



Republic of Maldives

Vulnerability and Poverty
Assessment
1998



Republic of Maldives

VULNERABILITY AND POVERTY ASSESSMENT

1998

**Ministry of Planning and National Development
in cooperation with the
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Male', Republic of Maldives**

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Message by Hon. Mr Ibrahim Hussain Zaki Minister of Planning and National Development

This report, the Vulnerability and Poverty Assessment 1998, marks a milestone in our understanding of development and change in the Maldives. It addresses a wide range of development issues covering both income and non-income aspects including gender, employment, environment, housing, social services and infrastructure, at the national, atoll and island levels. Based on these and other relevant indicators, the report provides valuable insights into the nature and extent of poverty, deprivation and vulnerability in the Maldives. The usefulness of the report is further enhanced by an assessment of the needs and priorities for development as perceived by the people themselves. This report provides not only new information about the Maldives but also a fresh look at the range of development issues facing the country, as we stand on the threshold of the new millennium.

This important report is a first in many ways. It is based on the most comprehensive survey undertaken in the Maldives so far, both in terms of geographical coverage as well as the range of development concerns. This information is also on CD-ROM, which makes it at once accessible and convenient for users. Based on the parameters of development covered in the survey, the report presents a Vulnerability Index for the Maldives for the first time in the country's development history.

As the Maldives experiences unsurpassed economic growth and social progress under the dynamic leadership of President Maumoon Abdul Gayoom, this report lays the ground work for assessing development shortfalls and promoting balanced, equitable and sustainable livelihoods for all. The present report and its accompanying database provide reliable and comprehensive baseline information that could be effectively used for monitoring the status of living conditions and to formulate relevant national and regional development strategies. This becomes particularly important as the country looks for new and innovative ways to overcome the barriers of smallness, and increase national productivity by developing strategies for the consolidation of widely dispersed island population.

I am confident that this report will also be a valuable source of information for our development partners in understanding our priorities and concerns, and in formulating suitable programmes of assistance. This report will greatly assist in bridging the information gap that all too often hinders the development of relevant and effective programmes and projects.

It is a great pleasure for me to express my gratitude to all those who assisted in conducting the survey and in the preparation of the report. In particular, I would like to thank the various Government agencies for their support and assistance in this process. I would also like to convey my deep appreciation to the United Nations Development Programme for providing the necessary financial support and technical assistance. I would personally like to acknowledge the valuable contribution made by the Resident Representative Mr. Narinder Kakar towards the formulation and implementation of the survey and in bringing the project to a successful conclusion.

Message by Mr Narinder Kakar UNDP Resident Representative

The rapid development in the Maldives during the last couple of decades has significantly improved the living standards of the people. Virtually all the socio-economic indicators used to measure progress have witnessed consistent and significant improvements to the extent that they have become exemplary. The Maldives can even be considered as having undergone social and economic transformation.

Nevertheless, a holistic approach to development is definitely compelling to address the various challenges and the evolving development needs. The *Maldives Vulnerability and Poverty Assessment 1998* (VPA) is in line with the UNDP mandate and priorities. Poverty as seen from a sustainable human development perspective is much broader than traditional poverty concepts that are defined in terms of shortfalls of consumption or income. The concept of vulnerability, or insecurity, is especially relevant for a country like the Maldives where the communities are widely dispersed over a large number of small and remote islands. Seasonal and non-seasonal shocks can have a strong impact on environmental security and on the year-round availability of basic minimum need of food and drinking water on all inhabited islands. As a monitoring tool or an initial benchmark, the VPA introduces a new, broad-based measure of development, poverty, deprivation and vulnerability.

The main output of the VPA is a composite index, called the *Human Vulnerability Index*, consisting of 12 living standard dimensions: housing, transport, electricity, communication, employment, income, food security, environmental security, availability of drinking water, consumer goods, access to health and education. In the given context, vulnerability is sought to be defined in terms of existence of disparities in income, opportunity and access to the related services and the need to measure them to facilitate formulation of policies and strategies for the future.

In addition to the information about living standards, the VPA includes opinions on the difficulties faced, and on the ranking of needs and development priorities experienced by households, Island Chiefs, Island Development Committees and Women's Committees. The broad spectrum of issues addressed through the Assessment should enable the formulation of balanced policies and strategies that are better targeted to people-centered development needs in the Maldives.

The successful completion of the VPA required the collaborative efforts of many Government agencies and individuals. In this regard, we are extremely grateful to Hon. Mr. Ibrahim Hussain Zaki, Minister of Planning and National Development for bringing about the synergies required to conclude the multi-sectoral analysis of the VPA. By the same token, I would like to express our deep appreciation to his predecessors, Hon. Mr. Ismail Shafeeu, Minister of Home Affairs, Housing and Environment for his foresight in initiating the Vulnerability and Poverty Assessment and Hon. Mr. Abdul Rasheed Hussain, Minister of Fisheries, Agriculture and Marine Resources for providing guidance during the implementation stage and for his sustained moral support.

I hope that this report will be a helpful tool in national and regional development planning that would eventually contribute to further improvements in the living standards of the Maldivian people.

Foreword

The Maldives Vulnerability and Poverty Assessment (VPA) report introduces the Human Vulnerability Index, a new, broad-based measure of development, poverty, deprivation and vulnerability. It is a composite index consisting of 12 living standard dimensions: housing, transport, electricity, communication, employment, income, food security, environmental security, availability of drinking water, consumer goods, access to health and education. In the given context, vulnerability is sought to be defined in terms of the existence of disparities in income, opportunity and access to the related services and the need to measure them for the formulation of policies and strategies. Each one of the above dimensions has a number of components. One of the methodological improvements attempted in the compilation of the index is the use of weights based on the perceptions of the islands' residents. Apart from this new index, the Assessment uses, in several fields, innovative concepts, definitions and methodologies to improve understanding of the problems facing the people of an island state like the Maldives.

The resulting database of the Assessment is founded on a comprehensive survey on all inhabited islands. In other words, the survey was carried out in all villages of the country. The sample size of the survey of 2,600 households is very large for a country like the Maldives and the close attention given throughout the period to data collection, editing and processing resulted in a database of a very high level of reliability.

This report presents part of the database, not only in tables and figures, but also in the form of a socio-economic Atlas consisting of 15 maps, one for each living standard dimension and three aggregated vulnerability maps. Further, a user-friendly CD-ROM is available that enables zooming in on the map of the Maldives to view information on the living standard dimensions of islands selected by simply clicking on them. Alternatively, one or more living standard dimensions can be selected to get the regional distribution of the performance of those dimensions across the country. All information can easily be exported to a spreadsheet (Excel) for further analyses.

Finally, it is our great pleasure and privilege to thankfully acknowledge the guidance and wise counsel provided by His Excellency Mr. Maumoon Abdul Gayoom, the President of the Republic of the Maldives.

United Nations Development Programme
in the Republic of Maldives

Ministry of Planning and National Development
of the Republic of Maldives

Acknowledgements

The success of a project like the Vulnerability and Poverty Assessment, a most comprehensive exercise ever conducted in the Maldives, depends on the cooperation of thousands of people in the country. In the first place, the contribution and cooperation of the 2,600 heads of the selected households and their spouses, the 4,000 members of the island development and women's committees and the 200 Island Chiefs is acknowledged with gratitude. Without their unstinted cooperation, the data and information for the Vulnerability and Poverty Assessment could not have been gathered.

The Atoll and Island Chiefs and their staff, as well as the staff of other Government departments have provided a great deal of appreciable services that allowed the surveys to be carried out in an efficient and timely manner.

The professional contributions of consultants Hans de Kruijk and Willem van der Andel, assisted by Manon Dohmen and Annemieke van der Steeg, who were responsible for carrying out the data analysis and preparing the Report, deserve a special mention. They worked tirelessly in bringing this project to a successful end. The hard work and contributions of Mariyam Waheeda, Director Statistics, Ministry of Planning and National Development and her staff were of critical importance in many stages of the process, including survey design, questionnaire development, enumerator training, field supervision and facilitation, data compilation as well as interpretation of the results. Asim Ahmed, Deputy Director, Programmes, Ministry of Planning and National Development was closely involved in the project from its inception through to its conclusion and provided valuable technical and logistical support to the project team. He played a key role in coordinating inter-sectoral discussions on various aspects of the study and the interpretation of the results. Eric Jager of UNDP provided technical support to the project team in relation to demographic data. Mohammed Saeed of UNICEF provided an analysis of the extent of wasting and stunting and nutrition levels. These professionals are also acknowledged for their contributions.

Mention must also be made of Anthony Dolman, Senior Consultant, Institute of Social Studies, The Hague, who wrote some parts of the report and undertook editing of the initial draft report. Final proof reading and editing of the consolidated version of the report has been done by another consultant, Raghunath Makkar. Andrew Price developed the basic format of the maps of the Atlas while Origin BV, The Netherlands, constructed the computer program held on the CD-ROM. A special mention is made to Deno Costi who made possible the final modifications to the database and computer program contained on this CD-ROM. Deno is also acknowledge for his idea of the electronic distribution of the Vulnerability and Poverty Assessment and for the construction and duplication of the CD-ROMS.

The enumeration staff involved in the survey, which included recent high-school graduates as enumerators and staff of the Statistics Section of the Ministry of Planning and National Development (MPND) as supervisors deserve special recognition for their hard work under considerable constraints and in difficult circumstances. In this regard, the significant contribution made by Idham Fahumy of Ministry of Planning and National Development in organising the time schedules and managing the day-to-day requirements of the various members of the Assessment team is duly recognised. The contributions of Jeehan Hassan Didi and Fathimath Nihan are also acknowledged for the maintenance of the data-entry programs and data management. The programs were developed in Blaise by Gosse Hommes in co-operation with Jeehan Hassan Didi. In general terms, the support and understanding of the Statistics Section staff is highly appreciated.

Throughout the entire exercise, the staff of the UNDP office in Male', especially Shaheem Razeem, Ali Hashim and Philippe Zysset provided invaluable support to the project team. The support provided by Abdulla Rasheed in the final stages of layout, compilation and printing, deserves a special mention.

Acknowledgements (continued)

Finally, it must be said that the VPA was an extensive exercise involving many people. Apart from the thousands of respondents, more than 150 people worked in the project, mainly in enumeration, data-entry and quality control. It is, therefore, not possible to name all those who have contributed and worked on this report. Deep gratitude is expressed for the contributions of all those involved in this valuable and satisfying exercise.

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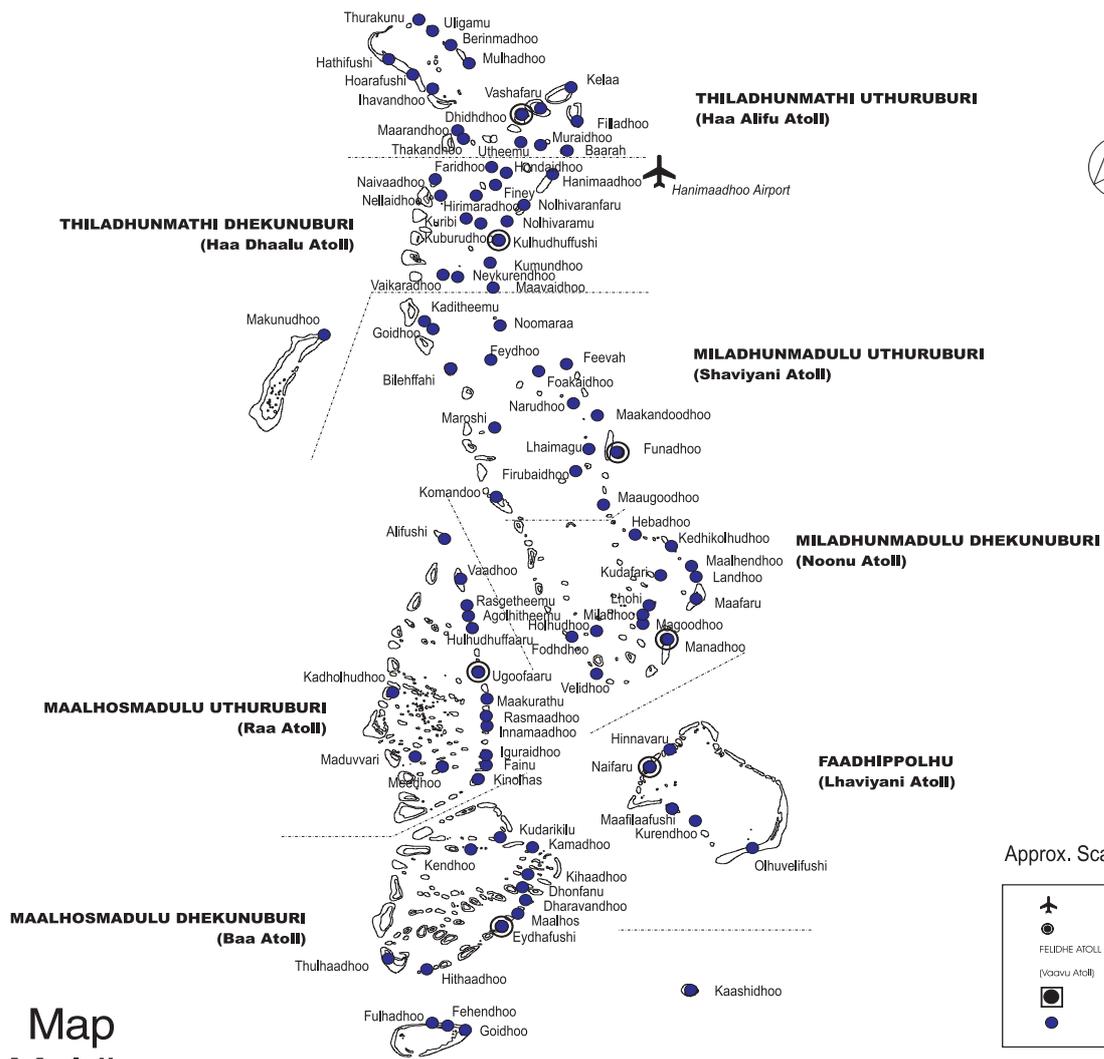
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Map of Maldives

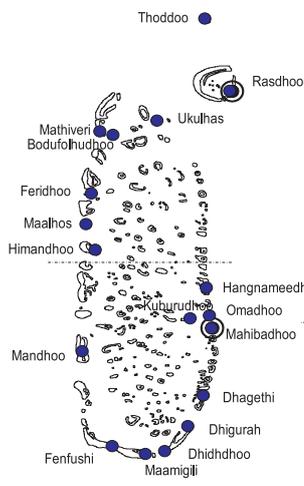
Map of Maldives (North)



Approx. Scale= 1:1,650,000

	Airport
	Atoll Capital
	FELIDHE ATOLL Official Atoll Name
	(Vaavu Atoll) Local Name
	Capital
	Inhabited island

ARI ATHOLHU UTHURUBURI (Alifu Alifu Atoll)

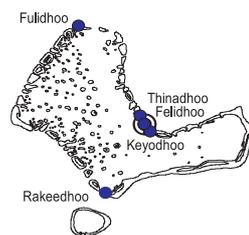


ARI ATHOLHU DHEKUNUBURI (Alifu Dhaalu Atoll)

MALE' ATOLL (Kaafu Atoll)

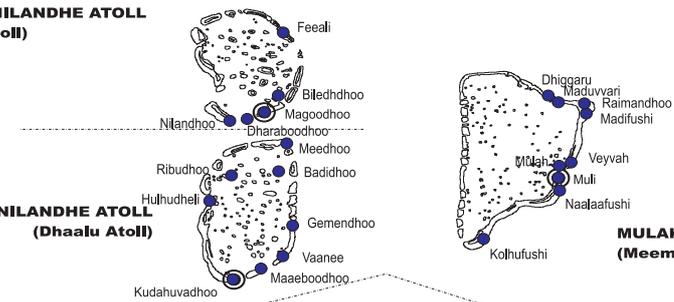


FELIDHE ATOLL (Vaavu Atoll)



**NORTH NILANDHE ATOLL
(Faafu Atoll)**

**SOUTH NILANDHE ATOLL
(Dhaalu Atoll)**

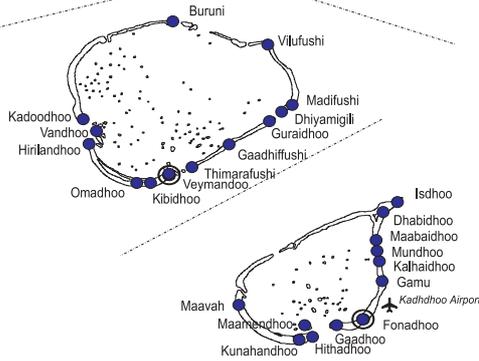


**MULAKATHOLHU ATOLL
(Meemu Atoll)**



**KOLHUMADULU
(Thaa Atoll)**

**HADHDHUNMATHI
(Laamu Atoll)**



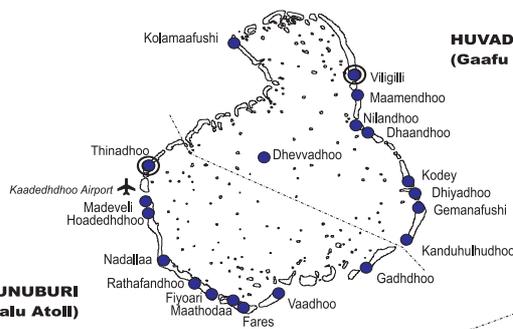
Approx. Scale= 1:1,650,000

**Map
of Maldives
(South)**

	Airport
	Atoll Capital
ADDU ATOLL	Official Atoll Name
(Seenu Atoll)	Local Name
	Inhabited island

**HUVADHU ATOLL DHEKUNUBURI
(Gaafu Dhaalu Atoll)**

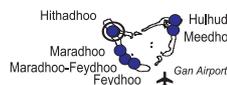
**HUVADHU ATHOLHU UTHURUBURI
(Gaafu Alifu Atoll)**



**FOAMULAKU ATOLL
(Gnaviyani Atoll)**

Foahmulah

**ADDU ATOLL
(Seenu Atoll)**



Statistical Profile of Maldives

	1977		MRE
<i>Human Development Indicators</i>			
Life expectancy at birth (years)	46.5	(1997)	69.62
Population with access to health services (%)	-		
Total	39.8		-
Urban	100.0		-
Rural	24.2		-
Population with access to safe water - Atolls (%) (total)	6.9		-
Population with access to safe water - Male' (%)	-		-
Daily calorie supply (as % of requirements)	79.0		-
Adult Literacy Rate (%)	81.6	(Census '95)	96
GDP per capita (MRf)	1,927.0	(1997)	5943.7
GDP (at constant 1985 prices in \$ '000,000)	-	(1997)	216.6
GNP per capita (MRf)	-		-
<i>Basic Indicators</i>			
Population ('000s)	143.3	(Census '95)	244.8
Male'	29.5	(Census '95)	63
Atolls	113.8	(Census '95)	182
Projected population year 2000	-		288.6
Population Density (sq. km.)	479.0		
Male'	-		
Atolls	-		-
Percentage of population in Male'	20.6	(Census '95)	25.7
Area of cultivable land per capita (sq. m.)	194.0		-
Average annual growth of population (%)	(1980-1985) 3.2	(1990 - 1995)	2.8
<i>Economic Indicators</i>			
GDP (MRf millions)	236.0	(1997)	1537.4
Average annual growth of GDP (%)	(1977-1987) 10.6	(1997)	6.2
<i>Composition of GDP (MRf millions)</i>			
Primary	103.6	(1997)	286.4
Secondary	19.7	(1997)	261.9
Tertiary	112.8	(1997)	989.1
<i>Employment and Labour Force</i>			
Total labour force (15 years and older)	60,903.0	(Census '95)	131213
Male	38,254.0	(Census '95)	66383
Female	22,649.0	(Census '95)	64830
Labour force Male'	10,939.0	(Census '95)	40748

Labour force Atolls	49,964.0	(Census '95)	90465
No. of university graduates	56.0		-
Merchandise Trade (US\$ millions)			
Value of exports (f.o.b.)	3.4	(1997)	70.1
Of which fish/fish products (metric tonnes)	3.4	(1997)	55.5
Value of imports (f.o.b.)	11.1	(1997)	348.8
Of which consumer goods	7.3	(1997)	168.8
Of which intermediate & capital goods	-	(1997)	141.2
Annual average growth of exports		(1977-1978) 8.8	18.1
Annual average growth of imports		(1977-1978) 11.1	15.6
Balance of Payments (US\$ millions)			
Trade Balance	-5.1	(1997)	-199.1
Current Account Balance	-0.4	(1997)	-23.0
Overall Balance	0.1	(1997)	27.4
Government Finance (MRf millions)			
Government revenues	48.9	(1997 Provisional)	1752.0
Tax revenues	20.7	(1997 Provisional)	872.8
Non-tax revenues	19.8	(1997 Provisional)	748.1
Grants and loans	8.4	(1997 Provisional)	131.1
Government expenditure	38.4	(1997 Provisional)	1933.4
Current expenditure	9.3	(1997 Provisional)	1145.1
Capital expenditure	29.1	(1997 Provisional)	788.3
External Debt (US\$ millions)			
Total debt outstanding, incl. Undisbursed	-	(1997)	189.40
Total debt outstanding and disbursed	-	(1997)	157.20
Public long-term debt	-	(1997)	156.30
Public short-term debt	-	(1997)	0.90
Debt outstanding & disbursed as % of GDP	-	(1997)	45.95
DSR as % of exports of goods and services	-	(1997)	3.30
Tourism indicators			
Tourist arrivals ('000s)	18.7	(1997)	365
Number of resorts	11.0	(1997)	73
Number of beds ('000s)	1.0	(1997)	12
Occupancy rate	-	(1997)	77.5
Tourism earnings (MRf millions)	-	(1997)	480.8
Health (from Vital Registration System)			
Crude birth rate (per '000)	44.0	(1997)	24

Crude death rate (per '000)	17.0	(1997)	5
Infant mortality rate (per '000)	121.0	(1997)	27
Population per physician ('000s)	15.9	(1997)	4.0
Population per nursing person ('000s)	20.4	(1997)	1.54
Population per hospital bed ('000s)	3.5	(1997)	1.42
<i>Social indicators</i>			
Nutrition			-
Daily per capita calorie intake (as % of requirements)	79.0		-
Daily per capita protein supply (%)	73.0		-
<i>Education</i>			
Primary school enrolment (as % of 5-13 age group)	26.9	(1997)	70.15
Secondary school enrolment (as % of 14-16 age group)	2.3	(1997)	47.15

Source: Ministry of Planning and National Development

List of Acronyms and Abbreviations

ADB	Asian Development Bank
CHW	Community Health Workers
GDI	Gender-related Development Index
GDP	Gross Domestic Product
HDI	Human Development Index
HDR	Human Development Report
HIES	Household Income and Expenditure Survey
HPI	Human Poverty Index
HVI	Human Vulnerability Index
IAD	Integrated Atoll Development
IMR	Infant Mortality Rate
MICS	Multiple Indicators Cluster Survey
MOH	Ministry of Health
ML	Mortality Levels
MPND	Ministry of Planning and National Development
NGO	Non-Governmental Organisation
PGI	Poverty Gap Index
PPP	Purchasing Power Parities
Rf	Rufiyaa
UNDP	United Nations Development Programme
VAD	Vitamin A Deficiency
VPA	Vulnerability and Poverty Assessment
VRS	Vital Registration System
WHO	World Health Organisation
MRE	Most Recent Estimate
UNICEF	United Nations Children's Fund

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Part I

The Development Context for the Vulnerability and Poverty Assessment

Chapter 1: Introduction

1.1 Two Decades of Development

The island universe in Maldives is particularly varied and diverse. The 1,190 islands that make up the Republic are grouped into 26 natural atolls that together form a chain 820 km in length and 130 km at its widest point, set in an area of more than 90,000 square km of the Indian Ocean. No fewer than 200 of the islands are inhabited. All are very small. Only 33 inhabited islands have a land area of more than 1 square km and no fewer than 67 islands – one-third of the total – have less than 500 inhabitants, while 144 islands – 70 percent of the total – have less than 1,000 inhabitants. This gives Maldives a geography that is unique, even by the exceptional standards of small archipelagic states.

To the problems of small size, insularity and extreme dispersal of population must be added the extreme paucity of land-based natural resources. This paucity extends far beyond mineral resources with a commercial value to include such basic resources as water and agricultural land. Maldives possesses neither rivers nor streams, is without land-based building materials, while the soils that do exist are hypercalcic and ill-suited for all but the most basic forms of agricultural production. Small size, insularity and population dispersal also translate directly into severe diseconomies of scale in production, transport and the provision of essential infrastructure and services, with the unit costs of schools, clinics and other social infrastructure typically 4-5 times those common in continental developing countries.

Despite the number and severity of constraints, few developing countries, especially least developing countries, are able to report the impressive progress recorded by Maldives in the past two decades.

The progress recorded by Maldives has been considerable and, as a review of the Statistical Summary clearly reveals, this progress finds clear expression in the indicators traditionally used to measure a nation's development. Throughout most of the 1980s,

GDP growth exceeded 10 percent per annum, averaging 8.4 percent per annum in the period 1986-96 and moderating to a more sustainable 6.2 percent in the period 1996-97. GDP per capita has increased in real terms from US\$ 470 in 1985 to US\$ 837 in 1997, a rate of increase more than twice that of population growth.

This growth has not only brought increased prosperity to the people of Maldives; it has also been accompanied by considerable progress in the social fields. In the period 1987-97, the crude birth rate, the crude death rate and the Infant Mortality Rate were halved and nearly a decade was added to the life expectancy of a Maldivian at birth. Several debilitating diseases, such as malaria, childhood tuberculosis, filaria and leprosy have either been eradicated or have transmission rates that are close to zero. Child immunisation is nearly universal and vaccination coverage against hepatitis has reached 80 percent of the population. Far larger numbers of Maldivians today have access to medical services, potable water, sanitation and electricity. Primary education has become the basic right of almost all Maldivian children, with primary school enrolment having increased by 5 percent per annum in the past decade to reach more than 90 percent of the respective age group, and there are today trained teachers on virtually all of the nation's 200 inhabited islands. The number of young people attending secondary school has also increased sharply, from only 9 percent of the relevant age group in 1986 to well over one-third in 1996. Overall, the number of children and young people enrolled in the nation's 264 educational institutions almost doubled, to reach more than 93,000 in 1997, more than half of whom were girls and young women. This growth in enrolment has been accompanied by the expansion of education infrastructure, with Maldives today possessing specialised training institutions in numerous fields, including teacher training, management and administration, health services, technical and vocational training, maritime training and Islamic studies. Adult literacy, at 98 percent, is among the highest for all least developed countries.

The financial basis for the progress recorded has been the judicious exploitation of the nation's marine resources and potentials, with fisheries and tourism having firmly established their place as the dominant sectors of the nation's economy. The total fish catch almost doubled between 1987 and 1997, increasing from 57,000 tonnes to 107,000 tonnes, while the value of exports of marine products has grown from US\$ 15.5 million in 1986 to US\$ 58 million in 1997, when they accounted for around 80 percent of the total value of merchandise exports. The number of tourists, boosted by the opening of Male' International Airport in 1981, increased eight-fold between 1980 and 1997, from 45,000 to nearly 366,000, with government revenues from tourism increasing over the period from virtually nothing to reach around US\$ 60 million in 1996, when they accounted for nearly 40 percent of total government revenue (compared with 24 percent a decade earlier).

1.2 The Challenge of Atoll and Island Development

One of the major challenges that has confronted Maldives has been to ensure that the benefits of growth and development are equitably shared between the nation's highly dispersed population. It is a challenge that the Government has sought to address since the 1970s, when efforts to raise the standards of living and well-being of atoll populations were first initiated. In 1978, the concept of atoll development was formulated as an instrument to accelerate development in the outer regions through the provision of basic physical and social infrastructure and the co-ordination of sectoral development programmes. Co-ordination was entrusted to a new ministry – the Ministry of Atolls Administration – that was also mandated to plan and execute projects that would benefit the outer atolls. An Atolls Development Advisory Board was also established which, responsible to the Minister for Atolls Administration, was composed of government officials having responsibilities for atoll and island development as well as representatives from the atolls themselves. These initiatives were followed by additional ones, including the establishment in 1981 of the Addu Development Authority charged with promoting the development

of the most southerly atoll, taking advantage of the physical infrastructure left behind by the British in 1976 when an RAF facility was closed.

The first programmes to foster social and economic development in the atolls targeted some 68 islands that were to be given priority attention in the provision of social and physical infrastructure. This programme was modified with the publication of the First National Development Plan covering the period 1985-87. Under a new policy initiative, eight main islands were identified as 'focal development centres' for the different regions in which they were located and were accorded highest priority for infrastructure development under the provisions of the Public Sector Investment Programme. These eight islands were located in Haa Dhaal (Kulhudhuffushi), Noonu (Manadhoo), Raa (Ugoofaru), Alif Dhekunuburi (Maamigili), Meemu (Muli), Laamu (Fonadhoo), Gaaf Dhaal (Thinadhoo) and Seenu (Hithadoo).

Programmes to accelerate atoll and island development were supported from the beginning by the concept of Integrated Atoll Development (IAD), modelled on the concept of integrated rural development. Since the early 1980s, the Ministry of Atolls Administration, supported by other line ministries, has implemented more than 20 IAD projects, each of which has targeted either a single atoll or a group of atolls. The emphasis within these projects, some of which have been supported by multilateral institutions and international NGOs, varied in response to the specific problems and opportunities existing at the atoll level. Components have typically covered basic education and skills development, employment creation and income generation, health, water supply and sanitation, energy and transport infrastructure, while almost all projects have had clearly defined women's components. Related initiatives also included the Special Atoll Vote Programme, which sought to complement overall atoll development and to respond to needs articulated at the atoll and island level through the provision of essential infrastructure, such as jetties, harbours, mosques and island offices and courts.

While these policy and planning initiatives yielded

Table 1.1 : Atoll Names

The 26 natural atolls that make up Maldives are grouped for purposes of administration into 20 *Administrative Atolls*, with Male', the nation's capital island, constituting an additional administrative unit. Each of the Administrative Atolls has an official name as well as more popular names that are widely used. To facilitate easy reading, popular names are used throughout this report, although in the Atlas (Part IV) all maps make reference to both names. The official and popular names of atolls are as follows:

Official Name	Popular name
Thiladhunmathi Uthuruburi	Haa Alif
Thiladhunmathi Dhekunuburi	Haa Dhaal
Miladhunmadulu Uthuruburi	Shaviyani
Miladhunmadulu Dhekunuburi	Noonu
Maalhosmadulu Uthuruburi	Raa
Faadhippolhu	Lhaviyani
Maalhosmadulu Dhekunuburi	Baa
Male' Atoll	Kaafu
Ari Atholhu Uthuruburi	Alif Uthuru buri
Ari Atholhu Dhekunuburi	Alif Dhekunu buri
Felidhe	Vaavu
North Nilhande	Faafu
South Nilhande	Dhaal
Mulakatholhu	Meemu
Kolhumadulu	Thaa
Hadhdhunmathi	Laamu
Huvadhu Atholhu Uthuruburi	Gaaf Alif
Huvadhu Atholl Dhekunuburi	Gaaf Dhaal
Foamulaku	Gnaviyani
Addu	Seenu

some positive results, they were unable to slow the growth of Male', with growth rates reaching a peak in the second half of the 1980s. The Government accordingly took stock of the situation and, in the light of the experience gained with especially the 'focal development centre' concept and the urgent need to find a solution to the increasingly pressing problems of the capital island, formulated a new policy initiative that was embodied in the Second National Development Plan 1988-1991. The core of the new policy was the Selected Islands Development Programme which was guided by a two-fold objective: (i) to develop islands in the vicinity of Male' that could accommodate the capital's growing population; and (ii) to develop islands in the atolls that were able to perform the role of 'regional growth centres'. To implement this new policy, a special office – the Selected Islands Development Unit – was established with a Consultative Board composed of representatives of all major sectors of the government.

Two islands were selected to accommodate the

future growth of Male': Viligili, the nearest large island to Male', used as a tourist resort; and Meerufenfushi, located approximately 40 minutes by speedboat from the capital. Seven islands were selected as 'regional growth centres': Kelaa in Haa Alif, Hanimaadhoo in Haa Dhaal, Maafilaafushi in Lhaviyani, Thoddoo in Alif Uthuru buri, Gan and Isdhoo in Laamu, and Hithadoo in Seenu. In defining these growth centres, the Government sought to achieve a higher degree of correspondence between programmes for the development of regional growth centres and important infrastructure development programmes existing in other areas with the aim of achieving positive synergies between them. Of these, particular importance was afforded to programmes for the development of four regional airports (Hanimaadhoo, Haa Dhaal; Kadhdhoo, Laamu; Kaadedhdhoo, Gaaf Dhaal; and Gan, Seenu) and three Industrial Promotion Zones (Hanimaadhoo, Haa Alif; Gan, Laamu; and Gan, Seenu).

The most notable achievement of the Selected Is-

lands Development Policy has been the transformation of Viligili from a tourist resort to a satellite island that has provided much-needed relief for the capital island. Efforts to establish regional growth centres that provide an alternative to Male' have been less successful, with the capital island continuing to function as the focal point for migration within the Republic. The mixed results achieved compelled the Government to again reconsider its approach to both the growth of Male' and to atoll and island development. In this reassessment particular importance was afforded to three main requirements: (i) finding a longer-term solution to the future growth of Male'; (ii) creating regional centres capable of supporting self-sustaining growth and serving as alternative centres of opportunity, with experience indicating that this can only be achieved when available resources are concentrated in a small number of locations rather than spread over a large number of islands; and (iii) reducing the high costs of developing and maintaining social and physical infrastructure for a highly dispersed population.

This re-examination, coinciding with the preparation of the Fifth National Development Plan for the period 1997-1999, has resulted in a new policy initiative with three main components:

- The reclamation of Hulule Island, which, when completed, will provide for a four-fold expansion in the area of land available for the national capital, providing the nation with its first-ever urban land frontier capable of responding to the needs of a modern nation state in the 21st century.
- The designation of two regional growth centres, one centred on Kulhudhuffushi in Haa Dhaal, the site of a regional secondary school, regional hospital and situated close to a regional airport and Industrial Promotion Zone, to serve the north of the country; and one centred on the interlinked islands of Hithadhoo, Maradhoo-Feydhoo and Gan in Seenu, similarly the location of a regional airport, Industrial Promotion Zone and regional secondary school as well as a regional hospital, to serve the southern region; with both constituting focal points for the further development of the infrastructure required to foster growth

and opportunity.

- The voluntary resettlement of populations from very small to larger islands to reduce the costs of infrastructure provision and to improve the access of atoll and island populations to essential services, thereby contributing to a reduction in disparities existing in this area, building on the progress recorded since 1993 with resettlement initiatives in Raa, Noonu, Haa Dhaal and Shaviyani.

These priorities will define the nation's approach to balanced and equitable regional development into the next century. They will find expression in sectoral policies as well as in a range of national programmes covering, for example, harbour development and jetty construction, water supply and sanitation, island electrification, and human resource and capacity development at the atoll and island level.

1.3 The Evolution of Policies and Programmes

It is clear that the nation's approach to atoll and island development has evolved considerably over a period of two decades. Given the complexity of the many issues that needed to be addressed, this process of policy evolution and adaptation was inevitable. While Maldives is a remarkably homogeneous nation in terms of a shared language, religion and culture, this homogeneity does not mean that there are few differences between the atolls that make up the Republic or that policy issues can be reduced to simple choices that distinguish between Male' and 'the atolls'. Experience of regional and atoll development in Maldives over two decades points to the critical importance of approaches that recognise and seek to take fully into account the differences existing not only between atolls but also between inhabited islands within the same atoll.

There are, for example, atolls and islands that have recorded considerable progress in the past two decades, benefiting from a variety of factors that may include land availability, the existence of well-developed fish collection services, and their proximity to the main tourist zones. There are other atolls and

islands, however, where progress has been more modest. These islands may be disadvantaged by the absence of land and fresh water, relatively short fishing seasons and the absence of the livebait required for a pole and line fishery. Some may be barely accessible, protected by reefs that cannot be penetrated by motorised vessels, further adding to the vulnerability of their populations.

The promotion of atoll and island development has entailed a process of learning by doing, with the periodic distillation of lessons learned and their application in new policies and programmes that promise greater effectiveness and increased impact. This process has been unable to draw upon a well-developed body of development theory that would be able to guide atoll and island development. Although the concept of atoll development has been central to the process, an atoll is not an economic, social or anthropological abstraction, but rather a geological and geomorphological one. While the concept of an atoll has been endowed with economic and social dimensions, the pre-eminently physical characteristics mean that they exist without a nodal structure and are often without the various types of linkages that can be utilised for purposes of development strategy. Relationships between inhabited islands in the same atoll may be rudimentary or even non-existent, with relationships existing between the island and the 'outside world' oriented not towards the atoll capital but rather with Male'.

The absence of a system of nodal points and of well-developed relationships between islands inevitably means that the 'spread effects' of 'focal points' and 'growth centres' are bound to be limited, being often restricted to the immediate vicinity of the islands in which investments in social and physical infrastructure are made. Although the concept of atoll development lends itself to easy generalisations, the differences existing between atolls and between islands within a single atoll mean that there are exceptions to every general rule. The absence of linkages only adds to the complexities and complications that must be addressed by a development strategy.

1.4 The Vulnerability and Poverty Assessment

In this situation, the overwhelming need is not only for a well-conceived national strategy for regional development but also, and no less importantly, a set of finely-tuned development programmes geared to the specific needs, problems and opportunities of individual atolls and islands. The formulation of such programmes has so far been frustrated by the absence of island-specific data and information. The main national surveys, notably the Population and Housing Censuses of 1977, 1985, 1990 and 1995, while serving many essential purposes, are not designed to provide insights into many of the problems that must be addressed by atoll and island development strategies. Many other surveys are often confined to specific atolls which, given the differences existing between and within atolls, may mean that the extrapolation of their results to cover the nation as a whole may carry risks, with possible inaccuracies being transferred to development strategy.

It is in recognition of the importance of island-specific information that the Government has undertaken, with the assistance of UNDP, the *Vulnerability and Poverty Assessment*, the main results of which are presented in the following pages¹. Based on interviews with a sample of households in all 200 inhabited islands, the survey is the most comprehensive and detailed one of its kind ever undertaken in Maldives.

A regional development strategy that embodies two decades of experience with atoll and island development and the *Vulnerability and Poverty Assessment* form a powerful combination that should enable the Government to articulate strategies that meet the requirements of both desirability and feasibility. It is a new combination that is expected to considerably increase both the efficiency and effectiveness of the efforts to further raise living standards and to accelerate the pace of sustainable social and economic development in a country with a geography that has few parallels in the developing world.

¹ This report is referred to as the *Vulnerability and Poverty Assessment*. It is based on a survey that is referred to in this document as the *Vulnerability and Poverty Survey*. As such, the assessment reports on the results of the survey.

Chapter 2: The Vulnerability and Poverty Survey

2.1 Main Aims and Purposes

The main purpose of the *Vulnerability and Poverty Survey* is to provide insights into the extent and severity of various aspects of poverty, deprivation and vulnerability in Maldives. More specifically, the survey seeks to:

- Identify and quantify various types of vulnerability, poverty and hardship;
- Locate these vulnerabilities at the lowest possible geographical level - at atoll or island level;
- Identify regional disparities in income and access to services;
- Identify problems and needs according to the island population;
- Identify the perceived priorities of the island population;
- Develop a composite Human Vulnerability Index (HVI) that serves to synthesise the main findings and which can be used in support of improved analysis and decision making on atoll and island development;
- Identify related policy issues relevant for development strategies and the formulation of national development plans.

The decision of the Government to undertake the survey, with support from UNDP, recognises the existence of disparities in income, opportunity and access to services within the nation and the need to measure them for the formulation of policies and strategies that are able to address them. These disparities find expression in a variety of problems existing at the atoll and island level, including:

- Limited opportunities for productive employment, especially for women, a situation which translates into low levels of income;
- Vulnerability to shortages of food and water due to the narrow and fragile resource base and de-

pendence on imported foods;

- Limited access to essential services, especially health and education, due to severe diseconomies of scale in the provision of such services;
- Limited access of many communities to communication facilities;
- The availability and costs of inter-island and inter-atoll transport services;
- Differences in environmental problems and ecological vulnerabilities.

2.2 Methodology

The results described in this report are based largely on original data collected through an extensive survey which covered all 200 inhabited administrative islands in Maldives². On each island, some basic characteristics of all households were listed. Subsequently, a number of households were selected for in-depth interviews.

In addition to the household interviews, an island questionnaire was also completed for each island. This questionnaire contained information on physical infrastructure, availability of social services, economic resources and the main problems experienced in the previous three years. Most of this information was provided by the office of the Island Chief.

The quantitative and qualitative information contained in the household and island questionnaires forms the basis for the statistical analysis carried out in this report. In addition, the heads of the households enumerated and their spouses, and members of Island Development Committee and Island Women's Committee on each island were asked to indicate which of the 15 problems described on a list were most important and to rank them all in order of importance. This ranking provides insights into the relative importance of the problems faced by the is-

² The 200 inhabited islands in Maldives are classified as *administrative* islands. A number of islands are used for industrial, agricultural and related purposes and 78 have been converted into resort islands for tourism. These *industrial*, *agricultural* and *resort* islands were not covered by the survey. Local employees resident on these islands during their employment periods are included in the households to which they belong in the administrative islands.

land communities, viewed from their own particular perspective. These rankings are used as weights in the aggregation of the survey results.

The survey methodology used is a hybrid. In order to ensure inclusion of information on each and every inhabited (administrative) island in Maldives, all islands were covered; in other words, a census approach was used. Consequently, the island questionnaires were completed for all islands, along with the rankings of problems in development by the members of the Island Development and Women's Committees. In order to prepare the sample frame for the households to be interviewed, a number of basic characteristics were listed for all households on the island.

From the household listing of an island, a random sample of ten households was selected for most islands. Only in those islands that had a larger population was the sample increased in size and ten households were taken for every 1,500 persons. The sampling method used for selection of households was systematic, with a random start. During sample selection, some replacement households were also identified, which could be canvassed in the event of non-cooperation by the selected households. However, the co-operation of the selected households was always satisfactory and there was no need to make use of replacement households in the islands. On Male', where 300 households were surveyed, non-response was sometimes a problem and the appropriate replacement households were interviewed.

In order to aggregate the survey results, it can be assumed that the selected households are representative of an island, as they have been selected randomly from among all households. The information collected from these households can, therefore, be raised to represent all households on the island. Information on the total number of households on an island is available from the listings prepared at the start of the survey. In other words, the raising factor equals the ratio of the total number of households over the number of households in the sample. Thus, if on a particular island there are 55 households and ten have been surveyed, the raising factor is 5.5 (i.e. 55/10).

2.3 Data Entry, Editing and Processing

Once the data had been entered into the computerised database, the information contents of each data item for the different respondents (persons, households and/or islands) could be checked in detail for consistency. A number of the adjustments carried out are described in the following paragraphs to illustrate their range and scope. The purpose of the data-cleaning operation was to ensure that all information used in the analysis was logically correct and acceptable. Where the information was obviously faulty, and the correct value could not be inferred, the data were generally treated as non-response.

Errors in the data emanate from different sources. The most common problem was that enumerators did not always properly understand or code the information they obtained during household visits. This was the case with household consumption where the quantities noted down were sometimes inconsistent with the value and the standard unit of measurement. For instance, for a 50 kg bag of rice, the price would have been entered correctly but the quantity given as 1 (bag) rather than 50 (kg) as needed for data consistency. Errors made during the coding process, which resulted in the wrong allocation of the information, were far less frequent. The data-entry process generated two distinct types of errors. Firstly, there were data transcription (keypunching) errors, which form a normal part of the work and are controlled to the extent possible through edit checks in the data entry programmes. The second type of error introduced during data entry related to the structure of the data entry system. Information was sometimes missing in some parts of the questionnaires while other parts, logically linked to those sections, contained data. In some cases, information supplied in different sections was contradictory in nature. This sometimes caused the data entry programme to stop, waiting for consistent information. When this was not available, dummy information was given to ensure continuation of data entry. Such problems should have been, and were mostly, captured in the field but in cases where they had slipped through, remedial action was necessary after data entry.

The following examples illustrate the cleaning process. The area available per person was calculated from the area of the house and the number of household members. If the result was less than five square feet per person, the information on size of the house was deleted and the household treated as non-respondent for this question.

The island questionnaire contained a question relating to the number of trips to the atoll capital or Male' by dhoni. There were four possible answers, namely: daily, the number of times per week, the number of times per month, and frequently. During cleaning, all data were converted to the number of times per month. Because the focus was on islands from which there is infrequent dhoni traffic to the atoll capital or Male', the answer *frequently* was above the limit set, at par with daily.

Another question on the island questionnaire asked for the distance to the nearest public telephone on another island. If the island itself had a public telephone, this question was not to be answered. In cases where this information was given, it was deleted. Where it was unclear whether the distance was given in hours as requested instead of in minutes, the distance was checked on the map and corrected as necessary.

For children between one and five years of age, the arm circumference, height and weight were measured. These measurements should have been in centimetres and kilograms. In a number of cases, measurements were clearly reported in inches and adjustments were made accordingly. In other instances, when there was no obvious correction procedure (children reportedly taller than 1.2 metres or less than three kilos in weight, for instance), the information was deleted and treated as non-response.

An important issue in the analysis of the data is the treatment of non-response. Even though data for a household, its members or the island may be available in general, it is often not available for all the items of information studied. In some cases, this is due to the lack of information in the original questionnaire, while in other cases it may be due to corrections applied in the data editing and cleaning steps

described earlier. In all instances, missing information has in principle been treated in the same way.

The basic assumption is that non-response is unbiased; in other words, that the behaviour of non-respondents is the same as that of respondents. This assumption makes it possible to formulate consistent procedures for dealing with data gaps. In the simplest case and at the lowest level of aggregation, this means that the percentage of respondents giving a certain answer is also (assumed to be) the percentage of the total population at that level of aggregation giving that answer. As rates of non-response differ from one area to another, as well as from one data item to another, these percentages have to be converted to the number of persons represented. This allows for the aggregation of the information so that the percentage distributions and average values at higher levels (island, atoll and overall) can be calculated.

While this procedure is straightforward in principle, it becomes rather complicated when it involves a number of steps which all have their own non-response. This occurs for instance in the calculation of employment, unemployment and underemployment, which are calculated on the basis of the particular responses to a series of questions on the activities of each person above the age of 11 years.

Overall, not only was the sample size large, major efforts were also made to ensure that data complied with qualitative criteria reflected in the use of consistency and other checks. The results reported in the following pages can accordingly be regarded as possessing a very high degree of reliability. The *Vulnerability and Poverty Survey* is not only unique in Maldives. Given its aims, scope and methodology, it probably has few parallels in the developing world.

2.4 Limitations

All surveys have limitations and the *Vulnerability and Poverty Survey* is no exception. These limitations have their origins in practical and financial considerations. A population census, for example, is comprehensive in its coverage of the population but lim-

ited in the depth of its coverage of population characteristics. On the other hand, the *Vulnerability and Poverty Survey* is characterised by the wide range of topics studied, but is limited in its sample size, with about one in every thirteen households covered in the atolls and half this number in Male'. Island-wide data were, however, obtained from all administra-

stance, on *average* only one household in ten displays a particular characteristic, it is not possible to obtain reliable data at the island level, where only ten households have been surveyed. Aggregation of information to atoll level³ normally provides a database large enough to overcome such problems. While there are analytical problems associated with the

Table 2.1 Periods of Enumeration

Atoll	Surveydate
Haa Alif	November 1997
Haa Dhaal	November 1997
Laamu	November 1997
Lhaviyani	November 1997
Meemu	November 1997
Noonu	November 1997
Shaviyani	November 1997
Thaa	November 1997
Vaavu	November 1997
Gaaf Alif	November/December 1997
Gaaf Dhaal	November/December 1997
Gnaviyani	November/December 1997
Seenu	November/December 1997
Baa	December 1997
Dhaal	December 1997
Faafu	December 1997
Raa	December 1997
Alif Dhekunu buri	February 1998
Alif Uthuru buri	February 1998
Kaafu	February 1998
Male'	February/March 1998

tive islands. This relatively large sample size provides an excellent basis for detailed studies at the national level, while sufficient information is available for most types of analysis at the atoll level.

Although the sample size of ten households per island may represent a substantial proportion of households on many islands, statistical analysis of household information at island level is hampered by the small absolute number of observations. If, for in-

small number of responses at the island level, the representativeness of the survey results is not in question because appropriate random sampling procedures have been followed for household selection⁴. In statistical terms, the small number of responses means that the variance or standard deviation, which also depends on the number of responses, increases beyond acceptable levels for the ten-household sample at the island level.

³There are at present twenty administrative atolls in Maldives, plus the capital Male' as a separate entity.

⁴See Section 3 of Chapter 2 for a description of the survey methodology.

A population census is normally conducted in a short period, with a fixed reference point. As shown in table 2.1, the field work for the *Vulnerability and Poverty Survey* was conducted over a longer period, between August 1997 and February 1998, and had a moving reference period (*last week* or *last month*) for many household questions. Island questionnaires also reflected the situation prevailing at the time of the visits, while perceptions on development and deprivation issues always reflected the feelings of the respondents at the time of interview.

The reasons for the fairly long duration of the fieldwork were numerous. Logistical problems and the repeated need to train newly-recruited enumeration staff also caused some delays, as did weather conditions in some cases. All in all, the survey work was originally scheduled to be conducted in four rounds, but due to various slippages, a fifth round became necessary.

Due to the relative isolation of many islands communities and their sober living patterns, the effects of a survey period that extended over half a year are probably rather limited on most aspects of the analysis. In one field, however, this is not the case. At the request of the Government, Dhiraagu is undertaking

a major, multi-year project to provide telephone connections to all islands in the Republic, and work is proceeding very rapidly.

It is relatively straight forward to modify the database to reflect the availability of telephones on islands at a certain cut-off date, such as 1 January 1998, since the information is contained only in the island questionnaires. However, this could give rise to conflicts and inconsistencies with other information contained in the survey. For instance, respondents were asked to rank the importance of various problems in their communities. Inhabitants of islands with telephone connections could be reasonably expected to accord a lower priority to the availability of telephone services than inhabitants of islands that have yet to be connected. If an island had not yet been connected at the time of enumeration but was provided with telephone facilities before the end of the year, the modification of information in the database on the availability of telephones would result in inconsistent information, and thus in incorrect analytical results. This may be problematic since the ranking of problems forms the basis for the weighing schemes for the most important variants of the Human Vulnerability Index presented in this report.

Chapter 3: Using the Vulnerability and Poverty Assessment

3.1 Structure of the Report

The *Vulnerability and Poverty Assessment* presents a wide range of information, much of which is derived directly from the Vulnerability and Poverty Survey. It is thus 'new' information which is being published for the first time.

This lengthy document has been structured in ways that are designed to facilitate reading and the use of the information it contains. The report has four main parts:

Part I: Context for the Assessment

Part I provides a general introduction to the report that seeks to establish the context for subsequent parts and chapters.

Part II: Main Results of the Survey

Part II presents the main findings of the survey, with information presented both sectorally and thematically. It is made up of 8 chapters, each of which deals with an aspect of living standards that are considered critical for an improved understanding of vulnerability and poverty. These chapters cover income poverty (chapter 4), access to physical infrastructure (chapter 5), access to social infrastructure (chapter 6), housing and environmental quality (chapter 7), food security and nutrition (chapter 8), employment (chapter 9) and gender (chapter 10). In addition to presenting the survey's main findings, the chapters are designed to provide building blocks for the subsequent calculation of a composite Index of Vulnerability and Poverty which is presented in chapter 11. The building blocks take the form of specific indices covering the following dimensions of living standards:

- Access to electricity (Electricity Index);
- Access to transport services (Transport Index);
- Access to communications (Communications Index);
- Access to educational services and infrastructure

(Education Index);

- Access to health services and infrastructure (Health Index);
- Access to potable drinking water (Drinking Water Index);
- Access to recreation and sport facilities (Recreation Index);
- Access to selected consumer goods (Consumer Goods index);
- The quality of housing (Housing Index);
- The quality of the natural environment (Environmental Index);
- Incidence of food insecurity and malnutrition (Index of food Insecurity and Malnutrition).

Each of the indices is based upon a number of measurable indicators – 40 in total - which are dimensioned in accordance with survey findings and with priorities derived from assessments of their relative importance.

Chapter 11 presents the Human Vulnerability Index (HVI) which is based on the survey's findings on poverty and vulnerability. The HVI synthesises the 12 individual indices developed in Part II into a single composite index that is based on 40 different indicators. HVIs are presented in the report for all 200 inhabited islands.

Part III: Main Conclusions and Policy Implications

Part III summarises the main results of the *Vulnerability and Poverty Assessment* and examines their implications for future policies and programmes aimed at achieving sustainable development in the atolls and islands.

Part IV: Atlas of Vulnerability and Poverty

Critical information on poverty, disparities and vulnerabilities is presented in map form in Part IV. A total of 15 maps are reproduced covering sectoral and thematic findings as well as the Human Vulnerability Index. These maps make it possible to obtain

a clear impression of the spatial distribution of poverty and vulnerability, both in respect of individual indices and the composite index.

Technical Notes

The report includes two Technical Notes of particular importance for an understanding of the *Vulnerability and Poverty Assessment* and of its findings and conclusion. These notes are:

- Technical Note 1 on *The Measurement of Vulnerability and Poverty*, which documents the main concepts and the methodology used for the measurement of poverty and vulnerability. As such, it provides the theoretical underpinnings for the whole report.
- Technical Note 2 on *Estimates of Life Expectancy and Infant Mortality*, which presents and discusses the concepts and methods used to arrive at the disaggregated estimates of infant mortality rates and life expectancy required for the calculation of UNDP indices.

Statistical Annex

The Statistical Annex presents in detail the results of the survey, with information reproduced for all atolls and islands. This annex forms the database for the survey's results and findings as presented in the main chapters. It is the most comprehensive and detailed database yet published on the islands that make up the nation.

3.2 Using the CD-ROM

Although the Statistical Annex reproduces the most comprehensive database on atolls and islands, it should be stressed that the findings and results presented in this report are based upon the analysis of approximately 10 percent of the data that have become available through the Vulnerability and Poverty Assessment. Only a small part of available data has thus been presented and analysed.

To facilitate further analysis, part of the survey's extensive database has been transferred to a CD-ROM which forms part of this report. The CD-ROM enables users to extract data from the survey into a spreadsheet format (Excel), thereby making it possible for them to undertake the analysis of data in ways that have not yet been undertaken.

Considerable effort has been made to ensure that the CD-ROM is user friendly, with start-up and other menus that make it possible for users to target specific atolls or individual islands within them. This provides the CD-ROM's database with some of the characteristics of a geographic information system.

The report contains a User Guide for the CD-ROM which is presented as an Annex to the report. The User Guide contains step-by-step instructions on the use of the database, with screen shots to illustrate the features of the software and the choices that users are able to make at different application stages.

Part II

Main Results of the Vulnerability and Poverty Survey

Chapter 4: Income Poverty

4.1 Introduction

This chapter reports on the survey's main findings on income levels, income disparities and income trends in Maldives. It thus deals with the core issue of poverty and vulnerability. Poverty is obviously a direct function of income levels, while vulnerability is in large measure determined by the means at the disposal of an individual, household or community to safeguard their security and to enlarge their opportunities. For the same reasons, income levels are a key determinant of human development.

Chapter 4 establishes an important part of the context for the following six chapters that similarly report on the survey's main findings. Given its importance for other chapters and for the compilation of the Composite Index on Human Vulnerability – the subject of chapter 11 – it necessarily includes a short presentation of underlying concepts and methodology.

4.2 Concepts

4.2.1 Income Versus Expenditure

This report, like most poverty studies based on household surveys, uses household consumption as a proxy for household income instead of using household income itself. Household consumption is more reliable and more stable over time than household income. Some respondents have the tendency to under-report their income, while others over-report because they do not completely understand how income is defined. In the present survey, many self-employed persons, like fishermen and shopkeepers, mention their turnover as being their income without taking their costs into account. They probably do so because estimates of profits are more complicated than estimates of turnover. Of course, turnover over-estimates income. Further, consumption expenditures are more reliable if the questionnaire contains a long list of local and imported con-

sumer items, as is the case with the questionnaire used in the survey. A short list leads to under-estimates. Besides, especially for the poor, household consumption is more stable over time, whereas household income is more subject to change and can be affected by seasonal fluctuations.

Further, this report uses the household as the unit of analysis. All estimates are expressed in per capita household units, thereby implicitly assuming that households distribute their welfare equally among all their members.

A presentation of the concepts and methodology underlying the study is provided in the Technical Note on The Measurement of Vulnerability and Poverty.

4.2.2 Regional Price Differences

In most countries the purchasing power of the currency is not equal in all parts of the country. Regional price differences must be captured by adjusting nominal prices into so-called regional purchasing power parities (PPP's). These regional PPP's convert nominal household incomes and expenditures into purchasing power that is comparable across the country. These adjusted household incomes and expenditures are used as a living standard indicator instead of nominal values. Estimates of regional PPP's are based on actual regional consumption baskets.

In Maldives, the main consumption items in the household expenditure basket are food items (fish, rice, wheat flour, sugar, milk powder, banana, coconut, arracanuts, beverages, some vegetables, such as taro and breadfruit), cigarettes, medical care, electricity, kerosene, clothing, education, transport, personal care, and consumer durables.

The first selection criterion for including certain items in the consumption basket to be used for estimating regional PPP's is the homogeneity of the goods. The heterogeneity existing in consumption

categories such as clothing, medical care, recreation, personal care, personal transport, and printed books makes it necessary to exclude them from the basket.

The second selection criterion is the availability and use of the item throughout the country. Electricity is not available on all islands, and cannot, therefore, be selected. Kerosene cannot be selected since in some parts of the country, especially in the north, firewood is the main fuel used for cooking. There is only one shopping centre in the country (Male') for luxury consumer goods and consumer durables. Regional price differences among islands for these goods are determined by differences in transport costs from Male'. However, since poor households cannot afford luxury goods, this category is irrelevant for estimating regional differences in the purchasing power of a Rufiyaa in the hands of the poor. That is the third selection criterion.

The above means that the candidates remaining for the consumption basket have to be restricted to food items only. Notwithstanding considerable efforts, it proved impossible to standardise and compare the prices of fish, bananas, coconuts, milk powder and cigarettes. Most households report the consumption of fish, bananas and coconuts by piece and not by weight. Thereafter, they estimate the value of these consumption items. The problem is that a coconut is not a coconut, a banana is not a banana and a fish is not a fish. There are many varieties, and not all coconuts, bananas and fish have the same size, weight and quality. Further, the price of fish varies from day to day depending on the daily catch.

Milk powder is available in three can-sizes, ranging from around 300 grams to about two kg. On some islands only medium-size cans are available, while on other islands only large cans can be bought, which are relatively cheaper. There are two different qualities of cigarettes in Maldives, but it is not always possible to detect from the survey which quality is consumed.

Finally, the above implies that only three consumption items remain that are homogenous, available and consumed throughout the country and consumed by the poor. These are wheat flour, rice and sugar. These

three products are imported and the government has fixed their prices so that regional price differences cannot be very large. Surprisingly, regional price levels correlate neither with the distance from Male' nor with the size of the islands in terms of population. Consequently, the income poverty analysis in this report is based on nominal prices and nominal household consumption expenditures not adjusted for regional price differences.

4.2.3 Imputing Own Produced Consumption

Nominal household consumption expenditures in cash are adjusted in two ways. Firstly, by adding the imputed value of own produced goods for home consumption. These values are estimated with the use of local prices. Secondly, by treating housing rent separately. The island population lives in their own houses and does not pay housing rent. For the population of Male', housing rent can be a considerable part of monthly expenditure. There are two options for adjusting consumption expenditures for the difference in housing rent to make household expenditure on the islands comparable with that in Male'. The first is to estimate the imputed value of housing rent on the islands. However, such an exercise would be very artificial in the absence of a housing market on the islands. Therefore, this report applies the second option, namely the deduction of actual housing rent paid from all household expenditures irrespective of whether the household is located on Male' or on other islands.

4.2.4 Applied Concept

This report uses the following indicator for household income: household consumption expenditures in cash plus the imputed value of own produced consumer goods minus housing rent paid. Unless otherwise stated, this concept is used as the proxy for household income.

4.3 Income Levels

4.3.1 Maldives

The survey shows that the average level of per capita

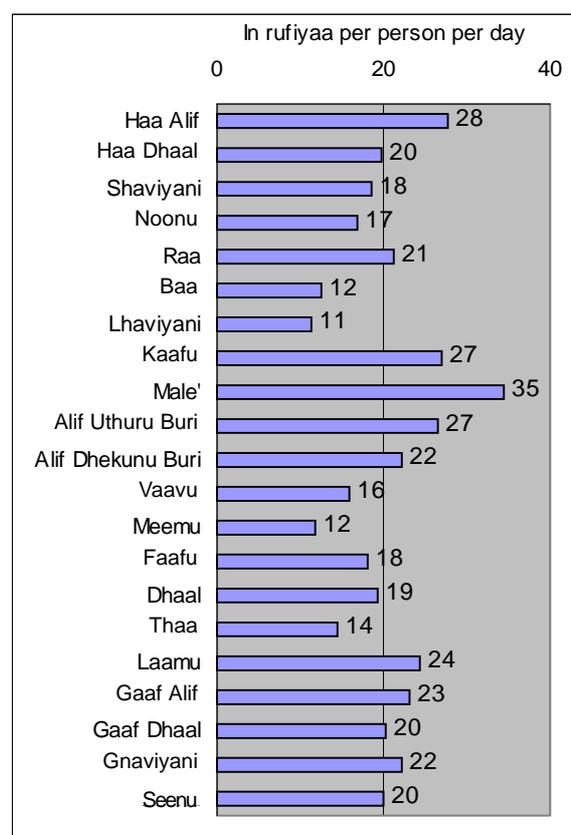
household income in Maldives is about 24 Maldivian Rufiyaa (Rf) per person per day, equivalent to approximately US\$ 2 per person per day. This figure can be compared with the National Accounts Statistics.⁵ The most recent national accounts data estimate the level of total household consumption expenditure at Rf 2,169 million in 1997 and Rf 2,343 million in 1998 at constant 1995 prices. The Vulnerability and Poverty Assessment listed the total population on all inhabited islands. As far as counting the population is concerned, the survey is a census and not a sample. The listing of all households and their members was necessary in order to draw the survey sample. According to this listing, the total population was estimated at 253,000. The survey was conducted during the last months of 1997 and the first months of 1998. Attributing this figure to 31 December 1997 and assuming a population growth rate of around 3 percent per annum, the mid-year population size in 1997 and 1998 is around 249,000 and 257,000 respectively. Applying these figures to the national accounts estimates of total household consumption expenditure, these estimates are equivalent to respectively Rf 24 and Rf 25 per person per day in 1997 and 1998 respectively. These figures are in line with the Rf 24 per person per day resulting from the survey. Of course, the above estimates should be converted into current prices, which will cause them to increase. On the other hand, the survey estimates are net of housing rent and will also increase after adding housing rent. It should be stressed that the above estimates and the estimates of the Vulnerability and Poverty Assessment have been derived along completely different lines. Given this situation, the closeness of both estimates is a strong indication of the reliability of both. They mutually support each other.

4.3.2 Male'

The above-mentioned Rf 24 per person per day is a national average. Incomes on Male' are higher than in the atolls. The survey shows an average household income of Rf 35 per person per day on Male'

and Rf 20 per person per day in the atolls. The resulting per capita household income for Male' can be compared with the results of the Household Income and Expenditure Survey (HIES) conducted in 1993 by the Ministry of Planning, Human Resources and Environment. The survey was conducted in Male' only and not in the atolls. The average household consumption expenditures, according to the HIES, was Rf 23 per person per day in Male' in 1993, equivalent to about Rf 30 per person per day at prices prevailing at the end of 1997. This figure is in line with the results of the survey. It would imply an average growth rate of real household consumption expenditures of about 3 percent per capita per annum on Male'. These consistency checks between the survey, the 1993 HIES and national accounts data confirm the consistency and reliability of the different data sources.

Figure 4.1 Average Household Income by Atoll



⁵ The most recent initial estimates of the national accounts have been compiled as a part of an ADB-supported project on the Development of a System of National Accounts. See *Technical Report on Compilation of the Prototype Supply and Use Table 1995 for the Maldivian Economy*, Ministry of Planning, Human Resources and Environment, Male', Maldives, August 1997.

4.3.3 Atolls

The average per capita household income in the atolls is about Rf 20 per person per day. Figure 4.1 presents household incomes per capita for each atoll. The atolls are ranked from north to south. The figure shows that, on average, households living in atolls in the middle of the country around Male', in the southern and most northern atolls have higher household incomes. On average, the lowest household incomes are in Lhaviyani and Baa in the northern half of the country and in Meemu and Thaa in the southern half.

Table 4.1 Mean and Median Per Capita Income by Atoll

Atoll	mean	median
Haa Alif	28	22
Haa Dhaal	20	15
Shaviyani	18	13
Noonu	17	12
Raa	21	15
Baa	12	10
Lhaviyani	11	10
Kaafu	27	20
Male'	35	26
Alif Uthuru Buri	27	17
Alif Dhekunu Buri	22	17
Vaavu	16	12
Meemu	12	8
Faafu	18	12
Dhaal	19	15
Thaa	14	11
Laamu	24	15
Gaaf Alif	23	20
Gaaf Dhaal	20	16
Gnaviyani	22	15
Seenu	20	18

The median is a better indicator of average welfare than the mean. Table 4.1 presents the median per capita household incomes, i.e. the income of the middle household if household incomes are ranked from poor to rich. The median per capita household income is Rf 26 per person per day in Male', and Rf 15 per person per day in the atolls. The overall picture does not change much. Male', the atolls close to it,

the most northern atoll (Haa Alif) and the southern atolls have higher median household incomes. Atolls with low median household incomes are still Meemu and Thaa in the middle south, although they are now joined by Faafu and Vaavu; and Baa and Lhaviyani in the middle north, which are now joined by Noonu and Shaviyani. Apparently, inequality within the atolls that joined the group of low average household incomes is relatively high.

The mean gives a first but very rough indication of the 'average' well being in an atoll as far as income is concerned. The presence of a few rich households will, of course, force the mean upwards. This deforms the picture of the 'average' household. Accordingly, the median is a better proxy for the income of the 'average' household. Both the mean and the median are, however, too general to say anything about the poor. For that, special poverty indicators are required.

4.4 Income Poverty

4.4.1 Headcount Ratios

Technical Note 1 provides an overview of ways in which poverty can be measured. The most common poverty indicators - the headcount ratio and the poverty gap index - require a specified poverty line. The question of where to set the income poverty line is extremely complex. Efforts to objectively determine a basic minimum needs package for a household always lead to polemical results. Necessarily, any outcome is the result of subjective elements and implicit value judgements.

This report uses a practical approach based on the theory of poverty dominance. When it is not known where the poverty line should be set, various poverty lines can be considered. Instead of trying to establish the poverty line, it is probably more fruitful to analyse whether the results of various poverty lines are robust in the sense that the identification of the poor is stable irrespective of the selection of the poverty line. In this framework, a very low poverty line, a relatively high poverty line, and a poverty line drawn somewhere in-between are considered. The

atoll median of Rf 15 per person per day is used as a kind of maximum poverty line. By definition, half the atoll population falls under that line. Half the atoll median, that is Rf 7.5 per person per day, or about US\$ 0.65 per person per day, is used as the low poverty line. About 15 percent of the atoll population falls under this line. The in-between poverty line is set at Rf 10 per person per day.

Figure 4.2 Over-Representation of Income Poverty

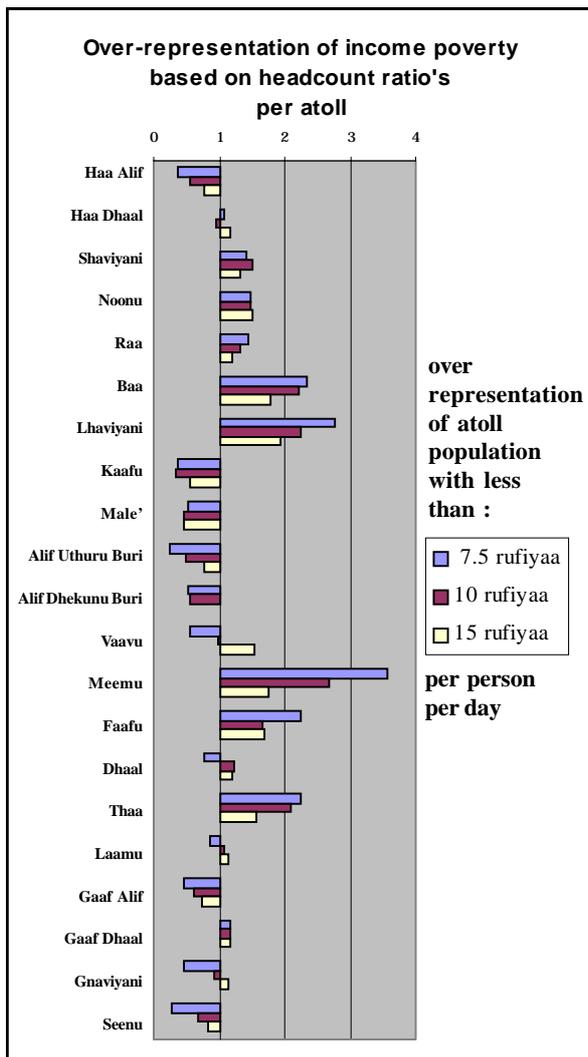


Figure 4.2 presents the atoll headcount ratios relating to these three poverty lines. Left-hand sided bars indicate relatively low headcount ratios and right-hand sided bars indicate higher than average headcount ratios for those atolls. In other words, left-hand sided bars show an under-representation of that atoll headcount ratio compared with the average headcount ratio for the country as a whole. For instance, the

headcount ratio belonging to the poverty line of Rf 7.5 in Haa Alif of 5 percent is much lower than the national average of 13 percent.

Figure 4.2 shows that Lhaviyani and Baa in the north, and Meemu, Faafu and Thaa in the south have relatively high percentages of income poor. This result is independent of the choice of poverty line. The headcount ratios in these atolls are significantly higher than average according to all three poverty lines. The same applies to Shaviyani, Noonu, Raa and Gaaf Dhaal, although the extent of over-representation in these cases is less pronounced.

Figure 4.2 presents the atoll headcount ratios relating to the three poverty lines. Thirteen percent of the population in Maldives falls under the poverty line of Rf 7.5, while 22 percent has an income of less than Rf 10 and 42 percent at an income of less than Rf 15 per person per day. To be able to compare headcounts per atoll for the three poverty lines, the ratios are calculated with the poverty lines as a base. For example the headcount for the Rf 7.5 poverty line for Haa Alif is 5 percent, which means that the headcount ratio for that atoll is $5/13=0.37$.

The national average for the three poverty lines function as the standard ratio which is 1 in all cases (13/13, 22/22, 42/42). Left-hand sided bars indicate relatively low headcount ratios (below the standard ratio of 1) and right-hand sided bars indicate higher than average headcount ratios (above the standard ratio) for those atolls. In other words, left-hand sided bars show an under-representation of that atoll headcount ratio compared with the average headcount ratio for the country as a whole.

4.4.2 Poverty Dominance with Unknown Poverty Lines

The headcount ratios relating to three poverty lines have so far been considered. It could be argued that the choice of these three lines is still arbitrary and that all possible poverty lines should be considered instead of only three. As discusses in Technical Note 1, the theory of Figure 4.4 is an enlargement of the segment between Rf 5 and Rf 15 per person per day in Figure 4.3. Figure 4.4 shows, for example, that Meemu is poverty dominant over the other atolls at

all poverty lines between Rf 5 and Rf 12. At higher values of the poverty line, Lhaviyani becomes dominant. In general, it can be concluded that five atolls are poverty dominant with respect to all other atolls. These are Meemu, Lhaviyani, Baa, Faafu and Thaa.

4.4.3 Poverty Dominance and Poverty Gap Indices

Since the curves in Figure 4.4 cross each other several times, it is worthwhile to consider the second-order poverty dominance criterion. This criterion is based on the poverty gap index. This index considers both the incidence and the depth of poverty. Figure 4.5 presents the poverty gap index associated with three poverty lines for all atolls.

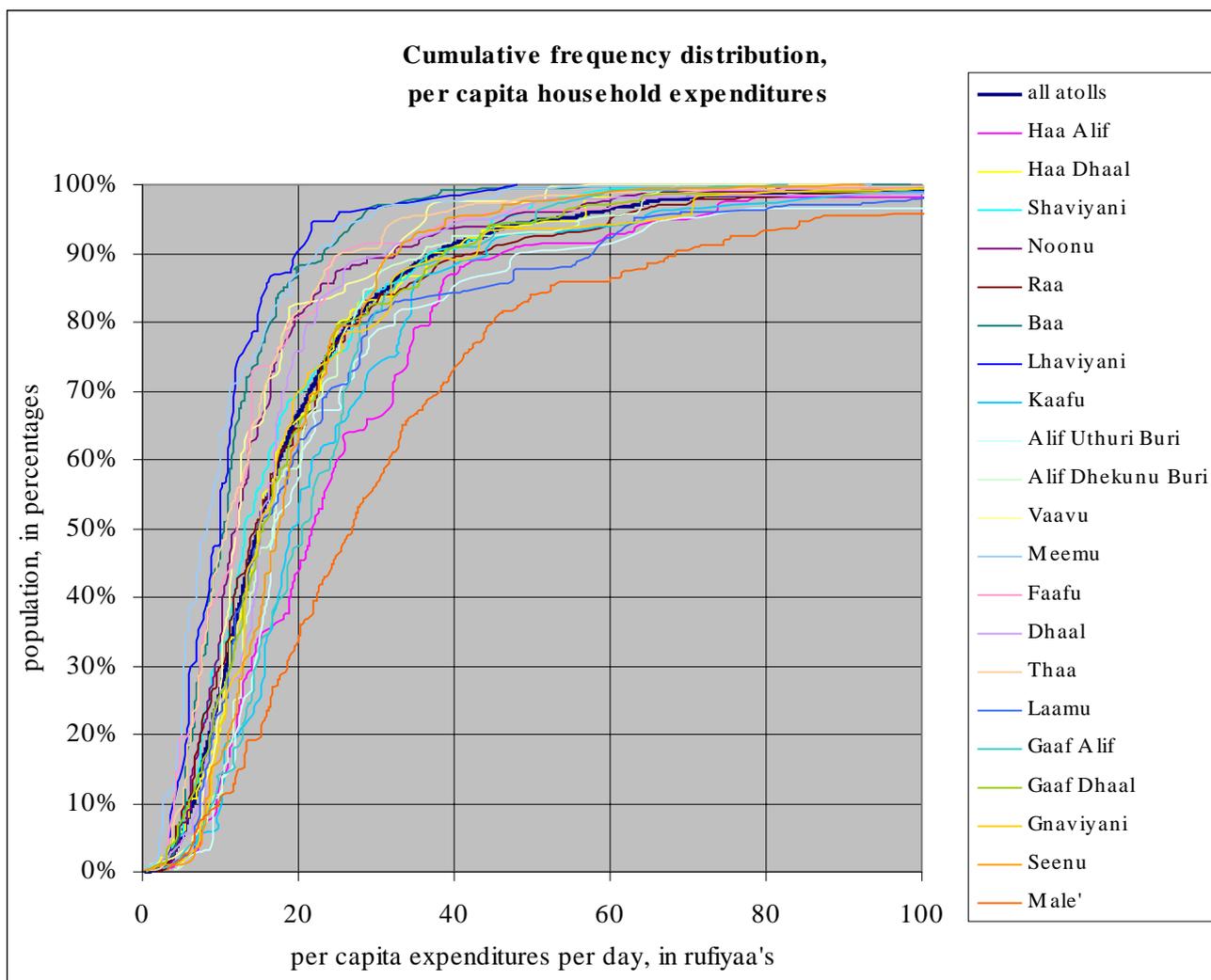
Again, the earlier mentioned five atolls - Meemu, Lhaviyani, Baa, Faafu and Thaa - are significantly over-represented.

This becomes even more evident in Figure 4.6. The poverty index of the above five atolls is significantly higher than the poverty gap indices for the rest of the atolls. The top five lines may cross each other, but none of them crosses a line belonging to the rest of the atolls.

4.4.4 Regional Distribution of Income Poverty

Income poverty exists everywhere in the country, even when applying the lowest poverty line of Rf 7.5 per person per day. It is found on all atolls and on Male'. Poor households are found not only on poor

Figure 4.3 Cumulative Frequency Distribution of Poverty by Atoll



islands but on rich islands also. On 55 islands no poverty is found when applying the lowest poverty line of Rf 7.5 per person per day. No poverty is found according to all possible poverty lines on six islands. These are Huraa (pop. 687) and Himmafushi (820) on Kaafu, Isdhoo (1,524) and Dhabidhoo (611) on Laamu, Agolhitheemu (354) on Raa, and Dhagethi (696) on Alif Dhekunu buri. Only 2 percent of the population lives on these islands.

The absolute number of the income poor per island is estimated by multiplying the headcount ratio with the island's population size. Adding these absolute numbers over the islands, the total number of income poor in Maldives is estimated at about 30,000 or 15 percent of the population. This group has a household income that is lower than Rf 7.5 per person per day.

Although income poverty, as defined above, exists everywhere in the country, there is nevertheless a concentration of poor on certain islands. The island with the highest absolute number of income poor is Male'. This may seem counterintuitive given that Male' is by far the richest island according to all possible standards. Although the headcount ratio in Male' (7 percent) is indeed significantly below average (15 percent), the absolute number of income poor in Male' is nevertheless substantial due to Male's relatively large population size of more than 60,000. About 15 percent of the income poor live on Male', while its share of total population is about 25 percent. In spite of this relative under-representation in terms of income poverty, the number of income poor in Male' is large in absolute terms. It is estimated at about 4,500. The island with the second-largest absolute number of income poor is Hinnavaru in

Figure 4.4 Enlargement of Cumulative Frequency Distribution of Poverty

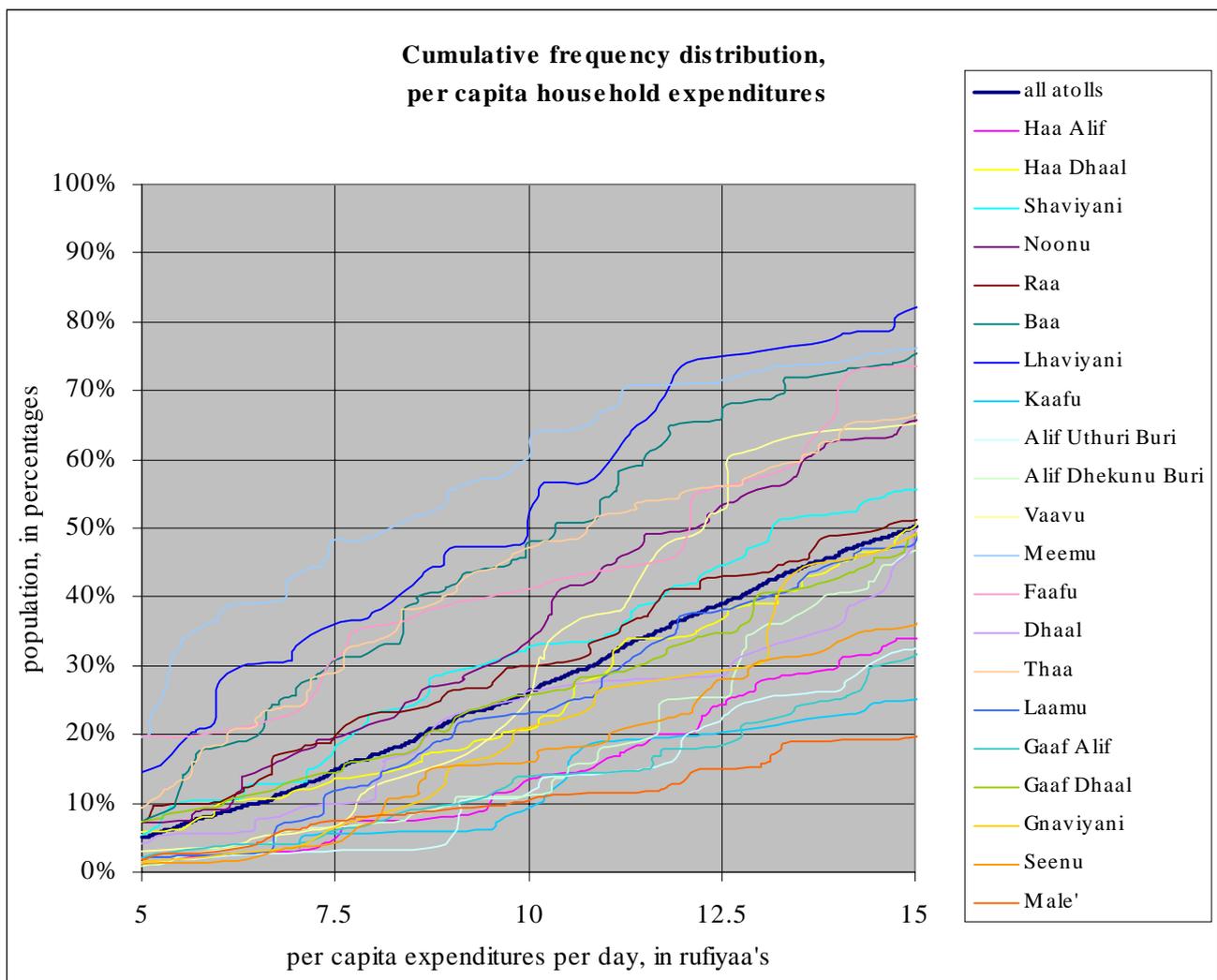


Figure 4.6 Poverty Gap Index by Atoll

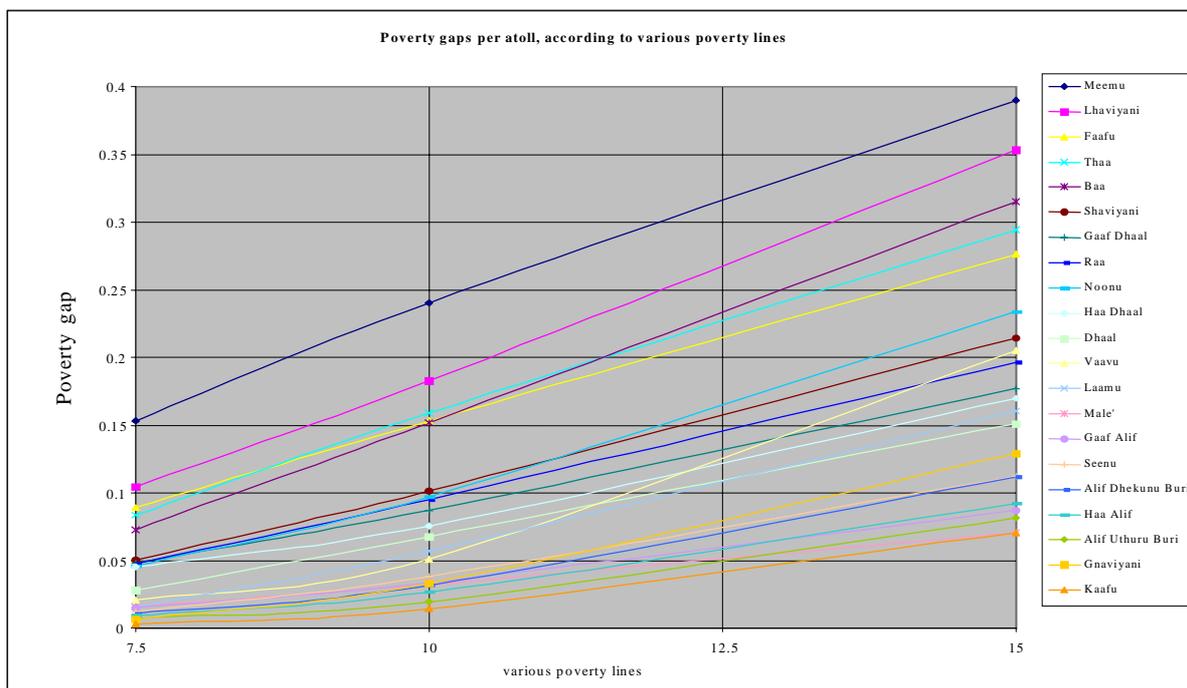


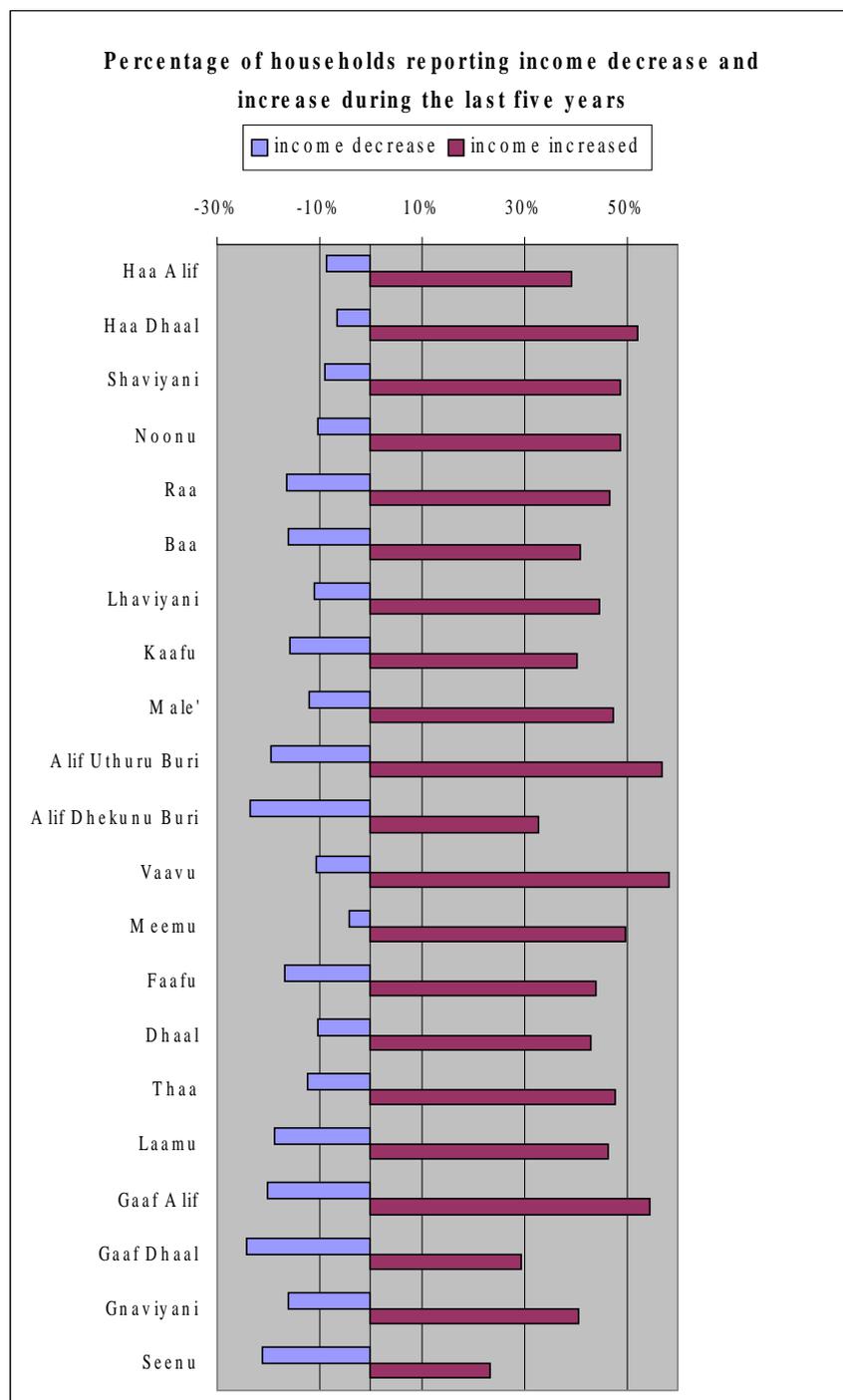
Table 4.2 Poorest Twenty Islands According to Headcount Ratio

Island	Atoll	Headcount ratio			Population Size	Number of poor, first poverty line	location of the poor	location cumulative	
		First poverty line Rf 7.5 Maldives 15%	Second poverty line Rf 10 Maldives 26%	Third poverty line Rf 15 Maldives 50%					
1	Kolhufushi	Meemu	76%	89%	100%	838	634	2%	2%
2	Fainu	Raa	71%	80%	100%	270	191	1%	3%
3	Dhiggaru	Meemu	70%	82%	93%	908	636	2%	5%
4	Fulhadhoo	Baa	69%	86%	92%	227	158	0%	5%
5	Madifushi	Meemu	67%	83%	94%	177	118	0%	5%
6	Nilandhoo	Faafu	64%	64%	93%	1,217	773	2%	8%
7	Kamadhoo	Baa	63%	73%	81%	290	184	1%	8%
8	Veyvah	Meemu	61%	70%	92%	156	95	0%	9%
9	Raimandhoo	Meemu	59%	66%	81%	199	118	0%	9%
10	Kudafari	Noonu	58%	94%	94%	451	263	1%	10%
11	Kihaadhoo	Baa	58%	81%	86%	278	161	1%	10%
12	Kadoodhoo	Thaa	57%	66%	82%	398	226	1%	11%
13	Foakaidhoo	Shaviyani	52%	62%	85%	1,000	525	2%	13%
14	Hinnavaru	Lhaviyani	52%	56%	88%	3,392	1,757	5%	18%
15	Maduvvari	Raa	51%	71%	97%	1,487	763	2%	21%
16	Guraidhoo	Thaa	49%	67%	78%	1,361	672	2%	23%
17	Maduvvari	Meemu	49%	49%	49%	525	258	1%	24%
18	Olhuvelifushi	Lhaviyani	49%	75%	75%	393	193	1%	24%
19	Nadallaa	Gaaf Dhaal	44%	75%	83%	718	316	1%	25%
20	Bilehffahi	Shaviyani	44%	61%	93%	442	194	1%	26%

numbers, it makes more sense to express poverty concentration in relative terms. Table 4.2 ranks the islands from poor to rich according to the headcount ratio relating to the lowest poverty line of Rf 7.5 per person per day. That means that island A is regarded as being poorer than island B if the headcount ratio on island A is higher than on island B. Table 4.2 shows

that 25 percent of the income poor are concentrated on 19 islands only. Six of these nineteen islands are in Meemu, three in Baa, two in Lhaviyani, Thaa, and Raa, and one in Faafu, Noonu, Shaviyani, and Gaaf Dhaal. The location of these 19 islands is shown in the income poverty map in the Vulnerability and Poverty Atlas (Part IV).

Figure 4.7 Percentage of Households Reporting an Increase or Decrease in Income by Atoll



4.5 Income Changes over Time

4.5.1 Growth of Household Incomes

A survey is a snapshot. It portrays the situation at a certain moment in time. Since the present household survey is the first of its kind in the country, developments over time cannot be evaluated. Nevertheless, the present household survey includes the question: Did your household income increase, decrease, or remain the same during the last five years? Answers to this question gives the preception of the people themselves about the development of their household income over time.

Forty-three percent of the respondents report an increase of their household income during the last five years, 14 percent report a decrease, and 42 percent report that their household income has remained the same over the last five years. In general, an increase in income is reported not only by richer households but also poorer ones. No relationship can be

established between the level of income and income changes over time. Even on atolls and islands where income poverty is over-represented, more households report an increase rather than a decrease in their household income. Figure 4.7 presents, at the atoll level, percentages of households reporting an income decrease or increase over the past five years.

On some islands, 100 percent of the survey respondents reported that their incomes had either increased or remained the same. There were only three islands where all respondents reported a decrease in incomes: Kanduhulhudhoo (pop.527) in Gaaf Alif, Dhonfanu (409) in Baa, and Maafilaafushi (69) in Lhaviyani.

There were five islands that recorded declining incomes with high levels of vulnerability (cf. Chapter 10) and would thus appear particularly disadvantaged: Nadallaa (735) and Fares (480) in Gaaf Dhaal, Hithadhoo (751) in Laamu, Kuburudhoo (292) in Haa Dhaal, and Dhaandhoo in Gaaf Alif.

Chapter 5: Physical Infrastructure

5.1 Introduction

This chapter reports on the main results obtained from the survey on the availability of physical infrastructure at the atoll and island level. Access to physical infrastructure provides a measure of the quality of life as well as standards of living. Islands well served with infrastructure can be expected to have higher overall levels of well being and welfare, while islands with no or limited access can be expected to possess a far higher degree of vulnerability.

Physical infrastructure covers a broad category of services and facilities. In the Vulnerability and Poverty Assessment preference was given to three areas, each of which is regarded as a single dimension of living standards in the compilation of the Human Vulnerability Index. These three dimensions are access to electricity, access to transport services, and access to communications.

The importance of electricity to living standards and the quality of life is self-evident and underscored by a wide range of studies. Not only does the availability of electricity contribute to overall levels of well-being, it also enables island communities to increase their productivity through, for example, the introduction of machinery and other technology that requires a source of power. Access to electricity also has positive impacts on social and human resource development, providing greater opportunities, for example, for schoolchildren to engage in study and for illiterate people to acquire the skills of literacy during times of the day that, without electricity, would be periods of darkness.

Access to transport services and communications are of critical importance in Maldives, where communities are separated by considerable distances. Access to transport and communications reduces the isolation of island communities and the insularity of their existence. Increased access translates into reduced isolation, decreased vulnerabilities, and expanded opportunities and choices. Access to modern forms of communication – telephone and the

printed and electronic media – also enable isolated communities to participate more fully in the mainstream of the nation's economic life, thereby enabling them to share more equitably in the benefits of growth and progress.

This chapter will cover the following dimensions:

- Electricity
- Transport and accessibility
- Communications and media, especially access to telephones and newspapers

5.2 Electricity

5.2.1 Access to Electricity

The percentage of the population with access to electricity has grown rapidly over the past decade. In 1990, an estimated one-third of the nation's population had no access to electricity. Five years later, the percentage had fallen to 13 percent, since when it has fallen further to stand at 7 percent. Although access to electricity has improved considerably, there are islands where electricity is not available around the clock. Today, more than 60 islands have electricity for 24 days a day, together accounting for 55 percent of the total population.

Access varies considerably among atolls. In the central zone (Kaafu) and in the southern atolls (Dhaal and Seenu), access is almost universal, with electricity being available for most of the day. This situation stands in contrast to other atolls, notably the northern atolls and those in the centre of the southern zone (Laamu and Gaaf Alif), where access is more restricted. Overall, nearly one in 3 of the atoll population enjoys access to electricity for only a few hours a day, although there are several atolls, such as Haa Alif, Thaa and Laamu, where the figure is considerably higher.

Approximately one in 4 of all households with access to electricity has up to four wired points in their homes. In several atolls, more than one-third of

households has up to 4 wired points, while in Gaaf Alif more than one-half of households have 4 or less. The lowest percentages – only 3-5 percent - are found in Alif Uthuru buri and Alif Dhekunu buri.

5.2.2 Electricity Index

The electricity index is based on the following indicators and penalty points:

Indicators	Penalty Points
No electricity	1.0
Electricity for 6 hours or less per day	0.5

Since the index is based on penalty points, a high score translates into low access to electricity. The higher the score, the poorer the access.

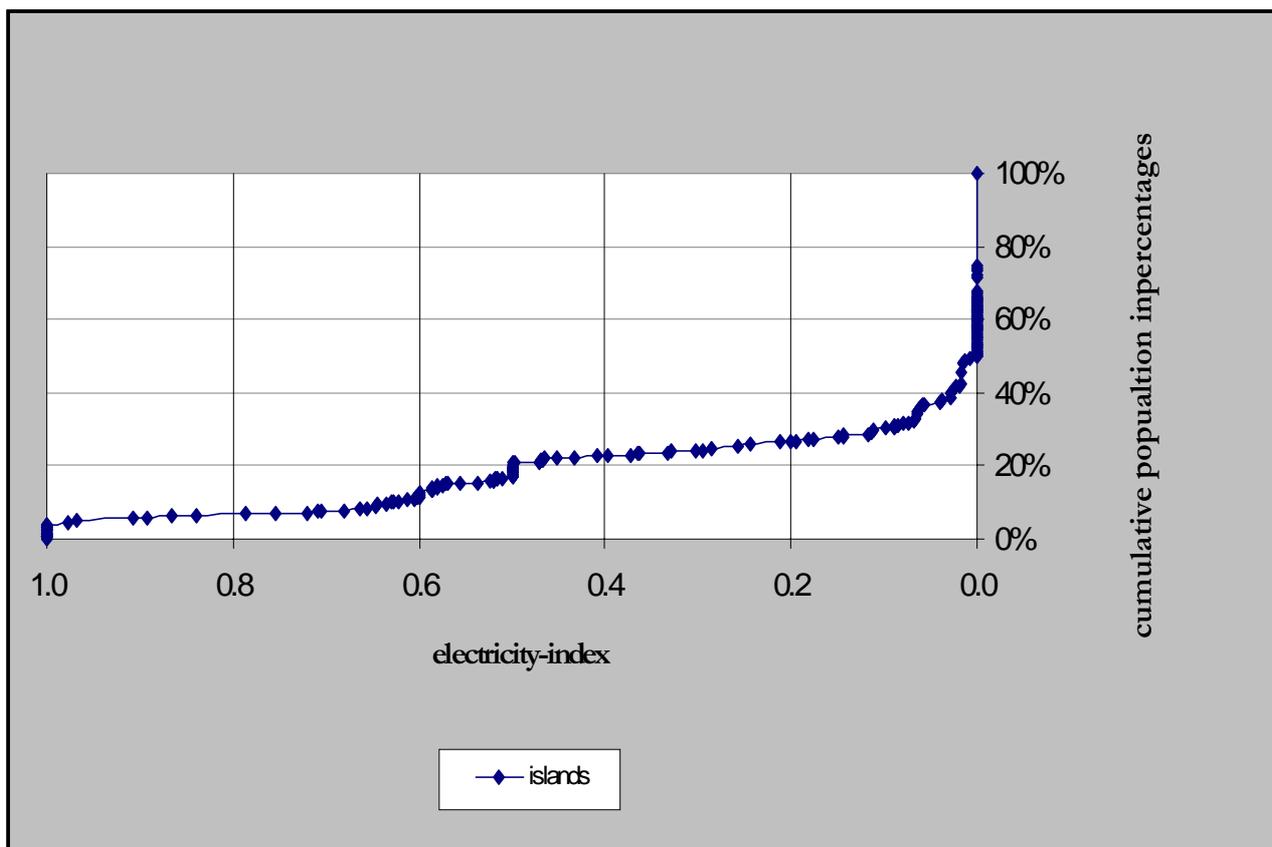
The application of this index to all inhabited islands reveals that there are some 90 islands that score between 0.0 and 0.5, while 85 islands record scores between 0.5 and 1.0. The islands with high scores are generally islands with small populations, together accounting for around 20 percent of the nation's population. Islands with low scores on the electricity index account for around 70 percent of the population.

Most of the islands with high scores are, not surprisingly, to be found in the atolls with below average access to electricity, with Haa Alif, Laamu and Gaaf Alif being over-represented on the index scale. Although one-quarter of households in these atolls have no access to electricity, there are considerable differences between islands within the atolls. In Haa Alif, for example, there are 3 islands (Thurakunu (pop. 510), Uligamu (384) and Berinmadhoo (163))

**Table 5.1 Indicators of Access to Electricity by Atoll
(Percentage of atoll population)**

	No Electricity	6 Hours or less Electricity per Day	4 Wired Points or Less in the House
Maldives	7	21	..
Male'	0	0	..
Atoll average	9	28	27
Haa Alif	24	62	39
Haa Dhaal	10	25	20
Shaviyani	7	44	37
Noonu	6	45	33
Raa	6	24	18
Baa	4	43	22
Lhaviyani	4	0	33
Kaafu	0	0	17
Alif Uthuru buri	4	0	5
Alif Dhekunu buri	3	18	3
Vaavu	2	26	39
Meemu	4	44	32
Faafu	10	20	16
Dhaal	0	0	17
Thaa	15	58	31
Laamu	23	55	15
Gaaf Alif	23	48	53
Gaaf Dhaal	13	41	34
Gnaviyani	2	0	21
Seenu	0	0	40

Figure 5.1 Electricity Index by Island



without electricity as well as 2 islands (Hathifushi (201) and Maarandhoo (635)) in which all households have electricity.

In Gaaf Alif also there are islands without electricity as well as those in which access to power is universal. Haa Dhaal is the only other atoll that has islands (Hondaidhoo (135) and Kuburudhoo (292)) which are still completely without electricity.

In atolls in the middle zone (Lhaviyani, Kaafu and Alif Uthuru buri) and in the south (Gnaviyani and Seenu) the electricity situation is well above the average for all atolls. Many of the islands in these atolls have penalty scores that range from 0.0 to 0.20. Overall, approximately 30 percent of the atoll population is to be found on islands with an electricity index of zero points. This figure excludes Male' that also scores zero and accounts for 25 percent of the

nation's population.

5.3 Transport

5.3.1 Inter-Atoll and Inter-Island Transport

With the exception of the ferry service between Male' and Viligili, Maldives is without regular inter-atoll and inter-island boat services. On the islands, people are typically required to arrange a dhoni for themselves in order to travel to another island. However, dhonis may not be available for hire and the costs of hire may be high. The accessibility of some islands may also be poor, with some lacking harbours and jetties, while access to others may be severely impeded by shallow waters and coral reefs.⁶

Table 5.2 shows that, overall, one-quarter of the at-

⁶ The survey excluded questions about air travel. Maldives possesses four regional airports, located at Hanimaadhoo in Haa Dhaal, Kadhdhoo in Laamu, Kaadeddhoo in Gaaf Dhaal and Gan in Seenu, with Air Maldives maintaining a schedule of domestic services between the airports and Male'. Baa, Lhaviyani, Kaafu, Alif Uthuru buri and Alif Dhekunu buri have operational heliports, and seaplanes operate between Male' and many resort islands, which can be used by persons living close to the resorts for travel to Male'. Although domestic aviation is growing in importance, the overwhelming majority of the atoll population is still dependent upon sea transport.

oll population is to be found on islands with more than 100 persons per dhoni. However, differences among atolls are pronounced. In several atolls, such as Noonu, Baa, Alif Uthuru buri, Faafu and Dhaal,

Male’.

Travel to Male’ is generally less frequent than travel to the atoll capital. For one-third of the population, found mainly in atolls in the north central and south

**Table 5.2 Indicators of Access to Transport Services by Atoll
(Percentage of atoll population)**

	More than Hundred Persons per Vessel	Dhoni going three Times or less a Month to Atoll Capital	Dhoni going One or Two Times a Month to Male'	Island not always Accessible
Atoll average	26	18	29	55
Haa Alif	21	28	34	43
Haa Dhaal	31	4	44	92
Shaviyani	8	41	40	75
Noonu	0	56	52	70
Raa	11	2	20	64
Baa	0	31	24	47
Lhaviyani	47	0	0	57
Kaafu	19	34	10	49
Alif Uthuru buri	0	73	0	85
Alif Dhekunu buri	6	53	7	48
Vaavu	9	19	0	56
Meemu	3	0	0	57
Faafu	0	0	22	86
Dhaal	0	23	52	61
Thaa	4	0	23	39
Laamu	21	11	34	50
Gaaf Alif	5	21	31	35
Gaaf Dhaal	35	0	53	25
Gnaviyani	100	0	0	100
Seenu	90	0	43	0

dhonis appear to be available in sufficient numbers to meet island transport needs, while in other atolls the numbers are more problematic.

The survey reveals that transport to the atoll capital may often be a problem for island populations. One-in-five of the atoll population is to be found on islands where dhoni services to the atoll capital are limited to three or fewer per month. Alif Uthuru buri appears particularly disadvantaged, with three-quarters of the population reporting that they are unable to travel more frequently to the atoll capital. In Noonu also, 60 percent of the population is unable to travel to the atoll capital more often than three times a month. As might be expected, this situation stands in contrast to Kaafu, where dhonis travel regularly to

central zones, opportunities to travel to Male’ are restricted to one or two dhoni services per month. In Noonu, Dhaal and Gaaf Dhaal, more than one-half of the population report that dhonis travelling to Male’ are only available once or twice a month.

This infrequent service must be placed in context. In practice, island populations are able to make use of dhonis that may be travelling to Male’ or to the atoll capital to reach nearby islands, or dhonis that are travelling to Male’ to reach the atoll capital. In most cases, island populations know when dhonis will be available for travel to either the atoll capital or Male’. However, travel by most islanders to both the atoll capital and Male’ is infrequent, although it is not clear whether there are few reasons for them to travel or

whether travel is restricted by the irregularity of services.

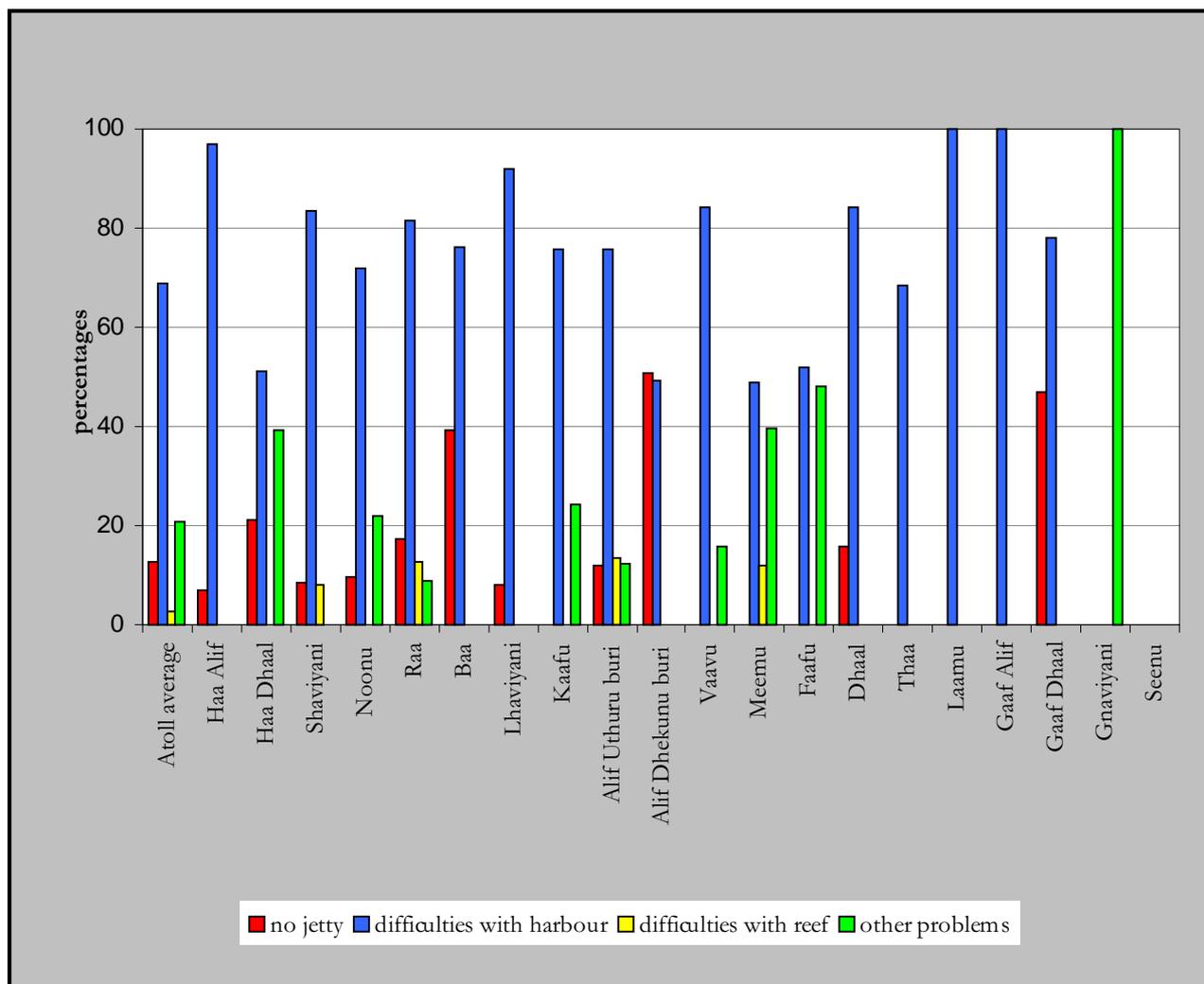
5.3.2 Island Accessibility

Many islands in Maldives are confronted with

the reef (3 percent).

As shown in Figure 5.2, harbour problems are the main reason reported for poor access in all atolls with the exception of Alif Dhekunu buri and Gnaviyani. In Laamu and Gaaf Alif, they are the only reasons

**Figure 5.2 Reasons for Poor Accessibility
(Percentage of atoll population)**



problems of accessibility. More than one-half of the atoll population is to be found on islands that experience such problems, with the figure rising to around 90 percent in the cases of Haa Dhaal and Noonu. Only two of the 17 islands in Haa Dhaal report that accessibility is not a problem. The main reason for poor accessibility is problems with the harbour, the cause reported by 70 percent of the population. This reason is followed by the absence of a jetty (13 percent) and by difficulties in penetrating

reported. In Alif Dhekunu Buri, 50 percent of the population, all found on Maamigili (pop. 1,759), report the absence of a jetty as the main difficulty, while on all other islands in the atoll harbour problems predominate. Problems with coral reefs are only reported in Shaviyani, Raa, Alif Uthuru buri and Meemu. Foammulah, the only island in Gnaviyani, also reports problems with access but for reasons other than difficulties experienced with the harbour, jetty or reef. Because none of the islands in Seenu

reports accessibility problems, it is without a bar in Figure 5.2.

5.3.3 Transport Index

The transport index is composed of the following indicators and penalty scores:

Indicators	Penalty Score
More than 100 persons per dhoni	0.25
Three or fewer dhonis per week to atoll capital	0.5
Islands not always accessible	0.5

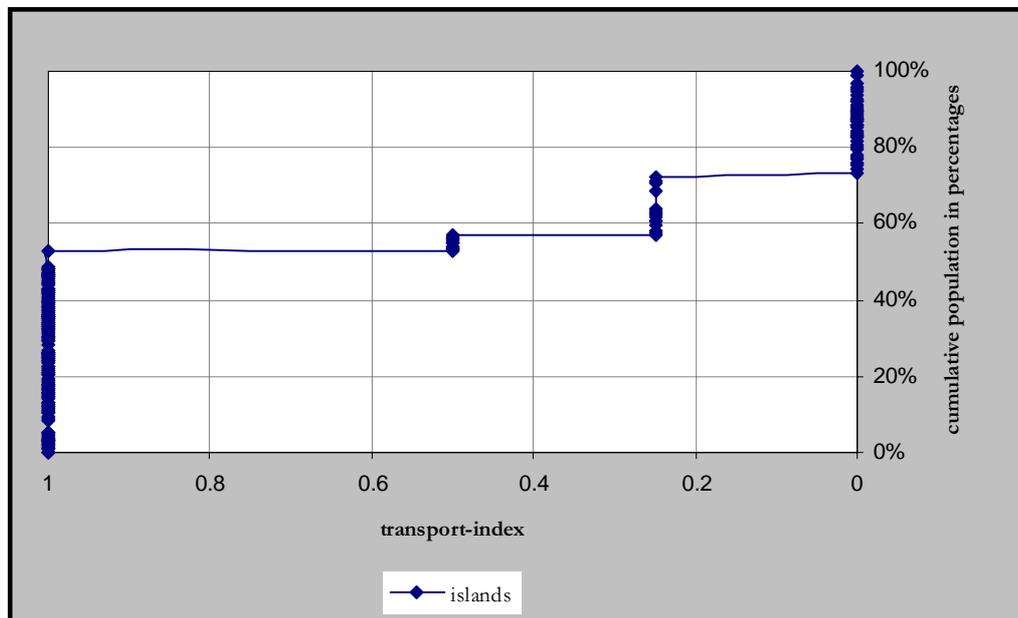
Since the index is based entirely on the island (as opposed to household) questionnaire, the transport index does not give expression to population considerations. Given its construction, the only possible results for this index are 0.0, 0.25, 0.50, 0.75 and 1 penalty point.

populations to share a dhoni with more than 100 persons. Maradhoo (pop. 1,047) is the only island where this is not the case.

The composite transport index shows that Baarah (1,206) in Haa Alif and Hirimaradhoo (409) in Haa Dhaal are the most disadvantaged islands in the country. These islands not only experience difficulties of access but their populations are required to share dhonis with more than 100 persons and dhonis are available less than four times per month for travel to the atoll capital and three times or less per month for travel to Male’.

More than 40 islands have a transport index of zero points (no transport or accessibility problems). Although they can be found throughout the archipelago, they are over-represented in especially Thaa and Gaaf Alif.

Figure 5.3 Transport Index by Island



In Figure 5.3, islands with an accessibility problem are shown on the left side of the illustration with a penalty score of 1 point. A total of 127 islands are recorded, distributed over the whole of the Republic. Seenu is the only atoll without a single island that scores 1 point. All islands in Seenu score 0.25 points due to the fact that it is common for island

5.4 Communications

5.4.1 Communications Infrastructure and Facilities

Communications infrastructure and facilities are, of course, much more highly developed in Male’ than

in the atolls. Male' is well served by public telephones, and newspapers and other sources of information are abundant. The situation stands in contrast to the one prevailing in other parts of the country.

On all islands, people have access to a telephone,

communities out of their relative isolation. This is particularly the case with telecommunications, where Dhiraagu is executing, at the request of the Government, a major programme of providing atolls and islands with telephone connections.

At the beginning of 1997, only 72 islands (35 percent

**Table 5.3 Communications Indicators at Atoll Level
(Percentage of atoll population)**

	No Public Telephone on Island	More than Two Hours to Nearest Public Telephone	No Newspaper on Island
Maldives	25	3	44
Male'	0	0	0
Atoll average	34	4	59
Haa Alif	80	9	79
Haa Dhaal	100	12	20
Shaviyani	96	12	94
Noonu	32	20	40
Raa	8	0	93
Baa	3	0	72
Lhaviyani	47	0	0
Kaafu	0	0	62
Alif Uthuru buri	0	0	100
Alif Dhekunu buri	24	0	51
Vaavu	74	18	74
Meemu	42	0	76
Faafu	86	0	0
Dhaal	78	13	71
Thaa	43	0	87
Laamu	0	0	82
Gaaf Alif	0	0	80
Gaaf Dhaal	0	0	48
Gnaviyani	0	0	0
Seenu	0	0	53

although this is not always a public telephone. On islands without a telephone booth, people are able to make use of the telephone available in the office of the island chief. Although this is available 24 hours a day to an island population, its location inevitably places restrictions on telephone use compared with islands with public telephones.

The calculation of indices is based upon the situation prevailing at the time of the survey. As noted in Chapter 2, rapid progress is being recorded in numerous areas that are serving to bring island

of all inhabited islands) had been provided with telephone connections. This had increased to 129 islands (65 percent of the islands) by the end of that year. Towards the end of 1998, coverage had been further extended to over 80 percent of all islands. During the period of fieldwork, public access to telephones was reported on 109 islands, which is within the range given by Dhiraagu for the start and end of 1997.

Overall, one-third of the atoll population lives on islands without public telephones, with such islands

showing a relative concentration in the northern atolls and in atolls in the south central zone. Lack of access to a public telephone is particularly pronounced in Haa Dhaal and Shaviyani, as shown in Table 5.4, where more than 90 percent of the population occupies islands without a public telephone.

People living on islands without a public telephone

Newspapers are transported to the islands but on an irregular basis. On some islands, newspapers are displayed on billboards at central locations. In three atolls – Lhaviyani, Faafu and Gnaviyani – all islands regularly receive newspapers, while in Alif Uthuru buri none of the islands report receiving a newspaper and in Shaviyani and Raa more than 90 percent of the population never read one.

**Table 5.4 Telephone, Radio and Television by Atoll
(Percentage of atoll population)**

	No Telephone	No Radio	No Television
Maldives	88	53	75
Male'	57	48	45
Atoll average	97	55	86
Haa Alif	100	30	85
Haa Dhaal	100	70	91
Shaviyani	100	67	90
Noonu	100	46	90
Raa	100	38	80
Baa	100	68	90
Lhaviyani	100	71	100
Kaafu	100	57	74
Alif Uthuru buri	100	37	71
Alif Dhekunu buri	100	34	69
Vaavu	100	41	80
Meemu	100	77	93
Faafu	100	36	84
Dhaal	100	38	87
Thaa	100	65	87
Laamu	100	50	88
Gaaf Alif	100	60	84
Gaaf Dhaal	100	52	89
Gnaviyani	90	58	87
Seenu	84	72	79

typically have to travel to other islands where facilities are available. Overall, 4 percent of the atoll population is required to travel for more than 2 hours to reach a public phone, with the percentage rising to a high of around 20 percent of the population in Noonu. Individual telephone connections are rare in Maldives outside of Male', being confined to households in Raa, Gnaviyani and Seenu. In Male', one-half of the population has a telephone at home.

Radio is the most important news, information and entertainment medium for the atoll population, with such programmes as the 'Voice of Maldives' playing a particularly important role in the maintenance of contacts within the country. Despite the importance of the radio, 55 percent of the atoll population reports having no radio at home, with few variations in the differences between atolls. With respect to national television, TVM broadcasts can at present

be received only by households on Male' and nearby islands. More than one-half of the population of Male' has a television, compared with only 15 percent of the atoll population. Although satellite television was recently introduced in Lhaviyani, none of the households interviewed reported the ownership of a television.

5.4.2 Communications Index

The Communications Index is composed of the following indicators and penalty scores:

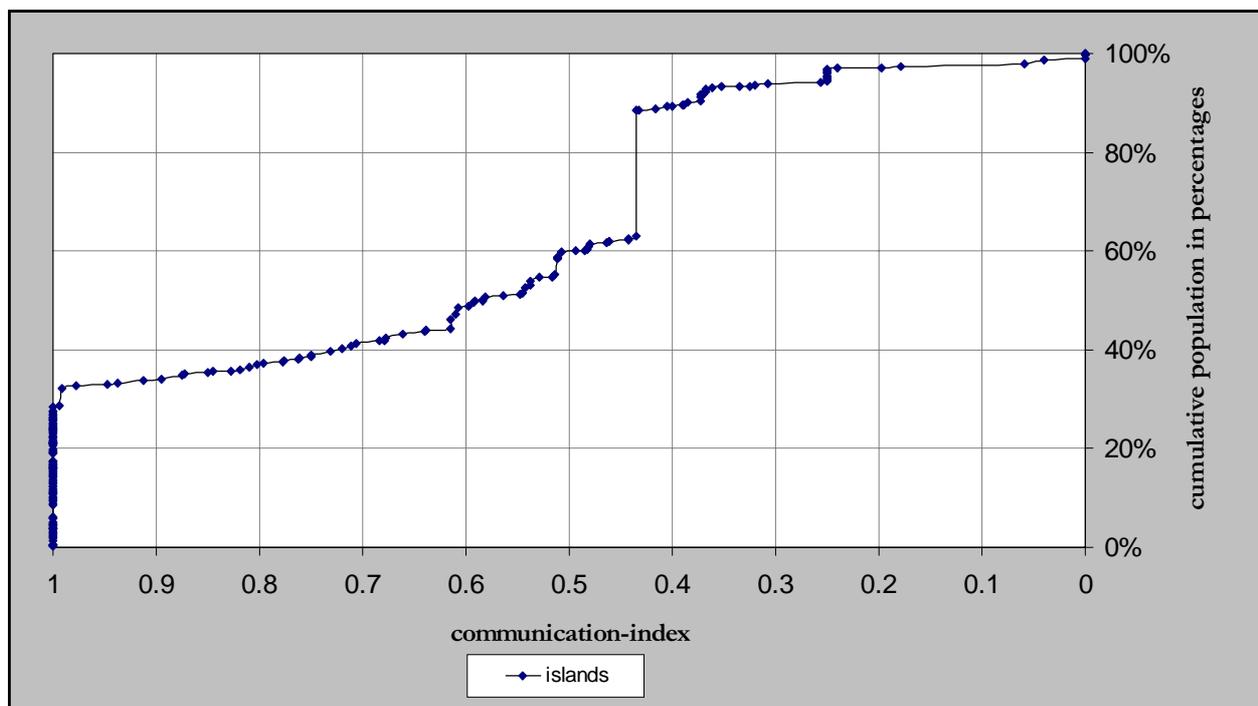
Indicators	Penalty Points
No public telephone on the island	0.75
More than 2 hours to nearest public telephone	1.0
No newspaper available on the island	0.25
No radio in the household	1.0

As can be seen, differences between islands are not great. Only in the upper ranges – between the values 0.06 and 0.18 – is there evidence of a gap.

Three islands only score zero points: Ugoofaaruu (pop. 1,094) in Raa, Kuburudhoo (459) in Alif Dhekunuburi, and Fares (480) in Gaaf Dhaal.⁷ Overall, almost 30 percent of the population is to be found on islands with a communications index of 1 point. High penalty scores are mainly to be found in the northern atolls of Haa Alif, Haa Dhaal, Shaviyani and in Vaavu, Dhaal and Thaa in the south central zone. Islands in Haa Dhaal appear particularly disadvantaged, with all islands in the atoll, with the single exception of Kulhudhuffushi (pop. 5,987) registering 1 penalty point. None of these islands have a public telephone, although only on Makunudhoo (1,095) do people have to travel more than 2 hours to reach one. The high score recorded by most islands can be attributed to the absence of a public telephone. In Shaviyani, for example, 95 percent of the population lives on islands without a public telephone, and the population of Bilehffahi (442) and Lhaimagu (508) has to travel for more than 2 hours to reach one.

The availability of an 'own' telephone is not considered in the compilation of the communications index. Outside of Male', household connections are

Figure 5.4 Communications Index by Island



⁷ Although Kaashidhoo in Kaafu is also shown with a score of zero points, this is due to the absence of an island questionnaire. This absence means that there is no information on the availability of a public 'phone and of newspapers.

only found on Innamaadhoo (513) in Raa, Foammulah (7,917) in Gnaviyani and on Hithadhoo (8,973), Maradhoo (1,939), Feydhoo (3,174) and Hulhudhoo (1,761) in Seenu. Foammulah, Feydhoo and Hulhudhoo also score well on other fronts, and all three islands are located just to the left of Male' in Figure 5.4.

All islands where none of the population has access to a radio are shown on the left-hand side of Figure 5.4. Of the 14 islands, three are to be found in Meemu,

three in Baa and two in Thaa.

If all factors in addition to those used for the index are considered, four islands can be shown to be particularly disadvantaged: Foakaidhoo (1,011) in Shaviyani, Veyvah (156) and Naalaafushi (341) in Meemu, and Vandhoo (291) in Thaa. On these islands, almost no one has a radio, television, or access to a public telephone or newspaper. However, in the case of a public telephone, no one has to travel more than two hours to reach one.

Chapter 6: Social Infrastructure

6.1 Introduction

This chapter reports on the results of the survey on the access of atoll and island populations to social infrastructure and services. As such, the findings complement those reported in the previous chapter of physical infrastructure.

Given the importance of social infrastructure and services to human welfare and well being, the approach adopted by the survey was deliberately broad. It covers not only the key services of education, health and drinking water but also access to recreation and sport facilities and access to consumer durables. All these are regarded as important determinants of living standards and the quality of life and they are each treated as living dimensions in the calculation of the Human Vulnerability Index in chapter 11.

The provision of education and health services poses particular challenges in a nation composed of 200 inhabited islands, many with small populations. It gives rise to severe diseconomies in the provision of services, which translate into unit costs that are typically 4-5 times those found in continental developing countries. The results of the survey make it possible to estimate the extent to which quantitative and qualitative challenges are being met.

Access to safe drinking water is no less problematic. A basic human need and an essential ingredient of strategies for primary health care, drinking water has traditionally been obtained from the shallow freshwater lens, accumulated through rainwater, which floats on saline water. In many islands in Maldives, the freshwater lens is shallow or almost non-existent and always subject to saline intrusion and contamination through especially human and agricultural wastes and residues. Saline intrusion and contamination not only adds to the vulnerability of island populations but can also render the island unfit for human habitation.

The decision to include in the survey access to recreation and sport facilities is based upon a two-fold consideration. First, it was recognised that many islands suffer from overcrowding and that the absence of space may severely limit opportunities for outdoor recreation. In severely overcrowded islands such as Male', the high population density, limited privacy and the absence of outdoor space have been linked to the emergence of social problems as well as identified as a factor that inhibits the psychological development of children. Second, the organisation of recreational and sporting events can be related to the level of social and community organisation existing on an island.

While consumer durables cannot be considered social infrastructure, ownership of them can help to increase overall levels of well-being and welfare, especially when such durables are able to reduce the drudgery associated with island life and a subsistence economy and to increase the productivity of households and thus their capacity to generate incomes.

The chapter also reports on the survey's findings with respect to infant mortality, child mortality and life expectancy. These findings are based upon direct interviews with sample households and the use of special software packages to estimate life expectancy. Findings in these areas differ from official statistics for reasons discussed in this chapter.

In this chapter, the survey's findings on the availability and quality of social infrastructure, facilities and services are reported under six main headings:

- Education
- Health
- Life expectancy
- Drinking water
- Recreation and sport
- Consumer durables

6.2 Education

6.2.1 Educational Infrastructure and Services

It is the Government’s policy to ensure that schools offering basic education up to grade 7 are available on all islands by the year 2000. As shown in Figure 6.1, there is still some way to go before this target is fully achieved.

In early 1998, grade 5 was the highest level available on 24 islands, and grade 6 the highest on 60 islands. More than 80 islands at present provide for education up to grade 7, while more than 30 islands are equipped to provide grades 8, 9 or 10. Kaafu (excluding Male’), Alif Uthuru buri, Vaavu, Meemu, Faafu and Laamu are the only atolls that are without grade 10 education, although in Kaafu, Vaavu and Faafu all islands have at least grade 7. In Lhaviyani and Gnaviyani most of the population already has access to grade 10 education. All the population of Haa Dhaal has access to grade 5 education with the exception of the population of Faridhoo (pop. 218), where the highest available grade is only grade 4.

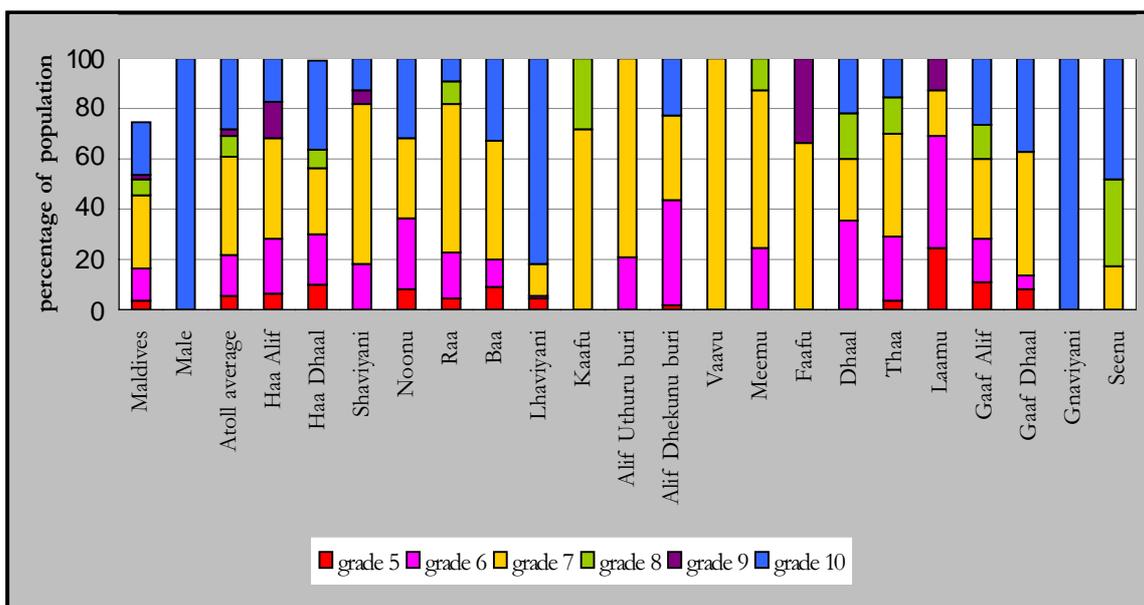
Table 6.1 provides tangible evidence of the progress recorded by Maldives in the field of education. Particularly noteworthy has been the growth in the

number of trained teachers who are today to be found on every atoll and the vast majority of islands. Overall, only 2 percent of the atoll population is to be found on islands that have no trained teacher. In 15 of the nation’s atolls, trained teachers are available for the entire population. Of the five atolls in which this is not the case, the situation is most marked in Haa Alif, where 7 percent of the atoll population is to be found on islands that are without trained teachers.

Table 6.1 also indicates the progress recorded in reducing student/trained-teacher ratios. Overall, only 8 percent of the atoll population is to be found on atolls in which more than 100 students per trained teacher, with the highest percentages being recorded in the cases of Thaa, with 19 percent, Haa Dhaal, with 16 percent, and Kaafu with 12 percent. Against this, there are 7 atolls – Baa, Lhaviyani, Alif Uthuru, Alif Dhekunu, Vaavu, Meemu and Gnaviyani – where, for the atolls as a whole, there are no cases of student/trained-teacher ratios in excess of 100.

However, these figures provide no grounds for complacency. Student/trained-teacher ratios are still unacceptably high, as evidenced by the percentage of the population that is found on atolls in which there are more than 50 students for every trained teacher. For the nation as a whole, nearly one-third of the

Figure 6.1 Highest Educational Grade Available by Atoll (Percentage of total population)



population is to be found on atolls that have between 50-100 students for every trained teacher. Particularly high figures can be noted for Seenu (71

Table 6.2 also shows that nursery schools are far from standard in the atolls. More than one-half of the population is to be found on atolls without nursery schools,

Table 6.1 Student-Trained Teacher Ratio for Primary School by Atoll (Percentage of the population)

	No trained teacher	More than 100 students per trained teacher	Between 50 and 100 students per trained teacher
Atoll average	2	8	30
Haa Alif	7	10	39
Haa Dhaal	4	16	56
Shaviyani	0	7	0
Noonu	2	7	26
Raa	3	6	69
Baa	0	0	11
Lhaviyani	5	0	0
Kaafu	0	12	0
Alif Uthuru buri	0	0	0
Alif Dhekunu buri	0	9	40
Vaavu	0	0	0
Meemu	0	0	0
Faafu	0	0	32
Dhaal	0	9	42
Thaa	0	19	12
Laamu	0	10	44
Gaaf Alif	0	7	0
Gaaf Dhaal	0	4	15
Gnaviyani	na	na	na
Seenu	0	11	71

percent), Raa (69 percent) and Haa Dhaal (56 percent). The situation with respect to student/trained-teacher ratios appears most favourable on Alif Uthuru buri, Vaavu and Meemu.

Basic indicators of the educational situation prevailing in Maldives at the time of the survey are presented in Table 6.2. Table 6.2 also confirms that not all schools yet meet the physical standards set by the Government. Some 12 percent of the nation's population is found on islands that have schools without drinking water and 13 percent on islands in which schools have no toilet facilities. The non-availability of drinking water at schools appears most pressing in Kaafu, Raa, Dhaal and Noonu, while schools without toilet facilities affect greater numbers of people in Meemu, Laamu, Gaaf Alif, Raa and Vaavu.

with the figure rising to 100 percent in the cases of Lhaviyani and Gnaviyani.

6.2.2 Education Index

The Education Index is made up of eight indicators as follows:

Indicator	Penalty points
No trained teacher 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

**Table 6.2 Educational Indicators by Atoll
(Percentage of atoll population)**

	No Drinking Water at School	No Toilet at School	No Enclosed Classroom	No Library at School	No Nursery School
Atoll average	12	13	44	52	55
Haa Alif	4	9	75	78	47
Haa Dhaal	7	2	19	57	32
Shaviyani	13	0	38	48	77
Noonu	24	3	49	68	29
Raa	35	35	49	67	61
Baa	12	17	44	50	31
Lhaviyani	5	0	5	17	100
Kaafu	39	0	50	88	60
Alif Uthuru buri	0	11	100	52	78
Alif Dhekunu buri	0	0	42	31	59
Vaavu	0	32	100	56	66
Meemu	0	62	61	28	76
Faafu	0	0	32	0	75
Dhaal	25	13	87	100	93
Thaa	0	32	42	83	45
Laamu	20	42	81	81	63
Gaaf Alif	17	40	94	60	72
Gaaf Dhaal	14	0	44	58	38
Gnaviyani	0	0	0	0	100
Seenu	0	0	0	0	27

In the penalty scoring system, greatest weight is accorded to islands without a trained teacher (1.0 penalty point), followed by islands with a very high student/trained-teacher ratio and without education beyond grade 5 (0.5 penalty points).

The resulting Education Index is shown in Figure 6.2. As a consequence of the scoring system used, islands can be divided into 5 categories with penalty points ranging from 0-1. The index shows that nearly 50 island, together accounting for 10 percent of the nation's population, can be found on islands with 1 full penalty point, indicating that educational disadvantage is closely correlated with small population size. These islands can be found in all atolls, with the exception of Alif Uthuru buri, Alif Dhekunu buri, Vaavu, Meemu, Faafu and Seenu. This figure compares with 40 percent of the population that inhabits islands that fail to score a penalty point.

Overall, the Education Index of 0.0 for Male' compares with an average of 0.50 for the atolls. Less than 10 islands outside of Male' record an index of 0.0.

6.3 Health

6.3.1 Health Infrastructure and Services

Maldives is well-advanced along the path of developing a decentralised system of health care, with levels consisting of a national referral hospital (and other specialised institutions) at the centre, four regional hospitals, Atoll Health Centres, and Community Health Workers (CHWs) and other trained medical personnel at the island level. The four regional hospitals are located at Kulhudhuffushi in Haa Dhaal, Ugoofaru in Raa, Muli in Meemu, and Hithadhoo in Seenu. In addition to CHWs, the target is to ensure that there is a trained midwife available on all islands and that, for specialist and emergency services, island populations do not have to travel longer than 2 hours to reach a regional hospital or Atoll Health Centre.

An indication of the extent to which these targets are currently being met is provided in Table 6.3.

As can be seen from the table, although most islands

Figure 6.2 Education Index by Island

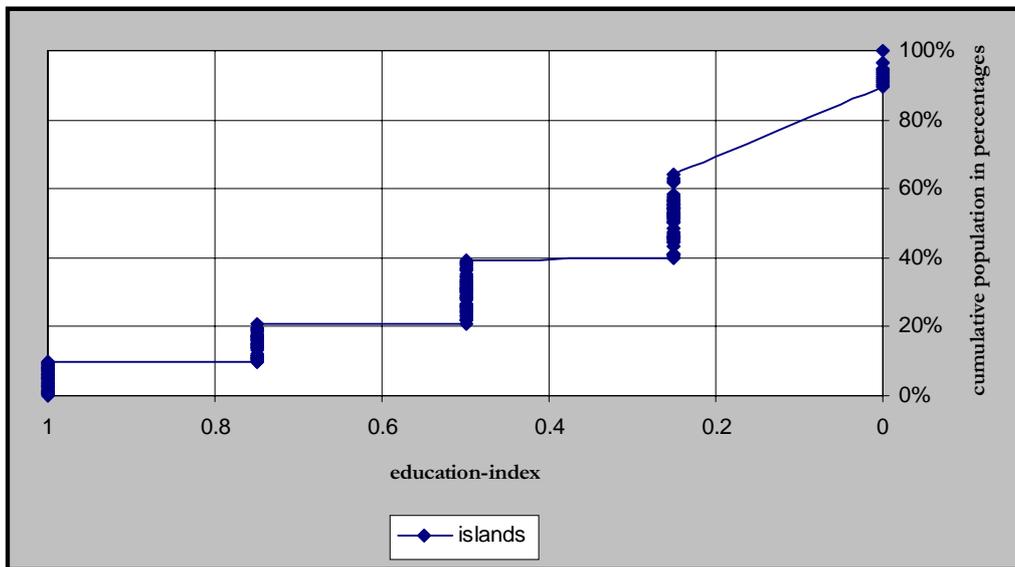
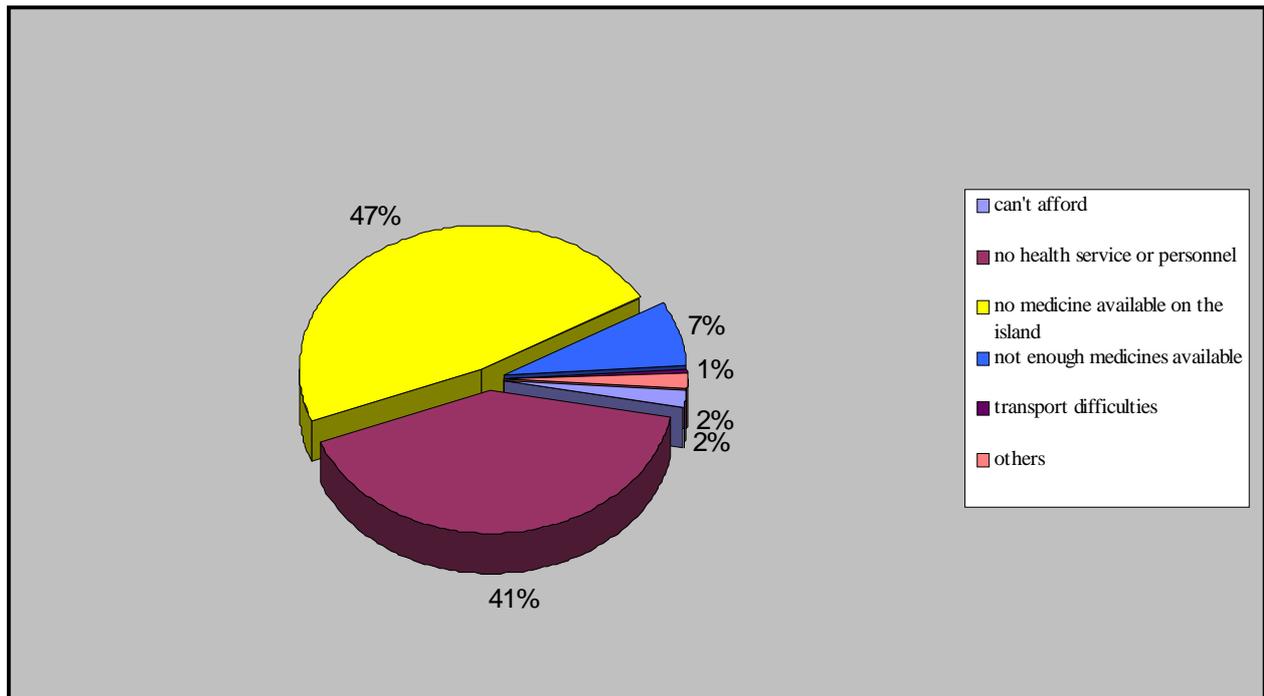


Table 6.3 The Availability of Health Personnel and Medicines in the Atolls (Percentage of atoll population)

	No Doctor	No Nurse	No Health Worker	No Midwife	No Pharmacist	Problems getting Medicine
Maldives	43	52	7	4	47	22
Male'	0	0	0	0	0	2
Atoll average	58	70	10	6	62	29
Haa Alif	85	76	22	21	59	29
Haa Dhaal	65	65	6	2	65	32
Shaviyani	96	96	4	0	100	31
Noonu	73	90	14	19	90	36
Raa	55	74	19	0	81	23
Baa	78	78	0	11	78	41
Lhaviyani	17	57	0	0	17	11
Kaafu	90	90	10	0	90	44
Alif Uthuru buri	85	85	32	31	85	49
Alif Dhekunu buri	44	77	23	8	68	29
Vaavu	74	100	41	9	100	15
Meemu	87	87	28	28	100	20
Faafu	86	86	8	8	86	29
Dhaal	78	78	12	0	71	52
Thaa	49	87	7	3	62	20
Laamu	50	70	0	0	70	50
Gaaf Alif	74	60	12	6	74	35
Gaaf Dhaal	48	63	6	0	48	34
Gnaviyani	0	0	0	0	0	2
Seenu	6	42	0	0	9	7

Figure 6.3 Reasons for the Non-Availability of Medicines

have a trained midwife, 6 percent of the population is to be found on islands that are still without one, being dependent upon an untrained foolhumas, with the figure rising to around 30 percent in Alif Uthuru buri and Meemu. Around 90 percent of the population live on islands with a trained health worker. The situation seems to be slightly worse in the southern atolls, especially in Meemu, where 40 percent of the population are recorded as living on islands without a trained CHW.

Given the provisions of the decentralised system of health care, the availability of doctors on individual islands is less pronounced, with 60 percent of the population being found on islands without one. In Lhaviyani, Gnaviyani and Seenu, the availability of doctors is highest.

Since nurses and pharmacists are also to be found mainly in larger health facilities, most individual islands do not have them. Overall, 30 percent of the population is to be found on islands with a nurse. There are, however, significant variations with, for example, no islands in Vaavu possessing a resident nurse. Similarly, 60 percent of the atoll population is to be found on islands without a pharmacist. The

situation is worse in Vaavu, Shaviyani and Meemu, all of which are recorded as being without a pharmacist.

Drugs are supplied by CHWs. They receive deliveries every six months, although delays may be incurred due to transport or various other problems. The percentage of the population experiencing difficulties in obtaining essential drugs appears to be quite high. Around 30 percent of the atoll population reports that it is unable to obtain drugs when they are required, with the figure rising to more than one-half of the population in the case of Dhaal and Meemu.

As can be seen from Figure 6.3, few people in the atolls give their inability to afford medicines as the reason for non-availability. Similarly, transport problems in supplying the islands with medicines are not regarded as an important problem.

With respect to travel time, approximately 15 percent of the atoll population is required to travel for more than two hours to reach the nearest health centre or hospital. The situation appears most difficult on Kaafu, Gaaf Alif and Gaaf Dhaal, where one in four of the population is required to travel for 2

hours or more to reach a health centre or hospital. The standard set for reaching the specialised services available in Male' has been set at 12 hours. When air transport is excluded, around 65 percent of the atoll population would be required to travel for longer than 12 hours to reach the nation's capital.

6.3.2 Health Index

The health Index is composed of the following indicators and weights.

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

The Health Index by island, calculated on the basis of the above, is given in Figure 6.4.

Figure 6.4 shows that there is a clear gap in the Health Index between 0.1 and 0.5 penalty points. Almost 40 islands are to be found on the right-hand side of the illustration, with an index ranging from 0.0 to 0.1, while more than 150 islands record scores above 0.5 points. As in the case of education, it is mainly the larger islands that have the lowest scores and hence the most satisfactory health situation. Such islands generally account for around 40 percent of the population, although even in some of these islands problems are reported concerning the availability of essential drugs.

In contrast, all islands recorded on the left-hand side of the illustration, together accounting for 45 percent of the population, experience problems. There are almost 30 islands, accounting for 7 percent of the population, that record a score of 1 point. In 20 of these islands there are very limited health services and their populations are required to travel more than two hours to reach them. More than one-half of these particularly disadvantaged islands are located

in Gaaf Alif (Kodey (pop. 276), Dhiyadhoo (115), Gemanafushi (906) and Kanduhulhudhoo (527)) and in Gaaf Dhaal (Rathafandhoo (627), Vaadhoo (826), Fiyolari (888), Maathodaa (454) and Fares (480)).

In the area of health infrastructure and services, four islands appear to be particularly disadvantaged.

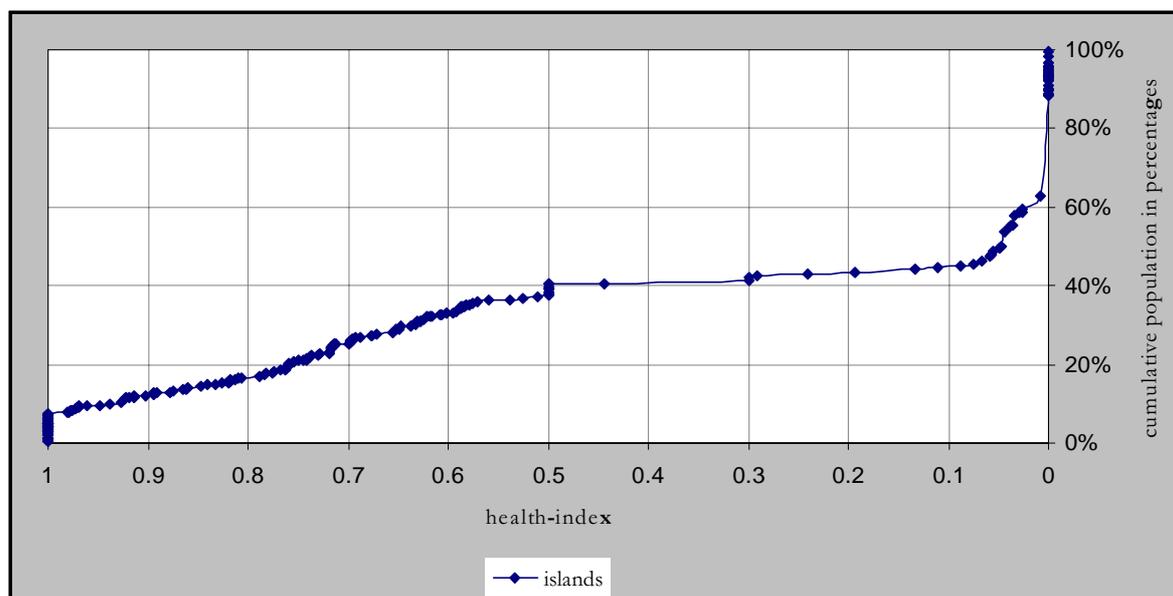
- Veyvah (156) in Meemu, which is without health services and trained health personnel, and its population have difficulties in obtaining medicines and have to travel more than 2 hours to reach the nearest health centre or hospital.
- Bodufolhudhoo (509) in Alif Uthuru buri and Dhigurah (423) in Alif Dhekunu buri, both of which are without health infrastructure and trained health personnel and where 80 percent of their populations state they have unsatisfactory access to essential drugs.
- Hebadhoo (469) in Noonu, which is also without health infrastructure and trained health personnel and where 70 percent of the population is unable to obtain medicines.

6.4 Life expectancy

6.4.1 Introduction to the Estimates

The Ministry of Health (MOH) maintains a Vital Registration System (VRS) and the records in this system provide the basis for estimating demographic indicators, such as life expectancy, infant mortality, and crude birth and death rates. This information is published annually in the Statistical Yearbook (MPND) and the Annual Health Reports (MOH). It needs to be mentioned that methodology used in the VPA-report to estimate life expectancy and infant mortality rate is different from the methodology used by the government and that the officially accepted figures are based on the Vital Registration System. The present analysis, however, needed estimates of the demographic characteristics of the population surveyed. Since it is not possible to match the survey data with the VRS information to obtain the desired demographic information, these have been computed from the data gathered in the survey.

Figure 6.4 Health Index by Island



During the survey, data were collected on the vital events taking place in the households enumerated. The procedure and coverage were similar to that used in the recent Population and Housing Censuses conducted in the country. The principal difference with the censuses was that it involved a sample of households only, compared with full coverage provided by the population censuses. The information obtained from censuses and surveys can be used to estimate various demographic characteristics of the population. The results of this analysis are de-

scribed in section 4.2. In the following paragraphs, various reasons for differences between the results derived from the survey and the vital registrations of the MOH are briefly outlined.

Survey results can be biased due to sampling and non-sampling errors in addition to errors introduced at all levels of processing. The same problems do occur in population censuses, except for the sampling errors. On the other hand, a VRS may have weaknesses of an institutional nature, while loss of docu-

Table 6.4 IMR and Life Expectancy estimates 1985-1997

Source	Infant Mortality Rate			Life Expectancy at Birth		
	Republic	Male'	Atolls	Republic	Male'	Atolls
Census 1985	121	95	127	50	55	49
VRS 1985	60	47	63	61	61	61
Census 1990	88	73	91	56	60	56
VRS 1990	34	35	33	65	63	62
Census 1995	72	55	76	60	64	59
VRS 1995	32	36	31	70	70	70
PVA Survey 1997	62	37	69	62	68	60
VRS 1997	27	70

Source: VRS data from various Annual Health Reports and Statistical Yearbooks

Census 1985 and 1990: R.H. Chaudhury, *Analytical Report on the 1985 and 1990 Population and Housing Censuses of Maldives (unpublished)* Census 1985 and VPA: E. Jager, *Technical Note 2*

ments and information may take place at any stage in the processing. Furthermore, the VRS will not give robust estimates of Infant Mortality Rate (IMR) on an annual basis due to the small number of events in the small population. The direction of a bias resulting from errors in censuses and surveys cannot be determined beforehand. However, in a VRS, missed events always result in an under-registration and, therefore, downward bias of basic events. In the event of double counting it may result in an upward bias of basic events.

In most respects, the Vulnerability and Poverty Survey is comparable to the population census of 1995. The use of a sample, albeit a large one of about seven percent of the households in the country, results in sampling errors. On the other hand, closer supervision and better enumerator training probably reduced the rate of error in recording the information at the household level. On balance, the quality of data from both sources may not differ substantially.

Recall problems as well as uncertainty about the exact events that have taken place, such as a still-birth (which was not supposed to be recorded) instead of a birth and a subsequent infant death, may have influenced the reporting somewhat. It is, however, unlikely that misreporting of the timing of the reported event did occur frequently as for small children in the household, age was recorded also in months. This could be matched with the mother's record. It was found that the error rate was negligible as was the rate of mismatches between mothers and their reported children present in the households.

The VPA findings were in line with population census figures for 1995. For the latter, basic data can be compared more readily with the data of the VRS as both attempt full coverage of all events. Comparing the reported number of births in the census with the VRS for the same period shows that in the 1995 census about ten percent more births were reported than the vital registration data showed. The infants were either reported in the households or as having died. The census information was internally consistent in this respect. The category of infants that died, however, was much larger than the infant

mortality registered in the vital statistics, as the number of infants born during the past year but not surviving to the census date implied a death rate of 85 per 1000 infants, which is equivalent to an IMR of about 100 as only about eighty percent of the expected mortality among infants born during the previous twelve months had taken place. This is about three times as high as the reported infant mortality for the same period. As mentioned, the reporting might have included stillbirths in some cases but even then the rate is twice the combined rate of infant mortality and stillbirths reported by the VRS. This direct estimate of infant mortality from the census is somewhat higher than the indirect estimates made by Chaudhury and Jager described further on.

The IMR is an important determinant of life expectancy at birth. Differences in the IMR estimates between the VRS on the one hand and population censuses and this survey on the other hand are the main reason for the differences in estimates of life expectancies. An overview of the IMR and life expectancy at birth calculated for different years is given in Table 6.4 .

Various possible sources of bias of the census and survey estimates have been described above and in Technical Note 2. The VRS has recently been the subject of a study that points to a number of weaknesses that result in loss of information. The reasons for this can be grouped into three categories. Firstly, there is a weak institutional embedding with unclear legal underpinning. Secondly, the administrative procedures are not well documented and can differ between offices, while documents are not always systematically maintained. Transcription errors and loss of documents are the third problem encountered. Although the study of the VRS was based on only a limited number of field visits, major discrepancies were encountered, with, in some cases, only half the events on an island occurring on an island reaching the MOH in Male'. In Male' also late registrations are sometimes ignored due to the design of the software. While no attempt was made to quantify the omissions resulting from these weaknesses, it is clear that the results of the VRS are not as robust as might be expected.

Table 6.5 Estimates of Life Expectancy by Atoll

	Life Expectancy		
	Female	Male	Total
Maldives	64	61	62
Atoll average	62	59	60
Raa	54	50	52
Shaviyani	55	52	53
Thaa	56	53	54
Faafu	56	53	54
Noonu	58	55	56
Haa Alif	59	56	58
Lhaviyani	60	56	58
Gaaf Dhaal	60	56	58
Dhaal	60	57	58
Alif Uthuru buri	60	57	58
Laamu	61	57	59
Vaavu	62	59	61
Haa Dhaal	63	60	62
Meemu	64	60	62
Gaaf Alif	64	61	62
Alif Dhekunu buri	67	64	65
Kaafu	68	65	66
Baa	68	64	66
Male'	69	66	68
Gnaviyani	70	67	69
Seenu	71	68	69

6.4.2 Life Expectancy

One of the principal determinants of life expectancy is infant mortality. Since these data were not available in a sufficiently disaggregated form, it was necessary for the survey to make its own estimates. The basis for these estimates were questions in the household survey addressed to mothers concerning the number of children born to them, the number of children that had died and the age of the mother. In order to ensure the statistical reliability of the estimates for Infant Mortality, this rate was first calculated at a regional rather than the atoll level. The methodology used to calculate life expectancy at the atoll level making use of the estimates of IMR derived from the survey is described in detail in Technical Note 2. The results obtained are reproduced in Table 6.5.

The estimates of the IMR and life expectancies calculated from the latest three censuses and the Vulnerability and Poverty Survey estimates are in line, and clearly distinct from the data provided through the VRS. It may be mentioned that the methodology

used by Chaudhury and Jager for the indirect estimates has a time reference between 2 and 3 years prior to the census/survey dates, but that does not change the conclusions that the IMR given by the VRS is only about half that found in the equivalent censuses, while life expectancies are (to some extent due to the lower IMRs) about ten years higher throughout the period.

The estimates arrived at through the application of the methodology are considerably lower than those available from other sources. The average life expectancy for Maldives as a whole was calculated at 62.3 years and 60.4 years for the atoll population. However, as shown in table 6.5, wide variations among atolls can be observed, ranging from a low of 52.0 years in the case of Raa to a high of 69.3 years for Seenu.

6.5 Drinking Water

6.5.1 Availability of Drinking Water

The population of Maldives has traditionally been dependent for drinking water on shallow wells that provide access to the island's freshwater lens. Accumulated through rainwater, the lens is often shallow and vulnerable to pollution, especially through the percolation of human wastes. Unsustainable use of the lens may easily result in salinity intrusion, which may eventually render an island unfit for human habitation.

In recognition of this problem and the declining quality of well-water in many islands, high priority has been accorded to the construction of rainwater tanks, both collective and individual, and rainwater collection schemes, with the aim of ensuring that the atoll population has access to at least 2 litres of rainwater per person per day. This policy has greatly facilitated the shift from well-water to rainwater in many islands, as indicated in Figure 6.5.

The survey shows that in almost all atolls rainwater is now used more widely than well-water as the main source of drinking water. As shown in Table 6.6, 75 percent of the population obtains its drinking water

**Table 6.6 Indicators of Drinking Water Situation by Atoll
(Percentage of atoll population)**

	Insufficient Drinking Water	Unsafe Drinking Water	Rain Water
Maldives	18	9	75
Male'	2	0	41
Atoll average	24	12	87
Haa Alif	6	38	57
Haa Dhaal	7	6	94
Shaviyani	21	5	93
Noonu	13	13	86
Raa	21	6	94
Baa	23	4	94
Lhaviyani	35	15	85
Kaafu	19	12	84
Alif Uthuru buri	24	4	96
Alif Dhekunu buri	43	1	98
Vaavu	47	0	98
Meemu	43	0	97
Faafu	22	1	99
Dhaal	39	8	90
Thaa	39	3	97
Laamu	28	3	97
Gaaf Alif	14	4	95
Gaaf Dhaal	26	2	98
Gnaviyani	46	10	90
Seenu	28	42	56

from rainwater, with the figure increasing to 87 percent in the case of the atoll population. In all atolls, the percentage is over 84 percent, with the exception of Haa Alif (57 percent) and Seenu (56 percent), where well-water remains important.

The Government considers properly stored rainwater as safe for human consumption, except in cases of epidemics. In accordance with this position, rainwater, whether or not treated prior to use, was considered safe for consumption. Unsafe water was defined as untreated well-water. With this definition, 9 percent of the population is estimated by the survey as having no access to safe water, with the figure increasing to 12 percent in the case of the atoll population.

Water shortages are more problematic. According to the survey, one-quarter of the atoll population experienced periods in the previous year when there were

insufficient supplies of drinking water. The shortage was particularly pronounced in some southern atolls (Alif Dhekunu buri, Vaavu, Gnaviyani and Meemu), where almost one-half of the population experienced shortages of drinking water.

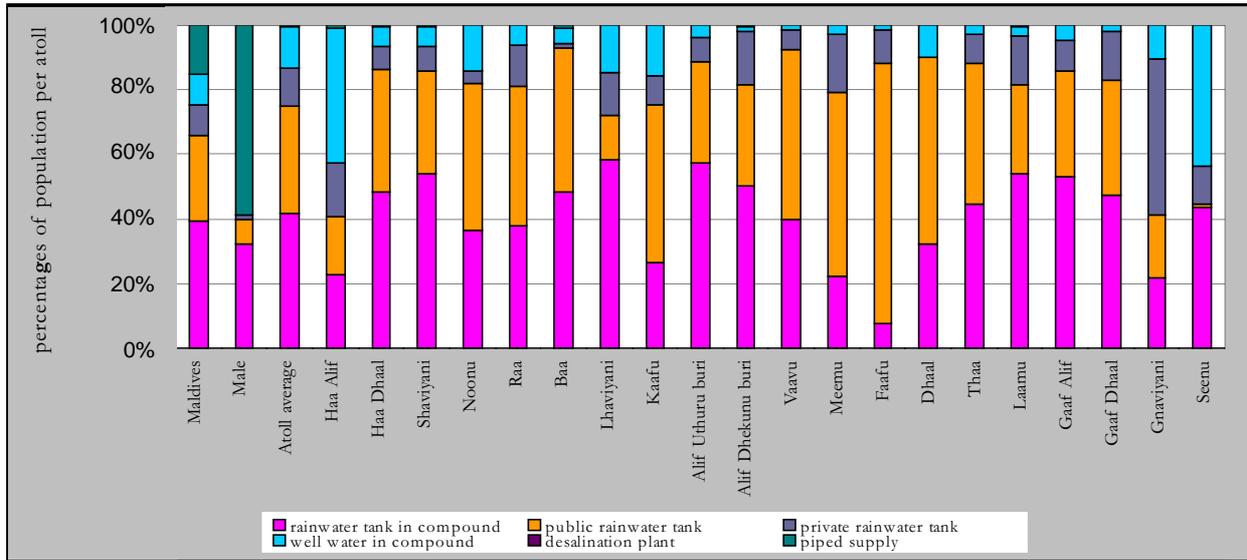
6.5.2 Drinking Water Index

A drinking water index was constructed based on the following indicators and penalty scores.

Indicators	Penalty Points
Drinking water shortage in previous year	1.0
No access to safe drinking water	1.0

The results of the index are shown in Figure 6.6. The figure shows the wide range of situations, although

Figure 6.5 Sources of Drinking Water by Atoll (Percentage of atoll population)

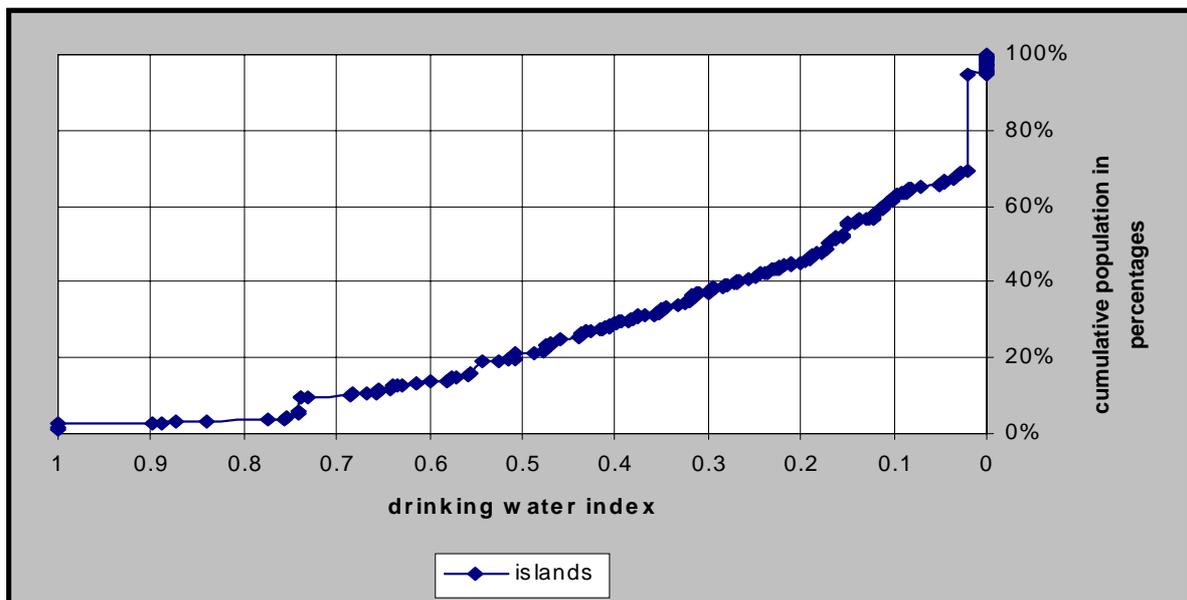


it is noteworthy that 40 percent of the population live on islands that score 0.1 penalty points or less, providing further evidence of the progress that has been recorded in the field.

Three islands scored the maximum penalty points, combining no access to safe water and prolonged water shortages. These were not small islands but relatively large ones: Kadholhudhoo (pop. 2,783) in Raa, and Meedhoo (1,818) and Hulhudhoo (1,761) in Seenu.

It might also be noted in conclusion that the figures reproduced above on access to drinking water might overstate the situation. Although rainwater should be considered safe, its fitness for human consumption will be determined by the quality of the tanks in which it is stored. In some islands, rainwater tanks are old and not always properly maintained. This can lead to problems and eventually require the treatment of water prior to human consumption. Very little rainwater is at present treated prior to use. Overall, more than 70 percent of the atoll population does not treat

Figure 6.6 Drinking Water Index by Island



**Table 6.7 Recreation and Sport Indicators by Atoll
(Percentage of atoll population)**

	No Clubs	No Events	Not Enough Space	Less Than Twenty Percent Open Space
Maldives	20	53	0	0
Male'	0	0	0	0
Atoll average	26	71	14	34
Haa Alif	16	44	0	22
Haa Dhaal	13	66	0	41
Shaviyani	17	28	26	13
Noonu	96	100	9	50
Raa	9	81	33	34
Baa	17	100	20	51
Lhaviyani	0	0	0	100
Kaafu	11	100	0	21
Alif Uthuru buri	10	100	0	43
Alif Dhekunu buri	36	91	0	24
Vaavu	9	61	0	32
Meemu	11	38	40	0
Faafu	20	100	33	0
Dhaal	66	100	18	33
Thaa	28	92	49	66
Laamu	32	49	0	32
Gaaf Alif	24	78	40	29
Gaaf Dhaal	13	95	0	66
Gnaviyani	0	0	0	0
Seenu	61	100	25	9

water prior to drinking, with the figure rising to more than 90 percent in the case of some atolls in the southern zone (Meemu, Faafu, Gnaviyani and Seenu).

6.6 Recreation and Sport

6.6.1 Recreation and Sport Infrastructure

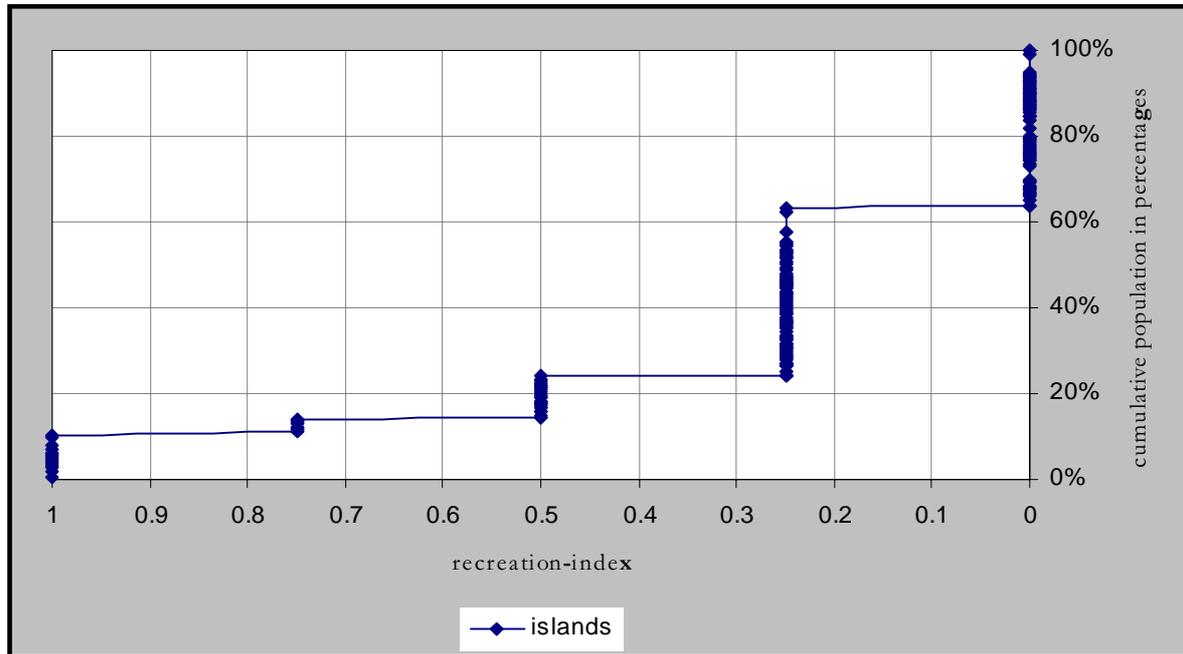
Recreation and sport are areas in which notable disparities could be expected between Male' and the atolls. In Male' events of various kinds are arranged throughout the year and it is the focal point within the nation for sports infrastructure and facilities. In

contrast, there may be little to do in the atolls. Relevant questions for the survey were whether this was due to the fact that few events are organised or whether there is insufficient space for sports and recreation.

Table 6.7 shows that one-fifth of the population is to be found on islands without any clubs. Differences among atolls are, however, striking. In Lhaviyani, for example, all islands are reported to have clubs, while in Noonu 95 percent of the population appear to live on islands that are without them.⁸

⁸ The lack of information makes it difficult to draw conclusions on the extent to which events are organised on the islands. Only 60 percent of islands answered this question in the Island Questionnaire.

Figure 6.7 Recreation Index by Island



Answers to the question on the availability of space for sports and recreation pointed to differences in perception existing among the atolls. An estimated 15 percent of the atoll population is to be found on islands where, according to the Island Chief, there is insufficient space for recreational facilities, while 35 percent of the population reside on islands where more than 80 percent of available space is used for housing. Island Chiefs in Meemu hold the view that the island does not have enough space for sports and recreation even though on all islands more than 20 percent of the available land area is open space.

6.6.2 Recreation Index

A Recreation Index was composed with the following indicators and penalty scores.

Indicators	Penalty Points
No youth programme or sports clubs	0.25
No organised public events	0.25
Insufficient space for recreational facilities	0.75

As in the case of education, the Recreation Index in Figure 6.7 shows four steps based on increments of 0.25 penalty points.

Around 10 percent of the atoll population is to be found on islands that score one point, while almost 40 percent of the population live on islands with clubs, events and sufficient space. Of the 15 islands that score one penalty point, six are to be found in Thaa. On Vandhoo (pop. 291) there are no clubs, no events and, according to the Island Chief, insufficient space for sport and recreation (although more than 20 percent of the island is open space). On Madifushi (768), Dhiyamigili 530), Guraidhoo (1,367), Hirilandhoo (717) and Veymandoo (764) there are clubs but no organised events and insufficient space.

6.7 Consumer Durables

6.7.1 Access to Consumer Durables

The survey’s main findings on access to consumer durables are summarised in Table 6.8.

**Table 6.8 Indicators of Access to Consumer Durables by Atoll
(Percentage of atoll population)**

	More than Hundred People per Shop	No Sewing Machine	No Washing Machine	No Fan	No Fridge
Maldives	0	60	77	52	78
Male'	0	32	58	37	49
Atoll average	23	70	83	57	87
Haa Alif	8	69	82	55	86
Haa Dhaal	54	80	92	74	95
Shaviyani	35	75	92	57	90
Noonu	6	73	78	61	94
Raa	38	65	86	53	84
Baa	55	83	85	85	86
Lhaviyani	40	68	80	74	91
Kaafu	23	63	79	54	86
Alif Uthuru buri	16	59	80	37	75
Alif Dhekunu buri	0	41	69	16	73
Vaavu	9	66	64	41	85
Meemu	24	67	93	76	93
Faafu	0	79	93	35	90
Dhaal	30	61	74	29	79
Thaa	21	67	91	62	93
Laamu	23	72	87	65	96
Gaaf Alif	22	74	80	56	91
Gaaf Dhaal	21	91	86	61	87
Gnaviyani	0	66	82	49	84
Seenu	0	60	77	52	82

As might be expected, considerable differences are in evidence between Male' and the atolls. In general, households in Male' own more consumer goods. Some 40 percent of households in Male' own a washing machine, compared with 20 percent in the atolls, and 60 percent of households in Male' have a fan compared with 40 percent in the atolls. These differences are even more pronounced for refrigerators and sewing machines. In Male', 50 percent of households have a fridge and 70 percent a sewing machine, compared with figures of 10 percent and 30 percent respectively in the atolls. Almost of all these appliances are electrical appliances and the sharp differences recorded between Male' and the atolls may have part of their explanation in the differences in access to power supplies. Overall, 85 percent of the atoll population has no access to a refrigerator or washing machine, 70 percent to a sewing machine and 60 percent to a fan.

Table 6.8 also shows that one-quarter of the atoll population has to share a single shop with more than 100 other persons, with the figure rising to more than one-half of the population in the case of Haa Dhaal and Baa.

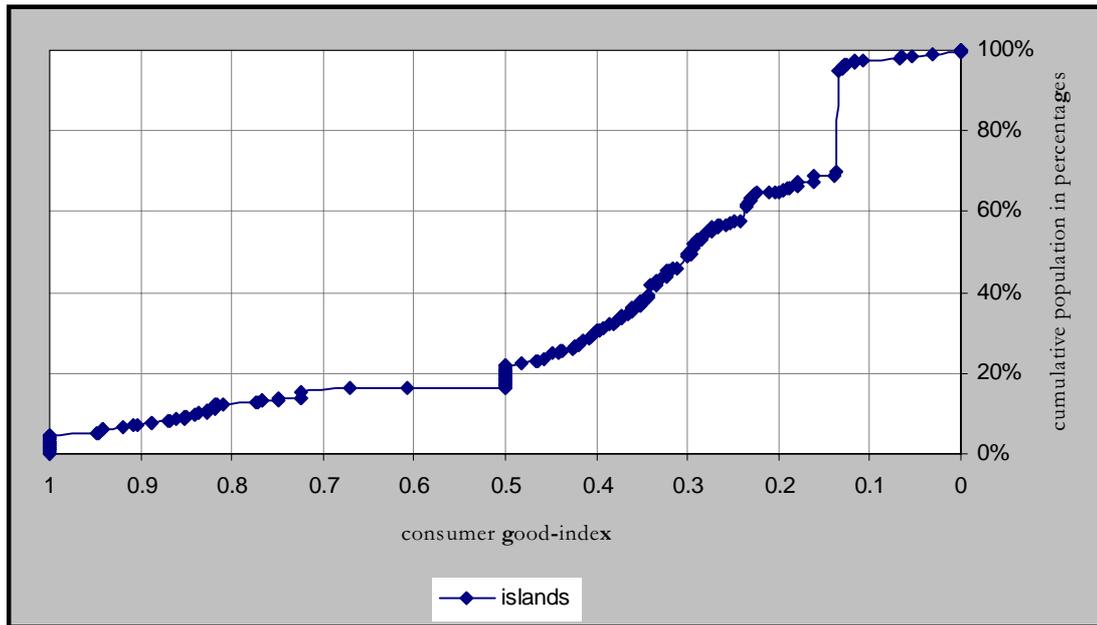
6.7.2 Consumer Goods Index

A Consumer Goods Index was compiled based on the following:

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

The sewing machine was selected in preference to other consumer durables since possession of

Figure 6.8 Consumer Goods Index by Island



one enlarges the income-generating capacity of households, especially for women.

The index in Figure 6.8 shows a considerable gap between the scores of 0.5 and 0.8 points. More than 40 islands, that together account for 12 percent of the population, record scores ranging from 0.8 and 1.0, while 150 islands, with more than 80 percent of the population, score below 0.5 points. Because the index is based on only two indicators, the implication is that the population of all islands scoring one point are required to share a single shop with more than 100 persons and that households do not own a sewing machine.

There are 17 islands that belong to this category. Of

the 17, five are situated in Haa Dhaal: Hirimaradhoo (pop. 409), Nolvivaranfaru (421), Kuburudhoo (292), Kumundhoo (1,037) and Maavaidhoo (352).

When all consumer goods are taken into account, it can be shown that there are eight islands where no one possesses a sewing machine, washing machine, refrigerator or fan and where a shop must be shared with more than 100 persons. Four of these islands are situated in the north (Nolvivaramu (pop. 1,508) and Maavaidhoo (352) in Haa Dhaal, Foakaidhoo (1,011) in Shaviyani, and Maalhendhoo (630) in Noonu) and four in the south (Hithadhoo (751) and Kunahandhoo (560) in Laamu, Dhaandhoo (1,154) in Gaaf Alif, and Vaadhoo (826) in Gaaf Dhaal).

Chapter 7: Housing and Environment

7.1 Introduction

Housing and environmental quality are treated as separate living standard dimensions in the Human Vulnerability Index. The survey's findings in respect of both are the subject of this chapter.

The quality of housing is a measure of physical well-being and welfare. However, the concept of quality in housing is not straightforward since it embodies intangibles related to family and community relationships that may be highly valued. In the survey, the decision was taken to focus on the physical aspects of housing quality since these are more susceptible to objective measurement. Three main criteria were selected, covering the quality of construction materials, available living space, and the availability of a compound.

Environmental quality is still more problematic. It has manifest dimensions and implications, especially in small coral atolls and islands that are recognised as being among the most vulnerable to disruption on the face of the planet. This vulnerability is not confined to human-induced changes in ecosystems but also to natural processes with their origins in winds, waves and temperature. The survey sought to capture vulnerabilities in respect of both. Human inter-relationships with the natural environment were mainly defined in terms of the negative impacts of high population densities, access to environmentally safe methods of sanitation and waste disposal, and the use of fuelwood for cooking, which is the principal source of deforestation of Maldives. Natural processes were captured by the incidence of beach erosion, which brings together the forces of both winds and tides.

7.2 Housing

7.2.1 Housing Situation

Notable improvements have been recorded in the physical quality of housing in the past decade and

housing conditions on the atolls are not poor. Only a few percent of the atoll population lives in housing with a thatch wall and sand floor and without a compound. Overall, 16 percent of the population share a room with more than five other persons, but only 5 percent has less than 40 square feet of living space per person.

The improvement is confirmed by reference to Population and Housing Census data. The 1990 Census indicates that 10 percent of the population lived in housing with walls made of thatch, compared with an estimated 3 percent today. Comparison of data reveals that improvements appear to have been particularly significant in Lhaviyani. According to the 1990 Census, 9 percent of the population lived in housing constructed with thatch, while the percentage is almost zero today.

As can be seen from Table 7.1, Gaaf Dhaal scores above average on all indicators. Especially in the north (Haa Dhaal) and in south central zone (Laamu and Gaaf Dhaal), more persons than the national average live in houses made of non-permanent building materials and sand floor, with the figure reaching one in 10 of the population in the case of Gaaf Dhaal. Sand floors are proportionately most in evidence in Gnaviyani, where one in five of the population occupy dwellings with a sand floor, although they have generally more space both inside and outside the home.

A high score on the indicator persons per room should not be interpreted as meaning that people occupy small dwellings. If household members have more than 40 square feet per capita, it may mean that the household occupies a large house with only one or two rooms. Houses in Meemu and Faafu provide a good example of this. Both atolls score high on persons per room (12 percent and 16 percent respectively) but only 1 percent of the population of both atolls has less than 40 square feet of living space. Overall, only 7 percent of the atoll population occupies houses exception, where nearly one-half of the atoll's population occupies dwellings that have no

**Table 7.1 Indicators of Housing Conditions by Atoll
(Percentage of atoll population)**

	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	2	6	1	7	14	16
Male'	0	3	0	17	16	43
Atoll average	3	7	2	4	13	7
Haa Alif	4	5	3	2	12	3
Haa Dhaal	7	11	5	3	12	3
Shaviyani	3	5	2	2	8	4
Noonu	3	6	1	2	9	8
Raa	3	2	1	6	11	13
Baa	3	4	1	5	16	9
Lhaviyani	0	11	0	6	11	47
Kaafu	1	1	0	5	7	4
Alif Uthuru buri	1	0	0	7	8	0
Alif Dhekunu buri	1	1	0	4	13	1
Vaavu	0	7	0	1	10	13
Maamu	0	1	0	1	12	8
Faafu	5	1	1	1	17	4
Dhaal	3	1	1	1	14	10
Thaa	2	10	0	8	11	5
Laamu	4	16	3	7	14	7
Gaaf Alif	5	4	3	4	17	7
Gaaf Dhaal	11	17	10	6	19	10
Gnaviyani	2	20	2	3	13	1
Seenu	0	3	0	5	19	0

compound due to severe overcrowding in Hinnavaru (pop. 3,483) and Naifaru (3,725).

With more than 60,000 persons occupying less than 2 square km, housing conditions on Male' could be expected to be poor. However, this is not confirmed by the survey. The survey recorded no houses on the capital island with thatch walls and only a few percent with a sand floor. The number of persons with less than 40 square feet of living space is only 10 percent higher than the average for the atolls, while the percentage of persons sharing a room with more than 5 persons is only slightly higher. The main difference between Male' and the atolls is in respect of the possession of a compound. In Male', 40 percent of the population occupies dwellings without a compound compared with an average of 7 percent in the atolls. However, the figure for Male' may be slightly overstated since it includes persons living in an apartment with a balcony.

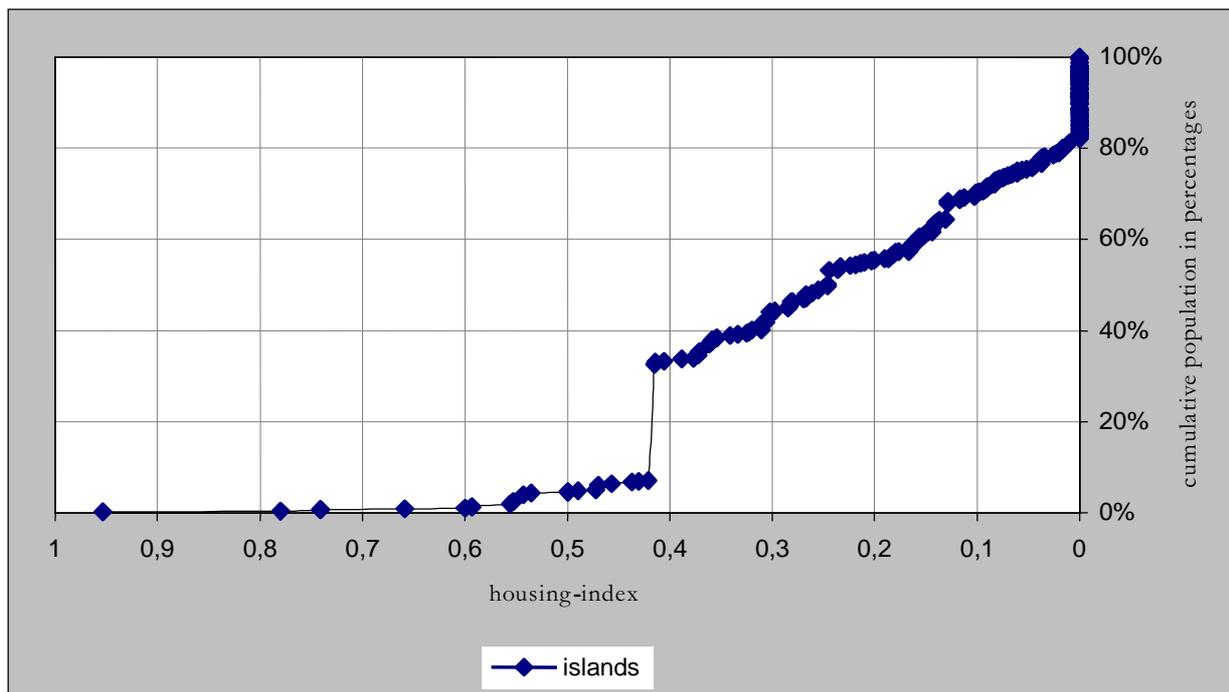
7.2.2 Housing Index

The housing index is composed as follows:

Indicators	Penalty Points
Thatched wall or sand floor	1.0
Living space of less than 40 square feet per capita	1.0
No compound	0.5

The use of this Housing Index provides a generally positive picture of the housing situation in Maldives. As shown in Figure 7.1, less than one-third of the population lives on an island with a score of 0.4 penalty points or higher, with the figure declining to less than one in 10 of the population when Male' is excluded.

Figure 7.1 Housing Index by Island



Islands with the highest score on the index are clustered in the south central zone, especially in Laamu and Gaaf Dhaal. The population of Mundhoo (pop. 580) and Maamendhoo (948) lives in small houses and almost 30 percent of the population of Mundhoo and 20 percent of the population of Maamendhoo have less than 40 square feet of living space per person. Kunahandhoo (560) in Laamu has the highest score of all 200 islands. This is primarily due to the fact that one in 4 of its population occupies a house with a thatch wall and three out of 4 persons a dwelling with a sand floor, while the atoll averages are 3 percent and 7 percent, respectively. The second highest score is recorded by Mulhadhoo (258) in Haa Alif. Here, 40 percent of the population occupies housing of thatch construction and a sand floor, although all households have a compound and there is little evidence of overcrowding.

In Gaaf Dhaal, one-half of the population of Nadallaa (735) and Fares (480) lives in houses with sand floors. Vaadhoo (826) scores high on every indicator and appears particularly disadvantaged when compared with other islands in the atoll. One-half of Vaadhoo's population lives in dwellings without a compound, while on other islands almost every household appears to possess one.

7.3 Environment

7.3.1 Environmental Problems

The Vulnerability and Poverty Assessment covered five problems that are directly linked to environmental degradation:

- Population density
- Beach erosion
- Sanitation
- Solid waste disposal
- Deforestation

The main results are summarised in Table 7.2.

7.3.2 Population Density

While Male's high population density (325 persons per hectare) is well known, there are three islands in Maldives with even higher population densities: Kadholhudhoo (pop. 2,766) in Raa with 629 persons per hectare, (nearly twice the figure for Male'), Hinnavaru (3,392) in Lhaviyani with 471 persons per hectare, and Thulhaadhoo (1,775) in Baa, with 355 persons per hectare.

High population density islands are classified as those with more than 50 persons per hectare (100x100m). According to this classification, almost one-half of the population of Maldives can be considered as living in high-density conditions, with possible negative consequences for the environment, the

habit islands that experience beach erosion, with the figure rising to 94 percent in the case of the atoll population. In eight of the nation's 20 atolls, all islands are reported to suffer beach erosion, with 183 of the 193 islands that completed the island questionnaire reporting it. Although the problem is com-

**Table 7.2 Indicators of Environmental Problems by atoll
(Percentages of atoll population)**

	Beach Erosion	Bury or Dump Garbage in Non-Demarcated Area	No Toilet	Cooking on Wood	High Population Density
Maldives	70	20	16	0	44
Male'	0	0	1	0	100
Atoll average	94	27	22	66	25
Haa Alif	94	18	31	75	0
Haa Dhaal	98	9	27	100	0
Shaviyani	100	28	31	68	13
Noonu	77	18	5	80	24
Raa	98	22	35	46	29
Baa	100	17	9	78	51
Lhaviyani	60	53	2	60	95
Kaafu	100	26	3	36	42
Alif Uthuru buri	90	27	21	75	10
Alif Dhekunu buri	100	7	9	62	29
Vaavu	100	3	1	66	47
Meemu	97	23	29	71	29
Faafu	100	7	52	100	20
Dhaal	100	29	13	69	25
Thaa	100	44	36	68	51
Laamu	87	54	34	78	0
Gaaf Alif	83	42	15	60	28
Gaaf Dhaal	100	55	29	48	52
Gnaviyani	100	29	15	100	0
Seenu	100	15	15	28	17

population-resource ratio, and the transmission of contagious diseases. Since this percentage is weighted heavily by Male's population, the average for the atolls is considerably lower. However, there are notable differences between atolls. In Haa Alif, Haa Dhaal, Laamu and Gnaviyani there are no islands with population densities in excess of 50 persons per ha, while in Lhaviyani 95 percent of the population lives on islands with high densities and which could be considered as being overcrowded.

7.3.3 Beach Erosion

Beach erosion is a common problem throughout Maldives⁹. Some 70 percent of the population in-

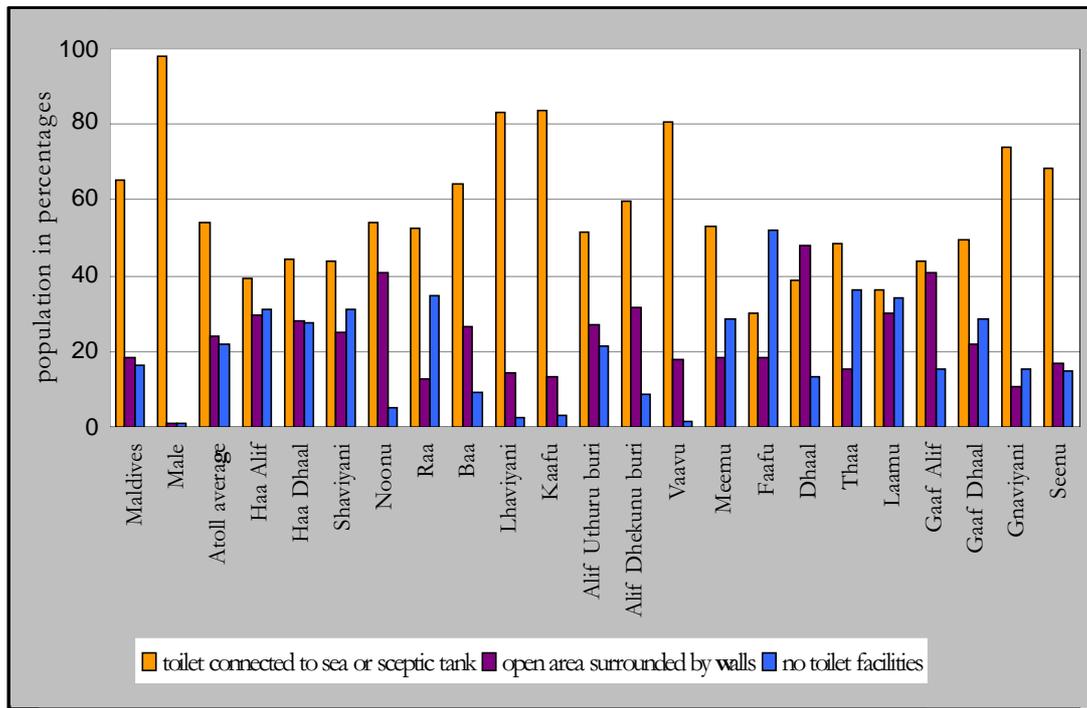
mon throughout the archipelago, it seems to be particularly pronounced in atolls in the central southern zone.

7.3.4 Sanitation

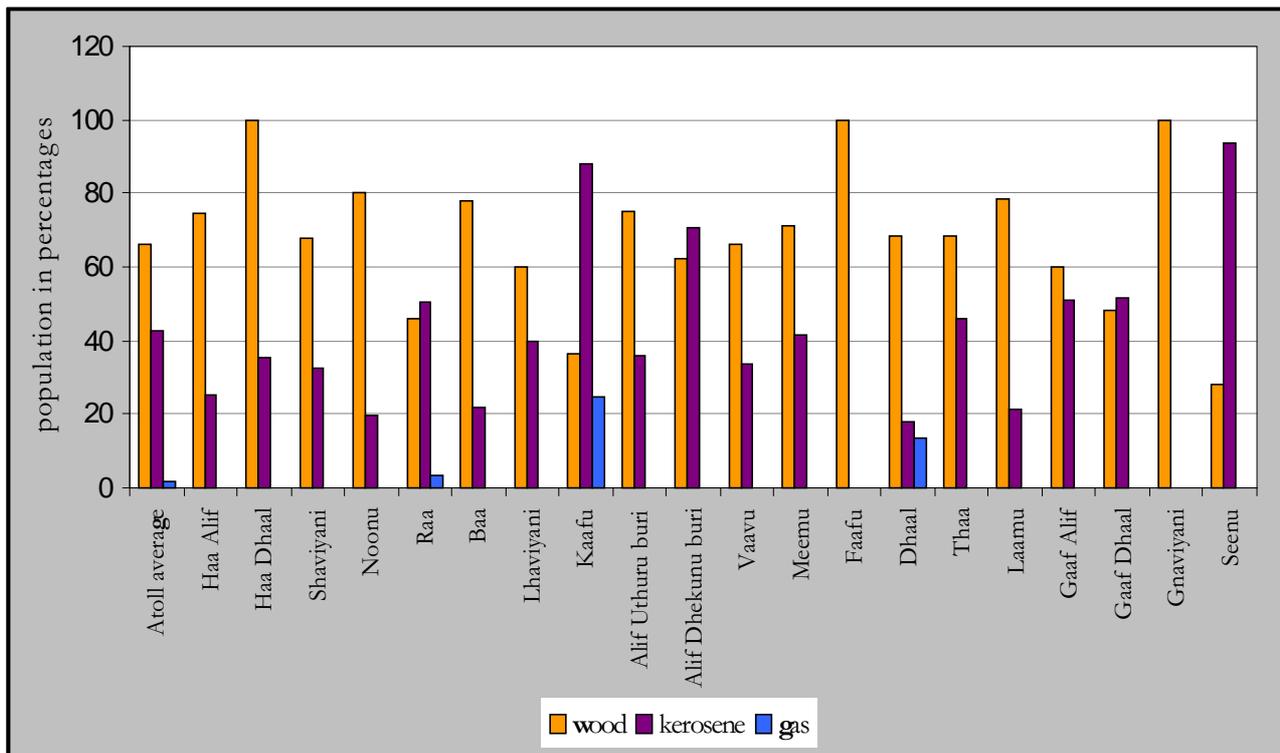
In Male', most households are connected to a closed sewerage system in which sewage is disposed of through outlet pipes to the sea. Although the situation in the atolls shows marked improvements, most households are still dependent upon more traditional methods of waste disposal. An indication of the improvements recorded can be obtained by comparing the results of the survey with the results of the 1990 Population and Housing Census. The compari-

⁹ Although beach erosion is a natural phenomenon, linked to the two main monsoon periods, there appears to be evidence in Maldives of an intensification of erosion processes for reasons which are not entirely clear but which may be related to climate change and sea state.

**Figure 7.2 Type of Toilet Facilities by Atoll
(Percentage of atoll population)**



**Figure 7.3 Energy Sources Used for Cooking by Atoll
(Percentage of atoll population)**



son reveals that the percentage of the population without access to toilet facilities decreased from more than 60 percent to 20 percent. This improvement was measurable in all atolls with the exception of Seenu, where the percentage of the population without facilities appears to have increased from 10 percent to 15 percent over the eight-year period.

Overall, as shown in Figure 7.2, more than one-half of the atoll population makes use of toilet facilities and one in 4 of the population makes use of an open area surrounded by walls (gifili). The situation appears to be best in atolls in the central and north central zones (Vaavu, Lhaviyani and Kaafu), where more than 80 percent of the population has toilet facilities. However, there are also atolls and islands where the situation still leaves much to be desired. One in five of all persons in the atolls are still without any kind of toilet facility. In Faafu, more than 50 percent of the population makes use of the beach, while there are islands (Dharaboodhoo (pop. 285) and Nilandhoo (1,220)) where nearly two-thirds of the population is without toilet facilities. In some northern atolls (Haa Alif, Shaviyani and Raa) and in some atolls in the south central zone (Faafu, Thaa and Laamu) approximately one-third of the

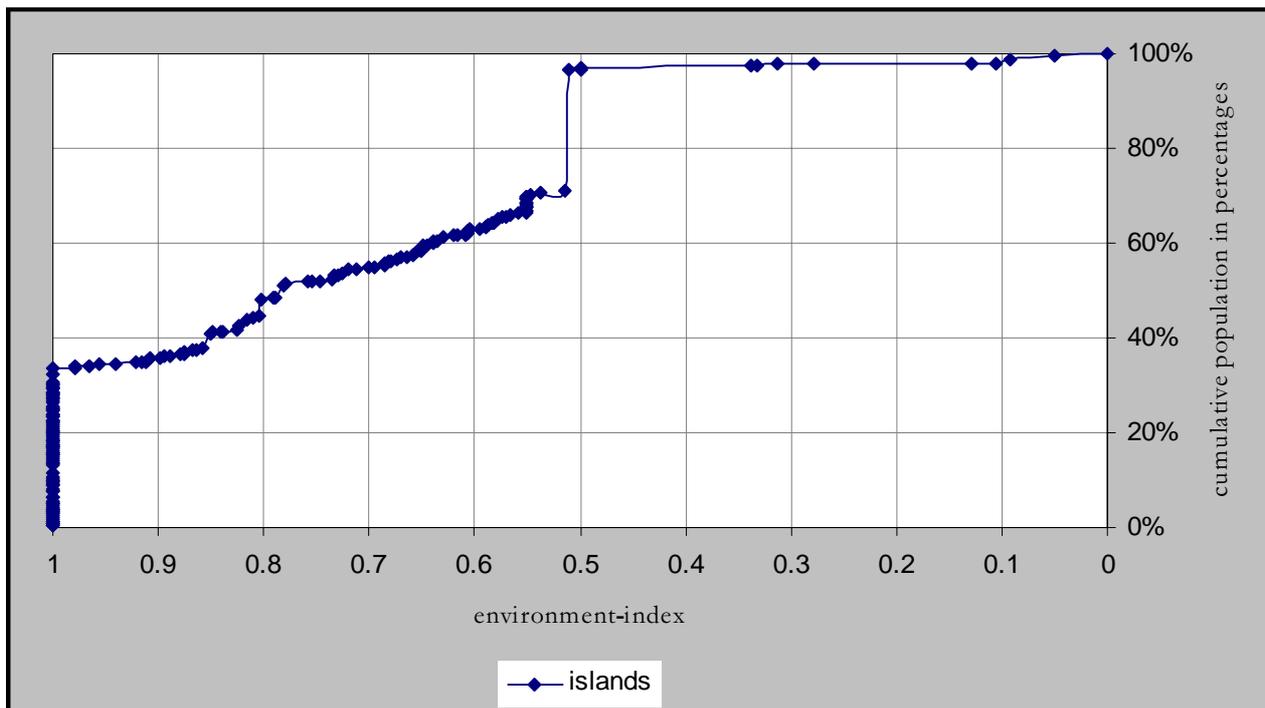
population is still without toilet facilities. There are also islands, such as Hanimaadhoo (919) in Haa Dhaal, Fainu (273) in Raa, and Naalaafushi (341) in Meemu, where households are completely without toilet facilities.

Although the sanitation situation is improving, the growth of toilet facilities for the atoll population may only have marginal improvements for environmental health. Many of the toilet facilities, including the traditional gifili, discharge sewage and human wastes into the groundwater. This groundwater is still used in many islands for cooking, washing and even for drinking water.

7.3.5 Solid Waste Disposal

One in 5 of the atoll population inhabits islands where there is no demarcated area in which to dump or dispose of garbage. In the absence of such an area, garbage is usually dumped on the beach or buried in the compound. This practice is particularly pronounced in Lhaviyani, Laamu and Gaaf Dhaal, where more than 50 percent of the population resort to it. The extent to which different methods of disposal contribute to the pollution of the freshwater lens is

Figure 7.4 Environmental Index by Island



uncertain and was not examined by the survey.

7.3.6 Deforestation

The principal cause of deforestation in Maldives has traditionally been the use of fuelwood for cooking. However, there has in recent years been a sharp increase in the number of households using kerosene, with a corresponding decrease in the use of fuelwood.

This change from fuelwood to kerosene has been particularly pronounced in the atolls. According to the 1990 Population and Housing Census, 94 percent of the atoll population made use of fuelwood for cooking, while the figure now estimated by the survey stands at 66 percent. Over the same period, the number of households making use of kerosene increased from 6 percent to 40 percent.

This change has been particularly pronounced in some atolls as shown in Figure 7.3. In Seenu, for example, an estimated 90 percent of the population used fuelwood for cooking in 1990, compared with only 28 percent in 1998. Over the same period, the number of people making use of kerosene increased from 10 percent to 94 percent, a switch that was greatly facilitated by growing fuelwood shortages that made the price of kerosene more competitive. In Kaafu, 90 percent of households today use kerosene as the main energy source for cooking, while in such atolls as Raa, Alif Dhekunu buri and Gaaf Dhaal the percentage of households using kerosene approximates that using fuelwood.

There are, however, many atolls where the use of fuelwood still predominates. In Haa Dhaal, Faafu and Gnaviyani almost all households make use exclusively of fuelwood, although on Kulhudhuffushi (pop. 5,987) in Haa Dhaal households also make use of kerosene.

The use of gas for cooking is still very uncommon outside of Male', being confined to small numbers of households in Raa, Kaafu and Dhaal.

7.3.7 Environmental Index

The Environmental Index is composed of the following indicators and scores:

Indicators	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

The Environmental Index is reproduced in Figure 7.4. The Index shows a clear gap between islands scoring above and below 0.5 points. Only nine islands, that together account for only 3 percent of the population, record less than 0.5 points. These islands are Maafilaafushi (69) in Lhaviyani, Kaashidhoo (1,535) in Kaafu, Meedhoo (1,818) in Seenu, Finey (367) in Haa Dhaal, Maalhendhoo (630) and Velidhoo (1,794) in Noonu, Agolhitheemu (354) in Raa, Maalhos (533) in Alif Uthuru buri, and Veyvah (156) in Meemu, although in the first three cases their position may be exaggerated due to the absence of information on the extent of beach erosion and the use of fuelwood for cooking.

More than 90 islands, or close to one-half of all inhabited islands, record a score of 1 point. Of these, there are four islands with very uncontrolled garbage disposal (Ukulhas (583) and Bodufolhudhoo (509) in Alif Uthuru buri, Kanduhulhudhoo (527) in Gaaf Alif, and Gadhdhoo (1,718) in Gaaf Dhaal) and three islands that are completely without toilet facilities (Hanimaadhoo (919) in Haa Dhaal, Fainu (273) in Raa, and Naalaafushi (341) in Meemu).

Some islands appear far more disadvantaged than others. These include Miladhoo (930) in Noonu, Ukulhas (583) in Alif Uthuru buri, Madifushi (768) in Thaa, and Gadhdhoo (1,718) in Gaaf Dhaal. All islands suffer from erosion and most have a high population density and use fuelwood for cooking.

Chapter 8: Food Security and Nutrition

8.1 Introduction

This chapter reports on the main findings of the Vulnerability and Poverty Assessment in the areas of food security and nutrition. Both are perceived as possessing a direct relationship with the incidence of income poverty and the vulnerability of island communities.

The data obtained on food security is based on interviews with island representatives and sample households. Information on the nutritional status of island populations was obtained by the measurement and weighing of atoll children and comparing, with the use of a special statistical programme, the results obtained with world averages to arrive at estimates of the incidence of stunting and wasting.

The findings in the area of nutrition are arguably among the most significant of the Vulnerability and Poverty Assessment. They point to the widespread incidence of malnutrition among the island population, reflected in high rates of both stunting and wasting, especially among girls. However, although a relationship could be expected between the incidence of malnutrition and the level of income poverty, the relationship was not investigated by the survey. For this reason, it may be premature to associate malnutrition directly with income levels. The relationship is in practice likely to be a more complex one involving dietary preferences, eating habits, and weaning practices. The results, while significant, should thus be interpreted with some caution and subjected to further analysis, especially island-based analysis of possible correlations between income poverty and malnutrition.

8.2 Food Security

8.2.1 Extent of Food Insecurity

Although Maldives is not considered a food inse-

secure nation,¹⁰ it is recognised that a small percentage of the population experiences occasional insecurity and that this may be linked to under-nutrition and malnutrition. The extent of food insecurity was examined by the survey and the main results are reproduced on the next page.

Table 8.1 reveals that 6 percent of the population reported a food crisis in the previous year. The problem appears to be most in evidence in atolls in the south central zone, where more than 10 percent of the population reportedly experienced food insecurity, with the figure rising to one in 6 of the population in the case of Thaa.

The duration of the period in which an insecure situation was reported is summarised in Figure 8.1. Figure 8.2 indicates that periods in which food was in short supply were generally short, although 10 percent of those reporting shortages reportedly experienced an insecure situation for more than 30 days. There appears to be only a slight connection between the extent and duration of food insecurity. One-half of those experiencing shortages for periods longer than 30 days is to be found in Laamu, Gaaf Alif and Gaaf Dhaal. In Thaa, the period of shortages varies between one and thirty days.

Food shortages were generally infrequent. Of those reporting food shortages, only 10 percent reported such shortages on more than four occasions per year. There is no obvious relationship between either the extent of food insecurity in an atoll and the frequency of the occurrence or between the duration of the food shortage and its frequency.

Figure 8.3 shows that the lack of purchasing power was the main reason given for food insecurity, even in Male' where disposal income is generally higher than in the atolls. Because the number of households reporting shortages is small, it is difficult to draw clear conclusions on the reasons for food insecurity at the atoll level. There appears to be considerable

¹⁰ See UNICEF, Children and Women in the Maldives, *Male'*, June 1994.

**Table 8.1 Indicators of Food Insecurity by Atoll
(Percentage of atoll population)**

	Food Crisis	Height for Age (Stunting)
Maldives	6	0
Male'	3	0
Atoll average	7	44
Haa Alif	5	54
Haa Dhaal	6	48
Shaviyani	1	50
Noonu	7	47
Raa	5	56
Baa	3	26
Lhaviyani	3	36
Kaafu	4	22
Alif Uthuru buri	7	16
Alif Dhekunu buri	8	26
Vaavu	8	39
Meemu	5	37
Faafu	10	60
Dhaal	2	37
Thaa	17	35
Laamu	13	43
Gaaf Alif	10	70
Gaaf Dhaal	12	49
Gnaviyani	9	50
Seenu	8	23

variation, ranging from income constraints (Haa Dhaal and Laamu) to supply deficiencies (Gaaf Alif).

8.3 Nutrition

8.3.1 Extent of Malnutrition

Malnutrition provides a far greater cause for concern. To assess the extent of malnutrition among the nation's children the survey provided for the physical measurement of children between the ages of 1-5 years. In the use of these anthropometric data, the survey distinguished between the accepted categories of:

- General malnutrition, or low weight-for-age;
- Chronic malnutrition, or low height-for-age, re-

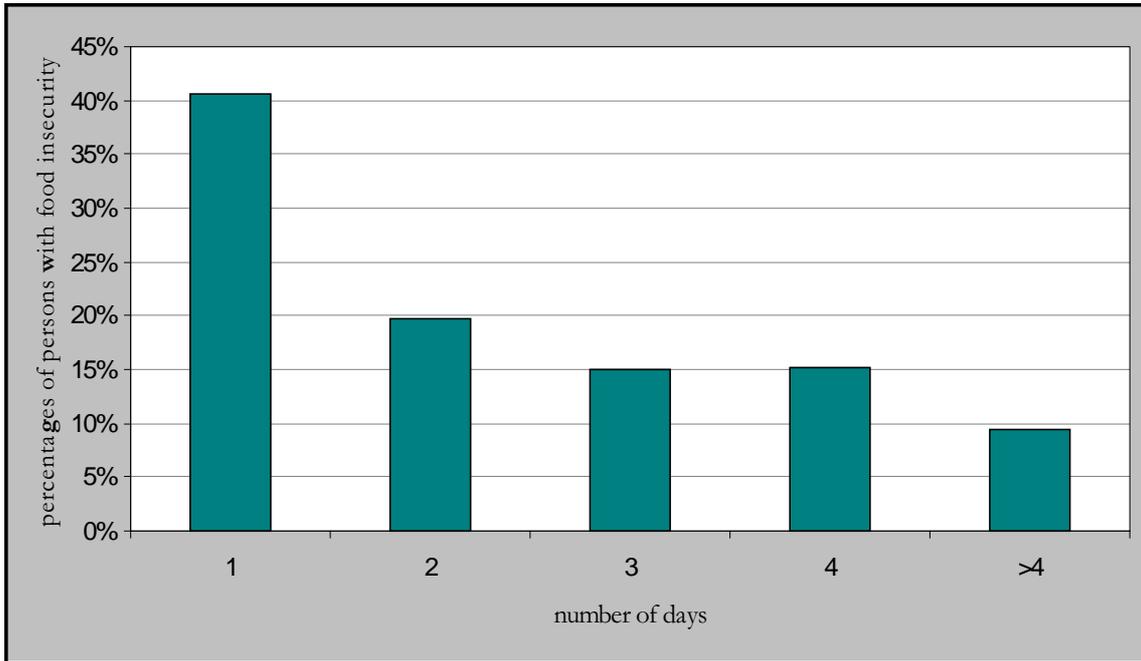
flected in stunting;

- Acute malnutrition, or low weight-for-height, reflected in wasting.

Height-for-age is an indicator of linear growth retardation, while weight-for-age is an important indicator of nutritional status. Because wasting could be attributable to the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of a recent illness or a seasonal deficiency in food supply, the stunting associated with chronic nutrition may in Maldives constitute a more useful indicator of the nutritional status of children.

In total, 1,425 children in the atolls and 250 children in Male' were measured (height, weight and arm circumference) by survey enumerators. The data obtained were analysed with the assistance of UNICEF,

Figure 8.1 Duration of Food Insecurity by Atoll



making use of special software, to assess the extent of both wasting and stunting. Wasting and stunting were considered to exist when observations fell outside of two standard deviations from the distribution

applicable to the world population.

The analysis of the data provided the following results which are shown in the Table 8.2.

Figure 8.2 Frequency of Food Insecure Periods by Atoll

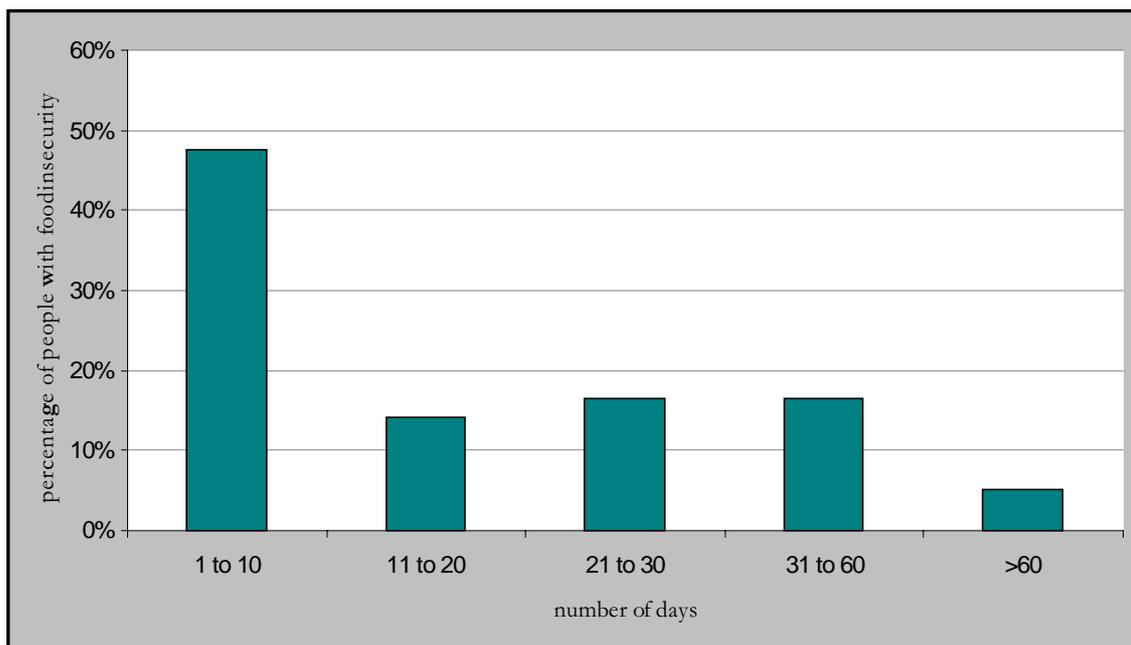
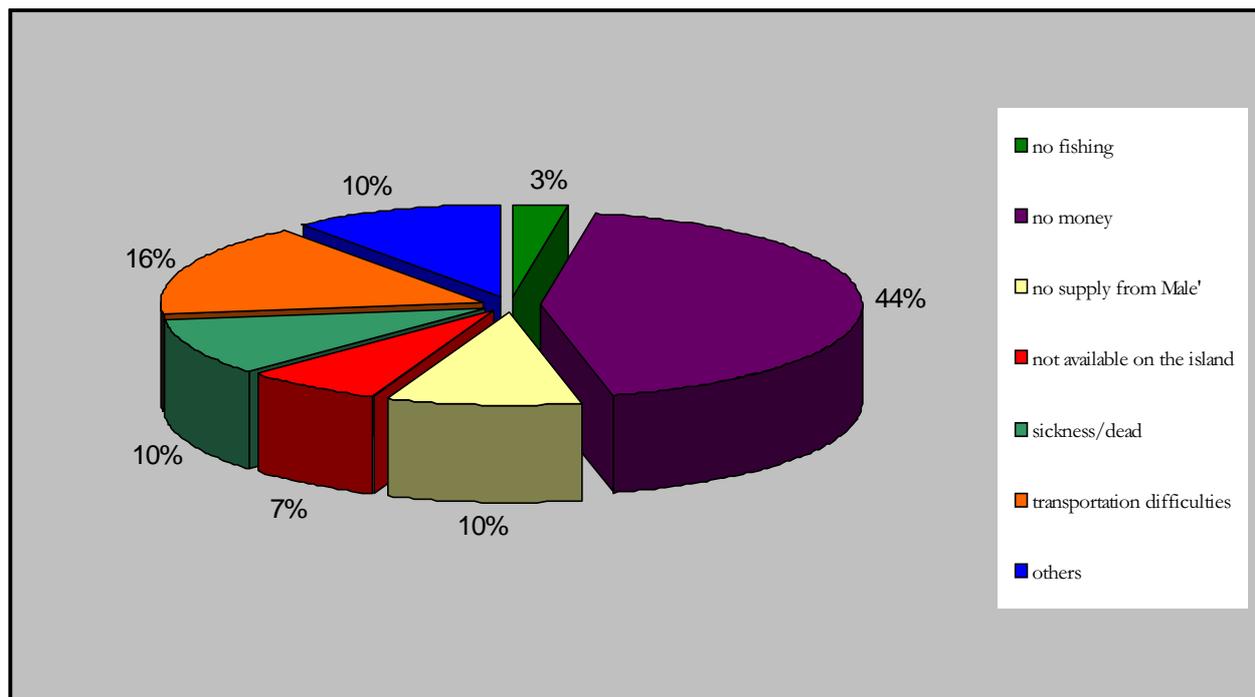


Figure 8.3 Reasons for Food Shortages



Although the above should be regarded as approximations,¹¹ they provide genuine cause for concern. In the case of wasting, prevalence rates of 8-15 percent are not uncommon in many developing countries. However, prevalence rates in excess of 15 percent are usually regarded as indicative of a serious situation. The figures for Maldives are far higher, both for stunting and wasting.

Comparison of the survey's results with other data on malnutrition¹² in Maldives supports the view that

there has been no significant improvement in the past 16 years. On the contrary, available evidence points to a worsening of the situation. The figures for Maldives in 1998 suggest that the nutritional situation in the country is worse than that of Sub-Saharan Africa.

The situation prevailing in Maldives can be attributed to a range of factors that include dietary habits and preferences, poor infant and child care practices, and the high incidence of some infections,

**Table 8.2 Extent of Stunting and Wasting in Maldives
(Percentage of population in age group 1-5 years)**

Location	Stunting (percent)			Wasting (percent)		
	Boys	Girls	Average	Boys	Girls	Average
Male'	14	18	16	22	42	30
Atolls	37	49	43	39	63	50
Nation	31	41	36	35	58	45

¹¹ Anthropometric measurement should preferably be undertaken by trained enumerators working under controlled supervision, making use of specialised equipment that was not available to the survey. The survey was required to use birth room scales, which are no longer recommended for nutritional surveys. Despite these limitations, the survey is one of the first surveys of malnutrition in Maldives that provides for national coverage.

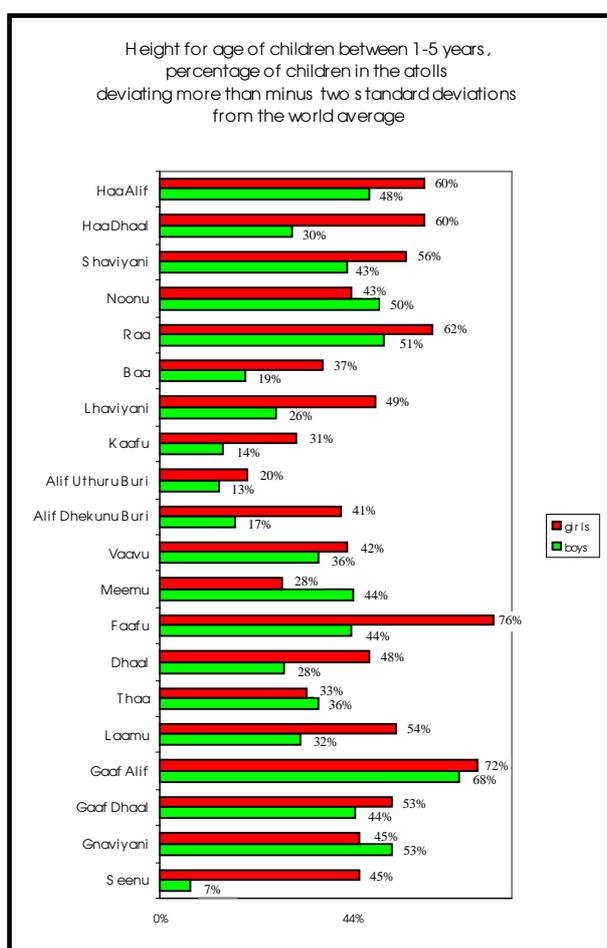
¹² Notably the National Nutrition Survey, 1993, MICS, 1995, and VAD Survey, 1997

such as diarrhoea, acute respiratory infection and worm infestation. Acute anaemia suffered by many mothers is also an important factor, the incidence of which may in part be due to hook worm infestation.

8.3.2 Malnutrition Among the Atoll Population

The extent of stunting by atoll is given in Figure 8.4.

Figure 8.4 Extent of Stunting Among Children by Atoll (Percentage of children in age group 1-5 years)



The illustration reveals that stunting is more prevalent among girls than boys, with only four of 20 atolls (Noonu, Meemu, Thaa, and Gnaviyani) recording higher incidence rates for boys.¹³ The highest observed rates of stunting are among girls in Faafu (76 percent), girls in Gaaf Dhaal (72 percent), boys in Gaaf Dhaal (68 percent), girls in Raa (62

percent), and girls in Haa Alif and Haa Dhaal (60 percent). Overall, stunting among girls is above the atoll average of 49 percent in eight atolls, and above the average of 37 percent for boys in nine atolls. The lowest observed incidences of stunting are to be found among boys in Seenu (7 percent), boys in Alif Uthuru buri (13 percent), boys in Kaafu (14 percent) and boys in Alif Dhekunu buri (17 percent).

8.4 Index of Food Insecurity and Malnutrition

A simple index of Food Insecurity and Malnutrition was compiled based upon the following:

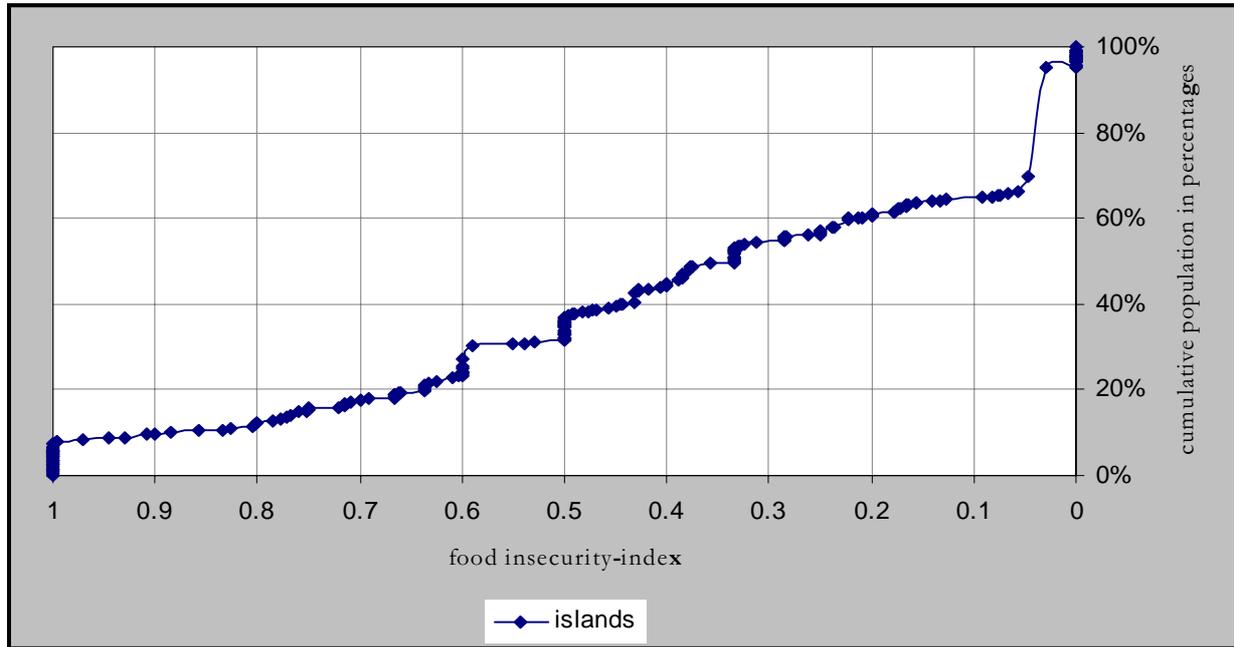
Indicators	Penalty Points
Food insecurity in the previous year	1.0
Significant incidence of stunting	1.0

The index is reproduced in Figure 8.5.

Although the index provides little evidence of ‘gaps’, it does suggest that some islands are more disadvantaged than others. There are 7 islands where more than 40 percent of the population experienced food insecurity for more than a day: Madifushi (pop. 768), Dhiyamigili (530) and Gaadhiffushi (361) in Thaa, Maavah (1,317) and Kunahandhoo (560) in Laamu, and Kodey (276) and Kanduhulhudhoo (527) in Gaaf Alif. The two islands in Gaaf Alif each score 1 point, as do 17 other islands where all children are estimated to suffer from stunting. Most of these islands are to be found in Haa Alif and Shaviyani.

¹³ For a further discussion of these differences, see chapter 10 on Gender.

Figure 8.5 Food Insecurity and Malnutrition Index by Island



Chapter 9: Employment

9.1 Introduction

This chapter reports the findings of the Vulnerability and Poverty Assessment with respect to employment. Its main focus is on the availability of productive employment and the existence of sustainable livelihoods, both of which are central to issues of poverty and vulnerability and to such concepts as sustainable human development. Productive employment and sustainable livelihoods are recognised as the most powerful means for overcoming poverty, reducing vulnerabilities, and expanding choices and opportunities.

The chapter seeks to paint a disaggregated picture of the employment situation prevailing in the atolls and islands, with sections on the sectoral distribution of employment, occupational status, employment status, literacy rates, and levels of unemployment and underemployment. Unlike some other chapters of this report, it has been necessary to make use of other sources of information to arrive at the picture.

The findings in respect of unemployment and underemployment are arguably the most significant, since they differ in significant respects from those reported elsewhere in official publications. However, it should be noted at the outset that these differences are conceptual and methodological in origin, since the survey adopted an approach that differs in important respects from the one used in the Population and Housing Census and employment and labour force surveys. These differences are fully reported in the chapter. It should be stressed that the survey set out to neither confirm nor reject official statistics on employment but rather, through the application of an adapted methodology, to throw additional light on a crucially important issue of development strategy.

The following subjects are covered:

- Sectoral employment
- Occupations
- Unemployment

- Underemployment
- Employment status
- Literacy

9.2 Sectoral Employment

It is difficult to state with precision the sectoral distribution of employment in Maldives. Many persons have more than one job and often 'commute' between different sectors, both in Male' and the atolls. In the survey, a worker's main activity was used as the basis for the estimation of sectoral shares, with occupations classified under 12 main headings corresponding to the following sectors: agriculture, mining, fishing, trade, tourism, manufacturing, construction, transport/communications, own worker, services, government and other.

The employment shares obtained are reported in Table 9.1. According to the survey, government is the main employer at the national level, followed by the fisheries, tourism and manufacturing sectors, with nearly two-thirds of the active population employed in these sectors.¹⁴ Relatively few persons are employed in the trade, mining and agricultural sectors.

In Male', government is the main employer, followed by services and self-employment. In the atolls, the main employment sectors are fisheries, manufacturing and government. Notable differences exist between the atolls. Although fisheries is the dominant employment sector for the atoll population, there are five atolls where other sectors are more important. In Haa Dhaal, the most important sector is manufacturing, with fisheries occupying second place. In Noonu, Alif Dhekunu buri, Gnaviyani and Seenu tourism occupies the first place.

Table 9.2 presents for each sector the employment distribution across atolls. Apart from agriculture, fishing, mining and tourism, most employment in all sectors is found in Male'. Particularly noteworthy is the

¹⁴ Because the classification system used in the Vulnerability and Poverty Assessment differs from the classification system used in the Population and Housing Census differs, the results of the survey are not directly comparable with those of the Census.

**Table 9.1 Sectoral Distribution of Employment
(Percentage of total population)**

Sectors	Total	Female	Male
Government	22	36	16
Fishing	18	3	24
Tourism	14	3	18
Manufacturing	12	31	4
Construction	9	1	12
Services	9	8	9
Transport/Communications	5	1	6
Own worker	4	4	5
Agriculture	4	10	2
Trade	3	2	3
Mining	1	0	1
Other	1	1	1

concentration of agricultural workers in certain atolls.

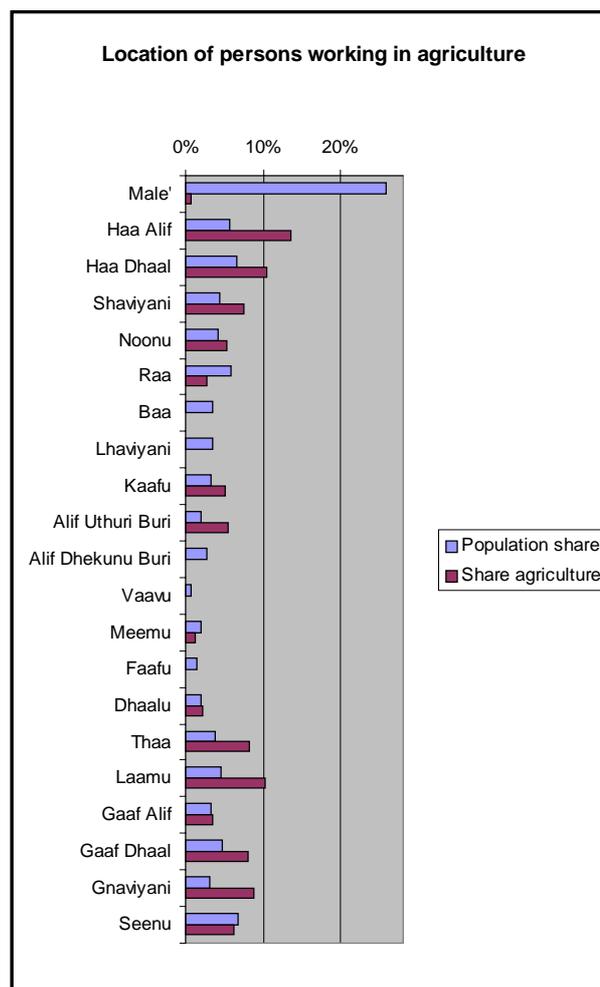
Additional information on the distribution of agricultural employment is given in Figure 9.1.

Comparison of population share with the share of agricultural workers indicates over-representation and under-representation of agricultural employment in the atolls. The figure shows that agricultural workers are primarily to be found in Haa Alif, Haa Dhaal, Laamu, Gaaf Dhaal and Gnaviyani. This is not surprising in view of the fact that more than one-half of available cultivable land is to be found in these atolls. By the same token, the absence of agricultural workers in Lhaviyani and Faafu corresponds with the absence of agricultural land in these two atolls. With respect to employment in the fisheries sector, this is notably absent, not only in Male', where this would be expected, but also in Gnaviyani and Seenu.

9.3 Occupations

Occupations are classified under 15 different headings in Table 9.3. The table shows that more than one-half of the active population can be grouped under these 15 headings, with fishermen and fishing crew constituting by far the largest group. Accounting for 15 percent of the labour force, it is three times

Figure 9.1 Location of persons working in agriculture



**Table 9.2 Distribution of Sectoral Employment by Atoll
(Percentage of atoll population)**

	Agriculture	Fishing	Services	Mining	Manufacturing	Construction	Trade	Tourism	Transport / Communication	Government	Own worker	Other
Male'	1	2	52	11	16	27	55	15	45	53	77	29
Haa Alif	13	6	1	7	5	5	1	5	4	3	1	3
Haa Dhaal	11	4	6	0	10	12	2	6	5	4	2	0
Shaviyani	7	6	4	0	6	4	6	6	3	3	1	5
Noonu	5	4	4	0	7	3	3	7	4	2	4	5
Raa	3	8	2	0	7	8	2	3	3	4	2	0
Baa	0	7	2	1	6	3	3	3	1	3	1	3
Lhaviyani	0	5	3	0	5	2	0	3	2	1	2	14
Kaafu	5	7	3	0	3	3	4	4	1	2	0	11
Alif Uthuru Buri	5	5	3	0	2	2	0	4	1	1	0	0
Alif Dhekunu Buri	0	3	0	58	2	3	0	7	4	2	2	1
Vaavu	0	2	1	0	0	0	0	0	0	1	0	0
Meemu	1	5	1	0	2	1	1	0	2	1	0	4
Faafu	0	2	1	11	3	2	0	0	0	1	1	0
Dhaal	2	4	1	0	2	2	5	1	1	2	0	0
Thaa	8	6	2	12	6	3	4	1	5	2	1	0
Laamu	10	7	2	0	2	6	3	2	2	4	0	0
Gaaf Alif	4	9	2	0	3	1	2	3	1	0	1	0
Gaaf Dhaal	8	5	4	0	6	6	4	3	5	3	0	13
Gnaviyani	9	1	3	0	3	3	3	4	4	2	2	6
Seenu	6	2	5	0	5	7	3	23	9	6	2	7

larger than the next most important group of teaching professionals. The survey captured very few occupations requiring professional and specialised skills. This applied not only to doctors, but also to many other categories.

9.4 Unemployment

The concepts of employment and unemployment can be defined in different ways. What is employment? When is someone unemployed? For how many hours should a person work to be considered as employed? Is an unpaid family worker employed or unemployed? These and related questions can be answered in vari-

ous ways, and the way in which they are answered determines the estimates made of employment and unemployment.

Maldives has a long record of very low unemployment rates. Successive Population and Housing Censuses have reported unemployment rates approximating those associated with frictional unemployment caused mainly by persons moving from one job to another. In the Population and Housing Census unemployment is defined in terms of persons who are not working but willing to work, looking for work, and available for work. The 1995 Census used the questions 'Did you look for work during the reference week?' and 'Could you have started work dur-

Table 9.3 Occupational Classification of Labour Force (Percentage of total population)

Fisherman/crew	15
Teaching professionals	5
Sewers	4
Carpenters and joiners	3
Building construction labour	3
Sweepers and related labour	3
Government employee	3
Clerk	3
Salesman	2
Fangimaker	2
Farmer	2
Shopkeeper	2
Secretaries	2
Waiters	2
Dhoni crew	2
Total	53

ing the reference week?’ When the answer to both questions is positive, the person concerned is considered to be unemployed. The use of this approach results in unemployment rates that are exceptionally low.

To obtain a different perspective on unemployment which is more relevant for Maldives, the survey used a slightly different approach. The survey did not include the question ‘Did you look for work during the reference period?’, because it is not realistic to expect that people go looking for work on their own island or on other islands on a daily or weekly basis while it is known that there are only few if any jobs available on the small islands. Furthermore, not everyone can afford to go to Male’ every week. While retaining the definition of both employment and unemployment, the survey used the questions ‘If you can get a job will you be available for work? 1. Yes; 2. No; 3. Not sure’ and ‘What is the main reason why you do not work?, 1. Inability to find suitable work; 2. Parent, spouse disapproves; 3. Poor health; 4. Due to housework, baby sitting, family responsibilities; 5. Income recipient (rental income, remit-

tances); 6. Other’. A person is considered to be unemployed when the answer to the first question is ‘Yes’ and when the answer to the second question is ‘Inability to find suitable work’. This modified approach resulted in estimates of unemployment that are significantly different from those obtained from the analysis of census data. It may be mentioned here that the definition of unemployment used in the VPA is different from the definition used in the Census of the Maldives and used by ILO.

The population aged 12 years and above can be divided into two main groups: persons willing to work but who have not yet found a suitable job; and persons with a job, even though it may provide for work for only a few hours per week. The first group falls in the category of ‘willing to work’. Persons in this category must be willing to work and available for work. These persons can appropriately be viewed as a reserve labour pool. When the economy is expanding and additional labour is required, the domestic economy is able to supply the additional labour. The second group forms the category ‘at work’. The two groups together form the domestic labour force.

A ratio can be calculated of the additional potential labour supply by comparing the persons in the category ‘willing to work’ with the labour force. Thus defined, the additional potential labour supply is about 10 percent of the present labour force. Table 9.4 confirms the existence a large additional potential labour supply, especially among the female population. In other words, at the national level, 10 percent of the labour force is available for work but has yet to find it. In general, because most men have already secured jobs – the survey confirms a male unemployment rate approximating that associated with frictional unemployment - it is mainly women who are available for work but unable to find it.

A labour force participation rate can also be calculated which expresses the labour force as a percentage of all persons above twelve years of age. Both ratios, for Male’, the atolls and for men and women, have been calculated and are reproduced in Table 9.4.

The survey also confirms that ratios differ both

among atolls and between Male' and the atolls. On average, the additional potential labour supply is much higher in the atolls, averaging 12 percent compared with an average of 6 percent for Male', with the lower rate recorded for Male' being attributable to the far higher level of economic activity. Among the atolls, Haa Alif, Vaavu, Gaaf Alif and Gaaf Dhaal have particularly high rates for additional potential labour supply, varying between 19 percent and 23 percent, well above the average for all atolls. Overall, the rate appears to be highest for atolls in the south central zone. Haa Dhaal, Kaafu, Alif Uthuru buri and Meemu have the lowest rates, averaging below 10 percent.

The labour force participation rate shows a less diverse trend. In Male' and the atolls it averages around 50 percent, although figures for individual atolls do show some variation, ranging from 43 percent in the case of Shaviyani to more than 55 percent for Vaavu and Gaaf Dhaal.

A potential domestic labour supply rate of 10 percent is neither exceptionally low nor high. As noted above, it can be attributable to the number of women who are ready to join the labour force. It is difficult to draw conclusions on the differences among individual atolls on the basis of survey data alone. Atolls with the highest rates are not, for example, concentrated in a single geographic location but rather spread throughout the Republic. Nor is there likely to be a single explanation for unfulfilled hopes and expectations, especially among women, with respect to work and employment. Reasons are likely to include low levels of economic activity, restrictions on mobility, the absence or high cost of transport (to neighbouring islands), and the absence of a formal labour market in some parts of the country. However, the survey nevertheless appears to confirm the importance of new initiatives aimed at creating productive employment for especially women outside of Male'.

9.5 Underemployment

Underemployment rates for Maldives are at present

unavailable, although it is recognised that they may be high. The existence of underemployment indicates the availability of additional capacity among the working population. Underemployment can be considered as a lost opportunity for the economy to expand by making fuller and more effective use of the nation's labour force; it is also a lost opportunity for those affected by underemployment to increase their incomes.

Underemployment can be expressed in terms of either time or productivity. A productivity-based estimate requires extensive research on sector- and branch-specific productivity levels, an exercise that fell well beyond the scope of the survey. The second approach, based upon available time, was adopted. An underemployed person was defined as one who worked less than 35 hours a week or eleven months a year, with the underemployment ratio expressed as the ratio of persons working less than 35 hours a week or eleven months a year and the working population.

Estimates of underemployment derived from the survey are included in Table 9.4. The survey reveals that, at the national level, around one-third of all working persons can be considered as underemployed.¹⁵ There are, however, marked variations, ranging from a low of 19 percent in the case of Dhaal to a high of 55 percent in the case of Noonu. Perhaps surprising, there are several atolls (Lhaviyani, Alif Dhekunu buri, Dhaal, Gnaviyani and Seenu) with underemployment rates that are lower or comparable with that observed for Male'. There are also several atolls (Haa Alif, Shaviyani, Noonu, Thaa and Gaaf Alif) where nearly one-half or more of the working population can be considered as underemployed.

To obtain an estimate of the number of persons who may be willing to work more hours or months, the survey included the question 'Do you want to work more?' One-half of all employed persons responded positively to this question, with the figure for underemployed persons in the atolls being twice the level of the figure for the underemployed in Male'. This

¹⁵ This is recognised as being an overestimate. There will be cases where persons who may be considered as 'underemployed' on the basis of the definition have no desire to work more hours than they currently do and are satisfied with situation in which they find themselves. In such cases, the persons can more appropriately be regarded as part-time workers rather than as underemployed persons.

Table 9.4 Potential Labour Force and Underemployment by Atoll

	Additional domestic potential labour supply	Female additional domestic potential labour supply	Male additional domestic potential labour supply	Net labourforce participation rate	Female net labourforce participation rate	Male net labourforce participation rate	Under-employment
Maldives	10	22	4	48	34	64	33
Male'	6	10	4	48	34	61	25
Atoll average	12	27	3	48	33	65	36
Haa Alif	23	44	8	46	36	59	48
Haa Dhaal	7	18	1	44	29	61	44
Shaviyani	9	22	0	51	38	67	45
Noonu	9	22	2	52	36	70	55
Raa	9	24	2	45	28	64	30
Baa	8	14	4	46	31	62	33
Lhaviyani	15	41	4	46	26	70	24
Kaafu	7	16	3	52	35	68	41
Alif Uthuru buri	6	10	4	51	30	72	44
Alif Dhekunu buri	13	41	4	51	29	69	20
Vaavu	22	45	5	56	51	61	35
Meemu	8	23	0	48	33	64	29
Faafu	13	23	0	51	52	50	40
Dhaal	12	24	5	48	32	64	19
Thaa	10	20	1	48	37	63	46
Laamu	15	34	4	49	36	62	37
Gaaf Alif	18	38	5	53	40	69	51
Gaaf Dhaal	21	40	5	56	46	68	33
Gnaviyani	10	20	4	43	32	56	25
Seenu	9	28	3	46	25	68	21

difference may in part be attributable to the higher incidence of underemployment existing in most atolls as well as differences in per capita incomes.

9.6 Employment Status

Employment status was classified according to five main groups: employer, employee, own worker, family worker and group worker. Overall, the majority of the working population can be classified as employees. This category was followed, in decreasing order of importance, by the categories own worker, group worker, employer and family worker.

Notable differences were, however, found to exist among atolls. As shown in Table 9.5, there are six atolls (Haa Alif, Shaviyani, Meemu, Faafu, Gaaf Alif and Gaaf Dhaal) where 'own worker' predominates. The existence of large-scale self-employment is most likely indicative of low levels of economic activity.

9.7 Literacy

Given the link existing between levels of educational attainment, literacy and numeracy on the one hand and employment on the other, the survey included questions on the highest educational level attained and on whether the person interviewed was literate.¹⁶

¹⁶ The findings of the survey with respect to education are presented in detail in Chapter 6.

Table 9.5 Employment Status by Atoll

	Employer	Employee	Own worker	Family worker	Group worker
Maldives	5	55	33	1	6
Male'	5	72	22	0	2
Atoll average	5	48	37	2	8
Haa Alif	3	37	57	1	2
Haa Dhaal	2	48	44	0	6
Shaviyani	3	38	50	5	4
Noonu	8	47	37	2	6
Raa	9	52	26	2	11
Baa	2	38	35	1	25
Lhaviyani	3	58	37	2	0
Kaafu	4	51	36	7	2
Alif Uthuru buri	1	44	40	4	11
Alif Dhekunu buri	1	53	24	1	20
Vaavu	12	61	13	5	9
Meemu	1	31	41	0	27
Faafu	2	25	62	0	11
Dhaal	8	42	38	7	5
Thaa	3	46	45	2	4
Laamu	13	48	24	2	13
Gaaf Alif	7	40	50	4	0
Gaaf Dhaal	1	38	51	1	8
Gnaviyani	11	49	31	1	8
Seenu	6	73	18	0	3

The literacy rate is defined as the ratio of persons 10 years and older who are literate in any language compared with the total population older than 10 years.

As shown in Table 10.1 in the next chapter, the survey confirmed the very high level of adult literacy existing in Maldives. Almost 100 percent of the adult population can be considered literate. Differences between Male' and the atolls are almost non-existent. Small variations between atolls were observed, but even the lowest rates recorded in the atolls were in the order of 95 percent. However, it is worth not-

ing that the high rates recorded in the atolls may be distorted by the high rates that could be observed in the larger islands. For this reason, the rates prevailing on smaller islands may be overstated. Moreover, the measurement of literacy is based upon the ability to recite basic texts. Functional literacy, which implies a full understanding of the text, may thus be lower. Approximately two-thirds of the adult population have completed primary school (grades 1-5), with slightly lower completion rates recorded in some atolls in the northern and southern zones.

Chapter 10: Gender

10.1 Introduction

One of the main purposes of the *Vulnerability and Poverty Assessment* was to determine whether poverty and vulnerability are gender dimensioned in Maldives. This is in recognition of the importance accorded by the Government to gender issues in development and of the importance of ensuring that interventions are properly targeted at the poorest and most vulnerable groups.

Several of the preceding chapters have reported findings that are gender dimensioned. This chapter contains a recapitulation of some of the more important findings as well as reports on additional findings derived from interviews with island representatives and sample households that throw light on the position of women in Maldives and the relationships existing between men and women.

The chapter presents and discusses gender issues under main headings covering:

- Education and literacy
- Marriage and divorce
- Health and nutrition
- Employment
- Women's priorities

10.2 Access to Education

10.2.1 School Enrolment and Educational Attainment

Education in Maldives is not differentiated along gender lines and all children enjoy the same rights to basic education. This finds expression in the gross enrolment rates for education, where rates for girls approximate those for boys. As shown in Table 10.1, gross enrolment rates for girls in the atolls are only marginally lower than for boys, although there are several atolls, notably Dhaal, where the gross enrol-

ment rate for girls is higher than for boys.

The access enjoyed by girls to basic education is reflected in overall levels of educational attainment, especially at lower levels. As shown in Figure 10.1, the average attainment level for women below grade 5 is higher than for men both in Male' and the atolls. The attainment level is expressed as the percentage of the population 18 years and older that has completed primary education.

Ministry of Education data reveal a difference in enrolment rates for boys and girls after grade 9, which become more pronounced in grades 11 and 12, that prepare students for university education. This suggests that while the access of girls to basic education is the same as that for boys, they may be disadvantaged at higher levels, with the disadvantage curtailing opportunities for advanced studies and the pursuit of professional careers. This disadvantage has its roots in the availability of secondary education in the atolls and restrictions that may be placed on the mobility of girls and young women in island communities. Secondary education outside of Male' is still mainly confined to two regional secondary schools, one serving the northern atolls and the other the southern atolls. For the pursuit of higher secondary education it is still often necessary for atoll children to make use of the facilities existing in Male'.

10.2.2 Female Literacy

Adult literacy rates in Maldives are exceptionally high for a developing country. The access of girls to education means that differences between literacy rates between men and women are very small. These modest differences were confirmed by the survey, the results of which were summarised in Table 10.1 above. The table reveals that literacy rates are very high in all atolls and that differences in the rates between men and women are negligible.

Table 10.1 Adult Literacy and Gross Enrolment Rates by Atoll

	Adult Literacy Rate			Gross Enrollment Rates		
	Total	Female	Male	Total	Female	Male
Maldives	98	97	98	80	79	80
Atoll average	97	97	97	80	78	81
Male'	99	100	99	79	81	77
Kaafu	99	99	100	72	69	75
Laamu	99	98	100	80	76	83
Gaaf Dhaal	99	99	99	80	77	83
Lhaviyani	99	98	100	81	78	84
Baa	99	99	98	77	75	79
Meemu	99	99	98	76	75	76
Alif Dhekunu buri	98	99	97	75	77	73
Thaa	98	98	98	88	86	92
Shaviyani	98	98	98	75	72	78
Haa Alif	98	97	98	81	72	90
Alif Uthuru buri	97	97	98	67	63	71
Dhaal	97	97	96	83	89	78
Raa	96	96	96	84	87	80
Vaavu	95	96	95	83	78	87
Haa Dhaal	95	94	96	84	82	86
Gaaf Alif	95	95	95	80	80	81
Gnaviyani	95	96	93	83	82	83
Seenu	94	93	96	82	86	78
Noonu	94	92	95	71	71	70
Faafu	93	98	86	90	87	94

10.3 Marriage & Divorce

10.3.1 Marriage

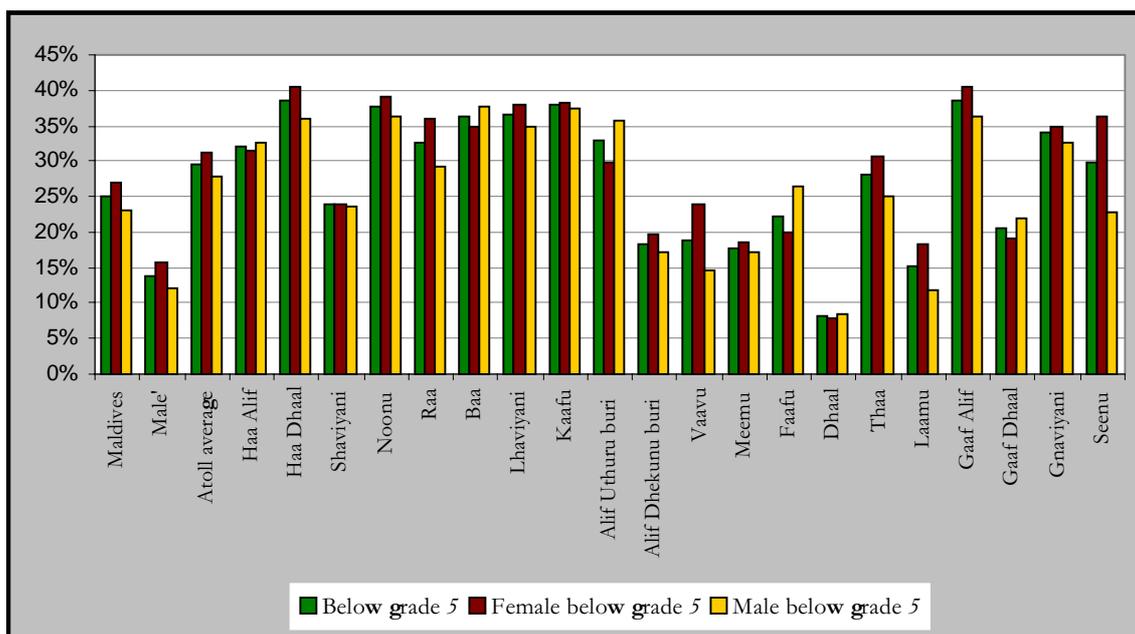
Under Sharia law, men are allowed to marry more than one woman, although a man may not be married to more than four wives at any one time. All wives must be treated equally and the man must possess the means to maintain his wives and children. Multiple marriages are today less common than they once were: according to the 1995 Population and Housing Census, only one in 11 of all men were married to more than one woman at the time of the census.

Divorce is, however, very common, with Maldives reportedly possessing one of the highest divorce rates in the world. Although both parties may initiate a divorce, women seldom do, with the frequency of divorce constituting a source of vulnerability for women. Although women are in principle free to pursue occupations, as they are increasingly doing, there are socially determined restrictions on the movement of some young women. This, combined with limited employment possibilities in many is-

lands, effectively serves to restrict the opportunities of many women and thereby prevents them from achieving a measure of financial independence. In some cases, they may have few alternatives to early marriage – the median age for first marriage for women is around 17 years - and young motherhood.

Although women are becoming more assertive, husbands have traditionally had a decisive voice in deciding whether their wives may work and in whether their wives should use a method of family planning. While many of the benefits of large family size, such as the rights to a home building plot, in practice accrue to the husband, many of the costs of childbearing, especially in the areas of health and education, are borne by the Government. Although husbands are legally obliged to provide support for their children in the event of divorce, they do not always do so, thereby escaping the private costs of child rearing. Unless a woman can remarry quickly, she may face great economic hardship since she has main responsibility for caring for the children. With the progressive replacement of the extended family with the nuclear family, most evident on Male', this respon-

Figure 10.1 Educational Level Below Grade Five by Atoll



sibility cannot always be shared, as it was in the past, with family members. Vulnerabilities to divorce and traditionally subservient positions in decision-making on work and reproductive health may mean that, by the age of 50, women with low levels of educational attainment in atoll communities may well have been married four times and given birth to 6-7 children.

The survey asked women questions related to divorce. Women reported that most of the hardships were financial, reflected in their ability to care for their children without the support of the extended family. They also observed that it was often sometimes difficult to provide children with the care and attention they deserved.

10.3.2 Female-Headed Households

The definition of a female-headed household adopted by the survey was not confined to a household in which the wife or mother is without a husband as a consequence of death, desertion or divorce. It was defined more broadly in terms of the person regarded by household members as being the head of the household. Overall, around one in three of all households are headed by a woman. There are no major differences between Male' and the atolls, although

variations are in evidence between atolls, with the percentage of female-headed households reaching around one-half of all households in some cases.

In the survey, women that headed households were asked the question why they occupied the position. Possible answers were defined to include the death of the husband, the absence of an adult male, and the desire on the part of the woman to head the household. Three out of 4 women replied that their position as head of the household was based on their desire 'to be in charge'.

Female household heads were also asked to enumerate the main hardships they encountered in managing the household. These could be grouped broadly into three main areas: financial difficulties; child-rearing obligations; and difficulties in fulfilling roles traditionally played by men. Some women reported that they were unable to secure work or to borrow the money required for food from family and friends. Other women included among hardships difficulties in acquiring firewood, which not only made it difficult for them to cook food but also to earn money from such activities as fish smoking, while other women reported the problem of loneliness. However, large numbers of women reported that they encountered no major difficulties or hardships in managing a

household.

10.4 Access to Health & Nutrition

10.4.1 Access to Health

The survey could find no evidence of any discrimination against girls in access to health services. On the contrary, Infant Mortality Rates (IMR) among boys were observed as being higher than for girls, with patterns in Maldives reflecting trends evident at the world level that are still insufficiently understood. As shown in Table 10.2, IMRs for boys were higher than for girls in every atoll, without a single exception.

Although men and women enjoy equal access to health services in Maldives, the health of women tends to be inferior to that of men in atoll and island communities, some of which may be distant from

Table 10.2 Male and Female Infant Mortality Rates by Atolls

	Infant Mortality Rate		
	Female	Male	Total
Maldives	56	69	62
Atoll average	63	76	69
Raa	101	119	110
Shaviyani	93	111	102
Faafu	90	108	99
Thaa	90	108	99
Noonu	80	96	88
Lhaviyani	73	89	81
Gaaf Dhaal	73	89	81
Haa Alif	75	84	79
Dhaal	71	86	78
Laamu	69	84	76
Alif Uthuru Buri	69	80	74
Vaavu	60	71	66
Haa Dhaal	58	67	63
Meemu	54	67	61
Gaaf Alif	53	66	60
Alif Dhekunu Buri	45	54	49
Kaafu	42	51	47
Baa	38	49	43
Male'	34	40	37
Gnaviyani	31	37	34
Seenu	29	35	32

health centres.¹⁷ Some of the main difficulties encountered by women appear to be directly related to child-bearing, with women in atoll communities giving birth to an average of six children during the course of their reproductive life.

Despite the major efforts that have been and are being made by the Government to address health problems at the island level, anaemia and Vitamin A deficiency among pregnant women are known to be high. One recent study estimated that more than 60 percent of pregnant women suffered from anaemia, while another study of one atoll estimated that 8 percent of pregnant women were below the cut-off points set by WHO for mean haemoglobin levels, which provides additional evidence of high generalised levels of anaemia.

These low levels appear to be related more to nutritional and dietary practices during pregnancy than to lack of access to health services, with some women appearing to believe that a reduction of food intake during pregnancy will restrict the growth of the child they are bearing and hence contribute to an easier delivery. However, traditional practices both during and after pregnancy do not always promote intra-uterine growth or ensure adequate lactation or composition of human breastmilk postpartum. The high incidence of worm infestation and other intestinal parasites exacerbates such problems.

10.4.2 Nutrition

Although infant mortality rates are lower among girls than boys, the nutritional status of girls is, as reported in Chapter 8, often inferior to that of boys. Although malnutrition appears very widespread, reflected in the high incidence of both stunting and wasting, there are only four atolls (Noonu, Meemu, Thaa and Gnaviyani) where the incidence of malnutrition among boys was observed to be higher than for girls. Overall, around one in 2 of all girls between the ages of 1-5 years in the atoll population can be considered as stunted, compared to just over one in 3 of all boys. In all but one case, the highest incidences of stunting observed in the atolls involved girls rather

¹⁷ See Chapter 6, viz. section 3.

than boys, with rates for girls reaching more than 70 percent in several atolls.¹⁸

The high incidence of malnutrition among children must be attributed to a variety of factors. These include dietary deficiencies. As noted in Chapter 8, food insecurity in Maldives is not commonplace, nor is it a frequent occurrence among the relatively small percentage of the population that reports food shortages. It is thus difficult to link malnutrition to inadequate access to food. A more important link is with dietary preferences and the fact that many island communities exist on a relatively simple diet composed of a narrow range of foodstuffs. This often excludes fruits and vegetables, with one survey conducted in 1993 revealing that fruits and vegetables were consumed on a regular basis by less than 30 percent of the children studied.

This situation is exacerbated by the high incidence of worm infestation, linked to poor access to safe sanitation and supplies of potable water that still exist in many islands. Recent estimates suggest that 50-75 percent of children below five years of age is affected by intestinal parasites. Why the effects on girls might be higher than for boys is unclear and was not investigated by the survey.

10.5 Access to Productive Employment

Women workers are primarily found in the government, manufacturing and agricultural sectors. They dominate in the latter, with women accounting for around 70 percent of all persons working in agriculture and with women recognised as the nation's most able cultivators. Employment in manufacturing is concentrated in traditional activities, such as rope making and handicraft production, which are characterised by part-time employment, low levels of productivity and low and often unpredictable incomes.

Although women continue to play an important role in the economic life of the nation and the Government is committed to enlarging the role, their position has been eroded by some economic develop-

ments, which has required the recovery of lost ground through gender-dimensioned employment creation initiatives. Women in atoll communities have, for example, been negatively affected by the structural changes that have taken place in the fisheries sector. With the development of fish collection systems, it has been more profitable for fishermen to sell their catches rather than to return home with them to be smoked and dried, activities that were traditionally performed by women. While these changes have increased the incomes of fishermen, reducing the need for women to work, they have significantly curtailed employment opportunities available for women at the island level.

While all occupations are in principle open to women, social customs in island communities have traditionally placed restrictions on the movement of women. This has meant that women have so far benefited less than men from the jobs created in tourism, the most dynamic sector of the nation's economy. Of the nearly 5,000 Maldivians employed by the sector in 1996, less than 100 were women. Overall, the female participation rate declined from 60 percent in 1978 to 20 percent in 1990, or from one of the highest to one of the lowest rates in the world. Since 1990, there is evidence of an increase, with current official estimates placing the participation rate at around 25 percent.

The findings of the survey suggest that the figure of 25 percent may be an underestimate, with a figure of around 35 percent emerging from the survey. Larger differences were, however, observed in the participation rate, ranging from a low of 25 percent in the case of Seenu to a high of 52 percent in the case of Faafu, with the rate observed in Faafu being higher than the participation rate for men.

Reasons given by both men and women for the relatively low participation rate of women in the labour force were reported as poor health, domestic responsibilities, and reluctance on the part of their husbands. Overall, 9 percent of the population of working age (both men and women) reported that they were prevented from working because either their parents or

¹⁸ See Chapter 8, viz. table 8.2 and figure 8.4

spouse disapproved. Above the age of 20, the negative position of spouses and parents pre-eminently affects women. Whereas only 9 percent of men report disapproval as the reason for not working, the comparable figure for women is 85 percent.

However, the survey also confirmed that there are large numbers of women in the atolls who are willing to work and looking for work and where their desire to work is supported by their husbands. As reported in Chapter 9, more than one in 4 of women in the atolls can be considered as a potential addition to the labour force, with the figure increasing to more than 40 percent of all women in some atolls. Whether women formally enter the labour force as either full-time or part-time workers will depend upon the speed at which productive employment can be created outside of Male’.

10.6 Women’s Priorities

As part of the survey, both men and women were

asked to rank a number of perceived problems in order of priority. Although differences might have been anticipated in the priorities of men and women, the rankings, reproduced in Table 10.3, displayed a marked degree of uniformity.

As indicated by the table, both men and women in Maldives ranked education, health, housing and electricity as the first four priorities. While slight differences can be denoted hereafter, they are very limited, with the overall rankings applied by men and women showing a remarkable degree of correspondence. The priority weights applied by men and women in the most vulnerable islands also display a marked degree of correspondence, with the difference in rankings given by men and women in vulnerable islands appearing to be determined mainly by their lack of access to essential infrastructure, which figures prominently in the definition of vulnerability. The results of the survey cannot support an assertion that men and women in Maldives are guided by different development priorities.

Table 10.3 Female and Male Rankings of Island-Based Priorities¹

		Female and male priority weights			
		All islands		Most vulnerable islands	
		Females	Males	Females	Males
1	Education	0.116	0.112	0.118	0.114
2	Health	0.101	0.104	0.104	0.102
3	Housing	0.100	0.103	0.101	0.100
4	Electricity	0.094	0.092	0.115	0.114
5	Income	0.085	0.084	0.088	0.082
6	Employment	0.083	0.086	0.080	0.078
7	Drinking water	0.081	0.078	0.070	0.072
8	Transport	0.074	0.078	0.071	0.080
9	Food security	0.073	0.070	0.068	0.068
10	Communication	0.072	0.072	0.069	0.072
11	Consumer goods	0.061	0.059	0.059	0.058
12	Environment	0.060	0.061	0.056	0.059
		1,000	1,000	1,000	1,000

¹ The results reported exclude Vaavu, Meemu and Thaa where priority rankings by households were not undertaken, while in Lhaviyani, Shaviyani and Noonu only one person in the household completed the question. For a presentation of the methodology used for the calculation of priority weights and of most vulnerable islands, see Chapter 11.

Chapter 11: Composite Index of Vulnerability and Poverty

11.1 Introduction

Frequently used indicators to measure the level of development of a country or a region are per capita income indicators and human development indicators such as the Human Development Index (HDI), the Gender-related Development Index (GDI), the Human Poverty Index (HPI), etc. The main drawback of these indicators is that they are based on a few components only: income, life expectancy, literacy rates, enrolments rates, access to health and safe water, and the percentage of underweight children. If the objective is to assemble these indices for as many countries as possible, this drawback is inevitable due to data limitations in a large number of countries.

For an individual country, these indices are too general and not specific enough for getting insights into the extent and severity of various aspects of development, poverty, deprivation and vulnerability. This report presents a new index, the Human Vulnerability Index (HVI), which is specially tailored for an island state like Maldives with large distances between remote islands and the nearest atoll capital or economic centre or Male' and where vulnerability of the island population is extremely important.

11.2 The Human Vulnerability Index (HVI)

11.2.1 Dimensions of Vulnerability and Poverty in Maldives

Table 11.1 presents a selection of dimensions of living standards and their indicators applicable to Maldives. Estimates of those indicators are based on the household and the island questionnaires and on interviews with island chiefs. These quantitative indicators provide the means to construct a Human Vulnerability Index (HVI) for Maldives at island level and atoll level. The scope of this HVI is broader and

gives more detail than the usual human development indices.

Firstly, the HVI for Maldives is based on 12 dimensions of vulnerability and poverty. Most dimensions have a number of components. The total number of dimensions and components is 40.

Secondly, a new weighting scheme is used among the various dimensions of poverty and vulnerability. The most serious criticism on the UNDP Human Development Indices refers to the use of equal weights of the different dimensions in constructing an overall index. In this HVI, in addition to equal weights, perception weights are used. Those perception weights are obtained by asking the households and the development committees and the women's committees to rank the list of living standard dimensions in the order of their priority.

Thirdly, in addition to presenting single scalar indices that should give an indication of the poverty and vulnerability situation in the various regions in the country, all available information is used. Useful information must be used and not compressed and bulldozed away just for the sake of constructing an index. Information from the household survey and the island surveys on the many poverty and vulnerability dimensions is combined to get an idea of the structure of the various dimensions of poverty and vulnerability, and of the differences in that structure between regions in the country. It provides the means to indicate for each dimension the overall as well as regional shortfalls according to certain norms. It may point to sectors and regions and combinations of the two where progress is needed most.

Fourthly, for each poverty and vulnerability dimension a country map has been prepared indicating the location of poverty and vulnerability for that dimension. Part IV of this report presents an atlas with these poverty and vulnerability dimension maps for

Maldives, one for each dimension, supplemented by a few summary maps.

11.2.2 Scoring

The Human Vulnerability Index (HVI) estimates the level of vulnerability as follows. Each living standard dimension has several indicators and components. For each indicator or component an individual gets a score between zero and one point depending on the severity of deprivation. Table 11.1 presents a list of living standards, their indicators and components, and the penalty points attributed to each indicator. For instance, the living standard condition of housing has three indicators: the material of the house, space in the house per household member, and the existence of a compound. If the walls of a house are made of palm leaves or if the house has sand floors, the inhabitants of that house are considered 100 percent housing poor. Lack of a compound makes them 50 percent housing poor. Similarly, complete lack of electricity makes the inhabitants 100 percent electricity poor. Partial availability of electricity during a restricted number of hours per day makes them partially electricity poor.

Wherever possible, the score for each dimension measures the poverty gap index for that dimension, i.e. the headcount multiplied by the shortfall. Nearly all dimensions have several components. Some components of dimensions are binary (toilet facility, yes/no). Those components have the character of a headcount, but the dimension itself consists of more than one component. For other dimensions, the components are continuous, like population density per island. Only one dimension consists of one component, i.e. income poverty, and that component is continuous.

In the first instance, the scores for the different forms of deprivation are simply added up without applying weights. In that case, the maximum score on the Human Vulnerability Index is 12 and the minimum score is zero (simply divide the HVI by 12 and multiply with 10 to let it run from zero to ten). The higher the score the higher the vulnerability.

Table 11.2 shows an illustration for two hypothetical atolls. The lower average HVI of Atoll 1 implies

that, on average, the population of Atoll 1 is better off than Atoll 2 population. However, the table also shows that the depth of vulnerability is higher in Atoll 1 where some individuals score six points. That means that not only the value of the overall index is important but also its composition. The strength of the way in which the HVI is constructed is, precisely, that its composition can be shown. That gives the opportunity to estimate both the incidence and the depth of vulnerability.

11.2.3 Priority Weights

In the above description, the score for each deprivation on the HVI index is one point, meaning that all living standard dimensions get the same weight. However, both in the household questionnaire as well as in the island committee questionnaire a question is included about priorities. The interviewees are asked to rank the living standard dimensions according to their priorities. If they are of the opinion that the availability of drinking water is their biggest problem and should, therefore, get the highest priority, drinking water gets ranking number 1, etc.

These ranking numbers can be used for attributing values for the weighting factors. Table 11.3 shows the overall ranking of priorities according to male and female household members. The value 3.9 for education means that on average education gets a ranking number of 3.9. That is the lowest ranking number in the list and has therefore the highest priority according to females.

Obviously, for calculations, a weighting factor with the highest priority should have the highest value. Table 11.4 converts the priority rankings into priority weights. The second column of Table 11.4 inverts the order of the first column by taking the complement of 13 so that priority number 1 gets a weight of 12, priority number 2 gets a weight of 11, priority number 3.8 gets a weight of 9.2, etc. The third column shows the priority weights to be applied in the analysis. They are the respective shares of the total of the second column. The left-hand side of the Table 11.3 shows the average priorities of females and males of all islands. The right-hand side of Table 11.3 shows the priorities of the female and

Table 11.1 Living standard dimensions and their indicators

Living Standard Dimensions	Indicators	Penalty Points
1. Income poverty	Poverty gap index	0-1
2. Electricity	No electricity	1
	Electricity for six hours or less per day	0.5
3. Transport	More than 100 persons per dhoni per island	0.25
	Three or fewer dhonis per week to atoll capital	0.5
	The island is not always accessible	0.5
4. Communication	No public telephone on the island	0.75
	Distance to public telephone is more than 2 hours	1
	No newspaper available on the island	0.25
	No radio in the household	1
5. Education	No trained teacher in primary school	1
	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
6. Health	No trained doctor, health worker, nurse or midwife on the island	0.25
	No access to drugs	0.5
	No hospital, private clinic or health centre on the island	0.5
	Travel time to hospital or health centre is more than 2 hours	1
7. Drinking Water	Insufficient access to drinking water last year	1
	No access to safe drinking water	1
8. Consumer Goods	More than 100 persons per shop on the island	0.5
	No sewing machine	0.5
9. Housing	Material of the house, thatch wall or sand floor	1
	Living space of less than 40 square feet per capita	1
	No compound	0.5
10. Environment	Coast erosion on the island	0.5
	No facility for garbage disposal	0.5
	No toilet facilities in the house	1
	Use of firewood for cooking	0.5
	Population density per island	0-1
11. Food security	Food insecurity in the previous year	1
	Significantly stunting of children between 1 and 5 year	1
12. Employment	Unemployed, no income earner in the household	1
	Unemployed, at least one earner in the household	0.5
	Underemployed, looking for more work	0.5
	No income generating community activities	0.25

Table 11.2 Hypothetical HVI for Two Atolls

HVI	Frequency	
	Atoll 1 (%)	Atoll 2 (%)
12	0	0
11	0	0
10	0	0
9	0	0
8	0	0
7	0	0
6	1	0
5	3	2
4	5	8
3	21	28
2	32	37
1	27	18
0	11	6
Average	1.97	2.21

male population of the most vulnerable islands. The main difference between right-hand side and the left hand side of the table is the higher priority given by the most vulnerable island to electricity. The reason for this is clear. Islands without electricity may give electricity priority number 1, whereas islands with electricity may give electricity the lowest priority, because electricity is not a problem any more for the island population. Probably, the priority list of the

most vulnerable islands where people are deprived of many living standard dimensions is even more relevant for constructing weighting factors to be applied for the whole country, because their choice is wider. To analyse to what extent the choice of the weighting factors is sensitive for the ultimate results, three different weighting schemes are used: equal weights, average priority weights, and priority weights of the most vulnerable islands. Priority weighting schemes can easily be split into priorities according to men and women separately. Thus, the sensitivity of five different weighting schemes can be analysed: equal weights, average priority weights for men and women, and priority weights of the most vulnerable islands according to their male and female populations.

Female and male priority weights are given in Table 10.3 in chapter 10.

11.3 Ranking Atolls and Islands according to Vulnerability

Tables 11.5 presents, for each atoll, the value of the HVI according to the different weighting schemes. Table 11.6 presents the HVI of the 90 most vulner-

Table 11.3 Female and Male Priority Rankings

		Female and male priority rankings			
		all islands		most vulnerable islands	
		females	males	females	males
1	Education	3.9	4.2	3.8	4.1
2	Health	5.1	4.9	4.9	5.1
3	Housing	5.2	4.9	5.1	5.2
4	Electricity	5.7	5.8	4.0	4.1
5	Income	6.3	6.3	6.1	6.9
6	Employment	6.5	6.4	6.8	6.6
7	Drinking water	6.7	6.9	7.6	7.4
8	Transport	7.3	6.9	7.4	6.7
9	Food security	7.3	7.4	7.7	7.4
10	Communication	7.4	7.5	7.6	7.7
11	Consumer goods	8.3	8.2	8.4	8.4
12	Environment	8.3	8.4	8.6	8.5
Total		78.0	78.0	78.0	78.0

Table 11.4 Converting Priority Rankings into Priority Weights

	all islands, females		
	priority ranking	ranking complement	priority weights
1 Education	3.9	9.1	0.116
2 Health	5.1	7.9	0.101
3 Housing	5.2	7.8	0.100
4 Electricity	5.7	7.3	0.094
5 Income	6.3	6.7	0.085
6 Employment	6.5	6.5	0.083
7 Drinking water	6.7	6.3	0.081
8 Transport	7.3	5.7	0.074
9 Food security	7.3	5.7	0.073
10 Communication	7.4	5.6	0.072
11 Consumer goods	8.3	4.7	0.061
12 Environment	8.3	4.7	0.060
Total	78.0	78.0	1.0

Table 11.5 Ranking of Atolls according to the Composite Human Vulnerability Index on a 0-10 scale

		EQUAL WEIGHT	FEMALE AND MALE PRIORITY WEIGHTS			
			All Islands		Most Vulnerable Islands	
			Females	Males	Females	Males
1	Gaaf Alif	5.2	5.0	5.0	5.1	5.0
2	Faafu	5.1	4.8	4.8	4.9	4.8
3	Shaviyani	5.1	4.8	4.8	4.8	4.8
4	Haa Alif	5.0	4.7	4.7	4.8	4.7
5	Noonu	4.9	4.7	4.7	4.7	4.7
6	Meemu	4.9	4.7	4.7	4.7	4.7
7	Gaaf Dhaal	4.9	4.7	4.7	4.8	4.7
8	Laamu	4.9	4.8	4.8	4.9	4.8
9	Thaa	4.9	4.7	4.6	4.7	4.6
10	Haa Dhaal	4.8	4.5	4.5	4.5	4.5
11	Baa	4.8	4.5	4.5	4.5	4.5
12	Lhaviyani	4.8	4.4	4.4	4.4	4.3
13	Dhaal	4.7	4.5	4.5	4.5	4.4
14	Vaavu	4.5	4.2	4.2	4.2	4.2
15	Raa	4.5	4.3	4.3	4.3	4.3
16	Alif Uthuru Buri	4.2	4.0	4.0	4.0	4.0
17	Kaafu	4.1	3.9	3.9	3.9	3.9
18	Alif Dhekunu Buri	4.1	3.9	3.9	3.9	3.8
19	Gnaviyani	3.9	3.4	3.5	3.4	3.4
20	Seenu	3.5	3.2	3.1	3.1	3.1
21	Male'	1.2	1.2	1.2	1.2	1.2
	Maldives	4.1	3.8	3.8	3.8	3.8

able islands, together accounting for about 20 percent of the total population. The ranking of atolls and islands appears to be robust. The tables show that the position of each atoll and island on a ranking list from most vulnerable to least vulnerable is stable and fairly independent of the weighting scheme applied.

According to all weighting schemes the most vul-

nerable atolls are Gaaf Alif, Faafu and Shaviyani. With equal weights and according to average male and female priority weights, the ranking from most to least vulnerable atolls is in the above order.

Applying the weighting factors of the populations of the most vulnerable atolls, Gaaf Alif is the most vulnerable atoll due to its relatively low performance with respect to electricity.

Table 11.6 Ranking of the 90 Most Vulnerable Islands according to the Composite Human Vulnerability Index on a 0-10 scale

		HVI (FEMALE AND MALE PRIORITY WEIGHTS)								
		HVI (EQUAL WEIGHTS)		All Islands		Most Vulnerable Islands		pop size	pop %	cum pop%
				Females	Males	Females	Males			
1	Nadallaa	Gaaf Dhaal	7.5	7.6	7.5	7.6	7.5	735	0.003	0.003
2	Kunahandhoo	Laamu	7.4	7.4	7.3	7.5	7.5	560	0.002	0.005
3	Berimadhoo	Haa Alif	7.1	7.0	7.0	7.1	7.1	163	0.001	0.006
4	Fares	Gaaf Dhaal	7.1	7.0	7.0	7.2	7.1	480	0.002	0.008
5	Kanduhulhudhoo	Gaaf Alif	6.8	6.6	6.6	6.7	6.7	527	0.002	0.010
6	Fulhadhoo	Baa	6.7	6.6	6.5	6.6	6.5	228	0.001	0.011
7	Uligamu	Haa Alif	6.6	6.5	6.4	6.6	6.6	384	0.002	0.012
8	Kuburudhoo	Haa Dhaal	6.6	6.4	6.4	6.6	6.5	292	0.001	0.013
9	Kibidhoo	Thaa	6.5	6.1	6.1	6.2	6.1	777	0.003	0.016
10	Vaadhoo	Gaaf Dhaal	6.4	6.2	6.2	6.4	6.3	826	0.003	0.020
11	Goidhoo	Baa	6.4	6.2	6.1	6.2	6.1	510	0.002	0.022
12	Baarah	Haa Alif	6.4	6.0	6.1	6.1	6.1	1,206	0.005	0.026
13	Nilandhoo	Gaaf Alif	6.4	6.3	6.3	6.5	6.4	486	0.002	0.028
14	Kodey	Gaaf Alif	6.4	6.3	6.3	6.4	6.3	276	0.001	0.029
15	Badidhoo	Dhaal	6.2	6.0	5.9	6.0	5.9	593	0.002	0.032
16	Kalhaidhoo	Laamu	6.2	6.2	6.2	6.3	6.2	567	0.002	0.034
17	Kumundhoo	Haa Dhaal	6.2	6.0	6.0	6.2	6.1	1,037	0.004	0.038
18	Veyvah	Meemu	6.2	6.1	6.0	6.1	6.0	156	0.001	0.039
19	Maalhendhoo	Noonu	6.1	6.1	6.0	6.1	6.0	630	0.002	0.041
20	Miladhoo	Noonu	6.1	6.1	6.1	6.1	6.1	930	0.004	0.045
21	Nolhivaramu	Haa Dhaal	6.1	5.8	5.8	5.8	5.8	1,508	0.006	0.051
22	Foakaidhoo	Shaviyani	6.1	5.7	5.7	5.8	5.8	1,011	0.004	0.055
23	Madifushi	Thaa	6.1	6.0	5.8	6.1	6.0	768	0.003	0.058
24	Thurakunu	Haa Alif	6.0	6.0	5.9	6.1	6.1	510	0.002	0.060
25	Thinadhoo	Vaavu	6.0	5.8	5.8	5.9	5.8	149	0.001	0.060
26	Olhuvelifushi	Lhaviyani	6.0	5.8	5.8	5.8	5.7	394	0.002	0.062
27	Hithadhoo	Laamu	5.9	5.6	5.6	5.8	5.7	751	0.003	0.065
28	Fehendhoo	Baa	5.9	5.8	5.8	5.9	5.9	172	0.001	0.066
29	Dhaandhoo	Gaaf Alif	5.9	5.7	5.7	5.9	5.8	1,154	0.005	0.070
30	Feydhoo	Shaviyani	5.9	5.8	5.7	5.9	5.9	759	0.003	0.073
31	Gaadhoo	Laamu	5.9	5.9	5.9	6.0	6.0	319	0.001	0.075

Table 11.6 Ranking of the 90 Most Vulnerable Islands according to the Composite Human Vulnerability Index on a 0-10 scale (Continued)

		HVI (EQUAL WEIGHTS)		HVI (FEMALE AND MALE PRIORITY WEIGHTS)						
				All Islands		Most Vulnerable		pop size	pop %	cum pop %
				Females	Males	Females	Males			
32	Kolhufushi	Meemu	5.9	5.6	5.5	5.6	5.5	854	0.337	8.000
33	Fainu	Raa	5.9	5.8	5.7	5.8	5.7	273	0.108	8.108
34	Muraidhoo	Haa Alif	5.9	5.6	5.5	5.6	5.6	505	0.200	8.307
35	Gemendhoo	Dhaal	5.9	5.7	5.6	5.7	5.6	370	0.146	8.454
36	Lhohi	Noonu	5.9	5.7	5.7	5.7	5.7	558	0.221	8.674
37	Kihaadhoo	Baa	5.8	5.7	5.6	5.7	5.7	280	0.111	8.785
38	Dhiggaru	Meemu	5.8	5.8	5.7	5.8	5.7	917	0.362	9.147
39	Hithaadhoo	Baa	5.8	5.4	5.4	5.4	5.4	944	0.373	9.520
40	Omadhoo	Thaa	5.8	5.6	5.5	5.6	5.5	403	0.159	9.679
41	Mulhadhoo	Haa Alif	5.7	5.6	5.6	5.7	5.7	258	0.102	9.781
42	Dhevvadhoo	Gaaf Alif	5.7	5.4	5.4	5.6	5.6	632	0.250	10.03
43	Narudhoo	Shaviyani	5.7	5.3	5.3	5.4	5.4	389	0.154	10.18
44	Fodhdhoo	Noonu	5.7	5.4	5.4	5.4	5.4	278	0.110	10.29
45	Kuribi	Haa Dhaal	5.7	5.3	5.3	5.5	5.4	499	0.197	10.49
46	Kinolhas	Raa	5.6	5.5	5.4	5.6	5.5	356	0.141	10.63
47	Kudafari	Noonu	5.6	5.5	5.4	5.4	5.3	477	0.188	10.82
48	Noomaraa	Shaviyani	5.6	5.4	5.4	5.6	5.5	460	0.182	11.00
49	Naalaafushi	Meemu	5.6	5.3	5.3	5.4	5.3	341	0.135	11.14
50	Kaditheemu	Shaviyani	5.6	5.2	5.2	5.2	5.2	1,014	0.401	11.54
51	Hirimaradhoo	Haa Dhaal	5.6	5.2	5.2	5.3	5.3	409	0.162	11.70
52	Bilehffahi	Shaviyani	5.6	5.3	5.3	5.3	5.2	442	0.175	11.87
53	Dhonfanu	Baa	5.5	5.5	5.4	5.6	5.5	409	0.162	12.04
54	Dhiyamigli	Thaa	5.5	5.6	5.4	5.6	5.4	530	0.209	12.25
55	Maamendhoo	Laamu	5.5	5.6	5.5	5.5	5.4	948	0.375	12.62
56	Makunudhoo	Haa Dhaal	5.5	5.1	5.1	5.1	5.1	1,095	0.433	13.05
57	Dhiyadhoo	Gaaf Alif	5.5	5.4	5.5	5.6	5.6	115	0.045	13.10
58	Hathifushi	Haa Alif	5.5	5.4	5.5	5.5	5.5	201	0.079	13.18
59	Madeveli	Gaaf Dhaal	5.5	5.3	5.3	5.4	5.3	1,054	0.417	13.59
60	Gaadhiffushi	Thaa	5.5	5.4	5.3	5.6	5.5	361	0.143	13.74
61	Biledhdhoo	Faafu	5.5	5.1	5.2	5.3	5.3	898	0.355	14.09
62	Finey	Haa Dhaal	5.4	5.2	5.2	5.4	5.4	367	0.145	14.24
63	Hulhudheli	Dhaal	5.4	5.1	5.1	5.1	5.0	478	0.189	14.00
64	Hondaiddhoo	Haa Dhaal	5.4	5.3	5.3	5.5	5.5	135	0.053	14.05
65	Kurendhoo	Lhaviyani	5.4	5.1	5.1	5.2	5.1	1,112	0.439	14.49
66	Goidhoo	Shaviyani	5.4	4.9	4.9	4.9	4.9	465	0.184	14.68
67	Mundhoo	Laamu	5.3	5.4	5.3	5.4	5.3	580	0.229	14.91
68	Vaadhoo	Raa	5.3	5.2	5.1	5.2	5.2	349	0.138	15.04
69	Maakurathu	Raa	5.3	5.3	5.2	5.4	5.3	841	0.332	15.38
70	Maduvvari	Raa	5.2	4.9	4.9	5.0	4.9	1,543	0.610	15.99
71	Magoodhoo	Noonu	5.2	5.2	5.2	5.4	5.3	261	0.103	16.09
72	Rasmaadhoo	Raa	5.2	5.2	5.2	5.3	5.2	559	0.221	16.31
73	Madifushi	Meemu	5.2	5.1	5.0	5.1	5.0	179	0.071	16.38

Table 11.6 Ranking of the 90 Most Vulnerable Islands according to the Composite Human Vulnerability Index on a 0-10 scale (Continued)

HVI (FEMALE AND MALE PRIORITY WEIGHTS)										
		HVI (EQUAL WEIGHTS)		All Islands		Most Vulnerable Islands		pop size	pop %	cum pop%
				Females	Males	Females	Males			
74	Feeali	Faafu	5.2	4.9	4.9	4.9	4.8	736	0.291	16.67
75	Kendhoo	Baa	5.2	4.9	4.9	4.9	4.9	794	0.314	16.99
76	Maafushi	Kaafu	5.2	5.0	5.0	5.0	5.0	953	0.377	17.36
77	Maathodaa	Gaaf Dhaal	5.2	5.3	5.2	5.5	5.4	454	0.179	17.54
78	Ribudhoo	Dhaal	5.2	5.0	4.9	4.9	4.9	549	0.217	17.76
79	Raimandhoo	Meemu	5.2	5.1	5.0	5.1	5.0	200	0.079	17.84
80	Dharaboodhoo	Faafu	5.2	5.1	5.0	5.1	5.0	285	0.113	17.95
81	Filladhoo	Haa Alif	5.2	5.1	5.0	5.2	5.1	708	0.280	18.23
82	Faridhoo	Haa Dhaal	5.1	5.1	5.0	5.1	5.1	218	0.086	18.32
83	Maavaidhoo	Haa Dhaal	5.1	5.0	4.9	5.1	5.0	352	0.139	18.46
84	Vandhoo	Thaa	5.1	5.2	5.0	5.3	5.1	291	0.115	18.57
85	Dhabidhoo	Laamu	5.1	4.7	4.8	4.8	4.8	611	0.241	18.81
86	Innamaadhoo	Raa	5.0	5.0	5.0	5.0	5.0	513	0.203	19.02
87	Feevah	Shaviyani	5.0	4.8	4.8	4.8	4.8	719	0.284	19.30
88	Hoadedhdhoo	Gaaf Dhaal	5.0	4.9	4.8	5.0	4.9	638	0.252	19.55
89	Dhidhdhoo	Alif Dhekunu Buri	5.0	5.0	5.0	5.0	5.0	125	0.049	19.60
90	Rathafandhoo	Gaaf Dhaal	5.0	4.9	4.9	5.0	5.0	623	0.246	19.85

Part III

Main Conclusions and Policy Implications

Chapter 12: Main Conclusions and Policy Implications

12.1 Introduction

The findings and results of the Vulnerability and Poverty Survey confirm the rapid progress recorded by Maldives in many fields, with progress finding clear expression in many of the indicators traditionally used to measure social and economic development. This progress is particularly in evidence in such fields as housing, electricity, education and, more generally, the provision of physical and social infrastructure.

Despite this progress, the survey has identified several areas that provide general cause for concern, suggesting that figures presently available from other sources may underestimate the severity and seriousness of some problems. In some areas also, positive developments are mixed with less positive ones, with this combination posing a challenge to future development strategy and planning.

The main findings of the Vulnerability and Poverty Assessment are summarised below under the following main headings:

- Income and poverty
- Disparities and inequalities
- Education and health
- Life expectancy
- Food security and nutrition
- Physical infrastructure
- Transport and communications
- Employment
- Gender
- Environment

12.2. Summary of Main Findings

12.2.1 Incomes and Poverty

The survey confirms that average per capita incomes in Maldives are low and that there is considerable evidence of income poverty. The average household income, corrected for home-produced consumption

and payment of housing rent, was estimated at Rf 35 per day for the population of Male' and Rf 20 per day for the atoll population.

An estimated 30,000 persons, equivalent to 15 percent of the population, were estimated to live on incomes of Rf 7.5 per day or less, which is well below the World Bank's definition of poverty. Of these, 4,500 are to be found on Male', followed by Hinnavaru in Lhaviyani, with 1,750 persons, or one-half of the island's population. No other island is estimated to have more than 1,000 persons who exist on incomes of less than Rf 7.5 per day.

The survey revealed that 25 percent of the poorest population is to be found on 19 islands that are spread throughout the Republic (six in Baa, two each in Lhaviyani, Thaa and Raa, and one each in Faafu, Noonu, Shaviyani and Gaaf Dhaal), and 50 percent of the poorest population on 50 islands. However, the results of the survey caution against the use of generalisations about 'poor' and 'rich' islands since it confirms that poor people can also often be found in islands with the highest average incomes, with Male' serving as a case in point.

Although average per capita incomes were generally low, there is ample evidence of a growth in household incomes. Almost one-half of the population reported an increase in incomes in the past five years, with only 15 percent reporting a decrease. Significantly, households reporting an increase were not confined to richer households but also included the poorest ones in atolls with the lowest average household incomes.

12.2.2 Disparities and Inequalities

The main disparities and inequalities in Maldives are recognised as existing between Male' and the atolls in relation to incomes and access to social and physical infrastructure.

Income disparities between Male' and the atolls were found to be in the order of 2:1, with the ratio in-

creasing to 3:1 in the case of Male' and the atoll with the lowest average per capita income. These income disparities, depressed by the generally low level of incomes, are considerably lower than many previous estimates, and could be regarded as one of the most significant findings emerging from the survey.

Hardly less significant are the survey's findings on income inequality within Male' and the atolls. The survey revealed that the differences in income inequality in Male' strongly approximate those found in the atolls, reflected in overlapping Lorenz curves. The survey could find no evidence of worsening income inequalities on Male'. On the contrary, comparison of survey findings with those reported in earlier Household Income and Expenditure Surveys, especially the 1993 HIES, suggests that there has been an improvement in the Gini coefficient for the capital island.

Inequalities between Male' and the atolls in access to social and physical infrastructure and services were found to be far more pronounced, averaging 4:1 on a composite index that took account of 12 different sets of indicators. These inequalities also found expression in access to consumer goods. Overall, 87 percent of the atoll population does not have access to a refrigerator, 83 percent to a washing machine, 70 percent to a sewing machine and 57 percent to a fan, compared with figures for Male' of 49 percent, 58 percent, 32 percent and 37 percent respectively.

The survey confirms that vulnerability is highest in the atolls and that it tends to be highest of all in the smallest islands. The composite Human Vulnerability Index, on a 0-12 scale, was found to vary from a high of 2.0 in the case of Male' to 7.0 in the case of Faafu, indicating that the population of some atolls can be considered up to 3.5 times more vulnerable than Male's population, a difference that is nearly twice the one estimated for incomes. Overall, 10 percent of the nation's most vulnerable population was found on 45 islands, the majority with relatively small populations, and 20 percent on 90 islands. Islands that appear particularly disadvantaged, defined as those that combine high vulnerability with declining incomes, include Kanduhulhudhoo (pop. 527) in Gaaf Alif, Nadallaa (735) and Fares (480) in Gaaf

Dhaal, Hithadhoo (751) in Laamu, and Kuburudhoo (292) in Haa Dhaal.

12.2.3 Education and Health

The survey confirms the rapid progress recorded by Maldives in the provision of social infrastructure and services, although significant disparities in access to them were found to exist between Male' and the atolls. In the field of education, the stage has been reached where even the smallest and most remote islands have been provided with a school which, in many respects, can be considered a remarkable achievement. The survey also confirmed the existence of high school enrolment rates, with rates for girls approximating those for boys, indicating that education is not differentiated along gender lines. The commitment to basic education finds expression in very high adult literacy rates, averaging 98 percent of the adult population, with virtually no difference between rates for Male' and the atolls and between men and women.

The main educational challenges identified by the survey are pre-eminently qualitative in nature. Some schools were found, for example, to be inadequately equipped. An estimated 10 percent of the atoll population is to be found on islands with schools that are still without drinking water and toilet facilities.

Similarly in the field of health, the survey confirms the progress made by Maldives in the development of its four-tiered system of health care. However, it indicates that there is still some way to go before standards set for the sector are fully met. An estimated 10 percent of the atoll population was found on islands without a trained Community Health Worker and 6 percent on islands without a trained midwife, with the percentage of the population without adequate access to health care increasing to up to 40 percent in the case of some atolls. Around 15 percent of the atoll population reportedly have to travel more than two hours by dhoni to reach the nearest health centre or hospital. Of particular concern is the percentage of the atoll population that experiences difficulties in obtaining essential medicines. Around 30 percent of the atoll population reported such difficulties, with the figure rising to 50

percent in the case of a few atolls.

12.2.4 Life Expectancy

Disaggregated estimates of life expectancy were required for the calculation of a number of indices. The basis for the calculation were estimates of infant mortality, figures for which were obtained by asking mothers about the number of children they had borne and who may have died. Analysis of the data obtained resulted in estimates for Infant Mortality Rates that are considerably higher than the officially accepted figures which are based on the vital registration system.

The IMR for Maldives was estimated at 62 per thousand and 69 per thousand for the atolls, although in two atolls rates in excess of 100 per thousand were observed. In all cases, the rates observed for boys were higher than those for girls. These higher estimates resulted in life expectancy estimates that were also considerably below the officially accepted figures.

Overall life expectancy was estimated for Maldives at 62 years and 60 years for the atolls, with individual atolls falling in the broad range of 52 years (Raa) and 69 years (Seenu). Life expectancy for females was found to be some three years higher than for men, a difference that is somewhat lower than the one recorded in many other countries.

12.2.5 Food Security and Nutrition

The survey found little evidence of acute food insecurity. Only 7 percent of the atoll population reported food shortages in the previous year. However, the periods during which food insecurity was experienced were generally short and periods of shortage were infrequent. The main reason given for food insecurity was income-related, being the inability to purchase the food required to satisfy household needs.

While food insecurity cannot be considered a major problem, nutrition emerges from the survey as one of the greatest causes for concern. It revealed that 36 percent of children in the age group 1-5 years can be

considered as suffering from stunting and 20 percent from wasting. Overall, evidence of stunting was found among 43 percent of the atolls' children. The incidence of stunting was found to be far higher among girls than boys. Overall, stunting among girls was estimated at 49 percent compared with 37 percent for boys, with the incidence of stunting among girls reaching more than 70 percent in a number of atolls. Although the survey's database cannot confirm it, results suggest that there may be individual islands in which all children suffer from stunting.

12.2.6 Physical Infrastructure

The survey confirms the considerable progress recorded by Maldives in the provision of the physical infrastructure required to promote standards of living and welfare as well as economic activity. Since much of the progress must be attributed to the efforts of individuals and households, it provides evidence of a general improvement in overall levels of prosperity.

The survey confirms, for example, the notable improvements that have been recorded in the quality of the national housing stock and in enlarging access to electricity. Only 3 percent of dwellings in Maldives was estimated to have thatched walls, compared with 10 percent in 1990, and only 2 percent were observed as having both a thatched wall and sand floor. With respect to electricity, 93 percent of the population today enjoys access to electricity compared with around 66 percent in 1990, and there are only 7 islands in the Republic that have no electricity at all. Although electricity is far more widely available, 28 percent of the atoll population reported that it has electricity for 6 hours or less per day, indicating the importance of continued progress in this area.

Access to drinking water has also improved considerably. Rainwater is today the main source of drinking water in all atolls and, overall, 88 percent of the atoll population has access to rainwater for drinking. However, there are both quantitative and qualitative problems that must still be addressed. Insufficiency of supplies was reported by one-half of the atoll population while the main qualitative problem is the widespread use of drinking water in

untreated form, which may constitute a health hazard in cases where rainwater tanks are old or poorly maintained. Overall, 70 percent of the atoll population consumes drinking water in the form of rainwater or well-water in untreated form, with the figure rising to 90 percent in the case of some atolls.

12.2.7 Transport and Communication

Despite the progress recorded in the development of telecommunications, the survey revealed that many island populations continue to live in relative isolation. More than one-third of the atoll population was found to live on islands that are without a public telephone and 12 percent of the atoll population is required to travel for more than two hours to reach one, with the figure rising to around 75 percent or more in the case of five atolls. Additional indicators of the relative isolation of many island communities are provided by the survey's estimate that some 60 percent of the atoll population seldom or ever see a newspaper and that more than one-half of all atoll households reportedly have no access to a radio.

Challenges in the area of communications are paralleled by those existing in the field of transport. One in five of the atoll population reported that transport to the atoll capital was problematic, with opportunities for travel restricted to two or three dhoni sailings per month. Similarly, one-third of the atoll population reported that opportunities to travel to Male' were confined to one or two sailings per week, with the figure rising to more than one-half of the population in the cases of islands in Noonu, Dhaal and Gaaf Dhaal.

In some islands and atolls the number of dhonis available appeared insufficient to meet the needs for travel. On average, one in four of the atoll population reported that they have to share a dhoni with more than 100 other inhabitants, with the percentage rising to 100 percent in the case of Gnaviyani.

The survey also confirmed that the accessibility of islands remains a major problem. More than one-half of all islands reported difficulties in access, with the percentage increasing to 90 percent in the case of islands in some atolls. The main reasons given

were problems with the harbour, the absence of a jetty and, to a far lesser extent, problems in penetrating the reef.

12.2.8 Employment

The definition of employment used by the study differed in several important respects from the one traditionally used to measure unemployment. On the basis of the definition used, 10 percent of the labour force could be classified as available for work but unable to find it, suggesting that there is a relatively large potential domestic labour force. Because most males have already secured jobs, it is mainly women who want a job. The number of persons in search of appropriate employment was found to be higher in the atolls (12 percent) than in Male' (6 percent), although there are atolls where the figure reached 23 percent of the labour force.

Overall, one-third of all working persons could be classified as underemployed, with the figure ranging from a low of 19 percent in the case of Dhaal to a high of 55 percent in the case of Noonu. The high level of self-employment in many atolls appears to confirm the existence of low levels of economic activity.

12.2.9 Gender

The survey confirmed the generally positive situation of women in Maldives. Education for girls is not differentiated along gender lines, with girls enjoying the same access to education as boys, reflected in broadly equal enrolment rates at all levels for both sexes. The survey confirmed that there are few differences between men and women either in adult literacy rates or levels of educational attainment up to grade 5. However, with regard to nutrition, malnutrition rates among children between one and five years of age were generally higher for girls than for boys.

Approximately one in three households was found to be headed by a woman, not necessarily as a consequence of divorce, desertion or the death of the husband but also because women desire to head and to be regarded as the head of the household. The most

common hardships encountered by women who head households were found to be financial difficulties, meeting child-rearing obligations, and fulfilling roles traditionally played by husbands and fathers. Relatively large numbers of women, especially in the atolls, are willing to work and in search of productive employment.

Significantly, no notable differences were observed among the development priorities of men and women, with both regarding health and education as the most important priority. The survey results confirmed that women in Maldives can be considered as among the most emancipated in the Islamic world and in the South Asian region. Their position can be strengthened still further by more concerted efforts to create productive employment, especially in the atolls.

12.2.10 Environment

The survey examined five factors that can contribute to environmental degradation: beach erosion, high population density; deforestation caused mainly by the use of fuelwood for cooking; solid waste disposal, and sanitation. For some of these factors, recent years have witnessed a sharp improvement in the situation. This is particularly pronounced in the use of fuelwood for cooking. An estimated two-thirds of the atoll population were estimated to make use of firewood as the principal fuel, compared with 94 percent in 1990, although there are still atolls (Haa Dhaal, Faafu and Gnaviyani), where almost all cooking is still done on open stoves requiring timber. The number of atoll households making use of kerosene increased from 6 percent in 1990, to 23 percent in 1995, to reach around 40 percent now.

Similarly in sanitation, only 22 percent of the atoll population has no access to toilet facilities, which is considerably lower than the 60 percent recorded in 1990 and even the 37 percent in 1995. However, many of the toilet facilities in use, including the gifili (used by 25 percent of the atoll population), leach wastes into the groundwater which, from environmental and health perspectives, poses hazards, especially on the more densely populated islands. Overall, one in four of the atoll population

was estimated to live in high-density conditions, defined as more than 50 persons per hectare.

With respect to waste disposal, one in five of the atoll population was to be found on islands that have no demarcated areas in which to dispose of garbage, with wastes either dumped on the beach or buried in the compound. This practice was observed to be particularly pronounced in Lhaviyani, Laamu and Gaaf Dhaal, where more than 50 percent of the population resort to it.

Beach erosion emerged from the survey as a particular cause for concern. More than 90 percent of the atoll population inhabits islands that suffer from beach erosion. However, it is not clear from the survey whether the beach erosion reported in the survey is the result of natural processes associated with monsoon patterns or whether the problem is becoming more pronounced and is taking on more serious forms that could, in the worst cases, pose a threat to resident populations.

12.3 Policy Implications

The results of the Vulnerability and Poverty Assessment should be able to support decision-making in a variety of ways. Findings and results should, for example, support:

- The preparation of national strategies that are able to address more effectively the disparities existing not only between Male' and the atolls but also between atolls and islands within individual atolls.
- The preparation of development strategies that, more than ever before, are anchored in the problems, priorities and needs of individual islands and communities.
- Improved targeting of atoll and island communities that can be shown to be most disadvantaged and vulnerable.
- The prioritisation of interventions based upon a comparative assessment of the problems and

needs of individual atolls and islands.

- The formulation and implementation of programmes for settlement consolidations.
- The preparations of baseline surveys and the development of monitoring systems capable of measuring the effectiveness and impacts of development interventions at the level of individual atolls and islands.

The survey has resulted in the calculation of a composite Human Vulnerability Index (HVI) based upon a wide range of indicators weighted to reflect priorities existing at the island level. The HVI was tailor-made for Maldives. It incorporates a far wider range of poverty and vulnerability indicators than the more general indices like the Human Development Index (HDI), the Human Poverty Index (HPI) or the Gender-related Development Index (GDI), all of which are based upon the methodologies advanced and advocated by UNDP. The HVI is a significantly improved tool, capable of responding more fully and effectively than many widely-used indices to differences in the distribution of poverty and vulnerability within a country.

12.4 Follow-Up

It was noted in Chapter 1 that the findings and results presented in this report are based upon an analysis of approximately 10 percent of the data that have become available through the survey. As a consequence, it has only been possible to tap a small part of the information that is available for analysis. A particularly rich source of data is provided by the household questionnaires that contained more than 150 questions as well as enumerated a wide variety of household characteristics.

There are two main priorities for the further analysis of the survey's large database.

First, priority should be accorded to the investigation of possible relationships existing between a wide range of variables. Such an investigation fell beyond the scope of this study, where the emphasis has necessarily been placed on the documentation of findings rather than on the multivariate analysis of data.

Analysis of the relationships existing between the variables and indicators used to compile the Human Vulnerability Index could be expected to result in the identification of significant correlations that may be pertinent to intervention strategies.

Second, no analysis has yet been made of the household questionnaire's many 'open-ended' questions. Many of these questions provide insights into the positions and opinions of households. They help to explain their perceptions of problems and the reasons underlying their priorities. The analysis of these questions could be expected to throw additional light on the behaviour of households at the atoll, island and individual levels that could similarly establish an improved basis for intervention strategies.

There is also a third priority. The database established as part of the Vulnerability and Poverty Survey is not the only one that exists in Maldives with information disaggregated at the atoll and island level. Other information systems are already in existence that deal with specific aspects of island life and infrastructure. An important task now is to bring the different databases together in ways that further enlarge their usefulness for purposes of analysis and prescription without losing the statistical integrity of the component parts. The most appropriate form of integration will be one that provides for the visual presentation of stored and analysed data. This calls for the development of an integrated Geographic Information System. The survey's large database should form one of its main building blocks.

12.5 Concluding Note

The Vulnerability and Poverty Survey is the most comprehensive survey of its kind ever undertaken in Maldives. The sample size and the attention given to data editing provide a database that is able to generate results with a very high level of statistical reliability.

The survey set out to neither confirm nor deny published data on poverty and vulnerability in Maldives. In some cases, the decision was deliberately taken to depart from the methodologies traditionally used

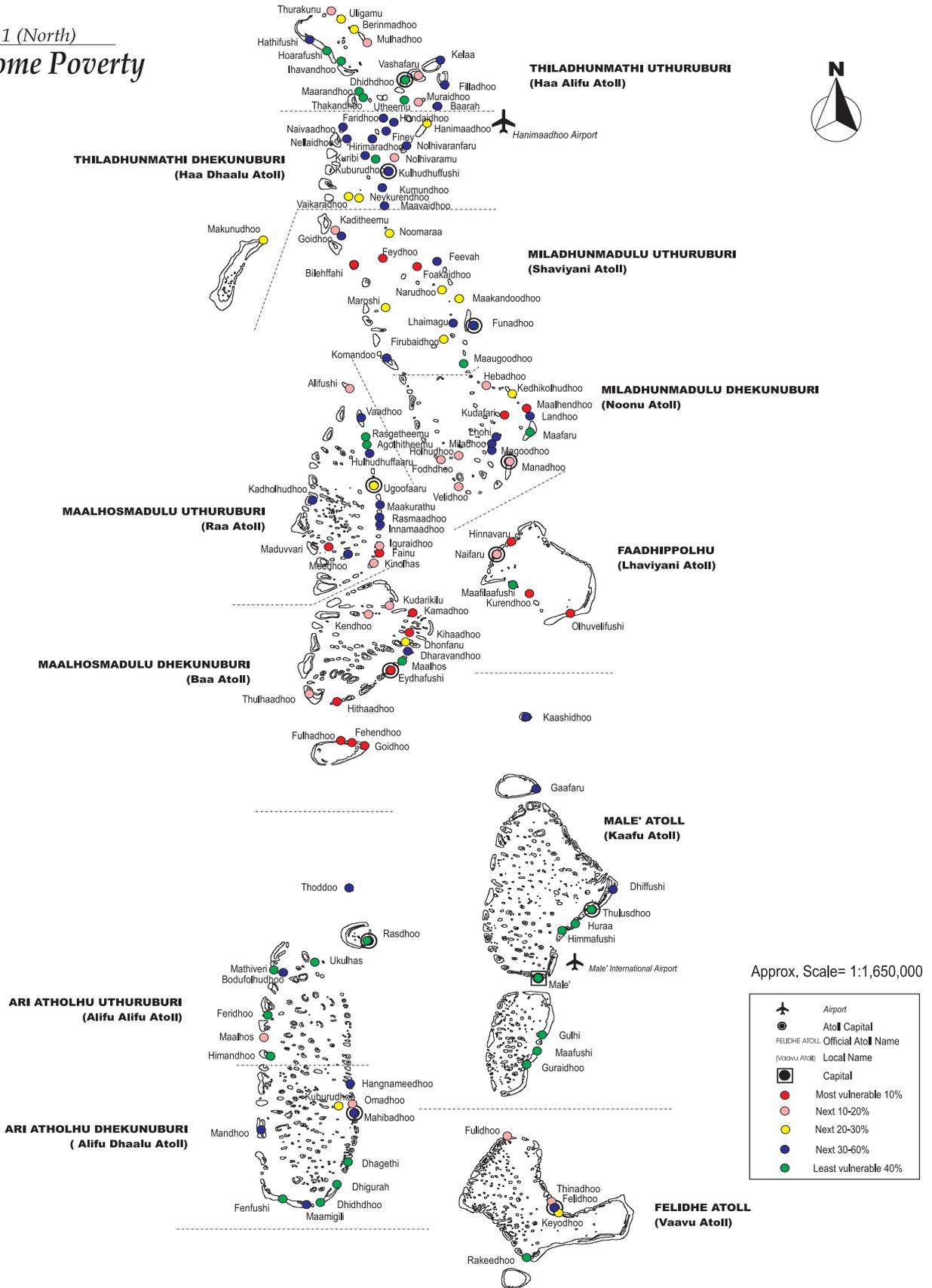
in Maldives in order to throw additional light on a number of issues that occupy a central place in development strategy. The application of a different or adapted methodology has in some areas given rise to results that, when viewed against published data, appear to challenge some interpretations of the nation's progress.

This is regarded as a positive feature of the assessment that has been undertaken. The review of the differences, where they exist, can be expected to contribute to the debate on development in Maldives and, eventually, to strategies that can further accelerate a process of social and economic transformation that is already well advanced.

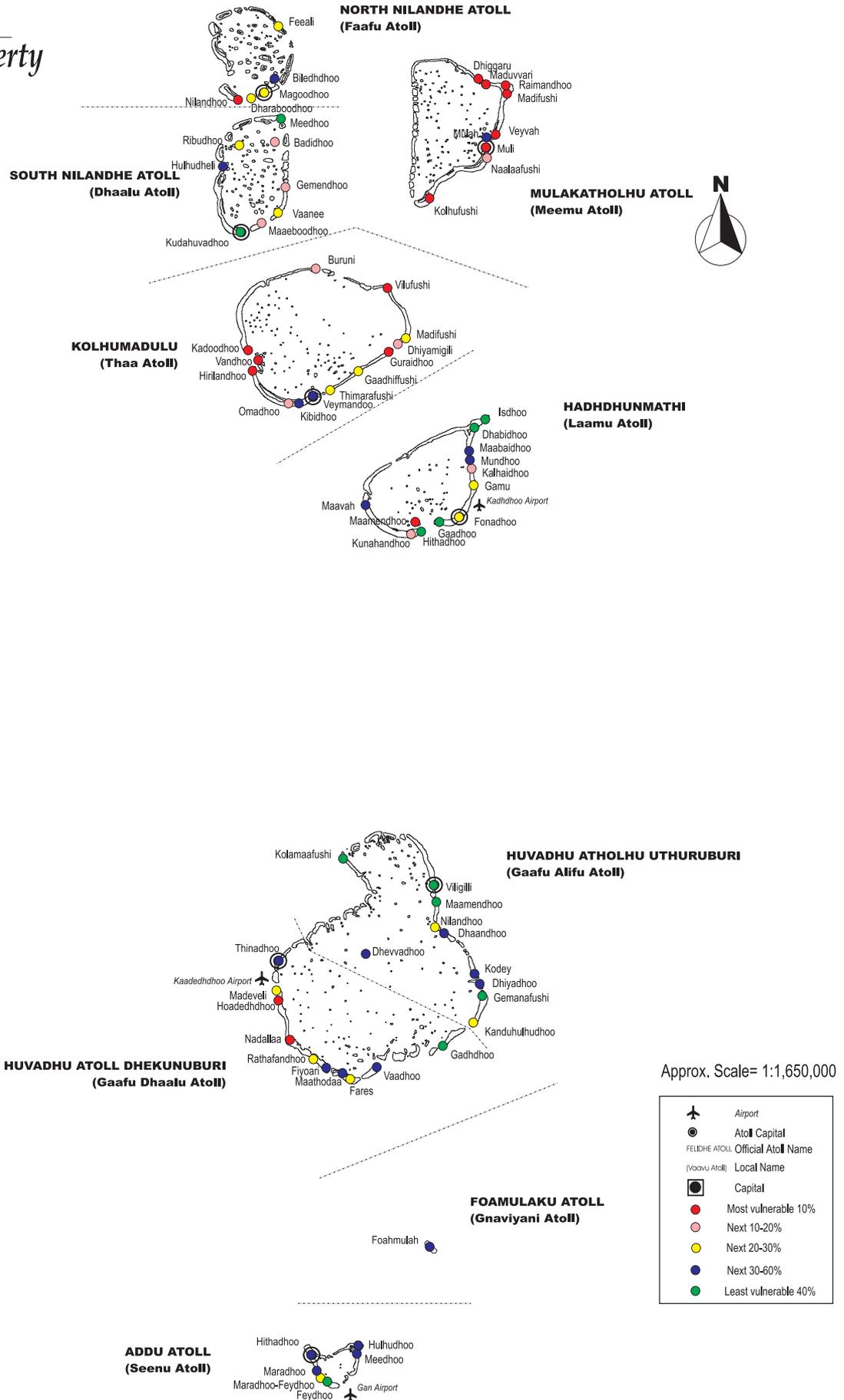
Part IV

Atlas of Vulnerability and Poverty in Maldives

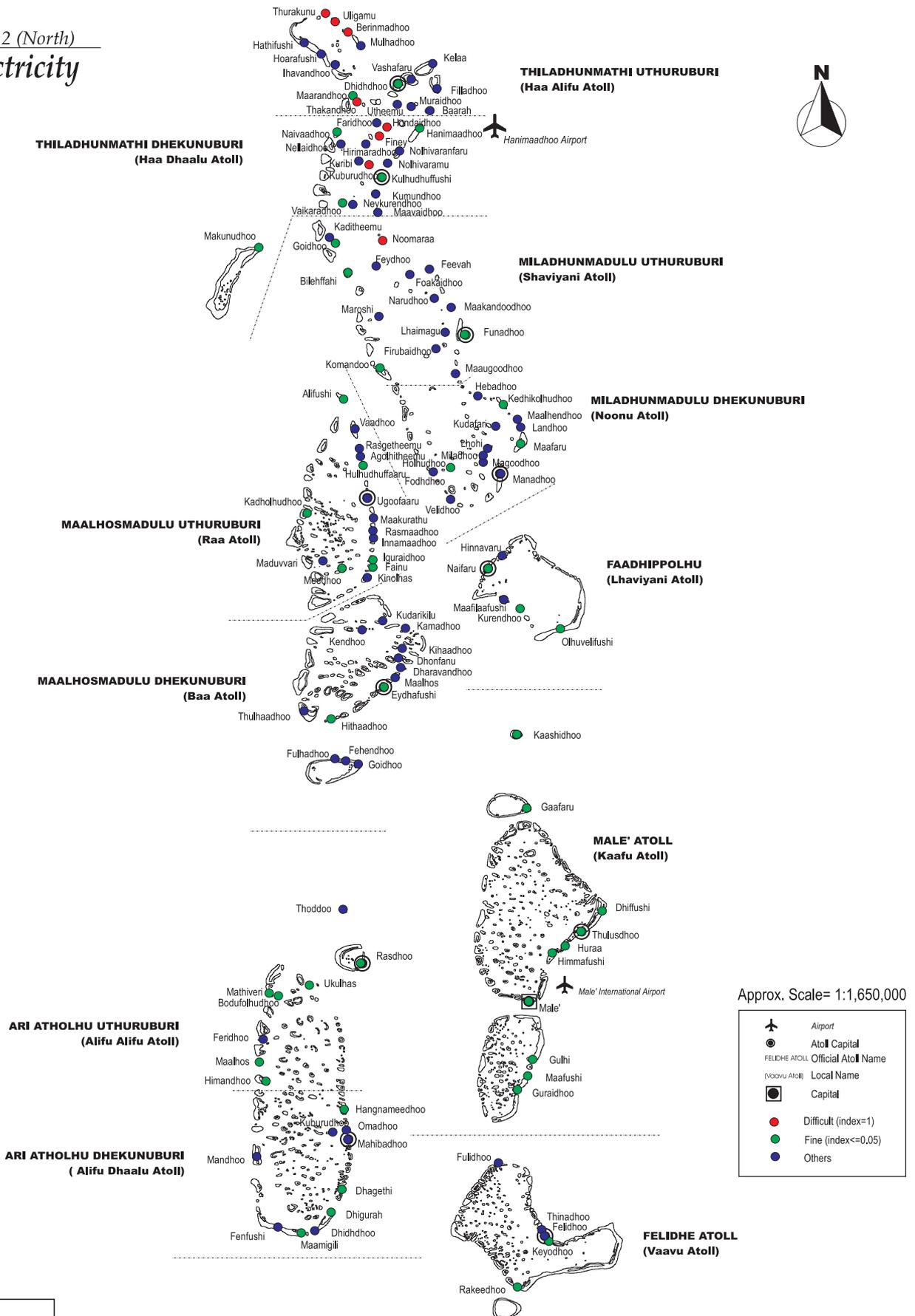
Map 1 (North)
Income Poverty



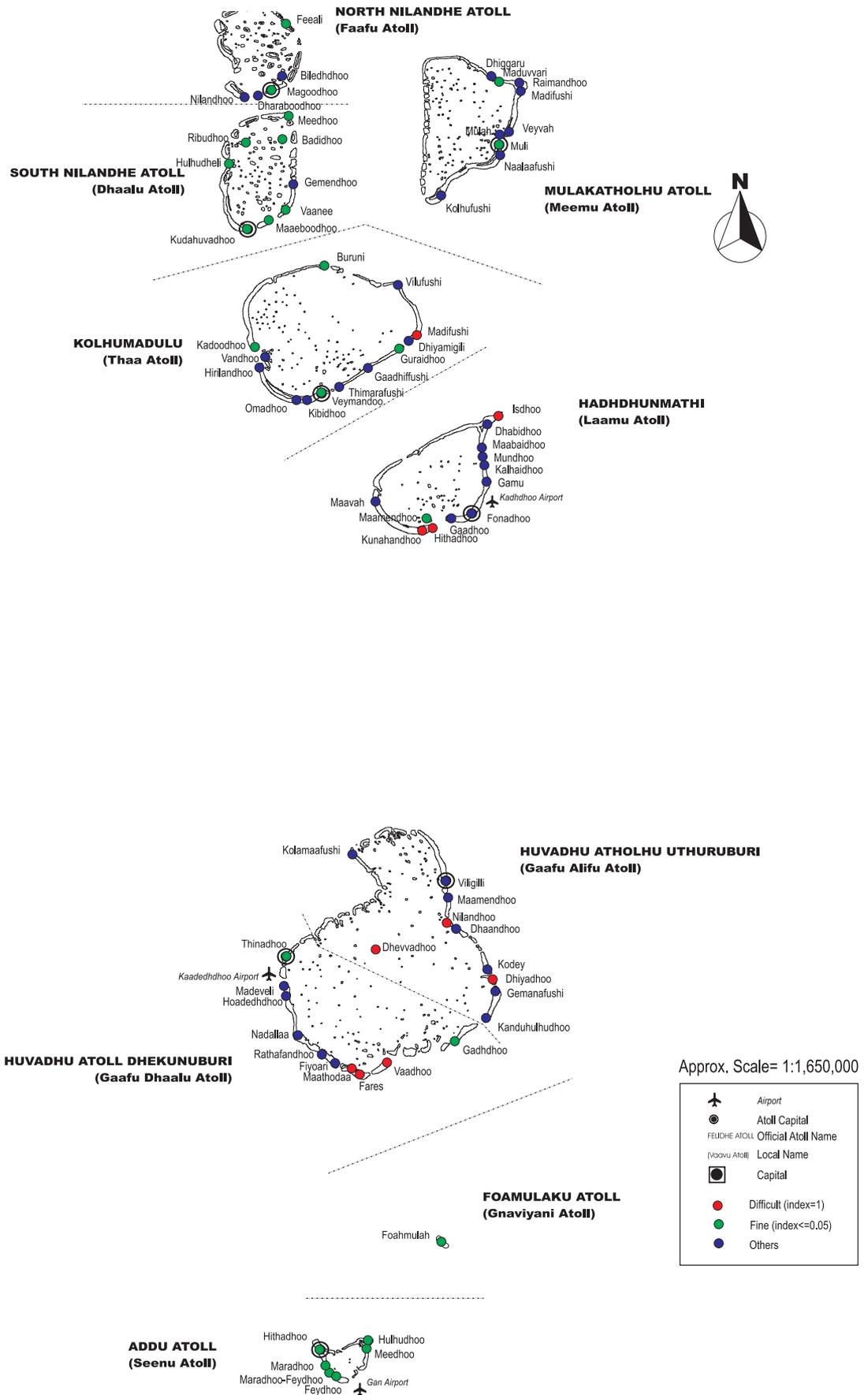
Map 1 (South)
Income Poverty



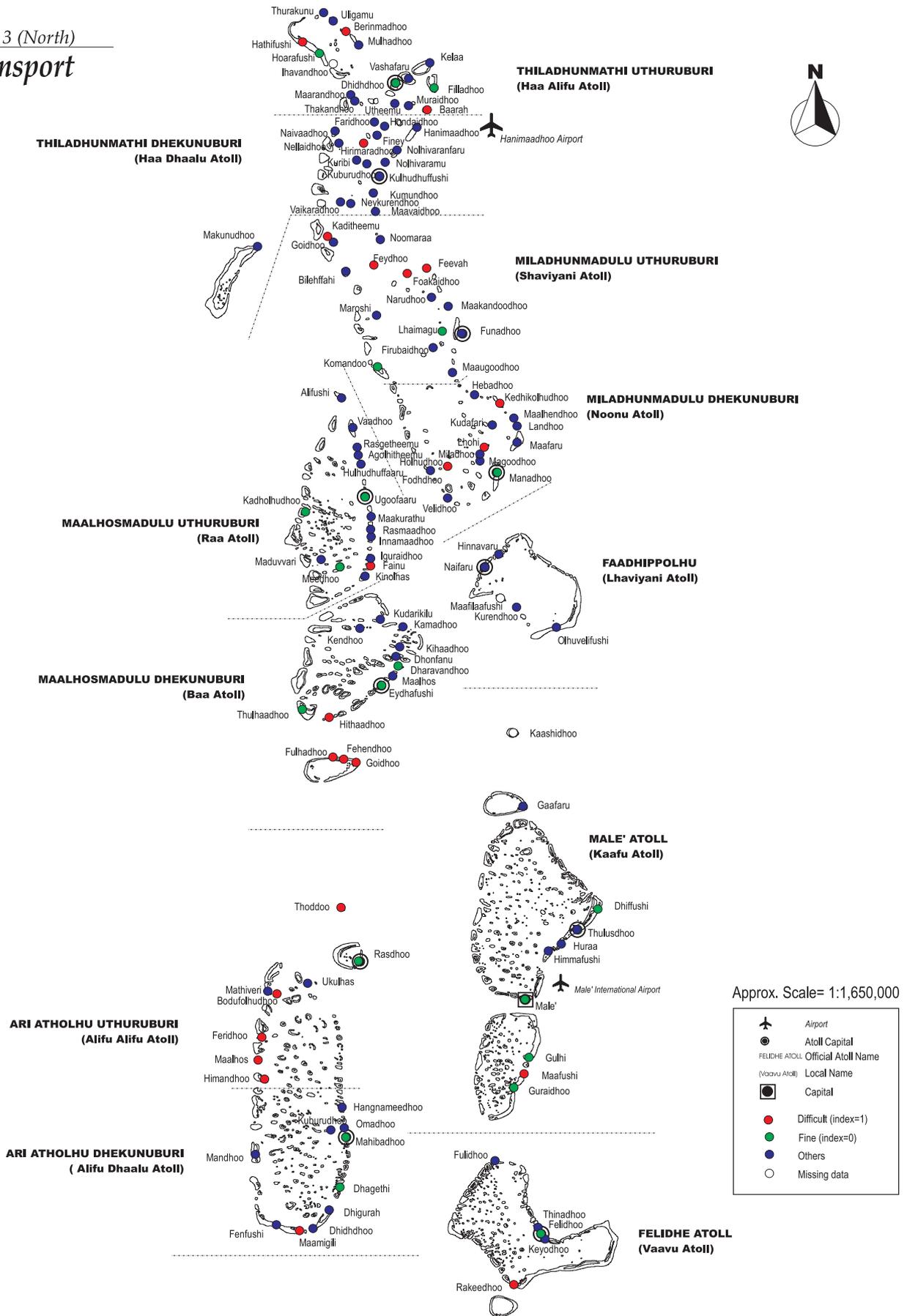
Map 2 (North)
Electricity



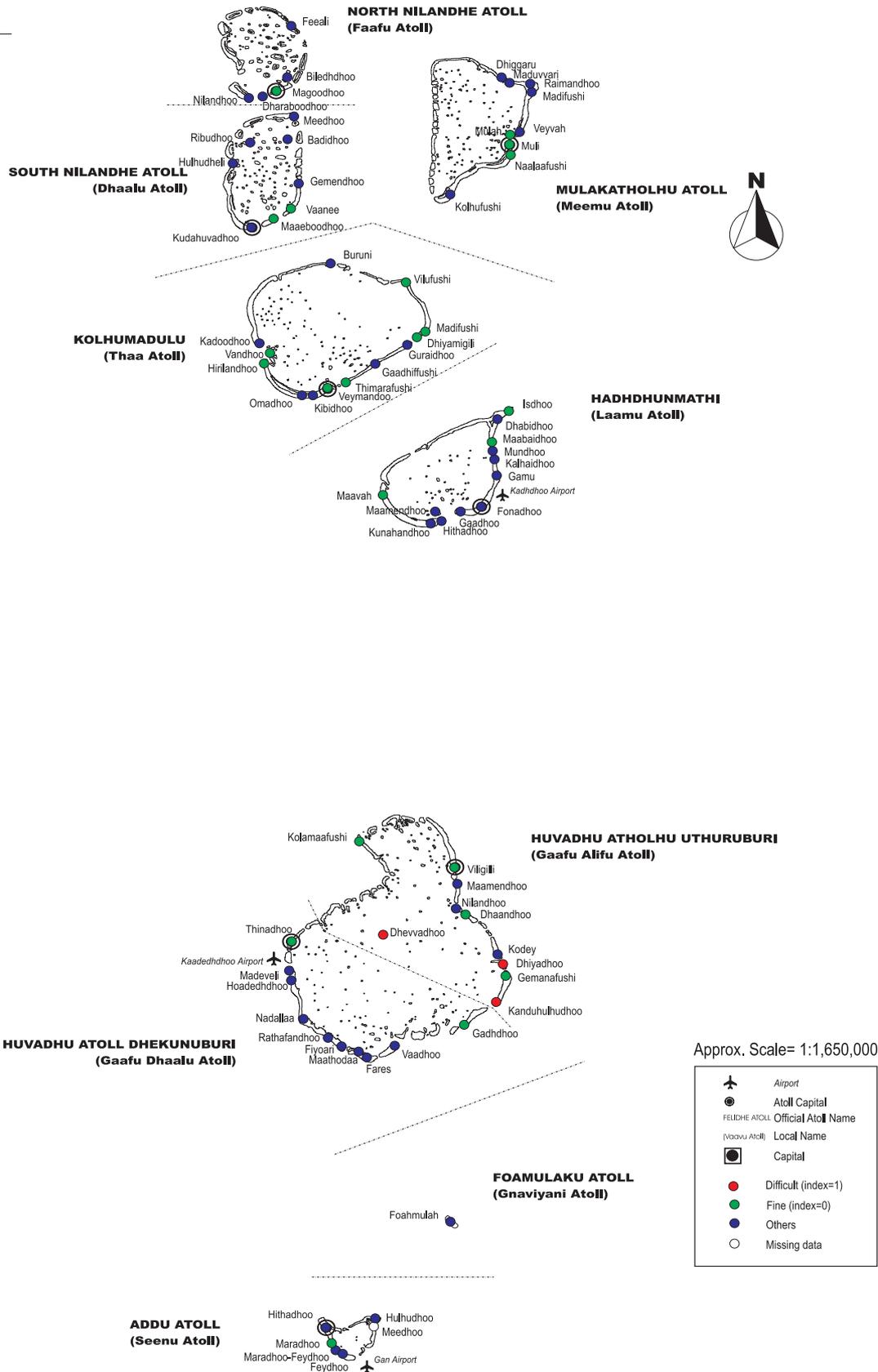
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Electricity



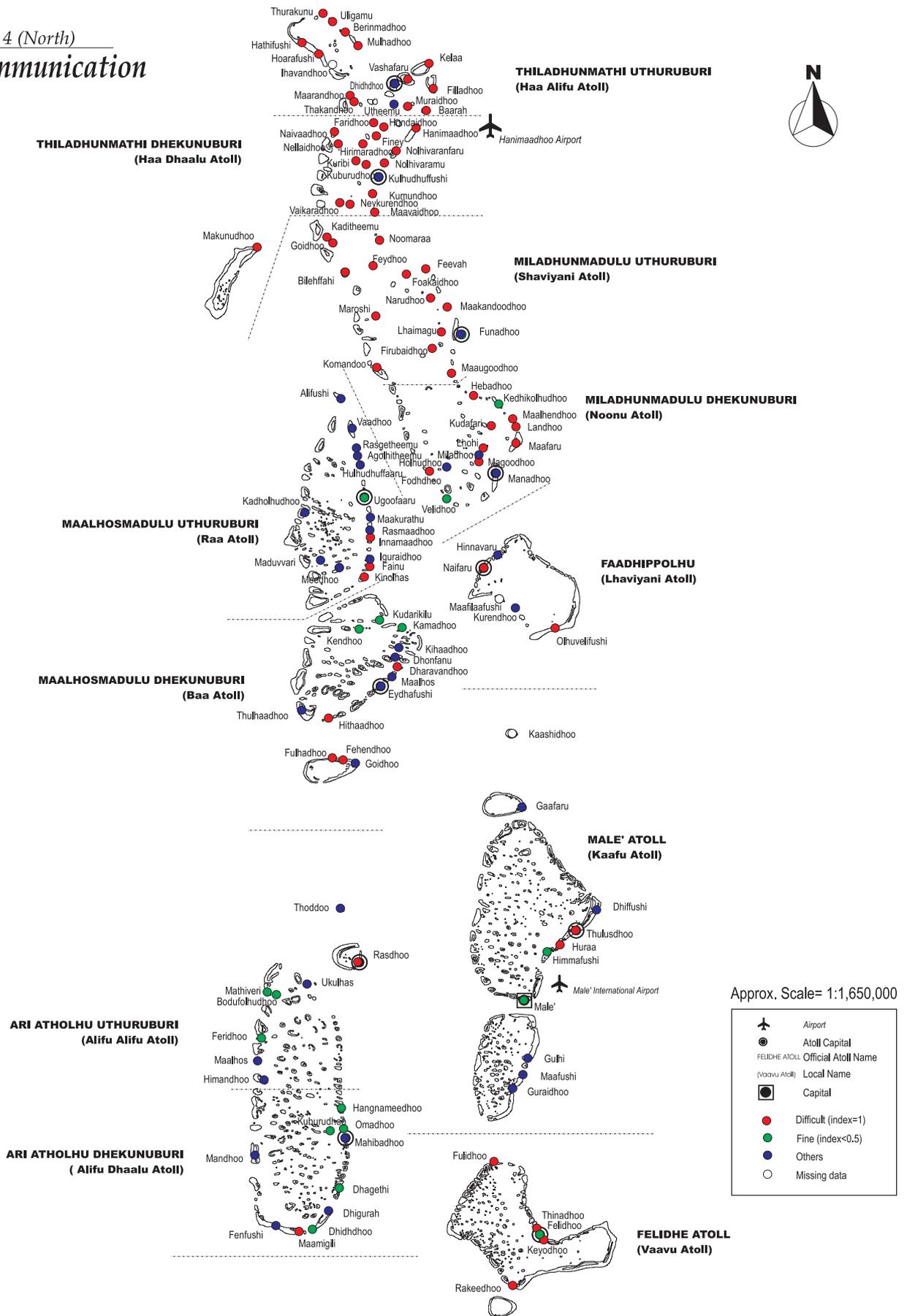
Map 3 (North)
Transport



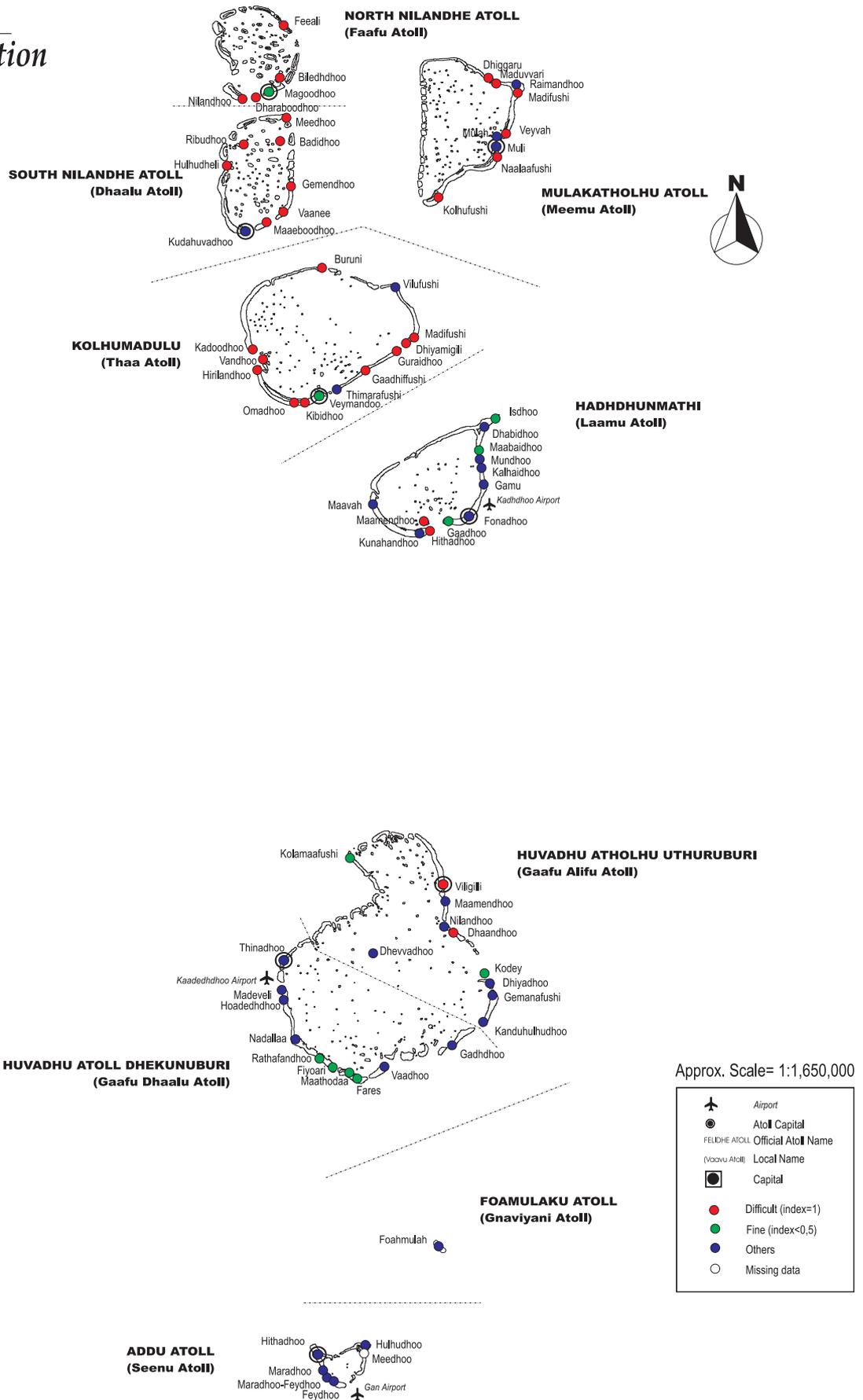
Map 3 (South)
Transport



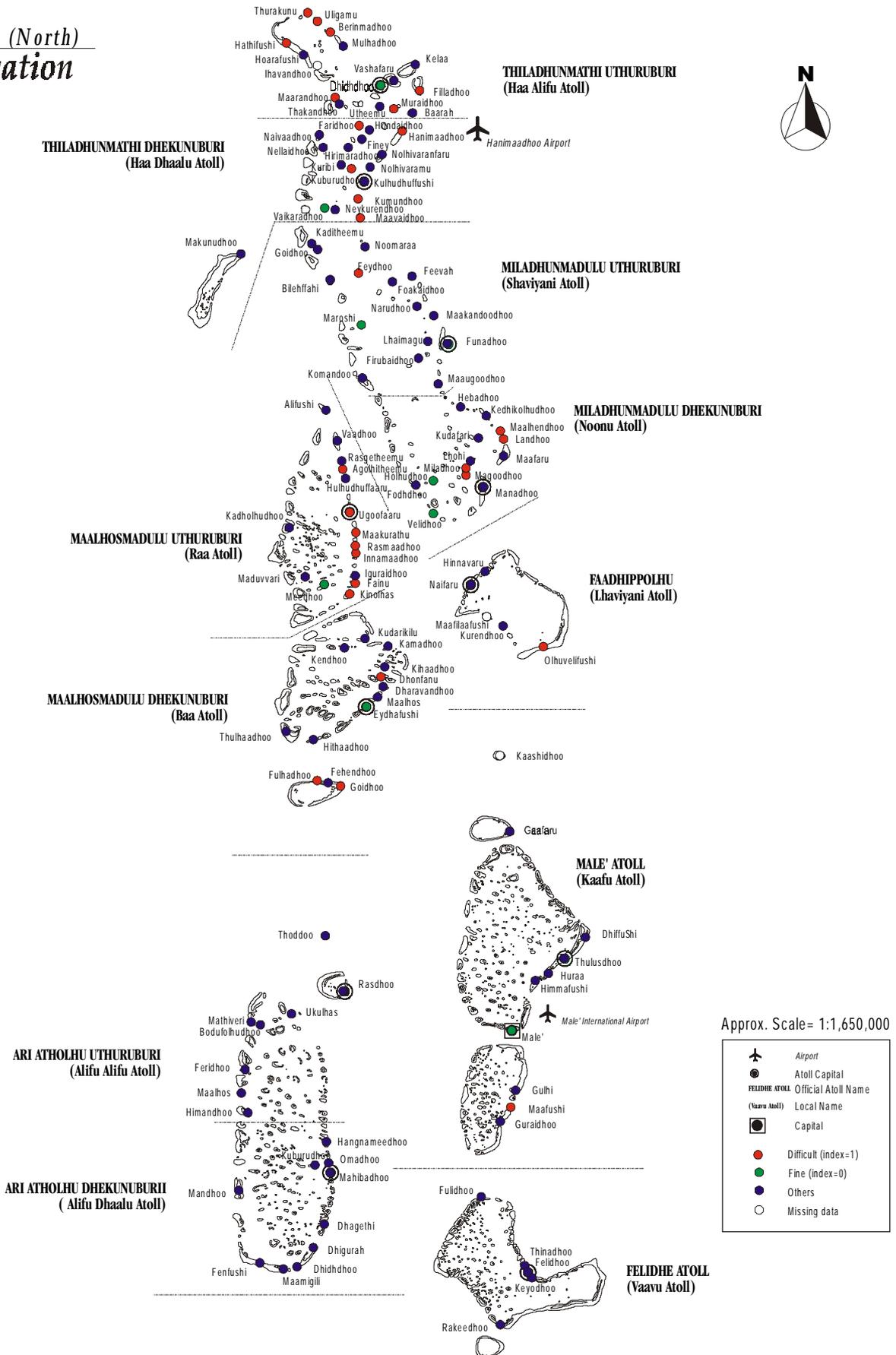
Map 4 (North)
Communication



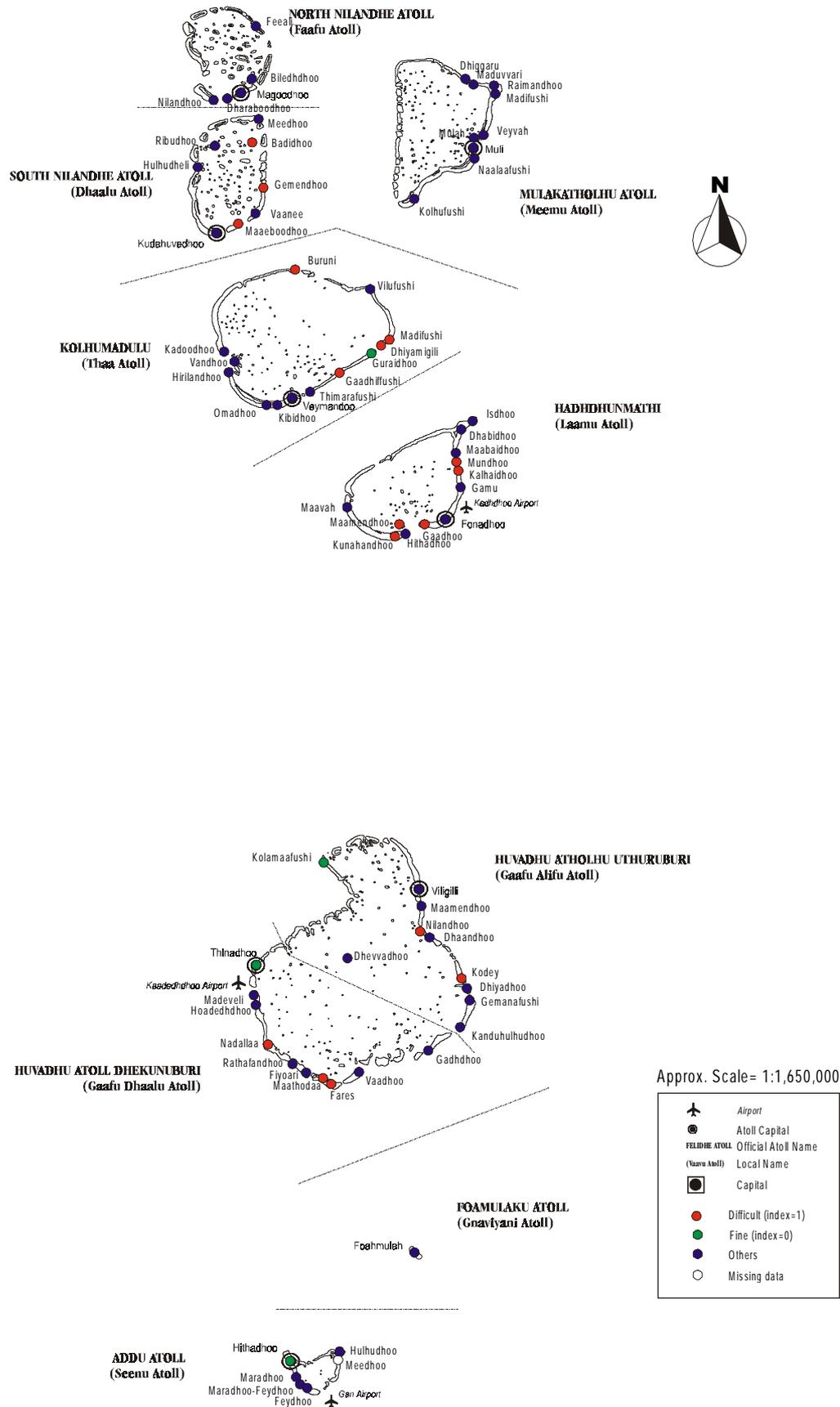
Map 4 (South)
Communication



Map 5 (North)
Education

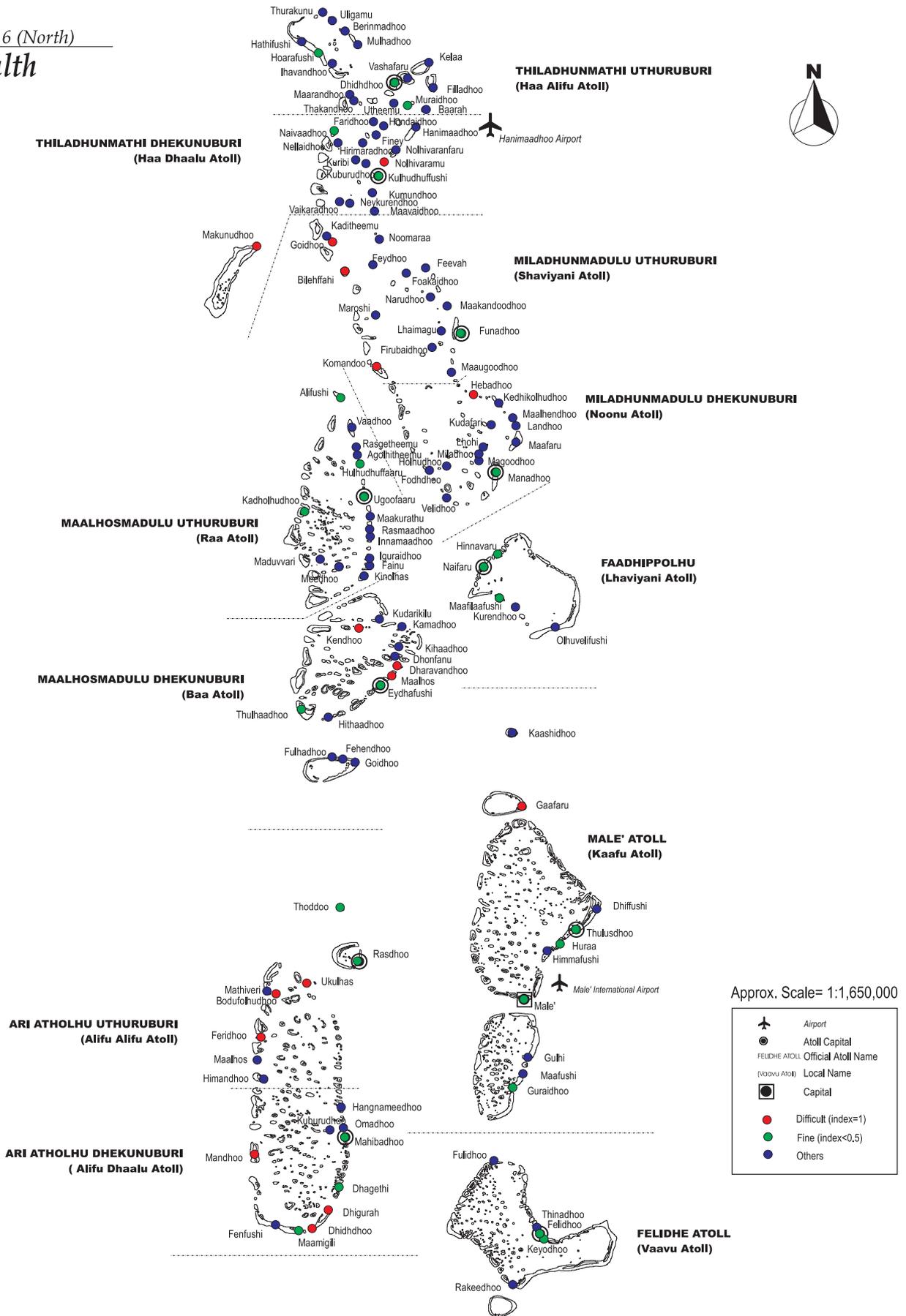


Map 5 (South)
Education

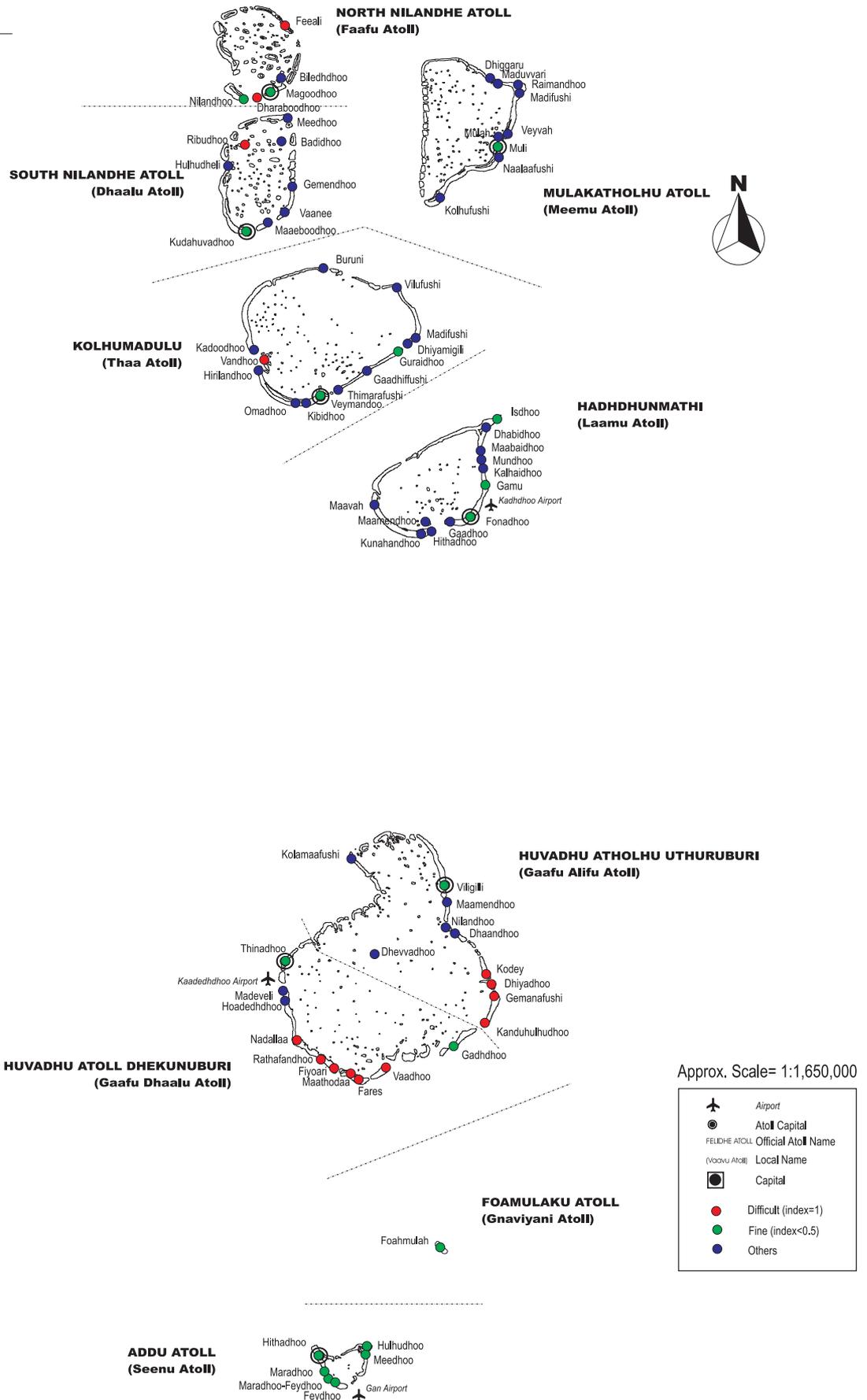


Map 6 (North)

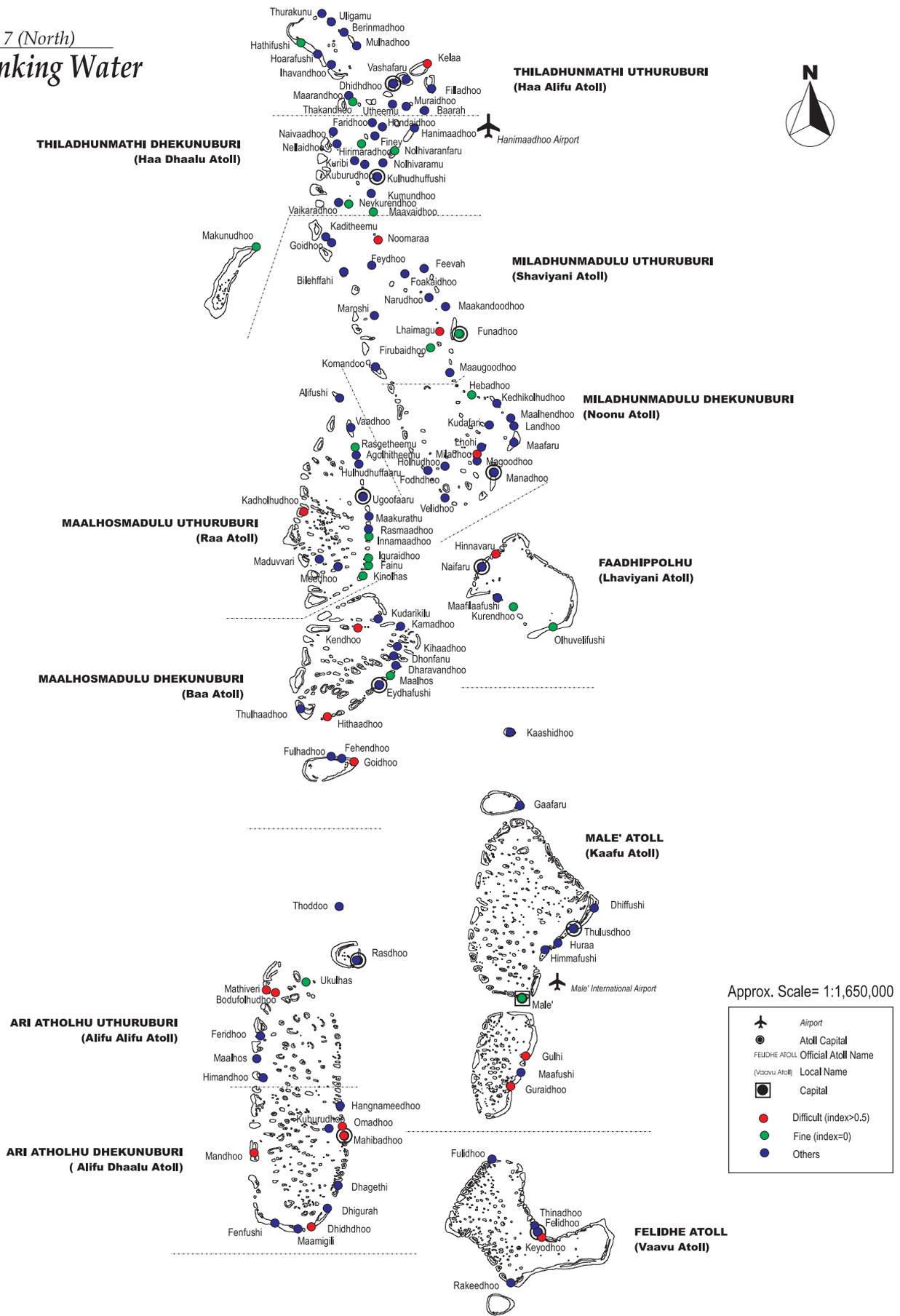
Health



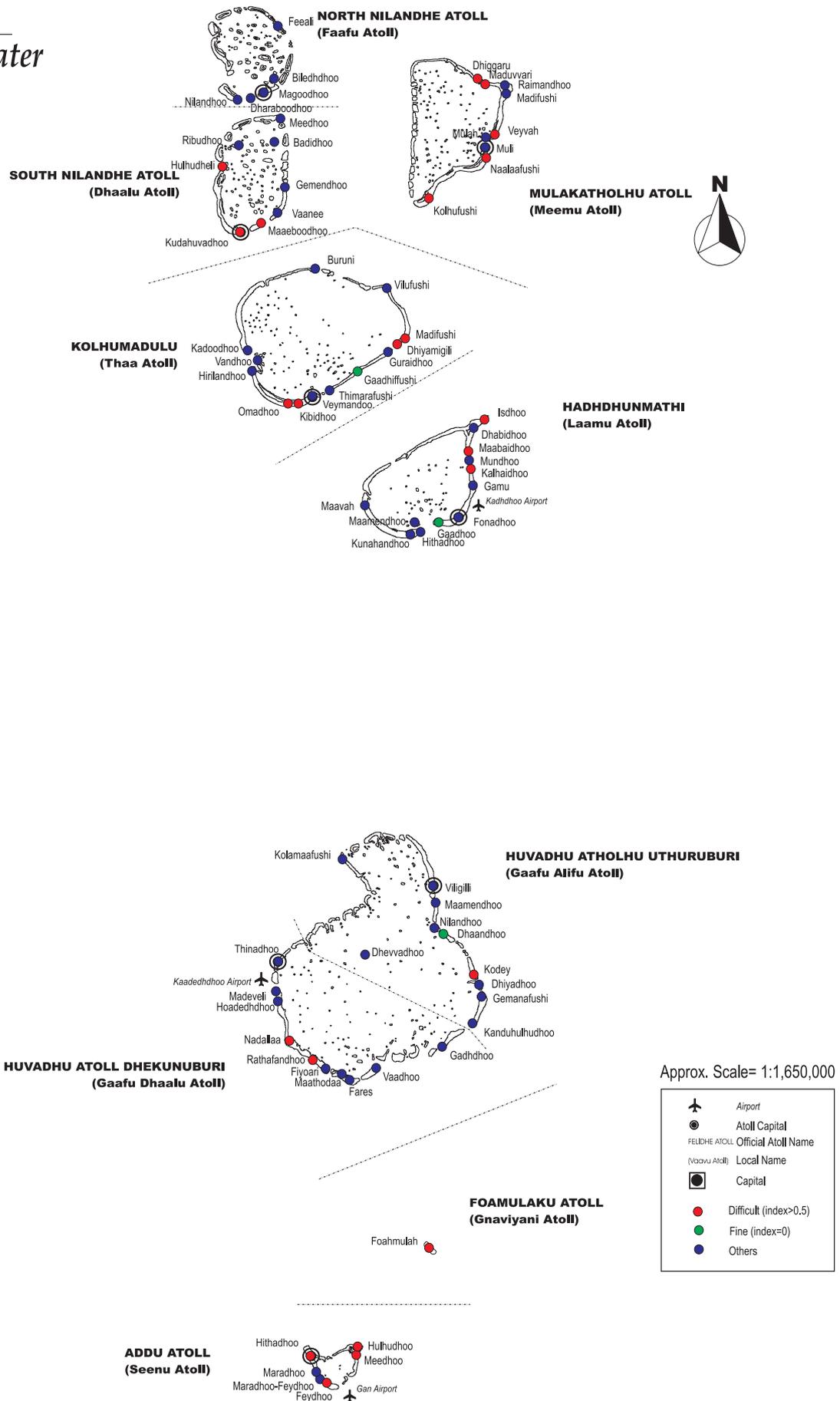
Map 6 (South)
Health



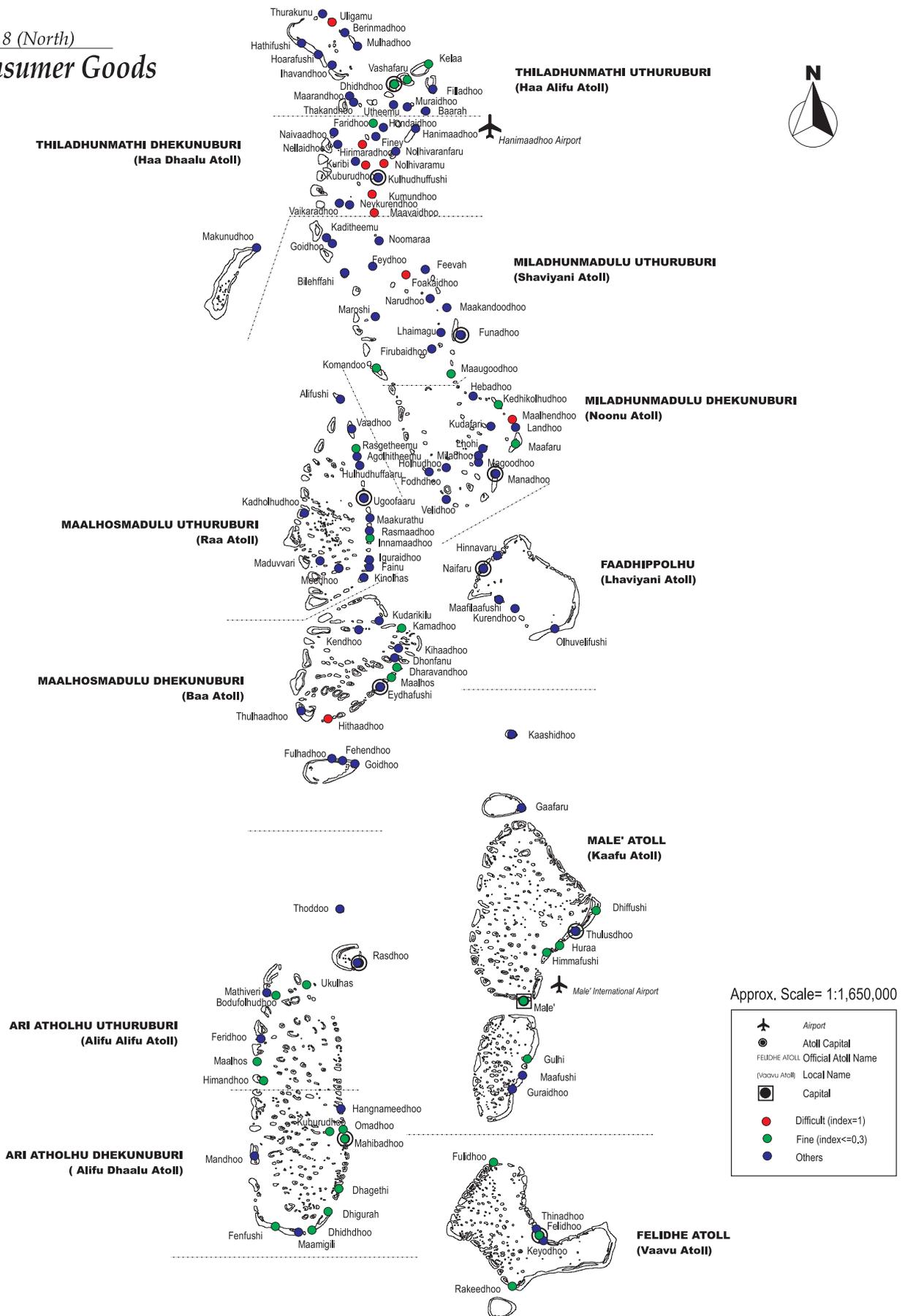
Map 7 (North)
Drinking Water



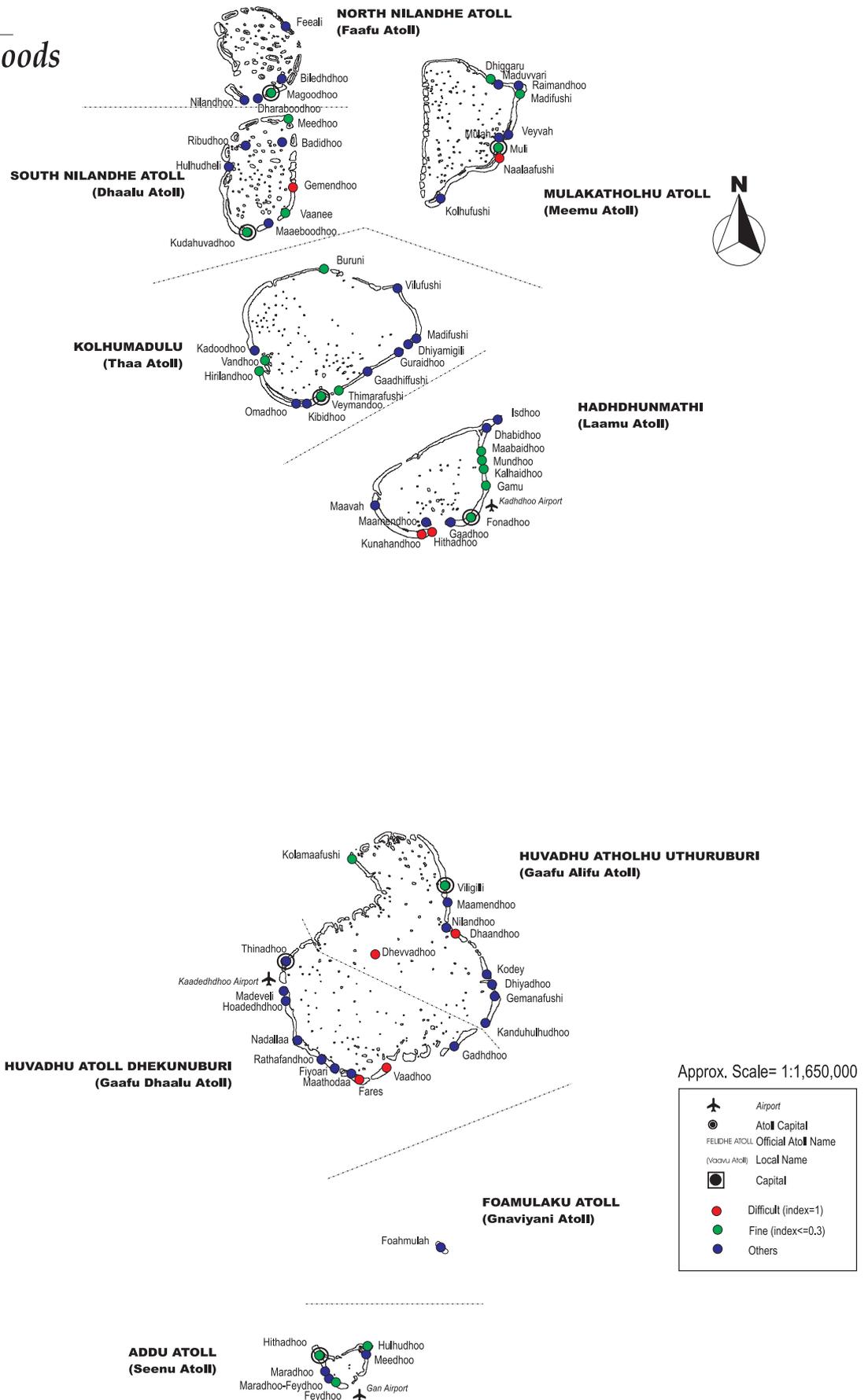
Map 7 (South)
Drinking Water



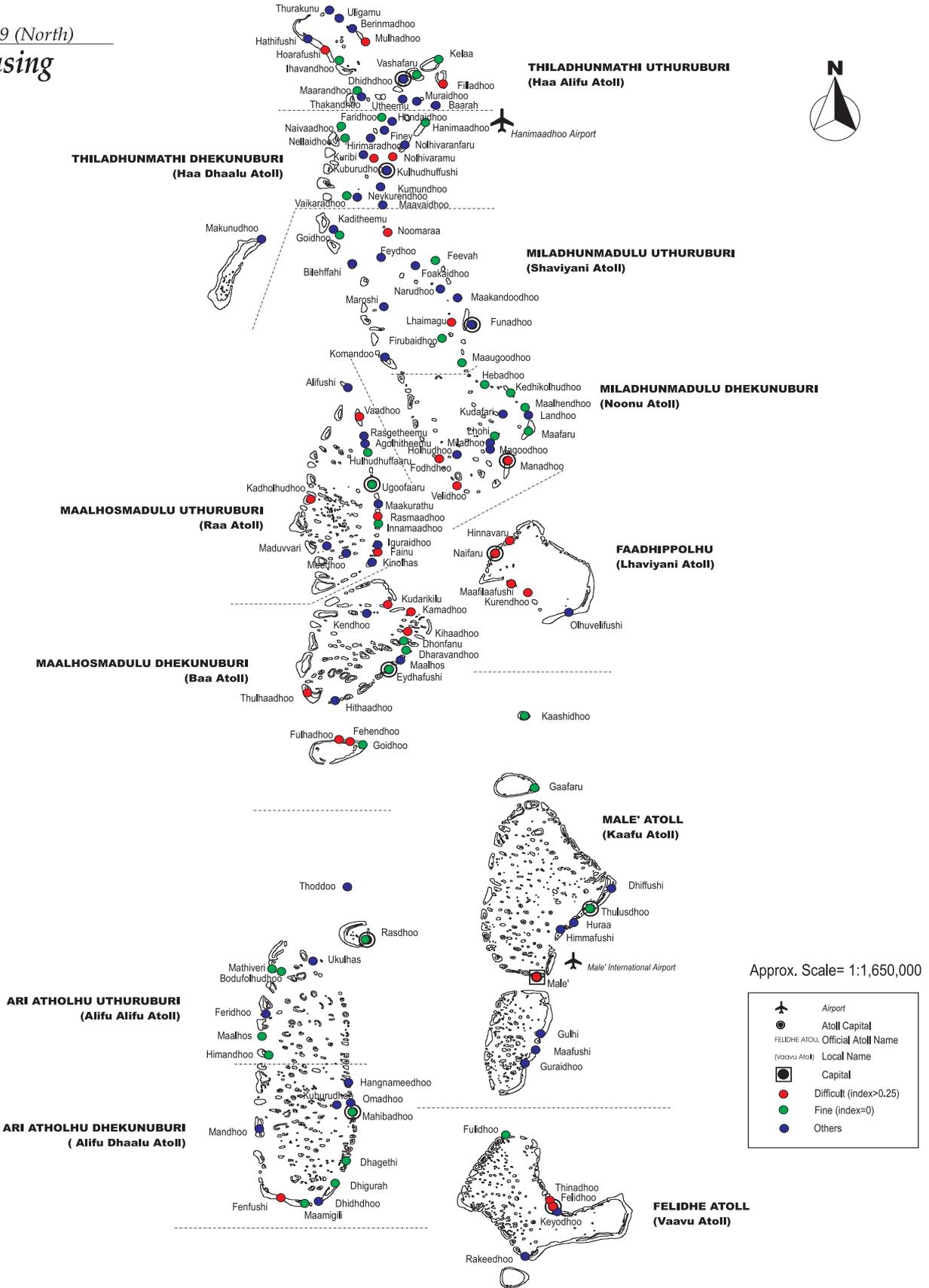
Map 8 (North)
Consumer Goods



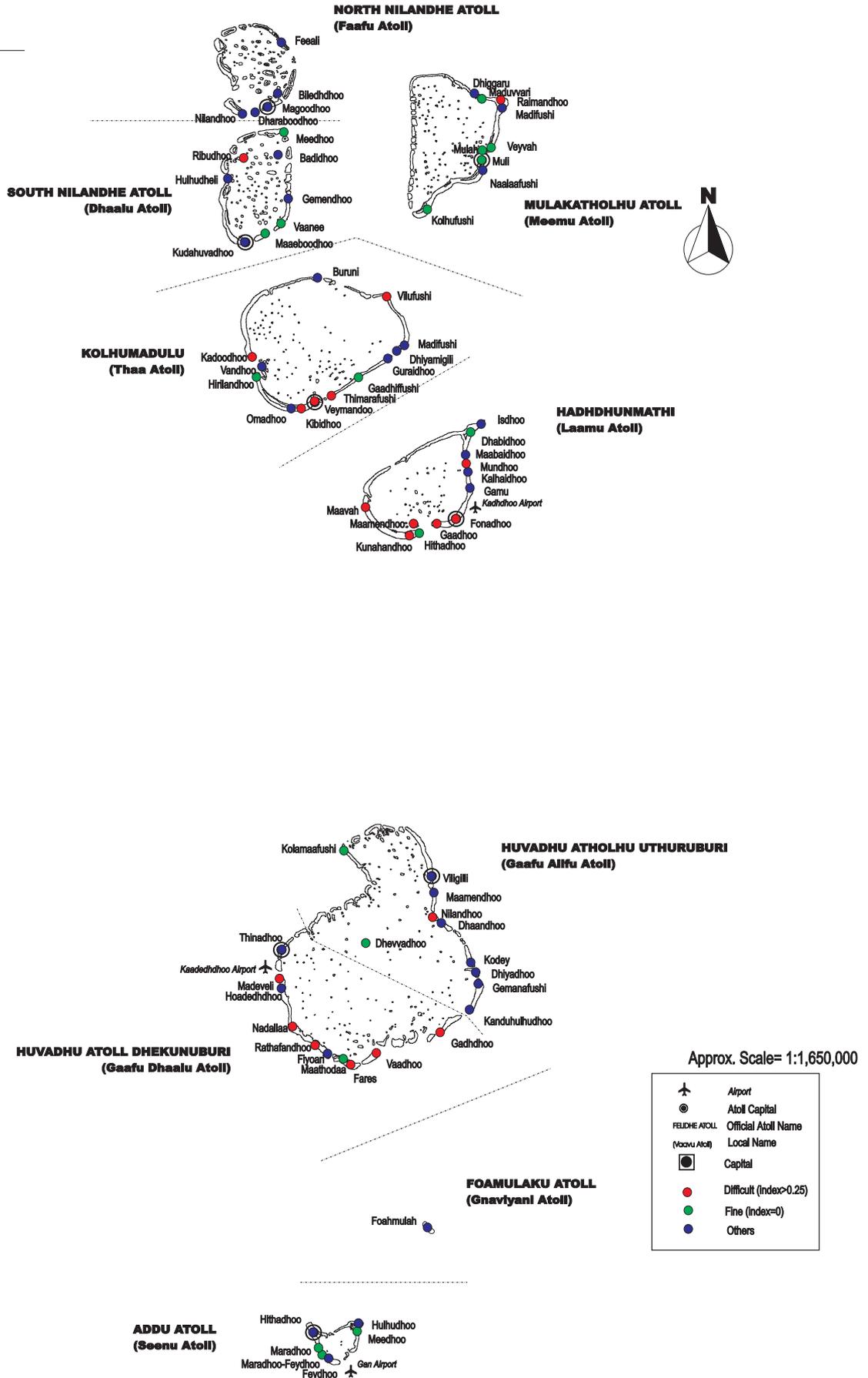
Map 8 (South)
Consumer Goods



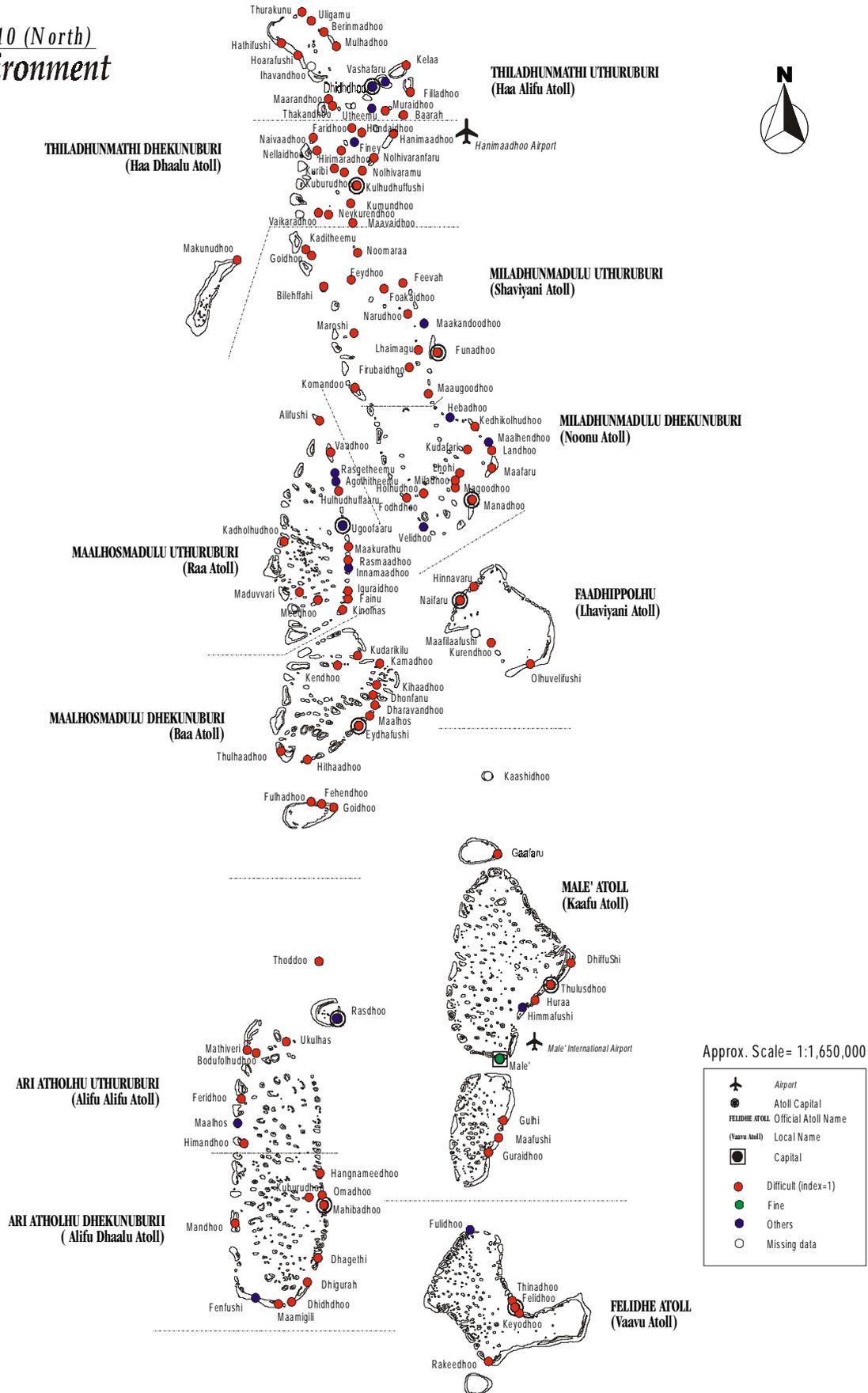
Map 9 (North)
Housing



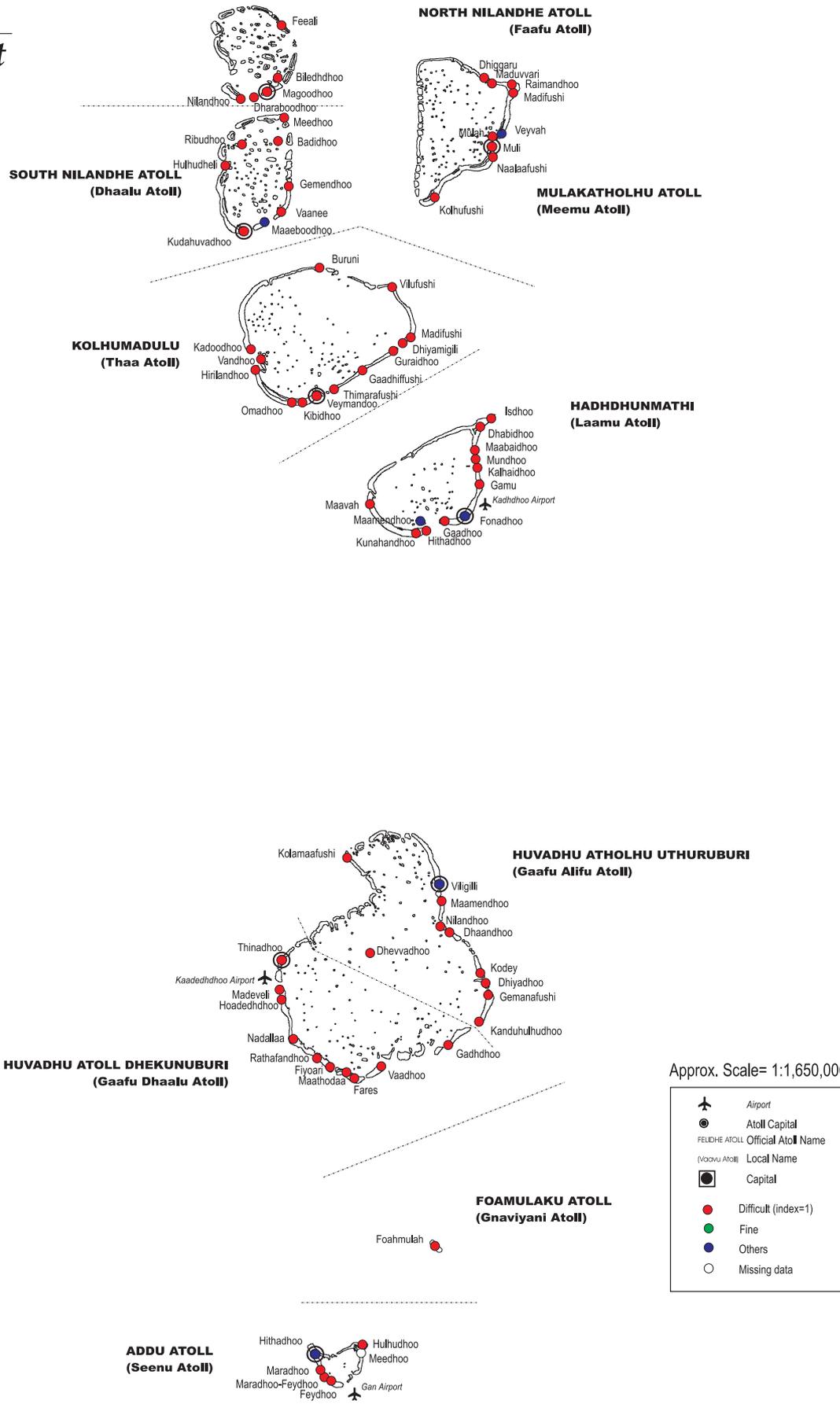
Map 9 (South)
Housing



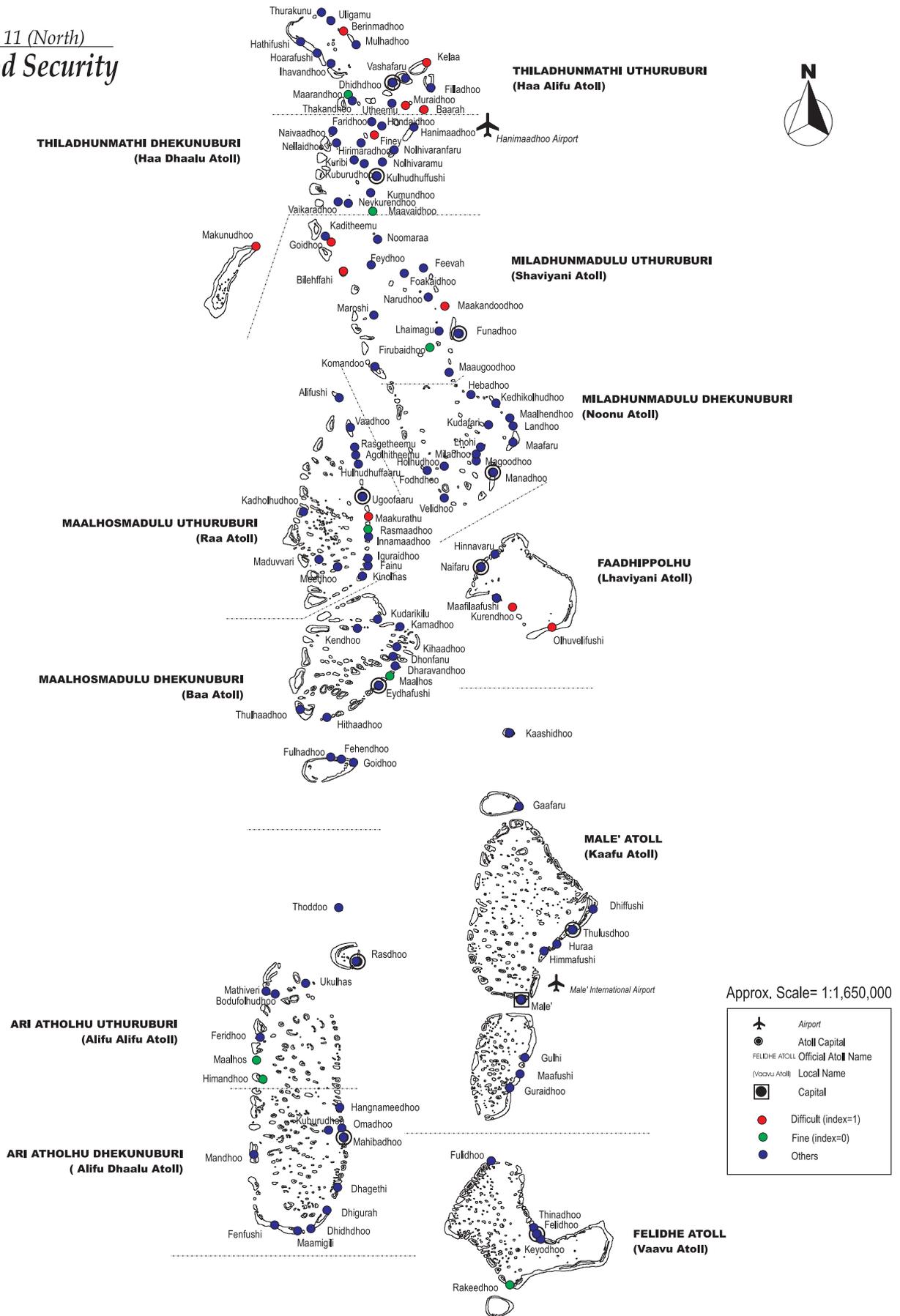
Map 10 (North)
Environment



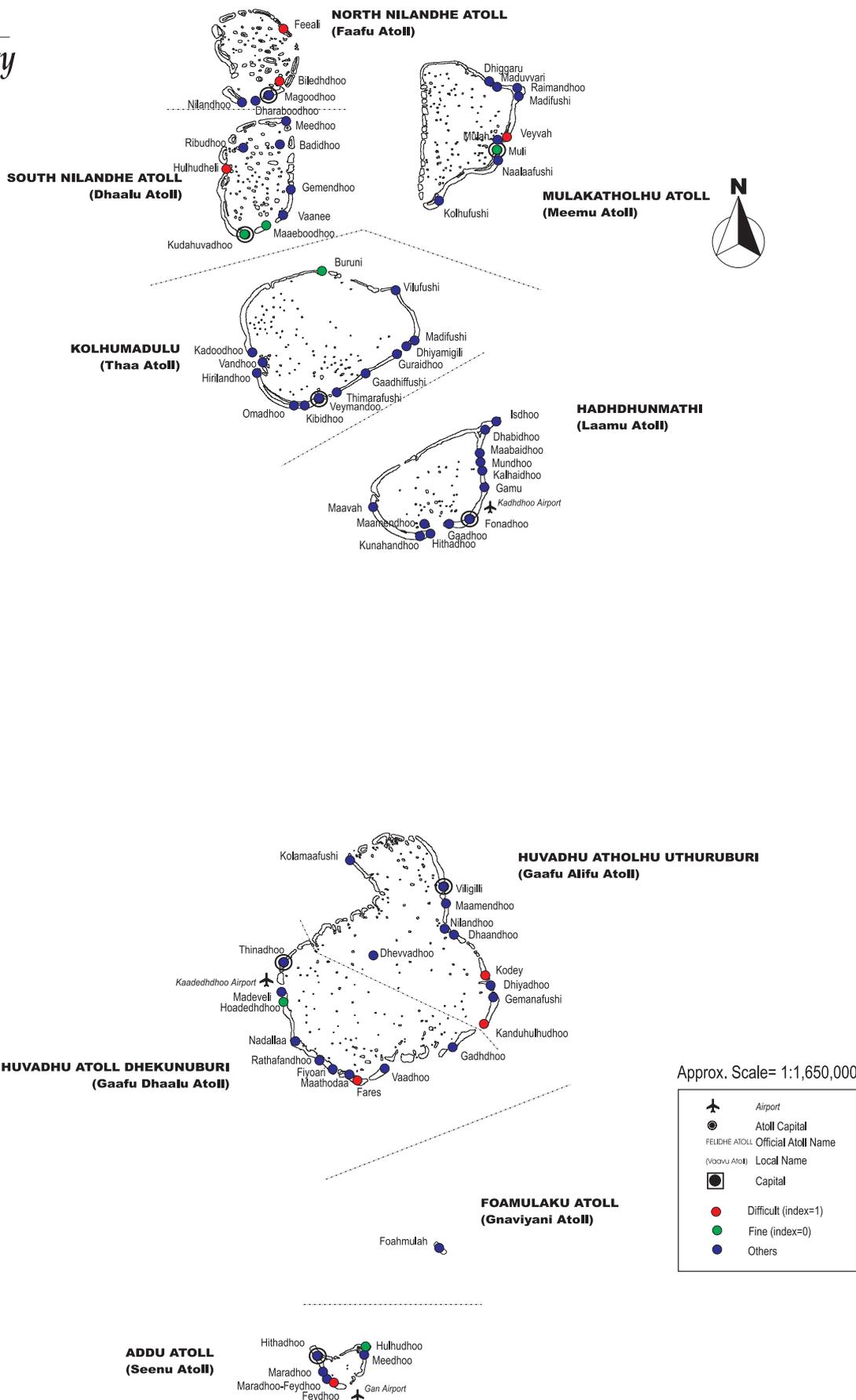
Map 10 (South)
Environment



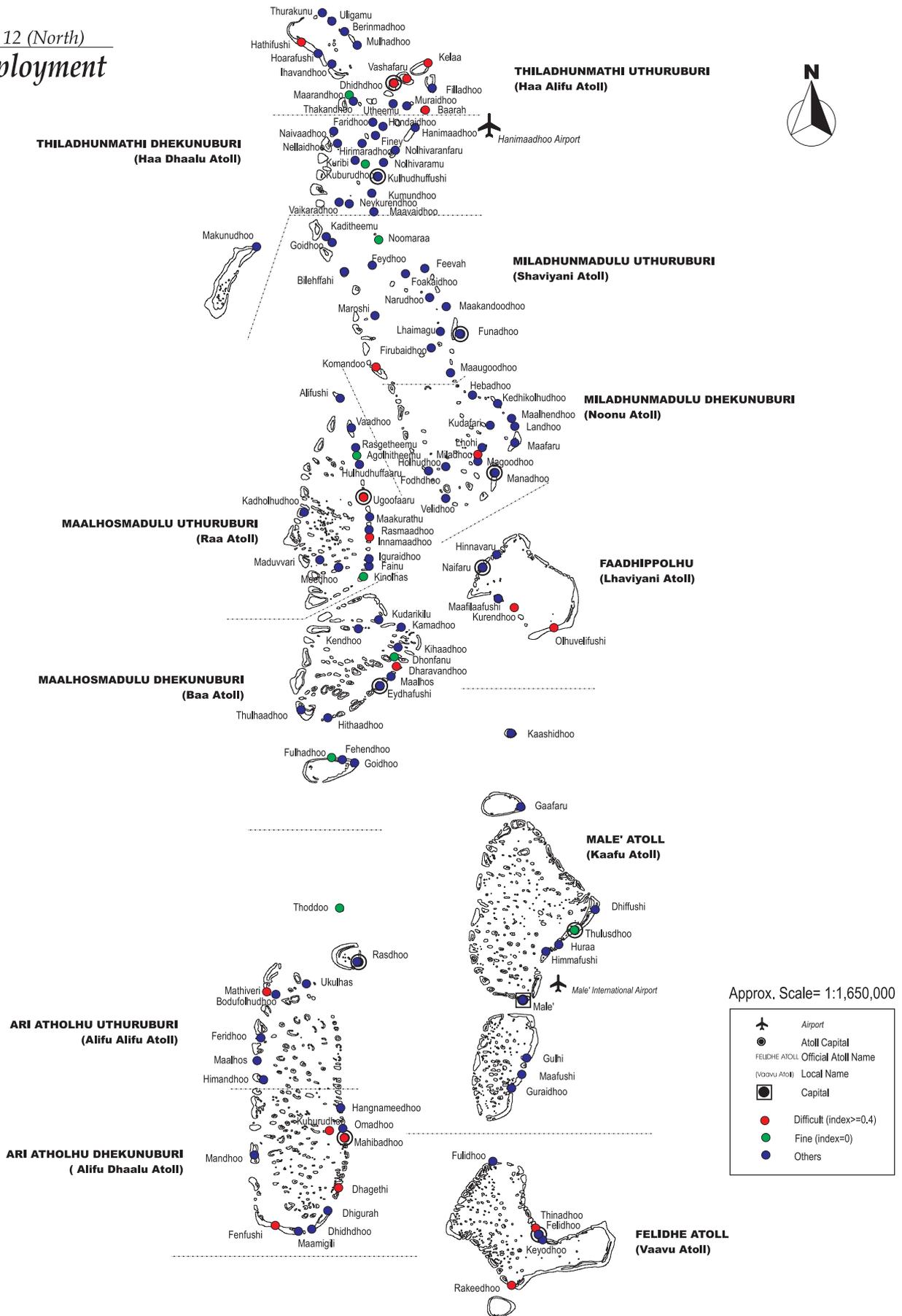
Map 11 (North)
Food Security



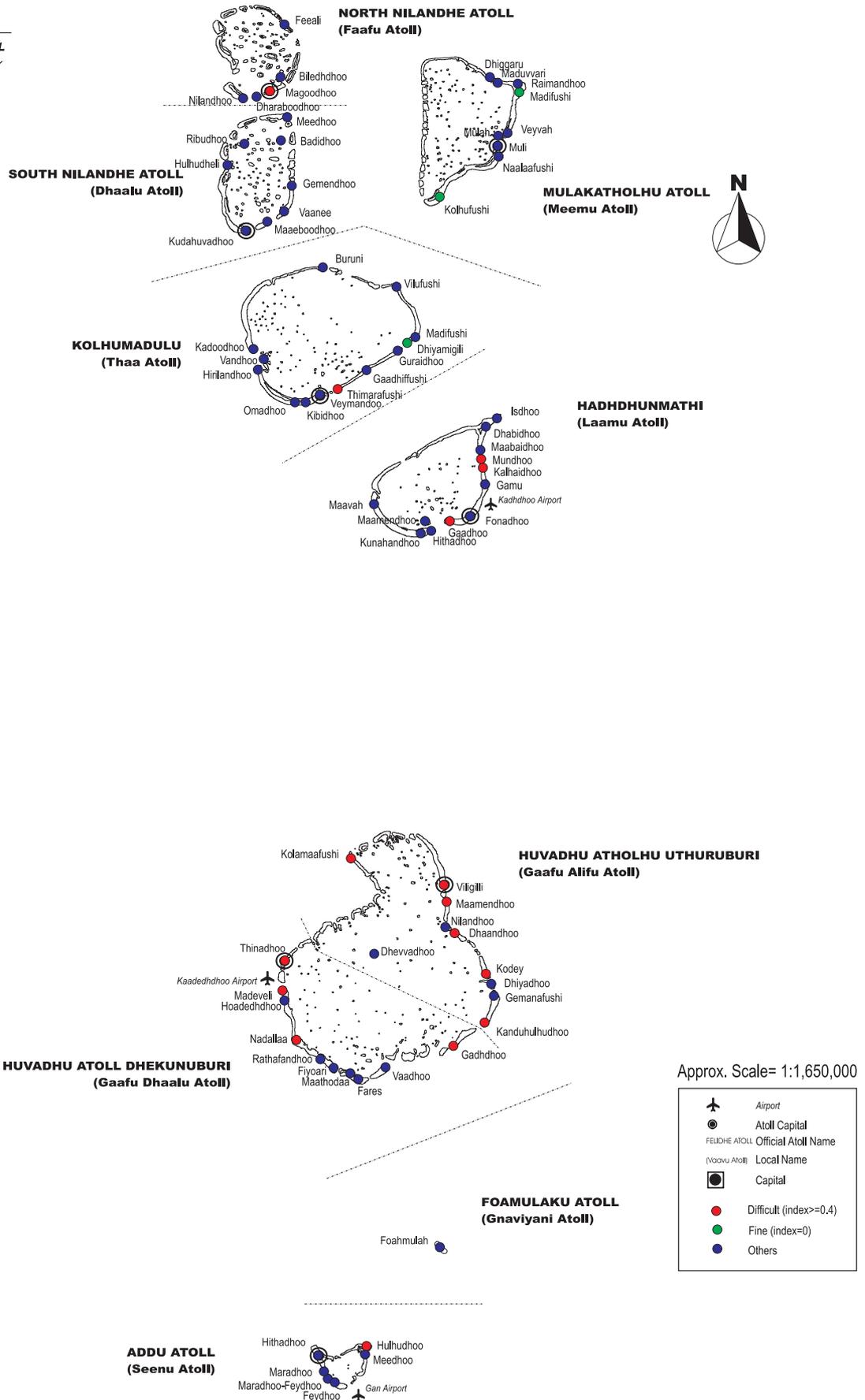
Map 11 (South)
Food Security



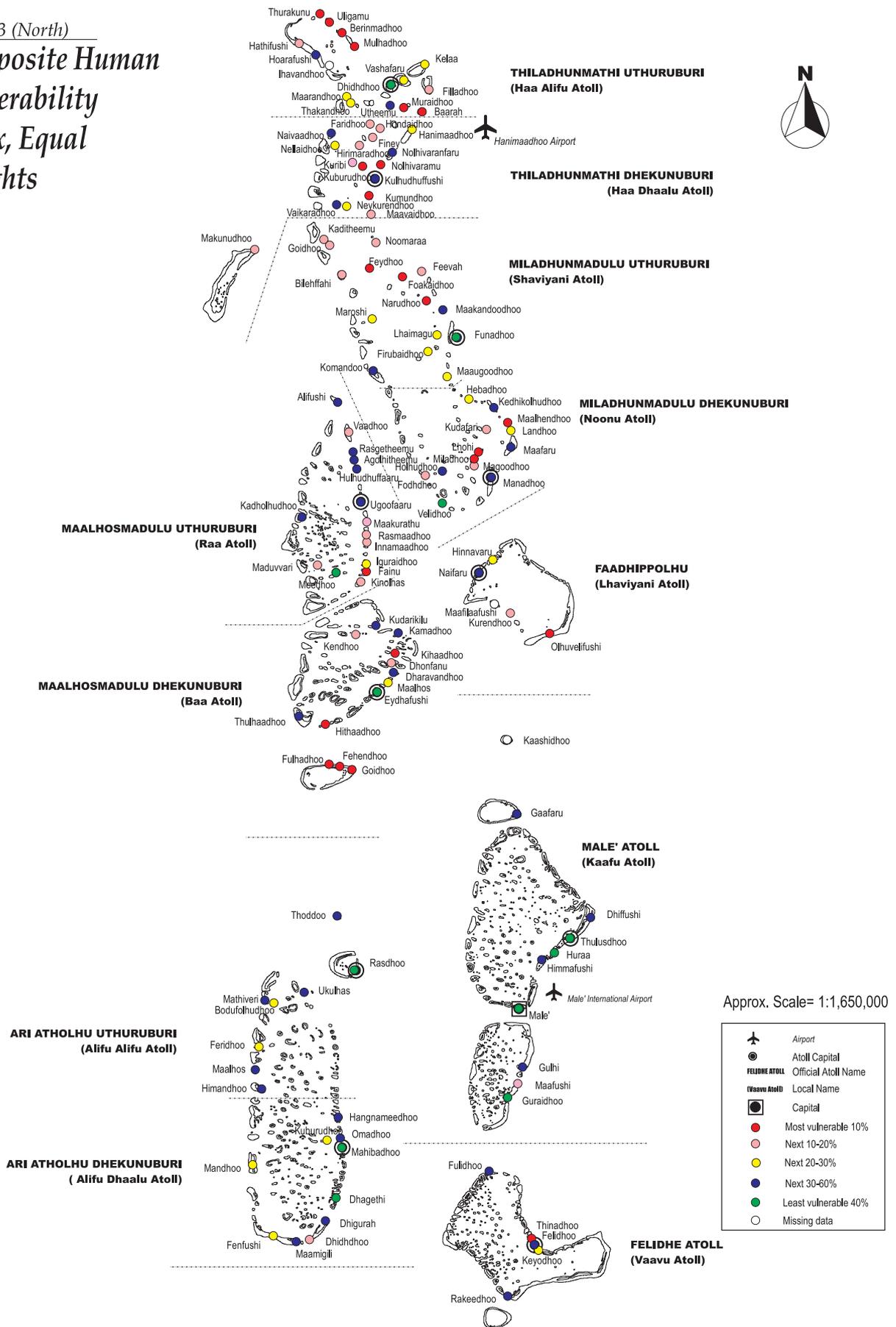
Map 12 (North)
Employment



Map 12 (South)
Employment

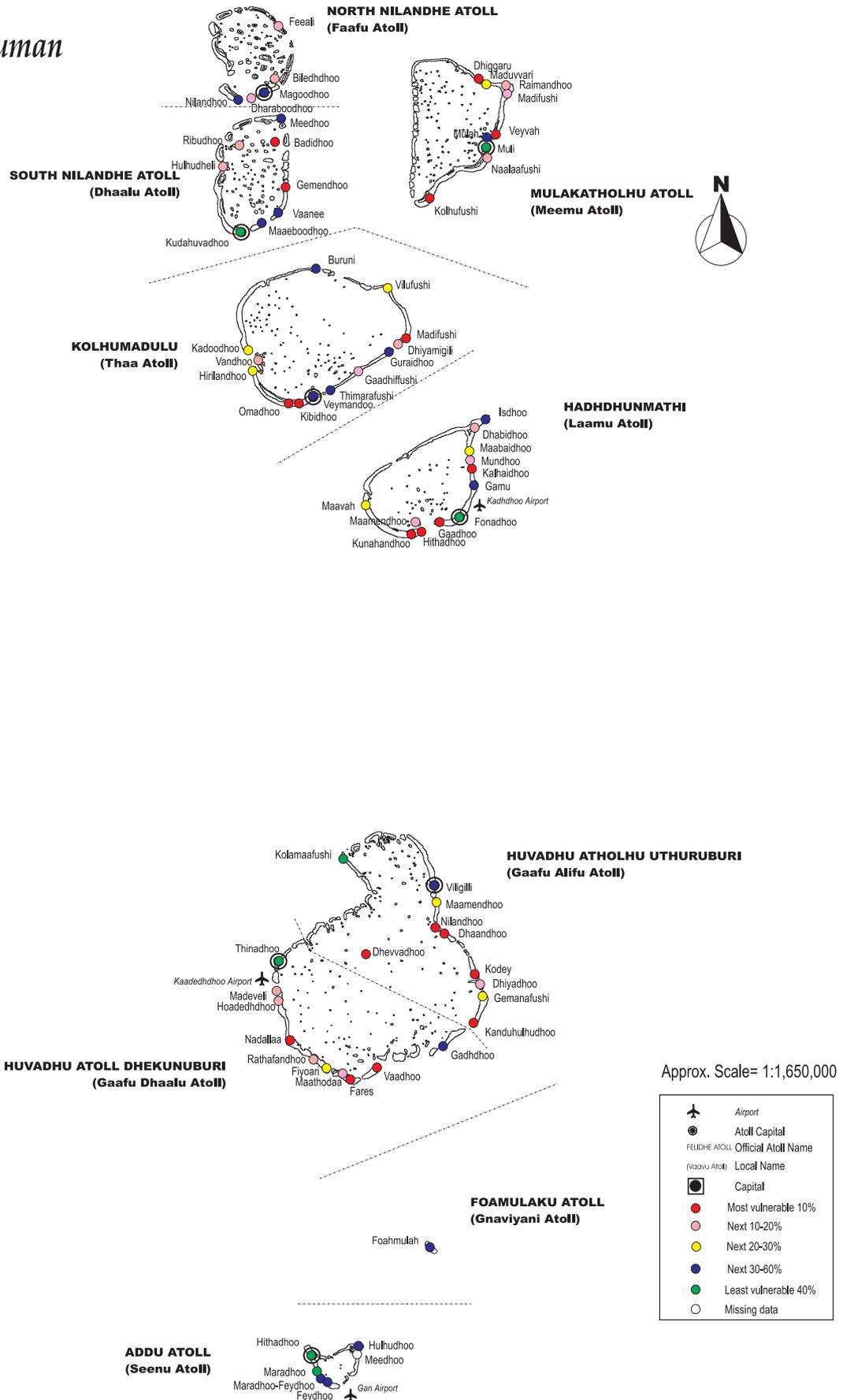


Map 13 (North)
Composite Human Vulnerability Index, Equal Weights

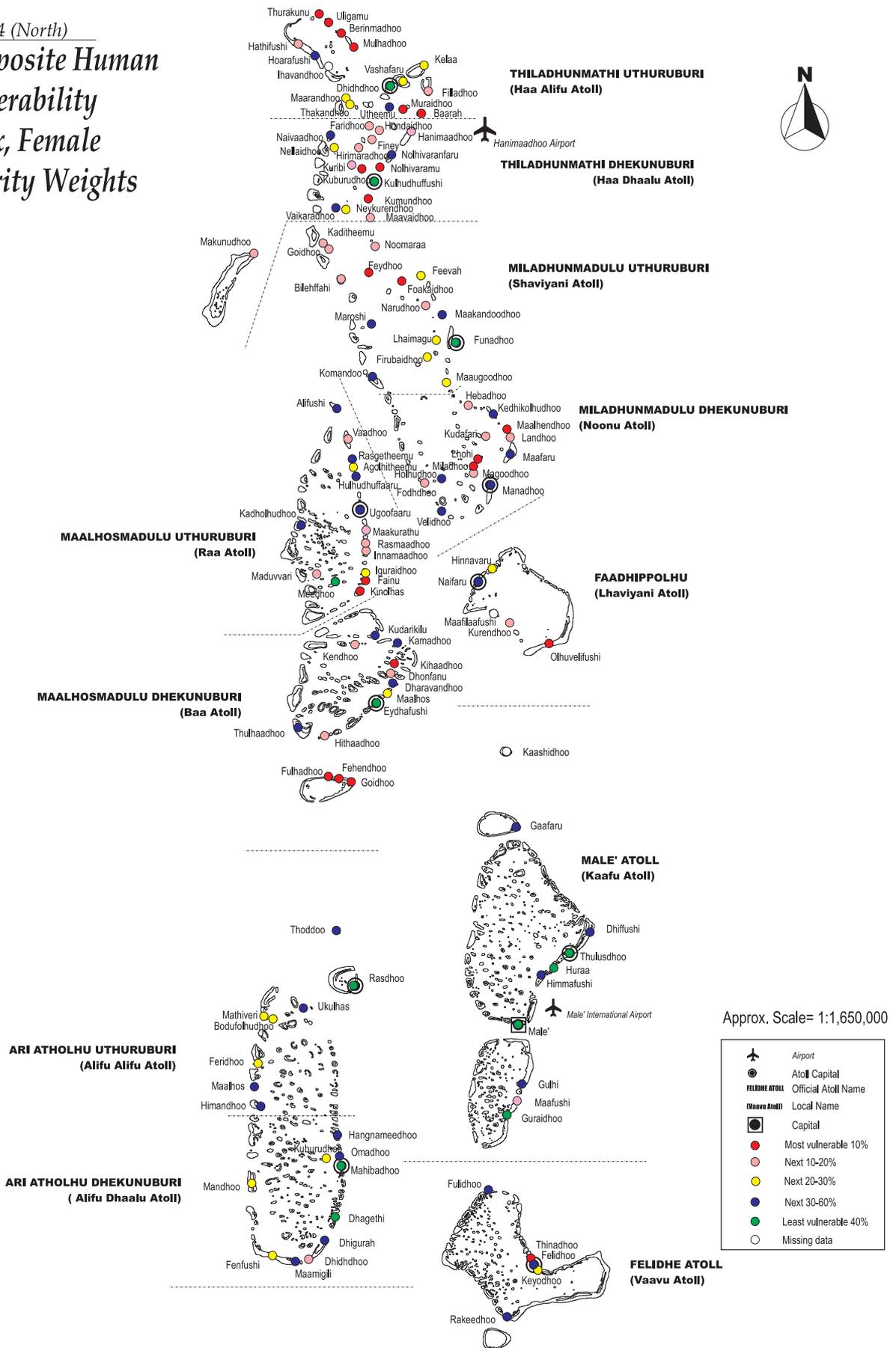


Map 13 (South)

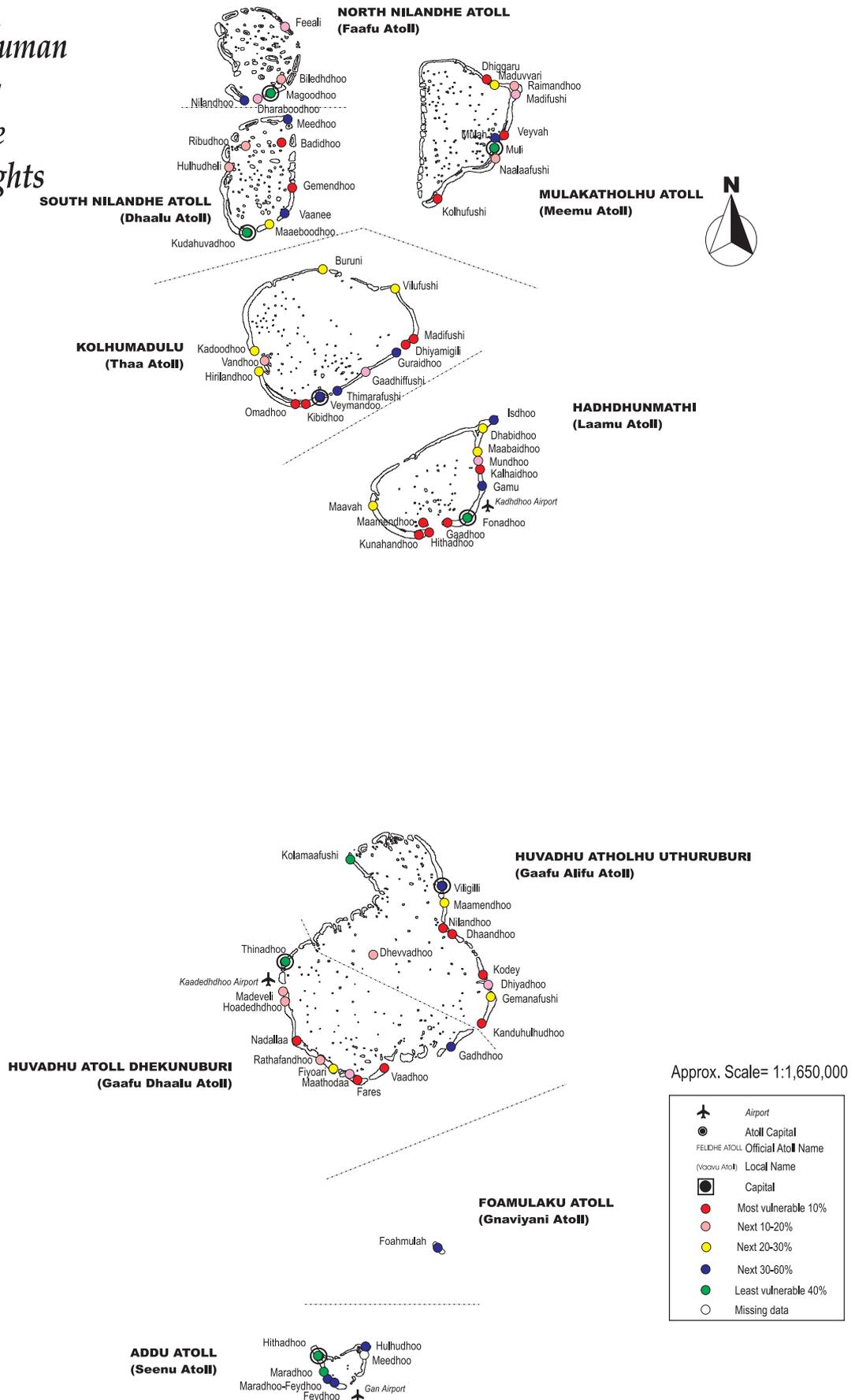
Composite Human Vulnerability Index, Equal Weights



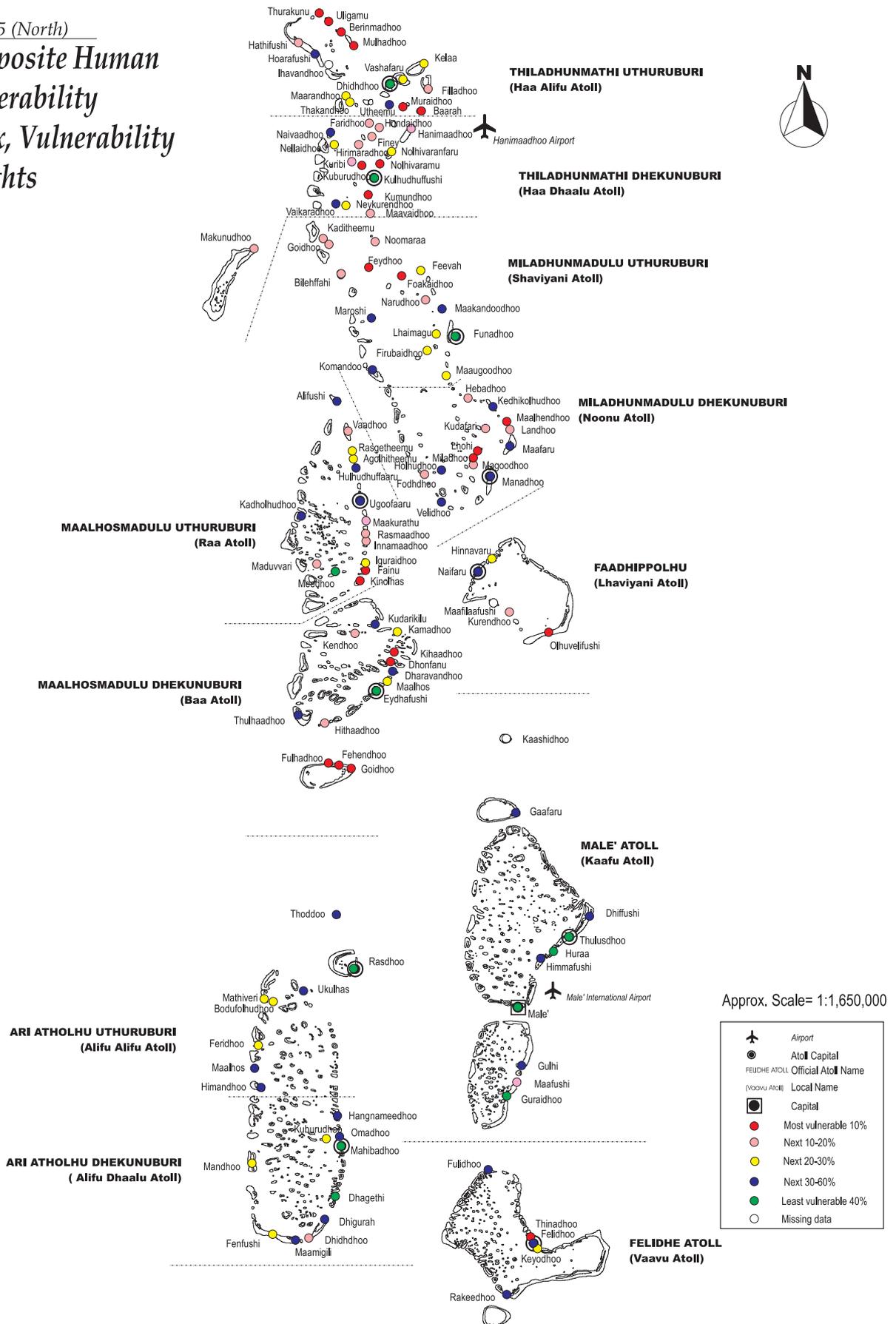
Map 14 (North)
Composite Human Vulnerability Index, Female Priority Weights



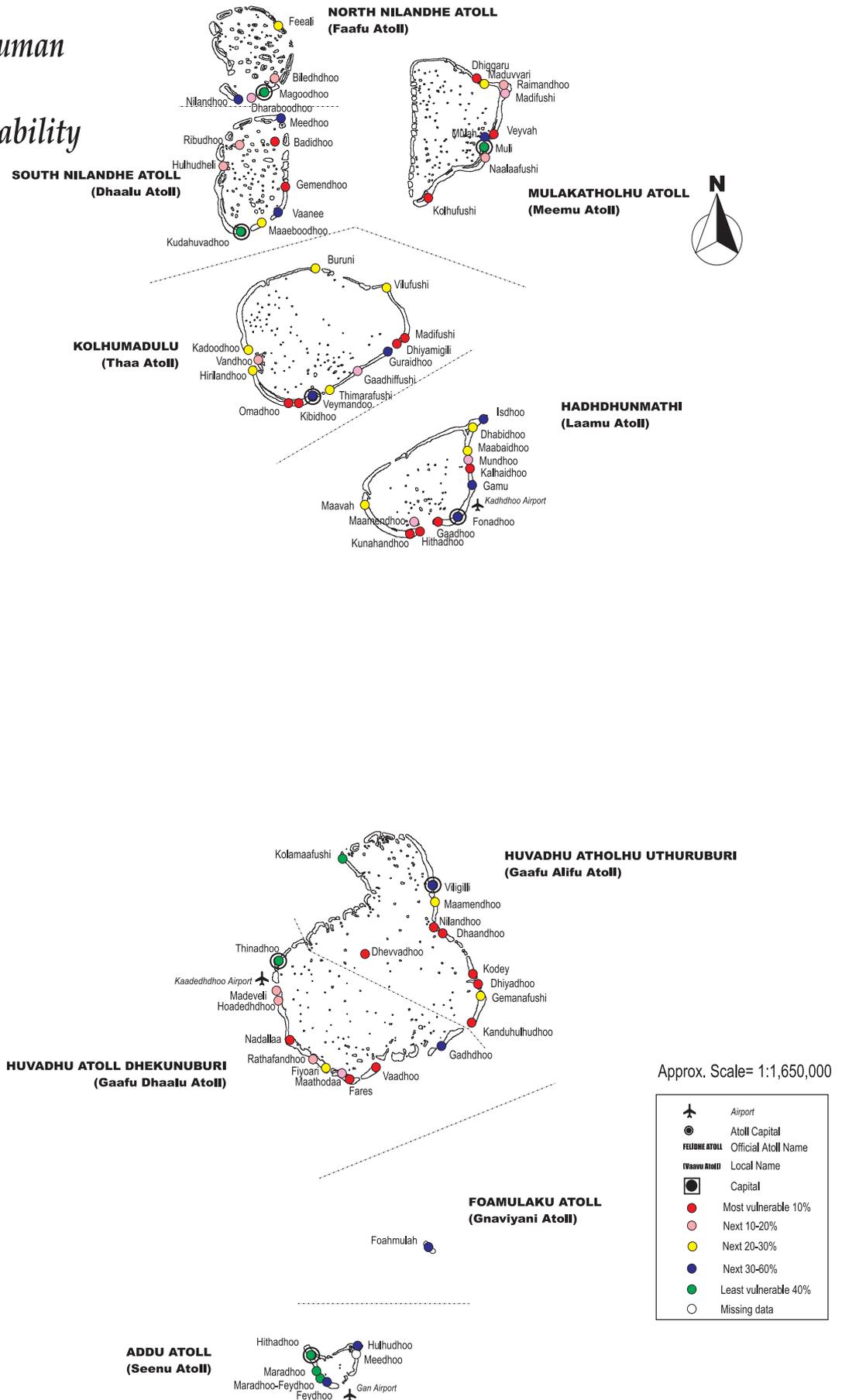
Map 14 (South)
Composite Human Vulnerability Index, Female Priority Weights



Map 15 (North)
Composite Human Vulnerability Index, Vulnerability Weights



Map 15 (South)
Composite Human Vulnerability Index, Vulnerability Weights



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 Indicators¹

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

1.2.1 The Headcount Ratio

The most popular poverty indicator is the headcount ratio or headcount index, defined as the number of

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

where:

H is the headcount ratio or headcount index

q is the number of poor

n is the total population size

poor as a proportion of total population.

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 Poverty Gap Ratio

A simple and widely used indicator for the depth of poverty is the poverty gap ratio, defined as the dis-

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

where:

I is the poverty gap ratio

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

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

tance of the average poor to the poverty line as a proportion of the poverty line.

The poverty gap ratio is sometimes called the proportionate average shortfall. It 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 Index

The poverty gap index (PGI) is defined here as the

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

poverty gap ratio normalised to the total population size rather than to the number of poor.

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

The meaning of the PGI 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 in region A is 0.8 dollar in region A and 0.6 dollar in region B, respectively. According to the PGI, 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 PGI 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 PGI 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 indi-

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

1.5 The Theory of Poverty Dominance

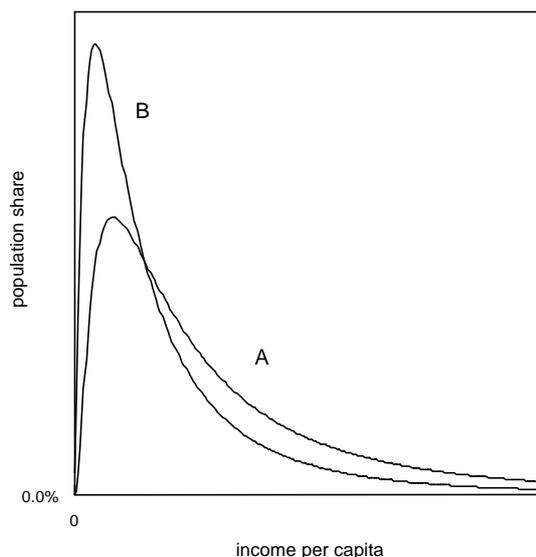
Consider two hypothetical regions A and B with their respective income distributions. Figure 1 shows their frequency distributions, i.e. the population share for each per capita income in the two regions. Suppose that both distributions have the same income range

and a common but unknown poverty line z . Country A is richer on average, and the income inequality is higher in A than in B.

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

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

Figure 1: Frequency distributions for two regions A and B



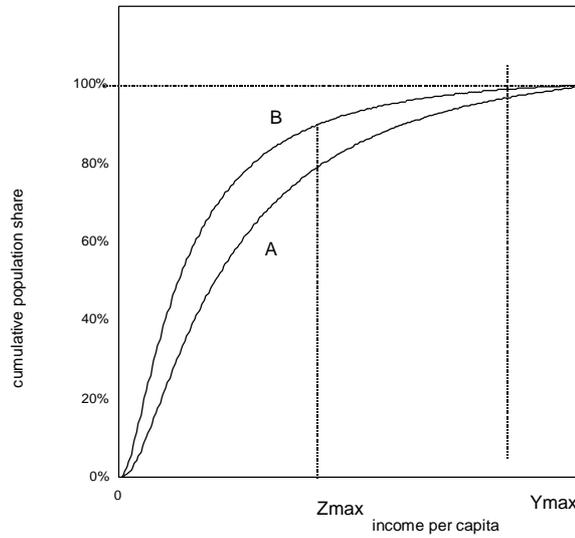
² A.B. Atkinson, On the Measurement of Poverty, *Econometrica*, Vol.55, No.4, July 1987, pp.749-764.

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

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

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

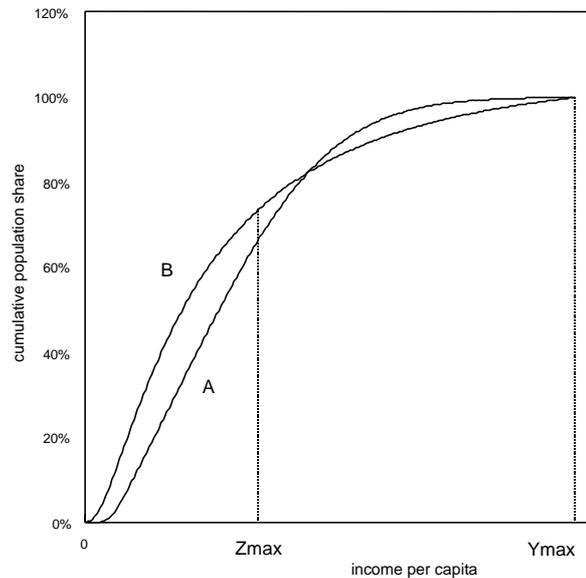
Figure 2 : Cumulative frequency distributions for two regions A and B



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

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

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



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) PGI 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 PGI ($= H \cdot I$), the y-axis of Figure 4, is actually the area under the curve of Figure 4.3 (normalised by z).

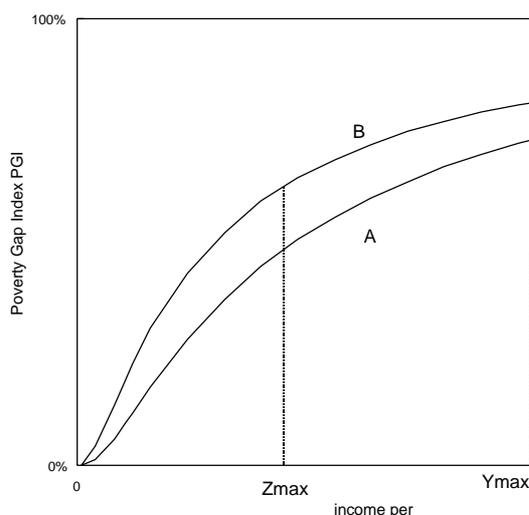
If the PGI of region B is everywhere above that of region A, as in Figure 4, we may conclude that, according to the PGI, poverty is definitely higher in

for all poverty lines. This theorem is not valid in the reverse order.

2. Empirical Application to Maldives

First, the usual poverty indicators like the headcount ratio and the poverty gap index are presented. These indicators are meaningful because they are appealing. As far as poverty dominance is concerned, the previous section has shown that when atoll B is poverty dominant over atoll A for a certain living standard indicator according to the headcount criterion, then it necessary follows that B is also poverty dominant according to the PGI for that living standard indica-

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



B than in A, whatever the level of the poverty line. Again, that conclusion holds for non-intersecting curves and for intersecting points in the interval $z > Z_{max}$.

This test is called the second-order dominance criterion, because it can be proved mathematically that poverty dominance of region B over A according to the first-order dominance condition, implies also poverty dominance of region B over A according to the second-order dominance condition. The area under B in Figure 3 is always larger than the area under A

tor. 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 PGI- curve.

Technical Note 2

Estimates of Life Expectancy and Infant Mortality

1. Introduction

Computation of the UNDP Human Development Index for the atolls in Maldives requires estimation of the life expectancy at birth, $e(0)$, for each of the twenty atolls. To accomplish this from the data available from the Vulnerability and Poverty Assessment Survey is not a straightforward task, for two reasons:

- The VPA is a sample survey. The large sample size enables derivation of statistically reliable estimates for the country and groups of atolls. It is more difficult, however, to obtain plausible estimates at the level of individual atolls since the absolute number of rare events (deaths) 'picked up' by the sample is small.
- The VPA provides data on the survival status of children to mothers in the age groups 15-19 to 55-59. This information can be used to obtain recent estimate of infant- and child mortality. For estimation of life expectancy at birth data on mortality at higher age would have been useful, because it would then have been possible to avoid resorting to assumptions on the patterns of mortality in Maldives.

This technical note is structured as follows. Section 2 discusses the main methodological issues and the limitations of the employed techniques; section 3 provides the step-by-step procedures followed to derive estimates of life expectancy and infant mortality at national and regional levels. Section 4 presents the findings (and methodology) of the estimation of $e(0)$ and IMR at the level of the individual atolls, and by sex.

2. Methodology and Limitations of Applied Techniques

2.1 The Principles of the Brass Child Survivorship Technique

The Brass child survivorship technique requires a tabulation of the children ever born and the number of children still alive to mothers in various five-year age groups. These data can be used to compute the percentage of dead children to mothers in each age group. This percentage of children dead is converted into a conventional probability of dying by taking into account differences in the age pattern of fertility and the pattern of mortality in the studied population. This technique, developed in the 1960s, has proved through the years to provide robust estimates of infant- and child mortality.

This technique, developed by William Brass, makes it possible to estimate, under certain conditions, the proportion of children who survive to age 1, 2, 3, 5, 10, 15, 20, 25, 30 and 35 from the proportion reported as surviving among children ever born to women in the ten five-year age groups 15-19, 20-24, 25-29, ..., 60-64. This technique is therefore based on the somewhat surprisingly close approximation of the proportion of children dying before the first birthday (= the infant mortality rate) and the proportion of children dead among women 15-19; the proportion dying before second birthday and the proportion of children dead to women 20-24, ..., and of the proportion of persons dying before age 35 from the proportion of children dying to women 60-64.

2.2 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 are discussed below, and the conclusion is drawn that, in spite of limitations, the Brass technique can reasonably be applied to the Maldives demographic situation. There is no reason to doubt that this technique, if critically utilised rather than routinely applied, 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 often at higher risk of dying for well-known reasons. Similarly, a first-born or high-parity child suffers increased risks of mortality, especially in populations where levels of fertility are high and where birth spacing is little practised. Consequently, in the interpretation of results little weight will be given to reports from very young (15-19) and older women (50+). Response by women aged group 15-19 on survival status of their children is generally discarded; reports from older women suffer usually from recall lapse problems, and the evidence provided by this group refers to the not so recent mortality conditions and are therefore of less interest for the estimation of current mortality levels.

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

Rapid fertility decline could cause that the P1/P2 and the P2/P3⁶ ratios are no longer a reliable indicator of the age pattern of fertility, but analysis of the survey data gave plausible results when the P1/P2 ratio was used to establish the adjustment factor for the translating of proportions of children dead to women in the lower age groups, as suggested by the Brass method. This condition does not deem the applied methods unreliable.

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. Whereas in the original Brass method, conflicting estimates based on different age groups of mothers could have been problematic, it has been fortunate that the Trussell refinements, in conditions of relatively smooth mortality change, allowed for computation of time reference periods to which the various estimates based on reports from mothers in various age groups refer.

2.3 Adjusting for Different Patterns of Fertility

In section 2.1 reference was made between the close approximation of e.g. the proportion dying before second birthday and the proportion of children dead to women 20-24. This and other approximations will be very close for a population characterised neither by a very early or a very late start in child-bearing. If child-bearing starts at a very early age, the children born to women in each age group would be exposed to a longer period of mortality risk, and, therefore, the proportion dead could be expected to be higher for each age group of mothers than when child-bearing starts at a higher age. Brass has constructed a set of adjustment factors that can be used to modify the estimates of the proportion dying before age 1, 2, 3, 5, 10, 15 and 20 (see column 1a in Table 1) in line with the age pattern of fertility (early, average, late). In later years, other demographers developed sets of adjustment factors using more refined techniques of standardisation and curve-fitting. Among these refinements, the one developed by Trussell has proved to give the best fitting results in this analysis.

The age pattern of fertility is incorporated in the Trussell adjustment factors by using the P1/P2 and the P2/P3 ratios in the formula. $k(i) = a(i) + b(i) * P1/P2 + c(i) * P2/P3$ in which a, b and c are constant

⁶ P1, P2 and P3 are defined as the average number of children given birth to by women in the age-group 15-19, 20-24 and 25-29. P1/P2 is therefore a ratio that relates the average number of children ever born in the young group 15-19 to the age group 20-24. A higher ratio implies an early age pattern of fertility, and vice versa. A similar interpretation can be applied to the P2/P3 ratio.

for the West pattern. P1, P2 and P3 and the P1/P2 and P2/P3 ratios are defined in footnote 6.

2.4 Adjusting for Different Patterns of Mortality

In this Brass technique all mothers of any age up to 55-59 answer questions about the survival status of their children. Older mothers will, on average, have older children than younger mothers. Similarly, the children who died to older mothers will on average have died at a higher age than dead children of younger mothers. The estimation technique used here does not make use of information on the age of death of the dead children, because very often this information cannot or cannot reliably be collected. Although this is a disadvantage, it is a surmountable problem, because the pattern of mortality generally does not change suddenly. The pattern of mortality refers to the age distribution of the deaths occurring in a population.

2.4.1 Model Patterns of Mortality

In demographic analysis, model patterns of mortality are frequently used. Among the best-known model patterns are the the Coale and Demeny Regional Model life tables consisting of 96 lifetables, laid out in four groups (or regions) of 24 tables. The four 'regions' differ in the pattern of mortality. 'West' is the most common standard pattern used if there is no strong evidence that one of the other patterns make a better fit. The other three regions patterns deviate from the standard in different ways: 'North' has a relatively lower Infant Mortality Rate (IMR), relatively high child mortality, and relatively low mortality after age 50; 'South' combines high infant- and child mortality with low mortality between age 40 and 60 and higher mortality after age 65; 'East' has a relatively high infant mortality rate compared to the standard, as well as high mortality after age 50.

2.4.2 Mortality Levels (ML)

For each pattern, there are 24 tables ranked from

high level of mortality at Mortality Level 1 (= a low female life expectancy at birth of 20 years) to very low levels of mortality at Mortality Level 24 that results in a female life expectancy at birth of 77.5 years. The Mortality Levels (ML) in the Coale and Demeny system are designed in such manner that an increase by one level adds 2.5 years of female life expectancy at birth.

2.4.3 Pattern of Mortality in Maldives

The Vulnerability and Poverty Assessment Survey also collected information on the number of deaths that took place in sampled households in the year prior to the survey: hundred and nineteen cases were identified. The age pattern of the reported deaths was compared with the age pattern of deaths in the regional model life tables on the basis of two measures: (i) the proportion of child mortality (age group 1-4) to the under-five mortality; and (ii) the ratio between 'adult' deaths (age group 5-19) to under-five deaths.

Comparison of the indicators made it clear that the West model appears to fit the Maldives data best. This finding does not come as a surprise. Analyses of the 1985 and 1990 censuses also made use of the West pattern for purpose of mortality estimation (see R.H. Chaudbury; Analytical Report on the 1985 and 1990 Population and Housing Censuses of Maldives).

We conclude that the Trussell method using the West pattern is the best model to be used for estimation of mortality for Maldives.

3. Computation of Life Expectancy at Birth and Infant Mortality Rate

3.1 The Computational Procedures, Step-by-Step

The various steps in the computation procedure using data on the survival status of children born to mothers (in five-year age groups) in the Republic, Male' and the atolls are illustrated in Table 1.

Step 1: Calculation of proportion of children dead

Table 1 Estimations of life expectancy at birth and infant mortality rate using data on child-survivorship

Republic of Maldives														
(1)	(1a)	(2a)	(2b)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age group	Index (i)	Women	Mothers	Children ever born	Children surviving	Children dead	Proportion dead	Trussell k(i)	q(x)	l(x)	ML(West)	e(0)	IMR	Timeref
15-19	1	14508	593	818	780	38	0.046	1.3030	0.061	0.939	18.7	62.4	59.6	Mar-97
20-24	2	11358	5511	10713	9768	945	0.088	1.1128	0.098	0.902	16.8	57.8	80.8	Jan-96
25-29	3	9576	6962	21402	19468	1934	0.090	1.0126	0.091	0.909	17.6	59.7	71.7	Jan-94
30-34	5	8794	7351	33558	29361	4196	0.125	1.0057	0.126	0.874	16.2	56.3	87.8	Aug-91
35-39	10	7569	6563	37723	32798	4925	0.131	1.0170	0.133	0.867	16.4	56.8	85.5	Oct-89
40-44	15	4220	3521	23842	20020	3822	0.160	1.0029	0.161	0.839	15.5	54.6	96.3	Oct-85
45-49	20	3507	3026	22507	17763	4744	0.211	0.9958	0.210	0.790	14.1	51.2	113.7	Oct-82
Parity ratios P1/P2 = 0.05980 and P2/P3 = 0.42204														
Male'														
(1)	(1a)	(2a)	(2b)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age group	Index (i)	Women	Mothers	Children ever born	Children surviving	Children dead	Proportion dead	Trussell k(i)	q(x)	l(x)	ML(West)	e(0)	IMR	Timeref
15-19	1	5016	79	97	97	0	0.000	1.1669	0.000	1.000	24+	>77.5	<12	Apr-97
20-24	2	3105	661	1000	962	38	0.038	1.1592	0.044	0.956	20.3	66.3	43.1	Jun-96
25-29	3	2623	1549	3442	3257	185	0.054	1.0863	0.058	0.942	19.8	65.1	48.2	May-94
30-34	5	2749	2077	7096	6361	735	0.104	1.0812	0.112	0.888	16.9	58.0	71.8	Oct-92
35-39	10	2132	1737	7620	7247	372	0.049	1.0957	0.054	0.946	20.7	67.3	39.0	Dec-90
40-44	15	1287	951	5114	4814	300	0.059	1.0831	0.064	0.936	20.3	66.3	43.1	Sep-88
45-49	20	932	797	4994	4201	793	0.159	1.0742	0.171	0.829	15.7	55.1	93.8	Aug-85
Parity ratios P1/P2 = 0.06013 and P2/P3 = 0.24554														
Atolls														
(1)	(1a)	(2a)	(2b)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Age group	Index (i)	Women	Mothers	Children ever born	Children surviving	Children dead	Proportion dead	Trussell k(i)	q(x)	l(x)	ML(West)	e(0)	IMR	Timeref
15-19	1	9492	514	721	683	38	0.053	1.3151	0.069	0.931	17.9	60.4	68.3	Apr-97
20-24	2	8253	4,850	9,713	8,806	907	0.093	1.1017	0.103	0.897	16.5	57.0	84.4	Jan-96
25-29	3	6953	5,413	17,960	16,212	1749	0.097	0.9993	0.097	0.903	17.3	59.0	75.1	Dec-93
30-34	5	6045	5,273	26,461	23,000	3461	0.131	0.9929	0.130	0.870	15.9	55.6	91.4	May-91
35-39	10	5437	4,826	30,104	25,550	4553	0.151	1.0040	0.152	0.848	15.4	55.4	97.5	May-89
40-44	15	2933	2,570	18,728	15,206	3522	0.188	0.9898	0.186	0.814	14.4	52.0	110.0	Apr-85
45-49	20	2575	2,228	17,514	13,562	3951	0.226	0.9829	0.222	0.778	13.6	50.0	120.5	Apr-82
Parity ratios P1/P2 = 0.06455 and P2/P3 = 0.45561														

for each age group of mother

Columns (1) to (5) in Table 1 list the data from the Vulnerability and Poverty Survey on the number of mothers by five-year age groups, the total number of children born to the mothers, and the number of children who are still alive, and the number of children who have died. Column (6) presents the proportion of children who are no longer alive using the formula: col(5)/col(3).

As expected, the proportion of children dead to mothers in the different age groups increases with the age of the mother, although the increase between mothers 20-24 to mothers 25-29 is minimal.

Step 2: Calculation of the parity ratios P1/P2 and P2/P3 ratios

These ratios are used in the estimation procedure to obtain the adjustment factors needed for transferring the proportion of children dead (column 6) into a conventional probability of dying. Each of the three parities (P1, P2, P3) are computed by the formula: col(3)/col(2a). The results of the calculation of the two parity ratios are given in the bottom row of each of the three panels for the Republic, Male' and the Atolls.

Step 3: Computation of the Trussell adjustment factors based on the P1/P2 and P2/P3 for different mortality patterns

The Trussell multipliers were computed using the formula: $k(i) = a(i) + b(i) * P1/P2 + c(i) * P2/P3$ in which a, b and c are constant for age group and mor-

tality pattern. These constants were obtained from Tables in relevant literature (UN, New York, 1983; Manual X: Indirect Techniques for Demographic Estimation), separately for the Republic, Male' and the Atolls.

Step 4: Calculation of probability of dying and survival

The proportion of children dead in column 6 is multiplied with the Trussell adjustment factor in column 7 to obtain the probability of dying, $q(x)$, in column 8. The probabilities of survival, $l(x)$, in column 9 are obtained by subtracting the $q(x)$ values in column 8 from unity, 1. Both the $q(x)$ and $l(x)$ values refer to probabilities of dying and surviving from birth to the age indicated in column 1a. For example, the $q(1)$ value for the Republic is 0.0605, and represents the probability that a child dies between birth and first birthday.

One would expect that the $l(x)$ values decrease with an increase in age, because an older person will be exposed to mortality risk for a longer period. Study of the $l(x)$ -sequences for the Republic, Male' and Atolls show that there are deviations from this expected pattern that can be related to the relatively small numbers included in the sample. The observed 'irregularities' are worse for Male' than for the Atolls.

Step 5: Matching survival probabilities with Coale and Demeny Mortality Levels

Having accepted that the West pattern of mortality fits the mortality pattern of Maldives better than any of the other model patterns (see section 2.4.3), the corresponding Mortality Level of each of the $l(x)$ values, i.e. $l(1)$, $l(2)$, $l(3)$, $l(5)$, $l(10)$, $l(15)$ and $l(20)$ for the Republic, Male' and Atolls can be obtained through interpolation in existing Tables showing the $l(x)$ values for the West pattern at Mortality levels 1 up to 24. The results of this process of interpolation are shown in column 10. Inevitably, the irregularities work their way through subsequent steps in the computation procedure.

Step 6: Deriving the life expectancies at birth and

the infant mortality rates

Once the Mortality Level (and pattern) is established within the system of the Coale and Demeny Regional Life Tables, the life expectancy at birth for each of the geographical areas by age group of the mother can be estimated, again through a process of interpolation. The results are given in column 11 for the life expectancy at birth and in column 12 for the Infant Mortality Rate.

Step 7: Computation of the reference date

As is clear from the above procedures, the Trussell method using child survivorship data from mothers in different age groups has provided a range of estimates. Children of older women will on average be exposed to mortality risk for a longer period than children of younger mothers; they also grew up in times of different health conditions than younger persons. Evidence on survival status of the children of older mothers therefore reflects the mortality conditions at an earlier date than the evidence of the same for younger mothers. Trussell designed a method that makes it possible to compute the date to which estimates from different age groups of mothers refer. The inputs needed for the computation of the reference date are again the $P1/P2$ and $P2/P3$ ratios. The formula used for computation of the reference date, $t(i)$ is: $t(i) = a(i) + b(i) * (P1/P2) + c(i) * (P2/P3)$. The results, expressed in years prior to the survey, were computed with the help of this formula and the results were subtracted from the survey date to obtain the reference month as given in column 13. The reference survey date was taken as 1 November 1997 for the atolls, and 1 February 1998 for the capital Male'. In this manner an estimate is obtained of the trend in mortality.

3.2 Interpretation of the Results

3.2.1 The Actual Database on which the Results are based

It should be noted that the figures given in columns 1a to 5 in Table 1 are raised by raising factors derived from sampling fractions in order to achieve

comparability between different locations. The results presented in Table 1 have their basis in reports from a smaller number of mothers who participated in the survey than the figures in columns 1a to 5 seem to suggest.

In the interpretation of results, most emphasis is placed on the answers of women in the age groups 20-24, 25-29 and 30-34, because they provide the most recent estimates of mortality indicators; in addition, women in these age groups are less likely to mis-report the number of children ever born and still alive as these vital events will have occurred in the fairly recent past. Reports from women in their (late) forties more often suffer from recall lapse whereby in particular children who died many years ago at a very low age are likely to be omitted. Reports from 15-19 year old women should not be relied upon to obtain the most recent estimates because (a) the numbers of mothers in this age group are small, and (b) teenage pregnancies and births tend to be atypical.

3.2.2 Findings on Mortality Level of Maldives, Male' and the Atolls around early 1994

The trend in columns 11 and 12 show that the life expectancy at birth has considerably increased and the infant mortality rate has decreased. Reports of Atolls women aged 20-24 and Male' women aged 30-34 'obstruct' the general trend of smooth progress in the improvement of the health conditions that has resulted in lower mortality figures. These irregularities are not present in e.g. the data from the 1995 Population and Housing Census.

In order to derive a recent and plausible estimate for the $e(0)$ and IMR for the Atolls, the data for mothers aged 20-24 were not accepted at face value; accepting these results would have implied that the levels of mortality in the period 1994-96 would have gone up (Atolls) or barely gone down (Male') which is highly improbable given the improvements in access to health on-goingly made during this period. The reports from mothers 25-29 are in line with the trend displayed by reports from older women. We can therefore be confident that the life expectancy at birth (both sexes) in the Atolls has been steadily increasing from 50 to 59 years in the period May 1982-

December 1993, which corresponds to a decrease in the IMR from 121 to 75. The $e(0)$ for both sexes for Male' increased from 55 to 65 in the period 1985-1994, corresponding to a decrease in the IMR from 94 to 48. For the Republic of Maldives the life expectancy at birth increased from 51 in late 1982 to 60 in early 1994, with a corresponding decline in the IMR from 114 to 72.

3.2.3 Estimates of Mortality Level of Maldives, Male' and the Atolls at the Time of Survey

This leaves the issue: 'What is the level of our mortality indicators at the time of the VPA survey in 1997? This question can only be answered by projections on the basis of plausible assumptions. The 'minimum' scenario is based on the assumption that no further decline in mortality took place after 1993; the 'maximum' scenario assumes a continued decline after 1993 at approximately the same speed as in the period 1982-1993. The 'medium' scenario, the average of the minimum and maximum, is considered most plausible as it reflects a slowing down in the rate of mortality decline. The phenomenon of a slow-down in mortality decline is common in populations after reaching a level of mortality corresponding to $e(0) = 60$ years. The results of these medium estimates for $e(0)$ and IMR are given in Table 2 on page 11. Maldives life expectancy at birth is estimated as 62 years; the Atolls just cross the 60 years mark, and Male's $e(0)$ is approximately 68. The corresponding Infant Mortality Rates are 62 for the Republic, 69 for the atolls and 37 for Male. This compares favourably with the results from the 1995 population census where data on birth and survival of births in the year prior to the census indicate that the IMR for the Republic is about 85.

4. Estimation of Life Expectancy at Birth and Infant Mortality Rate for Single Atolls, by Sex

4.1 Estimates by Sex (Male, Female)

The procedures outlined above are also followed to estimate the $e(0)$ and IMR separately for males and females. The proportions of girls who died to moth-

ers in the Atolls by age groups show a regular pattern conforming to an increase in this proportion with a rise in the mother's age. This can be taken as an indication that reporting of female deaths is more reliable than reporting of male deaths. The estimated Mortality Levels for each of the sexes by age group of mother are remarkably close, adding confidence to quality of the data and the results of the analysis. The data reveal that the sex gap in mortality in Maldives is relatively small compared to many other countries. For example, the estimated life expectancies at birth in 1997 for Maldivian women is 64, for men it is 61 years. These figures correspond to an IMR for girls of 56, for boys 69. There is no evidence that female mortality is higher than male mortality as is sometimes suggested in publications on Maldives' demography on the basis of sex ratio analysis.

4.2 Mortality for Atoll Regions and Atolls

4.2.1 Methodology and Data Limitations

Initial attempts were made to apply the same estimation procedure as described in section 3 to derive estimates for each of the 20 atolls. However, this proved to be impossible in some cases: in some atolls no mothers in the age group 15-19 were included in the survey, in others there were age groups of mothers that reported all children alive, so that a Mortality Level for that age group could not be derived. These problems were obviously caused by the sample size, for example, in Vaavu atoll the number of mothers aged 20-34 included in the sample was only 24.

Two techniques were used to circumvent the problem in order to derive a 'plausible' estimate.

First, estimates were made for the following Atoll Regions:

- Upper North: Haa Alif, Haa Dhaal
- North: Shaviyani, Noonu, Raa, Baa, Lhaviyani
- Centre: Kaafu, Alif Uthuru buri, Alif Dhekunu buri, Vaavu
- South: Meemu, Faafu, Dhaal, Thaa, Laamu,

Gaaf Alif, Gaaf Dhaal

- Far South: Gnaviyani, Seenu

For the Atoll Regions, the usual procedures are applied by which a strong emphasis is placed on the most 'stable' statistic, $l(3)$ which rarely produced an atypical result. This survival probability up to age 3 for both sexes is derived from reports on survival status of children from mothers 25-29 and is taken to compute the ML in the West Model life tables. The relatively small differential between male and female mortality found for the total Atolls population is assumed to be applicable to all Atolls Regions, and in this manner the various mortality indicators by sex are derived for which the reference date is late 1993. The 'medium assumption' of reduced speed in mortality decline is again applied to derive mortality estimates by sex for 1997. Mortality indicators for both sexes are then computed for Atoll Regions by averaging the male and female estimates.

At atoll level it is no longer possible to depend heavily on the $l(3)$ -value estimated from reports of women in the age group 25-29 because they produce extreme and unacceptable estimates in several cases. In some cases the $l(2)$ -value derived from reports of women 20-24 produced more plausible results. For all atolls the Mortality Level was also calculated on the basis of the proportion of children dead to women 15-64 in the atoll relative to this proportion in the 'region' to which the atoll belongs. The ratio so obtained is then multiplied with the estimated ML for the region, resulting in the estimated ML for the atoll, as follows:

$$ML_{\text{atoll}} = (\text{Ratio percent dead (region)/ percent dead (atoll)}) * \text{the ML (region)}$$

where:

ML_{atoll} = the estimate of the Mortality level for the atoll based on evidence from data from the region, and $ML(\text{region})$ is the Mortality Level for the region to which the atoll belongs.

There are two obvious advantages to this procedure: (1) the data on proportion of children dead to mothers in a broad age group at atoll and regional level is

Table 2 Life expectancy at birth and infant mortality rate by sex

Area	Life expectancy at birth			Infant Mortality Rate		
	Both e(0) b	Female e(0) f	Male e(0) m	Both IMR(b)	Female IMR(f)	Male IMR(m)
Maldives	62	64	61	62	56	69
Male'	68	69	67	37	34	40
All atolls	60	62	59	69	63	76
Far North	60	61	58	71	67	76
Haa Alif	58	59	56	79	75	84
Haa Dhaal	62	63	60	63	58	67
North	55	57	54	93	86	100
Shaviyani	53	55	52	102	93	111
Noonu	56	58	55	88	80	96
Raa (a)	52	54	50	110	101	119
Baa	66	68	64	43	38	49
Lhaviyani (b)	58	60	56	81	73	89
Centre	63	64	61	59	54	64
Kaafu	66	68	65	47	42	51
Alif Uthuru buri (b)	58	60	57	74	69	80
Alif Dhekunu buri	65	67	64	49	45	54
Vaavu (b)	61	62	59	66	60	71
South	57	59	56	83	77	89
Meemu (a,b)	62	64	60	61	54	67
Faafu (a,b)	54	56	53	99	90	108
Dhaal (a,b)	58	60	57	78	71	86
Thaa (a)	54	56	53	99	90	108
Laamu	59	61	57	76	69	84
Gaaf Alif	62	64	61	60	53	66
Gaaf Dhaal	58	60	56	81	73	89
Far South	69	70	68	33	30	36
Gnaviyani (b)	69	70	67	34	31	37
Seenu	69	71	68	32	29	35
Notes:						
(a) = large discrepancy between ML(13) and ML(atoll) (see text for explanation)						
(b) = result is based on sample of less than 50 mothers aged 20-34 years old						

always available; (2) the ratio takes the child loss experience of mothers of all age groups into account: this increases the number of cases used in the computation of the ratio and adds stability to the statistic. The effects of age mis-reporting and chance fluctuations are considerably reduced. However, an element of arbitrariness is added to the procedure by relating each atoll to a region which is somewhat subjectively defined.

The ML_{atoll} so obtained was then compared with the ML directly derived from reports of mothers aged 25-29, i.e. ML_{13} and with the ML_{12} whenever possible. The most plausible estimate was adopted using as a guiding principle that evidence from the atoll should be utilised to the greatest extent possible. Obviously, this exercise had its arbitrary moments, and this was particularly so for the atolls Raa, Meemu, Faafu, Dhaal and Thaa Atolls. These atolls have been

labelled '(a)' in Table 2.

This 'atolls' methodology described above introduces a difficulty that the reference date for the estimate is not the same for each atoll. The atoll estimates were projected to 1997 by reference to the 1997 medium estimates for the Atoll Region to which each atoll belongs.

4.2.2 The Results of the Mortality Estimation for the Atolls

The results of the analysis are shown in Table 2. The values presented there represent the 'medium' estimates for 1997. 'Far South' and Male' capital have the lowest levels of mortality with $e(0)$ for both sexes close to 70, followed by the Centre (close proximity to Male' and its facilities), Far North, South and North. This last region's $e(0)$ is approximately 55 years. Correspondingly, the IMR varies between approximately 35 (Far South and Male') to over 90 in the North Region. Table 2 also gives the estimates

for each atoll: Raa, Shaviyani, Faafu and Thaa are worst off with a $e(0)$ for both sexes above 50 but below 55 years. Seenu, Gnaviyani, Male', Baa, Kaafu and Alif Dhekunu buri are best off with the $e(0)$ for both sexes in excess of 65 years.

It should also be noted that no attempts were made to refine the Atolls estimates for the relatively small 'mortality gap' between the sexes as was observed at national and regional levels. Table 2 shows that the difference between male and female life expectancy at birth always exceeds three years.

A final note of caution will be made. Although the applied procedures for estimation of mortality for each atoll has resulted in 'reasonable' or 'plausible' results, there is no denying that the statistical basis for them is fairly weak: 'plausible findings' are not necessarily 'accurate estimates'. The statistics for the Atolls therefore need to be taken as indicative; they need to be verified with a larger body of data from, e.g. the 1995 population and housing census.

Statistical Annex

Explanatory Note to Statistical Annex

For each living standard dimension presented in the tables in the following annex, the columns preceding the Human Vulnerability Index (HVI) are sub-components of the HVI. The columns that follow the HVI do not form part of the Index. Rather, they provide additional information for the living standard dimension for each island and atoll.

Unless otherwise stated, the figures in the following tables are percentages. For instance, the figure “2” in the column “house with thatched wall” indicates that 2 percent of the population in Haa Alif lives in houses with a thatch wall. Because the HVI is a deprivation index, double negatives have had to be used in some cases. For instance, a zero (0) in the column “no electricity” is a double negative that indicates a positive situation. In this case, the whole of the island population has access to electricity (0 percent of the population has no electricity). A blank has a different meaning than a zero. A zero means 0 percent while a “blank” indicates non-response.

For technical reasons, it was not possible to process the questionnaires completed by Island Chiefs in four islands: Ihavandhoo (pop. 1980) in Haa Alif, Maafilaafushi (69) in Lhaviyani, Kaashidhoo (1,535) in Kaafu, and Meedhoo (1,818) in Seenu. Consequently, the HVIs for transport, communications, environment and education could not be calculated for these four islands, nor could their overall HVIs. For the calculation of the overall HVIs for the atolls in which the islands are located, the missing data were treated as non-response.

Statistical Annex I - General

ATOLLS	population size	area in hectares	population density, population size per hectare	ATOLLS	population size	area in hectares	population density, population size per hectare
Maldives Male' Atoll average	253054			Maroshi	604	27	23
HAA ALIF ATOLL	14235			Lhaimagu	508	37	14
Thurakunu	510	22	23	Firubaidhoo	681	14	48
Uligamu	384	113	3	Komandoo	1441	6	240
Berinmadhoo	163	15	11	Maaugoodhoo	772	27	29
Hathifushi	201	4	49	Funadhoo	498	77	6
Mulhadhoo	258	118	2	NOONU ATOLL	10715		
Hoarafushi	2113	63	33	Hebadhoo	469	20	24
Ihavandhoo	1980	61	33	Kedhikolhudhoo	1123	219	5
Kelaa	1286	213	6	Maalhendhoo	630	31	20
Vashafaru	594	31	19	Kudafari	477	23	21
Dhidhdhoo	2468	51	49	Landhoo	703	81	9
Filladhoo	708	226	3	Maafaru	746	114	7
Maarandhoo	635	41	15	Lhohi	558	35	16
Thakandhoo	609	45	14	Miladhoo	930	18	51
Utheemu	615	47	13	Magoodhoo	261	31	9
Muraidhoo	505	50	10	Manadhoo	1104	92	12
Baarah	1206	249	5	Holhudhoo	1642	17	95
HAA DHAAL ATOLL	16911			Fodhdhoo	278	25	11
Faridhoo	218	23	9	Velidhoo	1794	43	42
Hondaiddhoo	135	17	8	RAA ATOLL	14692		
Hanimaadhoo	919	260	4	Alifushi	1804	46	40
Finney	367	118	3	Vaadhoo	349	31	11
Naivaadhoo	642	26	25	Rasgetheemu	601	30	20
Hirimaradhoo	409	43	10	Agolhitheemu	354	32	11
Nolhivaranfaru	421	150	3	Hulhudhuffaaruu	946	49	19
Nellaidhoo	838	30	28	Ugoofaaruu	1094	28	39
Nolhivaramu	1508	221	7	Kadhohudhoo	2783	4	633
Kuribi	499	32	16	Maakurathu	841	43	19
Kuburudhoo	292	42	7	Rasmaadhoo	559	23	25
Kulhudhuffushi	5987	172	35	Innamaadhoo	513	28	18
Kumundhoo	1037	178	6	Maduvvari	1543	16	94
Neykurendhoo	991	163	6	Iguraidhoo	1279	36	36
Vaikaradhoo	1201	95	13	Fainu	273	50	5
Maavaiddhoo	352	37	10	Meedhoo	1397	31	46
Makunudhoo	1095	61	18	Kinolhas	356	45	8
SHAVIYANI ATOLL	11287			BAA ATOLL	8857		
Kaditheemu	1014	90	11	Kudarikilu	409	14	30
Noomaraa	460	35	13	Kamadhoo	295	16	18
Goidhoo	465	106	4	Kendhoo	794	15	55
Feydhoo	759	82	9	Kihaadhoo	280	26	11
Feevah	719	79	9	Dhonfanu	409	13	32
Bilehffahi	442	58	8	Dharavandhoo	675	46	15
Foakaidhoo	1011	56	18	Maalhos	407	23	18
Narudhoo	389	42	9	Eydhafushi	1942	22	87
Maakandoodhoo	1524	91	17	Thulhaadhoo	1792	5	358
				Hithaadhoo	944	25	37
				Fulhadhoo	228	32	7

Contd.

Statistical Annex - General , Contd.

ATOLLS	population size	area in hectares	population density, population size per hectare	ATOLLS	population size	area in hectares	population density, population size per hectare
Fehendhoo	172	21	8	Veyvah	156	35	5
Goidhoo	510	114	4	Muli	641	27	23
LHAVIYANI ATOLL	8783			Naalaafushi	341	9	38
Hinnavaru	3483	7	484	Kolhufushi	854	76	11
Naifaru	3725	14	260	Dhiggaru	917	5	199
Kurendhoo	1112	20	56	Maduvvari	525	3	169
Olhuvelifushi	394	20	20	FAAFU ATOLL	3658		
Maafilaafushi	69	49	1	Feeali	736	14	54
KAAFU ATOLL	8245			Biledhdhoo	898	30	30
Kaashidhoo	1535	277	6	Magoodhoo	519	18	29
Gaafaru	875	10	88	Dharaboodhoo	285	37	8
Dhiffushi	858	13	65	Nilandhoo	1220	49	25
Thulusdhoo	805	34	24	DHAAL ATOLL	4995		
Huraa	687	19	37	Meedhoo	899	9	101
Himmafushi	820	25	33	Badidhoo	593	20	30
Gulhi	576	6	105	Ribudhoo	549	16	34
Maafushi	953	23	41	Hulhudheli	478	16	31
Guraidhoo	1136	18	62	Gemendhoo	370	5	79
ALIF UTHURU BURI	5154			Vaanee	362	11	33
Thoddoo	1115	141	8	Maaeoodhoo	666	18	38
Rasdhoo	758	17	46	Kudahuvadhoo	1078	64	17
Ukulhas	583	17	34	THAA ATOLL	9482		
Mathiveri	591	19	32	Buruni	387	31	13
Bodufolhudhoo	509	7	74	Vilufushi	1220	14	90
Feridhoo	534	43	12	Madifushi	768	15	51
Maalhos	533	23	23	Dhiyamigili	530	12	44
Himandhoo	531	16	32	Guraidhoo	1367	17	81
ALIF DHEKUNU BURI	7263			Kadoodhoo	398	78	5
Hangnameedhoo	517	17	30	Vandhoo	291	23	13
Omadhoo	716	19	38	Hirilandhoo	717	25	29
Kuburudhoo	459	5	94	Gaadhiffushi	361	11	33
Mahibadhoo	1642	18	93	Thimarafushi	1499	15	103
Mandhoo	291	29	10	Veymandoo	764	41	19
Dhagethi	696	21	33	Kibidhoo	777	31	25
Dhigurah	423	43	10	Omadhoo	403	33	12
Fenfushi	635	17	38	LAAMU ATOLL	11078		
Dhidhdhoo	125	13	9	Isdhoo	1524	294	5
Maamigili	1759	75	23	Dhabidhoo	611	47	13
VAAVU ATOLL	1692			Maabaidhoo	630	43	15
Fulidhoo	305	10	31	Mundhoo	580	20	29
Thinadhoo	149	9	16	Kalhaidhoo	567	18	32
Felidhoo	436	12	37	Gamu	1831	517	4
Keyodhoo	537	7	74	Maavah	1317	32	41
Rakeedhoo	265	4	66	Fonadhoo	1440	159	9
MEEMU ATOLL	4993			Gaadhoo	319	69	5
Raimandhoo	200	22	9	Maamendhoo	948	19	50
Madifushi	179	11	16	Hithadhoo	751	107	7
Mulah	1180	58	20	Kunahandhoo	560	81	7

Contd.

Statistical Annex - General , Contd.

ATOLLS	population size	area in hectares	population density, population size per hectare	ATOLLS	population size	area in hectares	population density, population size per hectare
GAAF ALIF ATOLL	8219			Rathafandhoo	623	35	18
Kolamaafushi	1136	20	56	Vaadhoo	826	167	5
Viligili	2147	53	41	Fiyoari	888	73	12
Maamendhoo	840	49	17	Maathodaa	454	16	29
Nilandhoo	486	57	9	Fares	480	22	22
Dhaandhoo	1154	13	92	Thinadhoo	4349	58	75
Dhevvadhoo	632	21	31	GNAVIYANI ATOLL	7917		
Kodey	276	104	3	Foammulah	7917	420	19
Dhiyadhoo	115	49	2	SEENU ATOLL	18712		
Gemanafushi	906	47	19	Meedhoo	1818	160	11
Kanduhulhudhoo	527	25	21	Hithadhoo	8973	467	19
GAAF DHAAL ATOLL	11765			Maradhoo	1939	49	40
Madeveli	1054	34	31	Feydhoo	3174	49	65
Hoadedhdhoo	638	86	7	Maradhoo-Feydhoo	1047	26	40
Nadallaa	735	41	18	Hulhudhoo	1761	54	33
Gadhdhoo	1718	22	77				

Statistical Annex II - Income Poverty (Map 1)

ATOLLS	headcount ratio, percentage of the population with less than 7.5 rufiyaa per person per day	headcount ratio, percentage of the population with less than 10 rufiyaa per person per day	headcount ratio, percentage of the population with less than 15 rufiyaa per person per day	average income of the population with less than 15 rufiyaa per person per day, in rufiyaa	income shortfall of the population with less than 15 rufiyaa per person per day, in percentages	poverty gap index of the population with less than 15 rufiyaa per person per day	Human Vulnerability Index
Maldives	13	22	43	9.5	37	0.15	0.25
Male'	7	10	20	9.5	37	0.07	0.11
Atoll average	15	26	50	9.5	37	0.18	0.29
HAA ALIF ATOLL	5	14	34	10.8	28	0.09	0.15
Thurakunu	30	30	68	9.2	38	0.26	0.42
Uligamu	12	30	87	10.8	28	0.24	0.39
Berinmadhoo	24	31	48	7.2	52	0.25	0.40
Hathifushi	5	21	21	8.8	41	0.09	0.14
Mulhadhoo	19	63	76	9.3	38	0.29	0.47
Hoarafushi	1	1	7	12.4	17	0.01	0.02
Ihavandhoo	0	0	6	13.7	9	0.01	0.01
Kelaa	0	14	25	9.8	34	0.09	0.14
Vashafaru	24	24	73	9.4	37	0.27	0.44
Dhidhdhoo	4	4	32	11.8	22	0.07	0.11
Filladhoo	12	12	47	11.3	25	0.12	0.19
Maarandhoo	0	0	19	12.7	16	0.03	0.05
Thakandhoo	0	0	47	12.6	16	0.07	0.12
Utheemu	0	0	13	12.9	14	0.02	0.03
Muraidhoo	11	61	89	10.0	33	0.30	0.48
Baarah	0	36	48	10.5	30	0.15	0.24
HAA DHAAL ATOLL	13	21	50	9.8	35	0.17	0.27
Faridhoo	0	9	68	11.5	23	0.16	0.26
Hondaidhoo	12	12	53	10.5	30	0.16	0.26
Hanimaadhoo	27	52	52	7.7	49	0.25	0.41
Finney	11	26	26	8.2	45	0.12	0.19
Naivaadhoo	10	10	37	10.7	29	0.11	0.17
Hirimaradhoo	12	12	12	3.6	76	0.09	0.15
Nolhivaranfaru	0	20	51	11.0	27	0.14	0.22
Nellaidhoo	9	9	54	12.1	19	0.10	0.17
Nolhivaramu	18	18	93	9.7	35	0.33	0.53
Kuribi	16	16	76	12.1	19	0.15	0.24
Kuburudhoo	0	10	39	12.4	17	0.07	0.11
Kulhudhuffushi	16	23	40	9.4	37	0.14	0.22
Kumundhoo	11	11	40	10.1	33	0.13	0.21
Neykurendhoo	30	30	30	3.8	75	0.23	0.37
Vaikaradhoo	17	24	68	10.4	31	0.21	0.33
Maavaidhoo	7	17	39	9.9	34	0.13	0.21
Makunudhoo	11	31	67	10.2	32	0.21	0.34
SHAVIYANI ATOLL	18	32	56	9.3	38	0.21	0.35
Kaditheemu	41	59	66	8.2	46	0.30	0.49
Noomaraa	24	33	33	6.2	59	0.20	0.32
Goidhoo	14	21	59	11.3	25	0.15	0.24
Feydhoo	33	56	63	7.2	52	0.33	0.53
Feevah	0	12	47	11.4	24	0.11	0.18
Bilehffahi	44	61	93	8.0	46	0.43	0.69
Foakaidhoo	52	62	85	7.5	50	0.42	0.69
Narudhoo	21	21	67	9.8	35	0.23	0.38

Statistical Annex - Income Poverty , Contd.

ATOLLS	headcount ratio, percentage of the population with less than 7.5 rufiyaa per person per day	headcount ratio, percentage of the population with less than 10 rufiyaa per person per day	headcount ratio, percentage of the population with less than 15 rufiyaa per person per day	average income of the population with less than 15 rufiyaa per person per day, in rufiyaa	income shortfall of the population with less than 15 rufiyaa per person per day, in percentages	poverty gap index of the population with less than 15 rufiyaa per person per day	Human Vulnerability Index
Maakandoodhoo	5	23	73	11.2	25	0.18	0.29
Maroshi	8	33	74	10.3	31	0.23	0.37
Lhaimagu	10	24	37	7.9	47	0.17	0.28
Firubaidhoo	15	37	37	6.9	54	0.20	0.32
Komandoo	0	21	43	10.1	33	0.14	0.22
Maugoodhoo	0	0	19	14.3	5	0.01	0.01
Funadhoo	18	18	28	8.1	46	0.13	0.21
NOONU ATOLL	20	34	66	9.5	37	0.23	0.38
Hebadhoo	22	22	69	8.8	41	0.29	0.46
Kedhikolhudhoo	25	42	55	8.8	42	0.23	0.37
Maalhendhoo	42	55	77	8.1	46	0.36	0.57
Kudafari	58	94	94	6.7	55	0.52	0.84
Landhoo	0	0	30	10.9	27	0.08	0.13
Maafaru	0	0	18	13.5	10	0.02	0.03
Lhohi	17	17	38	10.0	34	0.13	0.20
Miladhoo	16	16	45	9.4	37	0.17	0.27
Magoodhoo	16	16	42	10.5	30	0.13	0.20
Manadhoo	11	41	75	9.2	38	0.29	0.47
Holhudhoo	15	41	82	10.2	32	0.26	0.42
Fodhdhoo	35	35	75	8.5	43	0.32	0.52
Velidhoo	20	33	84	10.2	32	0.27	0.43
RAA ATOLL	20	30	51	9.1	39	0.20	0.32
Alifushi	42	42	67	8.7	42	0.28	0.45
Vaadhoo	6	21	32	10.9	27	0.09	0.14
Rasgetheemu	0	0	26	12.0	20	0.05	0.08
Agolhitheemu	0	0	0		0		0.00
Hulhudhuffaaru	0	0	48	12.2	18	0.09	0.14
Ugoofaaru	29	39	50	8.8	41	0.21	0.33
Kadholhudhoo	1	12	26	9.3	38	0.10	0.16
Maakurathu	10	29	29	7.5	50	0.14	0.23
Rasmaadhoo	0	13	43	11.8	21	0.09	0.15
Innamaadhoo	0	18	27	10.2	32	0.09	0.14
Maduvvari	51	71	97	7.3	52	0.50	0.81
Iguraidhoo	31	44	65	8.8	41	0.27	0.44
Fainu	71	80	100	6.8	54	0.54	0.88
Meedhoo	3	17	51	11.2	25	0.13	0.21
Kinolhas	32	39	78	9.8	35	0.27	0.44
BAA ATOLL	31	46	75	8.6	42	0.32	0.51
Kudarikilu	22	45	72	9.2	39	0.28	0.45
Kamadhoo	63	73	81	6.7	56	0.45	0.72
Kendhoo	20	54	73	8.7	42	0.31	0.49
Kihaadhoo	58	81	86	7.4	51	0.44	0.70
Dhonfanu	20	39	56	8.6	42	0.24	0.38
Dharavandhoo	0	4	50	12.2	19	0.09	0.15
Maalhos	0	0	35	13.2	12	0.04	0.07
Eydhafushi	30	54	86	8.5	43	0.37	0.60
Thulhaadhoo	33	47	68	8.4	44	0.30	0.49

Contd.

Statistical Annex - Income Poverty , Contd...

	headcount ratio, percentage of the population with less than 7.5 rufiyaa per person per day	headcount ratio, percentage of the population with less than 10 rufiyaa per person per day	headcount ratio, percentage of the population with less than 15 rufiyaa per person per day	average income of the population with less than 15 rufiyaa per person per day, in rufiyaa	income shortfall of the population with less than 15 rufiyaa per person per day, in percentages	poverty gap index of the population with less than 15 rufiyaa per person per day	Human Vulnerability Index
ATOLLS							
Hithaadhoo	36	53	91	8.8	42	0.38	0.61
Fulhadhoo	69	86	92	7.1	52	0.48	0.78
Fehendhoo	42	56	92	7.6	49	0.45	0.73
Goidhoo	42	68	79	7.8	48	0.38	0.61
LHAVIYANI ATOLL	36	51	82	8.4	44	0.35	0.57
Hinnavaru	52	56	88	7.6	49	0.43	0.70
Naifaru	20	34	75	9.8	35	0.26	0.42
Kurendhoo	31	69	84	7.5	50	0.42	0.68
Olhuvelifushi	49	75	75	6.7	55	0.42	0.67
Maafilaafushi	0	0	32	13.2	12	0.04	0.06
KAAFU ATOLL	5	10	25	10.6	30	0.07	0.11
Kaashidhoo	15	15	38	9.2	39	0.15	0.24
Gaafaru	0	9	36	10.9	27	0.10	0.16
Dhiffushi	16	25	32	8.5	43	0.14	0.22
Thulusdhoo	0	0	32	12.2	19	0.06	0.10
Huraa	0	0	0		0		0.00
Himmafushi	0	0	0		0		0.00
Gulhi	0	14	37	11.7	22	0.08	0.13
Maafushi	0	2	17	14.0	7	0.01	0.02
Guraidhoo	0	0	13	11.1	26	0.03	0.05
ALIF UTHURU BURI	3	12	32	11.3	25	0.08	0.13
Thoddo	0	19	33	10.2	32	0.11	0.17
Rasdho	0	0	24	14.7	2	0.00	0.01
Ukulhas	0	7	38	12.6	16	0.06	0.10
Mathiveri	0	0	31	12.3	18	0.06	0.09
Bodufolhudhoo	11	11	25	10.0	34	0.09	0.14
Feridhoo	15	15	15	7.1	53	0.08	0.13
Maalhos	7	25	57	10.0	33	0.19	0.30
Himandhoo	0	4	38	11.8	21	0.08	0.13
ALIF DHEKUNU BURI	6	11	47	11.0	26	0.11	0.18
Hangnameedhoo	10	20	57	10.5	30	0.17	0.28
Omadhoo	17	34	82	9.8	35	0.29	0.46
Kuburudhoo	19	39	57	9.3	38	0.22	0.35
Mahibadhoo	0	0	60	12.5	17	0.10	0.16
Mandhoo	6	6	61	11.4	24	0.14	0.23
Dhagethi	0	0	0		0		0.00
Dhigurah	0	0	11	14.4	4	0.00	0.01
Fenfushi	0	15	38	12.2	19	0.07	0.12
Dhidhdhoo	0	11	25	12.1	19	0.05	0.08
Maamigili	12	12	24	9.7	36	0.09	0.14
VAAVU ATOLL	7	25	65	10.3	32	0.21	0.33
Fulidhoo	19	51	66	8.6	42	0.28	0.45
Thinadhoo	17	33	96	10.6	29	0.28	0.45
Felidhoo	0	27	61	10.6	29	0.18	0.29
Keyodhoo	7	7	75	10.3	31	0.23	0.38
Rakeedhoo	0	0	33	12.2	19	0.06	0.10
MEEMU ATOLL	48	60	76	7.1	53	0.39	0.63
Raimandhoo	59	66	81	6.9	54	0.44	0.71
Madifushi	67	83	94	5.1	66	0.62	1.01

Contd.

Statistical Annex - Income Poverty , Contd.

	headcount ratio, percentage of the population with less than 7.5 rufiyaa per person per day	headcount ratio, percentage of the population with less than 10 rufiyaa per person per day	headcount ratio, percentage of the population with less than 15 rufiyaa per person per day	average income of the population with less than 15 rufiyaa per person per day, in rufiyaa	income shortfall of the population with less than 15 rufiyaa per person per day, in percentages	poverty gap index of the population with less than 15 rufiyaa per person per day	Human Vulnerability Index
ATOLLS							
Veyvah	61	70	92	6.9	54	0.50	0.81
Mulah	12	24	37	8.5	43	0.16	0.26
Muli	29	53	87	8.5	43	0.38	0.61
Naalaafushi	20	39	78	9.9	34	0.27	0.43
Kolhufushi	76	89	100	5.6	62	0.62	1.01
Dhiggaru	70	82	93	7.7	49	0.46	0.74
Maduvvari	49	49	49	3.3	78	0.38	0.62
FAAFU ATOLL	31	41	73	9.2	39	0.28	0.45
Feali	16	31	65	9.8	35	0.23	0.36
Biledhdhoo	0	12	63	12.3	18	0.11	0.18
Magoodhoo	18	31	44	7.0	53	0.23	0.37
Dharaboodhoo	22	22	69	9.8	35	0.24	0.38
Nilandhoo	64	64	93	7.7	49	0.46	0.73
DHAAL ATOLL	10	25	48	10.5	30	0.15	0.24
Meedhoo	0	10	33	12.4	17	0.06	0.09
Badidhoo	17	46	56	7.8	48	0.27	0.43
Ribudhoo	23	30	44	7.8	48	0.21	0.34
Hulhudheli	0	27	38	10.1	32	0.12	0.20
Gemendhoo	19	58	66	8.2	45	0.30	0.48
Vaanee	10	38	62	10.1	32	0.20	0.32
Maaeboodhoo	24	48	78	10.1	33	0.25	0.41
Kudahuvadhoo	0	0	42	14.4	4	0.02	0.03
THAA ATOLL	29	47	67	8.3	45	0.29	0.48
Buruni	37	37	52	6.9	54	0.28	0.45
Vilufushi	33	56	78	7.9	47	0.37	0.59
Madifushi	23	32	65	9.4	37	0.24	0.39
Dhiyamigili	29	29	65	8.2	45	0.29	0.47
Guraidhoo	49	67	78	7.3	51	0.40	0.64
Kadoodhoo	57	66	82	6.2	59	0.48	0.77
Vandhoo	36	64	76	6.8	55	0.42	0.68
Hirilandhoo	36	59	76	7.3	51	0.39	0.63
Gaadhiffushi	16	37	55	9.7	35	0.19	0.31
Thimarafushi	18	41	61	9.4	37	0.23	0.37
Veymandoo	0	15	59	11.8	21	0.12	0.20
Kibidhoo	16	39	39	8.4	44	0.17	0.28
Omadhoo	30	47	60	7.2	52	0.31	0.50
LAAMU ATOLL	11	23	47	10.0	34	0.16	0.26
Isdhoo	0	0	0		0		0.00
Dhabidhoo	0	0	0		0		0.00
Maabaidhoo	11	11	56	11.0	27	0.15	0.24
Mundhoo	11	11	40	10.7	28	0.12	0.19
Kalhaidhoo	21	30	85	9.8	34	0.29	0.47
Gamu	3	41	65	9.9	34	0.22	0.35
Maavah	20	20	44	10.1	32	0.14	0.23
Fonadhoo	17	24	75	10.6	30	0.22	0.36
Gadhoo	0	13	32	11.7	22	0.07	0.12
Maamendhoo	22	64	73	8.2	45	0.33	0.53
Hithadhoo	0	9	27	11.0	27	0.07	0.12
Kunahandhoo	32	43	68	8.9	40	0.27	0.44

Statistical Annex - Income Poverty , Contd.

	headcount ratio, percentage of the population with less than 7.5 rufiyaa per person per day	headcount ratio, percentage of the population with less than 10 rufiyaa per person per day	headcount ratio, percentage of the population with less than 15 rufiyaa per person per day	average income of the population with less than 15 rufiyaa per person per day, in rufiyaa	income shortfall of the population with less than 15 rufiyaa per person per day, in percentages	poverty gap index of the population with less than 15 rufiyaa per person per day	Human Vulnerability Index
ATOLLS							
GAAF ALIF ATOLL	6	14	31	10.8	28	0.09	0.14
Kolamaafushi	0	0	4	13.7	9	0.00	0.01
Viligili	2	10	23	11.9	21	0.05	0.08
Maamendhoo	6	6	33	12.4	17	0.06	0.09
Nilandhoo	13	27	56	10.0	34	0.19	0.30
Dhaandhoo	13	30	46	9.8	35	0.16	0.26
Dheevadhoo	13	13	43	10.9	27	0.12	0.19
Kodey	8	20	34	10.2	32	0.11	0.17
Dhiyadhoo	0	13	40	10.7	29	0.11	0.18
Gemanafushi	0	12	23	10.4	30	0.07	0.11
Kanduhulhudhoo	13	24	58	9.8	35	0.20	0.32
GAAF DHAAL ATOLL	14	26	49	9.5	36	0.18	0.29
Madeveli	21	41	77	10.2	32	0.25	0.40
Hoadedhdhoo	43	55	70	7.3	52	0.36	0.58
Nadallaa	44	75	83	6.4	57	0.48	0.77
Gadhdhoo	7	7	24	11.5	23	0.06	0.09
Rathafandhoo	34	34	34	6.4	57	0.20	0.32
Vaadhoo	8	23	32	9.6	36	0.12	0.19
Fiyolari	0	20	57	11.3	25	0.14	0.23
Maathodaa	0	13	51	11.6	23	0.11	0.19
Fares	32	32	57	8.7	42	0.24	0.38
Thinadhoo	9	18	45	10.1	33	0.15	0.24
GNAVIYANI ATOLL	6	21	49	11.0	27	0.13	0.21
Foammulah	6	21	49	11.0	27	0.13	0.21
SEENU ATOLL	4	16	36	10.2	32	0.11	0.18
Meedhoo	4	13	32	9.7	35	0.11	0.18
Hithadhoo	2	17	32	10.2	32	0.10	0.17
Maradhoo	8	11	40	10.0	34	0.13	0.22
Feydhoo	0	0	28	12.1	19	0.05	0.09
Maradhoo-Feydhoo	20	32	56	8.4	44	0.25	0.40
Hulhudhoo	3	29	48	9.8	35	0.17	0.27

Statistical Annex III - Electricity (Map 2)

ATOLLS	no electricity	6 hours or less electricity per day	Human Vulnerability Index	4 wired points or less in the house
Maldives	7	20	0.14	
Male'	0		0.00	
Atoll average	9	28	0.23	27
HAA ALIF ATOLL	24	62	0.55	39
Thurakunu	100		1.00	
Uligamu	100		1.00	
Berimadhoo	100		1.00	
Hathifushi	0	93	0.47	63
Mulhadhoo	20	100	0.70	54
Hoarafushi	14	100	0.64	72
Ihavandhoo	47	100	0.97	82
Kelaa	2	12	0.08	2
Vashafaru	2	100	0.52	26
Dhidhdhoo	4	0	0.04	9
Filladhoo	10	100	0.60	17
Maarandhoo	0	0	0.00	40
Thakandhoo	70	100	1.00	100
Utheemu	0	100	0.50	64
Muraidhoo	7	100	0.57	50
Baarah	29	100	0.79	30
HAA DHAAL ATOLL	10	25	0.23	20
Faridhoo	0	100	0.50	0
Hondaaidhoo	100		1.00	
Hanimaadhoo	0	0	0.00	45
Finey	56	100	1.00	47
Naivaadhoo	0	0	0.00	10
Hirimaradhoo	2	100	0.52	14
Nolhivaranfaru	0	100	0.50	76
Nellaidhoo	9	100	0.59	10
Nolhivaramu	2	54	0.29	71
Kuribi	8	100	0.58	2
Kuburudhoo	100		1.00	
Kulhudhuffushi	0	3	0.01	4
Kumundhoo	91	0	0.91	0
Neykurendhoo	0	13	0.06	8
Vaikaradhoo	0	0	0.00	20
Maavaidhoo	15	72	0.51	41
Makunudhoo	0	0	0.00	22
SHAVIYANI ATOLL	7	44	0.29	37
Kaditheemu	0	11	0.06	42
Noomaraa	58	100	1.00	26
Goidhoo	0	0	0.00	12
Feydhoo	30	65	0.63	65
Feevah	0	35	0.18	45
Bilehffahi	0	0	0.00	20
Foakaidhoo	10	100	0.60	69
Narudhoo	7	100	0.57	67

Statistical Annex - Electricity , Contd.

ATOLLS	no electricity	6 hours or less electricity per day	Human Vulnerability Index	4 wired points or less in the house
Maakandoodhoo	11	0	0.11	5
Maroshi	0	86	0.43	92
Lhaimagu	0	100	0.50	61
Firubaidhoo	0	100	0.50	42
Komandoo	0	0	0.00	0
Maagoodhoo	0	100	0.50	60
Funadhoo	0	0	0.00	16
NOONU ATOLL	6	45	0.29	33
Hebadhoo	10	100	0.60	30
Kedhikolhudhoo	0	0	0.00	15
Maalhendhoo	12	100	0.62	60
Kudafari	9	0	0.09	54
Landhoo	20	0	0.20	16
Maafaru	0	0	0.00	20
Lhohi	2	100	0.52	77
Miladhoo	16	100	0.66	30
Magoodhoo	16	100	0.66	35
Manadhoo	14	0	0.14	52
Holhudhoo	1	0	0.01	13
Fodhdhoo	2	100	0.52	80
Velidhoo	0	94	0.47	32
RAA ATOLL	6	24	0.19	18
Alifushi	0	0	0.00	16
Vaadhoo	0	100	0.50	79
Rasgetheemu	0	60	0.30	14
Agolhitheemu	20	95	0.68	51
Hulhudhuffaar	0	0	0.00	4
Ugoofaar	14	88	0.58	54
Kadholhudhoo	1	0	0.01	13
Maakurathu	13	95	0.60	10
Rasmaadhoo	0	100	0.50	15
Innamaadhoo	18	0	0.18	0
Maduvvari	26	0	0.26	0
Iguraidhoo	0	0	0.00	19
Fainu	0	0	0.00	40
Meedhoo	2	0	0.02	12
Kinolhas	13	100	0.63	22
BAA ATOLL	4	43	0.25	22
Kudarikilu	0	100	0.50	35
Kamadhoo	0	100	0.50	58
Kendhoo	0	81	0.41	27
Kihaadhoo	0	100	0.50	86
Dhonfanu	22	100	0.72	78
Dharavandhoo	9	100	0.59	0
Maalhos	2	100	0.52	20
Eydhafushi	0	0	0.00	5
Thulhaadhoo	10	0	0.10	33

Statistical Annex - Electricity , Contd.

ATOLLS	no electricity	6 hours or less electricity per day	Human Vulnerability Index	4 wired points or less in the house
Hithaadhoo	0	0	0.00	2
Fulhadhoo	0	80	0.40	60
Fehendhoo	0	90	0.45	0
Goidhoo	0	73	0.36	0
LHAVIYANI ATOLL	4	0	0.04	33
Hinnavaru	6	0	0.06	36
Naifaru	3	0	0.03	34
Kurendhoo	4	0	0.04	22
Olhuvelifushi	0	4	0.02	19
Maafilaafushi	7	0	0.07	36
KAAFU ATOLL	0	0	0.00	17
Kaashidhoo	0	0	0.00	70
Gaafaru	0	0	0.00	0
Dhiffushi	0	0	0.00	14
Thulusdhoo	0	0	0.00	0
Huraa	0	0	0.00	0
Himmafushi	0	0	0.00	4
Gulhi	0	0	0.00	4
Maafushi	0	0	0.00	2
Guraidhoo	0	0	0.00	13
ALIF UTHURU BURI	4	0	0.04	5
Thoddoo	11	0	0.11	0
Rasdhoo	0	0	0.00	4
Ukulhas	0	0	0.00	11
Mathiveri	0	0	0.00	11
Bodufolhudhoo	0	0	0.00	0
Feridhoo	15	0	0.15	10
Maalhos	0	0	0.00	0
Himandhoo	0	0	0.00	4
ALIF DHEKUNU BURI	3	18	0.12	3
Hangnameedhoo	3	0	0.03	12
Omadhoo	9	0	0.09	11
Kuburudhoo	0	59	0.30	9
Mahibadhoo	7	0	0.07	0
Mandhoo	7	89	0.52	7
Dhagethi	0	0	0.00	9
Dhigurah	0	0	0.00	0
Fenfushi	0	100	0.50	0
Dhidhdhoo	0	100	0.50	0
Maamigili	0	0	0.00	0
VAAVU ATOLL	2	26	0.15	39
Fulidhoo	8	0	0.08	50
Thinadhoo	9	100	0.59	43
Felidhoo	0	66	0.33	48
Keyodhoo	0	0	0.00	29
Rakeedhoo	0	0	0.00	30
MEEMU ATOLL	4	44	0.26	32
Raimandhoo	0	93	0.47	36
Madifushi	0	100	0.50	26

Statistical Annex - Electricity , Contd.

ATOLLS	no electricity	6 hours or less electricity per day	Human Vulnerability Index	4 wired points or less in the house
Veyvah	0	100	0.50	49
Mulah	12	0	0.12	8
Muli	0	0	0.00	24
Naalaafushi	0	100	0.50	25
Kolhufushi	0	49	0.24	48
Dhiggaru	7	100	0.57	67
Maduvvari	0	0	0.00	11
FAAFU ATOLL	10	20	0.20	16
Feeali	0	0	0.00	31
Biledhdhoo	25	100	0.75	0
Magoodhoo	0	0	0.00	23
Dharaboodhoo	20	0	0.20	11
Nilandhoo	7	0	0.07	13
DHAAL ATOLL	0	0	0.00	17
Meedhoo	0	0	0.00	0
Badidhoo	0	0	0.00	61
Ribudhoo	0	0	0.00	16
Hulhudheli	0	0	0.00	0
Gemendhoo	6	0	0.06	30
Vaanee	0	0	0.00	12
Maeboodhoo	0	0	0.00	24
Kudahuvadhoo	0	0	0.00	8
THAA ATOLL	15	58	0.44	31
Buruni	0	0	0.00	26
Vilufushi	9	100	0.59	73
Madifushi	54	100	1.00	54
Dhiyamigili	33	0	0.33	20
Guraidhoo	0	0	0.00	11
Kadoodhoo	0	0	0.00	28
Vandhoo	4	100	0.54	19
Hirilandhoo	5	89	0.50	24
Gaadhiffushi	39	100	0.89	68
Thimarafushi	37	100	0.87	44
Veymandoo	0	0	0.00	11
Kibidhoo	0	100	0.50	15
Omadhoo	5	84	0.47	31
LAAMU ATOLL	23	55	0.51	15
Isdhoo	80	100	1.00	0
Dhabidhoo	0	75	0.37	0
Maabaidhoo	0	100	0.50	11
Mundhoo	14	0	0.14	0
Kalhaidhoo	11	100	0.61	0
Gamu	0	42	0.21	25
Maavah	0	12	0.06	12
Fonadhoo	10	100	0.60	19
Gaadhoo	34	100	0.84	0
Maamendhoo	0	0	0.00	20
Hithadhoo	53	100	1.00	46
Kunahandhoo	95	100	1.00	100

Statistical Annex - Electricity , Contd.

ATOLLS	no electricity	6 hours or less electricity per day	Human Vulnerability Index	4 wired points or less in the house
GAAF ALIF ATOLL	23	48	0.47	53
Kolamaafushi	6	0	0.06	46
Viligili	6	0	0.06	52
Maamendhoo	0	73	0.36	29
Nilandhoo	60	100	1.00	67
Dhaandhoo	48	100	0.98	100
Dhevvdhoo	100		1.00	
Kodey	0	100	0.50	75
Dhiyadhoo	100		1.00	
Gemanafushi	0	100	0.50	26
Kanduhulhudhoo	21	100	0.71	88
GAAF DHAAL ATOLL	13	41	0.34	34
Madeveli	21	86	0.65	89
Hoadedhdhoo	13	95	0.60	100
Nadallaa	14	100	0.64	100
Gadhdhoo	0	0	0.00	14
Rathafandhoo	6	100	0.56	50
Vaadhoo	68	100	1.00	76
Fiyoari	0	100	0.50	18
Maathodaa	58	100	1.00	74
Fares	64	100	1.00	75
Thinadhoo	0	4	0.02	10
GNAVIYANI ATOLL	2	0	0.02	21
Foammulah	2	0	0.02	21
SEENU ATOLL	0	0	0.00	40
Meedhoo	0	0	0.00	34
Hithadhoo	0	0	0.00	47
Maradhoo	0	0	0.00	22
Feydhoo	0	0	0.00	44
Maradhoo-Feydhoo	0	0	0.00	22
Hulhudhoo	0	0	0.00	38

Statistical Annex IV - Transport (Map 3)

ATOLLS	more than 100 persons per vessel	dhoni 3 times or less per month to atoll capital	island not always accessible	Human Vulnerability Index	dhoni 1 or 2 times per month to Male'	no jetty	difficulties with harbour	difficulties with reef	other problems
Maldives				0.32					
Male'				0.00					
Atoll average	26	18	55	0.43	29	13	69	3	21
HAA ALIF ATOLL	21	28	43	0.40	34	7	97	0	0
Thurakunu	0	100	0	0.50	0				
Uligamu	0	100	0	0.50	100				
Berinmadhoo	0	100	100	1.00	0	100	0	0	0
Hathifushi	0	100	100	1.00	0	100	100	0	0
Mulhadhoo	0	100	0	0.50	0				
Hoarafushi	0	0	0	0.00	0				
Ihavandhoo	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kelaa	0	0	100	0.50	0	0	100	0	0
Vashafaru	100	0	0	0.25	n.a.				
Dhidhdhoo	0		0	0.00	0				
Filladhoo	0	0	0	0.00	100				
Maarandhoo	100	0	100	0.75	100	0	100	0	0
Thakandhoo	0	0	100	0.50	100	0	100	0	0
Utheemu	0	0	100	0.50	n.a.	0	100	0	0
Muraidhoo	100	0	100	0.75	n.a.	0	100	0	0
Baarah	100	100	100	1.00	100	0	100	0	0
HAA DHAAL ATOLL	31	4	92	0.56	44	21	51	0	39
Faridhoo	0	0	100	0.50	0	0	100	0	0
Hondaaidhoo	100	0	100	0.75	0	0	0	0	100
Hanimaadhoo	100	0	0	0.25	n.a.				
Finey	0	0	100	0.50	0	100	100	0	0
Naivaadhoo	0	0	100	0.50	100	0	100	0	0
Hirimaradhoo	100	100	100	1.00	100	100	100	0	0
Nolhivaranfaru	100	n.a.	0	0.25	0				
Nellaidhoo	0	0	100	0.50	100	0	100	0	0
Nolhivaramu	100	0	100	0.75	100	100	0	0	0
Kuribi	100	0	100	0.75	0	0	100	0	0
Kuburudhoo	100	0	100	0.75	100	0	100	0	0
Kulhudhuffushi	0		100	0.50	0	0	0	0	100
Kumundhoo	100	0	100	0.75	0	100	100	0	0
Neykurendhoo	0	0	100	0.50	100	0	100	0	0
Vaikaradhoo	0	0	100	0.50	100	0	100	0	0
Maavaidhoo	0	0	100	0.50	0	0	100	0	0
Makunudhoo	0	0	100	0.50	100	0	100	0	0
SHAVIYANI ATOLL	8	41	75	0.60	40	9	83	8	0
Kaditheemu	0	100	100	1.00	0	0	100	0	0
Noomaraa	0	0	100	0.50	100	0	100	0	0
Goidhoo	0	100	0	0.50	100				
Feydhoo	0	100	100	1.00	100	0	100	0	0
Feevah	0	100	100	1.00	0	100	0	0	0
Bilehffahi	0	100	0	0.50	0				
Foakaidhoo	0	100	100	1.00	100	0	100	0	0
Narudhoo	100	0	100	0.75	100	0	100	0	0
Maakandoodhoo	0	0	100	0.50	0	0	100	0	0
Maroshi	0	0	100	0.50	0	0	100	0	0
Lhaimagu	0	0	0	0.00	0				

Statistical Annex - Transport , Contd.

ATOLLS	more than 100 persons per vessel	dhoni 3 times or less per month to atoll capital	island not always accessible	Human Vulnerability Index	dhoni 1 or 2 times per month to				
					Male'	no jetty	difficulties with harbour	difficulties with reef	other problems
Firubaidhoo	0	0	100	0.50	100	0	0	100	0
Komandoo	0	0	0	0.00	0				
Maaugoodhoo	0	0	100	0.50	100	0	100	0	0
Funadhoo	100		100	0.75	0	0	100	0	0
NOONU ATOLL	0	56	70	0.63	52	10	72	0	22
Hebadhoo	0	0	100	0.50	100	100	0	0	0
Kedhikolhudhoo	n.a.	100	100	1.00	0	0	100	0	0
Maalhendhoo	n.a.	0	100	0.50	100	0	100	0	0
Kudafari	n.a.	0	100	0.50	0	0	100	0	0
Landhoo	n.a.	0	100	0.50	100	0	100	0	0
Maafaru	n.a.	0	100	0.50	0	0	100	0	0
Lhohi	n.a.	100	100	1.00	0	0	100	0	0
Miladhoo	n.a.	0	100	0.50	100	0	100	0	0
Magoodhoo	n.a.	0	100	0.50	0	100	100	0	0
Manadhoo	n.a.		0	0.00	100				
Holhudhoo	n.a.	100	100	1.00	100	0	0	0	100
Fodhdhoo	n.a.	100	0	0.50	n.a.				
Velidhoo	n.a.	100	0	0.50	0				
RAA ATOLL	11	2	64	0.36	20	17	81	13	9
Alifushi	0	0	100	0.50	0	0	100	0	0
Vaadhoo	0	0	100	0.50	n.a.	0	100	0	0
Rasgetheemu	100	0	100	0.75	0	0	100	0	0
Agolhitheemu	0	0	100	0.50	0	0	100	0	0
Hulhudhuffaaruu	0	0	100	0.50	0	0	100	0	0
Ugoofaaruu	0		0	0.00	0				
Kadhohudhoo	0	0	0	0.00	0				
Maakurathu	0	0	100	0.50	100	0	0	0	100
Rasmaadhoo	100	0	100	0.75	0	0	0	100	0
Innamaadhoo	100	0	100	0.75	100	0	100	0	0
Maduvvari	0	0	100	0.50	0	0	100	0	0
Iguraidhoo	0	0	100	0.50	0	100	100	0	0
Fainu	0	100	100	1.00	n.a.	0	100	100	0
Meedhoo	0	0	0	0.00	100				
Kinolhas	0	0	100	0.50	0	100	0	100	0
BAA ATOLL	0	31	47	0.39	24	39	76	0	0
Kudarikilu	0	0	100	0.50	100	100	0	0	0
Kamadhoo	0	100	0	0.50	0				
Kendhoo	0	0	100	0.50	0	0	100	0	0
Kihaadhoo	0	0	100	0.50	0	0	100	0	0
Dhonfanu	0	0	100	0.50	0	100	0	0	0
Dharavandhoo	0	0	0	0.00	0				
Maalhos	0	0	100	0.50	100	100	100	0	0
Eydhafushi	0		0	0.00	0				
Thulhaadhoo	0	0	0	0.00	0				
Hithaadhoo	0	100	100	1.00	100	0	100	0	0
Fulhadhoo	0	100	100	1.00	100	100	100	0	0
Fehendhoo	0	100	100	1.00	100	100	0	0	0
Goidhoo	0	100	100	1.00	0	0	100	0	0
LHAVIYANI ATOLL	47	0	57	0.40	0	8	92	0	0
Hinnavaruu	0	0	100	0.50	0	0	100	0	0
Naifaruu	100		0	0.25	0				

Statistical Annex - Transport , Contd.

ATOLLS	more than 100 persons per vessel	dhoni 3 times or less per month to atoll capital	island not always accessible	Human Vulnerability Index	dhoni 1 or 2 times per month to Male'	no jetty	difficulties with harbour	difficulties with reef	other problems
Kurendhoo	0	0	100	0.50	0	0	100	0	0
Olhuvelifushi	100	0	100	0.75	0	100	0	0	0
Maafilaafushi	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
KAAFU ATOLL	19	34	49	0.46	10	0	76	0	24
Kaashidhoo	100	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gaafaru	0	0	100	0.50	0	0	100	0	0
Dhiffushi	0	0	0	0.00	0				
Thulusdhoo	0		100	0.50	0	0	0	0	100
Huraa	0	n.a.	100	0.50	100	0	100	0	0
Himmafushi	0	100	0	0.50	0				
Gulhi	0	0	0	0.00	0				
Maafushi	0	100	100	1.00	0	0	100	0	0
Guraidhoo	0	0	0	0.00	0				
ALIF UTHURU BURI	0	73	85	0.79	0	12	76	13	12
Thoddoo	0	100	100	1.00	0	0	100	0	0
Rasdhoo	0		0	0.00	0				
Ukulhas	0	0	100	0.50	0	0	100	0	0
Mathiveri	0	0	100	0.50	0	0	100	100	0
Bodufolhudhoo	0	100	100	1.00	0	0	100	0	0
Feridhoo	0	100	100	1.00	0	0	100	0	0
Maalhos	0	100	100	1.00	0	0	0	0	100
Himandhoo	0	100	100	1.00	0	100	0	0	0
ALIF DHEKUNU BURI	6	53	48	0.52	7	51	49	0	0
Hangnameedhoo	0	0	100	0.50	0	0	100	0	0
Omadhoo	0	100	0	0.50	n.a.				
Kuburudhoo	0	100	0	0.50	0				
Mahibadhoo	0		0	0.00	0				
Mandhoo	100	0	0	0.25	0				
Dhagethi	0	0	0	0.00	0				
Dhigurah	0	0	100	0.50	100	0	100	0	0
Fenfushi	0	0	100	0.50	0	0	100	0	0
Dhidhdhoo	100	n.a.	100	0.75	n.a.	0	100	0	0
Maamigili	0	100	100	1.00	0	100	0	0	0
VAAVU ATOLL	9	19	56	0.40	0	0	84	0	16
Fulidhoo	0		0	0.00	0				
Thinadhoo	100	0	100	0.75	0	0	0	0	100
Felidhoo	0	0	0	0.00	0				
Keyodhoo	0	0	100	0.50	n.a.	0	100	0	0
Rakeedhoo	0	100	100	1.00	n.a.	0	100	0	0
MEEMU ATOLL	3	0	57	0.29	0	0	49	12	39
Raimandhoo	0	0	100	0.50	0	0	0	0	100
Madifushi	0	0	100	0.50	n.a.	0	0	100	0
Veyvah	100	0	100	0.75	n.a.	0	0	100	0
Mulah	0	0	0	0.00	0				
Muli	0		0	0.00	0				
Naalaafushi	0	0	0	0.00	n.a.				
Kolhufushi	0	0	100	0.50	n.a.	0	100	0	0
Dhiggaru	0	0	100	0.50	0	0	0	0	100
Maduvvari	0	0	100	0.50	n.a.	0	100	0	0
FAAFU ATOLL	0	0	86	0.43	22	0	52	0	48
Feeali	0	0	100	0.50	0	0	100	0	0

Contd.

Statistical Annex - Transport , Contd.

ATOLLS	more than 100 persons per vessel	dhoni 3 times or less per month to atoll capital	island not always accessible	Human Vulnerability Index	dhoni 1 or 2 times per month to Male'	no jetty	difficulties with harbour	difficulties with reef	other problems
Biledhdhoo	0	0	100	0.50	0	0	100	0	0
Magoodhoo	0		0	0.00	100				
Dharaboodhoo	0	0	100	0.50	100	0	0	0	100
Nilandhoo	0	0	100	0.50	0	0	0	0	100
DHAAL ATOLL	0	23	61	0.42	52	16	84	0	0
Meedhoo	0	100	0	0.50	0				
Badidhoo	0	0	100	0.50	0	0	100	0	0
Ribudhoo	0	0	100	0.50	0	0	100	0	0
Hulhudheli	0	0	100	0.50	100	100	0	0	0
Gemendhoo	0	0	100	0.50	0	0	100	0	0
Vaanee	0	0	0	0.00	100				
Maaeboodhoo	0	0	0	0.00	100				
Kudahuvadhoo	0		100	0.50	100	0	100	0	0
THAA ATOLL	4	0	39	0.20	23	0	68	0	0
Buruni	100	n.a.	100	0.75	n.a.	0	0	0	0
Vilufushi	0	0	0	0.00	0				
Madifushi	0	n.a.	0	0.00	0				
Dhiyamigili	0	n.a.	0	0.00	n.a.				
Guraidhoo	0	n.a.	100	0.50	0	0	100	0	0
Kadoodhoo	0	0	100	0.50	n.a.	0	100	0	0
Vandhoo	0	0	0	0.00	n.a.				
Hirilandhoo	0	0	0	0.00	n.a.				
Gaadhiffushi	0	n.a.	100	0.50	n.a.	0	100	0	0
Thimarafushi	0	0	0	0.00	100				
Veymandoo	0		0	0.00	0				
Kibidhoo	0	0	100	0.50	0	0	0	0	0
Omadhoo	0	n.a.	100	0.50	n.a.	0	100	0	0
LAAMU ATOLL	21	11	50	0.36	34	0	100	0	0
Isdhoo	0	n.a.	0	0.00	0				
Dhabidhoo	0	100	0	0.50	100				
Maabaidhoo	0	0	0	0.00	0				
Mundhoo	0	0	100	0.50	100	0	100	0	0
Kalhaidhoo	0	0	100	0.50	0	0	100	0	0
Gamu	0	n.a.	100	0.50	0	0	100	0	0
Maavah	0	0	0	0.00	0				
Fonadhoo	100		0	0.25	100				
Gaadhoo	100	0	100	0.75	100	0	100	0	0
Maamendhoo	0	n.a.	100	0.50	0	0	100	0	0
Hithadhoo	0	0	100	0.50	n.a.	0	100	0	0
Kunahandhoo	100	0	100	0.75	100	0	100	0	0
GAAF ALIF ATOLL	5	21	35	0.29	31	0	100	0	0
Kolamaafushi	0	0	0	0.00	100				
Viligili	0		0	0.00	0				
Maamendhoo	0	0	100	0.50	0	0	100	0	0
Nilandhoo	0	0	100	0.50	100	0	100	0	0
Dhaandhoo	0	0	0	0.00	0				
Dheevadhoo	0	100	100	1.00	n.a.	0	100	0	0
Kodey	100	0	100	0.75	100	0	100	0	0
Dhiyadhoo	100	100	100	1.00	0	0	100	0	0
Gemanafushi	0	0	0	0.00	n.a.				
Kanduhulhudhoo	0	100	100	1.00	n.a.	0	100	0	0

Statistical Annex - Transport , Contd.

ATOLLS	more than 100 persons per vessel	dhoni 3 times or less per month to atoll capital	island not always accessible	Human Vulnerability Index	dhoni 1 or 2 times per month to				
					Male'	no jetty	difficulties with harbour	difficulties with reef	other problems
GAAF DHAAL ATOLL	35	0	25	0.21	53	47	78	0	0
Madeveli	100	0	0	0.25	n.a.				
Hoadedhdhoo	100	0	100	0.75	n.a.	100	0	0	0
Nadallaa	100	0	100	0.75	n.a.	100	100	0	0
Gadhdhoo	0	0	0	0.00	100				
Rathafandhoo	0	0	100	0.50	100	0	100	0	0
Vaadhoo	100	0	0	0.25	100				
Fiyoari	100	0	0	0.25	100				
Maathodaa	0	0	100	0.50	100	0	100	0	0
Fares	0	0	100	0.50	100	0	100	0	0
Thinadhoo	0	0	0	0.00	0				
GNAVIYANI ATOLL	100	0	100	0.75	0	0	0	0	100
Foammulah	100		100	0.75	n.a.	0	0	0	100
SEENU ATOLL	90	0	0	0.22	43				
Meedhoo	100	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hithadhoo	100		0	0.25	0				
Maradhoo	0	0	0	0.00	100				
Feydhoo	100	n.a.	0	0.25	100				
Maradhoo-Feydhoo	100	n.a.	n.a.	0.25	n.a.	n.a.	n.a.	n.a.	n.a.
Hulhudhoo	100	0	0	0.25	100				

Statistical Annex V - Communication (Map 4)

ATOLLS	no public phone	more than	no paper on	no radio	Human Vulnerability Index	no telephone	no television
	on the island	two hours to public phone	the island				
Maldives	25	9	44	53	0.92	88	75
Male'	0	0	0	48	0.49	57	45
Atoll average	34	12	59	55	1.00	98	86
HAA ALIF ATOLL	80	11	79	30	1.00	100	85
Thurakunu	100	0	100	92	1.00	100	100
Uligamu	100	0	100	50	1.00	100	100
Berinmadhoo	100	0	100	73	1.00	100	100
Hathifushi	100	0	100	21	1.00	100	100
Mulhadhoo	100	0	100	75	1.00	100	100
Hoarafushi	100		100	9	1.00	100	82
Ihavandhoo	n.a.	n.a.	n.a.	18	n.a.	100	95
Kelaa	100	0	100	19	1.00	100	88
Vashafaru	100	0	100	45	1.00	100	59
Dhidhdhoo	0		0	51	0.51	100	68
Filladhoo	100	100	100	28	1.00	100	100
Maarandhoo	100	0	100	0	1.00	100	84
Thakandhoo	100	0	100	17	1.00	100	91
Utheemu	100	0	n.a.	0	0.75	100	89
Muraidhoo	100	0	100	24	1.00	100	71
Baarah	100	n.a.	100	37	1.00	100	87
HAA DHAAL ATOLL	100	12	20	70	1.00	100	91
Faridhoo	100	0	100	84	1.00	100	100
Hondaidhoo	100	0	100	83	1.00	100	100
Hanimaadhoo	100	0	0	100	1.00	100	100
Finney	100	n.a.	100	65	1.00	100	77
Naivaadhoo	100	0	0	46	1.00	100	90
Hirimaradhoo	100	0		33	1.00	100	91
Nolhivaranfaru	100	0	100	72	1.00	100	100
Nellaidhoo	100	0	0	71	1.00	100	100
Nolhivaramu	100	0	0	56	1.00	100	100
Kuribi	100	0	100	24	1.00	100	77
Kuburudhoo	100	0	100	17	1.00	100	100
Kulhudhuffushi	100	n.a.	0	85	0.85	100	86
Kumundhoo	100	0	0	61	1.00	100	87
Neykurendhoo	100	n.a.	0	47	1.00	100	86
Vaikaradhoo	100	0	0	88	1.00	100	88
Maavaidhoo	100	n.a.	100	41	1.00	100	100
Makunudhoo	100	100	100	66	1.00	100	100
SHAVIYANI ATOLL	96	13	94	67	1.00	100	90
Kaditheemu	100	0	100	64	1.00	100	100
Noomaraa	100	0	100	67	1.00	100	69
Goidhoo	100	0	100	82	1.00	100	94
Feydhoo	100	0	100	89	1.00	100	100
Feevah	100	n.a.		100	1.00	100	100
Bilehffahi	100	100	100	75	1.00	100	91
Foakaidhoo	100	n.a.	100	100	1.00	100	100
Narudhoo	100	0	100	70	1.00	100	100
Maakandoodhoo	100	n.a.	100	92	1.00	100	100
Maroshi	100	0	100	47	1.00	100	100
Lhaimagu	100	100	100	45	1.00	100	89

Statistical Annex - Communication , Contd.

ATOLLS	no public phone on the island	more than two hours to public phone	no paper on the island	no radio	Human Vulnerability Index	no telephone	no television
Firubaidhoo	100	0	0	78	1.00	100	65
Komandoo	100	0	100	11	1.00	100	79
Maagoodhoo	100	0	100	48	1.00	100	59
Funadhoo	0		100	39	0.64	100	100
NOONU ATOLL	32	65	40	46	1.00	100	90
Hebadhoo	100	100	100	19	1.00	100	100
Kedhikolhudhoo	0		0	40	0.40	100	76
Maalhendhoo	100	0	100	18	1.00	100	100
Kudafari	100	100	100	23	1.00	100	88
Landhoo	100	100	100	4	1.00	100	100
Maafaru	0		100	88	1.00	100	95
Lhohi	100	0	0	80	1.00	100	100
Miladhoo	0		100	29	0.54	100	71
Magoodhoo	100	100	0	20	1.00	100	88
Manadhoo	0		0	79	0.79	100	100
Holhudhoo	0		0	59	0.59	100	81
Fodhdhoo	100	100	100	28	1.00	100	100
Velidhoo	0		0	46	0.46	100	93
RAA ATOLL	8	0	93	38	0.67	100	80
Alifushi	0		100	39	0.64	100	76
Vaadhoo	0		100	38	0.63	100	84
Rasgetheemu	0		100	62	0.87	100	92
Agolhitheemu	0		100	57	0.82	100	76
Hulhudhuffaaruu	0		100	53	0.78	100	100
Ugoofaaruu	0		0	11	0.11	100	100
Kadholhudhoo	0		100	44	0.69	100	53
Maakurathu	0		100	31	0.56	100	79
Rasmaadhoo	0		100	26	0.51	100	100
Innamaadhoo	100	n.a.	100	29	1.00	91	69
Maduvvari	0		100	26	0.51	100	68
Iguraidhoo	0		100	55	0.80	100	85
Fainu	100	n.a.	100	25	1.00	100	100
Meedhoo	0		100	30	0.55	100	100
Kinolhas	100	n.a.	100	48	1.00	100	100
BAA ATOLL	3	0	72	68	0.88	100	90
Kudarikilu	0		100	14	0.39	100	100
Kamadhoo	0		100	13	0.38	100	100
Kendhoo	0		100	11	0.36	100	81
Kihaadhoo	0		100	32	0.57	100	83
Dhonfanu	0		100	40	0.65	100	86
Dharavandhoo	0		100	100	1.00	100	93
Maalhos	0		100	50	0.75	100	50
Eydhafushi	0		0	91	0.91	100	78
Thulhaadhoo	0		na	61	0.61	100	100
Hithaadhoo	0		100	100	1.00	100	100
Fulhadhoo	100	n.a.	n.a.	81	1.00	100	100
Fehendhoo	0		100	100	1.00	100	100
Goidhoo	0		100	70	0.95	100	70
LHAVIYANI ATOLL	47	0	0	71	1.00	100	100
Hinnavaruu	0		0	72	0.72	100	100
Naifaruu	100	n.a.	0	64	1.00	100	100

Statistical Annex - Communication , Contd.

ATOLLS	no public phone on the island	more than two hours to public phone	no paper on the island	no radio	Human Vulnerability Index	no telephone	no television
Kurendhoo	0		0	79	0.79	100	100
Olhuvelifushi	100	0	0	100	1.00	100	100
Maafilaafushi	n.a.	n.a.	na	64	n.a.	100	100
KAAFU ATOLL	0	0	62	57	0.73	100	74
Kaashidhoo	n.a.	n.a.	n.a.	15	n.a.	100	83
Gaafaru	0		100	59	0.84	100	72
Dhiffushi	0		100	47	0.72	100	72
Thulusdhoo	0		100	100	1.00	100	71
Huraa	0		100	89	1.00	100	65
Himmafushi	0		0	45	0.45	100	72
Gulhi	0		0	56	0.56	100	83
Maafushi	0		100	73	0.98	100	58
Guraidhoo	0		0	67	0.67	100	85
ALIF UTHURU BURI	0	0	100	37	0.62	100	71
Thoddoo	0		100	29	0.54	100	42
Rasdhoo	0		100	86	1.00	100	64
Ukulhas	0		100	37	0.62	100	49
Mathiveri	0		100	7	0.32	100	100
Bodufolhudhoo	0		100	18	0.43	100	62
Feridhoo	0		100	4	0.29	100	84
Maalhos	0		100	30	0.55	100	100
Himandhoo	0		100	72	0.97	100	100
ALIF DHEKUNU BURI	24	0	51	34	0.65	100	69
Hangnameedhoo	0		0	36	0.36	100	83
Omadhoo	0		100	0	0.25	100	85
Kuburudhoo	0		0	0	0.00	100	70
Mahibadhoo	0		100	47	0.72	100	43
Mandhoo	0		100	61	0.86	100	74
Dhagethi	0		0	26	0.26	100	52
Dhigurah	0		100	31	0.56	100	100
Fenfushi	0		100	25	0.50	100	100
Dhidhdhoo	0		0	34	0.34	100	89
Maamigili	100	n.a.	0	46	1.00	100	68
VAAVU ATOLL	74	24	74	41	1.00	100	80
Fulidhoo	100	100	100	50	1.00	100	73
Thinadhoo	100	0	100	40	1.00	100	74
Felidhoo	0		0	20	0.20	100	68
Keyodhoo	100	0	100	55	1.00	100	100
Rakeedhoo	100	0	100	37	1.00	100	69
MEEMU ATOLL	42	0	76	77	1.00	100	93
Raimandhoo	0		100	64	0.89	100	100
Madifushi	100	n.a.	100	62	1.00	100	100
Veyvah	100	0	100	100	1.00	100	100
Mulah	0		0	63	0.63	100	100
Muli	0		100	61	0.86	100	100
Naalaafushi	100	0	100	100	1.00	100	100
Kolhufushi	0		100	100	1.00	100	81
Dhiggaru	100	0	100	79	1.00	100	100
Maduvvari	100	n.a.	100	72	1.00	100	61
FAAFU ATOLL	86	0	0	36	1.00	100	84
Feeali	100	n.a.	0	35	1.00	100	100

Statistical Annex - Communication , Contd.

ATOLLS	no public phone on the island	more than two hours to public phone	no paper on the island	no radio	Human Vulnerability Index	no telephone	no television
Biledhdhoo	100	0	0	34	1.00	100	69
Magoodhoo	0		0	32	0.32	100	69
Dharaboodhoo	100	0	0	59	1.00	100	79
Nilandhoo	100	0	0	36	1.00	100	94
DHAAL ATOLL	78	17	71	38	1.00	100	87
Meedhoo	100	0	0	42	1.00	100	72
Badidhoo	100	0	100	52	1.00	100	81
Ribudhoo	100	100	0	30	1.00	100	72
Hulhudheli	100	0	100	8	1.00	100	92
Gemendhoo	100	0	100	29	1.00	100	95
Vaanee	100	0	100	44	1.00	100	74
Maaeboodhoo	100	n.a.	100	54	1.00	100	100
Kudahuvadho	0		100	36	0.61	100	100
THAA ATOLL	43	0	87	65	1.00	100	87
Buruni	100	0	100	56	1.00	100	100
Vilufushi	0		100	73	0.98	100	100
Madifushi	100	n.a.	100	90	1.00	100	75
Dhiyamigili	0		100	84	1.00	100	72
Guraidhoo	0		100	80	1.00	100	90
Kadoodhoo	100	0	100	100	1.00	100	74
Vandhoo	100	0	100	100	1.00	100	100
Hirilandhoo	100	0	100	100	1.00	100	83
Gaadhiffushi	100	0	100	41	1.00	100	100
Thimarafushi	0		100	27	0.52	100	94
Veymandoo	0		0	41	0.41	100	65
Kibidhoo	100	n.a.	n.a.	48	1.00	100	83
Omadhoo	100	0	0	53	1.00	100	88
LAAMU ATOLL	0	0	82	50	0.71	100	88
Isdhoo	0		100	3	0.28	100	79
Dhabidhoo	0		100	63	0.88	100	84
Maabaidhoo	0		0	44	0.44	100	100
Mundhoo	0		100	30	0.55	100	76
Kalhaidhoo	0		100	57	0.82	100	100
Gamu	0		100	59	0.84	100	92
Maavah	0		0	70	0.70	100	100
Fonadhoo	0		100	31	0.56	100	84
Gaadhoo	0		100	14	0.39	100	84
Maamendhoo	0		100	87	1.00	100	61
Hithadhoo	0		100	84	1.00	100	100
Kunahandhoo	0		100	71	0.96	100	100
GAAF ALIF ATOLL	0	0	80	60	0.80	100	84
Kolamaafushi	0		0	6	0.06	100	100
Viligili	0		100	92	1.00	100	85
Maamendhoo	0		100	38	0.63	100	100
Nilandhoo	0		0	86	0.86	100	100
Dhaandhoo	0		100	82	1.00	100	52
Dhevvadhoo	0		100	42	0.67	100	100
Kodey	0		100	14	0.39	100	82
Dhiyadhoo	0		100	38	0.63	100	100
Gemanafushi	0		100	59	0.84	100	70
Kanduhulhudhoo	0		100	61	0.86	100	75

Statistical Annex - Communication , Contd.

ATOLLS	no public phone on the island	more than two hours to public phone	no paper on the island	no radio	Human Vulnerability Index	no telephone	no television
GAAF DHAAL ATOLL	0	0	48	52	0.64	100	89
Madeveli	0		100	40	0.65	100	100
Hoadeddhoo	0		100	54	0.79	100	77
Nadallaa	0		100	35	0.60	100	100
Gadhdhoo	0		100	43	0.68	100	75
Rathafandhoo	0		100	22	0.47	100	57
Vaadhoo	0		100	65	0.90	100	88
Fiyoari	0		0	47	0.47	100	100
Maathodaa	0		0	38	0.38	100	100
Fares	0		0	36	0.36	100	79
Thinadhoo	0		0	67	0.67	100	94
GNAVIYANI ATOLL	0	0	0	58	0.58	90	87
Foammulah	0		0	58	0.58	90	87
SEENU ATOLL	0	0	53	72	0.85	84	79
Meedhoo	n.a.	n.a.	n.a.	63	n.a.	100	90
Hithadhoo	0		100	81	0.81	84	85
Maradhoo	0		0	76	0.76	80	88
Feydhoo	0		0	64	0.64	62	58
Maradhoo-Feydhoo	0		0	60	0.60	100	86
Hulhudhoo	0		0	50	0.50	94	61

Statistical Annex VI - Education (Map 5)

ATOLLS	no drink- ing water in school	no toilet in school	no nursery	grade 5 as highest grade	grade 6 or 7 as highest grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher	Human Vulnerability Index
Maldives	9	10	41	4	41	2	6	23	0.37
Male'	0	0	0	0	0	0	0	0	0.00
Atoll average	12	13	55	5	56	2	8	30	0.50
HAA ALIF ATOLL	4	9	47	6	62	7	10	39	0.55
Thurakunu	0	0	100	0	100	0	100	0	1.00
Uligamu	0	0	0	0	100	100	0	0	1.00
Berinmadhoo	0	100	100	100	0	na	na	na	1.00
Hathifushi	0	100	100	100	0	na	na	na	1.00
Mulhadhoo	0	0	100	0	100	0	0	0	0.50
Hoarafushi	0	0	100	0	0	0	0	100	0.50
Ihavandhoo	na	na	0	0	0	na	na	na	na
Kelaa	0	0	0	0	100	0	0	0	0.25
Vashafaru	0	0	0	0	100	0	0	100	0.50
Dhidhdhoo	0	0	0	0	0	0	0	0	0.00
Filladhoo	0	100	100	0	100	0	0	100	1.00
Maarandhoo	0	0	100	0	100	0	100	0	1.00
Thakandhoo	0	0	0	0	100	0	0	0	0.25
Utheemu	0	0	100	0	100	0	0	0	0.50
Muraidhoo	100	0	100	100	0	100	0	0	1.00
Baarah	0	0	0	0	100	0	0	100	0.50
HAA DHAAL ATOLL	7	2	32	10	47	4	16	56	0.53
Faridhoo	0	100	100	0	0	100	0	0	1.00
Hondaidhoo	100	100	0	0	100	0	0	0	0.75
Hanimaadhoo	na	na	100	100	0	0	100	0	1.00
Finey	0	0	0	0	100	0	0	100	0.50
Naivaadhoo	0	0	0	0	100	0	0	100	0.50
Hirimaradhoo	0	0	0	100	0	0	0	100	0.75
Nolhivaranfaru	0	0	0	0	100	0	0	0	0.25
Nellaidhoo	0	0	0	0	100	0	0	0	0.25
Nolhivaramu	0	0	100	0	100	na	na	na	0.50
Kuribi	0	0	0	0	100	0	100	0	0.75
Kuburudhoo	0	0	100	100	0	0	0	100	1.00
Kulhudhuffushi	0	0	0	0	0	0	0	100	0.25
Kumundhoo	100	0	100	0	100	0	100	0	1.00
Neykurendhoo	0	0	0	0	100	0	0	100	0.50
Vaikaradhoo	0	0	0	0	0	0	0	0	0.00
Maavaidhoo	0	0	100	0	100	100	0	0	1.00
Makunudhoo	0	0	100	0	100	0	0	0	0.50
SHAVIYANI ATOLL	13	0	77	0	82	0	7	0	0.46
Kaditheemu	0	0	100	0	100	0	0	0	0.50
Noomaraa	0	0	100	0	100	0	0	0	0.50
Goidhoo	0	0	100	0	100	0	0	0	0.50
Feydhoo	0	0	100	0	100	0	100	0	1.00
Feevah	100	0	100	0	100	0	0	0	0.75
Bilehffahi	0	0	100	0	100	0	0	0	0.50
Foakaidhoo	0	0	100	0	100	0	0	0	0.50
Narudhoo	0	0	100	0	100	0	0	0	0.50
Maakandoodhoo	0	0	0	0	100	0	0	0	0.25
Maroshi	0	0	0	0	0	0	0	0	0.00
Lhaimagu	0	0	100	0	100	0	0	0	0.50

Contd.

Statistical Annex - Education , Contd.

ATOLLS	no drink- ing water in school	no toilet in school	no nursery	grade 5 as highest grade	grade 6 or 7 as highest grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher	Human Vulnerability Index
Firubaidhoo	0	0	100	0	100	0	0	0	0.50
Komandoo	0	0	100	0	0	0	0	0	0.25
Maagoodhoo	100	0	100	0	100	0	0	0	0.75
Funadhoo	0	0	0	0	100	0	0	0	0.25
NOONU ATOLL	24	3	29	8	60	2	7	26	0.45
Hebadhoo	0	0	100	0	100	0	0	100	0.75
Kedhikolhudhoo	0	0	0	0	100	0	0	0	0.25
Maalhendhoo	100	0	0	100	0	0	0	100	1.00
Kudafari	100	0	100	0	100	0	0	0	0.75
Landhoo	0	0	100	0	100	0	100	0	1.00
Maafaru	0	0	0	0	100	0	0	100	0.50
Lhohi	100	0	100	0	100	0	0	0	0.75
Miladhoo	100	0	100	0	100	0	0	100	1.00
Magoodhoo	0	100	0	100	0	100	0	0	1.00
Manadhoo	0	0	0	0	100	0	0	0	0.25
Holhudhoo	0	na	0	0	0	0	0	0	0.00
Fodhdhoo	0	0	0	0	100	0	0	0	0.25
Velidhoo	0	0	0	0	0	0	0	0	0.00
RAA ATOLL	35	35	61	4	78	3	6	69	0.78
Alifushi	0	0	0	0	100	0	0	100	0.50
Vaadhoo	0	100	0	0	100	0	0	100	0.75
Rasgetheemu	0	100	0	0	100	0	0	100	0.75
Agolhitheemu	0	100	100	100	0	0	0	0	1.00
Hulhudhuffaaruu	100	0	100	0	100	0	0	0	0.75
Ugoofaaruu	100	0	100	0	100	0	0	100	1.00
Kadholhudhoo	0	0	100	0	100	0	0	100	0.75
Maakurathu	100	100	100	0	100	0	100	0	1.00
Rasmaadhoo	100	100	100	0	100	0	0	0	1.00
Innamaadhoo	100	100	100	0	100	100	0	0	1.00
Maduvvari	na	0	0	0	100	0	0	100	0.50
Iguraidhoo	0	100	100	0	0	0	0	100	0.75
Fainu	100	100	100	100	0	0	0	100	1.00
Meedhoo	0	0	0	0	0	0	0	0	0.00
Kinolhas	100	100	100	0	100	0	0	100	1.00
BAA ATOLL	12	17	31	9	58	0	0	11	0.37
Kudarikilu	0	0	0	0	100	0	0	0	0.25
Kamadhoo	0	0	0	0	100	0	0	100	0.50
Kendhoo	0	0	0	0	100	0	0	0	0.25
Kihaadhoo	0	0	100	0	100	0	0	0	0.50
Dhonfanu	0	0	100	100	0	0	0	100	1.00
Dharavandhoo	0	0	0	0	100	0	0	0	0.25
Maalhos	100	0	100	0	100	0	0	0	0.75
Eydhafushi	0	0	0	0	0	0	0	0	0.00
Thulhaadhoo	0	0	0	0	100	0	0	0	0.25
Hithaadhoo	0	100	100	0	0	0	0	0	0.50
Fulhadhoo	0	0	100	100	0	0	0	100	1.00
Fehendhoo	100		0	100	0	0	0	0	0.75
Goidhoo	100	100	100	0	100	0	0	0	1.00
LHAVIYANI ATOLL	5	0	100	4	13	5	0	0	0.37
Hinnavaruu	0	0	100	0	0	na	na	na	0.25
Naifaru	0	0	100	0	0	0	0	0	0.25

Statistical Annex - Education , Contd.

ATOLLS	no drink- ing water in school	no toilet in school	no nursery	grade 5 as highest grade	grade 6 or 7 as highest grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher	Human Vulnerability Index
Kurendhoo	0	0	100	0	100	0	0	0	0.50
Olhuvelifushi	100	0	100	100	0	0	0	0	1.00
Maafilaafushi	na	na	0	0	100	100	0	0	na
KAAFU ATOLL	39	0	60	0	72	0	12	0	0.49
Kaashidhoo	na	na	100	0	0	0	0	0	na
Gaafaru	100	0	100	0	100	0	0	0	0.75
Dhiffushi	0	0	0	0	100	0	0	0	0.25
Thulusdhoo	0	0	100	0	0	0	0	0	0.25
Huraa	0	0	0	0	100	0	0	0	0.25
Himmafushi	100	0	100	0	100	0	0	0	0.75
Gulhi	0	0	0	0	100	0	0	0	0.25
Maafushi	100	0	100	0	100	0	100	0	1.00
Guraidhoo	0	0	0	0	100	0	0	0	0.25
ALIF UTHURU BURI	0	11	78	0	100	0	0	0	0.47
Thoddoo	0	0	100	0	100	0	0	0	0.50
Rasdho	0	0	100	0	100	0	0	0	0.50
Ukulhas	0	0	0	0	100	0	0	0	0.25
Mathiveri	0	100	100	0	100	0	0	0	0.75
Bodufolhudhoo	0	0	100	0	100	na	na	na	0.50
Feridhoo	0	0	100	0	100	0	0	0	0.50
Maalhos	0	0	0	0	100	0	0	0	0.25
Himandhoo	0	0	100	0	100	0	0	0	0.50
ALIF DHEKUNU BURI	0	0	59	2	76	0	9	40	0.49
Hangnameedhoo	0	0	0	0	100	0	0	0	0.25
Omadhoo	0	0	0	0	100	0	0	100	0.50
Kuburudhoo	0	0	100	0	100	0	0	100	0.75
Mahibadhoo	0	0	100	0	0	0	0	0	0.25
Mandhoo	0	0	100	0	100	0	0	0	0.50
Dhagethi	0	0	0	0	100	0	0	0	0.25
Dhigurah	0	0	0	0	100	0	0	0	0.25
Fenfushi	na	na	0	0	100	0	100	0	0.75
Dhidhdhoo	0	0	100	100	0	0	0	0	0.75
Maamigili	0	0	100	0	100	0	0	100	0.75
VAAVU ATOLL	0	32	66	0	100	0	0	0	0.50
Fulidhoo	0	0	0	0	100	0	0	0	0.25
Thinadhoo	0	0	100	0	100	0	0	0	0.50
Felidhoo	0	0	100	0	100	0	0	0	0.50
Keyodhoo	0	100	100	0	100	0	0	0	0.75
Rakeedhoo	0	0	0	0	100	0	0	0	0.25
MEEMU ATOLL	0	62	76	0	87	0	0	0	0.56
Raimandhoo	0	0	100	0	100	0	0	0	0.50
Madifushi	0	0	100	0	100	0	0	0	0.50
Veyvah	0	100	100	0	100	0	0	0	0.75
Mulah	0	100	0	0	100	0	0	0	0.50
Muli	0	0	100	0	0	0	0	0	0.25
Naalaafushi	0	0	100	0	100	0	0	0	0.50
Kolhufushi	0	100	100	0	100	0	0	0	0.75
Dhiggaru	0	100	100	0	100	0	0	0	0.75
Maduvvari	0	0	100	0	100	na	na	na	0.50
FAAFU ATOLL	0	0	75	0	67	0	0	32	0.44
Feeali	0	0	100	0	100	0	0	0	0.50

Statistical Annex - Education , Contd.

ATOLLS	no drink- ing water in school	no toilet in school	no nursery	grade 5 as highest grade	grade 6 or 7 as highest grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher	Human Vulnerability Index
Biledhdhoo	0	0	0	0	100	0	0	100	0.50
Magoodhoo	0	0	100	0	100	0	0	0	0.50
Dharaboodhoo	0	0	100	0	100	0	0	100	0.75
Nilandhoo	0	0	100	0	0	0	0	0	0.25
DHAAL ATOLL	25	13	93	0	60	0	9	42	0.63
Meedhoo	0	0	100	0	0	na	na	na	0.25
Badidhoo	100	0	100	0	100	0	0	100	1.00
Ribudhoo	0	0	100	0	100	0	0	0	0.50
Hulhudheli	0	0	100	0	100	0	0	100	0.75
Gemendhoo	0	0	100	0	100	0	100	0	1.00
Vaanee	0	0	0	0	100	0	0	0	0.25
Maaeoodhoo	100	100	100	0	100	0	0	100	1.00
Kudahuvadhoo	0	0	100	0	0	0	0	0	0.25
THAA ATOLL	0	32	45	4	66	0	19	12	0.50
Buruni	0	0	100	0	100	0	100	0	1.00
Vilufushi	0	0	0	0	100	0	0	0	0.25
Madifushi	na	na	100	0	100	0	100	0	1.00
Dhiyamigili	0	100	100	0	100	0	100	0	1.00
Guraidhoo	0	0	0	0	0	0	0	0	0.00
Kadoodhoo	0	0	0	0	100	0	0	0	0.25
Vandhoo	0	100	100	0	100	0	0	0	0.75
Hirilandhoo	0	0	0	0	100	0	0	100	0.50
Gaadhiffushi	0	0	100	100	0	0	0	100	1.00
Thimarafushi	0	0	100	0	0	0	0	0	0.25
Veymandoo	0	100	0	0	100	0	0	0	0.50
Kibidhoo	0	100	0	0	100	0	0	0	0.50
Omadhoo	0	100	100	0	100	na	na	na	0.75
LAAMU ATOLL	20	42	63	24	63	0	10	44	0.75
Isdhoo	0	0	0	0	100	0	0	100	0.50
Dhabidhoo	0	0	100	0	100	na	na	na	0.50
Maabaidhoo	0	0	100	0	100	0	0	100	0.75
Mundhoo	100	100	100	0	100	0	0	0	1.00
Kalhaidhoo	100	100	100	0	100	0	0	100	1.00
Gamu	0	100	0	100	0	0	0	0	0.75
Maavah	0	0	100	0	100	0	0	0	0.50
Fonadhoo	0	0	100	0	0	0	0	0	0.25
Gaadhoo	100	0	100	100	0	0	0	0	1.00
Maamendhoo	0	100	100	0	100	0	100	0	1.00
Hithadhoo	100	100	0	0	100	na	na	na	0.75
Kunahandhoo	0	0	100	100	0	0	0	100	1.00
GAAF ALIF ATOLL	17	40	72	11	49	0	7	0	0.54
Kolamaafushi	0	0	0	0	0	0	0	0	0.00
Viligili	0	100	100	0	0	0	0	0	0.50
Maamendhoo	0	0	100	0	100	na	na	na	0.50
Nilandhoo	0	0	100	0	100	0	100	0	1.00
Dhaandhoo	100	100	0	0	100	0	0	0	0.75
Dheevadhoo	0	0	100	0	100	0	0	0	0.50
Kodey	100	0	100	100	0	0	0	0	1.00
Dhiyadhoo	0	0	100	100	0	0	0	0	0.75
Gemanafushi	0	0	100	0	100	0	0	0	0.50
Kanduhulhudhoo	0	0	100	100	0	0	0	0	0.75

Statistical Annex - Education , Contd.

ATOLLS	no drink- ing water in school	no toilet in school	no nursery	grade 5 as highest grade	grade 6 or 7 as highest grade	no trained teacher in primary school	more than 100 pupils per trained teacher	between 50 and 100 pupils per trained teacher	Human Vulnerability Index
GAAF DHAAL ATOLL	14	0	38	8	55	0	4	15	0.36
Madeveli	0	0	100	0	100	na	na	na	0.50
Hoadedhdhoo	0	0	100	0	100	0	0	0	0.50
Nadallaa	100	0	100	0	100	0	0	100	1.00
Gadhdhoo	0	0	0	0	100	0	0	0	0.25
Rathafandhoo	0	0	100	0	100	0	0	0	0.50
Vaadhoo	0	0	0	0	100	0	0	100	0.50
Fiyoari	0	0	100	0	100	0	0	0	0.50
Maathodaa	100	0	0	100	0	0	100	0	1.00
Fares	100	0	100	100	0	0	0	0	1.00
Thinadhoo	0	0	0	0	0	0	0	0	0.00
GNAVIYANI ATOLL	0	0	100	0	0	na	na	na	0.25
Foammulah	0	0	100	0	0	na	na	na	0.25
SEENU ATOLL	0	0	27	0	17	0	11	71	0.34
Meedhoo	na	na	100	0	0	0	0	0	na
Hithadhoo	na	na	0	0	0	na	na	na	0.00
Maradhoo	na	na	0	0	0	0	0	100	0.25
Feydhoo	0	0	100	0	100	0	0	100	0.75
Maradhoo-Feydhoo	na	na	0	0	0	0	100	0	0.50
Hulhudhoo	na	na	0	0	0	0	0	100	0.25

Statistical Annex VI - Education (Map 5)

ATOLLS	no enclosed class-room	no library in school	highest grade	student/trained teacher ratio
Maldives Male' Atoll average	44	46	10	
HAA ALIF ATOLL	75	87		
Thurakunu	100	100	6	150
Uligamu	0	100	6	0
Berinmadhoo	0	100	5	na
Hathifushi	100	100	5	na
Mulhadhoo	100	0	6	39
Hoarafushi	100	100	9	850
Ihavandhoo	n.a.	n.a.	7	na
Kelaa	0	100	7	44
Vashafaru	0	100	7	76
Dhidhdhoo	100	0	10	37
Filladhoo	100	100	6	93
Maarandhoo	100	100	6	106
Thakandhoo	100	100	6	35
Utheemu	0	100	7	34
Muraidhoo	100	100	5	0
Baarah	100	100	7	59
HAA DHAAL ATOLL	19	57		
Faridhoo	100	100	4	0
Hondaidhoo	0	100	6	32
Hanimaadhoo	n.a.	n.a.	5	102
Finey	0	100	6	84
Naivaadhoo	0	100	7	60
Hirimaradhoo	0	100	5	93
Nolhivaranfaru	100	100	7	35
Nellaidhoo	100	0	7	42
Nolhivaramu	100	100	7	na
Kuribi	0	100	6	126
Kuburudhoo	0	100	5	70
Kulhudhuffushi	0	0	10	56
Kumundhoo	0	100	6	113
Neykurendhoo	0	100	6	73
Vaikaradhoo	0	100	8	22
Maavaidhoo	0	100	6	0
Makunudhoo	0	100	7	38
SHAVIYANI ATOLL	38	48		
Kaditheemu	0	100	7	15
Noomaraa	0	0	7	50
Goidhoo	0	100	6	42
Feydhoo	100	0	6	236
Feevah	100	100	7	20
Bilehffahi	0	100	6	38
Foakaidhoo	0	0	7	33
Narudhoo	100	0	6	49
Maakandoodhoo	0	100	7	48
Maroshi	0	0	9	9
Lhaimagu	100	100	7	36

Contd.

Statistical Annex - Education , Contd.

ATOLLS	no enclosed class-room	no library in school	highest grade	student/trained teacher ratio
Firubaidhoo	100	0	7	39
Komandoo	0	0	10	14
Maagoodhoo	100	100	7	38
Funadhoo	100	0	7	27
NOONU ATOLL	49	68		
Hebadhoo	100	100	6	63
Kedhikolhudhoo	0	100	7	22
Maalhendhoo	100	100	5	53
Kudafari	100	100	7	40
Landhoo	100	100	7	110
Maafaru	0	100	6	93
Lhohi	100	100	6	33
Miladhoo	0	100	6	58
Magoodhoo	100	100	5	0
Manadhoo	100	100	7	5
Holhudhoo	n.a.	0	10	35
Fodhdhoo	100	100	6	43
Velidhoo	0	0	10	42
RAA ATOLL	49	67		
Alifushi	0	100	7	56
Vaadhoo	100	100	6	87
Rasgetheemu	100	100	6	55
Agolhitheemu	100	100	5	24
Hulhudhuffaaruu	0	100	7	40
Ugoofaaruu	100	100	7	62
Kadholhudhoo	0	0	7	52
Maakurathu	100	100	6	169
Rasmaadhoo	100	100	7	43
Innamaadhoo	100	100	6	0
Maduvvari	0	n.a.	7	73
Iguraidhoo	100	100	8	58
Fainu	100	100	5	68
Meedhoo	100	0	10	35
Kinolhas	0		6	58
BAA ATOLL	44	50		
Kudarikilu	100	100	7	25
Kamadhoo	100	100	6	79
Kendhoo	0	100	7	38
Kihaadhoo	100	100	6	23
Dhonfanu	0	100	5	77
Dharavandhoo	100	0	7	21
Maalhos	100	100	6	22
Eydhafushi	0	0	10	6
Thulhaadhoo	0	0	7	30
Hithaadhoo	100	100	10	22
Fulhadhoo	100	100	5	53
Fehendhoo	100	100	5	44
Goidhoo	100	100	7	19
LHAVIYANI ATOLL	5	17		
Hinnavaruu	0	0	10	n.a.
Naifaruu	0	0	10	36

Statistical Annex - Education , Contd.

ATOLLS	no enclosed class-room	no library in school	highest grade	student/trained teacher ratio
Kurendhoo	0	100	7	39
Olhuvelifushi	100	100	5	24
Maafilaafushi	n.a.	n.a.	6	0
KAAFU ATOLL	50	88		
Kaashidhoo	n.a.	n.a.	8	16
Gaafaru	0	100	7	35
Dhiffushi	100	100	7	44
Thulusdhoo	100	0	8	325
Huraa	0	100	7	20
Himmafushi	0	100	7	29
Gulhi	100	100	7	49
Maafushi	0	100	7	327
Guraidhoo	100	100	7	45
ALIF UTHURU BURI	100	52		
Thoddoo	100	0	7	31
Rasdoo	100	0	7	28
Ukulhas	100	0	7	43
Mathiveri	100	100	7	29
Bodufolhudhoo	100	100	7	n.a.
Feridhoo	100	100	7	27
Maalhos	100	100	6	29
Himandhoo	100	100	6	425
ALIF DHEKUNU BURI	42	31		
Hangnameedhoo	100	100	6	40
Omadhoo	100	100	6	51
Kuburudhoo	100	0	6	85
Mahibadhoo	0	0	10	26
Mandhoo	100	100	6	46
Dhagethi	100	0	7	38
Dhigurah	0	100	6	19
Fenfushi	n.a.	n.a.	6	175
Dhidhdhoo	100	100	5	16
Maamigili	0	0	7	90
VAAVU ATOLL	100	56		
Fulidhoo	100	0	7	32
Thinadhoo	100	100	7	250
Felidhoo	100	0	7	225
Keyodhoo	100	100	7	37
Rakeedhoo	100	100	7	23
MEEMU ATOLL	61	28		
Raimandhoo	100	100	6	11
Madifushi	100	100	6	29
Veyvah	0	100	7	22
Mulah	100	0	7	27
Muli	100	0	8	15
Naalaafushi	100	100	6	32
Kolhufushi	0	0	7	24
Dhiggaru	0	0	7	25
Maduvvari	100	100	6	n.a.
FAAFU ATOLL	32	0		
Feali	0	0	7	38

Statistical Annex - Education , Contd.

ATOLLS	no enclosed class- room	no library in school	higest grade	student/trained teacher ratio
Biledhdhoo	100	0	7	74
Magoodhoo	0	0	7	29
Dharaboodhoo	100	0	7	79
Nilandhoo	n.a.	n.a.	9	16
DHAAL ATOLL	87	100		
Meedhoo	100	100	8	n.a.
Badidhoo	100	100	7	90
Ribudhoo	100	100	6	31
Hulhudheli	100	100	6	52
Gemendhoo	100	100	6	128
Vaanee	100	100	6	47
Maaeoodhoo	0	100	7	75
Kudahuvadhoo	100	100	10	22
THAA ATOLL	42	83		
Buruni	0	100	6	133
Vilufushi	100	100	7	23
Madifushi	n.a.	n.a.	6	143
Dhiyamigili	100	100	6	168
Guraidhoo	0	100	8	29
Kadoodhoo	0	100	7	33
Vandhoo	0	100	6	33
Hirilandhoo	100	100	7	54
Gaadhiffushi	0	100	5	925
Thimarafushi	0	0	10	24
Veymandoo	100	100	7	33
Kibidhoo	0	100	7	18
Omadhoo	100	100	6	n.a.
LAAMU ATOLL	81	81		
Isdhoo	0	100	6	82
Dhabidhoo	100	100	6	n.a.
Maabaidhoo	0	0	7	51
Mundhoo	100	100	6	26
Kalhaidhoo	100	100	6	75
Gamu	100	100	5	45
Maavah	100	100	7	25
Fonadhoo	100	0	9	26
Gaadhoo	100	100	5	37
Maamendhoo	100	100	6	1050
Hithadhoo	100	100	6	n.a.
Kunahandhoo	100	100	5	68
GAAF ALIF ATOLL	94	60		
Kolamaafushi	100	0	8	19
Viligili	100	0	10	23
Maamendhoo	100	100	7	n.a.
Nilandhoo	100	100	6	136
Dhaandhoo	100	100	7	24
Dhevvhadhoo	100	100	7	49
Kodey	100	100	5	23
Dhiyadhoo	100	100	5	33
Gemanafushi	100	100	6	30
Kanduhulhudhoo	0	100	5	39

Contd.

Statistical Annex - Education , Contd.

ATOLLS	no enclosed class-room	no library in school	highest grade	student/trained teacher ratio
GAAF DHAAL ATOLL	44	58		
Madeveli	100	100	7	n.a.
Hoadedhdhoo	100	0	7	49
Nadallaa	100	100	7	73
Gadhdhoo	0	100	7	16
Rathafandhoo	100	100	6	46
Vaadhoo	100	100	7	71
Fiyoari	100	100	7	27
Maathodaa	100	100	5	122
Fares	0	100	5	23
Thinadhoo	0	0	10	24
GNAVIYANI ATOLL	0	0		
Foammulah	0	0	10	n.a.
SEENU ATOLL	0	0		
Meedhoo	n.a.	n.a.	8	17
Hithadhoo	n.a.	n.a.	10	n.a.
Maradhoo	n.a.	n.a.	8	87
Feydhoo	0	0	7	68
Maradhoo-Feydhoo	n.a.	n.a.	8	160
Hulhudhoo	n.a.	n.a.	8	55

Statistical Annex - Health , Contd.

Statistical Annex VII - Health (Map 6)

ATOLLS	no personnel	problems getting medicine	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital	Human Vulnerability Index
Maldives	3	22	40		0.42
Male'	0	2	0		0.01
A toll average	4	29	54	14	0.57
HAA ALIF ATOLL	17	29	64	0	0.51
Thurakunu	0	18	100	0	0.59
Uligamu	0	46	100	0	0.73
Berinmadhoo	0	84	100	0	0.92
Hathifushi	0	72	100	0	0.86
Mulhadhoo	0	79	100	0	0.89
Hoarafushi	0	5	0		0.03
Ihavandhoo	0	85	100		0.92
Kelaa	0	0	100	0	0.50
Vashafaru	0	72	100	0	0.86
Dhidhdhoo	100	10	0		0.30
Filladhoo	0	15	100	0	0.58
Maarandhoo	0	35	100	0	0.68
Thakandhoo	0	30	100	0	0.65
Utheemu	0	31	100	0	0.66
Muraidhoo	0	7	0		0.04
Baarah	0	18	100	0	0.59
HAA DHAAL ATOLL	0	32	61	11	0.57
Faridhoo	0	20	100	0	0.60
Hondaidhoo	0	25	100	0	0.63
Hanimaadhoo	0	95	100	0	0.97
Finney	0	26	100	0	0.63
Naivaadhoo	0	39	0		0.19
Hirimaradhoo	0	42	100	0	0.71
Nolhivaranfaru	0	96	100	0	0.98
Nellaidhoo	0	38	100	0	0.69
Nolhivaramu	0	100	100	0	1.00
Kuribi	0	53	100	0	0.77
Kuburudhoo	0	63	100	0	0.81
Kulhudhuffushi	0	7	0		0.03
Kumundhoo	0	26	100	0	0.63
Neykurendhoo	0	52	100	0	0.76
Vaikaradhoo	0	0	100	0	0.50
Maavaidhoo	0	39	100	0	0.70
Makunudhoo	0	0	100	100	1.00
SHAVIYANI ATOLL	0	31	96	17	0.81
Kaditheemu	0	64	100	0	0.82
Noomaraa	0	31	100	0	0.66
Goidhoo	0	100	100	0	1.00
Feydhoo	0	40	100	0	0.70
Feevah	0	48	100	0	0.74
Bilehffahi	0	46	100	100	1.00
Foakaidhoo	0	43	100	0	0.71
Narudhoo	0	39	100	0	0.69
Maakandoodhoo	0	30	100	0	0.65
Maroshi	0	8	100	0	0.54
Lhaimagu	0	27	100	0	0.63

Contd.

Statistical Annex - Health , Contd.

ATOLLS	no personnel	problems getting medicine	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital	Human Vulnerability Index
Firubaidhoo	0	22	100	0	0.61
Komandoo	0	0	100	100	1.00
Maagoodhoo	0	0	100	0	0.50
Funadhoo	0	0	0		0.00
NOONU ATOLL	10	36	90	0	0.65
Hebadhoo	100	73	100	0	1.00
Kedhikolhudhoo	0	43	100	0	0.72
Maalhendhoo	0	94	100	0	0.97
Kudafari	0	61	100	0	0.81
Landhoo	0	83	100	0	0.91
Maafaru	0	5	100	0	0.53
Lhohi	100	45	100	0	0.98
Miladhoo	0	56	100	0	0.78
Magoodhoo	0	48	100	0	0.74
Manadhoo	0	0	0		0.00
Holhudhoo	0	30	100	0	0.65
Fodhdhoo	0	48	100	0	0.74
Velidhoo	0	0	100	0	0.50
RAA ATOLL	0	23	55	0	0.39
Alifushi	0	0	0		0.00
Vaadhoo	0	19	100	0	0.59
Rasgetheemu	0	16	100	0	0.58
Agolhitheemu	0	17	100	0	0.58
Hulhudhuffaar	0	48	0		0.24
Ugoofaar	0	0	0		0.00
Kadholhudhoo	0	12	0		0.06
Maakurathu	0	39	100		0.69
Rasmaadhoo	0	55	100	0	0.78
Innamaadhoo	0	51	100	0	0.75
Maduvvari	0	24	100	0	0.62
Iguraidhoo	0	14	100	n.a.	0.57
Fainu	0	24	100	n.a.	0.62
Meedhoo	0	58	100	0	0.79
Kinolhas	0	23	100	0	0.62
BAA ATOLL	0	41	58	23	0.73
Kudarikilu	0	35	100	0	0.68
Kamadhoo	0	17	100	0	0.59
Kendhoo	0	62	100	100	1.00
Kihaadhoo	0	89	100	0	0.95
Dhonfanu	0	69	100	0	0.85
Dharavandhoo	0	100	100	0	1.00
Maalhos	0	66	100	100	1.00
Eydhafushi	0	0	0		0.00
Thulhaadhoo	0	11	0		0.06
Hithaadhoo	0	85	100	0	0.93
Fulhadhoo	0	40	100	0	0.70
Fehendhoo	0	43	100	0	0.71
Goidhoo	0	50	100	0	0.75
LHAVIYANI ATOLL	0	11	17	0	0.14
Hinnavaru	0	0	0		0.00
Naifaru	0	8	0		0.04

Statistical Annex - Health , Contd.

ATOLLS	no personnel	problems getting medicine	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital	Human Vulnerability Index
Kurendhoo	0	43	100	0	0.72
Olhuvelifushi	0	40	100	0	0.70
Maafilaafushi	0	89	0		0.44
KAAFU ATOLL	0	44	68	36	0.92
Kaashidhoo	0	44	100	n.a.	0.72
Gaafaru	0	52	100	100	1.00
Dhiffushi	0	55	100	n.a.	0.77
Thulusdhoo	0	7	0		0.04
Huraa	0	15	0		0.08
Himmafushi	0	52	100	n.a.	0.76
Gulhi	0	47	100	0	0.74
Maafushi	0	53	100	0	0.76
Guraidhoo	0	58	0		0.29
ALIF UTHURU BURI	20	49	64	31	0.93
Thoddo	0	17	0		0.09
Rasdhoo	0	0	0		0.00
Ukulhas	0	100	100	0	1.00
Mathiveri	0	62	100	0	0.81
Bodufolhudhoo	100	93	100	n.a.	1.00
Feridhoo	0	53	100	100	1.00
Maalhos	100	45	100	n.a.	0.98
Himandhoo	0	73	100	n.a.	0.87
ALIF DHEKUNU BURI	8	29	44	17	0.56
Hangnameedhoo	0	34	100	0	0.67
Omadhoo	0	27	100	n.a.	0.63
Kuburudhoo	0	48	100	0	0.74
Mahibadhoo	0	0	0		0.00
Mandhoo	0	80	100	100	1.00
Dhagethi	0	0	0		0.00
Dhigurah	100	84	100	0	1.00
Fenfushi	0	79	100	n.a.	0.89
Dhidhdhoo	100	58	100	n.a.	1.00
Maamigili	0	22	0		0.11
VAAVU ATOLL	9	15	42	0	0.31
Fulidhoo	0	51	100	0	0.75
Thinadhoo	100	33	100	0	0.91
Felidhoo	0	0	0		0.00
Keyodhoo	0	0	0		0.00
Rakeedhoo	0	21	100	0	0.61
MEEMU ATOLL	28	20	87	4	0.64
Raimandhoo	0	17	100	0	0.58
Madifushi	0	65	100	n.a.	0.83
Veyvah	100	48	100	100	0.99
Mulah	0	25	100	0	0.63
Muli	0	0	0		0.00
Naalaafushi	100	29	100	0	0.89
Kolhufushi	0	18	100	0	0.59
Dhiggaru	100	25	100	0	0.88
Maduvvari	0	0	100	0	0.50
FAAFU ATOLL	8	29	52	38	0.81
Feali	0	69	100	100	1.00

Statistical Annex - Health , Contd.

ATOLLS	no personnel	problems getting medicine	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital	Human Vulnerability Index
Biledhdhoo	0	27	100	0	0.64
Magoodhoo	0	5	0	0	0.03
Dharaboodhoo	100	53	100	0	1.00
Nilandhoo	0	9	0		0.05
DHAAL ATOLL	0	52	78	14	0.79
Meedhoo	0	53	100	0	0.76
Badidhoo	0	94	100	0	0.97
Ribudhoo	0	69	100	100	1.00
Hulhudheli	0	46	100	0	0.73
Gemendhoo	0	92	100	0	0.96
Vaanee	0	52	100	0	0.76
Maaeboodhoo	0	64	100	0	0.82
Kudahuvadhoo	0	0	0		0.00
THAA ATOLL	3	20	78	0	0.50
Buruni	0	20	100	0	0.60
Vilufushi	0	0	100	n.a.	0.50
Madifushi	0	16	100	0	0.58
Dhiyamigili	0	78	100	0	0.89
Guraidhoo	0	0	0		0.00
Kadoodhoo	0	49	100	0	0.74
Vandhoo	100	53	100	0	1.00
Hirilandhoo	0	18	100	n.a.	0.59
Gaadhiffushi	0	12	100	0	0.56
Thimarafushi	0	0	100	0	0.50
Veymandoo	0	0	0	0	0.00
Kibidhoo	0	80	100	0	0.90
Omadhoo	0	44	100	0	0.72
LAAMU ATOLL	0	50	50	0	0.50
Isdhoo	0	60	0		0.30
Dhabidhoo	0	67	100	0	0.83
Maabaidhoo	0	39	100	0	0.70
Mundhoo	0	48	100	0	0.74
Kalhaidhoo	0	85	100	0	0.92
Gamu	0	0	0		0.00
Maavah	0	68	100	0	0.84
Fonadhoo	0	0	0		0.00
Gaadhoo	0	75	100	0	0.88
Maamendhoo	0	88	100	0	0.94
Hithadhoo	0	100	0		0.50
Kunahandhoo	0	94	100	0	0.97
GAAF ALIF ATOLL	6	35	74	37	0.93
Kolamaafushi	0	96	100	n.a.	0.98
Viligili	0	13	0		0.07
Maamendhoo	0	2	100	0	0.51
Nilandhoo	100	7	100	0	0.78
Dhaandhoo	0	43	100	0	0.72
Dheevadhoo	0	63	100	0	0.82
Kodey	0	55	100	100	1.00
Dhiyadhoo	0	52	100	100	1.00
Gemanafushi	0	8	100	100	1.00
Kanduhulhudhoo	0	55	100	100	1.00

Statistical Annex - Health , Contd.

ATOLLS	no personnel	problems getting medicine	no health centre, hospital or private clinic	more than two hours to nearest health centre or hospital	Human Vulnerability Index
GAAF DHAAL ATOLL	0	34	48	57	0.99
Madeveli	0	52	100	0	0.76
Hoadedhdhoo	0	72	100	0	0.86
Nadallaa	0	100	100	0	1.00
Gadhdhoo	0	27	0		0.13
Rathafandhoo	0	100	100	100	1.00
Vaadhoo	0	74	100	100	1.00
Fiyoari	0	26	100	100	1.00
Maathodaa	0	33	100	100	1.00
Fares	0	39	100	100	1.00
Thinadhoo	0	0	0		0.00
GNAVIYANI ATOLL	0	2	0		0.01
Foammulah	0	2	0		0.01
SEENU ATOLL	0	7	0		0.03
Meedhoo	0	10	0		0.05
Hithadhoo	0	9	0		0.04
Maradhoo	0	6	0		0.03
Feydhoo	0	0	0		0.00
Maradhoo-Feydhoo	0	0	0		0.00
Hulhudhoo	0	11	0		0.06

Stastical Annex VII - Health (Map 6)

ATOLLS	no doctor	no nurse	no health worker	no midwife	no pharma- cist	no health center	no hospital or private clinic	more than twelve hours to Male'
Maldives Male'	43	52	7	4	47	40	58	
Atoll average	58	70	10	6	62	74	78	66
HAA ALIF ATOLL	85	76	22	21	59	68	96	100
Thurakunu	100	100	0	0	100	100	100	100
Uligamu	100	100	0	0	100	100	100	100
Berimadhoo	100	100	0	0	100	100	100	100
Hathifushi	100	100	0	0	100	100	100	100
Mulhadhoo	100	100	0	0	100	100	100	100
Hoarafushi	0	0	0	0	0	0	100	100
Ihavandhoo	100	100	0	0	100	100	100	n.a.
Kelaa	100	0	0	0	0	100	100	100
Vashafaru	100	100	0	0	100	100	100	100
Dhidhdhoo	100	100	100	100	0	0	100	100
Filladhoo	100	100	0	0	100	100	100	100
Maarandhoo	100	100	0	0	100	100	100	100
Thakandhoo	100	100	100	0	100	100	100	100
Utheemu	100	100	0	0	100	100	100	100
Muraidhoo	100	100	0	100	100	100	0	100
Baarah	100	100	0	0	100	100	100	100
HAA DHAAL ATOLL	65	65	6	2	65	96	65	100
Faridhoo	100	100	0	0	100	100	100	100
Hondaithoo	100	100	0	0	100	100	100	100
Hanimaadhoo	100	100	0	0	100	100	100	n.a.
Finey	100	100	0	100	100	100	100	100
Naivaadhoo	100	100	0	0	100	0	100	100
Hirimaradhoo	100	100	0	0	100	100	100	100
Nolhivaranfaru	100	100	0	0	100	100	100	100
Nellaidhoo	100	100	0	0	100	100	100	100
Nolhivaramu	100	100	0	0	100	100	100	100
Kuribi	100	100	0	0	100	100	100	100
Kuburudhoo	100	100	0	0	100	100	100	100
Kulhudhuffushi	0	0	0	0	0	100	0	n.a.
Kumundhoo	100	100	0	0	100	100	100	100
Neykurendhoo	100	100	100	0	100	100	100	100
Vaikaradhoo	100	100	0	0	100	100	100	100
Maavaidhoo	100	100	0	0	100	100	100	100
Makunudhoo	100	100	0	0	100	100	100	100
SHAVIYANI ATOLL	96	96	4	0	100	100	96	100
Kaditheemu	100	100	0	0	100	100	100	100
Noomaraa	100	100	0	0	100	100	100	100
Goidhoo	100	100	100	0	100	100	100	100
Feydhoo	100	100	0	0	100	100	100	100
Feevah	100	100	0	0	100	100	100	100
Bilehffahi	100	100	0	0	100	100	100	100
Foakaidhoo	100	100	0	0	100	100	100	100
Narudhoo	100	100	0	0	100	100	100	100
Maakandoodhoo	100	100	0	0	100	100	100	100
Maroshi	100	100	0	0	100	100	100	100
Lhaimagu	100	100	0	0	100	100	100	100

Statistical Annex - Health , Contd.

ATOLLS	no doctor	no nurse	no health worker	no midwife	no pharma- cist	no health center	no hospital or private clinic	more than twelve hours to Male'
Firubaidhoo	100	100	0	0	100	100	100	100
Komandoo	100	100	0	0	100	100	100	100
Maaugoodhoo	100	100	0	0	100	100	100	100
Funadhoo	0	0	0	0	100	100	0	100
NOONU ATOLL	73	90	14	19	90	90	100	58
Hebadhoo	100	100	100	100	100	100	100	100
Kedhikolhudhoo	100	100	0	0	100	100	100	100
Maalhendhoo	100	100	0	0	100	100	100	0
Kudafari	100	100	100	0	100	100	100	0
Landhoo	100	100	0	0	100	100	100	100
Maafaru	100	100	0	100	100	100	100	100
Lhohi	100	100	100	100	100	100	100	100
Miladhoo	100	100	0	0	100	100	100	100
Magoodhoo	100	100	0	100	100	100	100	0
Manadhoo	0	0	0	0	0	0	100	0
Holhudhoo	100	100	0	0	100	100	100	100
Fodhdhoo	100	100	0	0	100	100	100	0
Velidhoo	0	100	0	0	100	100	100	0
RAA ATOLL	55	74	19	0	81	94	61	44
Alifushi	0	0	0	0	100	100	0	100
Vaadhoo	100	100	0	0	100	100	100	100
Rasgetheemu	100	100	0	0	100	100	100	100
Agolhitheemu	100	100	0	0	100	100	100	0
Hulhudhuffaaruu	0	0	0	0	100	0	100	100
Ugoofaaruu	0	0	0	0	100	100	0	0
Kadholhudhoo	0	100	100	0	0	100	0	100
Maakurathu	100	100	0	0	100	100	100	0
Rasmaadhoo	100	100	0	0	100	100	100	0
Innamaadhoo	100	100	0	0	100	100	100	0
Maduvvari	100	100	0	0	100	100	100	0
Iguraidhoo	100	100	0	0	100	100	100	0
Fainu	100	100	0	0	100	100	100	0
Meedhoo	100	100	0	0	100	100	100	0
Kinolhas	100	100	0	0	100	100	100	0
BAA ATOLL	78	78	0	11	78	78	80	0
Kudarikilu	100	100	0	0	100	100	100	0
Kamadhoo	100	100	0	0	100	100	100	0
Kendhoo	100	100	0	0	100	100	100	0
Kihaadhoo	100	100	0	0	100	100	100	0
Dhonfanu	100	100	0	0	100	100	100	0
Dharavandhoo	100	100	0	0	100	100	100	0
Maalhos	100	100	0	0	100	100	100	0
Eydhafushi	0	0	0	0	0	0	100	0
Thulhaadhoo	100	100	0	0	100	100	0	0
Hithaadhoo	100	100	0	100	100	100	100	0
Fulhadhoo	100	100	0	0	100	100	100	0
Fehendhoo	100	100	0	0	100	100	100	0
Goidhoo	100	100	0	0	100	100	100	0
LHAVIYANI ATOLL	17	57	0	0	17	17	100	0
Hinnavaruu	0	100	0	0	0	0	100	0
Naifaru	0	0	0	0	0	0	100	0

Contd.

Statistical Annex - Health , Contd.

	no doctor	no nurse	no health worker	no midwife	no pharma- cist	no health center	no hospital or private clinic	more than twelve hours to Male'
ATOLLS								
Kurendhoo	100	100	0	0	100	100	100	0
Olhuvelifushi	100	100	0	0	100	100	100	0
Maafilaafushi	n.a.	n.a.	n.a.	n.a.	n.a.	0	100	n.a.
KAAFU ATOLL	90	90	10	0	90	68	100	0
Kaashidhoo	100	100	0	0	100	100	100	n.a.
Gaafaru	100	100	0	0	100	100	100	0
Dhiffushi	100	100	100	0	100	100	100	0
Thulusdhoo	0	0	0	0	0	0	100	0
Huraa	100	100	0	0	100	0	100	0
Himmafushi	100	100	0	0	100	100	100	0
Gulhi	100	100	0	0	100	100	100	0
Maafushi	100	100	0	0	100	100	100	0
Guraidhoo	100	100	0	0	100	0	100	0
ALIF UTHURU BURI	85	85	32	31	85	64	100	0
Thoddoo	100	100	0	0	100	0	100	0
Rasdoo	0	0	0	0	0	0	100	0
Ukulhas	100	100	100	0	100	100	100	0
Mathiveri	100	100	0	0	100	100	100	0
Bodufolhudhoo	100	100	100	100	100	100	100	0
Feridhoo	100	100	0	0	100	100	100	0
Maalhos	100	100	100	100	100	100	100	0
Himandhoo	100	100	0	100	100	100	100	0
ALIF DHEKUNU BURI	44	77	23	8	68	53	68	0
Hangnameedhoo	100	100	0	0	100	100	100	0
Omadhoo	100	100	0	0	100	100	100	n.a.
Kuburudhoo	100	100	100	0	100	100	100	0
Mahibadhoo	0	0	0	0	0	0	0	0
Mandhoo	100	100	0	0	100	100	100	0
Dhagethi	0	100	100	0	0	100	0	0
Dhigurah	100	100	100	100	100	100	100	0
Fenfushi	100	100	0	0	100	100	100	0
Dhidhdhoo	100	100	100	100	100	100	100	0
Maamigili	0	100	0	0	100	0	100	0
VAAVU ATOLL	74	100	41	9	100	74	68	0
Fulidhoo	100	100	0	0	100	100	100	0
Thinadhoo	100	100	100	100	100	100	100	0
Felidhoo	0	100	0	0	100	0	100	0
Keyodhoo	100	100	100	0	100	100	0	0
Rakeedhoo	100	100	0	0	100	100	100	0
MEEMU ATOLL	87	87	28	28	100	100	87	0
Raimandhoo	100	100	0	0	100	100	100	0
Madifushi	100	100	0	0	100	100	100	0
Veyvah	100	100	100	100	100	100	100	0
Mulah	100	100	0	0	100	100	100	0
Muli	0	0	0	0	100	100	0	0
Naalaafushi	100	100	100	100	100	100	100	0
Kolhufushi	100	100	0	0	100	100	100	0
Dhiggaru	100	100	100	100	100	100	100	0
Maduvvari	100	100	0	0	100	100	100	0
FAAFU ATOLL	86	86	8	8	86	52	100	0
Feali	100	100	0	0	100	100	100	0

Contd.

Statistical Annex - Health , Contd.

ATOLLS	no doctor	no nurse	no health worker	no midwife	no pharma- cist	no health center	no hospital or private clinic	more than twelve hours to Male'
Biledhdhoo	100	100	0	0	100	100	100	0
Magoodhoo	0	0	0	0	0	0	100	0
Dharaboodhoo	100	100	100	100	100	100	100	0
Nilandhoo	100	100	0	0	100	0	100	0
DHAAL ATOLL	78	78	12	0	71	78	100	46
Meedhoo	100	100	0	0	100	100	100	0
Badidhoo	100	100	100	0	100	100	100	0
Ribudhoo	100	100	0	0	100	100	100	100
Hulhudheli	100	100	0	0	100	100	100	0
Gemendhoo	100	100	0	0	100	100	100	0
Vaanee	100	100	0	0	0	100	100	0
Maaeoodhoo	100	100	0	0	100	100	100	100
Kudahuvadho	0	0	0	0	0	0	100	100
THAA ATOLL	49	87	7	3	62	92	86	100
Buruni	100	100	0	0	100	100	100	100
Vilufushi	0	0	0	0	100	100	100	100
Madifushi	100	100	0	0	100	100	100	100
Dhiyamigili	100	100	0	0	100	100	100	100
Guraidhoo	0	100	0	0	0	100	0	100
Kadoodhoo	100	100	0	0	100	100	100	100
Vandhoo	100	100	100	100	100	100	100	100
Hirilandhoo	100	100	0	0	100	100	100	100
Gaadhiffushi	100	100	100	0	100	100	100	100
Thimarafushi	0	100	0	0	0	100	100	100
Veymandoo	0	100	0	0	0	0	100	100
Kibidhoo	100	100	0	0	100	100	100	100
Omadhoo	100	100	0	0	100	100	100	100
LAAMU ATOLL	50	70	0	0	70	83	50	100
Isdhoo	0	0	0	0	100	100	0	100
Dhabidhoo	100	100	0	0	100	100	100	100
Maabaidhoo	100	100	0	0	100	100	100	100
Mundhoo	100	100	0	0	100	100	100	100
Kalhaidhoo	100	100	0	0	100	100	100	100
Gamu	0	0	0	0	0	0	0	100
Maavah	100	100	0	0	100	100	100	100
Fonadhoo	0	100	0	0	0	100	0	100
Gaadhoo	100	100	0	0	100	100	100	100
Maamendhoo	100	100	0	0	100	100	100	100
Hithadhoo	0	100	0	0	100	100	0	100
Kunahandhoo	100	100	0	0	100	100	100	100
GAAF ALIF ATOLL	74	60	12	6	74	74	74	100
Kolamaafushi	100	0	0	0	100	100	100	100
Viligili	0	0	0	0	0	0	0	100
Maamendhoo	100	100	0	0	100	100	100	100
Nilandhoo	100	100	100	100	100	100	100	100
Dhaandhoo	100	100	0	0	100	100	100	100
Dheevadhoo	100	100	0	0	100	100	100	100
Kodey	100	100	0	0	100	100	100	100
Dhiyadhoo	100	100	0	0	100	100	100	100
Gemanafushi	100	100	0	0	100	100	100	100
Kanduhulhudhoo	100	100	100	0	100	100	100	100

Contd.

Statistical Annex - Health , Contd.

ATOLLS	no doctor	no nurse	no health worker	no midwife	no pharma- cist	no health center	no hospital or private clinic	more than twelve hours to Male'
GAAF DHAAL ATOLL	48	63	6	0	48	48	100	100
Madeveli	100	100	0	0	100	100	100	100
Hoadedhdhoo	100	100	0	0	100	100	100	100
Nadallaa	100	100	100	0	100	100	100	100
Gadhdhoo	0	100	0	0	0	0	100	100
Rathafandhoo	100	100	0	0	100	100	100	100
Vaadhoo	100	100	0	0	100	100	100	100
Fiyoari	100	100	0	0	100	100	100	100
Maathodaa	100	100	0	0	100	100	100	100
Fares	100	100	0	0	100	100	100	100
Thinadhoo	0	0	0	0	0	0	100	n.a.
GNAVIYANI ATOLL	0	0	0	0	0	0	100	100
Foammulah	0	0	0	0	0	0	100	100
SEENU ATOLL	6	42	0	0	9	81	19	100
Meedhoo	0	0	0	0	0	0	100	n.a.
Hithadhoo	0	0	0	0	0	100	0	100
Maradhoo	0	100	0	0	0	100	0	100
Feydhoo	0	100	0	0	0	100	0	100
Maradhoo-Feydhoo	100	100	0	0	0	100	0	100
Hulhudhoo	0	100	0	0	100	0	100	n.a.

Statistical Annex VIII - Drinking Water (Map 7)

ATOLLS	insufficient drinking water	unsafe drinking water	Human Vulnerability Index	untreated drinking water	rain water tank in compound	well water in compound	public rain water tank	private rain water tank	desalination plant/piped supply
Maldives Male'	18	9	0.27	67	39	10	27	9	15
Atoll average	24	12	0.36	72	42	13	33	12	0
HAA ALIF ATOLL	6	38	0.44	64	23	42	18	17	1
Thurakunu	14	25	0.40	88	75	25	0	0	0
Uligamu	0	35	0.35	88	21	35	44	0	0
Berinmadhoo	19	24	0.43	84	39	24	25	12	0
Hathifushi	0	0	0.00	47	56	0	40	5	0
Mulhadhoo	6	8	0.15	76	29	8	63	0	0
Hoarafushi	11	7	0.17	27	16	29	28	28	0
Ihavandhoo	0	23	0.23	67	24	33	0	43	0
Kelaa	0	69	0.69	59	12	69	8	12	0
Vashafaru	15	26	0.41	100	38	26	23	13	0
Dhidhdhoo	6	40	0.46	72	28	46	22	4	0
Filladhoo	0	30	0.30	100	43	30	8	18	0
Maarandhoo	26	0	0.26	56	46	0	51	3	0
Thakandhoo	0	0	0.00	33	51	0	49	0	0
Utheemu	16	0	0.16	13	13	0	51	11	25
Muraidhoo	0	42	0.42	100	35	42	15	8	0
Baarah	0	44	0.44	85	15	44	0	41	0
HAA DHAAL ATOLL	7	6	0.13	82	48	6	38	7	1
Faridhoo	35	0	0.35	65	63	0	0	37	0
Hondaidhoo	13	0	0.13	100	58	0	29	14	0
Hanimaadhoo	8	0	0.08	100	44	0	56	0	0
Finey	13	3	0.15	83	28	3	36	33	0
Naivaadhoo	38	0	0.38	75	70	0	30	0	0
Hirimaradhoo	0	0	0.00	88	8	0	92	0	0
Nolhivaranfaru	0	0	0.00	100	0	0	100	0	0
Nellaidhoo	5	0	0.05	100	41	0	59	0	0
Nolhivaramu	22	0	0.22	80	42	0	58	0	0
Kuribi	9	0	0.09	90	82	0	18	0	0
Kuburudhoo	14	0	0.14	100	55	0	45	0	0
Kulhudhuffushi	5	11	0.15	96	55	11	29	6	0
Kumundhoo	5	0	0.05	89	26	0	74	0	0
Neykurendhoo	0	0	0.00	85	6	0	56	38	0
Vaikaradhoo	0	21	0.21	34	66	21	13	0	0
Maavaidhoo	0	0	0.00	72	0	0	100	0	0
Makunudhoo	0	0	0.00	9	80	0	0	10	10
SHAVIYANI ATOLL	21	5	0.26	66	54	6	31	8	1
Kaditheemu	0	3	0.03	100	35	3	62	0	0
Noomaraa	42	33	0.76	76	31	33	27	7	2
Goidhoo	18	0	0.18	100	36	0	47	7	10
Feydhoo	12	0	0.12	69	63	0	37	0	0
Feevah	0	5	0.05	88	18	5	65	12	0
Bilehffahi	41	0	0.41	84	44	0	56	0	0
Foakaidhoo	8	21	0.29	49	49	31	0	20	0
Narudhoo	28	0	0.28	100	57	0	28	15	0
Maakandoodhoo	43	0	0.43	23	89	0	7	5	0
Maroshi	39	0	0.39	95	26	0	74	0	0
Lhaimagu	62	0	0.62	100	27	0	61	12	0

Contd.

Statistical Annex - Drinking Water , Contd.

	insufficient drinking water	unsafe drinking water	Human Vulnerability Index	untreated drinking water	rain water tank in compound	well water in compound	public rain water tank	private rain water tank	desalination plant/ piped supply
ATOLLS									
Firubaidhoo	0	0	0.00	100	65	0	22	13	0
Komandoo	29	6	0.35	21	74	6	6	14	0
Maugoodhoo	0	8	0.08	51	54	8	27	10	0
Funadhoo	0	0	0.00	81	34	0	22	43	0
NOONU ATOLL	13	13	0.26	47	37	14	45	4	0
Hebadhoo	0	0	0.00	40	49	0	51	0	0
Kedhikolhudhoo	25	15	0.40	71	15	15	71	0	0
Maalhendhoo	32	0	0.32	58	26	0	74	0	0
Kudafari	48	0	0.48	52	0	0	100	0	0
Landhoo	0	11	0.11	51	7	11	83	0	0
Maafaru	11	30	0.41	10	40	40	19	0	0
Lhohi	13	17	0.30	19	29	17	44	10	0
Miladhoo	27	50	0.77	17	35	50	0	15	0
Magoodhoo	8	0	0.08	19	31	0	69	0	0
Manadhoo	0	20	0.20	15	29	20	51	0	0
Holhudhoo	3	0	0.03	60	72	0	25	3	0
Fodhdhoo	21	0	0.21	50	15	0	83	2	0
Velidhoo	8	11	0.19	77	52	11	28	9	0
RAA ATOLL	21	6	0.27	78	38	6	43	13	0
Alifushi	0	3	0.03	76	59	3	7	31	0
Vaadhoo	16	0	0.16	100	38	0	62	0	0
Rasgetheemu	0	0	0.00	100	28	0	72	0	0
Agolhitheemu	22	0	0.22	69	72	0	0	28	0
Hulhudhuffaaruu	0	2	0.02	100	72	2	0	26	0
Ugoofaaruu	28	7	0.35	100	45	7	25	23	0
Kadholhudhoo	90	12	1.00	90	18	12	61	9	0
Maakurathu	4	4	0.09	81	13	4	83	0	0
Rasmaadhoo	8	20	0.28	59	28	20	35	17	0
Innamaadhoo	0	0	0.00	52	22	0	51	27	0
Maduvvari	0	17	0.17	80	27	17	36	21	0
Iguraidhoo	0	0	0.00	71	32	0	68	0	0
Fainu	0	0	0.00	89	0	0	100	0	0
Meedhoo	0	10	0.10	29	80	10	10	0	0
Kinolhas	0	0	0.00	83	22	0	78	0	0
BAA ATOLL	23	4	0.27	70	48	5	45	1	1
Kudarikilu	17	6	0.23	100	26	6	68	0	0
Kamadhoo	10	0	0.10	90	75	0	25	0	0
Kendhoo	64	0	0.64	86	56	0	44	0	0
Kihaadhoo	19	16	0.35	79	46	16	39	0	0
Dhonfanu	10	0	0.10	25	27	10	59	3	0
Dharavandhoo	4	0	0.04	21	61	0	34	4	0
Maalhos	0	0	0.00	48	71	0	29	0	0
Eydhafushi	18	7	0.24	91	6	7	87	0	0
Thulhaadhoo	12	0	0.12	60	86	2	13	0	0
Hithaadhoo	35	16	0.52	63	20	16	49	5	9
Fulhadhoo	39	0	0.39	84	32	0	68	0	0
Fehendhoo	12	0	0.12	65	57	0	43	0	0
Goidhoo	57	0	0.57	78	71	0	29	0	0
LHAVIYANI ATOLL	35	15	0.50	36	58	15	14	13	0
Hinnavaru	74	0	0.74	0	75	0	12	13	0
Naifaru	12	35	0.47	45	55	35	1	9	0

Statistical Annex - Drinking Water , Contd.

ATOLLS	insufficient drinking water	unsafe drinking water	Human Vulnerability Index	untreated drinking water	rain water tank in compound	well water in compound	public rain water tank	private rain water tank	desalination plant/ piped supply
Kurendhoo	0	0	0.00	100	14	0	57	29	0
Olhuvelifushi	0	0	0.00	100	68	0	13	19	0
Maafilaafushi	22	0	0.22	0	0	0	100	0	0
KAAFU ATOLL	19	12	0.31	89	27	16	49	9	0
Kaashidhoo	0	11	0.11	100	0	11	77	11	0
Gaafaru	14	0	0.14	100	7	0	82	11	0
Dhiffushi	32	0	0.32	100	71	0	29	0	0
Thulusdhoo	0	12	0.12	100	29	12	47	12	0
Huraa	19	0	0.19	58	33	0	67	0	0
Himmafushi	3	15	0.18	26	19	65	11	6	0
Gulhi	33	56	0.90	100	14	56	18	12	0
Maafushi	19	0	0.19	100	47	0	53	0	0
Guraidhoo	55	11	0.65	100	29	11	31	29	0
ALIF UTHURU BURI	24	4	0.27	98	57	4	32	8	0
Thoddoo	10	0	0.10	100	75	0	25	0	0
Rasdhoo	10	0	0.10	100	73	0	18	8	0
Ukulhas	0	0	0.00	100	73	0	0	27	0
Mathiveri	67	0	0.67	100	18	0	70	11	0
Bodufolhudhoo	54	10	0.63	100	65	10	25	0	0
Feridhoo	15	4	0.19	91	51	4	45	0	0
Maalhos	18	18	0.36	100	45	18	30	7	0
Himandhoo	38	0	0.38	92	25	0	67	8	0
ALIF DHEKUNU BURI	43	1	0.44	74	50	1	31	17	0
Hangnameedhoo	27	0	0.27	66	70	0	17	13	0
Omadhoo	63	0	0.63	49	54	0	46	0	0
Kuburudhoo	40	0	0.40	39	81	0	19	0	0
Mahibadhoo	64	0	0.64	67	52	0	48	0	0
Mandhoo	68	0	0.68	73	41	0	48	0	11
Dhagethi	11	0	0.11	84	45	0	48	7	0
Dhigurah	41	0	0.41	100	60	0	33	7	0
Fenfushi	24	14	0.38	58	45	14	16	25	0
Dhidhdhoo	89	0	0.89	85	44	0	53	2	0
Maamigili	32	0	0.32	98	37	0	12	51	0
VAAVU ATOLL	47	0	0.47	52	40	2	53	6	0
Fulidhoo	24	0	0.24	42	47	8	41	3	0
Thinadhoo	19	0	0.19	59	0	0	100	0	0
Felidhoo	30	0	0.30	49	54	0	27	20	0
Keyodhoo	87	0	0.87	61	37	0	63	0	0
Rakeedhoo	35	0	0.35	45	42	0	58	0	0
MEEMU ATOLL	43	0	0.43	94	22	3	57	18	0
Raimandhoo	36	0	0.36	100	22	0	75	3	0
Madifushi	31	0	0.31	79	0	0	100	0	0
Veyvah	66	0	0.66	100	8	0	92	0	0
Mulah	15	0	0.15	87	10	12	41	37	0
Muli	16	0	0.16	85	53	0	47	0	0
Naalaafushi	61	0	0.61	100	23	0	77	0	0
Kolhufushi	58	0	0.58	100	18	0	82	0	0
Dhiggaru	58	0	0.58	100	0	0	50	50	0
Maduvvari	74	0	0.74	100	70	0	30	0	0
FAAFU ATOLL	22	1	0.23	95	7	1	81	11	0
Feeali	13	0	0.13	74	29	0	53	18	0

Statistical Annex - Drinking Water , Contd.

	insufficient drinking water	unsafe drinking water	Human Vulnerability Index	untreated drinking water	rain water tank in compound	well water in compound	public rain water tank	private rain water tank	desalination plant/ piped supply
ATOLLS									
Biledhdhoo	10	0	0.10	100	6	0	84	10	0
Magoodhoo	22	8	0.29	100	0	8	87	5	0
Dharaboodhoo	0	9	0.09	100	0	9	89	2	0
Nilandhoo	41	0	0.41	100	27	0	66	7	0
DHAAL ATOLL	39	8	0.47	1	32	10	58	0	0
Meedhoo	32	0	0.32	0	60	0	40	0	0
Badidhoo	46	0	0.46	0	13	0	87	0	0
Ribudhoo	43	0	0.43	0	28	0	72	0	0
Hulhudheli	63	11	0.74	0	0	11	89	0	0
Gemendhoo	11	0	0.11	12	25	0	75	0	0
Vaanee	11	0	0.11	0	14	0	86	0	0
Maeeboodhoo	53	0	0.53	0	24	16	60	0	0
Kudahuvadhoo	41	17	0.58	0	52	28	20	0	0
THAA ATOLL	39	3	0.42	70	45	3	43	9	0
Buruni	14	0	0.14	0	19	0	81	0	0
Vilufushi	28	0	0.28	13	78	0	17	5	0
Madifushi	63	11	0.73	84	18	11	72	0	0
Dhiyamigili	66	0	0.66	100	59	0	22	19	0
Guraidhoo	31	0	0.31	93	56	0	30	14	0
Kadoodhoo	30	0	0.30	81	17	0	83	0	0
Vandhoo	22	0	0.22	94	11	0	89	0	0
Hirilandhoo	49	0	0.49	100	46	0	54	0	0
Gaadhiffushi	0	0	0.00	35	0	0	100	0	0
Thimarafushi	27	5	0.32	48	31	5	34	31	0
Veymandoo	47	0	0.47	91	70	0	23	8	0
Kibidhoo	64	11	0.75	100	49	11	36	3	0
Omadhoo	65	0	0.65	100	47	0	53	0	0
LAAMU ATOLL	28	3	0.31	60	54	3	28	15	0
Isdhoo	43	13	0.56	65	48	13	38	0	0
Dhabidhoo	35	0	0.35	24	100	0	0	0	0
Maabaidhoo	60	0	0.60	56	31	0	28	33	8
Mundhoo	24	0	0.24	63	68	0	27	5	0
Kalhaidhoo	51	0	0.51	62	75	0	0	25	0
Gamu	4	0	0.04	71	48	0	22	29	0
Maavah	33	0	0.33	63	81	0	7	12	0
Fonadhoo	7	0	0.07	62	34	0	62	4	0
Gaadhoo	0	0	0.00	43	85	0	9	6	0
Maamendhoo	47	0	0.47	53	50	0	50	0	0
Hithadhoo	29	15	0.44	59	29	15	0	56	0
Kunahandhoo	37	0	0.37	54	40	0	42	18	0
GAAF ALIF ATOLL	14	4	0.18	49	53	5	33	10	0
Kolamaafushi	0	10	0.10	84	51	10	39	0	0
Viligili	15	0	0.15	74	41	0	26	32	0
Maamendhoo	27	0	0.27	48	81	0	19	0	0
Nilandhoo	32	0	0.32	40	56	0	18	27	0
Dhaandhoo	0	0	0.00	17	63	0	37	0	0
Dhevvadhoo	0	14	0.14	81	27	14	54	5	0
Kodey	51	0	0.51	0	38	0	62	0	0
Dhiyadhoo	14	8	0.23	0	25	19	56	0	0
Gemanafushi	27	0	0.27	18	68	0	19	13	0
Kanduhulhudhoo	13	22	0.36	0	57	22	20	0	0

Statistical Annex - Drinking Water , Contd.

ATOLLS	insufficient drinking water	unsafe drinking water	Human Vulnerability Index	untreated drinking water	rain water tank in compound	well water in compound	public rain water tank	private rain water tank	desalination plant/ piped supply
GAAF DHAAL ATOLL	26	2	0.28	89	47	2	36	15	0
Madeveli	38	0	0.38	88	38	0	27	36	0
Hoadedhdhoo	21	6	0.27	89	49	6	32	13	0
Nadallaa	84	0	0.84	93	64	0	36	0	0
Gadhdhoo	25	0	0.25	96	41	0	42	17	0
Rathafandhoo	56	0	0.56	100	42	0	22	36	0
Vaadhoo	20	0	0.20	100	30	0	62	8	0
Fiyoari	12	0	0.12	100	40	0	28	32	0
Maathodaa	9	0	0.09	100	38	0	62	0	0
Fares	48	0	0.48	100	20	0	52	27	0
Thinadhoo	13	4	0.17	78	65	4	23	8	0
GNAVIYANI ATOLL	46	10	0.56	92	22	10	19	48	0
Foammulah	45	10	0.54	92	26	10	20	44	0
SEENU ATOLL	28	42	0.70	92	43	44	1	12	0
Meedhoo	64	43	1.00	100	34	43	0	23	0
Hithadhoo	21	53	0.74	91	34	53	0	14	0
Maradhoo	10	1	0.11	100	84	1	0	15	0
Feydhoo	21	30	0.51	81	48	45	4	4	0
Maradhoo-Feydhoo	0	44	0.44	100	40	44	4	12	0
Hulhudhoo	74	60	1.00	93	28	60	0	12	0

Statistical Annex IX - Consumer Goods (Map 8)

ATOLLS	more than hundred people per shop	no sewing machine	Human Vulnerability Index	no washing machine	no fan	no fridge
Maldives		60	0.39	77	52	78
Male'		32	0.16	58	37	49
Atoll average	23	70	0.46	83	57	87
HAA ALIF ATOLL	8	69	0.38	82	55	86
Thurakunu	0	92	0.46	n.a.	n.a.	n.a.
Uligamu	100	100	1.00	n.a.	n.a.	n.a.
Berinmadhoo	n.a.	100	0.50	n.a.	n.a.	n.a.
Hathifushi	0	100	0.50	68	79	100
Mulhadhoo	0	80	0.40	100	100	100
Hoarafushi	0	70	0.35	61	76	94
Ihavandhoo	0	86	0.43	80	56	80
Kelaa	0	27	0.13	76	28	88
Vashafaru	0	40	0.20	100	74	75
Dhidhdhoo	0	36	0.18	74	24	70
Filladhoo	0	100	0.50	100	78	81
Maarandhoo	100	84	0.92	100	9	84
Thakandhoo	0	100	0.50	68	48	100
Utheemu	n.a.	62	0.31	89	54	100
Muraidhoo	0	100	0.50	100	74	85
Baarah	0	87	0.43	100	75	100
HAA DHAAL ATOLL	54	80	0.67	92	74	95
Faridhoo	0	27	0.13	100	53	84
Hondaidhoo	n.a.	74	0.37	n.a.	n.a.	n.a.
Hanimaadhoo	0	79	0.39	100	42	100
Finney	n.a.	100	0.50	100	63	100
Naivaadhoo	100	63	0.82	63	77	86
Hirimaradhoo	100	100	1.00	91	78	100
Nolhivaranfaru	0	80	0.40	100	100	100
Nellaidhoo	100	74	0.87	88	62	100
Nolhivaramu	100	100	1.00	100	100	100
Kuribi	100	77	0.88	100	76	100
Kuburudhoo	100	100	1.00	n.a.	n.a.	n.a.
Kulhudhuffushi	0	76	0.38	86	79	90
Kumundhoo	100	100	1.00	100	42	100
Neykurendhoo	100	56	0.78	100	20	100
Vaikaradhoo	100	70	0.85	100	84	84
Maavaidhoo	100	100	1.00	100	100	100
Makunudhoo	100	84	0.92	100	63	100
SHAVIYANI ATOLL	35	75	0.55	92	57	90
Kaditheemu	100	90	0.95	88	54	83
Noomaraa	0	100	0.50	100	100	100
Goidhoo	100	80	0.90	86	68	88
Feydhoo	n.a.	89	0.45	100	46	46
Feevah	0	100	0.50	90	43	100
Bilehffahi	n.a.	65	0.33	84	34	100
Foakaidhoo	100	100	1.00	100	100	100
Narudhoo	100	79	0.90	100	100	100
Maakandoodhoo	0	84	0.42	83	35	91
Maroshi	0	100	0.50	100	91	100
Lhaimagu	0	100	0.50	100	100	100

Statistical Annex - Consumer goods , Contd.

ATOLLS	more than hundred people per shop	no sewing machine	Human Vulnerability Index	no washing machine	no fan	no fridge
Firubaidhoo	100	65	0.83	100	73	100
Komandoo	0	4	0.02	88	10	79
Maaugoodhoo	0	59	0.30	85	70	100
Funadhoo	0	74	0.37	100	52	74
NOONU ATOLL	6	73	0.39	78	61	94
Hebadhoo	0	89	0.44	86	100	100
Kedhikolhudhoo	0	48	0.24	33	35	83
Maalhendhoo	100	100	1.00	100	100	100
Kudafari	0	100	0.50	69	18	100
Landhoo	0	77	0.39	72	44	92
Maafaru	0	56	0.28	70	51	88
Lhohi	0	80	0.40	100	100	75
Miladhoo	0	71	0.36	59	23	90
Magoodhoo	0	67	0.33	69	100	95
Manadhoo	0	75	0.38	60	56	100
Holhudhoo	0	63	0.31	100	76	98
Fodhdhoo	0	94	0.47	100	94	100
Velidhoo	0	76	0.38	94	59	96
RAA ATOLL	38	65	0.51	86	53	84
Alifushi	100	34	0.67	78	53	100
Vaadhoo	100	57	0.78	100	83	100
Rasgetheemu	0	42	0.21	92	70	92
Agolhitheemu	0	67	0.34	100	68	100
Hulhudhuffaaruu	100	65	0.82	79	46	100
Ugoofaaruu	0	74	0.37	100	80	100
Kadhohudhoo	0	63	0.32	90	29	41
Maakurathu	0	74	0.37	82	100	100
Rasmaadhoo	100	68	0.84	82	68	100
Innamaadhoo	0	45	0.23	74	17	68
Maduvvari	100	68	0.84	83	36	100
Iguraidhoo	0	100	0.50	100	59	89
Fainu	0	100	0.50	100	100	100
Meedhoo	0	68	0.34	67	39	77
Kinolhas	100	71	0.85	100	84	100
BAA ATOLL	55	83	0.69	85	85	86
Kudarikilu	0	85	0.42	75	20	92
Kamadhoo	n.a.	55	0.28	72	64	86
Kendhoo	100	70	0.85	48	64	81
Kihaadhoo	0	94	0.47	90	86	100
Dhonfanu	100	77	0.88	80	100	85
Dharavandhoo	0	38	0.19	100	77	92
Maalhos	0	50	0.25	100	100	100
Eydhafushi	0	95	0.47	100	100	88
Thulhaadhoo	100	90	0.95	74	96	81
Hithaadhoo	100	100	1.00	90	92	100
Fulhadhoo	100	56	0.78	81	65	100
Fehendhoo	0	100	0.50	63	75	100
Goidhoo	100	70	0.85	100	70	39
LHAVIYANI ATOLL	40	68	0.54	80	74	91
Hinnavaruu	100	61	0.81	90	82	100
Naifaru	0	72	0.36	78	70	79

Contd.

Statistical Annex - Consumer goods , Contd.

	more than hundred people per shop	no sewing machine	Human Vulnerability Index	no washing machine	no fan	no fridge
ATOLLS						
Kurendhoo	0	79	0.40	49	70	100
Olhuvelifushi	0	72	0.36	100	48	100
Maafilaafushi	0	64	0.32	100	64	100
KAAFU ATOLL	23	63	0.43	79	54	86
Kaashidhoo	100	72	0.86	67	47	100
Gaafaru	n.a.	78	0.39	87	41	87
Dhiffushi	0	56	0.28	72	72	100
Thulusdhoo	0	69	0.34	100	58	100
Huraa	n.a.	52	0.26	63	42	76
Himmafushi	0	47	0.24	98	19	81
Gulhi	0	52	0.26	83	36	72
Maafushi	0	66	0.33	85	93	63
Guraidhoo	0	65	0.32	70	65	82
ALIF UTHURU BURI	16	59	0.38	80	37	75
Thoddoo	0	68	0.34	73	53	53
Rasdoo	100	73	0.86	86	42	73
Ukulhas	0	42	0.21	70	49	65
Mathiveri	0	73	0.37	93	39	90
Bodufolhudhoo	0	42	0.21	59	7	68
Feridhoo	0	84	0.42	76	45	100
Maalhos	n.a.	25	0.13	93	14	95
Himandhoo	0	51	0.26	92	28	85
ALIF DHEKUNU BURI	0	41	0.20	69	16	73
Hangnameedhoo	0	71	0.36	53	53	87
Omadhoo	0	26	0.13	77	16	100
Kuburudhoo	n.a.	56	0.28	59	12	70
Mahibadhoo	0	9	0.05	61	29	70
Mandhoo	0	76	0.38	63	14	90
Dhagethi	0	14	0.07	68	1	62
Dhigurah	0	57	0.28	55	32	83
Fenfushi	0	33	0.17	59	1	67
Dhidhdhoo	0	55	0.27	80	11	75
Maamigili	0	66	0.33	88	2	64
VAAVU ATOLL	9	66	0.38	64	41	85
Fulidhoo	0	59	0.30	84	46	84
Thinadhoo	100	60	0.80	58	38	73
Felidhoo	0	59	0.30	61	31	76
Keyodhoo	0	82	0.41	59	44	100
Rakeedhoo	0	59	0.30	61	48	78
MEEMU ATOLL	24	67	0.46	93	76	93
Raimandhoo	0	89	0.44	78	100	100
Madifushi	0	52	0.26	100	100	100
Veyvah	0	64	0.32	100	100	100
Mulah	0	76	0.38	91	75	100
Muli	0	40	0.20	72	61	100
Naalaafushi	100	100	1.00	100	42	100
Kolhufushi	100	79	0.89	100	57	59
Dhiggaru	0	49	0.24	100	100	100
Maduvvari	0	71	0.35	100	83	100
FAAFU ATOLL	0	79	0.40	93	35	90
Feeali	0	86	0.43	86	53	86

Statistical Annex - Consumer goods , Contd.

ATOLLS	more than hundred people per shop	no sewing machine	Human Vulnerability Index	no washing machine	no fan	no fridge
Biledhdhoo	0	90	0.45	100	37	100
Magoodhoo	0	57	0.29	72	15	100
Dharaboodhoo	0	67	0.34	100	35	100
Nilandhoo	0	79	0.40	100	31	79
DHAAL ATOLL	30	61	0.46	74	29	79
Meedhoo	0	13	0.06	58	0	35
Badidhoo	100	90	0.95	80	33	90
Ribudhoo	100	21	0.61	54	18	61
Hulhudheli	0	100	0.50	75	49	92
Gemendhoo	100	100	1.00	73	22	100
Vaanee	0	49	0.24	69	18	100
Maaeoodhoo	0	100	0.50	88	23	100
Kudahuvadhoo	0	57	0.29	87	59	87
THAA ATOLL	21	67	0.44	91	62	93
Buruni	0	45	0.22	100	47	100
Vilufushi	0	84	0.42	79	93	100
Madifushi	100	83	0.91	100	88	100
Dhiyamigili	0	68	0.34	100	20	75
Guraidhoo	0	82	0.41	100	15	100
Kadoodhoo	0	100	0.50	87	87	100
Vandhoo	0	39	0.20	100	90	100
Hirilandhoo	0	57	0.28	100	93	100
Gaadhiffushi	0	82	0.41	100	100	100
Thimarafushi	0	36	0.18	69	71	93
Veymandoo	0	42	0.21	87	23	66
Kibidhoo	100	88	0.94	100	65	100
Omadhoo	100	69	0.85	100	64	69
LAAMU ATOLL	23	72	0.48	87	65	96
Isdhoo	0	79	0.40	39	39	100
Dhabidhoo	100	55	0.77	73	61	84
Maabaidhoo	n.a.	57	0.28	61	69	83
Mundhoo	n.a.	55	0.27	73	30	100
Kalhaidhoo	0	56	0.28	80	57	100
Gamu	0	59	0.30	100	39	95
Maavah	0	83	0.41	100	90	100
Fonadhoo	0	61	0.30	85	78	100
Gaadhoo	100	71	0.85	100	88	85
Maamendhoo	0	97	0.48	97	47	90
Hithadhoo	100	100	1.00	100	100	100
Kunahandhoo	100	100	1.00	100	100	100
GAAF ALIF ATOLL	22	74	0.48	80	56	91
Kolamaafushi	0	24	0.12	19	11	100
Viligili	0	51	0.26	75	41	77
Maamendhoo	0	79	0.40	94	61	82
Nilandhoo	0	100	0.50	100	70	100
Dhaandhoo	100	100	1.00	100	100	100
Dhevvadhoo	100	100	1.00	n.a	n.a.	n.a.
Kodey	0	100	0.50	100	100	100
Dhiyadhoo	n.a.	84	0.42	n.a	n.a.	n.a.
Gemanafushi	0	100	0.50	100	38	100
Kanduhulhudhoo	0	100	0.50	100	100	100

Statistical Annex - Consumer goods , Contd.

ATOLLS	more than hundred people per shop	no sewing machine	Human Vulnerability Index	no washing machine	no fan	no fridge
GAAF DHAAL ATOLL	21	91	0.56	86	61	87
Madeveli	100	86	0.93	100	85	100
Hoadedhdhoo	0	100	0.50	84	84	100
Nadallaa	n.a.	100	0.50	74	100	100
Gadhdhoo	0	68	0.34	89	30	67
Rathafandhoo	0	100	0.50	100	100	100
Vaadhoo	100	100	1.00	100	100	100
Fiyoari	0	100	0.50	75	100	100
Maathodaa	0	100	0.50	100	100	100
Fares	100	100	1.00	71	71	100
Thinadhoo	0	91	0.46	81	38	79
GNAVIYANI ATOLL	0	66	0.33	82	49	84
Foammulah	0	66	0.33	82	49	84
SEENU ATOLL	0	60	0.30	77	52	82
Meedhoo	0	78	0.39	89	40	70
Hithadhoo	0	60	0.30	83	61	97
Maradhoo	0	80	0.40	80	56	95
Feydhoo	0	46	0.23	61	38	61
Maradhoo-Feydhoo	0	77	0.39	91	71	74
Hulhudhoo	0	31	0.15	51	33	41

Statistical Annex X - Housing (Map 9)

ATOLLS	house with thatch wall	house with sand floor	forty square feet or less housing area	no com- pound	Human Vulnerability Index	house with thatch wall and sand floor	five or more people per room
Maldives	2	6	7	16	0.22	1	14
Male'	0	3	17	43	0.42	0	16
Atoll average	3	7	4	7	0.16	2	13
HAA ALIF ATOLL	4	5	2	3	0.11	3	12
Thurakunu	0	0	21	0	0.21	0	30
Uligamu	11	22	0	0	0.22	11	11
Berinmadhoo	0	9	0	0	0.09	0	43
Hathifushi	9	5	0	0	0.14	0	0
Mulhadhoo	39	39	0	0	0.39	39	20
Hoarafushi	4	7	11	12	0.28	0	26
Ihavandhoo	0	0	0	0	0.00	0	8
Kelaa	0	0	0	0	0.00	0	0
Vashafaru	0	0	0	0	0.00	0	0
Dhidhdhoo	0	0	0	7	0.04	0	18
Filladhoo	20	8	0	0	0.28	0	0
Maarandhoo	0	0	0	0	0.00	0	0
Thakandhoo	7	7	0	0	0.07	7	9
Utheemu	0	10	0	0	0.10	0	0
Muraidhoo	0	0	0	7	0.04	0	11
Baarah	16	16	0	0	0.16	16	13
HAA DHAAL ATOLL	7	11	3	3	0.17	5	12
Faridhoo	0	0	0	0	0.00	0	26
Hondaidhoo	19	0	0	0	0.19	0	0
Hanimaadhoo	0	0	0	0	0.00	0	16
Finey	8	0	9	0	0.17	0	0
Naivaadhoo	0	0	0	0	0.00	0	0
Hirimaradhoo	2	2	0	0	0.02	2	10
Nolhivaranfaru	0	10	0	0	0.10	0	20
Nellaidhoo	0	0	0	0	0.00	0	0
Nolhivaramu	7	21	26	2	0.48	7	9
Kuribi	0	0	0	0	0.00	0	14
Kuburudhoo	22	0	0	14	0.28	0	14
Kulhudhuffushi	9	17	0	7	0.25	6	11
Kumundhoo	12	12	0	0	0.12	12	28
Neykurendhoo	8	8	0	0	0.08	8	25
Vaikaradhoo	0	0	0	0	0.00	0	0
Maavaidhoo	7	9	0	0	0.09	7	11
Makunudhoo	8	16	0	0	0.16	8	16
SHAVIYANI ATOLL	3	5	2	4	0.09	2	8
Kaditheemu	0	0	0	26	0.13	0	18
Noomaraa	0	33	0	0	0.33	0	0
Goidhoo	0	0	0	0	0.00	0	10
Feydhoo	7	0	0	0	0.07	0	0
Feevah	0	0	0	0	0.00	0	10
Bilehffahi	0	0	0	7	0.04	0	12
Foakaidhoo	0	15	0	0	0.15	0	0
Narudhoo	7	7	0	0	0.07	7	17
Maakandoodhoo	7	7	0	6	0.10	7	16
Maroshi	5	5	0	0	0.05	5	13
Lhaimagu	22	22	0	8	0.27	22	14

Statistical Annex - Housing , Contd.

ATOLLS	house with thatch wall	house with sand floor	forty square feet or less housing area	no com- pound	Human Vulnerability Index	house with thatch wall and sand floor	five or more people per room
Firubaidhoo	0	0	0	0	0.00	0	0
Komandoo	0	0	13	6	0.16	0	0
Maaugoodhoo	0	0	0	0	0.00	0	0
Funadhoo	0	0	0	0	0.00	0	21
NOONU ATOLL	3	6	2	8	0.14	1	9
Hebadhoo	0	0	0	0	0.00	0	10
Kedhikolhudhoo	0	0	0	0	0.00	0	9
Maalhendhoo	0	0	0	0	0.00	0	9
Kudafari	8	0	0	0	0.08	0	0
Landhoo	12	0	0	0	0.12	0	22
Maafaru	0	0	0	0	0.00	0	0
Lhohi	0	0	0	0	0.00	0	0
Miladhoo	0	0	0	18	0.09	0	51
Magoodhoo	8	8	8	8	0.20	8	0
Manadhoo	11	14	0	21	0.36	0	11
Holhudhoo	0	1	9	13	0.16	0	0
Fodhdhoo	13	23	13	0	0.37	13	0
Velidhoo	0	23	0	11	0.28	0	0
RAA ATOLL	3	2	6	13	0.16	1	11
Alifushi	14	0	0	2	0.14	0	0
Vaadhoo	21	0	15	0	0.36	0	0
Rasgetheemu	16	16	0	0	0.16	16	16
Agolhitheemu	0	4	0	0	0.04	0	20
Hulhudhuffaaruu	0	0	0	0	0.00	0	0
Ugoofaaruu	0	0	0	0	0.00	0	20
Kadhohudhoo	0	1	17	58	0.47	0	14
Maakurathu	0	0	0	5	0.02	0	9
Rasmaadhoo	0	0	17	38	0.35	0	13
Innamaadhoo	0	0	0	0	0.00	0	9
Maduvvari	0	0	13	3	0.14	0	23
Iguraidhoo	0	0	0	4	0.02	0	9
Fainu	0	19	12	0	0.31	0	29
Meedhoo	0	2	0	0	0.02	0	10
Kinolhas	6	10	0	0	0.10	6	7
BAA ATOLL	3	4	5	9	0.15	1	16
Kudarikilu	14	0	12	12	0.32	0	31
Kamadhoo	8	0	19	0	0.27	0	19
Kendhoo	0	0	9	0	0.09	0	14
Kihaadhoo	12	11	19	0	0.35	7	19
Dhonfanu	0	0	0	0	0.00	0	49
Dharavandhoo	0	0	0	0	0.00	0	21
Maalhos	0	0	13	0	0.13	0	24
Eydhafushi	0	0	0	0	0.00	0	11
Thulhaadhoo	0	10	7	41	0.37	0	0
Hithaadhoo	0	9	0	0	0.09	0	36
Fulhadhoo	36	24	0	0	0.36	24	18
Fehendhoo	23	6	18	0	0.41	6	31
Goidhoo	0	0	0	0	0.00	0	0
LHAVIYANI ATOLL	0	11	6	47	0.41	0	11
Hinnavaruu	0	5	0	52	0.31	0	8
Naifaru	0	19	6	58	0.54	0	17

Statistical Annex - Housing , Contd.

ATOLLS	house with thatch wall	house with sand floor	forty square feet or less housing area	no com- pound	Human Vulnerability Index	house with thatch wall and sand floor	five or more people per room
Kurendhoo	0	0	31	6	0.34	0	0
Olhuvelifushi	0	0	0	19	0.09	0	13
Maafilaafushi	0	74	0	0	0.74	0	19
KAAFU ATOLL	1	1	5	4	0.09	0	7
Kaashidhoo	0	0	0	0	0.00	0	0
Gaafaru	0	0	0	0	0.00	0	0
Dhiffushi	0	0	0	9	0.05	0	20
Thulusdhoo	0	0	0	0	0.00	0	0
Huraa	8	0	0	0	0.08	0	8
Himmafushi	0	7	0	26	0.20	0	17
Gulhi	0	0	20	4	0.22	0	12
Maafushi	0	0	14	2	0.14	0	0
Guraidhoo	0	0	18	0	0.18	0	11
ALIF UTHURU BURI	1	0	7	0	0.08	0	8
Thoddoo	2	2	16	0	0.17	2	21
Rasdoo	0	0	0	0	0.00	0	0
Ukulhas	0	0	18	0	0.18	0	0
Mathiveri	0	0	0	0	0.00	0	11
Bodufolhudhoo	0	0	0	0	0.00	0	0
Feridhoo	9	0	15	0	0.23	0	15
Maalhos	0	0	0	0	0.00	0	0
Himandhoo	0	0	0	0	0.00	0	10
ALIF DHEKUNU BURI	1	1	4	1	0.07	0	13
Hangnameedhoo	0	3	0	3	0.04	0	0
Omadhoo	0	0	14	0	0.14	0	24
Kuburudhoo	8	0	0	16	0.16	0	0
Mahibadhoo	0	0	0	0	0.00	0	34
Mandhoo	6	0	0	0	0.06	0	24
Dhageethi	0	0	0	0	0.00	0	0
Dhigurah	0	0	0	0	0.00	0	10
Fenfushi	0	9	34	0	0.43	0	14
Dhidhdhoo	11	0	0	11	0.17	0	22
Maamigili	0	0	0	0	0.00	0	0
VAAVU ATOLL	0	7	1	13	0.15	0	10
Fulidhoo	0	0	0	0	0.00	0	29
Thinadhoo	0	11	10	21	0.31	0	0
Felidhoo	0	10	0	34	0.27	0	7
Keyodhoo	0	11	0	0	0.11	0	8
Rakeedhoo	0	0	0	17	0.08	0	0
MEEMU ATOLL	0	1	1	8	0.06	0	12
Raimandhoo	10	24	25	0	0.49	10	0
Madifushi	0	0	0	4	0.02	0	0
Veyvah	0	0	0	0	0.00	0	0
Mulah	0	0	0	0	0.00	0	18
Muli	0	0	0	0	0.00	0	0
Naalaafushi	0	0	0	32	0.16	0	10
Kolhufushi	0	0	0	0	0.00	0	20
Dhiggaru	0	0	0	30	0.15	0	13
Maduvvari	0	0	0	0	0.00	0	16
FAAFU ATOLL	5	1	1	4	0.09	1	17
Feali	8	0	0	0	0.08	0	22

Contd.

Statistical Annex - Housing , Contd.

ATOLLS	house with thatch wall	house with sand floor	forty square feet or less housing area	no com- pound	Human Vulnerability Index	house with thatch wall and sand floor	five or more people per room
Biledhdhoo	12	0	0	0	0.12	0	0
Magoodhoo	5	5	0	0	0.05	5	26
Dharaboodhoo	2	2	16	0	0.18	2	16
Nilandhoo	0	0	0	12	0.06	0	24
DHAAL ATOLL	3	1	1	10	0.10	1	14
Meedhoo	0	0	0	0	0.00	0	0
Badidhoo	6	6	10	0	0.16	6	17
Ribudhoo	23	0	0	30	0.38	0	30
Hulhudheli	0	0	0	10	0.05	0	17
Gemendhoo	0	9	0	13	0.16	0	53
Vaanee	0	0	0	0	0.00	0	15
Maaeoodhoo	0	0	0	0	0.00	0	12
Kudahuvadhoo	0	0	0	20	0.10	0	0
THAA ATOLL	2	10	8	5	0.22	0	11
Buruni	0	0	7	0	0.07	0	19
Vilufushi	0	12	22	16	0.41	0	17
Madifushi	0	0	16	0	0.16	0	35
Dhiyamigili	15	3	0	0	0.18	0	16
Guraidhoo	0	4	0	0	0.04	0	0
Kadoodhoo	0	26	0	9	0.30	0	0
Vandhoo	0	24	0	0	0.24	0	0
Hirilandhoo	0	0	0	0	0.00	0	0
Gaadhiffushi	0	0	0	0	0.00	0	21
Thimarafushi	0	16	6	8	0.27	0	21
Veymandoo	0	23	15	15	0.46	0	8
Kibidhoo	11	11	13	0	0.36	0	0
Omadhoo	0	14	0	0	0.14	0	0
LAAMU ATOLL	4	16	7	7	0.28	3	14
Isdhoo	0	10	0	17	0.18	0	0
Dhabidhoo	0	0	0	0	0.00	0	0
Maabaidhoo	0	11	11	0	0.22	0	11
Mundhoo	10	0	29	24	0.50	0	17
Kalhaidhoo	0	0	0	11	0.06	0	31
Gamu	0	17	7	3	0.25	0	14
Maavah	7	27	10	24	0.49	7	16
Fonadhoo	0	27	0	0	0.27	0	0
Gaadhoo	15	6	15	0	0.30	6	0
Maamendhoo	11	11	22	0	0.33	11	31
Hithadhoo	0	0	0	0	0.00	0	19
Kunahandhoo	23	72	0	0	0.72	23	49
GAAF ALIF ATOLL	5	4	4	7	0.14	3	17
Kolamaafushi	0	0	0	0	0.00	0	0
Viligili	7	1	13	9	0.25	0	26
Maamendhoo	0	0	0	19	0.09	0	10
Nilandhoo	14	14	13	0	0.27	14	27
Dhaandhoo	16	16	0	12	0.22	16	25
Dhevvdhoo	0	0	0	0	0.00	0	0
Kodey	6	25	0	0	0.25	6	31
Dhiyadhoo	0	2	0	0	0.02	0	13
Gemanafushi	0	0	0	5	0.03	0	9
Kanduhulhudhoo	6	0	0	0	0.06	0	30

Statistical Annex - Housing , Contd.

ATOLLS	house with thatch wall	house with sand floor	forty square feet or less housing area	no com- pound	Human Vulnerability Index	house with thatch wall and sand floor	five or more people per room
GAAF DHAAL ATOLL	11	17	6	10	0.30	10	19
Madeveli	13	13	29	0	0.41	13	32
Hoadedhdhoo	0	0	0	13	0.07	0	0
Nadallaa	5	54	0	0	0.54	5	8
Gadhdhoo	7	20	0	19	0.30	7	29
Rathafandhoo	31	6	0	0	0.36	0	22
Vaadhoo	11	11	29	47	0.64	11	27
Fiyoari	6	20	0	0	0.20	6	0
Maathodaa	0	0	0	0	0.00	0	11
Fares	16	50	0	0	0.50	16	41
Thinadhoo	13	14	4	10	0.23	13	18
GNAVIYANI ATOLL	2	20	3	1	0.23	2	13
Foammulah	2	20	3	1	0.23	2	13
SEENU ATOLL	0	3	5	0	0.07	0	19
Meedhoo	0	0	0	0	0.00	0	7
Hithadhoo	0	3	9	0	0.13	0	31
Maradhoo	0	0	0	0	0.00	0	17
Feydhoo	0	1	0	0	0.01	0	0
Maradhoo-Feydhoo	0	0	0	0	0.00	0	14
Hulhudhoo	0	8	0	0	0.08	0	6

Statistical Annex XI - Environment (Map 10)

ATOLLS	beach erosion	bury or dump garbage in non- demarcated area	no toilet	cooking on wood	high population density	Human Vulnerability Index
Maldives	70	20	16		44	1.00
Male'	0	0	1		100	0.01
Atoll average	94	27	22	66	25	1.00
HAA ALIF ATOLL	94	18	31	75	0	1.00
Thurakunu	100	32	27	100	0	1.00
Uligamu	100	52	11	100	0	1.00
Berinmadhoo	100	36	0	100	0	1.00
Hathifushi	100	0	33	100	0	1.00
Mulhadhoo	100	49	7	100	0	1.00
Hoarafushi	n.a.	28	44	100	0	1.00
Ihavandhoo	n.a.	6	62	n.a.	0	n.a.
Kelaa	100	31	2	100	0	1.00
Vashafaru	n.a.	21	38	100	0	0.99
Dhidhdhoo	100	7	11	0	0	0.65
Filladhoo	100	18	22	100	0	1.00
Maarandhoo	100	15	53	100	0	1.00
Thakandhoo	100	0	0	100	0	1.00
Utheemu	100	0	8	0	0	0.58
Muraidhoo	100	43	28	100	0	1.00
Baarah	100	9	64	100	0	1.00
HAA DHAAL ATOLL	98	9	27	100	0	1.00
Faridhoo	100	0	52	100	0	1.00
Hondaidhoo	100	0	47	100	0	1.00
Hanimaadhoo	100	0	100	100	0	1.00
Finey	0	0	28	100	0	0.78
Naivaadhoo	100	0	9	100	0	1.00
Hirimaradhoo	100	0	8	100	0	1.00
Nolhivaranfaru	100	0	78	100	0	1.00
Nellaidhoo	100	0	28	100	0	1.00
Nolhivaramu	100	0	77	100	0	1.00
Kuribi	100	4	0	100	0	1.00
Kuburudhoo	100	0	6	100	0	1.00
Kulhudhuffushi	100	21	12	100	0	1.00
Kumundhoo	100	0	12	100	0	1.00
Neykurendhoo	100	27	0	100	0	1.00
Vaikaradhoo	100	0	6	100	0	1.00
Maavaidhoo	100	0	26	100	0	1.00
Makunudhoo	100	0	52	100	0	1.00
SHAVIYANI ATOLL	100	28	31	68	13	1.00
Kaditheemu	100	8	9	100	0	1.00
Noomaraa	100	0	58	100	0	1.00
Goidhoo	100	0	84	100	0	1.00
Feydhoo	100	0	77	100	0	1.00
Feevah	100	0	0	100	0	1.00
Bilehffahi	100	0	0	100	0	1.00
Foakaidhoo	100	7	0	100	0	1.00
Narudhoo	100	0	90	100	0	1.00
Maakandoodhoo	100	10	0	0	0	0.55
Maroshi	100	56	67	100	0	1.00
Lhaimagu	100	0	73	100	0	1.00

Statistical Annex - Environment , Contd.

ATOLLS	beach erosion	bury or dump garbage in non- demarcated area	no toilet	cooking on wood	high population density	Human Vulnerability Index
Firubaidhoo	100	30	64	0	0	1.00
Komandoo	100	93	14	0	100	1.00
Maagoodhoo	100	92	27	100	0	1.00
Funadhoo	100	61	40	100	0	1.00
NOONU ATOLL	77	18	5	80	24	1.00
Hebadhoo	100	0	16	0	0	0.66
Kedhikolhudhoo	100	0	0	100	0	1.00
Maalhendhoo	0	0	29	100	0	0.79
Kudafari	100	9	0	100	0	1.00
Landhoo	100	26	26	100	0	1.00
Maafaru	100	22	0	100	0	1.00
Lhohi	100	26	0	100	0	1.00
Miladhoo	100	93	0	100	100	1.00
Magoodhoo	100	0	0	100	0	1.00
Manadhoo	100	2	0	100	0	1.00
Holhudhoo	100	20	1	0	100	1.00
Fodhdhoo	100	52	32	100	0	1.00
Velidhoo	0	0	0	100	0	0.50
RAA ATOLL	98	22	35	46	29	1.00
Alifushi	100	0	17	100	0	1.00
Vaadhoo	100	0	42	100	0	1.00
Rasgetheemu	100	0	47	0	0	0.97
Agolhitheemu	0	0	6	100	0	0.56
Hulhudhuffaaruu	100	2	8	100	0	1.00
Ugoofaaruu	100	0	30	0	0	0.80
Kadholhudhoo	100	96	12	0	100	1.00
Maakurathu	100	0	36	100	0	1.00
Rasmaadhoo	100	13	42	100	0	1.00
Innamaadhoo	100	0	20	0	0	0.70
Maduvvari	100	0	86	0	100	1.00
Iguraidhoo	100	30	37	100	0	1.00
Fainu	100	7	100	100	0	1.00
Meedhoo	100	0	54	0	0	1.00
Kinolhas	100	0	34	100	0	1.00
BAA ATOLL	100	17	9	78	51	1.00
Kudarikilu	100	0	48	100	0	1.00
Kamadhoo	100	0	37	100	0	1.00
Kendhoo	100	9	6	100	100	1.00
Kihaadhoo	100	0	91	100	0	1.00
Dhonfanu	100	0	20	100	0	1.00
Dharavandhoo	100	0	0	100	0	1.00
Maalhos	100	0	2	100	0	1.00
Eydhafushi	100	0	0	0	100	1.00
Thulhaadhoo	100	55	5	100	100	1.00
Hithaadhoo	100	29	0	100	0	1.00
Fulhadhoo	100	8	0	100	0	1.00
Fehendhoo	100	12	13	100	0	1.00
Goidhoo	100	26	0	100	0	1.00
LHAVIYANI ATOLL	60	53	2	60	95	1.00
Hinnavaruu	0	63	0	0	100	1.00
Naifaruu	100	56	4	100	100	1.00

Contd.

Statistical Annex - Environment , Contd.

ATOLLS	beach erosion	bury or dump garbage in non- demarcated area	no toilet	cooking on wood	high population density	Human Vulnerability Index
Kurendhoo	100	4	5	100	100	1.00
Olhuvelifushi	100	81	0	100	0	1.00
Maafilaafushi	n.a.	11	22	n.a.	0	n.a.
KAAFU ATOLL	100	26	3	36	42	1.00
Kaashidhoo	n.a.	0	0	n.a.	0	n.a.
Gaafaru	100	5	0	0	100	1.00
Dhiffushi	100	16	0	0	100	1.00
Thulusdhoo	100	0	0	100	0	1.00
Huraa	100	0	0	100	0	1.00
Himmafushi	100	13	33	0	0	0.90
Gulhi	100	47	0	0	100	1.00
Maafushi	100	98	0	100	0	1.00
Guraidhoo	100	58	0	0	100	1.00
ALIF UTHURU BURI	90	27	21	75	10	1.00
Thoddoo	100	2	2	100	0	1.00
Rasdoo	100	0	37	0	0	0.87
Ukulhas	100	100	40	100	0	1.00
Mathiveri	100	41	41	100	0	1.00
Bodufolhudhoo	100	100	7	0	100	1.00
Feridhoo	100	0	30	100	0	1.00
Maalhos	0	0	26	100	0	0.76
Himandhoo	100	8	0	100	0	1.00
ALIF DHEKUNU BURI	100	7	9	62	29	1.00
Hangnameedhoo	100	20	0	100	0	1.00
Omadhoo	100	0	19	100	0	1.00
Kuburudhoo	100	0	53	0	100	1.00
Mahibadhoo	100	7	7	0	100	1.00
Mandhoo	100	7	39	100	0	1.00
Dhagethi	100	11	7	100	0	1.00
Dhigurah	100	11	0	100	0	1.00
Fenfushi	100	21	0	0	0	0.61
Dhidhdhoo	100	0	0	100	0	1.00
Maamigili	100	0	0	100	0	1.00
VAAVU ATOLL	100	3	1	66	47	1.00
Fulidhoo	100	0	0	0	0	0.50
Thinadhoo	100	0	0	100	0	1.00
Felidhoo	100	0	6	100	0	1.00
Keyodhoo	100	0	0	100	100	1.00
Rakeedhoo	100	17	0	0	100	1.00
MEEMU ATOLL	97	23	29	71	29	1.00
Raimandhoo	100	0	29	100	0	1.00
Madifushi	100	21	67	100	0	1.00
Veyvah	0	9	3	100	0	0.58
Mulah	100	26	51	100	0	1.00
Muli	100	36	11	100	0	1.00
Naalaafushi	100	0	100	100	0	1.00
Kolhufushi	100	7	0	100	0	1.00
Dhiggaru	100	45	12	0	100	1.00
Maduvvari	100	16	24	0	100	1.00
FAAFU ATOLL	100	7	52	100	20	1.00
Feeali	100	0	55	100	100	1.00

Statistical Annex - Environment , Contd.

ATOLLS	beach erosion	bury or dump garbage in non- demarcated area	no toilet	cooking on wood	high population density	Human Vulnerability Index
Biledhdhoo	100	22	35	100	0	1.00
Magoodhoo	100	0	36	100	0	1.00
Dharaboodhoo	100	16	64	100	0	1.00
Nilandhoo	100	0	66	100	0	1.00
DHAAL ATOLL	100	29	13	69	25	1.00
Meedhoo	100	42	6	0	100	1.00
Badidhoo	100	6	30	100	0	1.00
Ribudhoo	100	0	0	100	0	1.00
Hulhudheli	100	48	0	100	0	1.00
Gemendhoo	100	0	0	100	100	1.00
Vaanee	100	0	0	100	0	1.00
Maaeoodhoo	100	0	12	0	0	0.62
Kudahuvadho	100	77	31	100	0	1.00
THAA ATOLL	100	44	36	68	51	1.00
Buruni	100	87	22	100	0	1.00
Vilufushi	100	6	19	0	100	1.00
Madifushi	100	37	72	100	100	1.00
Dhiyamigili	100	66	35	100	0	1.00
Guraidhoo	100	0	7	100	100	1.00
Kadoodhoo	100	0	36	100	0	1.00
Vandhoo	100	27	85	0	0	1.00
Hirilandhoo	100	0	71	100	0	1.00
Gadhiffushi	100	51	61	100	0	1.00
Thimarafushi	100	96	5	0	100	1.00
Veymandoo	100	71	35	100	0	1.00
Kibidhoo	n.a.	80	74	100	0	1.00
Omadhoo	100	67	60	100	0	1.00
LAAMU ATOLL	87	54	34	78	0	1.00
Isdhoo	100	80	28	100	0	1.00
Dhabidhoo	100	44	29	100	0	1.00
Maabaidhoo	100	69	22	100	0	1.00
Mundhoo	100	85	18	100	0	1.00
Kalhaidhoo	100	92	39	100	0	1.00
Gamu	100	52	35	100	0	1.00
Maavah	100	43	31	100	0	1.00
Fonadhoo	0	75	14	0	0	0.51
Gaadhoo	100	0	0	100	0	1.00
Maamendhoo	100	0	38	0	0	0.88
Hithadhoo	100	38	89	100	0	1.00
Kunahandhoo	100	35	74	100	0	1.00
GAAF ALIF ATOLL	83	42	15	60	28	1.00
Kolamaafushi	0	0	0	0	100	1.00
Viligili	100	39	13	0	0	0.82
Maamendhoo	100	42	0	100	0	1.00
Nilandhoo	100	13	0	100	0	1.00
Dhaandhoo	100	52	0	100	100	1.00
Dheevadhoo	100	52	19	100	0	1.00
Kodey	0	0	66	100	0	1.00
Dhiyadhoo	100	0	50	100	0	1.00
Gemanafushi	100	81	51	100	0	1.00
Kanduhulhudhoo	100	100	31	100	0	1.00

Contd.

Statistical Annex - Environment , Contd.

ATOLLS	beach erosion	bury or dump garbage in non- demarcated area	no toilet	cooking on wood	high population density	Human Vulnerability Index
GAAF DHAAL ATOLL	100	55	29	48	52	1.00
Madeveli	100	23	13	100	0	1.00
Hoadedhdhoo	100	19	0	100	0	1.00
Nadallaa	100	68	0	100	0	1.00
Gadhdhoo	100	100	50	0	100	1.00
Rathafandhoo	100	78	39	100	0	1.00
Vaadhoo	100	32	59	100	0	1.00
Fiyoari	100	49	49	100	0	1.00
Maathodaa	100	58	38	100	0	1.00
Fares	100	18	73	100	0	1.00
Thinadhoo	100	53	16	0	100	1.00
GNAVIYANI ATOLL	100	29	15	100	0	1.00
Foammulah	100	29	15	100	0	1.00
SEENU ATOLL	100	15	15	28	17	1.00
Meedhoo	n.a.	10	4	n.a.	0	n.a.
Hithadhoo	100	12	24	0	0	0.80
Maradhoo	100	7	15	100	0	1.00
Feydhoo	100	30	5	0	100	1.00
Maradhoo-Feydhoo	100	30	8	100	0	1.00
Hulhudhoo	100	6	0	100	0	1.00

Statistical Annex XI - Environment

ATOLLS	cooking on kerosene	cooking on gas	toilet connected to sea or septic tank	open area surrounded by walls
Maldives			65	18
Male'			98	1
Atoll average	43	2	54	24
HAA ALIF ATOLL	25	0	39	30
Thurakunu	0	0	8	65
Uligamu	0	0	12	77
Berinmadhoo	0	0	18	82
Hathifushi	0	0	63	5
Mulhadhoo	0	0	12	81
Hoarafushi	0	0	56	0
Ihavandhoo	n.a	n.a	38	0
Kelaa	0	0	39	59
Vashafaru	0	0	22	40
Dhidhdhoo	100	0	56	33
Filladhoo	0	0	47	32
Maarandhoo	0	0	15	32
Thakandhoo	0	0	89	11
Utheemu	100	0	66	26
Muraidhoo	0	0	0	72
Baarah	0	0	0	36
HAA DHAAL ATOLL	35	0	44	28
Faridhoo	0	0	0	48
Hondaithoo	0	0	0	53
Hanimaadhoo	0	0	0	0
Finey	0	0	10	62
Naivaadhoo	0	0	84	7
Hirimaradhoo	0	0	2	90
Nolhivaranfaru	0	0	22	0
Nellaidhoo	0	0	32	41
Nolhivaramu	0	0	7	16
Kuribi	0	0	20	80
Kuburudhoo	0	0	0	94
Kulhudhuffushi	100	0	74	14
Kumundhoo	0	0	18	69
Neykurendhoo	0	0	38	63
Vaikaradhoo	0	0	86	8
Maavaidhoo	0	0	24	50
Makunudhoo	0	0	23	25
SHAVIYANI ATOLL	32	0	44	25
Kaditheemu	0	0	91	0
Noomaraa	0	0	42	0
Goidhoo	0	0	16	0
Feydhoo	0	0	23	0
Feevah	0	0	40	60
Bilehffahi	0	0	61	39
Foakaidhoo	0	0	10	90
Narudhoo	0	0	10	0
Maakandoodhoo	100	0	20	80
Maroshi	0	0	33	0
Lhaimagu	0	0	27	0

Statistical Annex - Environment , Contd.

ATOLLS	cooking on kerosene	cooking on gas	toilet connected to sea or septic tank	open area surrounded by walls
Firubaidhoo	100	0	36	0
Komandoo	100	0	86	0
Maaugoodhoo	0	0	65	8
Funadhoo	0	0	49	10
NOONU ATOLL	20	0	54	41
Hebadhoo	100	0	27	57
Kedhikolhudhoo	0	0	32	68
Maalhendhoo	0	0	24	47
Kudafari	0	0	70	30
Landhoo	0	0	7	67
Maafaru	0	0	47	53
Lhohi	0	0	42	58
Miladhoo	0	0	51	49
Magoodhoo	0	0	42	58
Manadhoo	0	0	86	14
Holhudhoo	100	0	84	15
Fodhdhoo	0	0	9	59
Velidhoo	0	0	71	29
RAA ATOLL	50	3	53	13
Alifushi	0	0	61	22
Vaadhoo	0	0	53	6
Rasgetheemu	100	0	40	14
Agolhitheemu	0	0	0	94
Hulhudhuffaaruu	0	0	56	36
Ugoofaaruu	100	0	70	0
Kadholhudhoo	100	0	88	0
Maakurathu	0	0	54	10
Rasmaadhoo	0	0	53	5
Innamaadhoo	0	100	71	9
Maduvvari	100	0	14	0
Iguraidhoo	0	0	23	40
Fainu	0	0	0	0
Meedhoo	100	0	46	0
Kinolhas	0	0	66	0
BAA ATOLL	22	0	64	27
Kudarikilu	0	0	52	0
Kamadhoo	0	0	44	19
Kendhoo	0	0	94	0
Kihaadhoo	0	0	9	0
Dhonfanu	0	0	3	76
Dharavandhoo	0	0	89	11
Maalhos	0	0	23	76
Eydhafushi	100	0	75	25
Thulhaadhoo	0	0	92	3
Hithaadhoo	0	0	33	67
Fulhadhoo	0	0	14	86
Fehendhoo	0	0	33	54
Goidhoo	0	0	71	29
LHAVIYANI ATOLL	40	0	83	14
Hinnavaruu	100	0	98	2
Naifaru	0	0	89	7

Statistical Annex - Environment , Contd.

ATOLLS	cooking on kerosene	cooking on gas	toilet connected to sea or septic tank	open area surrounded by walls
Kurendhoo	0	0	45	50
Olhuvelifushi	0	0	15	85
Maafilaafushi	n.a.	n.a.	19	59
KAAFU ATOLL	88	24	83	13
Kaashidhoo	n.a.	n.a.	86	14
Gaafaru	100	0	100	0
Dhiffushi	100	0	82	18
Thulusdhoo	0	0	100	0
Huraa	100	100	100	0
Himmafushi	100	0	30	37
Gulhi	100	0	88	12
Maafushi	100	100	98	2
Guraidhoo	100	0	71	29
ALIF UTHURU BURI	36	0	51	27
Thoddoo	0	0	89	10
Rasdoo	100	0	51	12
Ukulhas	0	0	31	29
Mathiveri	100	0	49	10
Bodufolhudhoo	100	0	73	20
Feridhoo	0	0	11	60
Maalhos	0	0	19	55
Himandhoo	0	0	50	50
ALIF DHEKUNU BURI	71	0	60	32
Hangnameedhoo	100	0	87	13
Omadhoo	0	0	78	4
Kuburudhoo	100	0	27	20
Mahibadhoo	100	0	66	27
Mandhoo	0	0	0	61
Dhagethi	0	0	87	7
Dhigurah	0	0	43	57
Fenfushi	100	0	53	47
Dhidhdhoo	100	0	24	76
Maamigili	100	0	54	46
VAAVU ATOLL	34	0	81	18
Fulidhoo	100	0	68	32
Thinadhoo	0	0	69	31
Felidhoo	0	0	73	21
Keyodhoo	0	0	92	8
Rakeedhoo	100	0	92	8
MEEMU ATOLL	42	0	53	18
Raimandhoo	0	0	46	25
Madifushi	0	0	33	0
Veyvah	0	0	20	77
Mulah	0	0	49	0
Muli	100	0	60	29
Naalaafushi	0	0	0	0
Kolhufushi	0	0	35	65
Dhiggaru	100	0	88	0
Maduvvari	100	0	76	0
FAAFU ATOLL	0	0	30	18
Feali	0	0	12	33

Contd.

Statistical Annex - Environment , Contd.

ATOLLS	cooking on kerosene	cooking on gas	toilet connected to sea or septic tank	open area surrounded by walls
Biledhdhoo	0	0	53	12
Magoodhoo	0	0	64	0
Dharaboodhoo	0	0	7	29
Nilandhoo	0	0	15	19
DHAAL ATOLL	18	13	39	48
Meedhoo	100	0	85	9
Badidhoo	0	0	0	70
Ribudhoo	0	0	57	43
Hulhudheli	0	0	27	73
Gemendhoo	0	0	19	81
Vaanee	0	0	18	82
Maaeoodhoo	0	100	0	88
Kudahuvadhoo	0	0	56	13
THAA ATOLL	46	0	49	15
Buruni	0	0	50	28
Vilufushi	100	0	43	38
Madifushi	0	0	0	28
Dhiyamigili	0	0	53	12
Guraidhoo	100	0	84	9
Kadoodhoo	0	0	64	0
Vandhoo	100	0	15	0
Hirilandhoo	0	0	29	0
Gaadhiffushi	0	0	20	20
Thimarafushi	100	0	78	16
Veymandoo	0	0	55	11
Kibidhoo	0	0	26	0
Omadhoo	0	0	26	14
LAAMU ATOLL	22	0	36	30
Isdhoo	0	0	0	72
Dhabidhoo	0	0	59	13
Maabaidhoo	0	0	33	45
Mundhoo	0	0	35	48
Kalhaidhoo	0	0	39	22
Gamu	0	0	32	33
Maavah	0	0	33	36
Fonadhoo	100	0	86	0
Gaadhoo	0	0	42	58
Maamendhoo	100	0	53	9
Hithadhoo	0	0	11	0
Kunahandhoo	0	0	8	18
GAAF ALIF ATOLL	51	0	44	41
Kolamaafushi	100	0	84	16
Viligili	100	0	48	39
Maamendhoo	0	0	37	63
Nilandhoo	0	0	0	100
Dhaandhoo	0	0	51	49
Dhevvadhoo	0	0	81	0
Kodey	0	0	6	28
Dhiyadhoo	0	0	0	50
Gemanafushi	100	0	8	42
Kanduhulhudhoo	0	0	21	48

Statistical Annex - Environment , Contd.

ATOLLS	cooking on kerosene	cooking on gas	toilet connected to sea or septic tank	open area surrounded by walls
GAAF DHAAL ATOLL	52	0	49	22
Madeveli	0	0	29	59
Hoadedhdhoo	0	0	9	91
Nadallaa	0	0	9	91
Gadhdhoo	100	0	50	0
Rathafandhoo	0	0	53	8
Vaadhoo	0	0	41	0
Fiyoari	0	0	51	0
Maathodaa	0	0	55	7
Fares	0	0	27	0
Thinadhoo	100	0	70	14
GNAVIYANI ATOLL	0	0	74	11
Foammulah	0	0	74	11
SEENU ATOLL	94	0	68	17
Meedhoo	n.a.	n.a.	77	19
Hithadhoo	100	0	55	21
Maradhoo	100	0	69	16
Feydhoo	100	0	86	9
Maradhoo-Feydhoo	0	0	62	30
Hulhudhoo	100	0	97	3

Statistical Annex XII - Food Security (Map 11)

ATOLLS	food crisis	height for age (stunting)	Human Vulnerability Index	weight for age (under nutrition)	weight for height (wasting)
Maldives	6	36	0.42	45	20
Male'	3	15	0.18	30	22
Atoll average	7	43	0.50	49	20
HAA ALIF ATOLL	5	50	0.55	54	27
Thurakunu	0	50	0.50	67	60
Uligamu	0	67	0.67	17	0
Berinmadhoo	13	100	1.00	75	0
Hathifushi	6	0	0.06	100	100
Mulhadhoo	8	67	0.75	67	17
Hoarafushi	0	39	0.39	61	33
Ihavandhoo	10	71	0.80	67	24
Kelaa	18	100	1.00	40	20
Vashafaru	2	30	0.32	82	60
Dhidhdhoo	0	25	0.25	41	15
Filladhoo	0	67	0.67	50	0
Maarandhoo	0	0	0.00	29	67
Thakandhoo	0	60	0.60	60	40
Utheemu	16	0	0.16	60	60
Muraidhoo	0	100	1.00	50	0
Baarah	9	100	1.00	50	0
HAA DHAAL ATOLL	6	49	0.55	61	32
Faridhoo	0	67	0.67	78	50
Hondaidhoo	0	33	0.33	33	0
Hanimaadhoo	0	50	0.50	80	100
Finey	13	100	1.00	0	0
Naivaadhoo	0	44	0.44	44	11
Hirimaradhoo	0	50	0.50	33	14
Nolhivaranfaru	6	43	0.49	29	0
Nellaidhoo	0	50	0.50	67	17
Nolhivaramu	0	40	0.40	60	20
Kuribi	16	50	0.66	60	50
Kuburudhoo	14	67	0.80	43	17
Kulhudhuffushi	6	38	0.43	63	38
Kumundhoo	11	50	0.61	100	100
Neykurendhoo	21	50	0.71	50	50
Vaikaradhoo	8	44	0.53	67	33
Maavaidhoo	0	0	0.00	50	50
Makunudhoo	0	100	1.00	71	0
SHAVIYANI ATOLL	1	50	0.51	61	12
Kaditheemu	0	71	0.71	86	29
Noomaraa	16	0	0.16	67	67
Goidhoo	0	100	1.00	100	0
Feydhoo	0	60	0.60	60	0
Feevah	0	33	0.33	33	17
Bilehffahi	15	100	1.00	100	50
Foakaidhoo	0	20	0.20	40	20
Narudhoo	0	50	0.50	90	20
Maakandoodhoo	0	100	1.00	80	0
Maroshi	5	33	0.38	33	0
Lhaimagu	0	29	0.29	38	0

Statistical Annex - Food Security , Contd.

ATOLLS	food crisis	height for age (stunting)	Human Vulnerability Index	weight for age (under nutrition)	weight for height (wasting)
Firubaidhoo	0	0	0.00	100	25
Komandoo	0	50	0.50	38	0
Maagoodhoo	0	67	0.67	83	0
Funadhoo	0	9	0.09	50	25
NOONU ATOLL	7	48	0.55	55	28
Hebadhoo	10	33	0.44	67	38
Kedhikolhudhoo	0	75	0.75	43	0
Maalhendhoo	14	33	0.47	44	22
Kudafari	16	33	0.50	70	50
Landhoo	0	40	0.40	60	40
Maafaru	0	57	0.57	67	33
Lhohi	0	50	0.50	17	17
Miladhoo	35	38	0.72	75	63
Magoodhoo	0	38	0.38	78	38
Manadhoo	20	29	0.48	43	0
Holhudhoo	0	67	0.67	58	27
Fodhdhoo	10	83	0.93	83	33
Velidhoo	0	n.a.	0.00	45	n.a.
RAA ATOLL	5	51	0.56	62	29
Alifushi	0	33	0.33	57	29
Vaadhoo	0	67	0.67	0	50
Rasgetheemu	0	33	0.33	75	33
Agolhitheemu	0	50	0.50	50	0
Hulhudhuffaaruu	0	50	0.50	50	0
Ugoofaaruu	30	33	0.64	29	0
Kadholhudhoo	17	38	0.55	78	58
Maakurathu	0	100	1.00	33	0
Rasmaadhoo	0	0	0.00	33	33
Innamaadhoo	0	83	0.83	71	0
Maduvvari	0	78	0.78	67	22
Iguraidhoo	0	86	0.86	86	14
Fainu	0	38	0.38	63	29
Meedhoo	0	29	0.29	43	43
Kinolhas	0	64	0.64	91	64
BAA ATOLL	3	24	0.27	45	30
Kudarikilu	0	25	0.25	38	13
Kamadhoo	0	20	0.20	20	40
Kendhoo	11	13	0.24	56	0
Kihaadhoo	0	90	0.90	60	0
Dhonfanu	0	57	0.57	89	50
Dharavandhoo	0	25	0.25	60	25
Maalhos	0	0	0.00	83	100
Eydhafushi	0	6	0.06	22	19
Thulhaadhoo	0	29	0.29	44	38
Hithaadhoo	16	0	0.16	33	50
Fulhadhoo	0	67	0.67	40	0
Fehendhoo	8	0	0.08	40	33
Goidhoo	0	50	0.50	57	33
LHAVIYANI ATOLL	3	35	0.38	40	16
Hinnavaruu	4	26	0.31	42	11
Naifaru	0	20	0.20	20	30

Statistical Annex - Food Security , Contd.

ATOLLS	food crisis	height for age (stunting)	Human Vulnerability Index	weight for age (under nutrition)	weight for height (wasting)
Kurendhoo	0	100	1.00	83	0
Olhuvelifushi	25	75	1.00	75	0
Maafilaafushi	7	n.a.	0.07	n.a.	n.a.
KAAFU ATOLL	4	23	0.27	31	14
Kaashidhoo	0	25	0.25	25	0
Gaafaru	0	17	0.17	0	17
Dhiffushi	13	0	0.13	43	33
Thulusdhoo	0	33	0.33	33	0
Huraa	8	0	0.08	50	50
Himmafushi	0	n.a.	0.00	50	n.a.
Gulhi	0	33	0.33	75	50
Maafushi	0	60	0.60	50	0
Guraidhoo	13	0	0.13	0	0
ALIF UTHURU BURI	7	11	0.18	35	17
Thoddoo	10	0	0.10	17	0
Rasdhoo	0	25	0.25	50	50
Ukulhas	16	0	0.16	43	29
Mathiveri	7	14	0.21	43	0
Bodufolhudhoo	23	40	0.63	40	20
Feridhoo	0	50	0.50	50	0
Maalhos	0	0	0.00	0	0
Himandhoo	0	0	0.00	25	25
ALIF DHEKUNU BURI	8	26	0.34	34	11
Hangnameedhoo	0	33	0.33	33	0
Omadhoo	16	58	0.74	54	20
Kuburudhoo	4	29	0.33	71	71
Mahibadhoo	6	18	0.24	25	0
Mandhoo	0	29	0.29	22	0
Dhagethi	0	17	0.17	0	0
Dhigurah	4	17	0.21	14	17
Fenfushi	17	0	0.17	14	29
Dhidhdhoo	18	0	0.18	33	33
Maamigili	10	33	0.44	67	0
VAAVU ATOLL	8	37	0.45	20	0
Fulidhoo	0	50	0.50	50	0
Thinadhoo	28	0	0.28	0	0
Felidhoo	10	67	0.77	33	0
Keyodhoo	8	33	0.42	14	0
Rakeedhoo	0	0	0.00	0	0
MEEMU ATOLL	5	35	0.40	41	17
Raimandhoo	0	n.a.	0.00	100	n.a.
Madifushi	0	30	0.30	44	11
Veyvah	0	100	1.00	100	0
Mulah	0	50	0.50	63	0
Muli	0	0	0.00	0	33
Naalaafushi	4	43	0.47	30	0
Kolhufushi	12	38	0.50	50	25
Dhiggaru	0	33	0.33	33	0
Maduvvari	24	13	0.36	13	57
FAAFU ATOLL	10	77	0.87	56	5
Feali	0	100	1.00	83	0

Statistical Annex - Food Security , Contd.

ATOLLS	food crisis	height for age (stunting)	Human Vulnerability Index	weight for age (under nutrition)	weight for height (wasting)
GAAF DHAAL ATOLL	12	47	0.59	53	15
Madeveli	18	0	0.18	23	0
Hoadedhdhoo	0	0	0.00	20	20
Nadallaa	29	63	0.91	75	0
Gadhdhoo	25	36	0.60	50	38
Rathafandhoo	0	20	0.20	25	25
Vaadhoo	0	80	0.80	71	0
Fiyoari	14	40	0.54	60	60
Maathodaa	0	20	0.20	50	0
Fares	16	100	1.00	75	0
Thinadhoo	8	52	0.60	52	8
GNAVIYANI ATOLL	9	50	0.59	47	6
Foammulah	9	50	0.59	47	6
SEENU ATOLL	8	32	0.40	33	10
Meedhoo	9	8	0.17	8	8
Hithadhoo	5	na	0.05	n.a.	n.a.
Maradhoo	1	75	0.76	60	20
Feydhoo	17	100	1.00	67	20
Maradhoo-Feydhoo	26	13	0.39	33	13
Hulhudhoo	0	0	0.00	18	0

Statistical Annex XIII - Employment (Map 12)

ATOLLS	no work	no work but someone in the household works	looking for more work	no income activities	Human Vulnerability Index
Maldives	1	16	12		0.19
Male'	0	12	5		0.09
Atoll average	2	17	14	22	0.23
HAA ALIF ATOLL	7	26	15	15	0.32
Thurakunu	0	18	11	0	0.15
Uligamu	0	15	6	0	0.11
Berinmadhoo	0	30	12	0	0.21
Hathifushi	0	52	34	0	0.43
Mulhadhoo	0	15	13	0	0.14
Hoarafushi	9	21	11	0	0.25
Ihavandhoo	7	46	16	n.a.	0.38
Kelaa	11	42	31	0	0.48
Vashafaru	0	22	12	100	0.42
Dhidhdhoo	14	38	13	0	0.40
Filladhoo	0	0	15	0	0.07
Maarandhoo	0	0	0	0	0.00
Thakandhoo	0	22	7	0	0.15
Utheemu	10	24	0	0	0.22
Muraidhoo	13	11	13	0	0.24
Baarah	7	5	35	100	0.52
HAA DHAAL ATOLL	1	7	10	5	0.11
Faridhoo	0	29	0	0	0.15
Hondaidhoo	0	11	10	0	0.11
Hanimaadhoo	0	10	0	100	0.30
Finey	0	5	15	0	0.10
Naivaadhoo	3	0	10	0	0.08
Hirimaradhoo	0	0	13	0	0.06
Nolhivaranfaru	0	18	14	0	0.16
Nellaidhoo	0	0	11	0	0.06
Nolhivaramu	0	15	12	0	0.14
Kuribi	0	0	14	0	0.07
Kuburudhoo	0	0	0	0	0.00
Kulhudhuffushi	0	4	7	0	0.05
Kumundhoo	0	10	27	0	0.19
Neykurendhoo	0	0	12	0	0.06
Vaikaradhoo	10	0	11	0	0.15
Maavaidhoo	0	0	29	0	0.15
Makunudhoo	0	29	9	0	0.19
SHAVIYANI ATOLL	2	13	12	22	0.20
Kaditheemu	0	7	0	0	0.03
Noomaraa	0	0	0	0	0.00
Goidhoo	0	20	0	0	0.10
Feydhoo	0	0	2	0	0.01
Feevah	0	0	10	100	0.30
Bilehffahi	15	0	17	0	0.23
Foakaidhoo	6	0	19	0	0.16
Narudhoo	14	14	0	0	0.21
Maakandoodhoo	0	0	4	0	0.02
Maroshi	8	5	0	100	0.35
Lhaimagu	0	19	0	100	0.35

Statistical Annex - Employment , Contd.

ATOLLS	no work	no work but someone in the household works	looking for more work	no income activities	Human Vulnerability Index
Firubaidhoo	0	8	10	100	0.34
Komandoo	0	61	34	0	0.48
Maagoodhoo	0	8	41	0	0.24
Funadhoo	0	25	7	0	0.16
NOONU ATOLL	2	12	15	16	0.19
Hebadhoo	0	9	0	0	0.05
Kedhikolhudhoo	0	10	0	0	0.05
Maalhendhoo	0	19	7	0	0.13
Kudafari	8	23	0	0	0.20
Landhoo	0	0	25	0	0.13
Maafaru	0	13	25	0	0.19
Lhohi	0	11	15	100	0.38
Miladhoo	14	34	16	100	0.64
Magoodhoo	3	6	26	0	0.19
Manadhoo	0	33	28	0	0.31
Holhudhoo	0	0	8	0	0.04
Fodhdhoo	0	0	15	100	0.33
Velidhoo	0	0	22	0	0.11
RAA ATOLL	2	12	15	16	0.19
Alifushi	0	0	12	0	0.06
Vaadhoo	0	0	15	100	0.33
Rasgetheemu	0	0	20	0	0.10
Agolhitheemu	0	0	0	0	0.00
Hulhudhuffaaruu	0	0	10	0	0.05
Ugoofaaruu	0	0	34	100	0.42
Kadholhudhoo	0	23	26	0	0.25
Maakurathu	0	0	18	100	0.34
Rasmaadhoo	0	0	15	0	0.07
Innamaadhoo	0	30	61	0	0.46
Maduvvari	9	15	0	0	0.16
Iguraidhoo	12	12	0	0	0.18
Fainu	8	35	23	0	0.37
Meedhoo	0	32	0	0	0.16
Kinolhas	0	0	0	0	0.00
BAA ATOLL	0	21	15	34	0.27
Kudarikilu	0	13	0	0	0.07
Kamadhoo	0	9	6	0	0.08
Kendhoo	0	48	29	0	0.39
Kihaadhoo	0	24	16	0	0.20
Dhonfanu	0	0	0	0	0.00
Dharavandhoo	0	35	0	100	0.43
Maalhos	0	28	0	100	0.39
Eydhafushi	0	18	6	100	0.37
Thulhaadhoo	0	25	35	0	0.30
Hithaadhoo	0	16	18	0	0.17
Fulhadhoo	0	0	0	0	0.00
Fehendhoo	21	8	21	0	0.35
Goidhoo	0	0	15	0	0.07
LHAVIYANI ATOLL	4	16	19	60	0.37
Hinnavaruu	11	25	9	0	0.28
Naifaru	0	15	13	100	0.39

Statistical Annex - Employment , Contd.

ATOLLS	no work	no work but someone in the household works	looking for more work	no income activities	Human Vulnerability Index
Kurendhoo	0	0	50	100	0.50
Olhuvelifushi	0	0	70	100	0.60
Maafilaafushi	7	0	63	n.a.	0.39
KAAFU ATOLL	0	11	7	13	0.12
Kaashidhoo	0	0	11	n.a.	0.06
Gaafaru	0	18	7	0	0.12
Dhiffushi	0	7	13	100	0.35
Thulusdhoo	0	0	0	0	0.00
Huraa	0	11	6	0	0.08
Himmafushi	0	4	11	0	0.07
Gulhi	0	18	0	0	0.09
Maafushi	0	37	0	0	0.19
Guraidhoo	0	12	9	0	0.11
ALIF UTHURU BURI	1	7	9	11	0.11
Thoddoo	0	0	0	0	0.00
Rasdhoo	0	16	0	0	0.08
Ukulhas	0	0	55	0	0.28
Mathiveri	8	18	16	100	0.50
Bodufolhudhoo	0	7	0	0	0.03
Feridhoo	0	6	0	0	0.03
Maalhos	0	7	0	0	0.03
Himandhoo	0	4	4	0	0.04
ALIF DHEKUNU BURI	1	26	22	38	0.34
Hangnameedhoo	0	11	23	0	0.17
Omadhoo	0	12	21	0	0.17
Kuburudhoo	0	51	48	100	0.75
Mahibadhoo	0	27	10	100	0.43
Mandhoo	0	27	0	0	0.13
Dhagethi	0	41	40	0	0.41
Dhigurah	0	8	25	0	0.17
Fenfushi	9	42	3	100	0.56
Dhidhdhoo	0	11	2	0	0.07
Maamigili	0	23	31	0	0.27
VAAVU ATOLL	3	37	13	24	0.34
Fulidhoo	0	3	0	0	0.02
Thinadhoo	9	11	9	100	0.43
Felidhoo	0	63	0	0	0.31
Keyodhoo	0	39	35	0	0.37
Rakeedhoo	13	44	6	100	0.64
MEEMU ATOLL	0	13	6	40	0.20
Raimandhoo	0	0	0	100	0.25
Madifushi	0	0	0	0	0.00
Veyvah	3	0	0	0	0.03
Mulah	0	0	0	100	0.25
Muli	0	5	13	100	0.34
Naalaafushi	0	29	0	0	0.14
Kolhufushi	0	0	0	0	0.00
Dhiggaru	0	35	13	0	0.24
Maduvvari	0	35	17	0	0.26
FAAFU ATOLL	4	20	24	0	0.26
Feali	0	23	20	0	0.22

Statistical Annex - Employment , Contd.

ATOLLS	no work	no work but someone in the household works	looking for more work	no income activities	Human Vulnerability Index
Biledhdhoo	0	14	47	0	0.30
Magoodhoo	26	13	26	0	0.45
Dharaboodhoo	0	7	0	0	0.03
Nilandhoo	0	30	13	0	0.22
DHAAL ATOLL	0	20	13	0	0.16
Meedhoo	0	61	0	0	0.30
Badidhoo	0	26	0	0	0.13
Ribudhoo	0	0	6	0	0.03
Hulhudheli	0	9	0	0	0.05
Gemendhoo	0	9	23	0	0.16
Vaanee	0	24	14	0	0.19
Maaeboodhoo	0	0	34	0	0.17
Kudahuvadho	0	11	23	0	0.17
THAA ATOLL	0	15	18	8	0.19
Buruni	0	0	11	0	0.05
Vilufushi	0	35	12	0	0.23
Madifushi	0	0	11	0	0.05
Dhiyamigili	0	0	0	0	0.00
Guraidhoo	0	0	7	0	0.04
Kadoodhoo	0	9	32	0	0.20
Vandhoo	0	4	0	0	0.02
Hirilandhoo	0	18	13	0	0.15
Gaadhiffushi	0	29	16	0	0.22
Thimarafushi	0	33	55	0	0.44
Veymandoo	0	21	6	100	0.39
Kibidhoo	0	8	16	0	0.12
Omadhoo	7	0	23	0	0.18
LAAMU ATOLL	1	20	24	0	0.23
Isdhoo	0	20	18	0	0.19
Dhabidhoo	0	46	0	0	0.23
Maabaidhoo	11	19	34	0	0.37
Mundhoo	0	58	24	0	0.41
Kalhaidhoo	0	60	59	0	0.59
Gamu	0	5	32	0	0.18
Maavah	0	0	12	0	0.06
Fonadhoo	0	7	25	0	0.16
Gaadhoo	11	50	17	0	0.45
Maamendhoo	0	50	8	0	0.29
Hithadhoo	0	4	33	0	0.18
Kunahandhoo	0	6	31	0	0.18
GAAF ALIF ATOLL	1	31	17	80	0.45
Kolamaafushi	0	27	8	100	0.42
Viligili	0	36	20	100	0.53
Maamendhoo	0	29	45	100	0.62
Nilandhoo	0	0	13	100	0.32
Dhaandhoo	9	31	0	100	0.49
Dheevadhoo	0	35	11	0	0.23
Kodey	0	29	35	100	0.57
Dhiyadhoo	0	6	21	0	0.13
Gemanafushi	0	37	5	0	0.21
Kanduhulhudhoo	0	36	36	100	0.61

Contd.

Statistical Annex - Employment , Contd.

ATOLLS	no work	no work but someone in the household works	looking for more work	no income activities	Human Vulnerability Index
GAAF DHAAL ATOLL	2	26	10	67	0.37
Madeveli	0	23	24	100	0.49
Hoadedhdhoo	0	19	0	0	0.09
Nadallaa	0	51	0	100	0.51
Gadhdhoo	0	21	13	100	0.42
Rathafandhoo	3	0	0	0	0.03
Vaadhoo	7	31	0	0	0.23
Fiyoari	0	36	26	0	0.31
Maathodaa	0	46	21	0	0.34
Fares	9	13	16	0	0.23
Thinadhoo	3	27	7	100	0.45
GNAVIYANI ATOLL	0	15	11	0	0.13
Foammulah	0	15	11	0	0.13
SEENU ATOLL	0	13	9	10	0.14
Meedhoo	0	12	38	n.a.	0.25
Hithadhoo	0	12	4	0	0.08
Maradhoo	3	6	0	0	0.06
Feydhoo	0	20	0	0	0.10
Maradhoo-Feydhoo	0	0	13	0	0.06
Hulhudhoo	0	23	34	100	0.54

Statistical Annex XIV - Recreation (Map 13)

ATOLLS	no clubs	no events	not enough space	less than twenty percent open space	no community activities
Maldives	20	53			
Male'	9	0			
Atoll average	26	71	14	34	17
HAA ALIF ATOLL	16	44	0	22	10
Thurakunu	0	n.a.	0	0	0
Uligamu	0	n.a.	0	0	0
Berinmadhoo	100	n.a.	0	0	100
Hathifushi	100	n.a.	0	100	0
Mulhadhoo	100	n.a.	0	0	0
Hoarafushi	0	n.a.	0	0	0
Ihavandhoo	n.a.	n.a.	n.a.	n.a.	n.a.
Kelaa	100	0	0	0	0
Vashafaru	0	0	0	0	100
Dhidhdhoo	0	100	0	100	0
Filladhoo	0	0	n.a.	0	0
Maarandhoo	0	n.a.	0	0	0
Thakandhoo	0	n.a.	0	0	0
Utheemu	0	n.a.	0	0	0
Muraidhoo	0	0	0	0	100
Baarah	0	n.a.	0	0	0
HAA DHAAL ATOLL	13	66	0	41	9
Faridhoo	100	n.a.	n.a.	n.a.	0
Hondaithoo	100	0	0	0	0
Hanimaadhoo	0	n.a.	0	0	0
Finey	100	n.a.	0	0	0
Naivaadhoo	0	n.a.	0	0	0
Hirimaradhoo	100	0	0	0	0
Nolhivaranfaru	0	100	0	0	0
Nellaidhoo	0	n.a.	0	100	0
Nolhivaramu	0	100	0	0	0
Kuribi	100	0	0	0	0
Kuburudhoo	100	n.a.	0	0	0
Kulhudhuffushi	0	n.a.	0	100	0
Kumundhoo	0	100	0	0	0
Neykurendhoo	0	100	0	0	0
Vaikaradhoo	0	0	0	0	100
Maavaidhoo	100	0	0	0	100
Makunudhoo	0	100	0	0	0
SHAVIYANI ATOLL	17	28	26	13	0
Kaditheemu	0	n.a.	0	0	0
Noomaraa	0	n.a.	0	0	0
Goidhoo	0	100	0	0	0
Feydhoo	0	n.a.	0	0	0
Feevah	0	100	0	0	0
Bilehffahi	0	100	0	0	0
Foakaidhoo	100	0	0	0	0
Narudhoo	100	0	0	n.a.	0
Maakandoodhoo	0	n.a.	100	0	0
Maroshi	0	0	0	0	0
Lhaimagu	100	100	0	0	0

Contd.

Statistical Annex - Recreation , Contd.

ATOLLS	no clubs	no events	not enough space	less than twenty percent open space	no community activities
Firubaidhoo	0	0	0	0	0
Komandoo	0	0	100	100	0
Maagoodhoo	0	0	0	0	0
Funadhoo	0	0	0	0	0
NOONU ATOLL	96	100	9	50	0
Hebadhoo	0	n.a.	0	100	0
Kedhikolhudhoo	100	n.a.	0	0	0
Maalhendhoo	100	n.a.	0	0	0
Kudafari	100	n.a.	0	0	0
Landhoo	100	100	0	n.a.	0
Maafaru	100	100	0	0	0
Lhohi	100	n.a.	0	0	0
Miladhoo	100	n.a.	100	100	0
Magoodhoo	100	n.a.	0	0	0
Manadhoo	100	100	0	0	0
Holhudhoo	100	n.a.	0	100	0
Fodhdhoo	100	100	0	n.a.	0
Velidhoo	100	100	0	100	0
RAA ATOLL	9	81	33	34	12
Alifushi	0	100	0	0	0
Vaadhoo	0	100	0	0	0
Rasgetheemu	0	100	0	n.a.	100
Agolhitheemu	100	100	0	0	0
Hulhudhuffaaruu	100	100	0	0	100
Ugoofaaruu	0	100	0	0	0
Kadholhudhoo	0	100	100	100	0
Maakurathu	0	0	0	0	0
Rasmaadhoo	0	0	100	0	0
Innamaadhoo	0	0	0	0	0
Maduvvari	0	100	100	n.a.	0
Iguraidhoo	0	n.a.	0	0	0
Fainu	0	0	0	n.a.	100
Meedhoo	0	n.a.	0	100	0
Kinolhas	0	n.a.	0	0	0
BAA ATOLL	17	100	20	51	40
Kudarikilu	0	100	0	n.a.	0
Kamadhoo	0	100	0	0	0
Kendhoo	0	n.a.	0	100	0
Kihaadhoo	0	100	0	0	0
Dhonfanu	100	n.a.	0	0	0
Dharavandhoo	100	n.a.	0	100	100
Maalhos	0	n.a.	0	0	100
Eydhafushi	0	100	0	n.a.	100
Thulhaadhoo	0	n.a.	100	100	0
Hithaadhoo	0	n.a.	0	0	0
Fulhadhoo	100	100	0	0	0
Fehendhoo	100	100	0	n.a.	0
Goidhoo	0	100	0	0	100
LHAVIYANI ATOLL	0	n.a.	0	100	0
Hinnavaruu	0	n.a.	0	100	0
Naifaruu	0	n.a.	n.a.	n.a.	0

Statistical Annex - Recreation , Contd.

ATOLLS	no clubs	no events	not enough space	less than twenty percent open space	no community activities
Kurendhoo	0	n.a.	0	n.a.	0
Olhuvelifushi	0	n.a.	0	n.a.	0
Maafilaafushi		n.a.	n.a.	n.a.	n.a.
KAAFU ATOLL	11	100	0	21	22
Kaashidhoo	0	n.a.	n.a.	n.a.	n.a.
Gaafaru	100	n.a.	0	0	0
Dhiffushi	0	n.a.	0	100	0
Thulusdhoo	0	100	0	0	0
Huraa	0	100	0	0	100
Himmafushi	0	n.a.	0	0	100
Gulhi	0	100	0	100	0
Maafushi	0	100	0	0	0
Guraidhoo	0	100	0	0	0
ALIF UTHURU BURI	10	100	0	43	42
Thoddoo	0	100	0	n.a.	100
Rasdoo	0	100	0	100	0
Ukulhas	0	n.a.	0	0	0
Mathiveri	0	100	0	0	0
Bodufolhudhoo	0	n.a.	0	100	0
Feridhoo	0	100	0	n.a.	0
Maalhos	0	100	0	n.a.	100
Himandhoo	100	100	0	0	100
ALIF DHEKUNU BURI	36	91	0	24	10
Hangnameedhoo	0	0	0	0	0
Omadhoo	0	100	0	100	0
Kuburudhoo	100	100	0	100	0
Mahibadhoo	0	100	0	n.a.	0
Mandhoo	100	n.a.	0	0	0
Dhagethi	0	n.a.	0	0	0
Dhigurah	0	n.a.	0	0	0
Fenfushi	0	100	0	n.a.	100
Dhidhdhoo	100	100	0	n.a.	100
Maamigili	100	100	0	0	0
VAAVU ATOLL	9	61	0	32	0
Fulidhoo	0	n.a.	0	0	0
Thinadhoo	100	100	0	0	0
Felidhoo	0	0	0	0	0
Keyodhoo	0	100	0	100	0
Rakeedhoo	0	n.a.	0	0	0
MEEMU ATOLL	11	38	40	0	0
Raimandhoo	100	n.a.	0	0	0
Madifushi	100	n.a.	0	0	0
Veyvah	100	0	0	0	0
Mulah	0	n.a.	0	0	0
Muli	0	n.a.	0	n.a.	0
Naalaafushi	0	0	0	0	0
Kolhufushi	0	100	100	0	0
Dhiggaru	0	0	100	0	0
Maduvvari	0	n.a.	n.a.	n.a.	0
FAAFU ATOLL	20	100	33	0	0
Feali	100	100	0	0	0

Statistical Annex - Recreation , Contd.

ATOLLS	no clubs	no events	not enough space	less than twenty percent open space	no community activities
Biledhdhoo	0	100	0	0	0
Magoodhoo	0	100	0	0	0
Dharaboodhoo	0	100	0	0	0
Nilandhoo	0	100	100	0	0
DHAAL ATOLL	66	100	18	33	13
Meedhoo	n.a.	n.a.	100	100	0
Badidhoo	100	100	0	0	0
Ribudhoo	100	n.a.	0	0	0
Hulhudheli	100	n.a.	0	0	0
Gemendhoo	0	n.a.	0	100	0
Vaanee	0	n.a.	0	100	0
Maaeoodhoo	0	n.a.	0	0	100
Kudahuvadhoo	100	100	0	0	0
THAA ATOLL	28	92	49	66	0
Buruni	0	100	0	n.a.	0
Vilufushi	100	100	0	100	0
Madifushi	0	100	100	100	0
Dhiyamigili	0	100	100	100	0
Guraidhoo	0	100	100	n.a.	0
Kadoodhoo	100	100	0	0	0
Vandhoo	100	100	100	0	0
Hirilandhoo	0	100	100	100	0
Gaadhiffushi	100	100	0	100	0
Thimarafushi	0	100	0	100	0
Veymandoo	0	100	100	0	0
Kibidhoo	0	0	0	0	0
Omadhoo	100	100	n.a.	0	0
LAAMU ATOLL	32	49	0	32	0
Isdhoo	100	0	0	0	0
Dhabidhoo	0	0	0	0	0
Maabaidhoo	0	n.a.	0	n.a.	0
Mundhoo	100	0	0	0	0
Kalhaidhoo	100	100	0	0	0
Gamu	0	100	0	n.a.	0
Maavah	0	100	0	100	0
Fonadhoo	0	100	0	n.a.	0
Gaadhoo	100	0	0	0	0
Maamendhoo	0	0	0	100	0
Hithadhoo	0	0	0	0	0
Kunahandhoo	100	0	0	0	0
GAAF ALIF ATOLL	24	78	40	29	42
Kolamaafushi	0	100	100	100	0
Viligili	0	100	100	n.a.	100
Maamendhoo		100	0	0	100
Nilandhoo	100	100	0	0	100
Dhaandhoo	100	n.a.	0	0	0
Dhevvdhoo	0	n.a.	0	100	0
Kodey	0	0	0	0	0
Dhiyadhoo	100	0	0	0	0
Gemanafushi	0	0	0	0	0
Kanduhulhudhoo	0	n.a.	0	0	0

Statistical Annex - Recreation , Contd.

ATOLLS	no clubs	no events	not enough space	less than twenty percent open space	no community activities
GAAF DHAAL ATOLL	13	95	0	66	46
Madeveli	100	100	0	0	100
Hoadedhdhoo	0	n.a.	0	0	0
Nadallaa	0	100	0	100	0
Gadhdhoo	0	100	0	100	0
Rathafandhoo	0	100	0	0	0
Vaadhoo	0	100	0	0	0
Fiyoari	0	n.a.	0	0	0
Maathodaa	100	100	0	100	0
Fares	0	0	0	100	0
Thinadhoo	0	100	0	100	100
GNAVIYANI ATOLL	n.a.	0	0	n.a.	0
Foammulah	n.a.	0	0	n.a.	0
SEENU ATOLL	61	100	25	9	53
Meedhoo	0	n.a.	n.a.	n.a.	n.a.
Hithadhoo	n.a.	100	0	0	100
Maradhoo	0	100	0	n.a.	0
Feydhoo	100	100	100	n.a.	0
Maradhoo-Feydhoo	100	n.a.	100	100	0
Hulhudhoo	100	100	0	0	0

Statistical Annex XV - Overall

Equal Weights (Map 13)

ATOLLS	Sum of Human Vulnerability Indices on a 0-12 scale	Non-income Vulnerability Index on a 0-10 scale	Income Poverty Index on a 0-10 scale	COMPOSITE Human Vulnerability Index on a 0-10 scale
Maldives	4.9	4.3	2.5	4.1
Male'	1.5	1.2	1.1	1.2
Atoll average	5.7	4.9	2.9	4.8
HAA ALIF ATOLL	6.0	5.3	1.5	5.0
Thurakunu	7.2	6.2	4.2	6.0
Uligamu	8.0	6.9	3.9	6.6
Berimadhoo	8.5	7.4	4.0	7.1
Hathifushi	6.6	5.9	1.4	5.5
Mulhadhoo	6.9	5.8	4.7	5.7
Hoarafushi	4.6	4.2	0.2	3.9
Ihavandhoo	3.7	3.4	0.1	3.1
Kelaa	5.8	5.1	1.4	4.8
Vashafaru	5.9	5.0	4.4	4.9
Dhidhdhoo	2.9	2.6	1.1	2.4
Filladhoo	6.2	5.5	1.9	5.2
Maarandhoo	5.6	5.1	0.5	4.7
Thakandhoo	5.8	5.2	1.2	4.9
Utheemu	4.5	4.0	0.3	3.7
Muraidhoo	7.0	6.0	4.8	5.9
Baarah	7.7	6.7	2.4	6.4
HAA DHAAL ATOLL	5.8	5.0	2.7	4.8
Faridhoo	6.2	5.4	2.6	5.1
Hondaidhoo	6.5	5.7	2.6	5.4
Hanimaadhoo	5.9	5.0	4.1	4.9
Finey	6.5	5.8	1.9	5.4
Naivaadhoo	5.1	4.5	1.7	4.2
Hirimaradhoo	6.7	6.0	1.5	5.6
Nolhivaranfaru	5.4	4.7	2.2	4.5
Nellaidhoo	5.7	5.0	1.7	4.7
Nolhivaramu	7.3	6.2	5.3	6.1
Kuribi	6.8	6.0	2.4	5.7
Kuburudhoo	7.9	7.1	1.1	6.6
Kulhudhuffushi	4.1	3.6	2.2	3.4
Kumundhoo	7.5	6.6	2.1	6.2
Neykurendhoo	5.8	5.0	3.7	4.9
Vaikaradhoo	5.1	4.3	3.3	4.2
Maavaidhoo	6.2	5.4	2.1	5.1
Makunudhoo	6.6	5.7	3.4	5.5
SHAVIYANI ATOLL	6.1	5.3	3.5	5.1
Kaditheemu	6.7	5.7	4.9	5.6
Noomaraa	6.7	5.8	3.2	5.6
Goidhoo	6.4	5.6	2.4	5.4
Feydhoo	7.1	6.0	5.3	5.9
Feevah	6.0	5.3	1.8	5.0
Bilehffahi	6.7	5.5	6.9	5.6
Foakaidhoo	7.3	6.0	6.9	6.1
Narudhoo	6.8	5.9	3.8	5.7
Maakandoodhoo	5.3	4.6	2.9	4.4
Maroshi	5.5	4.7	3.7	4.6
Lhaimagu	5.9	5.1	2.8	4.9

Statistical Annex - Overall , Contd.

ATOLLS	Sum of Human Vulnerability Indices on a 0-12 scale	Non-income Vulnerability Index on a 0-10 scale	Income Poverty Index on a 0-10 scale	COMPOSITE Human Vulnerability Index on a 0-10 scale
Firubaidhoo	5.6	4.8	3.2	4.7
Komandoo	5.0	4.3	2.2	4.1
Maaugoodhoo	5.6	5.0	0.1	4.6
Funadhoo	3.5	3.0	2.1	2.9
NOONU ATOLL	5.9	5.1	3.8	4.9
Hebadhoo	5.9	4.9	4.6	4.9
Kedhikolhudhoo	5.2	4.4	3.7	4.3
Maalhendhoo	7.4	6.2	5.7	6.1
Kudafari	6.7	5.4	8.4	5.6
Landhoo	5.9	5.2	1.3	4.9
Maafaru	5.0	4.5	0.3	4.2
Lhohi	7.0	6.2	2.0	5.9
Miladhoo	7.3	6.4	2.7	6.1
Magoodhoo	6.3	5.5	2.0	5.2
Manadhoo	4.4	3.5	4.7	3.6
Holhudhoo	4.9	4.1	4.2	4.1
Fodhdhoo	6.8	5.7	5.2	5.7
Velidhoo	3.8	3.1	4.3	3.2
RAA ATOLL	5.4	4.6	3.2	4.5
Alifushi	4.3	3.5	4.5	3.6
Vaadhoo	6.4	5.7	1.4	5.3
Rasgetheemu	5.1	4.6	0.8	4.3
Agolhitheemu	5.2	4.8	0.0	4.4
Hulhudhuffaaruu	4.8	4.2	1.4	4.0
Ugoofaaruu	4.6	3.9	3.3	3.8
Kadholhudhoo	5.3	4.6	1.6	4.4
Maakurathu	6.4	5.6	2.3	5.3
Rasmaadhoo	6.2	5.5	1.5	5.2
Innamaadhoo	6.0	5.4	1.4	5.0
Maduvvari	6.3	5.0	8.1	5.2
Iguraidhoo	5.6	4.7	4.4	4.7
Fainu	7.1	5.6	8.8	5.9
Meedhoo	3.5	3.0	2.1	2.9
Kinolhas	6.8	5.8	4.4	5.6
BAA ATOLL	5.8	4.8	5.1	4.8
Kudarikilu	5.1	4.2	4.5	4.2
Kamadhoo	5.1	4.0	7.2	4.3
Kendhoo	6.2	5.2	4.9	5.2
Kihaadhoo	7.0	5.7	7.0	5.8
Dhonfanu	6.7	5.7	3.8	5.5
Dharavandhoo	4.9	4.3	1.5	4.1
Maalhos	5.4	4.8	0.7	4.5
Eydhafushi	3.7	2.8	6.0	3.0
Thulhaadhoo	4.5	3.7	4.9	3.8
Hithaadhoo	7.0	5.8	6.1	5.8
Fulhadhoo	8.1	6.6	7.8	6.7
Fehendhoo	7.1	5.8	7.3	5.9
Goidhoo	7.7	6.4	6.1	6.4
LHAVIYANI ATOLL	5.7	4.7	5.7	4.8
Hinnavaruu	5.7	4.5	7.0	4.7
Naifaruu	5.0	4.1	4.2	4.1

Contd.

Statistical Annex - Overall , Contd.

ATOLLS	Sum of Human Vulnerability Indices on a 0-12 scale	Non-income Vulnerability Index on a 0-10 scale	Income Poverty Index on a 0-10 scale	COMPOSITE Human Vulnerability Index on a 0-10 scale
Kurendhoo	6.5	5.3	6.8	5.4
Olhuvelifushi	7.2	5.9	6.7	6.0
Maafilaafushi	2.3	2.1	0.6	1.9
KAAFU ATOLL	4.9	4.4	1.1	4.1
Kaashidhoo	2.2	1.8	2.4	1.9
Gaafaru	5.1	4.5	1.6	4.2
Dhiffushi	4.1	3.5	2.2	3.4
Thulusdhoo	3.7	3.3	1.0	3.1
Huraa	3.5	3.2	0.0	2.9
Himmafushi	4.1	3.7	0.0	3.4
Gulhi	4.5	4.0	1.3	3.7
Maafushi	6.2	5.6	0.2	5.2
Guraidhoo	3.7	3.3	0.5	3.0
ALIF UTHURU BURI	5.0	4.4	1.3	4.2
Thoddoo	4.1	3.6	1.7	3.4
Rasdoo	3.7	3.3	0.1	3.1
Ukulhas	4.3	3.8	1.0	3.6
Mathiveri	5.2	4.7	0.9	4.3
Bodufolhudhoo	5.6	4.9	1.4	4.6
Feridhoo	5.4	4.8	1.3	4.5
Maalhos	4.4	3.7	3.0	3.6
Himandhoo	5.1	4.6	1.3	4.3
ALIF DHEKUNU BURI	4.9	4.3	1.8	4.1
Hangnameedhoo	4.3	3.6	2.8	3.6
Omadhoo	5.2	4.3	4.6	4.4
Kuburudhoo	5.5	4.7	3.5	4.6
Mahibadhoo	3.6	3.1	1.6	3.0
Mandhoo	5.9	5.2	2.3	4.9
Dhagethi	2.3	2.1	0.0	1.9
Dhigurah	4.4	4.0	0.1	3.6
Fenfushi	5.6	5.0	1.2	4.7
Dhidhdhoo	6.0	5.4	0.8	5.0
Maamigili	5.4	4.7	1.4	4.5
VAAVU ATOLL	5.5	4.7	3.3	4.5
Fulidhoo	4.1	3.3	4.5	3.4
Thinadhoo	7.2	6.1	4.5	6.0
Felidhoo	4.2	3.6	2.9	3.5
Keyodhoo	5.8	4.9	3.8	4.8
Rakeedhoo	5.3	4.7	1.0	4.4
MEEMU ATOLL	5.9	4.8	6.3	4.9
Raimandhoo	6.2	5.0	7.1	5.2
Madifushi	6.2	4.7	10.1	5.2
Veyvah	7.4	6.0	8.1	6.2
Mulah	4.4	3.8	2.6	3.7
Muli	3.4	2.6	6.1	2.9
Naalaafushi	6.7	5.7	4.3	5.6
Kolhufushi	7.1	5.5	10.1	5.9
Dhiggaru	7.0	5.7	7.4	5.8
Maduvvari	5.8	4.7	6.2	4.9
FAAFU ATOLL	6.2	5.2	4.5	5.1
Feali	6.2	5.3	3.6	5.2

Statistical Annex - Overall , Contd.

ATOLLS	Sum of Human Vulnerability Indices on a 0-12 scale	Non-income Vulnerability Index on a 0-10 scale	Income Poverty Index on a 0-10 scale	COMPOSITE Human Vulnerability Index on a 0-10 scale
Biledhdhoo	6.5	5.8	1.8	5.5
Magoodhoo	3.8	3.2	3.7	3.2
Dharaboodhoo	6.2	5.3	3.8	5.2
Nilandhoo	5.0	3.9	7.3	4.2
DHAAL ATOLL	5.7	5.0	2.4	4.7
Meedhoo	4.6	4.1	0.9	3.8
Badidhoo	7.5	6.4	4.3	6.2
Ribudhoo	6.2	5.3	3.4	5.2
Hulhudheli	6.5	5.7	2.0	5.4
Gemendhoo	7.0	6.0	4.8	5.9
Vaanee	4.7	4.0	3.2	3.9
Maaeoodhoo	5.0	4.2	4.1	4.2
Kudahuvadhoo	3.5	3.2	0.3	2.9
THAA ATOLL	5.9	4.9	4.8	4.9
Buruni	5.3	4.4	4.5	4.4
Vilufushi	5.7	4.6	5.9	4.7
Madifushi	7.3	6.3	3.9	6.1
Dhiyamigili	6.6	5.6	4.7	5.5
Guraidhoo	4.5	3.5	6.4	3.8
Kadoodhoo	5.9	4.7	7.7	5.0
Vandhoo	6.1	5.0	6.8	5.1
Hirilandhoo	5.4	4.4	6.3	4.5
Gaadhiffushi	6.6	5.7	3.1	5.5
Thimarafushi	5.2	4.4	3.7	4.3
Veymandoo	3.9	3.3	2.0	3.2
Kibidhoo	7.8	6.8	2.8	6.5
Omadhoo	6.9	5.8	5.0	5.8
LAAMU ATOLL	5.9	5.1	2.6	4.9
Isdhoo	5.0	4.6	0.0	4.2
Dhabidhoo	6.1	5.6	0.0	5.1
Maabaidhoo	5.5	4.8	2.4	4.6
Mundhoo	6.4	5.7	1.9	5.3
Kalhaidhoo	7.5	6.4	4.7	6.2
Gamu	4.8	4.0	3.5	4.0
Maavah	5.5	4.7	2.3	4.5
Fonadhoo	3.8	3.1	3.6	3.1
Gaadhoo	7.1	6.3	1.2	5.9
Maamendhoo	6.6	5.5	5.3	5.5
Hithadhoo	7.1	6.4	1.2	5.9
Kunahandhoo	8.9	7.7	4.4	7.4
GAAF ALIF ATOLL	6.2	5.5	1.4	5.2
Kolamaafushi	3.2	2.9	0.1	2.7
Viligili	4.6	4.1	0.8	3.9
Maamendhoo	5.7	5.1	0.9	4.8
Nilandhoo	7.7	6.7	3.0	6.4
Dhaandhoo	7.1	6.2	2.6	5.9
Dhevvadhoo	6.9	6.1	1.9	5.7
Kodey	7.6	6.8	1.7	6.4
Dhiyadhoo	6.6	5.8	1.8	5.5
Gemanafushi	5.9	5.3	1.1	4.9
Kanduhulhudhoo	8.2	7.1	3.2	6.8

Statistical Annex - Overall , Contd.

ATOLLS	Sum of Human Vulnerability Indices on a 0-12 scale	Non-income Vulnerability Index on a 0-10 scale	Income Poverty Index on a 0-10 scale	COMPOSITE Human Vulnerability Index on a 0-10 scale
GAAF DHAAL ATOLL	5.9	5.1	2.9	4.9
Madeveli	6.6	5.6	4.0	5.5
Hoadedhdhoo	6.0	4.9	5.8	5.0
Nadallaa	9.1	7.5	7.7	7.5
Gadhdhoo	4.1	3.6	0.9	3.4
Rathafandhoo	6.0	5.2	3.2	5.0
Vaadhoo	7.7	6.8	1.9	6.4
Fiyoari	5.6	4.9	2.3	4.7
Maathodaa	6.2	5.5	1.9	5.2
Fares	8.5	7.3	3.8	7.1
Thinadhoo	3.8	3.3	2.4	3.2
GNAVIYANI ATOLL	4.7	4.0	2.1	3.9
Foammulah	4.6	4.0	2.1	3.9
SEENU ATOLL	4.2	3.7	1.8	3.5
Meedhoo	2.0	1.7	1.8	1.7
Hithadhoo	3.4	2.9	1.7	2.8
Maradhoo	3.6	3.1	2.2	3.0
Feydhoo	4.6	4.1	0.9	3.8
Maradhoo-Feydhoo	4.0	3.3	4.0	3.4
Hulhudhoo	4.1	3.5	2.7	3.4

Statistical Annex - Overall , Contd.

Priority Weights (Map 14)

Vulnerability Weights (Map 15)

ATOLLS	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale
Maldives	3.8	3.8	3.8	3.8
Male'	1.2	1.2	1.2	1.2
Atoll average	4.5	4.5	4.5	4.5
HAA ALIF ATOLL	4.7	4.7	4.8	4.7
Thurakunu	6.0	5.9	6.1	6.1
Uligamu	6.5	6.4	6.6	6.6
Berinmadhoo	7.0	7.0	7.1	7.1
Hathifushi	5.4	5.5	5.5	5.5
Mulhadhoo	5.6	5.6	5.7	5.7
Hoarafushi	3.6	3.6	3.7	3.7
Ihavandhoo	3.1	3.1	3.3	3.3
Kelaa	4.4	4.4	4.3	4.3
Vashafaru	4.8	4.8	4.9	4.8
Dhidhdhoo	2.2	2.2	2.1	2.1
Filladhoo	5.1	5.0	5.2	5.1
Maarandhoo	4.5	4.5	4.5	4.4
Thakandhoo	4.5	4.5	4.7	4.7
Utheemu	3.7	3.7	3.7	3.7
Muraidhoo	5.6	5.5	5.6	5.6
Baarah	6.0	6.1	6.1	6.1
HAA DHAAL ATOLL	4.5	4.5	4.5	4.5
Faridhoo	5.1	5.0	5.1	5.1
Hondaidhoo	5.3	5.3	5.5	5.5
Hanimaadhoo	4.9	4.8	4.9	4.8
Finney	5.2	5.2	5.4	5.4
Naivaadhoo	3.8	3.8	3.7	3.7
Hirimaradhoo	5.2	5.2	5.3	5.3
Nolhivaranfaru	4.2	4.2	4.3	4.3
Nellaidhoo	4.3	4.3	4.4	4.4
Nolhivaramu	5.8	5.8	5.8	5.8
Kuribi	5.3	5.3	5.5	5.4
Kuburudhoo	6.4	6.4	6.6	6.5
Kulhudhuffushi	3.0	3.0	3.0	3.0
Kumundhoo	6.0	6.0	6.2	6.1
Neykurendhoo	4.5	4.5	4.5	4.5
Vaikaradhoo	3.6	3.7	3.6	3.6
Maavaidhoo	5.0	4.9	5.1	5.0
Makunudhoo	5.1	5.1	5.1	5.1
SHAVIYANI ATOLL	4.8	4.8	4.8	4.8
Kaditheemu	5.2	5.2	5.2	5.2
Noomaraa	5.4	5.4	5.6	5.5
Goidhoo	4.9	4.9	4.9	4.9
Feydhoo	5.8	5.7	5.9	5.9
Feevah	4.8	4.8	4.8	4.8
Bilehffahi	5.3	5.3	5.3	5.2
Foakaidhoo	5.7	5.7	5.8	5.8
Narudhoo	5.3	5.3	5.4	5.4
Maakandoodhoo	4.1	4.1	4.1	4.1
Maroshi	4.1	4.2	4.2	4.2
Lhaimagu	4.8	4.7	4.8	4.7

Contd.

Statistical Annex - Overall , Contd.

ATOLLS	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale
Firubaidhoo	4.4	4.4	4.5	4.4
Komandoo	4.0	4.0	3.9	3.9
Maagoodhoo	4.4	4.4	4.5	4.5
Funadhoo	2.5	2.5	2.5	2.5
NOONU ATOLL	4.7	4.7	4.7	4.7
Hebadhoo	4.9	4.8	5.0	5.0
Kedhikolhudhoo	4.0	4.0	3.9	4.0
Maalhendhoo	6.1	6.0	6.1	6.0
Kudafari	5.5	5.4	5.4	5.3
Landhoo	4.9	4.8	4.9	4.8
Maafaru	3.9	3.9	3.8	3.8
Lhohi	5.7	5.7	5.7	5.7
Miladhoo	6.1	6.1	6.1	6.1
Magoodhoo	5.2	5.2	5.4	5.3
Manadhoo	3.3	3.3	3.3	3.3
Holhudhoo	3.6	3.7	3.6	3.7
Fodhdhoo	5.4	5.4	5.4	5.4
Velidhoo	3.0	3.1	3.1	3.1
RAA ATOLL	4.3	4.3	4.3	4.3
Alifushi	3.3	3.2	3.3	3.2
Vaadhoo	5.2	5.1	5.2	5.2
Rasgetheemu	4.1	4.1	4.2	4.2
Agolhitheemu	4.4	4.4	4.5	4.5
Hulhudhuffaaruu	3.7	3.6	3.7	3.6
Ugoofaaruu	3.9	3.8	3.9	3.8
Kadhohudhoo	4.2	4.2	4.1	4.0
Maakurathu	5.3	5.2	5.4	5.3
Rasmaadhoo	5.2	5.2	5.3	5.2
Innamaadhoo	5.0	5.0	5.0	5.0
Maduvvari	4.9	4.9	5.0	4.9
Iguraidhoo	4.4	4.4	4.4	4.4
Fainu	5.8	5.7	5.8	5.7
Meedhoo	2.6	2.6	2.6	2.6
Kinolhas	5.5	5.4	5.6	5.5
BAA ATOLL	4.5	4.5	4.5	4.5
Kudarikilu	4.0	4.0	4.1	4.1
Kamadhoo	4.2	4.2	4.3	4.2
Kendhoo	4.9	4.9	4.9	4.9
Kihaadhoo	5.7	5.6	5.7	5.7
Dhonfanu	5.5	5.4	5.6	5.5
Dharavandhoo	3.9	3.9	4.0	4.0
Maalhos	4.5	4.5	4.6	4.6
Eydhafushi	2.6	2.6	2.6	2.5
Thulhaadhoo	3.4	3.4	3.4	3.3
Hithaadhoo	5.4	5.4	5.4	5.4
Fulhadhoo	6.6	6.5	6.6	6.5
Fehendhoo	5.8	5.8	5.9	5.9
Goidhoo	6.2	6.1	6.2	6.1
LHAVIYANI ATOLL	4.4	4.4	4.4	4.3
Hinnavaruu	4.3	4.2	4.2	4.2
Naifaru	3.8	3.8	3.8	3.7

Statistical Annex - Overall , Contd.

	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale
ATOLLS				
Kurendhoo	5.1	5.1	5.2	5.1
Olhuvelifushi	5.8	5.8	5.8	5.7
Maafilaafushi	2.0	2.1	2.0	2.0
KAAFU ATOLL	3.9	3.9	3.9	3.9
Kaashidhoo	1.8	1.7	1.8	1.7
Gaafaru	4.1	4.1	4.1	4.1
Dhiffushi	3.2	3.2	3.2	3.1
Thulusdhoo	2.6	2.6	2.6	2.6
Huraa	2.5	2.6	2.5	2.5
Himmafushi	3.4	3.4	3.4	3.4
Gulhi	3.5	3.5	3.5	3.4
Maafushi	5.0	5.0	5.0	5.0
Guraidhoo	2.8	2.8	2.7	2.7
ALIF UTHURU BURI	4.0	4.0	4.0	4.0
Thoddoo	3.1	3.2	3.2	3.2
Rasdoo	2.7	2.6	2.7	2.6
Ukulhas	3.4	3.5	3.4	3.4
Mathiveri	4.3	4.3	4.2	4.2
Bodufolhudhoo	4.4	4.5	4.4	4.4
Feridhoo	4.4	4.4	4.4	4.4
Maalhos	3.5	3.5	3.4	3.5
Himandhoo	4.0	4.1	4.0	4.0
ALIF DHEKUNU BURI	3.9	3.9	3.9	3.8
Hangnameedhoo	3.3	3.3	3.3	3.3
Omadhoo	4.2	4.2	4.2	4.1
Kuburudhoo	4.6	4.7	4.7	4.6
Mahibadhoo	2.7	2.7	2.6	2.6
Mandhoo	4.8	4.8	4.8	4.8
Dhagethi	1.7	1.7	1.6	1.6
Dhigurah	3.4	3.5	3.4	3.4
Fenfushi	4.8	4.8	4.9	4.8
Dhidhdhoo	5.0	5.0	5.0	5.0
Maamigili	4.1	4.1	4.1	4.1
VAAVU ATOLL	4.2	4.2	4.2	4.2
Fulidhoo	3.3	3.2	3.3	3.2
Thinadhoo	5.8	5.8	5.9	5.8
Felidhoo	3.4	3.3	3.4	3.3
Keyodhoo	4.5	4.5	4.4	4.4
Rakeedhoo	4.0	4.2	4.0	4.1
MEEMU ATOLL	4.7	4.7	4.7	4.7
Raimandhoo	5.1	5.0	5.1	5.0
Madifushi	5.1	5.0	5.1	5.0
Veyvah	6.1	6.0	6.1	6.0
Mulah	3.5	3.5	3.5	3.4
Muli	2.6	2.5	2.6	2.5
Naalaafushi	5.3	5.3	5.4	5.3
Kolhufushi	5.6	5.5	5.6	5.5
Dhiggaru	5.8	5.7	5.8	5.7
Maduvvari	4.6	4.5	4.5	4.4
FAAFU ATOLL	4.8	4.8	4.9	4.8
Feeali	4.9	4.9	4.9	4.8

Contd.

Statistical Annex - Overall , Contd.

	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale
ATOLLS				
Biledhdhoo	5.1	5.2	5.3	5.3
Magoodhoo	3.0	2.9	3.0	2.9
Dharaboodhoo	5.1	5.0	5.1	5.0
Nilandhoo	3.8	3.7	3.7	3.7
DHAAL ATOLL	4.5	4.5	4.5	4.4
Meedhoo	3.5	3.6	3.5	3.5
Badidhoo	6.0	5.9	6.0	5.9
Ribudhoo	5.0	4.9	4.9	4.9
Hulhudheli	5.1	5.1	5.1	5.0
Gemendhoo	5.7	5.6	5.7	5.6
Vaanee	3.6	3.6	3.6	3.6
Maaeoodhoo	4.3	4.2	4.3	4.1
Kudahuvadhoo	2.6	2.6	2.5	2.5
THAA ATOLL	4.7	4.6	4.7	4.6
Buruni	4.4	4.3	4.4	4.3
Vilufushi	4.5	4.4	4.6	4.5
Madifushi	6.0	5.8	6.1	6.0
Dhiyamigili	5.6	5.4	5.6	5.4
Guraidhoo	3.2	3.2	3.2	3.2
Kadoodhoo	4.7	4.6	4.6	4.6
Vandhoo	5.2	5.0	5.3	5.1
Hirilandhoo	4.4	4.3	4.4	4.3
Gaadhiffushi	5.4	5.3	5.6	5.5
Thimarafushi	4.2	4.2	4.3	4.3
Veymandoo	3.1	3.1	3.1	3.0
Kibidhoo	6.1	6.1	6.2	6.1
Omadhoo	5.6	5.5	5.6	5.5
LAAMU ATOLL	4.8	4.8	4.9	4.8
Isdhoo	4.0	4.0	4.2	4.1
Dhabidhoo	4.7	4.8	4.8	4.8
Maabaidhoo	4.7	4.6	4.7	4.6
Mundhoo	5.4	5.3	5.4	5.3
Kalhaidhoo	6.2	6.2	6.3	6.2
Gamu	3.8	3.7	3.8	3.8
Maavah	4.4	4.4	4.4	4.3
Fonadhoo	3.0	3.0	3.1	3.0
Gaadhoo	5.9	5.9	6.0	6.0
Maamendhoo	5.6	5.5	5.5	5.4
Hithadhoo	5.6	5.6	5.8	5.7
Kunahandhoo	7.4	7.3	7.5	7.5
GAAF ALIF ATOLL	5.0	5.0	5.1	5.0
Kolamaafushi	2.5	2.6	2.5	2.5
Viligili	3.6	3.6	3.6	3.5
Maamendhoo	4.5	4.5	4.5	4.5
Nilandhoo	6.3	6.3	6.5	6.4
Dhaandhoo	5.7	5.7	5.9	5.8
Dhevvadhoo	5.4	5.4	5.6	5.6
Kodey	6.3	6.3	6.4	6.3
Dhiyadhoo	5.4	5.5	5.6	5.6
Gemanafushi	4.7	4.7	4.8	4.7
Kanduhulhudhoo	6.6	6.6	6.7	6.7

Statistical Annex - Overall , Contd.

ATOLLS	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale	Female priorities Composite Human Vulnerability Index on a 0-10 scale	Male priorities Composite Human Vulnerability Index on a 0-10 scale
GAAF DHAAL ATOLL	4.7	4.7	4.8	4.7
Madeveli	5.3	5.3	5.4	5.3
Hoadedhdhoo	4.9	4.8	5.0	4.9
Nadallaa	7.6	7.5	7.6	7.5
Gadhdhoo	3.0	3.1	3.0	3.0
Rathafandhoo	4.9	4.9	5.0	5.0
Vaadhoo	6.2	6.2	6.4	6.3
Fiyoari	4.6	4.6	4.7	4.6
Maathodaa	5.3	5.2	5.5	5.4
Fares	7.0	7.0	7.2	7.1
Thinadhoo	2.7	2.7	2.7	2.7
GNAVIYANI ATOLL	3.4	3.5	3.4	3.4
Foammulah	3.4	3.5	3.4	3.4
SEENU ATOLL	3.2	3.1	3.1	3.1
Meedhoo	1.6	1.6	1.5	1.4
Hithadhoo	2.4	2.4	2.3	2.3
Maradhoo	2.6	2.5	2.6	2.5
Feydhoo	3.5	3.5	3.5	3.4
Maradhoo-Feydhoo	3.1	3.0	3.0	2.9
Hulhudhoo	3.1	3.2	3.0	3.0

Attachment

CD-ROM User Guide

1. Getting started

The purpose of the application is to display a selection of the outcomes of the Maldives Vulnerability and Poverty Assessment 1998. The user can decide which part of the outcomes are to be displayed by selecting islands and/or atolls and living conditions. The data displayed can be exported to a MS-Excel format file.

1.1 To install

Place the CD in the CD-ROM drive. The setup-program will start automatically. If AutoPlay is turned off or if you want to create an icon and Program Group, insert the CD and choose Run under the Start menu. Type D:\setup.exe (where D is the designation of your CD-ROM drive) and click OK. Follow the instructions that appear on your screen.

1.2 Starting and quitting

To start the application, choose Programs under the



Start menu and click Maldives. To quit the application, click the  Close button in the upper-right corner of the Main form, or choose Exit from the File menu in the Main form.

2. Using the application

The Title screen (About Form) appears when you start the Maldives-application. This form displays the name of the application, a version number and a welcoming text of the participating organisations. This form will disappear automatically after 5 seconds. To close the form manually, click the  Close button in the upper-right corner of the form.

2.1 Main form

The Main form appears automatically when the Title screen is closed. The Main form is the central part of the application. The form contains the following objects:

- map, presenting the Maldives;
- menu: File, Edit and About;
- toolbar: buttons for Zoom-in, Zoom-out, Shift and Show data;
- selection windows that list selected islands, selected atolls and selected living conditions; and
- clear buttons.

2.1.1 How to use the map

The map presents the Maldives and can be used to select islands and atolls. See below for further information on how to select and deselect islands and atolls. Initially all of the Maldives are shown.

You can zoom on one particular part of the Maldives by clicking on . While this button is pushed, you can click the left mouse button somewhere on the map. Hold the button and track the mouse to select a rectangle part of the visible map. The view will zoom

in on the selected rectangle when releasing the mouse button.

You can zoom out by clicking on . While this button is pushed, you can click the left mouse button somewhere on the map. The view will zoom out centred around the clicked spot, when releasing the mouse button.

You can pan the visible part of the map without zooming, by clicking on . While this button is pushed, you can click the left mouse button somewhere on the map. The map will shift with the moving of the mouse as long as you hold the mouse button.

The map can always be viewed in full extent by clicking on .

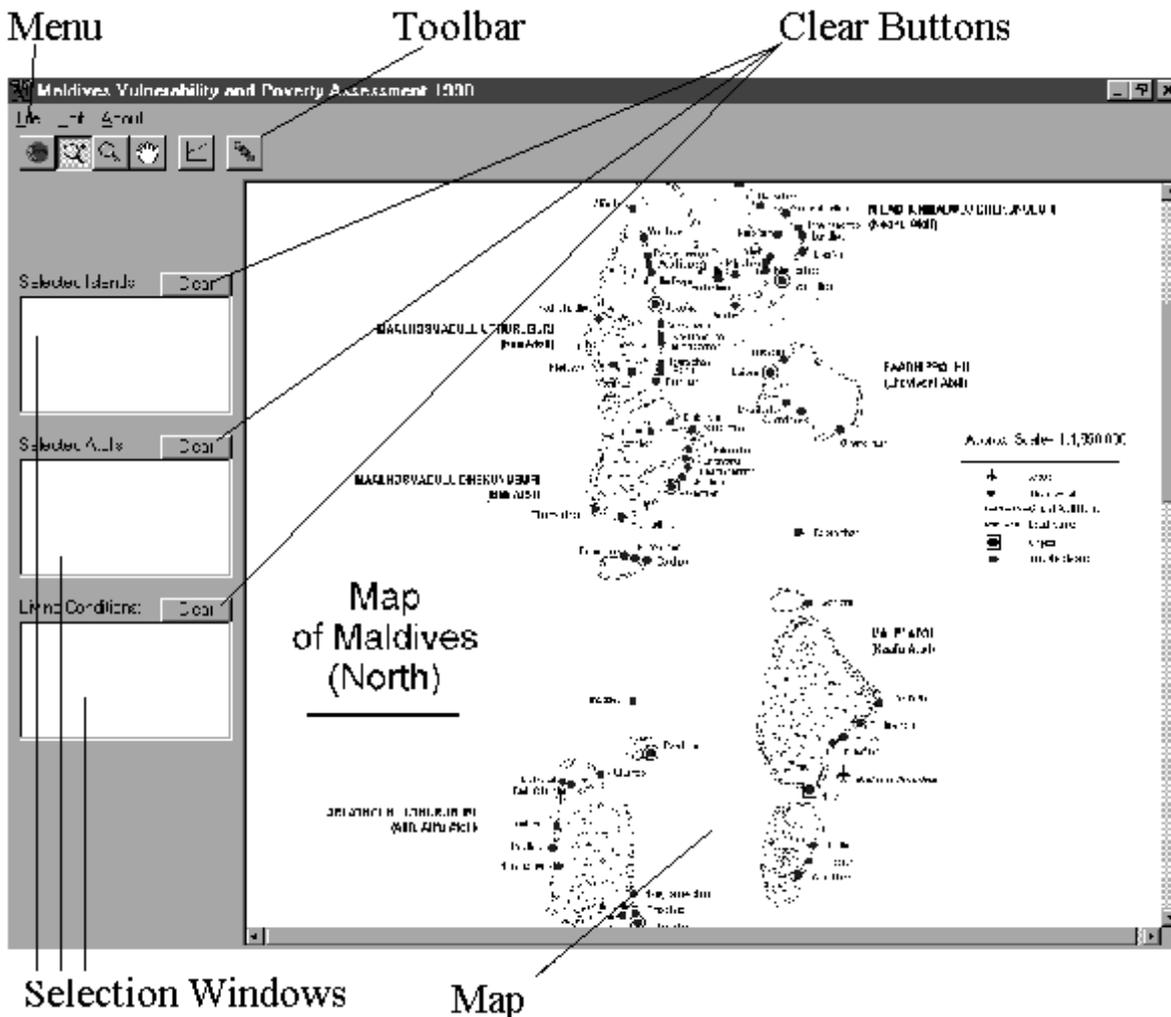
2.1.2 How to select islands

Selected islands are listed at the left of the main form. Islands can be selected and deselected in two ways:

1. Pass your mouse cursor over the coloured dots on the map which represent the inhabited islands. The name of the island (together with its population size) appears when the mouse cursor is over the island. While the name is displayed the island can be selected or deselected by clicking the right mouse button.
2. Click Selection on the Edit menu-item and choose Islands or use the shortcut key CTRL+i to open the select form for islands. See below for a further description of how to use this form.

2.1.3 How to select atolls

Selected atolls are listed at the left of the main form.

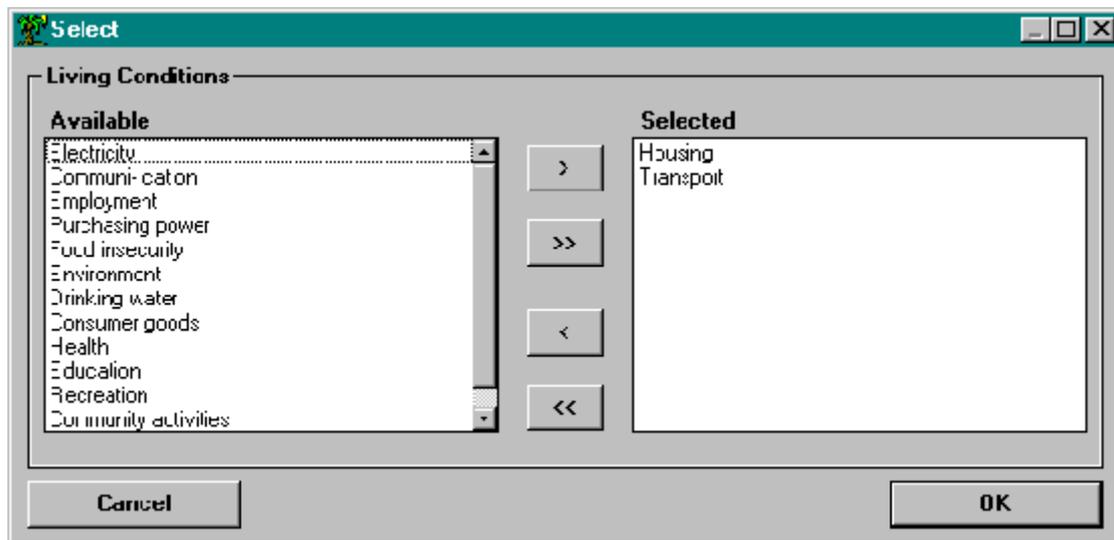


Atolls can be selected and deselected in two ways:

1. Pass your mouse cursor over the atoll names (written in capitals) on the map. The name of the atoll appears when the mouse-pointer is over the atoll-name. While the name is displayed the atoll can be selected or deselected by clicking the right mouse button.
2. Click Selection on the Edit menu-item and choose Atolls or use the shortcut key CTRL+a to open the select form for atolls. See below for a further description of how to use this form.

2.1.6 How to show data

Once selections of islands and/or atolls as well as living conditions are made, you can click on  to open a new form with the data belonging to the selections. At least one island or atoll and at least one living condition must be selected.

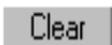


2.1.4 How to select living conditions

Selected living conditions are listed at the left of the main form. Living conditions can be selected and deselected only by using the select form.

Click Selection on the Edit menu-item and choose Living Conditions or use the shortcut key CTRL+C to open the select form for living conditions. See below for a further description of how to use this form.

2.1.5 How to clear selections

Selections of islands, atolls or living conditions can be cleared separately by clicking on  at top right of the selection window. You can clear all selections at once by clicking on  in the toolbar.

2.2 Select Form

There are three similar select forms. The first one is to define your selection of islands, the second one to define your selection of atolls and the last one to define your selection of living conditions. Only one selection form can be opened at the same time.

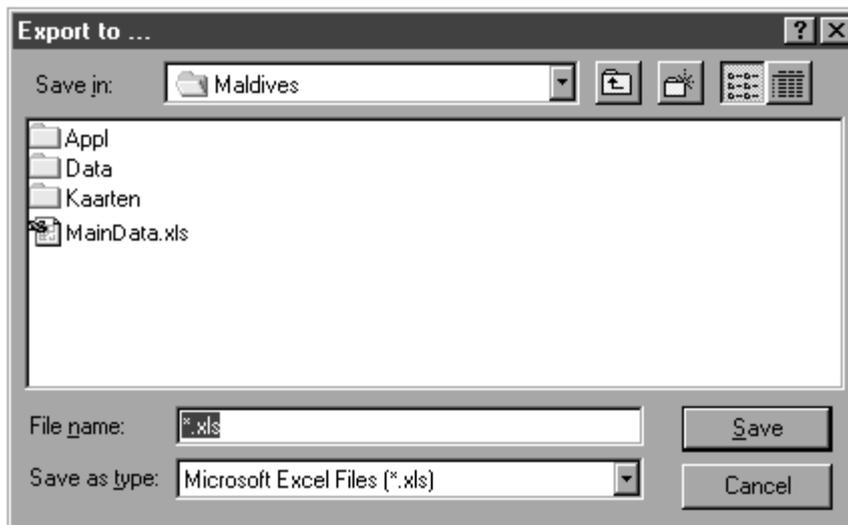
When you open the form, the already selected items are displayed in the right-hand list and the other items available are displayed in the left-hand list. You can exchange items between the two lists by using the four buttons in the middle or by double-clicking on one item. To switch one item at a time, use the > or < button or double-click on the item. To exchange all items from the list use the >> or << button. By clicking on the OK-button the new selection will be confirmed. By clicking on the Cancel-button the initial selection will be restored. In both cases the form is closed.

2.3 Result form

This form contains a table showing the selected part of the outcomes of the assessment. The selection is based on the selected islands, atolls and living conditions in the main form. One row is added for each

selected island. When an atoll is selected, one row is added for each island belonging to that atoll. Also, one row is added representing the totals for the atoll. The upper three rows, representing the totals for all Maldives, the island Male' and the Atoll Average, are always added to the table. The columns repre-

Atoll	Island	Green	Forest	Grass	Housing	Housing	Housing	Housing	Housing	Housing
		population size	area in hectares	population density, population size per hectare	house with stretch wall	house with sand floor	fully square feet or less housing area	no compound	Urban Vulnerability Index	house with stretch wall and sand floor
	Maldives	250054			7	0	7	10	0.22	
	Male	84401	127	664	-	3	7	45	0.4	
	atoll average	188853			7	7	4	7	0.16	
Ree atoll	Ugirafooru	1084	58	19	-	0	1	0	0	
	Maafuathu	841	43	19	-	0	0	5	0.02	
EAATOLL	Total	8857			3	4	5	5	0.15	
	Kudafile	409	11	30	14	0	12	12	0.32	
	Femaluu	290	16	18	-	0	13	1	0.27	
	Fenuhu	391	11	36	-	0	3	1	0.09	
	Fhaaduu	280	26	11	12	11	13	1	0.35	
	Fhuulau	409	12	32	-	0	1	1	0	
	Fharavandhu	675	41	15	-	0	1	1	0	
	Mashho (Eaa Atoll)	407	22	0	-	0	0	0	0.0	
	Eedhaku	1942	22	07	-	0	0	0	0	
	Fhuvaadhoo	1702	5	360	-	10	7	41	0.17	
	Filhadhu	944	25	37	-	0	1	0	0.00	
	Filhadhu	223	22	7	32	14	1	0	0.36	
	Fharadhoo	172	21	8	25	6	13	0	0.4	
	Fharidhu (Eaa atoll)	571	114	4	-	0	1	0	0	



sent the indicators of all selected living conditions. The first three columns, representing population size, area and population density, are always added to the table.

To close the form, click the  Close button in the upper-right corner of the form.

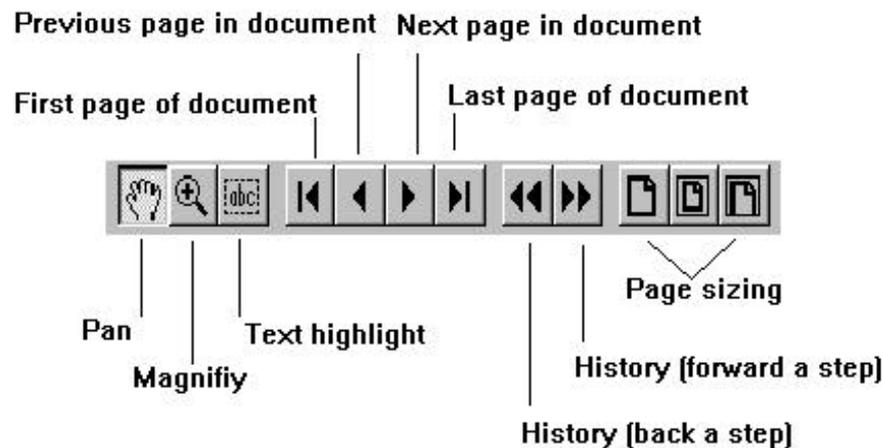
The data shown in the table can be exported to a MS-Excel format file by clicking on . A MS-Windows standard file selection form appears. You can either create a new file or overwrite an existing one. To create a new file you have to choose a directory and enter a name for the new file. To overwrite an existing file you have to select that file. In both cases you can store the new data by clicking on the Save-button.

The Vulnerability And Poverty Assessment 1998

On-line Edition Getting Started

The Acrobat Reader allows for Portable Document Format (PDF) files to be read.

The following is a basic description of the functions of the main controls of the Acrobat reader: -



Pan

Use this tool to move around your document.

Magnify

Use this tool to magnify (zoom in) an area of your document. (The default view is a whole page at a time. By using this tool you can enlarge a page and so read the text much easier).

Text highlight

Use this tool to select text for pasting to the system clipboard.

First page of document

This will display the first page of the document.

Next page of document

If one exists, this will display the next page in numeric order.

Previous page of document

If one exists, this will display the previous page in numeric order.

Last page of document

This will display the last page of the document.

History (back a step)

Acrobat keeps a history of every step you make in the document (including jumps to linked pages). This button allows you to move back a step.

History (forward a step)

This button allows you to move forward a step.

Page sizing

Use these buttons to adjust the size of your displayed page.

[Click here to return to the beginning of the report](#)

The Following Four Pages Contain the Basic Maps
Used Within This Report

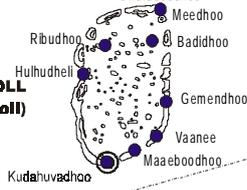
The First Set Of Maps Are Of The North And South Of
The Republic Of Maldives And Show
Atolls And Island Names

The Second Set Of Maps Are Of The North And South Of
The Republic Of Maldives And Show
Only Atolls And Atoll Capital Names

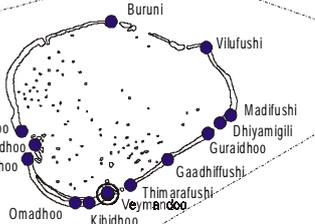
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(Faafu Atoll)**



**SOUTH NILANDHE ATOLL
(Dhaalu Atoll)**



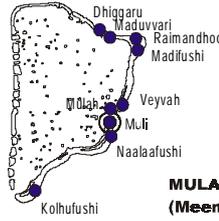
**KOLHUMADULU
(Thaa Atoll)**



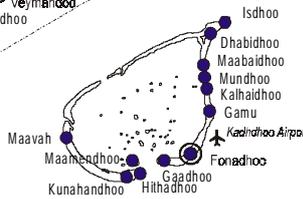
Map of The Republic of Maldives (South)

Atoll & Island Names

**MULAKATHOLHU ATOLL
(Meemu Atoll)**



**HADHDHUNMATHI
(Laamu Atoll)**

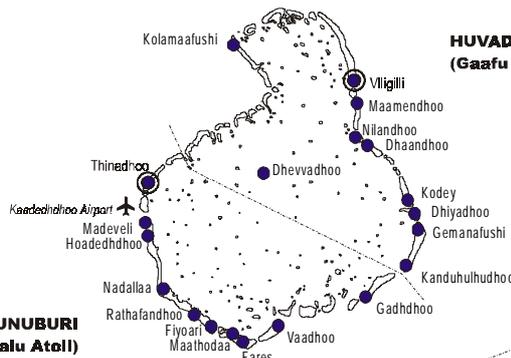


Approx. Scale= 1:1,650,000

Map
of Maldives
(South)

	Airport
	Atoll Capital
ADDU ATOLL	Official Atoll Name
(Seenu Atoll)	Local Name
	Inhabited island

**HUVADHU ATHOLHU UTHURUBURI
(Gaafu Alifu Atoll)**



**HUVADHU ATOLL DHEKUNUBURI
(Gaafu Dhaalu Atoll)**

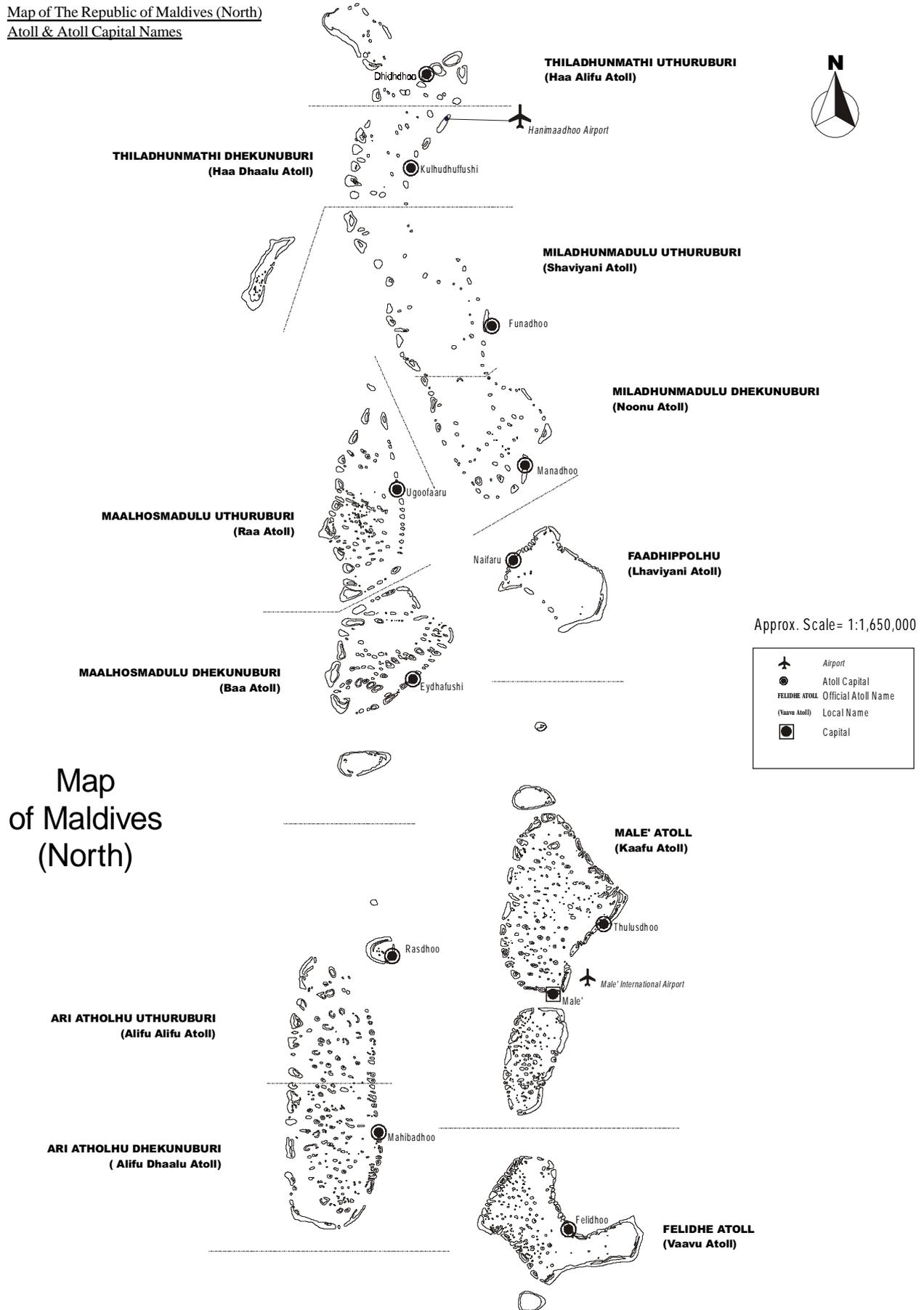
**FOAMULAKU ATOLL
(Gnaviyani Atoll)**



**ADDU ATOLL
(Seenu Atoll)**



Map of The Republic of Maldives (North)
Atoll & Atoll Capital Names



Map
of Maldives
(North)

NORTH NILANDHE ATOLL
(Faafu Atoll)



SOUTH NILANDHE ATOLL
(Dhaalu Atoll)

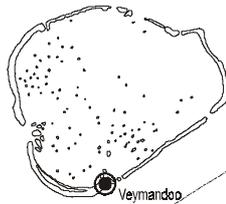


Map of The Republic of Maldives (South)
Atoll & Atoll Capital Names

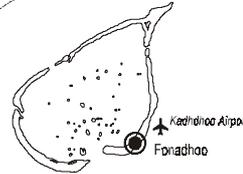
MULAKATHOLHU ATOLL
(Maaemu Atoll)



KOLHUMADULU
(Thaa Atoll)



HADHDHUNMATHI
(Laamu Atoll)

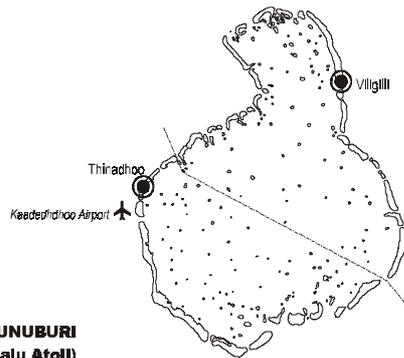


Map of Maldives (South)

Approx. Scale= 1:1,650,000

	Airport
	Atoll Capital
FELDHHE ATOLL	Official Atoll Name
(Vaaru Atoll)	Local Name
	Capital
	Inhabited island

HUVADHU ATOLL DHEKUNUBURI
(Gaafu Dhaalu Atoll)

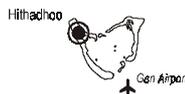


HUVADHU ATHOLHU UTHURUBURI
(Gaafu Aalfu Atoll)

FOAMULAKU ATOLL
(Gnaviyani Atoll)



ADDU ATOLL
(Seenu Atoll)



The Vulnerability And Poverty Assessment 1998

On-line Edition

Constructed by Deno Costi

For The

United Nations Development Programme

Malé, Republic of Maldives

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