulhudhoo	0	0	*0.36*	0.00	100	72	0	14	14	0
205	**GAAFU DHAALU ATOLL**	**10**	**0**	***0.28***	**0.10**	**88**	**76**	**0**	**14**	**8**	**0**
206	Madeveli	0	0	*0.38*	0.00	82	89	0	11	0	0
207	Hoadedhdhoo	41	0	*0.27*	0.41	100	90	0	10	0	0
208	Nadallaa	23	0	*0.84*	0.23	69	76	0	19	5	0
209	Gadhdhoo	0	0	*0.25*	0.00	97	55	0	29	15	0
210	Rathafandhoo	43	0	*0.56*	0.43	100	55	0	39	6	0
211	Vaadhoo	0	0	*0.20*	0.00	100	54	0	19	27	0
212	Fiyoari	0	0	*0.12*	0.00	67	92	0	0	8	0
213	Maathodaa	13	0	*0.09*	0.13	90	87	0	7	7	0
214	Fares	0	0	*0.48*	0.00	100	45	0	49	6	0
215	THINADHOO	11	0	*0.17*	0.11	85	84	0	5	5	0
216	**GNAVIYANI ATOLL**	**11**	**0**	***0.56***	**0.11**	**93**	**64**	**0**	**4**	**32**	**0**
217	FOAMMULAH	11	0	*0.54*	0.11	93	64	0	4	32	0
218	**SEENU ATOLL**	**16**	**17**	***0.70***	**0.33**	**89**	**68**	**20**	**5**	**5**	**0**
219	Meedhoo	10	28	*1.00*	0.38	92	65	28	0	7	0
220	HITHADHOO	15	20	*0.74*	0.36	95	66	22	6	4	0
221	Maradhoo	16	11	*0.11*	0.27	95	79	11	10	0	0
222	Feydhoo	25	6	*0.51*	0.31	62	65	22	8	4	0
223	Maradhoo-Feydhoo	8	15	*0.44*	0.23	100	82	15	0	3	0
224	Hulhudhoo	15	7	*1.00*	0.22	78	69	13	0	19	0

	STATISTICAL ANNEX 9:	CONSUMER GOODS						
		2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	**more than hundred people per shop**	**no sewing machine**	***Human Vulnera-bility Index***	**Consu-mer Goods Index**	**no washing machine**	**no fan**	**no fridge**
1	**Maldives**	**6**	**40**	***0.39***	**0.23**	**11**	**4**	**43**
2	**Male'**	**0**	**33**	***0.16***	**0.17**	**9**	**5**	**15**
3	**Atoll average**	**8**	**43**	***0.46***	**0.26**	**12**	**4**	**55**
4	**HAA ALIFU ATOLL**	**3**	**42**	***0.38***	**0.22**	**16**	**10**	**69**
5	Thurakunu	100	36	*0.46*	0.68	29	3	75
6	Uligamu	0	71	*1.00*	0.36	33	9	96
7	Berinmadhoo	0	18	*0.50*	0.09	9	9	62
8	Hathifushi	0	47	*0.50*	0.23	13	38	100
9	Mulhadhoo	0	44	*0.40*	0.22	24	16	80
10	Hoarafushi	0	29	*0.35*	0.15	19	7	72
11	Ihavandhoo	0	43	*0.43*	0.21	24	27	78
12	Kelaa	0	60	*0.13*	0.30	12	0	54
13	Vashafaru	0	17	*0.20*	0.08	19	8	60
14	DHIDHDHOO	0	43	*0.18*	0.21	9	0	64
15	Filladhoo	0	77	*0.50*	0.38	10	10	60
16	Maarandhoo	0	38	*0.92*	0.19	24	7	52
17	Thakandhoo	0	24	*0.50*	0.12	30	24	79
18	Utheemu	0	28	*0.31*	0.14	0	0	32
19	Muraidhoo	0	67	*0.50*	0.34	9	30	89
20	Baarah	0	37	*0.43*	0.18	7	7	80
21	**HAA DHAALU ATOLL**	**8**	**43**	***0.67***	**0.26**	**18**	**5**	**64**
22	Faridhoo	0	37	*0.13*	0.19	9	0	72
23	Hondaidhoo			*0.37*				
24	Hanimaadhoo	0	41	*0.39*	0.20	25	0	39
25	Finey	0	53	*0.50*	0.26	37	3	76
26	Naivaadhoo	0	49	*0.82*	0.24	22	32	61
27	Hirimaradhoo	0	36	*1.00*	0.18	13	13	57
28	Nolhivaranfaru	0	52	*0.40*	0.26	13	0	83
29	Nellaidhoo	0	57	*0.87*	0.29	29	0	63
30	Nolhivaramu	0	62	*1.00*	0.31	26	24	100
31	Kuribi	100	38	*0.88*	0.69	4	0	75
32	Kuburudhoo	0	54	*1.00*	0.27	17	35	83
33	KULHUDHUFFUSHI	0	40	*0.38*	0.20	12	0	55
34	Kumundhoo	0	38	*1.00*	0.19	31	0	81
35	Neykurendhoo	0	41	*0.78*	0.20	22	4	78
36	Vaikaradhoo	0	44	*0.85*	0.22	9	15	72
37	Maavaidhoo	0	32	*1.00*	0.16	32	16	100
38	Makunudhoo	100	34	*0.92*	0.67	34	9	55
39	**SHAVIYANI ATOLL**	**27**	**45**	***0.55***	**0.36**	**10**	**6**	**59**
40	Kaditheemu	0	19	*0.95*	0.10	0	0	47
41	Noomaraa	0	48	*0.50*	0.24	74	17	93
42	Goidhoo	0	47	*0.90*	0.23	23	10	75
43	Feydhoo	0	52	*0.45*	0.26	24	10	54
44	Feevah	0	48	*0.50*	0.24	16	10	54
45	Bilehffahi	0	12	*0.33*	0.06	2	2	37
46	Foakaidhoo	100	64	*1.00*	0.82	18	7	58
47	Narudhoo	0	82	*0.90*	0.41	1	24	87
48	Maakandoodhoo	0	24	*0.42*	0.12	0	4	64

STATISTICAL ANNEX 9: CONSUMER GOODS

		2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	**more than hundred people per shop**	**no sewing machine**	***Human Vulnera-bility Index***	**Consu-mer Goods Index**	**no washing machine**	**no fan**	**no fridge**
49	Maroshi	0	35	*0.50*	0.18	31	4	69
50	Lhaimagu	100	59	*0.50*	0.79	6	22	65
51	Firubaidhoo	0	20	*0.83*	0.10	7	7	59
52	Komandoo	0	55	*0.02*	0.28	4	0	51
53	Maaugoodhoo	0	25	*0.30*	0.13	0	12	86
54	FUNADHOO	0	51	*0.37*	0.25	0	0	42
55	Milandhoo	100	33		0.66	0	0	63
56	**NOONU ATOLL**	**7**	**39**	***0.39***	**0.23**	**7**	**9**	**59**
57	Hebadhoo	0	59	*0.44*	0.30	4	4	67
58	Kedhikolhudhoo	0	44	*0.24*	0.22	4	8	63
59	Maalhendhoo	0	55	*1.00*	0.28	13	0	80
60	Kudafari	0	71	*0.50*	0.35	0	0	78
61	Landhoo	0	40	*0.39*	0.20	4	10	68
62	Maafaru	100	31	*0.28*	0.65	24	10	100
63	Lhohi	0	36	*0.40*	0.18	13	32	87
64	Miladhoo	0	61	*0.36*	0.31	21	18	63
65	Magoodhoo	0	53	*0.33*	0.27	3	0	83
66	MANADHOO	0	9	*0.38*	0.05	0	0	68
67	Holhudhoo	0	55	*0.31*	0.27	0	2	45
68	Fodhdhoo	0	64	*0.47*	0.32	21	33	69
69	Velidhoo	0	16	*0.38*	0.08	6	14	21
70	**RAA ATOLL**	**18**	**47**	***0.51***	**0.32**	**16**	**7**	**59**
71	Alifushi	0	46	*0.67*	0.23	1	5	77
72	Vaadhoo	0	48	*0.78*	0.24	9	57	83
73	Rasgetheemu	0	45	*0.21*	0.23	10	4	31
74	Agolhitheemu	0	34	*0.34*	0.17	19	11	81
75	Hulhudhuffaaru	0	4	*0.82*	0.02	4	0	46
76	UGUFAARU	0	25	*0.37*	0.13	25	0	29
77	Kadholhudhoo	0	68	*0.32*	0.34	13	6	34
78	Maakurathu	100	34	*0.37*	0.67	15	28	51
79	Rasmaadhoo	0	70	*0.84*	0.35	40	2	85
80	Innamaadhoo	0	10	*0.23*	0.05	0	0	58
81	Maduvvari	100	39	*0.84*	0.69	10	11	73
82	Iguraidhoo	0	78	*0.50*	0.39	58	14	75
83	Fainu	0	19	*0.50*	0.10	26	0	62
84	Meedhoo	0	48	*0.34*	0.24	7	0	87
85	Kinolhas	100	51	*0.85*	0.75	31	4	78
86	**BAA ATOLL**	**11**	**42**	***0.69***	**0.27**	**15**	**3**	**54**
87	Kudarikilu	0	20	*0.42*	0.10	10	0	67
88	Kamadhoo	0	48	*0.28*	0.24	15	0	78
89	Kendhoo	0	34	*0.85*	0.17	3	3	81
90	Kihaadhoo	100	73	*0.47*	0.87	6	6	80
91	Dhonfanu	0	82	*0.88*	0.41	3	9	74
92	Dharavandhoo	0	54	*0.19*	0.27	0	4	19
93	Maalhos	100	60	*0.25*	0.80	17	0	53
94	EYDHAFUSHI	0	32	*0.47*	0.16	1	0	25
95	Thulhaadhoo	0	43	*0.95*	0.21	40	2	64
96	Hithaadhoo	0	48	*1.00*	0.24	38	18	82

	STATISTICAL ANNEX 9:	CONSUMER GOODS						
		2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	**more than hundred people per shop**	**no sewing machine**	***Human Vulnera-bility Index***	**Consu-mer Goods Index**	**no washing machine**	**no fan**	**no fridge**
97	Fulhadhoo	0	44	*0.78*	0.22	12	0	73
98	Fehendhoo	0	19	*0.50*	0.09	15	0	46
99	Goidhoo	100	31	*0.85*	0.65	5	0	48
100	**LHAVIYANI ATOLL**	**0**	**23**	***0.54***	**0.11**	**10**	**1**	**57**
101	Hinnavaru	0	11	*0.81*	0.06	10	1	63
102	NAIFARU	0	17	*0.36*	0.08	8	0	42
103	Kurendhoo	0	49	*0.40*	0.25	13	0	87
104	Olhuvelifushi	0	88	*0.36*	0.44	16	0	88
105	Maafilaafushi	0	39	*0.32*	0.19	8	0	33
106	**KAAFU ATOLL**	**10**	**44**	***0.43***	**0.27**	**5**	**1**	**37**
107	Kaashidhoo	0	36	*0.86*	0.18	3	3	64
108	Gaafaru	0	43	*0.39*	0.21	17	0	57
109	Dhiffushi	0	20	*0.28*	0.10	5	0	32
110	THULUSDHOO	100	41	*0.34*	0.70	0	0	26
111	Huraa	0	36	*0.26*	0.18	0	0	20
112	Himmafushi	0	62	*0.24*	0.31	3	0	3
113	Gulhi	0	46	*0.26*	0.23	0	0	0
114	Maafushi	0	43	*0.33*	0.22	0	0	10
115	Guraidhoo	0	66	*0.32*	0.33	12	0	66
116	**ALIF ALIFU ATOLL**	**0**	**43**	***0.38***	**0.22**	**15**	**0**	**31**
117	Thoddoo	0	70	*0.34*	0.35	13	0	48
118	RASDHOO	0	53	*0.86*	0.26	3	0	4
119	Ukulhas	0	18	*0.21*	0.09	9	0	32
120	Mathiveri	0	57	*0.37*	0.29	21	0	24
121	Bodufolhudhoo	0	20	*0.21*	0.10	0	0	8
122	Feridhoo	0	59	*0.42*	0.29	37	0	41
123	Maalhos	0	22	*0.13*	0.11	28	0	44
124	Himendhoo	0	22	*0.26*	0.11	9	0	39
125	**ALIFU DHAALU ATOLL**	**10**	**43**	***0.20***	**0.26**	**8**	**0**	**33**
126	Hangnameedhoo	0	35	*0.36*	0.18	2	0	52
127	Omadhoo	100	22	*0.13*	0.61	10	0	45
128	Kuburudhoo	0	68	*0.28*	0.34	0	0	93
129	MAHIBADHOO	0	35	*0.05*	0.17	12	0	2
130	Mandhoo	0	57	*0.38*	0.29	12	0	63
131	Dhagethi	0	40	*0.07*	0.20	2	0	11
132	Dhigurah	0	43	*0.28*	0.22	7	0	57
133	Fenfushi	0	66	*0.17*	0.33	0	0	15
134	Dhidhdhoo	0	20	*0.27*	0.10	10	0	49
135	Maamigili	0	49	*0.33*	0.25	12	0	51
136	**VAAVU ATOLL**	**0**	**42**	***0.38***	**0.21**	**17**	**0**	**53**
137	Fulidhoo	0	16	*0.30*	0.08	3	0	44
138	Thinadhoo	0	29	*0.80*	0.15	13	13	83
139	FELIDHOO	0	32	*0.30*	0.16	6	0	49
140	Keyodhoo	0	57	*0.41*	0.29	30	0	54
141	Rakeedhoo	0	74	*0.30*	0.37	38	0	67
142	**MEEMU ATOLL**	**19**	**38**	***0.46***	**0.28**	**11**	**3**	**54**
143	Raimandhoo	0	32	*0.44*	0.16	23	14	68
144	Madifushi	0	33	*0.26*	0.17	5	8	41

	STATISTICAL ANNEX 9:	CONSUMER GOODS					
		2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	**more than hundred people per shop**	**no sewing machine**	***Human Vulnera-bility Index***	**Consu-mer Goods Index**	**no washing machine**	**no fan**	**no fridge**
145	Veyvah	0	41	*0.32*	0.21	0	0	72
146	Mulah	0	12	*0.38*	0.06	3	0	33
147	MULI	0	9	*0.20*	0.05	0	0	9
148	Naalaafushi	0	43	*1.00*	0.22	22	0	62
149	Kolhufushi	0	75	*0.89*	0.38	13	0	74
150	Dhiggaru	100	57	*0.24*	0.79	21	8	84
151	Maduvvari	0	39	*0.35*	0.19	17	9	76
152	**FAAFU ATOLL**	**33**	**69**	***0.40***	**0.51**	**13**	**1**	**76**
153	Feeali	0	60	*0.43*	0.30	22	0	69
154	Biledhdhoo	0	78	*0.45*	0.39	10	3	80
155	Magoodhoo	0	57	*0.29*	0.29	9	0	90
156	Dharaboodhoo	0	35	*0.34*	0.18	9	0	70
157	NILANDHOO	100	79	*0.40*	0.89	11	0	73
158	**DHAALU ATOLL**	**17**	**48**	***0.46***	**0.33**	**10**	**3**	**61**
159	Meedhoo	0	50	*0.06*	0.25	5	0	72
160	Badidhoo	0	31	*0.95*	0.15	7	11	55
161	Ribudhoo	0	26	*0.61*	0.13	0	0	48
162	Hulhudheli	0	45	*0.50*	0.22	12	0	86
163	Gemendhoo	100	89	*1.00*	0.95	26	0	85
164	Vaanee	0	33	*0.24*	0.17	0	0	76
165	Maaeboodhoo	100	74	*0.50*	0.87	48	12	83
166	KUDAHUVADHOO	0	46	*0.29*	0.23	0	0	33
167	**THAA ATOLL**	**5**	**36**	***0.44***	**0.20**	**7**	**1**	**60**
168	Buruni	0	47	*0.22*	0.24	21	0	82
169	Vilufushi	0	49	*0.42*	0.24	8	0	45
170	Madifushi	0	10	*0.91*	0.05	13	0	85
171	Dhiyamigili	100	32	*0.34*	0.66	13	0	77
172	Guraidhoo	0	27	*0.41*	0.13	0	0	33
173	Kadoodhoo	0	13	*0.50*	0.06	0	0	53
174	Vandhoo	0	43	*0.20*	0.22	10	0	43
175	Hirilandhoo	0	27	*0.28*	0.13	13	0	78
176	Gaadhiffushi	0	61	*0.41*	0.30	12	12	41
177	Thimarafushi	0	58	*0.18*	0.29	1	0	53
178	VEYMANDOO	0	13	*0.21*	0.07	7	0	90
179	Kibidhoo	0	33	*0.94*	0.16	13	5	70
180	Omadhoo	0	62	*0.85*	0.31	0	0	48
181	**LAAMU ATOLL**	**0**	**33**	***0.48***	**0.17**	**11**	**7**	**60**
182	Isdhoo	0	0	*0.40*	0.00	5	5	38
183	Dhabidhoo	0	6	*0.77*	0.03	0	0	77
184	Maabaidhoo	0	47	*0.28*	0.24	25	9	78
185	Mundoo	0	30	*0.27*	0.15	0	0	74
186	Kalhaidhoo	0	42	*0.28*	0.21	30	0	73
187	Gamu	0	47	*0.30*	0.24	5	0	63
188	Maavah	0	27	*0.41*	0.13	8	0	85
189	FONADHOO	0	33	*0.30*	0.16	6	6	28
190	Gaadhoo	0	54	*0.85*	0.27	33	0	74
191	Maamendhoo	0	48	*0.48*	0.24	11	3	34
192	Hithadhoo	0	36	*1.00*	0.18	20	45	80

STATISTICAL ANNEX 9: CONSUMER GOODS

		2004	2004	*1997*	2004	2004	2004	2004
	Atoll / Island name	**more than hundred people per shop**	**no sewing machine**	***Human Vulnera-bility Index***	**Consu-mer Goods Index**	**no washing machine**	**no fan**	**no fridge**
193	Kunahandhoo	0	45	*1.00*	0.23	36	31	95
194	**GAAFU ALIFU ATOLL**	**1**	**40**	***0.48***	**0.21**	**23**	**3**	**48**
195	Kolamaafushi	0	15	*0.12*	0.07	7	0	26
196	VILLINGILI	0	32	*0.26*	0.16	14	0	26
197	Maamendhoo	0	32	*0.40*	0.16	18	8	75
198	Nilandhoo	0	73	*0.50*	0.37	25	12	63
199	Dhaandhoo	0	58	*1.00*	0.29	29	0	47
200	Dhevvadhoo	0	63	*1.00*	0.32	19	0	63
201	Kodey	0	63	*0.50*	0.31	61	12	94
202	Dhiyadhoo	100	29	*0.42*	0.64	32	37	74
203	Gemanafushi	0	41	*0.50*	0.20	32	0	58
204	Kanduhulhudhoo	0	49	*0.50*	0.25	63	14	70
205	**GAAFU DHAALU ATOLL**	**6**	**45**	***0.56***	**0.26**	**20**	**5**	**55**
206	Madeveli	0	51	*0.93*	0.25	17	21	73
207	Hoadedhdhoo	0	58	*0.50*	0.29	11	0	52
208	Nadallaa	100	58	*0.50*	0.79	82	14	86
209	Gadhdhoo	0	52	*0.34*	0.26	7	0	74
210	Rathafandhoo	0	80	*0.50*	0.40	39	16	100
211	Vaadhoo	0	44	*1.00*	0.22	27	8	33
212	Fiyoari	0	51	*0.50*	0.26	33	2	86
213	Maathodaa	0	27	*0.50*	0.13	7	7	32
214	Fares	0	36	*1.00*	0.18	23	0	51
215	THINADHOO	0	36	*0.46*	0.18	12	0	33
216	**GNAVIYANI ATOLL**	**0**	**59**	***0.33***	**0.30**	**4**	**0**	**64**
217	FOAMMULAH	0	59	*0.33*	0.30	4	0	64
218	**SEENU ATOLL**	**0**	**49**	***0.30***	**0.24**	**9**	**3**	**43**
219	Meedhoo	0	57	*0.39*	0.28	10	13	43
220	HITHADHOO	0	54	*0.30*	0.27	10	3	41
221	Maradhoo	0	47	*0.40*	0.23	7	0	47
222	Feydhoo	0	34	*0.23*	0.17	10	1	31
223	Maradhoo-Feydhoo	0	28	*0.39*	0.14	3	0	55
224	Hulhudhoo	0	54	*0.15*	0.27	4	0	80

	STATISTICAL ANNEX 10:	HOUSING							
		2004	2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	house with thatch wall	house with sand floor	forty square feet or less housing-area	no compound	*Human Vulnerability Index*	Housing Index	house with thatch wall and sand floor	five or more people per room
1	**Maldives**	**1**	**1**	**10**	**24**	***0.22***	**0.24**	**0**	**9**
2	**Male'**	**0**	**0**	**22**	**61**	***0.42***	**0.53**	**0**	**15**
3	**Atoll average**	**1**	**2**	**5**	**9**	***0.16***	**0.12**	**1**	**6**
4	**HAA ALIFU ATOLL**	**1**	**2**	**8**	1	***0.11***	**0.11**	**0**	**7**
5	Thurakunu	0	0	0	0	*0.21*	0.00	0	0
6	Uligamu	0	2	31	0	*0.22*	0.33	0	25
7	Berinmadhoo	0	0	21	0	*0.09*	0.21	0	0
8	Hathifushi	0	9	0	0	*0.14*	0.09	0	0
9	Mulhadhoo	20	0	49	0	*0.39*	0.69	0	12
10	Hoarafushi	0	5	4	0	*0.28*	0.09	0	21
11	Ihavandhoo	0	0	18	0	*0.00*	0.18	0	7
12	Kelaa	0	0	0	0	*0.00*	0.00	0	0
13	Vashafaru	13	13	0	0	*0.00*	0.13	13	0
14	DHIDHDHOO	0	0	0	3	*0.04*	0.01	0	4
15	Filladhoo	0	10	0	0	*0.28*	0.10	0	0
16	Maarandhoo	0	0	0	0	*0.00*	0.00	0	0
17	Thakandhoo	15	0	0	0	*0.07*	0.15	0	0
18	Utheemu	0	0	0	0	*0.10*	0.00	0	0
19	Muraidhoo	0	0	0	0	*0.04*	0.00	0	0
20	Baarah	0	0	37	0	*0.16*	0.37	0	12
21	**HAA DHAALU ATOLL**	**5**	**3**	2	1	***0.17***	**0.09**	**2**	**2**
22	Faridhoo	0	0	0	0	*0.00*	0.00	0	0
23	Hondaidhoo					*0.19*			
24	Hanimaadhoo	0	0	0	0	*0.00*	0.00	0	11
25	Finey	0	0	0	0	*0.17*	0.00	0	0
26	Naivaadhoo	0	0	0	0	*0.00*	0.00	0	0
27	Hirimaradhoo	13	13	0	0	*0.02*	0.13	13	19
28	Nolhivaranfaru	10	0	0	0	*0.10*	0.10	0	10
29	Nellaidhoo	11	11	29	0	*0.00*	0.41	11	0
30	Nolhivaramu	4	12	12	0	*0.48*	0.24	4	6
31	Kuribi	0	0	0	0	*0.00*	0.00	0	16
32	Kuburudhoo	15	0	0	0	*0.28*	0.15	0	0
33	KULHUDHUFFUSHI	6	0	0	0	*0.25*	0.06	0	0
34	Kumundhoo	19	27	0	0	*0.12*	0.27	19	0
35	Neykurendhoo	6	6	0	0	*0.08*	0.06	6	9
36	Vaikaradhoo	0	0	0	0	*0.00*	0.00	0	0
37	Maavaidhoo	16	5	0	0	*0.09*	0.21	0	0
38	Makunudhoo	0	0	0	11	*0.16*	0.06	0	0
39	**SHAVIYANI ATOLL**	**1**	**1**	**1**	**11**	***0.09***	**0.08**	**0**	**2**
40	Kaditheemu	0	0	0	15	*0.13*	0.08	0	0
41	Noomaraa	0	0	7	12	*0.33*	0.13	0	0
42	Goidhoo	0	7	0	12	*0.00*	0.13	0	0
43	Feydhoo	0	0	0	8	*0.07*	0.04	0	11
44	Feevah	0	0	0	10	*0.00*	0.05	0	0
45	Bilehffahi	0	0	0	0	*0.04*	0.00	0	0
46	Foakaidhoo	0	0	0	13	*0.15*	0.07	0	11

STATISTICAL ANNEX 10: HOUSING

		2004	2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	house with thatch wall	house with sand floor	forty square feet or less housing-area	no com-pound	*Human Vulnera-bility Index*	Housing Index	house with thatch wall and sand floor	five or more people per room
47	Narudhoo	0	13	0	0	*0.07*	0.13	0	13
48	Maakandoodhoo	0	0	0	18	*0.10*	0.09	0	0
49	Maroshi	0	0	0	0	*0.05*	0.00	0	0
50	Lhaimagu	14	0	0	0	*0.27*	0.14	0	0
51	Firubaidhoo	0	0	0	0	*0.00*	0.00	0	0
52	Komandoo	0	0	0	46	*0.16*	0.23	0	0
53	Maaugoodhoo	0	0	0	6	*0.00*	0.03	0	0
54	FUNADHOO	0	0	10	0	*0.00*	0.10	0	0
55	Milandhoo	0	0	0	0		0.00	0	0
56	**NOONU ATOLL**	**2**	**2**	**3**	**3**	***0.14***	**0.08**	**1**	**7**
57	Hebadhoo	0	0	0	0	*0.00*	0.00	0	0
58	Kedhikolhudhoo	0	0	0	0	*0.00*	0.00	0	28
59	Maalhendhoo	0	0	0	8	*0.00*	0.04	0	0
60	Kudafari	7	0	0	0	*0.08*	0.07	0	0
61	Landhoo	14	0	8	9	*0.12*	0.26	0	0
62	Maafaru	0	10	10	0	*0.00*	0.20	0	0
63	Lhohi	0	0	0	0	*0.00*	0.00	0	8
64	Miladhoo	0	8	0	0	*0.09*	0.08	0	0
65	Magoodhoo	0	0	0	0	*0.20*	0.00	0	0
66	MANADHOO	0	0	13	12	*0.36*	0.19	0	13
67	Holhudhoo	0	0	0	4	*0.16*	0.02	0	11
68	Fodhdhoo	13	0	13	0	*0.37*	0.26	0	0
69	Velidhoo	6	3	0	0	*0.28*	0.06	3	0
70	**RAA ATOLL**	**3**	**1**	**12**	**28**	***0.16***	**0.28**	**1**	**9**
71	Alifushi	8	8	42	20	*0.14*	0.61	8	23
72	Vaadhoo	24	11	0	0	*0.36*	0.24	11	0
73	Rasgetheemu	0	0	12	23	*0.16*	0.23	0	0
74	Agolhitheemu	0	0	0	8	*0.04*	0.04	0	0
75	Hulhudhuffaaru	0	0	0	9	*0.00*	0.04	0	0
76	UGUFAARU	0	0	0	0	*0.00*	0.00	0	0
77	Kadholhudhoo	0	0	23	90	*0.47*	0.68	0	18
78	Maakurathu	15	0	15	6	*0.02*	0.32	0	20
79	Rasmaadhoo	0	0	0	13	*0.35*	0.06	0	26
80	Innamaadhoo	0	0	0	0	*0.00*	0.00	0	15
81	Maduvvari	4	0	7	12	*0.14*	0.18	0	0
82	Iguraidhoo	0	0	0	39	*0.02*	0.20	0	0
83	Fainu	0	0	0	15	*0.31*	0.07	0	0
84	Meedhoo	0	0	0	0	*0.02*	0.00	0	0
85	Kinolhas	0	0	0	0	*0.10*	0.00	0	0
86	**BAA ATOLL**	**1**	**3**	**10**	**22**	***0.15***	**0.24**	**1**	**2**
87	Kudarikilu	0	0	0	0	*0.32*	0.00	0	0
88	Kamadhoo	0	0	0	0	*0.27*	0.00	0	0
89	Kendhoo	0	0	0	14	*0.09*	0.07	0	14
90	Kihaadhoo	0	0	0	0	*0.35*	0.00	0	32
91	Dhonfanu	0	0	0	0	*0.00*	0.00	0	8
92	Dharavandhoo	0	0	0	27	*0.00*	0.14	0	0

	STATISTICAL ANNEX 10:	HOUSING							
		2004	2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	house with thatch wall	house with sand floor	forty square feet or less housing-area	no com-pound	*Human Vulnera-bility Index*	Housing Index	house with thatch wall and sand floor	five or more people per room
93	Maalhos	16	16	0	26	*0.13*	0.29	16	0
94	EYDHAFUSHI	0	0	7	28	*0.00*	0.21	0	0
95	Thulhaadhoo	0	10	24	49	*0.37*	0.58	0	0
96	Hithaadhoo	0	0	27	0	*0.09*	0.27	0	0
97	Fulhadhoo	0	0	0	0	*0.36*	0.00	0	0
98	Fehendhoo	10	2	0	0	*0.41*	0.13	0	0
99	Goidhoo	0	0	15	0	*0.00*	0.15	0	0
100	**LHAVIYANI ATOLL**	**1**	**2**	**2**	**53**	***0.41***	**0.31**	**0**	**6**
101	Hinnavaru	0	1	0	71	*0.31*	0.37	0	17
102	NAIFARU	0	2	4	60	*0.54*	0.37	0	0
103	Kurendhoo	0	0	0	8	*0.34*	0.04	0	0
104	Olhuvelifushi	0	0	0	0	*0.09*	0.00	0	0
105	Maafilaafushi	42	17	0	0	*0.74*	0.42	17	0
106	**KAAFU ATOLL**	**1**	**2**	**3**	**5**	***0.09***	**0.08**	**1**	**4**
107	Kaashidhoo	0	0	0	10	*0.00*	0.05	0	0
108	Gaafaru	0	0	0	19	*0.00*	0.09	0	0
109	Dhiffushi	0	5	22	5	*0.05*	0.30	0	0
110	THULUSDHOO	0	0	0	0	*0.00*	0.00	0	7
111	Huraa	0	0	14	0	*0.08*	0.14	0	14
112	Himmafushi	0	0	0	4	*0.20*	0.02	0	0
113	Gulhi	0	0	0	10	*0.22*	0.05	0	0
114	Maafushi	0	0	0	0	*0.14*	0.00	0	0
115	Guraidhoo	7	7	0	0	*0.18*	0.07	7	18
116	**ALIF ALIFU ATOLL**	**0**	**2**	**1**	**12**	***0.08***	**0.09**	**0**	**6**
117	Thoddoo	0	0	0	18	*0.17*	0.09	0	7
118	RASDHOO	0	0	0	17	*0.00*	0.08	0	0
119	Ukulhas	0	0	0	0	*0.18*	0.00	0	0
120	Mathiveri	0	0	0	0	*0.00*	0.00	0	9
121	Bodufolhudhoo	0	0	0	11	*0.00*	0.06	0	28
122	Feridhoo	5	17	12	0	*0.23*	0.29	5	14
123	Maalhos	0	0	0	26	*0.00*	0.13	0	0
124	Himendhoo	0	0	0	0	*0.00*	0.00	0	0
125	**ALIFU DHAALU ATOLL**	**0**	**5**	**2**	**11**	***0.07***	**0.12**	**0**	**2**
126	Hangnameedhoo	0	0	0	0	*0.04*	0.00	0	17
127	Omadhoo	0	0	0	0	*0.14*	0.00	0	0
128	Kuburudhoo	0	0	0	0	*0.16*	0.00	0	23
129	MAHIBADHOO	0	0	7	25	*0.00*	0.20	0	0
130	Mandhoo	0	0	0	0	*0.06*	0.00	0	0
131	Dhagethi	0	0	0	0	*0.00*	0.00	0	0
132	Dhigurah	0	0	0	16	*0.00*	0.08	0	0
133	Fenfushi	0	0	0	28	*0.43*	0.14	0	0
134	Dhidhdhoo	0	0	0	0	*0.17*	0.00	0	0
135	Maamigili	0	22	0	5	*0.00*	0.24	0	0
136	**VAAVU ATOLL**	**0**	**3**	**0**	**8**	***0.15***	**0.07**	**0**	**3**
137	Fulidhoo	0	0	0	0	*0.00*	0.00	0	14
138	Thinadhoo	0	0	0	8	*0.31*	0.04	0	0

STATISTICAL ANNEX 10: HOUSING

		2004	2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	house with thatch wall	house with sand floor	forty square feet or less housing-area	no com-pound	*Human Vulnera-bility Index*	Housing Index	house with thatch wall and sand floor	five or more people per room
139	FELIDHOO	0	10	0	20	*0.27*	0.20	0	0
140	Keyodhoo	0	0	0	0	*0.11*	0.00	0	0
141	Rakeedhoo	0	0	0	14	*0.08*	0.07	0	0
142	**MEEMU ATOLL**	**0**	**2**	**0**	**2**	***0.06***	**0.03**	**0**	**9**
143	Raimandhoo	0	9	0	0	*0.49*	0.09	0	10
144	Madifushi	0	0	0	0	*0.02*	0.00	0	15
145	Veyvah	0	0	0	0	*0.00*	0.00	0	0
146	Mulah	0	0	0	0	*0.00*	0.00	0	0
147	MULI	0	0	0	0	*0.00*	0.00	0	9
148	Naalaafushi	0	0	0	0	*0.16*	0.00	0	0
149	Kolhufushi	0	0	0	0	*0.00*	0.00	0	14
150	Dhiggaru	0	8	0	0	*0.15*	0.08	0	23
151	Maduvvari	0	0	0	24	*0.00*	0.12	0	0
152	**FAAFU ATOLL**	**0**	**0**	**8**	**0**	***0.09***	**0.08**	**0**	**15**
153	Feeali	0	0	0	0	*0.08*	0.00	0	17
154	Biledhdhoo	0	0	12	0	*0.12*	0.12	0	15
155	Magoodhoo	0	0	16	0	*0.05*	0.16	0	20
156	Dharaboodhoo	0	0	0	0	*0.18*	0.00	0	16
157	NILANDHOO	0	0	9	0	*0.06*	0.09	0	10
158	**DHAALU ATOLL**	**0**	**1**	**1**	**11**	***0.10***	**0.08**	**0**	**11**
159	Meedhoo	0	0	0	19	*0.00*	0.09	0	26
160	Badidhoo	0	0	0	0	*0.16*	0.00	0	41
161	Ribudhoo	7	0	0	7	*0.38*	0.10	0	0
162	Hulhudheli	0	0	0	0	*0.05*	0.00	0	0
163	Gemendhoo	0	0	0	19	*0.16*	0.09	0	0
164	Vaanee	0	0	0	0	*0.00*	0.00	0	0
165	Maaeboodhoo	0	8	9	0	*0.00*	0.17	0	0
166	KUDAHUVADHOO	0	0	0	24	*0.10*	0.12	0	0
167	**THAA ATOLL**	**0**	**0**	**4**	**6**	***0.22***	**0.07**	**0**	**5**
168	Buruni	0	0	0	0	*0.07*	0.00	0	0
169	Vilufushi	0	0	0	0	*0.41*	0.00	0	12
170	Madifushi	0	0	0	23	*0.16*	0.11	0	0
171	Dhiyamigili	0	0	28	0	*0.18*	0.28	0	0
172	Guraidhoo	0	0	0	0	*0.04*	0.00	0	11
173	Kadoodhoo	0	0	0	16	*0.30*	0.08	0	0
174	Vandhoo	0	0	0	0	*0.24*	0.00	0	0
175	Hirilandhoo	0	0	30	0	*0.00*	0.30	0	0
176	Gaadhiffushi	0	0	0	0	*0.00*	0.00	0	0
177	Thimarafushi	0	0	0	18	*0.27*	0.09	0	5
178	VEYMANDOO	0	0	0	0	*0.46*	0.00	0	0
179	Kibidhoo	0	0	0	0	*0.36*	0.00	0	9
180	Omadhoo	0	0	0	16	*0.14*	0.08	0	0
181	**LAAMU ATOLL**	**2**	**5**	**8**	**1**	***0.28***	**0.14**	**0**	**1**
182	Isdhoo	0	0	0	0	*0.18*	0.00	0	0
183	Dhabidhoo	0	0	0	0	*0.00*	0.00	0	0
184	Maabaidhoo	11	0	0	14	*0.22*	0.18	0	0

STATISTICAL ANNEX 10: HOUSING

		2004	2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**house with thatch wall**	**house with sand floor**	**forty square feet or less housing-area**	**no com-pound**	***Human Vulnera-bility Index***	**Housing Index**	**house with thatch wall and sand floor**	**five or more people per room**
185	Mundoo	0	0	0	0	*0.50*	0.00	0	0
186	Kalhaidhoo	0	0	0	0	*0.06*	0.00	0	0
187	Gamu	0	9	18	0	*0.25*	0.26	0	4
188	Maavah	0	8	0	0	*0.49*	0.08	0	0
189	FONADHOO	3	0	13	0	*0.27*	0.16	0	0
190	Gaadhoo	0	0	0	0	*0.30*	0.00	0	0
191	Maamendhoo	0	0	21	0	*0.33*	0.21	0	0
192	Hithadhoo	0	12	0	0	*0.00*	0.12	0	0
193	Kunahandhoo	7	29	14	0	*0.72*	0.43	7	0
194	**GAAFU ALIFU ATOLL**	**4**	**2**	**14**	**2**	***0.14***	**0.18**	**2**	**14**
195	Kolamaafushi	3	0	11	0	*0.00*	0.15	0	0
196	VILLINGILI	6	1	17	0	*0.25*	0.24	0	20
197	Maamendhoo	0	0	25	0	*0.09*	0.25	0	25
198	Nilandhoo	0	0	0	0	*0.27*	0.00	0	12
199	Dhaandhoo	11	11	12	0	*0.22*	0.23	11	0
200	Dhevvadhoo	0	0	13	0	*0.00*	0.13	0	13
201	Kodey	0	0	10	0	*0.25*	0.10	0	0
202	Dhiyadhoo	0	0	0	0	*0.02*	0.00	0	0
203	Gemanafushi	0	0	14	11	*0.03*	0.19	0	10
204	Kanduhulhudhoo	0	0	0	14	*0.06*	0.07	0	60
205	**GAAFU DHAALU ATOLL**	**2**	**1**	**4**	**3**	***0.30***	**0.08**	**1**	**10**
206	Madeveli	0	0	0	0	*0.41*	0.00	0	0
207	Hoadedhdhoo	0	0	0	0	*0.07*	0.00	0	15
208	Nadallaa	0	0	0	0	*0.54*	0.00	0	35
209	Gadhdhoo	0	0	0	0	*0.30*	0.00	0	12
210	Rathafandhoo	9	0	23	0	*0.36*	0.32	0	0
211	Vaadhoo	8	8	27	0	*0.64*	0.35	8	20
212	Fiyoari	0	0	0	12	*0.20*	0.06	0	0
213	Maathodaa	0	0	8	0	*0.00*	0.08	0	0
214	Fares	0	0	21	0	*0.50*	0.21	0	40
215	THINADHOO	4	0	0	5	*0.23*	0.06	0	7
216	**GNAVIYANI ATOLL**	**0**	**0**	**0**	**3**	***0.23***	**0.01**	**0**	**16**
217	FOAMMULAH	0	0	0	3	*0.23*	0.01	0	16
218	**SEENU ATOLL**	**0**	**1**	**0**	**4**	***0.07***	**0.03**	**0**	**5**
219	Meedhoo	0	0	0	0	*0.00*	0.00	0	6
220	HITHADHOO	0	0	0	8	*0.13*	0.04	0	8
221	Maradhoo	0	0	0	0	*0.00*	0.00	0	0
222	Feydhoo	0	4	0	0	*0.01*	0.04	0	0
223	Maradhoo-Feydhoo	0	0	0	0	*0.00*	0.00	0	0
224	Hulhudhoo	0	0	0	0	*0.08*	0.00	0	17

	STATISTICAL ANNEX 11:	ENVIRONMENT 1						
		2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**beach erosion**	**bury or dump garbage in non-demar-cated area**	**no toilet**	**cooking on wood**	**high population density**	***Human Vulnera-bility Index***	**Environ-ment Index**
1	**Maldives**	**68**	**8**	**4**	**24**	**50**	***1.00***	**1.00**
2	**Male'**	**0**	**0**	**1**	**0**	**100**	***1.00***	**1.00**
3	**Atoll average**	**97**	**11**	**6**	**35**	**29**	***1.00***	**1.00**
4	**HAA ALIFU ATOLL**	**100**	**6**	**6**	**39**	**20**	***1.00***	**0.98**
5	Thurakunu	100	0	29	0	0	*1.00*	0.79
6	Uligamu	100	29	62	100	0	*1.00*	1.00
7	Berinmadhoo	100	0	18	0	0	*1.00*	0.68
8	Hathifushi	100	0	19	100	0	*1.00*	1.00
9	Mulhadhoo	100	24	27	100	0	*1.00*	1.00
10	Hoarafushi	100	0	4	0	0	*1.00*	0.54
11	Ihavandhoo	100	0	0	0	0	*n.a.*	0.50
12	Kelaa	100	0	0	100	0	*1.00*	1.00
13	Vashafaru	100	0	0	100	0	*0.99*	1.00
14	DHIDHDHOO	100	21	4	0	100	*0.65*	1.00
15	Filladhoo	100	0	13	100	0	*1.00*	1.00
16	Maarandhoo	100	0	7	100	0	*1.00*	1.00
17	Thakandhoo	100	0	0	100	0	*1.00*	1.00
18	Utheemu	100	0	0	0	0	*0.58*	0.50
19	Muraidhoo	100	39	24	100	0	*1.00*	1.00
20	Baarah	100	0	0	100	0	*1.00*	1.00
21	**HAA DHAALU ATOLL**	**98**	**5**	12	**50**	**46**	***1.00***	**1.00**
22	Faridhoo	100	42	21	100	0	*1.00*	1.00
23	Hondaidhoo						*1.00*	
24	Hanimaadhoo	100	23	16	100	0	*1.00*	1.00
25	Finey	0	42	42	100	0	*0.78*	1.00
26	Naivaadhoo	100	0	49	100	0	*1.00*	1.00
27	Hirimaradhoo	100	30	6	100	0	*1.00*	1.00
28	Nolhivaranfaru	100	0	0	100	0	*1.00*	1.00
29	Nellaidhoo	100	0	11	0	0	*1.00*	0.61
30	Nolhivaramu	100	0	23	100	0	*1.00*	1.00
31	Kuribi	100	0	9	100	0	*1.00*	1.00
32	Kuburudhoo	100	0	13	100	0	*1.00*	1.00
33	KULHUDHUFFUSHI	100	2	8	0	100	*1.00*	1.00
34	Kumundhoo	100	19	8	100	0	*1.00*	1.00
35	Neykurendhoo	100	0	20	100	0	*1.00*	1.00
36	Vaikaradhoo	100	0	0	100	0	*1.00*	1.00
37	Maavaidhoo	100	0	32	100	0	*1.00*	1.00
38	Makunudhoo	100	0	11	100	0	*1.00*	1.00
39	**SHAVIYANI ATOLL**	**100**	**15**	**6**	**37**	**12**	***1.00***	**0.95**
40	Kaditheemu	100	0	0	0	0	*1.00*	0.50
41	Noomaraa	100	7	0	100	0	*1.00*	1.00
42	Goidhoo	100	12	8	100	0	*1.00*	1.00
43	Feydhoo	100	8	24	100	0	*1.00*	1.00
44	Feevah	100	10	8	100	0	*1.00*	1.00
45	Bilehffahi	100	0	2	100	0	*1.00*	1.00
46	Foakaidhoo	100	0	14	100	0	*1.00*	1.00
47	Narudhoo	100	37	15	100	0	*1.00*	1.00

	STATISTICAL ANNEX 11:	ENVIRONMENT 1						
		2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**beach erosion**	**bury or dump garbage in non-demar-cated area**	**no toilet**	**cooking on wood**	**high population density**	***Human Vulnera-bility Index***	**Environ-ment Index**
48	Maakandoodhoo	100	27	9	0	0	*0.55*	0.72
49	Maroshi	100	13	11	0	0	*1.00*	0.67
50	Lhaimagu	100	6	22	0	0	*1.00*	0.75
51	Firubaidhoo	100	59	7	100	0	*1.00*	1.00
52	Komandoo	100	66	0	0	100	*1.00*	1.00
53	Maaugoodhoo	100	0	0	0	0	*1.00*	0.50
54	FUNADHOO	100	0	0	0	0	*1.00*	0.50
55	Milandhoo	100	15	0	0	0		0.57
56	**NOONU ATOLL**	**100**	**11**	**6**	**40**	**16**	***1.00***	**0.97**
57	Hebadhoo	100	0	0	100	0	*0.66*	1.00
58	Kedhikolhudhoo	100	0	0	100	0	*1.00*	1.00
59	Maalhendhoo	100	0	25	100	0	*0.79*	1.00
60	Kudafari	100	0	0	100	0	*1.00*	1.00
61	Landhoo	100	14	4	0	0	*1.00*	0.61
62	Maafaru	100	0	14	100	0	*1.00*	1.00
63	Lhohi	100	0	7	100	0	*1.00*	1.00
64	Miladhoo	100	66	5	0	0	*1.00*	0.88
65	Magoodhoo	100	5	9	100	0	*1.00*	1.00
66	MANADHOO	100	0	0	0	0	*1.00*	0.50
67	Holhudhoo	100	27	16	0	100	*1.00*	1.00
68	Fodhdhoo	100	13	0	100	0	*1.00*	1.00
69	Velidhoo	100	0	0	0	0	*0.50*	0.50
70	**RAA ATOLL**	**78**	**26**	**3**	**42**	**41**	***1.00***	**1.00**
71	Alifushi	100	8	0	100	0	*1.00*	1.00
72	Vaadhoo	100	0	13	100	0	*1.00*	1.00
73	Rasgetheemu	100	10	13	0	0	*0.97*	0.68
74	Agolhitheemu	0	0	0	100	0	*0.56*	0.50
75	Hulhudhuffaaru	100	0	0	100	0	*1.00*	1.00
76	UGUFAARU	100	0	3	0	0	*0.80*	0.53
77	Kadholhudhoo	0	100	0	0	100	*1.00*	1.00
78	Maakurathu	100	10	16	100	0	*1.00*	1.00
79	Rasmaadhoo	100	0	2	0	0	*1.00*	0.52
80	Innamaadhoo	100	0	0	0	0	*0.70*	0.50
81	Maduvvari	100	7	8	0	100	*1.00*	1.00
82	Iguraidhoo	100	19	0	0	0	*1.00*	0.59
83	Fainu	100	66	11	100	0	*1.00*	1.00
84	Meedhoo	100	0	0	100	100	*1.00*	1.00
85	Kinolhas	100	18	0	100	0	*1.00*	1.00
86	**BAA ATOLL**	**100**	**9**	**1**	**43**	**56**	***1.00***	**1.00**
87	Kudarikilu	100	14	0	0	0	*1.00*	0.57
88	Kamadhoo	100	0	0	0	0	*1.00*	0.50
89	Kendhoo	100	0	0	100	100	*1.00*	1.00
90	Kihaadhoo	100	0	0	100	0	*1.00*	1.00
91	Dhonfanu	100	0	0	100	0	*1.00*	1.00
92	Dharavandhoo	100	15	0	0	0	*1.00*	0.57
93	Maalhos	100	0	0	0	0	*1.00*	0.50
94	EYDHAFUSHI	100	7	0	100	100	*1.00*	1.00

	STATISTICAL ANNEX 11:	ENVIRONMENT 1						
		2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**beach erosion**	**bury or dump garbage in non-demar-cated area**	**no toilet**	**cooking on wood**	**high population density**	***Human Vulnera-bility Index***	**Environ-ment Index**
95	Thulhaadhoo	100	20	0	0	100	*1.00*	1.00
96	Hithaadhoo	100	0	11	0	0	*1.00*	0.61
97	Fulhadhoo	100	0	10	0	0	*1.00*	0.60
98	Fehendhoo	100	13	0	100	0	*1.00*	1.00
99	Goidhoo	100	15	5	0	0	*1.00*	0.62
100	**LHAVIYANI ATOLL**	**100**	**2**	**1**	**47**	**94**	***1.00***	**1.00**
101	Hinnavaru	100	2	0	0	100	*1.00*	1.00
102	NAIFARU	100	2	0	100	100	*1.00*	1.00
103	Kurendhoo	100	0	0	0	100	*1.00*	1.00
104	Olhuvelifushi	100	0	10	0	0	*1.00*	0.60
105	Maafilaafushi	100	6	8	100	0	*n.a.*	1.00
106	**KAAFU ATOLL**	**100**	**2**	**3**	**29**	**41**	***1.00***	**1.00**
107	Kaashidhoo	100	5	13	100	0	*n.a.*	1.00
108	Gaafaru	100	0	0	0	100	*1.00*	1.00
109	Dhiffushi	100	0	0	0	100	*1.00*	1.00
110	THULUSDHOO	100	0	0	0	0	*1.00*	0.50
111	Huraa	100	0	0	0	0	*1.00*	0.50
112	Himmafushi	100	0	4	100	0	*0.90*	1.00
113	Gulhi	100	0	0	0	100	*1.00*	1.00
114	Maafushi	100	12	0	0	0	*1.00*	0.56
115	Guraidhoo	100	0	0	0	100	*1.00*	1.00
116	**ALIF ALIFU ATOLL**	**80**	**8**	**4**	**33**	**27**	***1.00***	**0.91**
117	Thoddoo	0	24	0	0	0	*1.00*	0.12
118	RASDHOO	100	0	0	0	100	*0.87*	1.00
119	Ukulhas	100	0	0	0	0	*1.00*	0.50
120	Mathiveri	100	0	0	100	0	*1.00*	1.00
121	Bodufolhudhoo	100	0	0	100	100	*1.00*	1.00
122	Feridhoo	100	7	29	0	0	*1.00*	0.83
123	Maalhos	100	14	10	100	0	*0.76*	1.00
124	Himendhoo	100	4	0	0	0	*1.00*	0.52
125	**ALIFU DHAALU ATOLL**	**100**	**2**	**4**	**43**	**31**	***1.00***	**1.00**
126	Hangnameedhoo	100	0	15	0	0	*1.00*	0.65
127	Omadhoo	100	0	0	0	0	*1.00*	0.50
128	Kuburudhoo	100	0	0	0	100	*1.00*	1.00
129	MAHIBADHOO	100	5	6	100	100	*1.00*	1.00
130	Mandhoo	100	0	4	0	0	*1.00*	0.54
131	Dhagethi	100	10	0	100	0	*1.00*	1.00
132	Dhigurah	100	0	0	100	0	*1.00*	1.00
133	Fenfushi	n.a.	0	0	0	0	*0.61*	0.00
134	Dhidhdhoo	100	0	0	100	0	*1.00*	1.00
135	Maamigili	100	0	4	0	0	*1.00*	0.54
136	**VAAVU ATOLL**	**100**	**0**	**0**	**14**	**36**	***1.00***	**0.93**
137	Fulidhoo	100	0	0	0	0	*0.50*	0.50
138	Thinadhoo	100	0	0	100	0	*1.00*	1.00
139	FELIDHOO	100	0	0	0	0	*1.00*	0.50
140	Keyodhoo	100	0	0	0	100	*1.00*	1.00
141	Rakeedhoo	100	0	0	100	0	*1.00*	1.00

	STATISTICAL ANNEX 11:	ENVIRONMENT 1						
		2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	beach erosion	bury or dump garbage in non-demar-cated area	no toilet	cooking on wood	high population density	*Human Vulnera-bility Index*	Environ-ment Index
142	**MEEMU ATOLL**	**100**	**8**	**9**	**47**	**27**	***1.00***	**1.00**
143	Raimandhoo	100	16	9	100	0	*1.00*	1.00
144	Madifushi	100	0	8	100	0	*1.00*	1.00
145	Veyvah	100	0	19	100	0	*0.58*	1.00
146	Mulah	100	18	0	100	0	*1.00*	1.00
147	MULI	100	0	0	0	0	*1.00*	0.50
148	Naalaafushi	100	0	6	100	0	*1.00*	1.00
149	Kolhufushi	100	17	40	0	0	*1.00*	0.99
150	Dhiggaru	100	0	0	0	100	*1.00*	1.00
151	Maduvvari	100	0	0	100	100	*1.00*	1.00
152	**FAAFU ATOLL**	**100**	**1**	**18**	**33**	**23**	***1.00***	**1.00**
153	Feeali	100	0	21	0	100	*1.00*	1.00
154	Biledhdhoo	100	0	12	100	0	*1.00*	1.00
155	Magoodhoo	100	0	0	0	0	*1.00*	0.50
156	Dharaboodhoo	100	16	35	100	0	*1.00*	1.00
157	NILANDHOO	100	0	26	0	0	*1.00*	0.76
158	**DHAALU ATOLL**	**100**	**1**	**17**	**23**	**24**	***1.00***	**1.00**
159	Meedhoo	100	0	0	0	100	*1.00*	1.00
160	Badidhoo	100	0	45	0	0	*1.00*	0.95
161	Ribudhoo	100	0	7	0	0	*1.00*	0.57
162	Hulhudheli	100	0	0	100	0	*1.00*	1.00
163	Gemendhoo	100	0	20	0	100	*1.00*	1.00
164	Vaanee	100	0	20	0	0	*1.00*	0.70
165	Maaeboodhoo	100	9	47	100	0	*0.62*	1.00
166	KUDAHUVADHOO	100	0	9	0	0	*1.00*	0.59
167	**THAA ATOLL**	**100**	**11**	**2**	**16**	**29**	***1.00***	**0.94**
168	Buruni	100	0	0	100	0	*1.00*	1.00
169	Vilufushi	100	0	9	0	100	*1.00*	1.00
170	Madifushi	100	20	0	0	0	*1.00*	0.60
171	Dhiyamigili	100	0	0	100	0	*1.00*	1.00
172	Guraidhoo	100	10	0	0	0	*1.00*	0.55
173	Kadoodhoo	100	7	0	100	0	*1.00*	1.00
174	Vandhoo	100	8	13	0	0	*1.00*	0.68
175	Hirilandhoo	100	0	0	0	0	*1.00*	0.50
176	Gaadhiffushi	100	20	12	0	0	*1.00*	0.72
177	Thimarafushi	100	25	0	0	100	*1.00*	1.00
178	VEYMANDOO	100	4	0	0	0	*1.00*	0.52
179	Kibidhoo	100	0	0	0	0	*1.00*	0.50
180	Omadhoo	100	62	4	100	0	*1.00*	1.00
181	**LAAMU ATOLL**	**98**	**39**	**14**	**73**	**8**	***1.00***	**1.00**
182	Isdhoo	100	28	7	100	0	*1.00*	1.00
183	Dhabidhoo	100	18	8	100	0	*1.00*	1.00
184	Maabaidhoo	100	66	25	100	0	*1.00*	1.00
185	Mundoo	100	16	15	100	0	*1.00*	1.00
186	Kalhaidhoo	100	52	21	0	0	*1.00*	0.97
187	Gamu	100	32	21	100	0	*1.00*	1.00
188	Maavah	100	84	18	0	0	*1.00*	1.00

STATISTICAL ANNEX 11: ENVIRONMENT 1

		2004	2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**beach erosion**	**bury or dump garbage in non-demar-cated area**	**no toilet**	**cooking on wood**	**high population density**	***Human Vulnera-bility Index***	**Environ-ment Index**
189	FONADHOO	100	0	6	100	0	*0.51*	1.00
190	Gaadhoo	0	0	0	0	0	*1.00*	0.00
191	Maamendhoo	100	98	3	0	100	*0.88*	1.00
192	Hithadhoo	100	0	18	100	0	*1.00*	1.00
193	Kunahandhoo	100	56	18	100	0	*1.00*	1.00
194	**GAAFU ALIFU ATOLL**	**96**	**33**	**5**	**10**	**28**	***1.00***	**1.00**
195	Kolamaafushi	100	54	0	0	100	*1.00*	1.00
196	VILLINGILI	100	8	0	0	0	*0.82*	0.54
197	Maamendhoo	100	50	8	0	0	*1.00*	0.83
198	Nilandhoo	100	0	0	100	0	*1.00*	1.00
199	Dhaandhoo	100	42	0	0	100	*1.00*	1.00
200	Dhevvadhoo	100	6	0	0	0	*1.00*	0.53
201	Kodey	0	10	24	100	0	*1.00*	0.78
202	Dhiyadhoo	100	0	8	100	0	*1.00*	1.00
203	Gemanafushi	100	61	0	0	0	*1.00*	0.81
204	Kanduhulhudhoo	100	63	46	0	0	*1.00*	1.00
205	**GAAFU DHAALU ATOLL**	**100**	**16**	**2**	**49**	**15**	***1.00***	**0.99**
206	Madeveli	100	14	8	100	0	*1.00*	1.00
207	Hoadedhdhoo	100	10	0	0	0	*1.00*	0.55
208	Nadallaa	100	23	0	100	0	*1.00*	1.00
209	Gadhdhoo	100	39	5	100	100	*1.00*	1.00
210	Rathafandhoo	100	27	0	0	0	*1.00*	0.64
211	Vaadhoo	100	54	0	100	0	*1.00*	1.00
212	Fiyoari	100	9	0	100	0	*1.00*	1.00
213	Maathodaa	100	0	0	0	0	*1.00*	0.50
214	Fares	100	0	0	100	0	*1.00*	1.00
215	THINADHOO	100	3	0	0	0	*1.00*	0.52
216	**GNAVIYANI ATOLL**	**100**	**1**	**6**	**0**	**0**	***1.00***	**0.56**
217	FOAMMULAH	100	1	6	0	0	*1.00*	0.56
218	**SEENU ATOLL**	**100**	**4**	**0**	**0**	**16**	***1.00***	**0.68**
219	Meedhoo	100	2	0	0	0	*n.a.*	0.51
220	HITHADHOO	100	5	0	0	0	*0.80*	0.53
221	Maradhoo	100	6	0	0	0	*1.00*	0.53
222	Feydhoo	100	0	0	0	100	*1.00*	1.00
223	Maradhoo-Feydhoo	100	0	0	0	0	*1.00*	0.50
224	Hulhudhoo	100	0	0	0	0	*1.00*	0.50

STATISTICAL ANNEX 11: ENVIRONMENT 2

		2004	2004	2004	2004
	Atoll / Island name	**cooking on kerosene**	**cooking on gas**	**toilet connected to sea or sceptic tank**	**open area surrounded by walls (gifili)**
1	**Maldives**	**40**	**52**	**90**	**6**
2	**Male'**	**25**	**77**	**99**	**0**
3	**Atoll average**	**46**	**41**	**86**	**8**
4	**HAA ALIFU ATOLL**	**51**	**20**	**81**	**13**
5	Thurakunu	39		57	14
6	Uligamu	24	16	36	2
7	Berinmadhoo	50		59	24
8	Hathifushi	45	21	81	0
9	Mulhadhoo	36	11	49	24
10	Hoarafushi	32	13	77	19
11	Ihavandhoo	36	26	94	6
12	Kelaa	84	12	88	12
13	Vashafaru	75	8	74	26
14	DHIDHDHOO	79	16	96	0
15	Filladhoo	20	40	50	37
16	Maarandhoo	38	17	76	17
17	Thakandhoo	48	27	90	10
18	Utheemu	16	96	100	0
19	Muraidhoo	63	11	63	13
20	Baarah	54	13	65	35
21	**HAA DHAALU ATOLL**	**42**	**28**	**76**	**12**
22	Faridhoo	60	5	33	47
23	Hondaidhoo	0	0		
24	Hanimaadhoo	20	7	73	11
25	Finey	61	5	34	24
26	Naivaadhoo	37	46	51	0
27	Hirimaradhoo	47	6	15	79
28	Nolhivaranfaru	31	21	100	0
29	Nellaidhoo	69	37	77	11
30	Nolhivaramu	9	6	50	27
31	Kuribi	36		68	23
32	Kuburudhoo	0		46	41
33	KULHUDHUFFUSHI	57	35	87	5
34	Kumundhoo	38	10	54	38
35	Neykurendhoo	31	41	54	26
36	Vaikaradhoo	33	11	100	0
37	Maavaidhoo	58		68	0
38	Makunudhoo	0	73	89	0
39	**SHAVIYANI ATOLL**	**33**	**30**	**80**	**13**
40	Kaditheemu		74	100	0
41	Noomaraa	64	17	83	17
42	Goidhoo		43	83	8
43	Feydhoo	46	6	46	30
44	Feevah	32	36	76	16
45	Bilehffahi	9	12	77	21
46	Foakaidhoo	29	11	69	17
47	Narudhoo	54		42	44
48	Maakandoodhoo		38	67	24

	STATISTICAL ANNEX 11:	ENVIRONMENT 2			
		2004	2004	2004	2004
	Atoll / Island name	**cooking on kerosene**	**cooking on gas**	**toilet connected to sea or sceptic tank**	**open area surrounded by walls (gifili)**
49	Maroshi	50		89	0
50	Lhaimagu	37	41	69	10
51	Firubaidhoo	22	15	51	41
52	Komandoo	63	24	89	11
53	Maaugoodhoo	35	22	84	16
54	FUNADHOO	27	46	100	0
55	Milandhoo	31	42	82	18
56	**NOONU ATOLL**	**40**	**33**	**91**	**3**
57	Hebadhoo	39	14	78	22
58	Kedhikolhudhoo	21	22	100	0
59	Maalhendhoo	8		60	15
60	Kudafari	14	40	93	7
61	Landhoo	82	20	96	0
62	Maafaru	22	5	86	0
63	Lhohi	4	13	93	0
64	Miladhoo	58	37	95	0
65	Magoodhoo	52	47	66	26
66	MANADHOO	51	57	100	0
67	Holhudhoo	50	43	84	0
68	Fodhdhoo	13	49	85	15
69	Velidhoo	49	41	97	3
70	**RAA ATOLL**	**43**	**34**	**89**	**8**
71	Alifushi	9	19	90	10
72	Vaadhoo	31	11	76	11
73	Rasgetheemu	71	18	82	4
74	Agolhitheemu	45	8	54	46
75	Hulhudhuffaaru	44	17	100	0
76	UGUFAARU	9	55	97	0
77	Kadholhudhoo	81	37	100	0
78	Maakurathu	16	31	52	31
79	Rasmaadhoo	66	6	88	10
80	Innamaadhoo	39	61	100	0
81	Maduvvari	52	45	82	10
82	Iguraidhoo	29	42	81	19
83	Fainu	33		28	61
84	Meedhoo	37	45	100	0
85	Kinolhas	35	33	91	9
86	**BAA ATOLL**	**58**	**38**	**95**	**4**
87	Kudarikilu	49	47	100	0
88	Kamadhoo	40	63	91	9
89	Kendhoo	76	24	100	0
90	Kihaadhoo	37	10	100	0
91	Dhonfanu	65		57	43
92	Dharavandhoo	17	75	100	0
93	Maalhos		36	100	0
94	EYDHAFUSHI	72	48	100	0
95	Thulhaadhoo	73	17	100	0
96	Hithaadhoo	75	20	80	9

	STATISTICAL ANNEX 11:	ENVIRONMENT 2			
		2004	2004	2004	2004
	Atoll / Island name	cooking on kerosene	cooking on gas	toilet connected to sea or sceptic tank	open area surrounded by walls (gifili)
97	Fulhadhoo	27	73	80	10
98	Fehendhoo	38	96	100	0
99	Goidhoo	16	55	81	15
100	**LHAVIYANI ATOLL**	**70**	**24**	**99**	**1**
101	Hinnavaru	90	6	100	0
102	NAIFARU	55	39	100	0
103	Kurendhoo	70	23	100	0
104	Olhuvelifushi	78	12	78	12
105	Maafilaafushi	14	44	75	17
106	**KAAFU ATOLL**	**24**	**61**	**96**	**1**
107	Kaashidhoo	26	39	87	0
108	Gaafaru	15	72	100	0
109	Dhiffushi	13	42	100	0
110	THULUSDHOO	25	67	100	0
111	Huraa	28	64	100	0
112	Himmafushi	69	54	96	0
113	Gulhi	25	55	100	0
114	Maafushi	21	85	100	0
115	Guraidhoo	4	78	93	7
116	**ALIF ALIFU ATOLL**	**25**	**60**	**94**	**2**
117	Thoddoo	15	65	100	0
118	RASDHOO	26	84	100	0
119	Ukulhas	2	84	89	11
120	Mathiveri	29	85	100	0
121	Bodufolhudhoo	51	41	100	0
122	Feridhoo	63	17	63	7
123	Maalhos	10	34	90	0
124	Himendhoo	20	67	100	0
125	**ALIFU DHAALU ATOLL**	**32**	**79**	**96**	**0**
126	Hangnameedhoo	35	65	85	0
127	Omadhoo	34	67	100	0
128	Kuburudhoo	80	20	100	0
129	MAHIBADHOO	32	90	94	0
130	Mandhoo	34	57	96	0
131	Dhagethi	52	98	100	0
132	Dhigurah	34	78	100	0
133	Fenfushi	7	89	100	0
134	Dhidhdhoo	57	57	100	0
135	Maamigili	18	83	96	0
136	**VAAVU ATOLL**	**65**	**38**	**100**	**0**
137	Fulidhoo	60	76	100	0
138	Thinadhoo	13	8	100	0
139	FELIDHOO	51	62	100	0
140	Keyodhoo	91		100	0
141	Rakeedhoo	40	33	100	0
142	**MEEMU ATOLL**	**57**	**44**	**86**	**5**
143	Raimandhoo	27	27	75	16
144	Madifushi	38	21	82	10

STATISTICAL ANNEX 11:		ENVIRONMENT 2			
		2004	2004	2004	2004
	Atoll / Island name	cooking on kerosene	cooking on gas	toilet connected to sea or sceptic tank	open area surrounded by walls (gifili)
145	Veyvah	21	41	81	0
146	Mulah	38	75	100	0
147	MULI	22	87	100	0
148	Naalaafushi	71	6	94	0
149	Kolhufushi	68	21	46	14
150	Dhiggaru	100	20	91	9
151	Maduvvari	83	15	100	0
152	**FAAFU ATOLL**	**32**	**35**	**77**	**5**
153	Feeali	26	28	71	9
154	Biledhdhoo	28		78	10
155	Magoodhoo	19	33	100	0
156	Dharaboodhoo	30	61	65	0
157	NILANDHOO	44	63	74	0
158	**DHAALU ATOLL**	**26**	**50**	**81**	**2**
159	Meedhoo		100	100	0
160	Badidhoo	10	25	55	0
161	Ribudhoo	33	59	93	0
162	Hulhudheli	43	8	100	0
163	Gemendhoo	26	79	52	27
164	Vaanee	53	36	80	0
165	Maaeboodhoo	29	24	53	0
166	KUDAHUVADHOO	37	52	91	0
167	**THAA ATOLL**	**53**	**41**	**88**	**10**
168	Buruni	79	29	85	15
169	Vilufushi	49	32	72	19
170	Madifushi	16	39	82	18
171	Dhiyamigili	40	38	85	15
172	Guraidhoo	39	84	100	0
173	Kadoodhoo	67	22	100	0
174	Vandhoo	52	25	65	22
175	Hirilandhoo	53	67	100	0
176	Gaadhiffushi	49	12	76	12
177	Thimarafushi	86	27	92	8
178	VEYMANDOO	67	18	84	16
179	Kibidhoo	46	33	95	5
180	Omadhoo	35	44	83	13
181	**LAAMU ATOLL**	**48**	**42**	**76**	**10**
182	Isdhoo	38	38	67	26
183	Dhabidhoo	49	32	92	0
184	Maabaidhoo	21	62	75	0
185	Mundoo	64	27	85	0
186	Kalhaidhoo	54	7	79	0
187	Gamu	46	52	79	0
188	Maavah	48	33	75	8
189	FONADHOO	55	62	88	6
190	Gaadhoo	56	10	100	0
191	Maamendhoo	70	51	72	25
192	Hithadhoo	23	36	64	18

STATISTICAL ANNEX 11: ENVIRONMENT 2

		2004	2004	2004	2004
	Atoll / Island name	cooking on kerosene	cooking on gas	toilet connected to sea or sceptic tank	open area surrounded by walls (gifili)
193	Kunahandhoo	64	5	40	42
194	**GAAFU ALIFU ATOLL**	**42**	**43**	**72**	**23**
195	Kolamaafushi	33	64	77	23
196	VILLINGILI	61	39	86	14
197	Maamendhoo	67	15	50	42
198	Nilandhoo	57		85	15
199	Dhaandhoo	35	32	71	29
200	Dhevvadhoo	25	63	100	0
201	Kodey	35	6	53	24
202	Dhiyadhoo	53	18	50	42
203	Gemanafushi		83	66	34
204	Kanduhulhudhoo	33	70	38	16
205	**GAAFU DHAALU ATOLL**	**51**	**39**	**86**	**13**
206	Madeveli	31	37	70	21
207	Hoadedhdhoo	31	37	61	39
208	Nadallaa	55	5	65	35
209	Gadhdhoo	66	29	82	14
210	Rathafandhoo	82	16	70	30
211	Vaadhoo	48	13	73	27
212	Fiyoari	70	23	97	3
213	Maathodaa	27	93	100	0
214	Fares	9	49	72	28
215	THINADHOO	54	51	100	0
216	**GNAVIYANI ATOLL**	**66**	**62**	**92**	**3**
217	FOAMMULAH	66	62	92	3
218	**SEENU ATOLL**	**59**	**59**	**92**	**8**
219	Meedhoo	50	52	94	6
220	HITHADHOO	48	68	90	10
221	Maradhoo	65	50	100	0
222	Feydhoo	89	41	100	0
223	Maradhoo-Feydhoo	85	50	87	13
224	Hulhudhoo	43	70	83	17

	STATISTICAL ANNEX 12:	FOOD SECURITY					
		2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	food crisis	height for age (stunting)	*Human Vulnerability Index*	Food Security Index	weight for age (under-nutrition)	weight for height (wasting)
1	**Maldives**	**7**	**22**	***0.42***	**0.28**	**31**	**20**
2.0	**Male'**	**7**	**17**	***0.18***	**0.24**	**35**	**23**
3	**Atoll average**	**7**	**23**	***0.50***	**0.29**	**30**	**19**
4	**HAA ALIFU ATOLL**	**6**	**11**	***0.55***	**0.17**	**22**	**28**
5	Thurakunu	0	33	*0.50*	0.33	0	0
6	Uligamu	49	0	*0.67*	0.49	67	67
7	Berinmadhoo	0	0	*1.00*	0.00	50	50
8	Hathifushi	0	20	*0.06*	0.20	40	40
9	Mulhadhoo	9	50	*0.75*	0.59	50	25
10	Hoarafushi	16	0	*0.39*	0.16	29	71
11	Ihavandhoo	6	7	*0.80*	0.14	43	29
12	Kelaa	4	0	*1.00*	0.04	0	0
13	Vashafaru	8	13	*0.32*	0.20	13	0
14	DHIDHDHOO	0	14	*0.25*	0.14	14	29
15	Filladhoo	3	n.a.	*0.67*	0.03	n.a.	n.a.
16	Maarandhoo	0	20	*0.00*	0.20	40	40
17	Thakandhoo	0	100	*0.60*	1.00	0	0
18	Utheemu	0	0	*0.16*	0.00	0	33
19	Muraidhoo	0	50	*1.00*	0.50	0	0
20	Baarah	7	0	*1.00*	0.07	0	0
21	**HAA DHAALU ATOLL**	**7**	**11**	***0.55***	**0.18**	**28**	**22**
22	Faridhoo	0	75	*0.67*	0.75	25	0
23	Hondaidhoo			*0.33*			
24	Hanimaadhoo	0	0	*0.50*	0.00	33	67
25	Finey	0	100	*1.00*	1.00	0	0
26	Naivaadhoo	0	100	*0.44*	1.00	100	50
27	Hirimaradhoo	0	13	*0.50*	0.13	38	0
28	Nolhivaranfaru	0	0	*0.49*	0.00	50	50
29	Nellaidhoo	0	0	*0.50*	0.00	0	0
30	Nolhivaramu	0	0	*0.40*	0.00	38	44
31	Kuribi	0	67	*0.66*	0.67	33	33
32	Kuburudhoo	0	0	*0.80*	0.00	33	33
33	KULHUDHUFFUSHI	8	0	*0.43*	0.08	17	11
34	Kumundhoo	10	0	*0.61*	0.10	0	0
35	Neykurendhoo	0	33	*0.71*	0.33	33	0
36	Vaikaradhoo	44	n.a.	*0.53*	0.44	n.a.	n.a.
37	Maavaidhoo	0	33	*0.00*	0.33	67	67
38	Makunudhoo	0	0	*1.00*	0.00	33	0
39	**SHAVIYANI ATOLL**	**3**	**32**	***0.51***	**0.35**	**28**	**11**
40	Kaditheemu	0	0	*0.71*	0.00	20	0
41	Noomaraa	17	33	*0.16*	0.50	33	17
42	Goidhoo	0	50	*1.00*	0.50	0	0
43	Feydhoo	0	40	*0.60*	0.40	20	0
44	Feevah	0	33	*0.33*	0.33	33	11
45	Bilehffahi	9	100	*1.00*	1.09	0	0
46	Foakaidhoo	11	50	*0.20*	0.61	50	0

	STATISTICAL ANNEX 12:	FOOD SECURITY					
		2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**food crisis**	**height for age (stunting)**	***Human Vulnerability Index***	**Food Security Index**	**weight for age (under-nutrition)**	**weight for height (wasting)**
47	Narudhoo	40	100	*0.50*	1.00	100	100
48	Maakandoodhoo	0	33	*1.00*	0.33	67	0
49	Maroshi	0	33	*0.38*	0.33	33	0
50	Lhaimagu	0	0	*0.29*	0.00	0	0
51	Firubaidhoo	0	20	*0.00*	0.20	40	20
52	Komandoo	0	0	*0.50*	0.00	11	11
53	Maaugoodhoo	0	0	*0.67*	0.00	0	0
54	FUNADHOO	0	60	*0.09*	0.60	60	20
55	Milandhoo	0	40		0.40	20	20
56	**NOONU ATOLL**	**3**	**37**	***0.55***	**0.40**	**49**	**18**
57	Hebadhoo	0	0	*0.44*	0.00	0	0
58	Kedhikolhudhoo	0	57	*0.75*	0.57	57	14
59	Maalhendhoo	13	50	*0.47*	0.63	67	17
60	Kudafari	0	25	*0.50*	0.25	0	0
61	Landhoo	0	0	*0.40*	0.00	0	33
62	Maafaru	10	20	*0.57*	0.30	60	0
63	Lhohi	9	17	*0.50*	0.25	83	50
64	Miladhoo	0	40	*0.72*	0.40	40	0
65	Magoodhoo	0	50	*0.38*	0.50	50	25
66	MANADHOO	12	50	*0.48*	0.62	60	40
67	Holhudhoo	0	38	*0.67*	0.38	38	0
68	Fodhdhoo	3	50	*0.93*	0.53	100	100
69	Velidhoo	0	0	*n.a*	0.00	33	0
70	**RAA ATOLL**	**10**	**31**	***0.56***	**0.42**	**36**	**14**
71	Alifushi	25	10	*0.33*	0.35	40	20
72	Vaadhoo	19	60	*0.67*	0.79	100	40
73	Rasgetheemu	0	33	*0.33*	0.33	33	0
74	Agolhitheemu	11	29	*0.50*	0.40	29	0
75	Hulhudhuffaaru	0	0	*0.50*	0.00	0	0
76	UGUFAARU	11	13	*0.64*	0.23	38	25
77	Kadholhudhoo	12	40	*0.55*	0.52	50	10
78	Maakurathu	5	50	*1.00*	0.55	0	0
79	Rasmaadhoo	15	50	*0.00*	0.65	50	0
80	Innamaadhoo	17	18	*0.83*	0.35	0	0
81	Maduvvari	10	22	*0.78*	0.32	44	0
82	Iguraidhoo	0	50	*0.86*	0.50	33	33
83	Fainu	16	67	*0.38*	0.83	33	0
84	Meedhoo	8	100	*0.29*	1.00	0	0
85	Kinolhas	0	0	*0.64*	0.00	67	50
86	**BAA ATOLL**	**4**	**25**	***0.27***	**0.28**	**31**	**23**
87	Kudarikilu	0	0	*0.25*	0.00	0	0
88	Kamadhoo	0	17	*0.20*	0.17	33	33
89	Kendhoo	13	57	*0.24*	0.71	29	0
90	Kihaadhoo	0	33	*0.90*	0.33	67	0
91	Dhonfanu	0	25	*0.57*	0.25	75	25
92	Dharavandhoo	6	0	*0.25*	0.06	0	0

	STATISTICAL ANNEX 12:	FOOD SECURITY					
		2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	food crisis	height for age (stunting)	*Human Vulnerability Index*	Food Security Index	weight for age (under-nutrition)	weight for height (wasting)
93	Maalhos	16	67	*0.00*	0.82	33	33
94	EYDHAFUSHI	0	0	*0.06*	0.00	0	13
95	Thulhaadhoo	7	33	*0.29*	0.40	44	44
96	Hithaadhoo	0	20	*0.16*	0.20	40	20
97	Fulhadhoo	0	50	*0.67*	0.50	100	100
98	Fehendhoo	0	33	*0.08*	0.33	50	17
99	Goidhoo	0	25	*0.50*	0.25	50	50
100	**LHAVIYANI ATOLL**	**6**	**39**	***0.38***	**0.45**	**18**	**6**
101	Hinnavaru	0	89	*0.31*	0.89	0	0
102	NAIFARU	3	0	*0.20*	0.03	13	13
103	Kurendhoo	23	83	*1.00*	1.06	50	0
104	Olhuvelifushi	22	0	*1.00*	0.22	0	0
105	Maafilaafushi	17	0	*0.07*	0.17	0	0
106	**KAAFU ATOLL**	**3**	**20**	***0.27***	**0.23**	**35**	**19**
107	Kaashidhoo	9	60	*0.25*	0.69	60	40
108	Gaafaru	0	0	*0.17*	0.00	50	0
109	Dhiffushi	0	0	*0.13*	0.00	0	17
110	THULUSDHOO	7	0	*0.33*	0.07	0	0
111	Huraa	0	25	*0.08*	0.25	25	0
112	Himmafushi	3	50		0.53	50	25
113	Gulhi	0	29	*0.33*	0.29	14	0
114	Maafushi	0	25	*0.60*	0.25	38	25
115	Guraidhoo	0	0	*0.13*	0.00	33	33
116	**ALIF ALIFU ATOLL**	**2**	**22**	***0.18***	**0.24**	**32**	**30**
117	Thoddoo	0	23	*0.10*	0.23	54	54
118	RASDHOO	0	0	*0.25*	0.00	0	33
119	Ukulhas	0	20	*0.16*	0.20	20	20
120	Mathiveri	10	40	*0.21*	0.50	40	40
121	Bodufolhudhoo	0	0	*0.63*	0.00	0	17
122	Feridhoo	0	67	*0.50*	0.67	33	0
123	Maalhos	0	25	*0.00*	0.25	25	0
124	Himendhoo	8	0	*0.00*	0.08	0	0
125	**ALIFU DHAALU ATOLL**	**4**	**13**	***0.34***	**0.18**	**24**	**19**
126	Hangnameedhoo	17	50	*0.33*	0.67	50	0
127	Omadhoo	0	20	*0.74*	0.20	40	40
128	Kuburudhoo	7	0	*0.33*	0.07	50	75
129	MAHIBADHOO	0	18	*0.24*	0.18	27	18
130	Mandhoo	0	0	*0.29*	0.00	33	33
131	Dhagethi	2	14	*0.17*	0.17	14	0
132	Dhigurah	0	0	*0.21*	0.00	14	14
133	Fenfushi	0	0	*0.17*	0.00	0	0
134	Dhidhdhoo	12	0	*0.18*	0.12	0	0
135	Maamigili	11	0	*0.44*	0.11	0	0
136	**VAAVU ATOLL**	**7**	**29**	***0.45***	**0.37**	**42**	**5**
137	Fulidhoo	0	44	*0.50*	0.44	56	11
138	Thinadhoo	0	0	*0.28*	0.00	0	0

	STATISTICAL ANNEX 12:	FOOD SECURITY					
		2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	food crisis	height for age (stunting)	*Human Vulnerability Index*	Food Security Index	weight for age (under-nutrition)	weight for height (wasting)
139	FELIDHOO	24	0	*0.77*	0.24	17	0
140	Keyodhoo	0	n.a.	*0.42*	0.00	n.a.	n.a.
141	Rakeedhoo	7	100	*0.00*	1.00	100	0
142	**MEEMU ATOLL**	**7**	**7**	***0.40***	**0.14**	**30**	**27**
143	Raimandhoo	0	0		0.00	0	0
144	Madifushi	0	0	*0.30*	0.00	100	100
145	Veyvah	0	33	*1.00*	0.33	50	17
146	Mulah	0	0	*0.50*	0.00	50	50
147	MULI	0	20	*0.00*	0.20	0	0
148	Naalaafushi	0	0	*0.47*	0.00	0	0
149	Kolhufushi	14	0	*0.50*	0.14	75	75
150	Dhiggaru	16	0	*0.33*	0.16	0	0
151	Maduvvari	17	0	*0.36*	0.17	67	67
152	**FAAFU ATOLL**	**12**	**15**	***0.87***	**0.28**	**26**	**25**
153	Feeali	0	0	*1.00*	0.00	14	29
154	Biledhdhoo	25	25	*1.00*	0.50	0	25
155	Magoodhoo	16	33	*0.55*	0.49	50	17
156	Dharaboodhoo	0	0	*0.71*	0.00	0	100
157	NILANDHOO	12	20	*0.36*	0.32	60	20
158	**DHAALU ATOLL**	**9**	**4**	***0.41***	**0.14**	**23**	**25**
159	Meedhoo	15	0	*0.30*	0.15	0	13
160	Badidhoo	16	20	*0.89*	0.36	80	60
161	Ribudhoo	7	0	*0.40*	0.07	0	0
162	Hulhudheli	0	0	*1.00*	0.00	0	0
163	Gemendhoo	0	0	*0.60*	0.00	20	20
164	Vaanee	0	17	*0.83*	0.17	33	33
165	Maaeboodhoo	33	0	*0.00*	0.33	0	0
166	KUDAHUVADHOO	0	0	*0.00*	0.00	50	50
167	**THAA ATOLL**	**6**	**19**	***0.48***	**0.26**	**29**	**28**
168	Buruni	15	0	*0.00*	0.15	25	0
169	Vilufushi	17	0	*0.41*	0.17	0	0
170	Madifushi	10	60	*0.46*	0.70	40	40
171	Dhiyamigili	0	100	*0.77*	1.00	0	0
172	Guraidhoo	0	0	*0.60*	0.00	0	25
173	Kadoodhoo	0	0	*0.38*	0.00	100	100
174	Vandhoo	0	0	*0.50*	0.00	33	33
175	Hirilandhoo	30	20	*0.29*	0.50	60	60
176	Gaadhiffushi	0	0	*0.66*	0.00	25	25
177	Thimarafushi	0	20	*0.45*	0.20	20	20
178	VEYMANDOO	0	50	*0.25*	0.50	75	25
179	Kibidhoo	0	0	*0.95*	0.00	0	50
180	Omadhoo	0	0	*0.14*	0.00	25	0
181	**LAAMU ATOLL**	**12**	**12**	***0.53***	**0.24**	**32**	**23**
182	Isdhoo	25	25	*0.60*	0.50	50	0
183	Dhabidhoo	0	20	*0.70*	0.20	20	20
184	Maabaidhoo	28	25	*0.44*	0.53	25	25

	STATISTICAL ANNEX 12:	FOOD SECURITY					
		2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**food crisis**	**height for age (stunting)**	***Human Vulnerability Index***	**Food Security Index**	**weight for age (under-nutrition)**	**weight for height (wasting)**
185	Mundoo	25	18	*0.88*	0.43	55	36
186	Kalhaidhoo	36	0	*0.71*	0.36	43	43
187	Gamu	5	8	*0.33*	0.14	17	42
188	Maavah	8	33	*0.83*	0.41	33	0
189	FONADHOO	5	0	*0.43*	0.05	23	8
190	Gaadhoo	18	0	*0.50*	0.18	25	25
191	Maamendhoo	0	0	*0.22*	0.00	0	0
192	Hithadhoo	11	n.a.	*0.64*	0.11	n.a.	n.a.
193	Kunahandhoo	13	0	*0.49*	0.13	71	57
194	**GAAFU ALIFU ATOLL**	**6**	**55**	***0.81***	**0.61**	**52**	**17**
195	Kolamaafushi	0	75	*0.50*	0.75	75	0
196	VILLINGILI	0	22	*0.91*	0.22	56	44
197	Maamendhoo	22	40	*0.77*	0.62	40	20
198	Nilandhoo	0	67	*0.80*	0.67	67	0
199	Dhaandhoo	0	60	*0.69*	0.60	20	0
200	Dhevvadhoo	0	83	*0.33*	0.83	67	0
201	Kodey	37	33	*1.00*	0.71	33	33
202	Dhiyadhoo	16	0	*0.25*	0.16	0	50
203	Gemanafushi	7	86	*0.97*	0.92	71	0
204	Kanduhulhudhoo	16	50	*1.00*	0.66	33	50
205	**GAAFU DHAALU ATOLL**	**8**	**26**	***0.59***	**0.34**	**27**	**12**
206	Madeveli	0	20	*0.18*	0.20	20	20
207	Hoadedhdhoo	23	0	*0.00*	0.23	33	17
208	Nadallaa	14	56	*0.91*	0.69	67	22
209	Gadhdhoo	0	36	*0.60*	0.36	27	0
210	Rathafandhoo	0	75	*0.20*	0.75	0	0
211	Vaadhoo	29	67	*0.80*	0.96	0	0
212	Fiyoari	16	33	*0.54*	0.50	67	33
213	Maathodaa	0	0	*0.20*	0.00	0	0
214	Fares	6	0	*1.00*	0.06	33	50
215	THINADHOO	7	0	*0.60*	0.07	11	0
216	**GNAVIYANI ATOLL**	**2**	**15**	***0.59***	**0.16**	**15**	**15**
217	FOAMMULAH	2	15	*0.59*	0.16	15	15
218	**SEENU ATOLL**	**10**	**18**	***0.40***	**0.28**	**25**	**20**
219	Meedhoo	13	0	*0.17*	0.13	0	50
220	HITHADHOO	12	11	*0.05*	0.22	24	24
221	Maradhoo	13	0	*0.76*	0.13	20	0
222	Feydhoo	7	50	*1.00*	0.57	38	13
223	Maradhoo-Feydhoo	0	25	*0.39*	0.25	50	25
224	Hulhudhoo	0	33	*0.00*	0.33	0	0
	n.a. : No observations for under-five children; the index is probably under-estimated						

	STATISTICAL ANNEX 13:	EMPLOYMENT					
		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no work**	**no work but someone in the household works**	**looking for more work**	**no income activities**	***Human Vulne-rability Index***	**Employ-ment Index**
1	**Maldives**	**9**	**28**	**10**	**32**	***0.19***	**0.36**
2	**Male’**	**3**	**40**	**11**	**0**	***0.09***	**0.29**
3	**Atoll average**	**11**	**23**	**10**	**45**	***0.23***	**0.39**
4	**HAA ALIFU ATOLL**	**23**	**27**	**6**	**41**	***0.30***	**0.49**
5	Thurakunu	25	14	16	0	*0.03*	0.40
6	Uligamu	38	0	7	0	*0.21*	0.41
7	Berinmadhoo	38	15	9	100	*0.14*	0.75
8	Hathifushi	17	23	0	0	*0.05*	0.29
9	Mulhadhoo	0	13	9	0	*0.15*	0.11
10	Hoarafushi	40	28	13	100	*0.19*	0.85
11	Ihavandhoo	13	21	0	0	*0.45*	0.24
12	Kelaa	28	12	0	0	*0.32*	0.34
13	Vashafaru	19	30	8	0	*0.58*	0.38
14	DHIDHDHOO	15	43	0	100	*0.30*	0.61
15	Filladhoo	10	13	33	0	*0.08*	0.33
16	Maarandhoo	29	50	26	0	*0.04*	0.67
17	Thakandhoo	33	0	15	0	*0.11*	0.41
18	Utheemu	16	44	0	100	*0.21*	0.63
19	Muraidhoo	2	50	4	0	*0.58*	0.29
20	Baarah	30	28	0	0	*0.66*	0.45
21	**HAA DHAALU ATOLL**	**10**	**25**	**9**	**59**	***0.15***	**0.42**
22	Faridhoo	16	53	14	0	*0.00*	0.50
23	Hondaidhoo					*0.00*	-
24	Hanimaadhoo	0	39	0	0	*0.47*	0.19
25	Finey	26	5	8	0	*0.08*	0.33
26	Naivaadhoo	5	0	0	0	*0.16*	0.05
27	Hirimaradhoo	11	32	6	0	*0.24*	0.30
28	Nolhivaranfaru	17	19	19	0	*0.29*	0.35
29	Nellaidhoo	0	34	14	0	*0.26*	0.24
30	Nolhivaramu	13	43	10	0	*0.25*	0.39
31	Kuribi	18	55	48	0	*0.02*	0.70
32	Kuburudhoo	0	7	7	100	*0.10*	0.32
33	KULHUDHUFFUSHI	7	23	5	100	*0.08*	0.46
34	Kumundhoo	21	17	0	0	*0.12*	0.29
35	Neykurendhoo	9	15	6	0	*0.24*	0.19
36	Vaikaradhoo	17	24	37	100	*0.12*	0.72
37	Maavaidhoo	5	11	0	0	*0.20*	0.11
38	Makunudhoo	18	18	20	100	*0.00*	0.63
39	**SHAVIYANI ATOLL**	**14**	**14**	**5**	**43**	***0.29***	**0.35**
40	Kaditheemu	23	5	0	100	*0.00*	0.51
41	Noomaraa	0	0	12	100	*0.09*	0.31
42	Goidhoo	2	20	12	0	*0.20*	0.18
43	Feydhoo	4	38	0	0	*0.12*	0.23
44	Feevah	0	20	12	0	*0.35*	0.16
45	Bilehffahi	7	0	40	100	*0.70*	0.52
46	Foakaidhoo	27	0	13	0	*0.16*	0.33
47	Narudhoo	1	18	18	0	*0.24*	0.19

STATISTICAL ANNEX 13: EMPLOYMENT

		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no work**	**no work but someone in the household works**	**looking for more work**	**no income activities**	***Human Vulne-rability Index***	**Employ-ment Index**
48	Maakandoodhoo	0	16	9	100	*0.61*	0.37
49	Maroshi	42	17	0	100	*0.21*	0.75
50	Lhaimagu	45	0	0	0	*0.35*	0.45
51	Firubaidhoo	0	0	0	100	*0.38*	0.25
52	Komandoo	8	20	0	0	*0.04*	0.18
53	Maaugoodhoo	0	16	0	100	*0.34*	0.33
54	FUNADHOO	12	10	0	100	*0.19*	0.42
55	Milandhoo	16	33	0	0	*-*	0.33
56	**NOONU ATOLL**	**11**	**12**	**3**	**50**	***0.27***	**0.31**
57	Hebadhoo	16	22	0	0	*0.20*	0.28
58	Kedhikolhudhoo	0	0	0	100	*0.00*	0.25
59	Maalhendhoo	18	0	0	0	*0.05*	0.18
60	Kudafari	16	12	0	0	*0.26*	0.22
61	Landhoo	14	6	24	0	*0.13*	0.29
62	Maafaru	0	0	12	0	*0.22*	0.06
63	Lhohi	0	13	0	0	*0.60*	0.07
64	Miladhoo	13	40	0	0	*0.70*	0.33
65	Magoodhoo	0	0	5	100	*0.41*	0.28
66	MANADHOO	0	0	0	0	*0.37*	0.00
67	Holhudhoo	27	17	0	100	*0.23*	0.61
68	Fodhdhoo	18	13	0	100	*0.39*	0.49
69	Velidhoo	13	18	2	100	*0.23*	0.49
70	**RAA ATOLL**	**16**	**17**	**11**	**34**	***0.21***	**0.39**
71	Alifushi	27	32	18	0	*0.23*	0.52
72	Vaadhoo	20	15	15	100	*0.55*	0.60
73	Rasgetheemu	0	18	12	0	*0.06*	0.15
74	Agolhitheemu	23	15	28	0	*0.09*	0.44
75	Hulhudhuffaaru	27	0	10	0	*0.00*	0.32
76	UGUFAARU	11	22	24	100	*0.25*	0.59
77	Kadholhudhoo	15	29	6	100	*0.18*	0.58
78	Maakurathu	15	30	0	0	*0.25*	0.30
79	Rasmaadhoo	0	34	0	0	*0.03*	0.17
80	Innamaadhoo	19	17	0	100	*0.20*	0.53
81	Maduvvari	26	4	5	0	*0.37*	0.31
82	Iguraidhoo	6	0	31	0	*0.25*	0.22
83	Fainu	10	36	0	0	*0.34*	0.27
84	Meedhoo	12	0	8	0	*0.20*	0.16
85	Kinolhas	15	18	0	0	*0.04*	0.24
86	**BAA ATOLL**	**8**	**24**	**5**	**80**	***0.16***	**0.42**
87	Kudarikilu	0	0	0	0	*0.04*	0.00
88	Kamadhoo	0	35	5	0	*0.13*	0.20
89	Kendhoo	4	13	0	100	*0.14*	0.36
90	Kihaadhoo	0	10	10	0	*0.05*	0.10
91	Dhonfanu	0	0	8	100	*0.07*	0.29
92	Dharavandhoo	8	40	27	100	*0.25*	0.67
93	Maalhos	10	31	24	100	*0.32*	0.63
94	EYDHAFUSHI	14	7	0	100	*0.28*	0.43

	STATISTICAL ANNEX 13:	EMPLOYMENT					
		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no work**	**no work but someone in the household works**	**looking for more work**	**no income activities**	***Human Vulne-rability Index***	**Employ-ment Index**
95	Thulhaadhoo	2	59	7	100	*0.06*	0.59
96	Hithaadhoo	18	16	0	0	*0.04*	0.26
97	Fulhadhoo	12	37	0	100	*0.18*	0.55
98	Fehendhoo	2	23	0	100	*0.38*	0.39
99	Goidhoo	0	6	0	100	*0.24*	0.28
100	**LHAVIYANI ATOLL**	**14**	**30**	**2**	**60**	***0.35***	**0.45**
101	Hinnavaru	27	36	2	0	*0.29*	0.46
102	NAIFARU	4	25	1	100	*0.34*	0.42
103	Kurendhoo	0	36	0	100	*0.57*	0.43
104	Olhuvelifushi	49	39	0	0	*0.29*	0.68
105	Maafilaafushi	6	0	0	100	*0.41*	0.31
106	**KAAFU ATOLL**	**7**	**27**	**10**	**55**	***0.15***	**0.39**
107	Kaashidhoo	15	11	3	100	*0.35*	0.48
108	Gaafaru	26	41	0	0	*0.04*	0.46
109	Dhiffushi	10	47	0	0	*0.25*	0.34
110	THULUSDHOO	0	34	17	0	*0.04*	0.26
111	Huraa	0	14	37	100	*0.00*	0.51
112	Himmafushi	0	33	33	0	*0.04*	0.33
113	Gulhi	6	19	21	0	*0.00*	0.26
114	Maafushi	0	38	0	100	*0.12*	0.44
115	Guraidhoo	0	21	0	100	*0.22*	0.35
116	**ALIF ALIFU ATOLL**	**4**	**28**	**8**	**28**	***0.13***	**0.29**
117	Thoddoo	0	15	0	0	*0.03*	0.08
118	RASDHOO	3	49	17	100	*0.08*	0.61
119	Ukulhas	0	38	11	0	*0.21*	0.24
120	Mathiveri	0	29	35	0	*0.33*	0.32
121	Bodufolhudhoo	0	75	0	0	*0.15*	0.38
122	Feridhoo	24	0	0	100	*0.17*	0.49
123	Maalhos	8	16	0	0	*0.02*	0.16
124	Himendhoo	0	13	13	0	*0.16*	0.13
125	**ALIFU DHAALU ATOLL**	**6**	**40**	**5**	**44**	***0.20***	**0.39**
126	Hangnameedhoo	11	41	15	0	*0.02*	0.39
127	Omadhoo	20	25	0	100	*0.14*	0.58
128	Kuburudhoo	20	52	0	100	*0.44*	0.71
129	MAHIBADHOO	4	32	0	0	*0.31*	0.20
130	Mandhoo	0	9	12	100	*0.00*	0.35
131	Dhagethi	2	60	10	0	*0.23*	0.38
132	Dhigurah	16	12	7	0	*0.11*	0.25
133	Fenfushi	0	67	0	0	*0.34*	0.34
134	Dhidhdhoo	4	0	10	100	*0.14*	0.34
135	Maamigili	0	48	8	100	*0.12*	0.53
136	**VAAVU ATOLL**	**6**	**16**	**20**	**0**	***0.24***	**0.24**
137	Fulidhoo	0	0	17	0	*0.23*	0.09
138	Thinadhoo	17	33	0	0	*0.38*	0.33
139	FELIDHOO	9	16	32	0	*0.13*	0.33
140	Keyodhoo	7	17	13	0	*0.16*	0.22
141	Rakeedhoo	0	45	26	0	*0.52*	0.36

STATISTICAL ANNEX 13:	EMPLOYMENT						
		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	no work	no work but someone in the household works	looking for more work	no income activities	*Human Vulne-rability Index*	Employ-ment Index
142	**MEEMU ATOLL**	**4**	**21**	**20**	**25**	***0.10***	**0.30**
143	Raimandhoo	0	0	25	0	*0.00*	0.13
144	Madifushi	0	0	5	0	*0.07*	0.03
145	Veyvah	4	0	28	100	*0.03*	0.43
146	Mulah	0	29	25	0	*0.00*	0.27
147	MULI	0	27	0	100	*0.25*	0.39
148	Naalaafushi	6	9	0	100	*0.00*	0.36
149	Kolhufushi	11	19	29	0	*0.00*	0.35
150	Dhiggaru	7	18	31	0	*0.00*	0.31
151	Maduvvari	0	22	9	0	*0.00*	0.16
152	**FAAFU ATOLL**	**6**	**17**	**20**	**0**	***0.36***	**0.24**
153	Feeali	0	9	17	0	*0.37*	0.13
154	Biledhdhoo	15	32	12	0	*0.32*	0.37
155	Magoodhoo	9	13	26	0	*0.64*	0.28
156	Dharaboodhoo	0	18	9	0	*0.09*	0.13
157	NILANDHOO	2	13	29	0	*0.34*	0.23
158	**DHAALU ATOLL**	**18**	**18**	**15**	**89**	***0.09***	**0.57**
159	Meedhoo	50	13	0	100	*0.00*	0.82
160	Badidhoo	0	10	10	100	*0.09*	0.35
161	Ribudhoo	7	30	11	100	*0.08*	0.52
162	Hulhudheli	24	0	14	100	*0.03*	0.57
163	Gemendhoo	15	0	0	0	*0.09*	0.15
164	Vaanee	38	13	0	0	*0.42*	0.44
165	Maaeboodhoo	0	8	29	100	*0.02*	0.43
166	KUDAHUVADHOO	11	41	28	100	*0.14*	0.70
167	**THAA ATOLL**	**13**	**19**	**23**	**13**	***0.22***	**0.37**
168	Buruni	0	15	12	0	*0.18*	0.13
169	Vilufushi	12	14	14	0	*0.12*	0.26
170	Madifushi	10	39	8	100	*0.18*	0.59
171	Dhiyamigili	9	6	19	100	*0.47*	0.46
172	Guraidhoo	0	47	5	0	*0.21*	0.26
173	Kadoodhoo	13	27	45	0	*0.28*	0.49
174	Vandhoo	0	8	10	0	*0.04*	0.09
175	Hirilandhoo	0	8	56	0	*0.06*	0.32
176	Gaadhiffushi	29	29	22	0	*0.20*	0.55
177	Thimarafushi	32	8	13	0	*0.26*	0.42
178	VEYMANDOO	0	15	61	0	*0.36*	0.38
179	Kibidhoo	30	5	25	0	*0.29*	0.44
180	Omadhoo	23	31	21	0	*0.28*	0.49
181	**LAAMU ATOLL**	**9**	**10**	**23**	**11**	***0.13***	**0.28**
182	Isdhoo	18	18	18	0	*0.04*	0.36
183	Dhabidhoo	0	18	14	0	*0.00*	0.16
184	Maabaidhoo	0	21	7	100	*0.37*	0.39
185	Mundoo	15	14	16	0	*0.08*	0.30
186	Kalhaidhoo	9	0	27	100	*0.22*	0.47
187	Gamu	4	4	32	0	*0.15*	0.22
188	Maavah	24	25	20	0	*0.06*	0.47

	STATISTICAL ANNEX 13:	EMPLOYMENT					
		2004	2004	2004	2004	*1997*	2004
	Atoll / Island name	**no work**	**no work but someone in the household works**	**looking for more work**	**no income activities**	***Human Vulne-rability Index***	**Employ-ment Index**
189	FONADHOO	5	0	12	0	*0.13*	0.10
190	Gaadhoo	44	0	28	0	*0.22*	0.58
191	Maamendhoo	0	0	31	0	*0.17*	0.16
192	Hithadhoo	0	0	30	0	*0.21*	0.15
193	Kunahandhoo	0	18	47	0	*0.12*	0.33
194	**GAAFU ALIFU ATOLL**	**8**	**27**	**8**	**44**	***0.35***	**0.37**
195	Kolamaafushi	11	21	0	0	*0.29*	0.22
196	VILLINGILI	4	49	6	100	*0.30*	0.56
197	Maamendhoo	0	25	10	100	*0.50*	0.43
198	Nilandhoo	12	0	33	0	*0.45*	0.28
199	Dhaandhoo	32	29	6	0	*0.59*	0.49
200	Dhevvadhoo	0	19	0	0	*0.06*	0.10
201	Kodey	0	20	31	100	*0.40*	0.50
202	Dhiyadhoo	39	0	11	100	*0.08*	0.70
203	Gemanafushi	0	12	12	0	*0.17*	0.12
204	Kanduhulhudhoo	0	14	7	0	*0.47*	0.11
205	**GAAFU DHAALU ATOLL**	**10**	**23**	**10**	**43**	***0.29***	**0.37**
206	Madeveli	0	18	14	0	*0.54*	0.16
207	Hoadedhdhoo	0	32	10	0	*0.04*	0.21
208	Nadallaa	16	23	5	100	*0.03*	0.55
209	Gadhdhoo	12	5	0	0	*0.33*	0.14
210	Rathafandhoo	9	27	0	0	*0.03*	0.23
211	Vaadhoo	0	21	13	0	*0.24*	0.17
212	Fiyoari	0	56	16	0	*0.00*	0.36
213	Maathodaa	15	7	0	0	*0.00*	0.18
214	Fares	11	11	15	0	*0.09*	0.23
215	THINADHOO	17	26	14	100	*0.40*	0.62
216	**GNAVIYANI ATOLL**	**18**	**26**	**5**	**0**	***0.17***	**0.33**
217	FOAMMULAH	18	26	5	0	*0.17*	0.33
218	**SEENU ATOLL**	**9**	**30**	**10**	**84**	***0.31***	**0.50**
219	Meedhoo	23	27	0	100	*0.39*	0.61
220	HITHADHOO	5	28	5	100	*0.20*	0.46
221	Maradhoo	2	40	21	100	*0.28*	0.57
222	Feydhoo	7	27	31	0	*0.48*	0.35
223	Maradhoo-Feydhoo	30	15	0	100	*0.35*	0.63
224	Hulhudhoo	28	48	0	100	*0.55*	0.77

	STATISTICAL ANNEX 14:	RECREATION						
		2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**no clubs**	**no events**	**not enough space**	***Human Vulnera-bility Index***	**Recre-ation Index**	**less than twenty percent open space**	**no community activities**
1	**Maldives**	**7**	**9**	**18**	***0.18***	**0.18**	**17**	**9**
2	**Male'**	**0**	**0**	**0**	***0.00***	**0.00**	**0**	**0**
3	**Atoll average**	**10**	**13**	**26**	***0.35***	**0.26**	**25**	**13**
4	**HAA ALIFU ATOLL**	**8**	**20**	**9**	***0.15***	**0.14**	**21**	**8**
5	Thurakunu	0	0	100	*0.00*	0.75	0	0
6	Uligamu	100	0	100	*0.00*	1.00	0	100
7	Berinmadhoo	100	100	100	*0.25*	1.00	0	100
8	Hathifushi	100	0	100	*0.25*	1.00	100	100
9	Mulhadhoo	100	0	0	*0.25*	0.25	0	100
10	Hoarafushi	0	0	0	*0.00*	0.00	0	0
11	Ihavandhoo	0	0	0	*n.a.*	0.00	0	0
12	Kelaa	0	100	0	*0.25*	0.25	0	0
13	Vashafaru	100	100	0	*0.00*	0.50	0	100
14	DHIDHDHOO	0	0	0	*0.25*	0.00	100	0
15	Filladhoo	0	0	0	*0.00*	0.00	0	0
16	Maarandhoo	0	0	0	*0.00*	0.00	0	0
17	Thakandhoo	0	100	0	*0.00*	0.25	0	0
18	Utheemu	0	100	0	*0.00*	0.25	0	0
19	Muraidhoo	0	0	100	*0.00*	0.75	0	0
20	Baarah	0	0	0	*0.00*	0.00	0	0
21	**HAA DHAALU ATOLL**	**7**	**0**	**2**	***0.20***	**0.04**	**46**	**14**
22	Faridhoo	100	0	0	*0.25*	0.25	0	100
23	Hondaidhoo				*0.25*			
24	Hanimaadhoo	0	0	0	*0.00*	0.00	0	0
25	Finey	100	0	0	*0.25*	0.25	0	100
26	Naivaadhoo	0	0	0	*0.00*	0.00	0	0
27	Hirimaradhoo	0	0	0	*0.25*	0.00	0	0
28	Nolhivaranfaru	100	0	0	*0.25*	0.25	0	100
29	Nellaidhoo	0	0	0	*0.00*	0.00	0	0
30	Nolhivaramu	0	0	0	*0.25*	0.00	0	0
31	Kuribi	100	0	100	*0.25*	1.00	0	100
32	Kuburudhoo	100	0	0	*0.25*	0.25	0	100
33	KULHUDHUFFUSHI	0	0	0	*0.00*	0.00	100	0
34	Kumundhoo	0	0	0	*0.25*	0.00	0	0
35	Neykurendhoo	0	0	0	*0.25*	0.00	0	100
36	Vaikaradhoo	0	0	0	*0.00*	0.00	0	0
37	Maavaidhoo	n.a.	0	0	*0.25*	0.00	0	100
38	Makunudhoo	0	0	0	*0.25*	0.00	0	0
39	**SHAVIYANI ATOLL**	**24**	**43**	**31**	***0.31***	**0.40**	**12**	**23**
40	Kaditheemu	0	100	0	*0.00*	0.25	0	0
41	Noomaraa	n.a.	0	100	*0.00*	0.75	0	0
42	Goidhoo	100	0	0	*0.25*	0.25	0	100
43	Feydhoo	100	0	0	*0.00*	0.25	0	100
44	Feevah	0	0	0	*0.25*	0.00	0	0
45	Bilehffahi	0	100	0	*0.25*	0.25	0	0
46	Foakaidhoo	0	100	100	*0.25*	1.00	0	0
47	Narudhoo	100	100	0	*0.25*	0.50	0	100

	STATISTICAL ANNEX 14:	RECREATION						
		2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**no clubs**	**no events**	**not enough space**	***Human Vulnera-bility Index***	**Recre-ation Index**	**less than twenty percent open space**	**no community activities**
48	Maakandoodhoo	100	0	100	*0.75*	1.00	0	100
49	Maroshi	0	0	0	*0.00*	0.00	0	0
50	Lhaimagu	0	0	0	*0.50*	0.00	0	0
51	Firubaidhoo	100	0	100	*0.00*	1.00	0	100
52	Komandoo	0	100	100	*0.75*	1.00	100	0
53	Maaugoodhoo	100	0	0	*0.00*	0.25	0	100
54	FUNADHOO	0	0	0	*0.00*	0.00	0	0
55	Milandhoo	0	n.a.	0		0.00	0	0
56	**NOONU ATOLL**	**12**	**0**	**26**	***0.55***	**0.22**	**46**	**12**
57	Hebadhoo	100	0	100	*0.00*	1.00	100	100
58	Kedhikolhudhoo	n.a.	n.a.	n.a.	*0.25*	n.a.	0	0
59	Maalhendhoo	0	0	0	*0.25*	0.00	0	0
60	Kudafari	100	0	100	*0.25*	1.00	0	100
61	Landhoo	0	0	0	*0.50*	0.00	0	0
62	Maafaru	n.a.	0	100	*0.50*	0.75	0	0
63	Lhohi	0	0	0	*0.25*	0.00	0	0
64	Miladhoo	0	0	100	*1.00*	0.75	100	0
65	Magoodhoo	n.a.	0	0	*0.25*	0.00	0	100
66	MANADHOO	0	0	0	*0.50*	0.00	0	0
67	Holhudhoo	0	0	0	*0.25*	0.00	100	0
68	Fodhdhoo	100	0	0	*0.50*	0.25	0	100
69	Velidhoo	0	0	0	*0.50*	0.00	100	0
70	**RAA ATOLL**	**2**	**17**	**53**	***0.47***	**0.44**	**31**	**2**
71	Alifushi	0	0	0	*0.25*	0.00	0	0
72	Vaadhoo	0	100	0	*0.25*	0.25	0	0
73	Rasgetheemu	0	0	0	*0.25*	0.00	0	0
74	Agolhitheemu	0	0	100	*0.50*	0.75	0	0
75	Hulhudhuffaaru	0	0	0	*0.50*	0.00	0	0
76	UGUFAARU	0	0	100	*0.25*	0.75	0	0
77	Kadholhudhoo	0	0	100	*1.00*	0.75	100	0
78	Maakurathu	0	0	0	*0.00*	0.00	0	0
79	Rasmaadhoo	0	0	100	*0.75*	0.75	0	0
80	Innamaadhoo	0	0	0	*0.00*	0.00	0	0
81	Maduvvari	0	100	100	*1.00*	1.00	100	0
82	Iguraidhoo	0	0	100	*0.00*	0.75	0	0
83	Fainu	100	100	0	*0.00*	0.50	0	100
84	Meedhoo	0	0	0	*0.00*	0.00	0	0
85	Kinolhas	0	100	0	*0.00*	0.25	0	0
86	**BAA ATOLL**	**1**	**14**	**35**	***0.44***	**0.30**	**56**	**5**
87	Kudarikilu	0	0	0	*0.25*	0.00	0	0
88	Kamadhoo	0	100	0	*0.25*	0.25	0	0
89	Kendhoo	0	0	0	*0.00*	0.00	100	0
90	Kihaadhoo	0	100	100	*0.25*	1.00	0	0
91	Dhonfanu	0	100	0	*0.25*	0.25	0	0
92	Dharavandhoo	0	0	0	*0.25*	0.00	0	0
93	Maalhos	0	100	0	*0.00*	0.25	0	100
94	EYDHAFUSHI	0	0	0	*0.00*	0.00	100	0

	STATISTICAL ANNEX 14:	RECREATION						
		2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**no clubs**	**no events**	**not enough space**	***Human Vulnera-bility Index***	**Recre-ation Index**	**less than twenty percent open space**	**no community activities**
95	Thulhaadhoo	0	0	100	*0.75*	0.75	100	0
96	Hithaadhoo	0	0	100	*0.00*	0.75	0	0
97	Fulhadhoo	0	n.a.	100	*0.25*	0.75	0	0
98	Fehendhoo	100	0	0	*0.25*	0.25	0	100
99	Goidhoo	0	0	0	*0.00*	0.00	0	0
100	**LHAVIYANI ATOLL**	**6**	**0**	**37**	***0.00***	**0.30**	**95**	**2**
101	Hinnavaru	0	0	100	*0.00*	0.75	100	0
102	NAIFARU	0	0	0	*0.00*	0.00	100	0
103	Kurendhoo	0	0	0	*0.00*	0.00	n.a.	0
104	Olhuvelifushi	100	0	0	*0.00*	0.25	0	0
105	Maafilaafushi	100	0	100	*n.a.*	1.00	n.a.	100
106	**KAAFU ATOLL**	**0**	**11**	**33**	***0.03***	**0.28**	**27**	**9**
107	Kaashidhoo	n.a.	0	0	*n.a.*	0.00	0	0
108	Gaafaru	0	0	0	*0.25*	0.00	100	0
109	Dhiffushi	0	0	0	*0.00*	0.00	0	0
110	THULUSDHOO	0	100	0	*0.00*	0.25	0	0
111	Huraa	0	n.a.	0	*0.00*	0.00	100	0
112	Himmafushi	0	0	0	*0.00*	0.00	0	100
113	Gulhi	0	0	100	*0.00*	0.75	100	0
114	Maafushi	0	0	100	*0.00*	0.75	n.a.	0
115	Guraidhoo	0	0	100	*0.00*	0.75	0	0
116	**ALIF ALIFU ATOLL**	**0**	**10**	**9**	***0.03***	**0.09**	**0**	**8**
117	Thoddoo	0	0	0	*0.00*	0.00	0	0
118	RASDHOO	0	0	0	*0.00*	0.00	0	0
119	Ukulhas	0	0	100	*0.00*	0.75	0	0
120	Mathiveri	0	0	0	*0.00*	0.00	0	100
121	Bodufolhudhoo	0	0	0	*0.00*	0.00	n.a.	0
122	Feridhoo	0	100	0	*0.00*	0.25	0	0
123	Maalhos	0	0	0	*0.00*	0.00	0	0
124	Himendhoo	0	0	0	*0.25*	0.00	0	0
125	**ALIFU DHAALU ATOLL**	**32**	**26**	**9**	***0.09***	**0.21**	**31**	**38**
126	Hangnameedhoo	0	0	0	*0.00*	0.00	0	0
127	Omadhoo	0	0	0	*0.00*	0.00	0	100
128	Kuburudhoo	100	0	100	*0.25*	1.00	0	100
129	MAHIBADHOO	0	0	0	*0.00*	0.00	100	0
130	Mandhoo	n.a.	0	100	*0.25*	0.75	0	0
131	Dhagethi	0	0	0	*0.00*	0.00	0	0
132	Dhigurah	0	0	0	*0.00*	0.00	100	0
133	Fenfushi	n.a.	n.a.	0	*0.25*	0.00	0	0
134	Dhidhdhoo	0	0	0	*0.50*	0.00	0	0
135	Maamigili	100	100	0	*0.50*	0.50	0	100
136	**VAAVU ATOLL**	**0**	**0**	**29**	***0.17***	**0.22**	**0**	**4**
137	Fulidhoo	0	0	0	*0.00*	0.00	0	0
138	Thinadhoo	0	n.a.	0	*0.50*	0.00	0	100
139	FELIDHOO	0	0	100	*0.00*	0.75	0	0
140	Keyodhoo	0	0	0	*0.25*	0.00	0	0
141	Rakeedhoo	n.a.	0	0	*0.00*	0.00	0	0

	STATISTICAL ANNEX 14:	RECREATION						
		2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	no clubs	no events	not enough space	*Human Vulnera-bility Index*	Recre-ation Index	less than twenty percent open space	no community activities
142	**MEEMU ATOLL**	**2**	**8**	**58**	***0.42***	**0.46**	**0**	**2**
143	Raimandhoo	0	0	0	*0.25*	0.00	0	0
144	Madifushi	100	100	0	*0.25*	0.50	0	100
145	Veyvah	0	0	0	*0.25*	0.00	0	0
146	Mulah	0	0	100	*0.00*	0.75	0	0
147	MULI	0	0	0	*0.00*	0.00	0	0
148	Naalaafushi	0	100	100	*0.00*	1.00	0	0
149	Kolhufushi	0	0	0	*1.00*	0.00	0	0
150	Dhiggaru	0	0	100	*0.75*	0.75	0	0
151	Maduvvari	0	0	100	*0.00*	0.75	0	0
152	**FAAFU ATOLL**	**0**	**0**	**0**	***0.55***	**0.00**	**0**	**0**
153	Feeali	0	0	0	*0.50*	0.00	0	0
154	Biledhdhoo	0	0	0	*0.25*	0.00	0	0
155	Magoodhoo	0	0	0	*0.25*	0.00	0	0
156	Dharaboodhoo	0	0	0	*0.25*	0.00	0	0
157	NILANDHOO	0	0	0	*1.00*	0.00	0	0
158	**DHAALU ATOLL**	**18**	**0**	**42**	***0.55***	**0.36**	**0**	**24**
159	Meedhoo	0	0	100	*0.75*	0.75	n.a.	0
160	Badidhoo	0	0	0	*0.50*	0.00	0	0
161	Ribudhoo	100	0	100	*0.25*	1.00	0	100
162	Hulhudheli	100	0	100	*0.25*	1.00	0	100
163	Gemendhoo	0	0	100	*0.00*	0.75	0	100
164	Vaanee	0	0	0	*0.00*	0.00	0	0
165	Maaeboodhoo	0	0	0	*0.00*	0.00	0	0
166	KUDAHUVADHOO	0	0	0	*0.50*	0.00	0	0
167	**THAA ATOLL**	**3**	**3**	**55**	***0.67***	**0.42**	**16**	**9**
168	Buruni	100	100	100	*0.25*	1.00	0	100
169	Vilufushi	0	0	100	*0.50*	0.75	0	0
170	Madifushi	0	0	100	*1.00*	0.75	0	0
171	Dhiyamigili	0	0	0	*1.00*	0.00	0	0
172	Guraidhoo	0	0	0	*1.00*	0.00	100	0
173	Kadoodhoo	0	0	100	*0.50*	0.75	0	100
174	Vandhoo	0	0	0	*1.00*	0.00	0	0
175	Hirilandhoo	0	0	100	*1.00*	0.75	0	0
176	Gaadhiffushi	0	0	100	*0.50*	0.75	0	100
177	Thimarafushi	0	0	100	*0.25*	0.75	n.a.	0
178	VEYMANDOO	0	0	0	*1.00*	0.00	0	0
179	Kibidhoo	0	n.a.	0	*0.00*	0.00	0	0
180	Omadhoo	n.a.	0	0	*0.50*	0.00	0	0
181	**LAAMU ATOLL**	**5**	**10**	**38**	***0.20***	**0.32**	**0**	**4**
182	Isdhoo	0	0	100	*0.25*	0.75	0	0
183	Dhabidhoo	0	0	0	*0.00*	0.00	0	0
184	Maabaidhoo	0	0	0	*0.00*	0.00	0	0
185	Mundoo	0	0	0	*0.25*	0.00	0	0
186	Kalhaidhoo	100	0	100	*0.50*	1.00	0	100
187	Gamu	n.a.	n.a.	n.a.	*0.25*	n.a.	0	0
188	Maavah	0	0	0	*0.25*	0.00	0	0

	STATISTICAL ANNEX 14:	RECREATION						
		2004	2004	2004	*1997*	2004	2004	2004
	Atoll / Island name	**no clubs**	**no events**	**not enough space**	***Human Vulnera-bility Index***	**Recre-ation Index**	**less than twenty percent open space**	**no community activities**
189	FONADHOO	0	0	0	*0.25*	0.00	0	0
190	Gaadhoo	0	0	100	*0.25*	0.75	0	0
191	Maamendhoo	0	100	100	*0.00*	1.00	0	0
192	Hithadhoo	0	0	0	*0.00*	0.00	0	0
193	Kunahandhoo	0	0	100	*0.25*	0.75	0	0
194	**GAAFU ALIFU ATOLL**	**31**	**57**	**34**	***0.55***	**0.47**	**14**	**32**
195	Kolamaafushi	0	n.a.	0	*1.00*	0.00	0	0
196	VILLINGILI	100	100	0	*1.00*	0.50	0	0
197	Maamendhoo	0	100	100	*0.25*	1.00	0	100
198	Nilandhoo	0	100	0	*0.50*	0.25	0	0
199	Dhaandhoo	0	0	100	*0.25*	0.75	100	100
200	Dhevvadhoo	0	0	100	*0.00*	0.75	0	0
201	Kodey	100	100	0	*0.00*	0.50	0	100
202	Dhiyadhoo	100	100	100	*0.25*	1.00	0	100
203	Gemanafushi	0	0	0	*0.00*	0.00	0	0
204	Kanduhulhudhoo	0	0	0	*0.00*	0.00	0	0
205	**GAAFU DHAALU ATOLL**	**14**	**7**	**35**	***0.27***	**0.32**	**0**	**24**
206	Madeveli	0	0	100	*0.50*	0.75	0	0
207	Hoadedhdhoo	0	0	0	*0.00*	0.00	0	0
208	Nadallaa	100	0	100	*0.25*	1.00	0	100
209	Gadhdhoo	0	0	100	*0.25*	0.75	n.a.	0
210	Rathafandhoo	0	0	0	*0.25*	0.00	0	0
211	Vaadhoo	100	0	0	*0.25*	0.25	0	100
212	Fiyoari	0	100	0	*0.00*	0.25	0	100
213	Maathodaa	0	0	100	*0.50*	0.75	0	0
214	Fares	n.a.	0	0	*0.00*	0.00	0	100
215	THINADHOO	0	0	0	*0.25*	0.00	0	0
216	**GNAVIYANI ATOLL**	**0**	**0**	**0**	***0.00***	**0.00**	**0**	**0**
217	FOAMMULAH	0	0	0	*0.00*	0.00	0	0
218	**SEENU ATOLL**	**22**	**11**	**11**	***0.59***	**0.17**	**33**	**22**
219	Meedhoo	0	0	0	*n.a.*	0.00	0	0
220	HITHADHOO	0	0	0	*0.25*	0.00	0	0
221	Maradhoo	0	100	100	*0.00*	1.00	100	0
222	Feydhoo	100	0	0	*1.00*	0.25	100	100
223	Maradhoo-Feydhoo	100	0	0	*1.00*	0.25	100	100
224	Hulhudhoo	0	0	0	*0.50*	0.00	0	0

STATISTICAL ANNEX 15: COMPOSITE HUMAN VULNERABILITY INDICES

		1997	2004	2004	2004	1997	1997	2004	2004
	Atoll / Island name	*Composite Human Vulnerability Index*	**Overall Non-income HVI – Equal Weights**	**Income poverty**	**Composite HVI – Equal Weights**	*Composite HVI – Female Priorities*	*Composite HVI – Male Priorities*	**Composite HVI – Female Priorities**	**Composite HVI – Male Priorities**
1	**Maldives**	*4.1*	**3.0**	**1.0**	**2.9**	*3.9*	*3.8*	**2.8**	**2.8**
2	**Male'**	*2.0*	**2.3**	**0.1**	**2.1**	*1.8*	*1.8*	**2.1**	**2.1**
3	**Atoll average**	*4.8*	**3.3**	**1.4**	**3.2**	*4.6*	*4.5*	**3.1**	**3.1**
4	**HAA ALIFU ATOLL**	*5.0*	**3.2**	**2.6**	**3.1**	*4.8*	*4.7*	**3.0**	**3.1**
5	Thurakunu	*5.9*	4.5	2.4	4.3	*5.9*	*5.9*	4.5	4.5
6	Uligamu	*6.7*	5.2	2.9	5.0	*6.6*	*6.6*	5.1	5.1
7	Berinmadhoo	*7.1*	4.4	0.6	4.1	*7.0*	*7.0*	4.5	4.4
8	Hathifushi	*5.2*	4.5	2.2	4.3	*5.2*	*5.2*	4.3	4.3
9	Mulhadhoo	*5.8*	4.8	1.4	4.5	*5.7*	*5.7*	4.7	4.7
10	Hoarafushi	*3.8*	2.9	3.3	2.9	*3.6*	*3.6*	2.9	3.0
11	Ihavandhoo	*3.2*	2.7	4.4	2.8	*3.3*	*3.2*	2.6	2.6
12	Kelaa	*4.7*	2.6	1.0	2.4	*4.3*	*4.3*	2.1	2.2
13	Vashafaru	*5.1*	4.2	3.5	4.2	*5.0*	*5.0*	4.4	4.4
14	DHIDHDHOO	*2.4*	2.2	2.4	2.2	*2.1*	*2.1*	2.1	2.2
15	Filladhoo	*5.2*	3.0	0.7	2.8	*5.2*	*5.1*	2.9	2.9
16	Maarandhoo	*4.7*	3.6	2.6	3.5	*4.6*	*4.5*	3.7	3.7
17	Thakandhoo	*4.8*	3.7	1.0	3.4	*4.6*	*4.6*	3.4	3.4
18	Utheemu	*3.7*	2.7	0.0	2.4	*3.7*	*3.7*	2.6	2.6
19	Muraidhoo	*6.1*	4.0	3.2	3.9	*5.9*	*5.9*	3.9	3.9
20	Baarah	*6.5*	3.4	2.5	3.3	*6.2*	*6.2*	3.4	3.4
21	**HAA DHAALU ATOLL**	*4.9*	**3.0**	**2.2**	**2.9**	*4.6*	*4.6*	**2.9**	**2.9**
22	Faridhoo	*5.0*	5.3	0.3	4.8	*5.0*	*4.9*	4.9	4.9
23	Hondaidhoo	*5.3*	0.0	0.0	0.0	*5.3*	*5.3*	-	-
24	Hanimaadhoo	*5.1*	1.7	1.9	1.7	*5.1*	*5.0*	1.6	1.6
25	Finey	*5.4*	4.4	1.9	4.2	*5.3*	*5.2*	4.3	4.3
26	Naivaadhoo	*4.3*	3.8	3.1	3.7	*3.9*	*3.8*	3.7	3.6
27	Hirimaradhoo	*5.7*	3.7	4.7	3.8	*5.4*	*5.4*	4.2	4.1
28	Nolhivaranfaru	*4.6*	2.5	3.4	2.6	*4.4*	*4.4*	2.6	2.6
29	Nellaidhoo	*4.9*	3.4	0.2	3.2	*4.5*	*4.5*	3.4	3.4
30	Nolhivaramu	*6.2*	3.7	3.7	3.7	*5.9*	*6.0*	3.9	3.9
31	Kuribi	*5.6*	4.5	2.9	4.3	*5.4*	*5.4*	4.4	4.4
32	Kuburudhoo	*6.7*	4.3	2.6	4.2	*6.6*	*6.5*	4.5	4.4
33	KULHUDHUFFUSHI	*3.5*	2.4	1.9	2.4	*3.1*	*3.1*	2.2	2.2
34	Kumundhoo	*6.2*	4.2	0.9	3.9	*6.0*	*6.0*	4.2	4.1
35	Neykurendhoo	*5.0*	3.1	1.8	2.9	*4.7*	*4.7*	3.0	3.0
36	Vaikaradhoo	*4.2*	2.7	4.4	2.8	*3.6*	*3.6*	2.9	2.9
37	Maavaidhoo	*5.2*	4.2	3.6	4.2	*5.1*	*5.0*	4.5	4.4
38	Makunudhoo	*5.4*	3.1	1.3	3.0	*5.0*	*5.0*	3.0	3.0
39	**SHAVIYANI ATOLL**	*5.2*	**4.0**	**1.4**	**3.8**	*4.9*	*4.9*	**3.6**	**3.6**
40	Kaditheemu	*5.6*	2.4	0.4	2.3	*5.2*	*5.2*	2.2	2.2
41	Noomaraa	*5.7*	5.1	3.4	5.0	*5.6*	*5.5*	5.0	5.0
42	Goidhoo	*5.4*	4.8	1.4	4.5	*5.1*	*5.1*	4.6	4.6
43	Feydhoo	*6.0*	4.7	3.8	4.7	*5.9*	*5.9*	4.7	4.7
44	Feevah	*5.1*	3.9	0.0	3.5	*4.9*	*4.9*	3.4	3.4
45	Bilehffahi	*6.0*	3.6	1.5	3.5	*5.8*	*5.7*	3.4	3.3
46	Foakaidhoo	*6.1*	5.3	1.2	4.9	*5.8*	*5.8*	4.6	4.6

STATISTICAL ANNEX 15: COMPOSITE HUMAN VULNERABILITY INDICES

		1997	2004	2004	2004	1997	1997	2004	2004
	Atoll / Island name	*Composite Human Vulnerability Index*	Overall Non-income HVI – Equal Weights	Income poverty	Composite HVI – Equal Weights	*Composite HVI – Female Priorities*	*Composite HVI – Male Priorities*	Composite HVI – Female Priorities	Composite HVI – Male Priorities
47	Narudhoo	*5.7*	5.8	1.3	5.4	*5.4*	*5.4*	5.4	5.3
48	Maakandoodhoo	*4.9*	4.1	0.3	3.8	*4.7*	*4.7*	3.8	3.8
49	Maroshi	*4.5*	3.5	1.7	3.4	*4.1*	*4.1*	3.4	3.4
50	Lhaimagu	*4.9*	4.2	2.2	4.0	*4.8*	*4.8*	4.1	4.1
51	Firubaidhoo	*4.7*	4.3	1.1	4.0	*4.4*	*4.4*	4.4	4.3
52	Komandoo	*3.8*	2.9	2.5	2.9	*3.7*	*3.6*	2.6	2.6
53	Maaugoodhoo	*4.7*	2.9	1.6	2.8	*4.6*	*4.5*	3.0	3.0
54	FUNADHOO	*2.9*	3.1	0.3	2.8	*2.5*	*2.5*	2.8	2.7
55	Milandhoo	*-*	3.6	0.9	3.4	*-*	*-*	3.0	3.0
56	**NOONU ATOLL**	***5.0***	**3.5**	**2.5**	**3.4**	***4.8***	***4.8***	**3.3**	**3.3**
57	Hebadhoo	*5.0*	3.2	1.0	3.0	*5.1*	*5.1*	3.1	3.1
58	Kedhikolhudhoo	*4.3*	3.8	1.8	3.6	*4.0*	*4.0*	3.2	3.3
59	Maalhendhoo	*6.1*	4.5	3.6	4.4	*6.0*	*6.0*	4.6	4.5
60	Kudafari	*5.7*	4.0	2.4	3.9	*5.5*	*5.5*	3.7	3.7
61	Landhoo	*4.9*	3.4	2.3	3.3	*4.9*	*4.9*	3.6	3.6
62	Maafaru	*4.2*	4.6	5.8	4.7	*3.9*	*3.9*	4.7	4.7
63	Lhohi	*6.0*	4.2	4.6	4.2	*5.9*	*5.9*	4.4	4.3
64	Miladhoo	*6.2*	3.9	4.4	3.9	*6.2*	*6.2*	3.8	3.8
65	Magoodhoo	*5.4*	4.2	0.8	3.9	*5.5*	*5.4*	4.0	3.9
66	MANADHOO	*3.7*	2.2	3.0	2.2	*3.4*	*3.4*	2.2	2.2
67	Holhudhoo	*4.2*	3.1	1.5	3.0	*3.8*	*3.9*	2.8	2.8
68	Fodhdhoo	*5.8*	6.1	1.5	5.7	*5.5*	*5.5*	5.7	5.7
69	Velidhoo	*3.3*	2.2	1.3	2.1	*3.2*	*3.2*	1.9	2.0
70	**RAA ATOLL**	***4.5***	**4.0**	**2.0**	**3.8**	***4.4***	***4.3***	**3.7**	**3.7**
71	Alifushi	*3.8*	3.9	3.2	3.8	*3.4*	*3.4*	3.8	3.8
72	Vaadhoo	*5.5*	5.8	5.1	5.7	*5.4*	*5.4*	5.8	5.8
73	Rasgetheemu	*4.2*	4.4	0.1	4.1	*4.2*	*4.1*	4.2	4.2
74	Agolhitheemu	*4.4*	4.0	1.4	3.8	*4.5*	*4.5*	3.9	3.9
75	Hulhudhuffaaru	*4.0*	3.2	3.3	3.3	*3.6*	*3.6*	2.9	3.0
76	UGUFAARU	*3.7*	2.4	0.9	2.3	*3.7*	*3.7*	2.1	2.2
77	Kadholhudhoo	*4.3*	4.7	1.0	4.4	*4.2*	*4.1*	4.3	4.3
78	Maakurathu	*5.3*	4.6	3.8	4.5	*5.3*	*5.2*	4.5	4.4
79	Rasmaadhoo	*5.2*	3.7	4.8	3.8	*5.2*	*5.2*	3.8	3.8
80	Innamaadhoo	*4.8*	3.4	0.5	3.2	*4.8*	*4.8*	3.3	3.3
81	Maduvvari	*5.4*	3.6	3.0	3.6	*5.1*	*5.1*	3.5	3.5
82	Iguraidhoo	*4.7*	3.6	1.6	3.5	*4.5*	*4.5*	3.3	3.3
83	Fainu	*5.9*	4.2	1.4	3.9	*5.8*	*5.8*	4.0	4.0
84	Meedhoo	*2.9*	3.7	1.4	3.5	*2.7*	*2.7*	3.2	3.2
85	Kinolhas	*5.7*	4.4	2.2	4.2	*5.6*	*5.5*	4.3	4.3
86	**BAA ATOLL**	***4.7***	**3.4**	**1.5**	**3.2**	***4.5***	***4.5***	**3.1**	**3.1**
87	Kudarikilu	*4.2*	2.5	1.1	2.4	*4.1*	*4.1*	2.4	2.4
88	Kamadhoo	*4.3*	2.7	0.6	2.5	*4.3*	*4.3*	2.7	2.7
89	Kendhoo	*5.0*	3.0	1.2	2.8	*4.7*	*4.7*	2.7	2.7
90	Kihaadhoo	*5.7*	4.8	1.1	4.5	*5.6*	*5.6*	4.5	4.4
91	Dhonfanu	*5.6*	4.0	1.6	3.8	*5.5*	*5.5*	4.1	4.0
92	Dharavandhoo	*3.9*	2.6	0.1	2.4	*3.8*	*3.8*	2.6	2.6

STATISTICAL ANNEX 15: COMPOSITE HUMAN VULNERABILITY INDICES

		1997	2004	2004	2004	1997	1997	2004	2004
	Atoll / Island name	*Composite Human Vulnerability Index*	**Overall Non-income HVI – Equal Weights**	**Income poverty**	**Composite HVI – Equal Weights**	*Composite HVI – Female Priorities*	*Composite HVI – Male Priorities*	**Composite HVI – Female Priorities**	**Composite HVI – Male Priorities**
93	Maalhos	4.4	4.8	0.8	4.5	4.5	4.5	4.5	4.5
94	EYDHAFUSHI	3.0	2.1	0.7	2.0	2.5	2.5	1.9	1.9
95	Thulhaadhoo	3.6	4.2	3.8	4.1	3.2	3.2	3.9	3.9
96	Hithaadhoo	5.7	3.4	1.6	3.2	5.4	5.4	3.3	3.3
97	Fulhadhoo	6.9	4.6	0.2	4.3	6.7	6.7	4.3	4.2
98	Fehendhoo	5.9	4.3	0.4	4.0	5.9	5.9	4.0	4.0
99	Goidhoo	6.5	3.3	0.4	3.1	6.3	6.3	2.9	3.0
100	**LHAVIYANI ATOLL**	**4.7**	**3.2**	**1.9**	**3.1**	**4.4**	**4.4**	**3.0**	**3.0**
101	Hinnavaru	4.7	3.5	3.0	3.4	4.3	4.3	3.2	3.2
102	NAIFARU	4.1	2.5	0.9	2.4	3.8	3.8	2.3	2.3
103	Kurendhoo	5.4	4.4	2.5	4.2	5.3	5.3	4.0	4.0
104	Olhuvelifushi	5.7	4.9	1.2	4.6	5.6	5.6	4.6	4.6
105	Maafilaafushi	2.0	3.8	0.0	3.5	2.1	2.1	3.8	3.8
106	**KAAFU ATOLL**	**4.1**	**3.2**	**1.1**	**3.0**	**4.0**	**4.0**	**3.0**	**3.0**
107	Kaashidhoo	2.1	2.4	2.8	2.4	2.0	2.0	2.3	2.3
108	Gaafaru	4.1	3.4	0.9	3.2	4.1	4.1	3.4	3.3
109	Dhiffushi	3.3	3.6	0.9	3.4	3.2	3.1	3.6	3.6
110	THULUSDHOO	3.1	2.4	2.2	2.4	2.7	2.7	2.2	2.2
111	Huraa	2.9	3.1	0.5	2.9	2.5	2.5	3.0	3.0
112	Himmafushi	3.3	4.3	0.2	3.9	3.4	3.4	4.0	3.9
113	Gulhi	3.7	4.2	0.9	3.9	3.5	3.5	4.1	4.0
114	Maafushi	5.1	2.8	0.1	2.5	5.0	5.0	2.3	2.3
115	Guraidhoo	3.1	2.7	0.0	2.5	2.9	2.9	2.4	2.4
116	**ALIF ALIFU ATOLL**	**4.2**	**3.5**	**1.6**	**3.3**	**4.0**	**4.1**	**3.3**	**3.3**
117	Thoddoo	3.5	2.7	0.9	2.6	3.2	3.2	2.6	2.6
118	RASDHOO	3.1	2.7	1.2	2.6	2.7	2.6	2.4	2.5
119	Ukulhas	3.5	2.8	1.5	2.7	3.4	3.4	2.9	2.9
120	Mathiveri	4.2	4.3	3.2	4.2	4.2	4.1	4.2	4.1
121	Bodufolhudhoo	4.7	3.8	1.5	3.6	4.6	4.6	3.7	3.7
122	Feridhoo	4.7	3.9	1.4	3.7	4.5	4.6	3.3	3.3
123	Maalhos	3.6	4.3	1.9	4.1	3.5	3.5	4.5	4.4
124	Himendhoo	4.4	2.3	2.1	2.3	4.2	4.2	2.3	2.2
125	**ALIFU DHAALU ATOLL**	**4.0**	**3.4**	**1.2**	**3.2**	**3.8**	**3.8**	**3.3**	**3.2**
126	Hangnameedhoo	3.4	3.1	0.9	3.0	3.2	3.2	3.1	3.0
127	Omadhoo	4.3	3.3	1.4	3.1	4.2	4.2	3.3	3.2
128	Kuburudhoo	4.4	4.4	1.2	4.1	4.4	4.4	4.6	4.5
129	MAHIBADHOO	2.9	2.5	2.3	2.5	2.6	2.5	2.3	2.3
130	Mandhoo	4.8	3.6	1.3	3.4	4.7	4.7	3.9	3.8
131	Dhagethi	1.7	2.6	0.1	2.4	1.5	1.5	2.3	2.3
132	Dhigurah	3.6	3.4	1.4	3.2	3.4	3.4	3.3	3.3
133	Fenfushi	4.5	3.5	1.5	3.3	4.7	4.7	3.7	3.7
134	Dhidhdhoo	5.1	3.5	0.0	3.2	5.1	5.1	3.6	3.5
135	Maamigili	4.3	3.3	0.3	3.0	4.0	4.0	3.1	3.1
136	**VAAVU ATOLL**	**4.5**	**3.2**	**0.6**	**3.0**	**4.2**	**4.2**	**3.0**	**3.0**
137	Fulidhoo	3.6	2.4	0.0	2.2	3.5	3.4	2.3	2.2
138	Thinadhoo	6.0	3.5	1.7	3.4	5.8	5.8	3.7	3.7

STATISTICAL ANNEX 15: COMPOSITE HUMAN VULNERABILITY INDICES

		1997	2004	2004	2004	*1997*	*1997*	2004	2004
	Atoll / Island name	***Composite Human Vulnerability Index***	**Overall Non-income HVI – Equal Weights**	**Income poverty**	**Composite HVI – Equal Weights**	***Composite HVI – Female Priorities***	***Composite HVI – Male Priorities***	**Composite HVI – Female Priorities**	**Composite HVI – Male Priorities**
139	FELIDHOO	*3.4*	2.8	0.4	2.6	*3.2*	*3.2*	2.6	2.6
140	Keyodhoo	*4.7*	2.9	0.9	2.7	*4.4*	*4.3*	2.8	2.8
141	Rakeedhoo	*4.3*	4.4	1.1	4.2	*4.0*	*4.0*	4.1	4.0
142	**MEEMU ATOLL**	***4.9***	**3.3**	**0.7**	**3.1**	***4.7***	***4.7***	**3.0**	**3.0**
143	Raimandhoo	*4.9*	3.6	0.0	3.3	*4.9*	*4.9*	3.4	3.3
144	Madifushi	*5.2*	3.4	0.8	3.2	*5.1*	*5.1*	3.1	3.1
145	Veyvah	*6.2*	4.4	0.7	4.1	*6.1*	*6.1*	4.2	4.2
146	Mulah	*3.5*	3.1	0.6	2.9	*3.3*	*3.3*	2.7	2.7
147	MULI	*2.8*	1.9	0.4	1.7	*2.5*	*2.5*	1.7	1.7
148	Naalaafushi	*5.5*	4.4	1.0	4.1	*5.3*	*5.2*	4.3	4.2
149	Kolhufushi	*5.9*	2.9	0.0	2.6	*5.6*	*5.6*	2.5	2.5
150	Dhiggaru	*5.6*	4.1	1.9	3.9	*5.6*	*5.6*	3.6	3.6
151	Maduvvari	*4.6*	3.8	0.4	3.5	*4.4*	*4.3*	3.3	3.3
152	**FAAFU ATOLL**	***5.2***	**3.6**	**1.2**	**3.4**	***5.0***	***5.0***	**3.3**	**3.3**
153	Feeali	*5.3*	3.2	0.5	3.0	*5.1*	*5.1*	2.9	2.9
154	Biledhdhoo	*5.5*	4.4	2.0	4.2	*5.2*	*5.2*	4.2	4.2
155	Magoodhoo	*3.4*	3.7	1.6	3.6	*3.2*	*3.1*	3.6	3.6
156	Dharaboodhoo	*5.2*	3.2	0.0	2.9	*5.1*	*5.1*	2.9	2.9
157	NILANDHOO	*4.3*	3.2	1.1	3.0	*3.9*	*3.9*	2.6	2.6
158	**DHAALU ATOLL**	***4.7***	**3.6**	**0.8**	**3.4**	***4.5***	***4.5***	**3.4**	**3.4**
159	Meedhoo	*3.6*	4.1	0.0	3.7	*3.3*	*3.3*	3.8	3.7
160	Badidhoo	*6.2*	2.9	0.0	2.6	*6.0*	*6.0*	2.6	2.5
161	Ribudhoo	*5.2*	3.9	0.0	3.5	*5.0*	*5.0*	3.6	3.6
162	Hulhudheli	*5.4*	4.0	1.4	3.8	*5.2*	*5.1*	3.9	3.9
163	Gemendhoo	*5.8*	4.4	2.6	4.3	*5.7*	*5.6*	4.3	4.2
164	Vaanee	*4.1*	4.3	1.1	4.0	*3.9*	*3.8*	4.3	4.2
165	Maaeboodhoo	*4.1*	5.1	2.1	4.9	*4.2*	*4.1*	4.9	4.8
166	KUDAHUVADHOO	*2.9*	1.9	0.6	1.8	*2.6*	*2.6*	1.8	1.8
167	**THAA ATOLL**	***4.9***	**3.4**	**0.8**	**3.2**	***4.7***	***4.7***	**3.1**	**3.0**
168	Buruni	*4.5*	3.9	0.0	3.5	*4.5*	*4.5*	3.6	3.6
169	Vilufushi	*4.6*	2.9	0.6	2.7	*4.4*	*4.4*	2.3	2.4
170	Madifushi	*6.2*	4.8	2.2	4.6	*6.1*	*6.0*	4.7	4.7
171	Dhiyamigili	*5.9*	6.4	0.8	5.9	*6.0*	*5.9*	5.8	5.8
172	Guraidhoo	*3.9*	1.6	1.3	1.5	*3.4*	*3.4*	1.4	1.4
173	Kadoodhoo	*5.0*	4.0	0.5	3.8	*4.7*	*4.8*	3.8	3.8
174	Vandhoo	*5.1*	3.8	0.1	3.5	*5.2*	*5.2*	3.5	3.5
175	Hirilandhoo	*4.4*	3.3	0.2	3.0	*4.3*	*4.3*	3.1	3.1
176	Gaadhiffushi	*5.4*	3.8	1.3	3.6	*5.4*	*5.4*	3.9	3.8
177	Thimarafushi	*4.1*	2.7	0.3	2.5	*4.1*	*4.0*	2.3	2.3
178	VEYMANDOO	*3.2*	2.6	0.0	2.4	*3.1*	*3.1*	2.1	2.1
179	Kibidhoo	*6.6*	2.4	1.1	2.3	*6.4*	*6.3*	2.3	2.3
180	Omadhoo	*5.8*	3.7	1.4	3.5	*5.7*	*5.6*	3.6	3.6
181	**LAAMU ATOLL**	***4.8***	**3.7**	**0.6**	**3.5**	***4.8***	***4.7***	**3.4**	**3.4**
182	Isdhoo	*4.1*	3.9	0.1	3.6	*4.0*	*3.9*	3.4	3.4
183	Dhabidhoo	*4.9*	4.1	0.3	3.8	*4.6*	*4.6*	3.8	3.7
184	Maabaidhoo	*4.6*	4.9	0.1	4.5	*4.7*	*4.6*	4.3	4.3

STATISTICAL ANNEX 15: COMPOSITE HUMAN VULNERABILITY INDICES

		1997	2004	2004	2004	*1997*	*1997*	2004	2004
	Atoll / Island name	***Composite Human Vulnerability Index***	**Overall Non-income HVI – Equal Weights**	**Income poverty**	**Composite HVI – Equal Weights**	***Composite HVI – Female Priorities***	***Composite HVI – Male Priorities***	**Composite HVI – Female Priorities**	**Composite HVI – Male Priorities**
185	Mundoo	*5.1*	5.2	0.1	4.8	*5.1*	*5.1*	5.0	4.9
186	Kalhaidhoo	*5.9*	3.9	3.5	3.8	*6.0*	*5.9*	4.0	3.9
187	Gamu	*3.9*	3.8	0.6	3.6	*3.8*	*3.7*	3.3	3.3
188	Maavah	*4.5*	3.0	1.8	2.9	*4.5*	*4.4*	2.7	2.7
189	FONADHOO	*3.1*	2.4	0.3	2.3	*3.0*	*3.0*	2.0	2.0
190	Gaadhoo	*5.7*	3.3	0.3	3.1	*5.7*	*5.7*	3.4	3.4
191	Maamendhoo	*5.4*	3.9	0.0	3.6	*5.5*	*5.5*	3.7	3.6
192	Hithadhoo	*6.0*	3.6	0.0	3.3	*5.7*	*5.6*	3.4	3.3
193	Kunahandhoo	*7.4*	4.5	1.2	4.2	*7.4*	*7.4*	4.5	4.4
194	**GAAFU ALIFU ATOLL**	***5.1***	**3.5**	**0.6**	**3.3**	***5.0***	***5.0***	**3.2**	**3.2**
195	Kolamaafushi	*2.6*	3.4	0.4	3.1	*2.5*	*2.5*	3.0	2.9
196	VILLINGILI	*3.7*	2.2	0.2	2.0	*3.4*	*3.4*	2.0	2.1
197	Maamendhoo	*4.7*	3.0	2.7	2.9	*4.5*	*4.4*	2.8	2.8
198	Nilandhoo	*6.5*	4.8	0.7	4.5	*6.5*	*6.5*	4.7	4.6
199	Dhaandhoo	*6.0*	3.7	0.3	3.4	*5.9*	*5.8*	3.6	3.5
200	Dhevvadhoo	*5.6*	4.1	0.0	3.7	*5.3*	*5.3*	3.8	3.7
201	Kodey	*6.2*	4.3	0.3	4.0	*6.2*	*6.2*	4.2	4.1
202	Dhiyadhoo	*5.5*	5.7	2.7	5.4	*5.5*	*5.5*	5.7	5.6
203	Gemanafushi	*4.9*	4.0	0.3	3.7	*4.8*	*4.7*	3.5	3.5
204	Kanduhulhudhoo	*6.7*	3.4	0.4	3.1	*6.6*	*6.5*	3.1	3.1
205	**GAAFU DHAALU ATOLL**	***4.9***	**2.9**	**0.7**	**2.7**	***4.7***	***4.7***	**2.6**	**2.6**
206	Madeveli	*5.5*	2.9	0.9	2.7	*5.4*	*5.4*	2.7	2.7
207	Hoadedhdhoo	*5.0*	3.2	1.6	3.1	*4.9*	*4.9*	3.3	3.2
208	Nadallaa	*7.1*	4.8	1.3	4.5	*7.2*	*7.2*	4.4	4.4
209	Gadhdhoo	*3.3*	2.7	0.2	2.5	*3.0*	*3.0*	2.2	2.2
210	Rathafandhoo	*5.0*	4.1	2.0	3.9	*5.0*	*5.0*	3.8	3.8
211	Vaadhoo	*6.4*	4.1	2.2	4.0	*6.3*	*6.3*	4.1	4.1
212	Fiyoari	*4.4*	2.3	0.0	2.1	*4.4*	*4.4*	2.0	2.0
213	Maathodaa	*4.9*	2.6	0.1	2.4	*5.0*	*5.0*	2.6	2.6
214	Fares	*6.9*	3.0	0.2	2.7	*7.0*	*6.9*	3.0	3.0
215	THINADHOO	*3.2*	1.5	0.5	1.4	*2.7*	*2.7*	1.4	1.5
216	**GNAVIYANI ATOLL**	***3.9***	**1.7**	**0.4**	**1.6**	***3.5***	***3.5***	**1.5**	**1.5**
217	FOAMMULAH	*3.9*	1.7	0.4	1.6	*3.5*	*3.5*	1.5	1.5
218	**SEENU ATOLL**	***3.7***	**2.4**	**0.5**	**2.3**	***3.3***	***3.3***	**2.1**	**2.1**
219	Meedhoo	*2.0*	3.2	0.1	2.9	*2.0*	*2.0*	3.1	3.1
220	HITHADHOO	*2.9*	2.2	0.8	2.1	*2.5*	*2.5*	1.9	1.9
221	Maradhoo	*3.2*	2.3	0.2	2.2	*2.8*	*2.7*	2.1	2.1
222	Feydhoo	*4.1*	2.7	0.0	2.5	*3.9*	*3.8*	2.3	2.3
223	Maradhoo-Feydhoo	*3.6*	1.9	0.2	1.7	*3.3*	*3.3*	1.6	1.7
224	Hulhudhoo	*3.4*	2.2	0.5	2.1	*3.2*	*3.1*	2.0	2.0