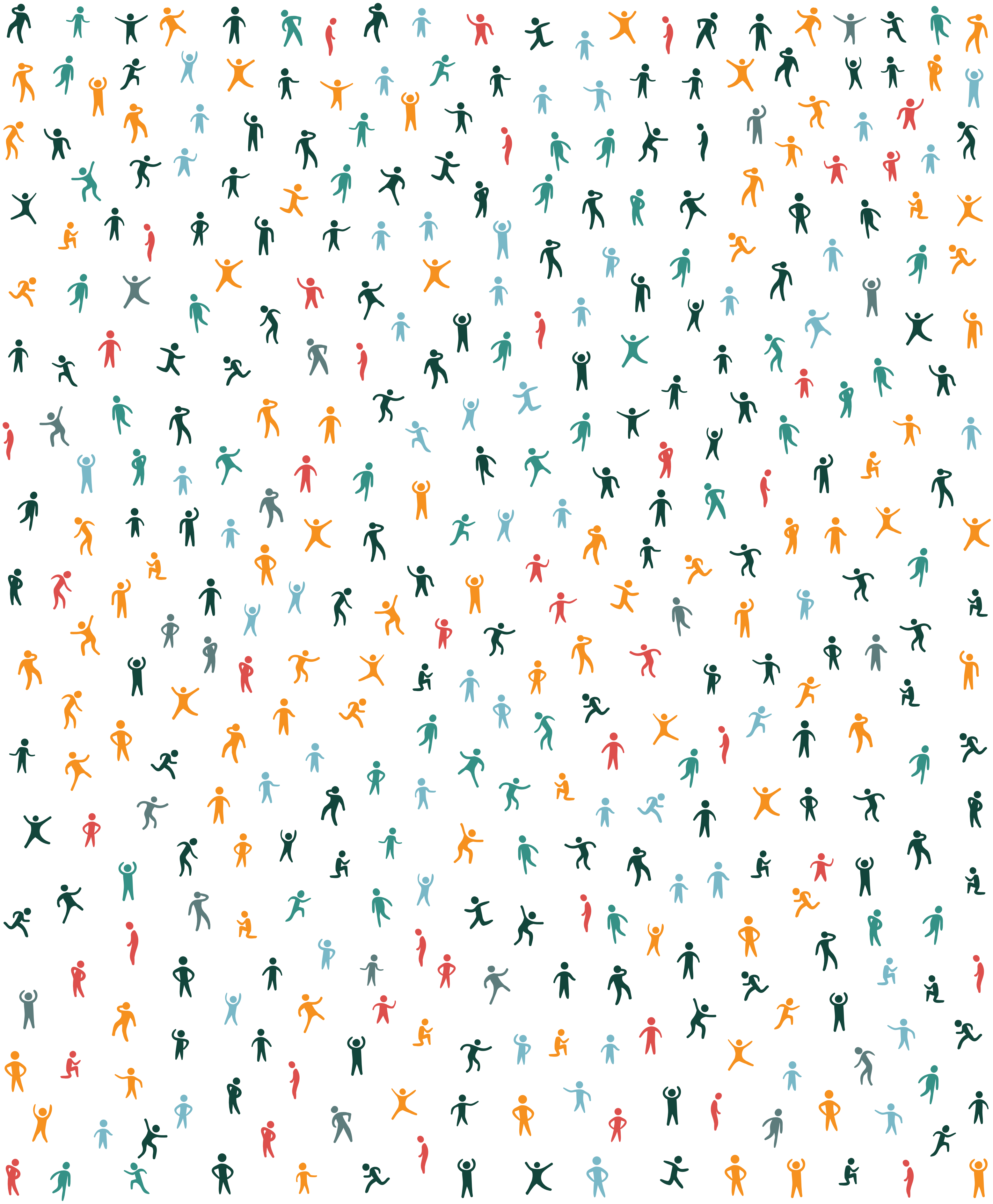

MALDIVES POPULATION PROJECTIONS 2014-2054

ASSUMPTIONS AND RESULTS ANALYSIS

UNFPA

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PREFACE

Population projections serve as a valuable evidence base for incorporating population and development issues into national planning strategies, in a comprehensive and holistic manner, support the formulation of targeted policies focused on different segments of the population. Furthermore, it is critical for monitoring the progress achieved and to work towards reducing the gaps faced by different population groups to reduce inequalities and attain sustainable development. In order to fulfil our pledge of the 2030 agenda to leave no one behind, we need demographic data on specific age groups in the population such as children, youth, working age persons and older persons.

These population projections provide data on the resident population, disaggregated by age, sex, locality and migratory status of the resident population covering a 40-year period spanning from 2014 to 2054. It is produced by 5-year age groups and sex at the level of Republic, Male' and the 20 Atolls separately. These projections are based on the 2014 Population and Housing Census of Maldives and assumptions on the future changes. Available administrative data and information on ongoing and planned development projects likely to have huge impacts on population composition, growth and distribution was factored in during the exercise. Extensive consultations were held with relevant stakeholders during the process. This paper provides a detailed overview of the methodology used, assumptions made and their underlying rationale and an analysis of the results. Similarly, some policy recommendations are also proposed.

The analysis of these projection draws out some salient features of socio-economic indicators. The projection shows that the fertility, mortality level in the country decreases giving a slow population growth overtime. By 2054, the country has a resident population close to one million (974,359 people) with 68 percent of the Resident Maldivian consisting of working age population.

The population dynamics of the country undergoes remarkable changes in future with a decreasing child population and with an ageing population. The composition of population between Male' and Atolls changes with more than 64 percent of the Resident Population being concentrated in Male'. These are crucial changes that provide an assessment of the Maldives population in future.

In order to ensure that these projections reflect the reality as time goes by it is necessary to update and improve these projections on a more frequent basis. While preparing these projection, critical data gaps regarding availability of administrative data, its coverage and quality were taken into account. Data on number of locals and foreigners residing in administrative islands, resorts and industrial islands will be needed to update the underlying assumptions.

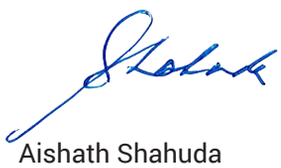
Considering that the population projections will depend on the reality of the underlying assumptions, and the planned updates of these projections on regular basis government will pay special attention while addressing the data gaps. A high priority is accorded by the current government to improve the statistics and data related to generate the SDG indicators.

Currently the National Bureau of Statistics is working on producing island level population projections for the period 2014-2054. Considering the geography of the Maldives, Island level population data is of critical importance to support local level planning and in addressing key population issues.

Population data at the level of Male' the capital and the Atolls for successive years, over a relatively long period of time constitute a valuable tool for policy making, program planning and service delivery provision, as well as to guide public and private investments. Population projections are an important contribution to strengthen the knowledge base for reviewing the effectiveness of existing policies to address population issues and better target and monitor the achievement of the goals set for the future. It is extremely important to utilize this information for the effective implementation of population consolidation policies, and other relevant socio-economic policies across all the relevant agencies of the Government.

I extend my appreciation to Professor John F. May for his invaluable time and guidance given to National Bureau of Statistics to complete this huge task. I also thank Mr. Andreas Demmke for his initial conceptual work on these projections. Special appreciation goes to UNFPA for providing financial and technical assistance for this projections process and for their continued support in population related activities in the country. The policy guidance, technical support and information provided by other government agencies and stakeholders to this process is duly noted and valued.

Finally, I offer my sincere gratitude and appreciation to the staff of National Bureau of Statistics for their dedication and successful completion of these population projections analysis and for preparing this publication.



Aishath Shahuda
Chief Statistician,
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FOREWORD

Advocating for using population data for national development processes has been always at the heart of the mandate of the United Nations Population Fund (UNFPA). When UNFPA was created in 1969, there was a common understanding that the world's population growth could threaten security, food supply, environment and development itself.

By the time of the International Conference on Population and Development (ICPD) in Cairo in 1994, the focus of population discussion shifted from a population control approach to a more holistic sustainable development approach. This led to the world to reaffirm the importance of fulfilling potential of young people, improving reproductive health outcomes, promoting gender equality and addressing migration issues towards our common future.

In today's world there is no arguing the relevance of population projections to plan for socio-economic development. According to the World Population Prospects 2017, the world is home to nearly 7.6 billion people. The world population is estimated to be 8.6 billion by 2030, 9.8 billion by 2050 and 11.2 billion by 2100.

As this report reveals, the scenario is no different in the Maldives where fertility and mortality rates are decreasing and at the same time population is ageing. By 2054 the population of this island nation will reach nearly 1 million (974,359), which is twice as much as today's total population (437,535). Furthermore, it is estimated that by 2054 more than 64 percent of the Maldivians will be living in the Greater Male' Area, where youth is already struggling with crowded spaces and to find affordable housing.

Population projections do matter because as we understand the demographic dynamics in the coming decades, policy measures and actions can be taken to ensure that the future generations will enjoy health care, education, employment opportunities and other social services. The projection can also help plan better for more sustainable consumption and natural resource management. All of these are in line with the Sustainable Development Goals (SDGs), and our efforts to leave no one behind.

UNFPA is working closely with the government of the Republic of the Maldives to help improve well-being of young people including their sexual and reproductive health; develop and implement gender equitable policies; maximize the potential of its demographic dividend; and manage internal and international migration.

I would like to express my gratitude towards the National Bureau of Statistics to be our key partner to bring forward critical population data and analysis for Maldives development. Special thanks also goes to our consultants Mr. Andreas Demmke and Professor John F. May, without whose tireless efforts to guide the population projection this publication would not have been possible.

Ritsu Nacken
UNFPA Country Director, Maldives

ACKNOWLEDGEMENTS

The National Bureau of Statistics provides population projections based on the most recent census. An appropriate process is required to produce population trends, estimates and projections of population size and structure by age and sex. Likewise, policy decisions from respective stakeholders were crucial to understand trends and preparing estimates. Thus, this population projections paper is based on 2014 census and it covers a 40-year period.

We extend our thanks and appreciation to the United Nations Population Fund (UNFPA) for their continuous support. We also would like to extent our heartfelt appreciation to Mr. Andreas Demmke for his initial conceptual work on this population projection. This was followed by the contribution given by Professor John F. May in the execution, analysis and leading the discussion concerning policy implications of the population projections. Hence, our sincere gratitude goes to Professor John F. May for his contribution and dedication while, formulating the assumptions and for bringing his expertise in projection processes.

On this note, we would like to express our appreciation to all staff working at the Demographic and Social Statistics Division at National Bureau of Statistics (NBS), who has tirelessly given their time in completing the task. The hard work and contributions from the staff of Demographic and Social Statistics Division is acknowledged as follows:

Assumptions and methodology-	Ms. Fathimath Riyaza Ms. Ikrisha Abdul Wahid Ms. Hudha Haleem Ms. Mariyam Mirfath
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Validation and rechecks-	Ms. Hudha Haleem Ms. Ikrisha Abdul Wahid
Projection analysis and report-	Ms. Fathimath Riyaza
Overall guidance and technical advice-	Ms. Aishath Shahuda

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Ministry of Finance and Treasury

EXECUTIVE SUMMARY

Population projections estimate the future size and composition of the population based on the assumptions with regard to fertility, mortality and migration. Both the size and composition of the population provides invaluable information in terms of assessing future trends on labour, education and socio-economic characteristics of the population.

The population projection was developed based on Maldives Population and Housing Census conducted in 2014. Based on the levels and trends of the components of population change, projection assumptions were made differently for Resident Maldivians and Foreigners. In the case of Maldivians, the projections assumed that fertility rate will decline from 2.45 children per woman to 1.9 children per woman. The life expectancy at birth is expected to increase from 73 years to 83 years for male and from 74 years to 83 years for female. The sex ratio at birth of 108 is expected to decrease throughout the projection period to a level of 105 boys for each 100 girls. As for internal migration, the net migration to urban areas is assumed to take place at a constant rate of 2,200 migrants annually. In case of international migration, it is assumed that for period 2014-2020, the Resident Foreign Population to grow at a rate of 10 percent per year. Thereafter, the growth rate is expected to slow down to 2.5 percent per year between 2021 and 2054. These different annual rates of growth take into account the ongoing and planned major infrastructure projects and expected migrant labour. Part A of this paper provides the methodology and assumptions used in producing the projections.

This report presents in detail, in Part B, the main results of the projections and introduces important policy implications. The Maldives population is expected to reach one million (974,359) by 2054.This includes 78 percent of Maldivians and 22 percent of Foreigners.

The Resident Population growth rate slows down over the projection period, from 4 percent to 1.52 percent by 2054. The Resident Population consist of a huge working age population throughout the projection period mainly due to the bulk of foreign population of working ages residing in the country for employment purposes. These migrant workers are assumed to be of temporary nature.

The Resident Maldivian Population ages steadily and substantially over the projection period. With a current growth rate of 1.65 percent and due to low fertility, the growth rate is expected to reach 0.90 percent by 2050.

The child population currently accounts for 28 percent and reduces to 18 percent by the end of the projection period. The working age population remained within the same proportion of 68 percent throughout the projection period.

The elderly population increased, leading to onset of population ageing in the country towards the end of the projection period. The ageing index (persons 65+ divided by persons aged 0-14 multiplied by 100) increased from 17 elderly persons to every 100 children in 2014 to 75 elderly persons to every 100 children by 2050. This was supplemented by the increase in median age from 17 to 37 years old showing that the population is said to be 'ageing'.

The most striking transformation expected over the projection period is the shift in the population between Male' and the Atolls. The Census 2014 showed that the majority of the population was living in the Atolls and 38 percent residing in Male'. Due to constant internal migration which takes place mostly in Male' and the low fertility rate, this trend changes and by 2054, with more than 64 percent of the Resident Maldivian is expected to live in Male'.

Such changes in population dynamics will bring demographic, social and economic changes, which calls for a shift on the current policy measures. This paper ends with a highlight on the policy implication of the population projections and provides specific policy recommendations.

TECHNICAL TERMS AND DEFINITIONS

Locality	Definitions
Resident Population	Population who have lived or intends to reside in Maldives for 1 year or more. This includes Resident Maldivian Population and Resident Foreign Population.
Resident Maldivian Population	Maldivian who have lived or intends to reside in Maldives for 1 year or more.
Resident Foreign Population	Foreigners who have lived or intends to reside in Maldives for 1 year or more.
Administrative Islands	The Administrative Islands in the 20 Administrative Atolls. Male' is an Administrative Island.
Non-Administrative Islands	Non-Administrative Islands include tourist resorts, industrial islands, and islands used for other purposes.
Greater Male' Area	Male' (Henveiru, Galolhu, Machangoalhi, Maafannu, VilliMale' and Hulhumale'), with Thilafushi, Gulheefalhu, and Hulhule'.
Population Projection	Estimates of total size and/or composition of a population in the future.
Cohort- component projection method	This procedure simulates population changes as a result of changes in the component of growth: fertility, mortality, and migration. The cohort- component method of projecting a population follows each cohort of people of the same age and sex throughout their life according to these components of growth.
Sex Ratio at Birth (SRB)	Number of boys born per 100 girls born in the population (boys divided by girls x 100).
Life Expectancy (LE)	Average number of years a person is expected to live at birth.

Locality	Definitions
Total Fertility Rate (TFR)	The number of children a woman would have if she follows the age-specific fertility pattern of a given year throughout all her reproductive life.
Annual Growth Rate	The rate at which a population is increasing (or decreasing) in a given year due to natural increase and net migration, expressed as a percentage of the base population.
Population Pyramid	A population pyramid is a graphical display of a population's age and sex composition. Horizontal bars present the numbers or proportions of males and females in each age group. Females are displayed on the right. A population pyramid shows the population by single years of age or five-year age groups.
Child population	Children between 0-14 years.
Working Age Group	Population between the age 15-64 years.
Elderly population	Population 65+ years.
Demographic transition / Demographic shift	The transition or demographic shift from high crude birth and death rates to low crude birth and death rates as a country develops.
Work Force	Defined as working age group.
Population Ageing	A process in which the proportions of adults and elderly increase in a population, while the proportions of children and adolescents decrease. This process results in a rise in the median age of the population. Ageing occurs when fertility rates decline while life expectancy remains constant or improves at the older ages.
Median Age	Median age is the age that divides a population into two numerically equal groups - that is, half the people are younger than this age and half are older. It is a single index that summarizes the age distribution of a population.
Ageing Index	The ageing index is calculated as the number of persons 60 years old and over per hundred persons under age 15.
Demographic Dependency Ratio	The demographic dependency ratio is a measure showing the number of dependents, aged 0-14 years and over the age of 65, to the working age group 15 to 64 years.

Locality	Definitions
Child Dependency Ratio	The child dependency ratio is the ratio of the population aged 0-14 to the population aged 15-64, presented as the number of dependents per 100 persons of working age (15-64).
Old age Dependency Ratio	The old-age-dependency ratio is the ratio of the number of elderly people at an age when they are generally economically inactive (i.e. aged 65 and over), compared to the number of people of working age (i.e. 15-64 years old).
Migrant	The term migrant as any person who is moving or has moved across an international border or within a State away from his/her place of birth.
Method of Balancing Equation	A basic demographic formula used to estimate total population change between two points in time or to estimate any unknown component of population change, provided that the other components are known. The balancing equation includes all components of population change: births, immigration, emigration, in-migration, and out-migration.
First Demographic Dividend	Demographic dividend occurs when the proportion of working people in the total population is high because this indicates that more people have the potential to be productive and contribute to economic growth.
Demographic Transition	The historical shift of birth and death rates from high to low levels in a population. The decline of mortality usually precedes the decline in fertility, thus resulting in rapid population growth during the transition period.
Potential Support Ratio	The potential support ratio (PSR) is the number of people age 15–64 per one older person aged 65 or older. This ratio describes the burden placed on the working population (unemployment and children are not considered in this measure) by the non-working elderly population.

Key Indicators

Key indicators from Maldives Population Projection

Indicators		Year					
		2014	2020	2030	2040	2050	2054
Projection Indicators							
Resident Population							
Total Population	Resident Population	437,535	557,426	665,256	784,780	916,951	974,359
	Resident Maldivian	339,761	379,270	438,245	491,051	539,795	557,537
	Resident Foreigners	97,774	178,156	227,011	293,729	377,156	416,822
Annual Growth Rate	Resident Population	-	4.0	1.8	1.7	1.6	1.5
	Resident Maldivian	1.5	1.8	1.4	1.1	0.9	0.8
	Resident Foreigners	10.0	10.0	2.4	2.6	2.5	2.5
Share of Resident Population between Maldivian and Foreigner	Resident Maldivian	78	68	66	63	59	57
	Resident Foreigners	22	32	34	37	41	43
Resident Population by broad Age Group	Child Population (0-14)	95,342	109,939	111,154	104,155	105,413	105,305
	Working Age Population (15-64)	325,586	428,890	521,782	631,501	736,134	779,108
	Elderly Population (65+)	16,607	18,597	32,320	49,124	75,404	89,945
Resident Population by broad Age Group (%)	Child Population (0-14)	22	20	17	13	11	11
	Working Age Population (15-64)	74	77	78	80	80	80
	Elderly Population (65+)	4	3	5	6	8	9
Resident Population	Republic	437,535	557,426	667,304	784,780	916,951	974,359
	Male'	167,507	227,486	300,142	379,737	472,627	514,159
	Atolls (Administrative Islands)	220,180	248,017	261,764	269,443	269,863	267,238
	Atolls (Non-Administrative Islands)	49,848	81,924	105,398	135,600	174,460	192,962
Resident Foreigners							
Resident Foreign Population	Republic	97,774	178,156	228,757	293,729	377,156	416,822
	Male'	37,042	67,496	86,666	111,282	142,888	157,916
	Atolls (Administrative Islands)	24,515	44,669	57,356	73,646	94,563	104,509
	Atolls (Non-Administrative Islands)	36,217	65,992	84,735	108,802	139,704	143,241
Resident Foreigners by broad Age Group	Child Population (0-14)	1,545	2,815	3,615	4,642	5,960	6,587
	Working Age Population (15-64)	95,999	174,921	224,603	288,396	370,307	409,253
	Elderly Population (65+)	230	420	539	692	889	982
Resident Maldivian							
Resident Maldivian Population	Republic	339,761	379,270	438,547	491,051	539,795	557,537
	Male'	130,465	159,990	213,476	268,455	329,739	356,243
	Atolls (Administrative Islands)	195,665	203,348	204,408	195,797	175,300	162,729
	Atolls (Non-Administrative Islands)	13,631	15,932	20,663	26,799	34,756	38,565
Share of Resident Maldivian between Male' and Atolls	Male'	38	42	49	55	61	64
	Atolls	62	58	51	45	39	36
Resident Maldivian by broad Age Group	Child Population (0-14)	93,797	107,123	107,541	99,513	99,453	98,719
	Working Age Population (15-64)	229,587	253,969	299,224	343,105	365,826	369,855
	Elderly Population (65+)	16,377	18,178	31,782	48,432	74,516	88,963
Resident Maldivian by broad Age Group (%)	Child Population (0-14)	28	28	25	20	18	18
	Working Age Population (15-64)	68	67	68	70	68	66
	Elderly Population (65+)	5	5	7	10	14	16
Size of Work Force (Resident Maldivian)	Number	229,587	253,969	299,224	343,105	365,826	369,855
	Percent (out of total Resident Maldivian Population)	68	67	68	70	68	66
Education	Pre-School (0-4 yrs)	35,843	37,870	33,961	33,236	33,274	32,394
	Primary Age (5-14 yrs)	57,954	69,253	73,580	66,278	66,179	66,325
	Secondary/ Higher Secondary (15-19 yrs)	30,926	27,101	37,085	37,897	35,002	35,414
Education (in %)	Pre-School (0-4 yrs)	11	10	8	7	6	6
	Primary Age (5-14 yrs)	17	18	17	13	12	12
	Secondary/ Higher Secondary (15-19 yrs)	9	7	8	8	6	6
Women in reproductive age	Female Population (Resident Maldivian)	167,075	185,331	211,905	234,305	253,452	259,855
	Reproductive Age women (15-49 yrs)	98,160	102,903	113,979	113,856	114,811	117,769
	Women in reproductive age (%)	59	56	54	49	45	45
Dependency Ratio	Overall Dependency Ratio	48	49	47	43	48	51
	Child Dependency Ratio	41	42	36	29	27	27
	Old Dependency Ratio	7	7	11	14	20	24
Median Age	In Years	26	28	31	33	35	37
Ageing Index	Elderly persons per 100 Children	17	17	30	49	75	90

Part A:

Maldives population projections methodology and assumptions

1. Projection methodology

In order to inform on population and other socio-economic policies of Maldives, it is crucial to estimate the future population of the country. Population projections are needed not only at the national level but also, and more importantly, at the sub-national level.

The approach adopted to prepare sub-national population projections for Maldives is the cohort-component projection methodology. The same approach was used by the National Bureau of Statistics in 2006 and 2017. The United Nations Population Division (UNPD) also uses a cohort-component approach for their population projections[1].

The new projections for Maldives have been calculated using the DemProj, which belongs to the Spectrum platform of demographic models. DemProj, the population projection module of Spectrum, projects the population for an entire country or region by age and sex, based on assumptions about mortality, fertility, and migration. A full set of demographic indicators can then be displayed for up to 50 years into the future.

For the new projections, the step-by-step calculations started from the Atoll age-sex structure, to which were applied national "risks" of mortality and Atoll "risks" of fertility. Thereafter, migration rates were also applied to the Atoll populations in order to take into account migratory movements between the Atolls and the Greater Male' Area.

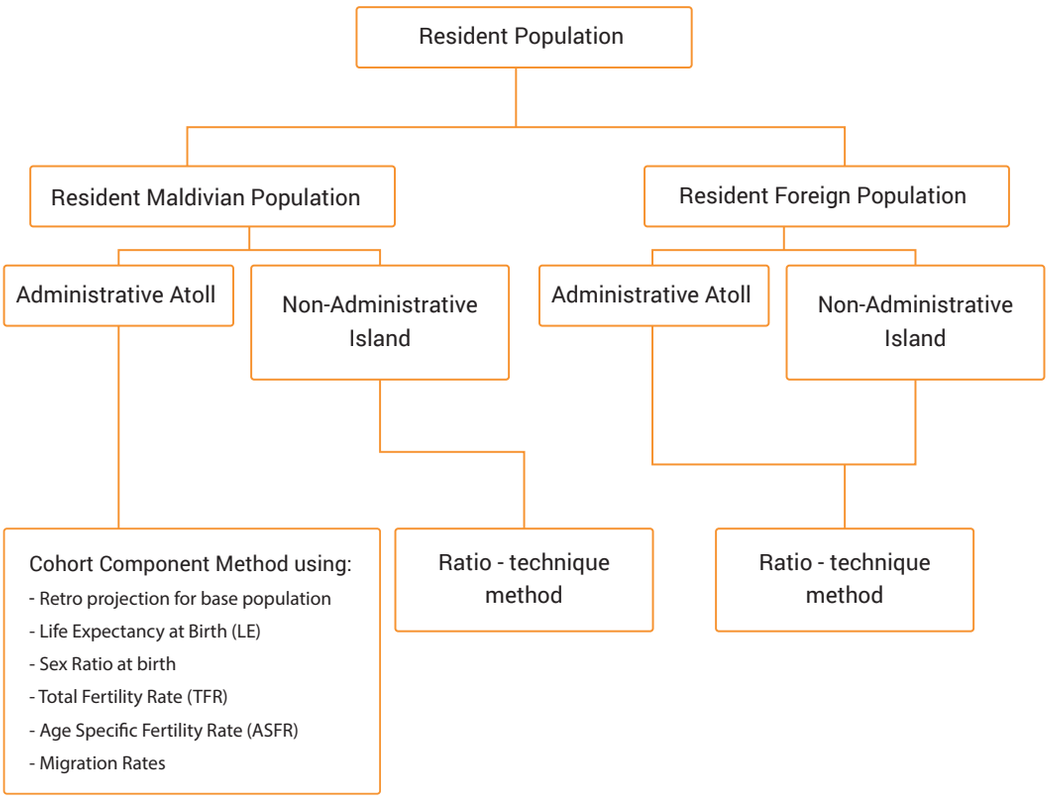
In the first step of the population projections, the population of the Resident Maldivians was calculated. It should be noted that the cohort-component method was applied to the Resident Maldivians living in Atolls whereas a ratio technique method (using percentages of population growth) was applied to the Resident Maldivians living in Non-Administrative Islands for each Atoll. Thereafter, the population of the Resident Maldivians in the Greater Male' Area was projected. Again, a ratio-technique method was used for Non-Administrative Islands. For Resident Foreigners, a ratio-technique was applied to foreigners living in Administrative and Non-Administrative Islands in each Atoll.

Table 1.1 Provides an overview of the population categories and the projection methodology used for each population category.

Table 1.1: Synopsis of population categories and projection methodology

Population categories	Projection Methodology
Population of Resident Maldivians in Administrative Islands	Cohort component
Population of Resident Maldivians in Male' (excluding Greater Male' Area)	Cohort component
Population of Resident Maldivians in Greater Male' Area	Ratio technique
Population of Resident Foreigners	Ratio technique
Population of Non-Administrative Islands	Ratio technique

[1] The UNPD issued their 2017 World Population Prospects in June 2017.



Base population and assumptions used (cohort component method)		Year	
		2014	2054
Base Population	Resident Population	437,535	-
	Resident Maldivian	339,761	-
	Resident Foreigners	97,774	-
Sex Ratio at Birth (SRB) for Resident Maldivian	Republic	108	105
	Male'	107	105
	Atolls	109	105
Life Expectancy at Birth (LE) for Resident Maldivian	Male	73.1	83.3
	Female	74.8	83.6
Total Fertility Rate (TFR) for Resident Maldivian	Republic	2.46	1.9
	Male'	2.05	1.8
	Atolls	2.80	2.1

Once sub-national projections had been obtained for all these groups, the results were added up in order to obtain national population projections for the Republic of Maldives. This methodology is called the bottom-up approach. This approach is more robust and reliable than the top-down methodology, in which national population projections are disaggregated (using mathematical models) to obtain sub-national projections.

Hence, the population projections were calculated for the 20 Atolls taking also into consideration the Administrative and the Non-Administrative Islands within each Atoll. For Male', the projections were done to reflect the Greater Male' Area, which includes the following wards and islands:

- Male', six wards, namely Henveiru, Galolhu, Machangoalhi, Maafannu, Villi-Male' and Hulhumale';
- Hulhule;
- Thilafushi; and
- Gulheefalhu

2. Calculation of assumptions by population categories

2.1 Population of Resident Maldivian Population in Administrative Islands

2.1.1 Base population for Resident Maldivian Population

The 2014 Population and Housing Census (2014 Census, as referred hereafter) was the base population used for the projections. The projections were done for the Resident Maldivian Population of the Atolls (Administrative Islands) and for the Non-Administrative Islands.

The reference period of the 2014 Census was September 19, 2014 at midnight. These populations were retro-projected from September 19 until June 30, 2014 at midnight, using the exponential formula $Pt = P0\ e^{rt}$, where t equals 81/365 and r is the annual rate of growth for each Atoll. A negative annual rate of growth was applied to retro-project the population. This was done to derive the mid-year population.

2.1.2 Sex Ratio at Birth (SRB) for Resident Maldivians

This is the number of boys born for each 100 girls. The 2014 Census provides the sex ratio at birth for each of the 20 Atolls or Administrative Islands, for Male', and for the Republic of Maldives (see Table 1.2).

Table 1.2: Sex Ratio at Birth (SRB) for Maldives, Male' and 20 Atolls

Locality	Population (0 year)			SRB
	Total	Male	Female	
Republic	**7,053**	**3,664**	**3,389**	**108**
Male' (Excludes Greater Male' Area)	**2,531**	**1,307**	**1,224**	**107**
Atolls (Includes Administrative and Non-Administrative Islands)	**4,522**	**2,357**	**2,165**	**109**
Administrative Islands	**4,519**	**2,354**	**2,165**	**109**
North Thiladhunmathi (HA)	330	177	153	116
South Thiladhunmathi (HDh)	459	224	235	95
North Miladhunmadulu (Sh)	305	164	141	116
South Miladhunmadulu (N)	260	128	132	97
North Maalhosmadulu (R)	353	189	164	115
South Maalhosmadulu (B)	188	94	94	100
Faadhippolhu (Lh)	201	98	103	95
Male' Atoll (K)	269	146	123	119
North Ari Atoll (AA)	136	80	56	143
South Ari Atoll (ADh)	229	118	111	106
Felidhu Atoll (V)	31	19	12	158
Mulakatholhu (M)	103	46	57	81
North Nilandhe Atoll (F)	123	74	49	151
South Nilandhe Atoll (Dh)	115	49	66	74
Kolhumadulu (Th)	186	98	88	111
Hadhdhunmathi (L)	263	148	115	129
North Huvadhu Atoll (GA)	157	89	68	131
South Huvadhu Atoll (GDh)	257	127	130	98
Gnaviyani (Gn)	184	98	86	114
Addu City (S)	370	188	182	103

Source: Maldives Population and Housing Census 2014

As seen from Table 1.2, the sex ratio varies a lot across the 20 Atolls. Hence, it was decided to use the SRB calculated from the data of the 20 Atolls combined. The rationale for this decision was to avoid the statistical variations generated by small numbers.

The Census 2014 gives a SRB figure for the Atolls as 109 boys born for each 100 girls; the SRB for Male' was 107. These SRBs were assumed to decrease throughout the projection period to a level of 105 boys born for each 100 girls, which is the standard international figure for SRB. A linear interpolation was used to bring the SRB values from their initial levels to their final levels (see Table 1.3).

Table 1.3: Sex ratios used for the projection period, 2014-2054

Locality	SRB	
	2014	2054
Male' (Excludes Greater Male' Area)	107	105
North Thiladhunmathi (HA)	109	105
South Thiladhunmathi (HDh)	109	105
North Miladhunmadulu (Sh)	109	105
South Miladhunmadulu (N)	109	105
North Maalhosmadulu (R)	109	105
South Maalhosmadulu (B)	109	105
Faadhippolhu (Lh)	109	105
Male' Atoll (K)	109	105
North Ari Atoll (AA)	109	105
South Ari Atoll (ADh)	109	105
Felidhu Atoll (V)	109	105
Mulakatholhu (M)	109	105
North Nilandhe Atoll (F)	109	105
South Nilandhe Atoll (Dh)	109	105
Kolhumadulu (Th)	109	105
Hadhdhunmathi (L)	109	105
North Huvadhu Atoll (GA)	109	105
South Huvadhu Atoll (GDh)	109	105
Gnaviyani (Gn)	109	105
Addu (S)	109	105

Source: Maldives Population and Housing Census 2014

2.1.3 Life Expectancy at Birth (LE) for Resident Maldivian Population

The life expectancy at birth or LE was estimated in 2014 at 73.1 years for males and 74.8 years for females. It was projected that the life expectancy at birth would increase moderately during the projection period to reach 83.3 years for males and 83.6 years for females in 2054. A linear interpolation was used to bring the LE values from their initial observed levels to their final projected levels. These life expectancy values have been used uniformly across all the Atolls and Male'.

A model life-table was then selected in the DemProj model, namely the UN South Asia family. This model life-table appears to reflect more closely the empirical pattern of mortality for Maldives, as established in the 2006 Census analysis.

2.1.4 Total Fertility Rates (TFRs) for Resident Maldivian Population

The Total Fertility Rates (TFRs) derived from the Census 2014 were used for each Atoll or Administrative Islands as the base indicators. It is observed that the TFR varied across the country, with many of the Atolls having a TFR higher than the overall Republic figure (2.5 children per woman).

It was assumed that the TFR for all the Atolls will decrease during the projection period to the fertility replacement value of 2.1 children per woman (see Table 1.4). For Male', it was assumed that the TFR will decrease from 2.05 in 2014 to 1.8 in 2054. The decline in TFRs between the period 2014-2054 was done in DemProj through linear interpolation.

The rationale for these assumptions was that in principle the TFR in Male' will eventually be lower than the TFRs in the Atolls. In addition, the population of the Greater Male' Area will increase significantly during the population projection period. Then, the combination of TFRs in Urban areas and in Atolls will yield a total TFR of 1.9 for the Republic of Maldives in 2054.

Table 1.4: Total Fertility Rates (TFRs) for Maldives, Male' and the 20 Atolls

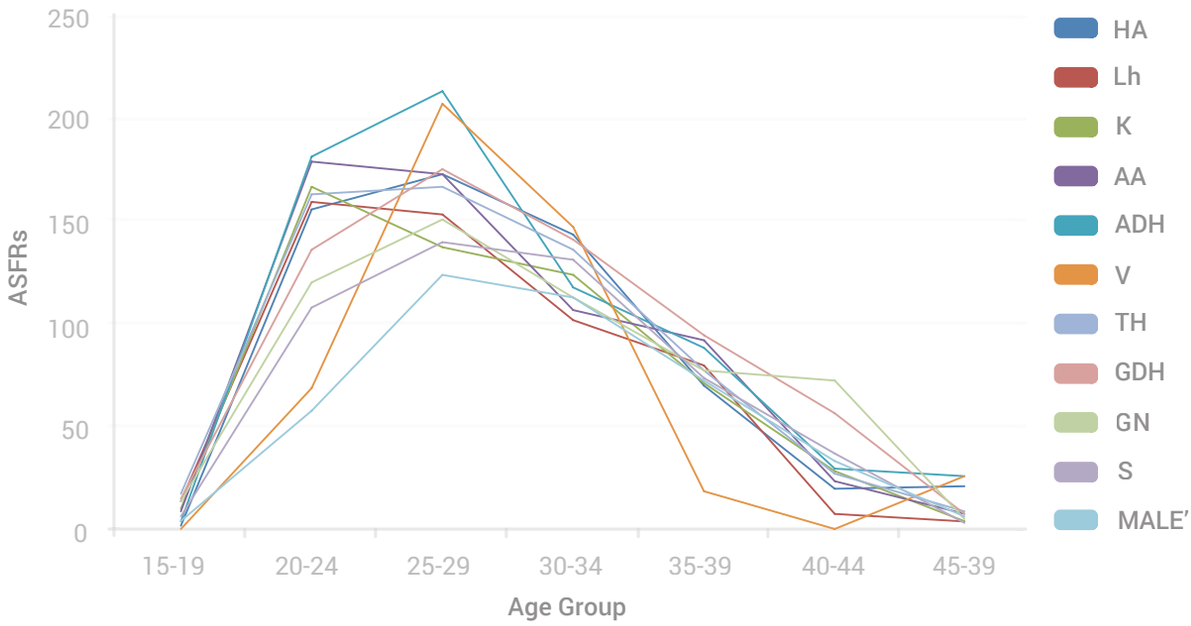
Locality	TFR	
	2014	2054
Republic	2.46	1.9
Male' (Excludes Greater Male' Area)	2.05	1.8
North Thiladhunmathi (HA)	2.91	2.1
South Thiladhunmathi (HDh)	2.91	2.1
North Miladhunmadulu (Sh)	2.66	2.1
South Miladhunmadulu (N)	2.83	2.1
North Maalhosmadulu (R)	2.93	2.1
South Maalhosmadulu (B)	2.45	2.1
Faadhippolhu (Lh)	2.59	2.1
Male' Atoll (K)	2.70	2.1
North Ari Atoll (AA)	2.94	2.1
South Ari Atoll (ADh)	3.30	2.1
Felidhu Atoll (V)	2.34	2.1
Mulakatholhu (M)	2.75	2.1
North Nilandhe Atoll (F)	3.88	2.1
South Nilandhe Atoll (Dh)	2.62	2.1
Kolhumadulu (Th)	2.97	2.1
Hadhdhunmathi (L)	2.67	2.1
North Huvadhu Atoll (GA)	2.80	2.1
South Huvadhu Atoll (GDh)	3.13	2.1
Gnaviyani (Gn)	2.76	2.1
Addu (S)	2.49	2.1

Source: Maldives Population and Housing Census 2014

2.1.5 Age-Specific Fertility Rates (ASFRs) for Resident Maldivian Population

The Age-Specific Fertility Rates (ASFRs) calculated from the 2014 Census were used as the base indicators in the projection for each Atoll or Administrative Island (see Figure 1.1 and Annex A Table 1). ASFRs for each Atoll were kept constant during the entire projection period. This was because not many variations were expected to result in the fertility schedule of the Maldives as the country reaches the end of its fertility transition.

Figure 1.1: Age-Specific Fertility Rates (ASFRs) for selected Atolls and Male', 2014 Census



Source: Maldives Population and Housing Census 2014

2.1.6 Internal Migration of Resident Maldivian Population

The analysis of the data from the 2006 Census and 2014 Census gives an estimate of 2,200 emigrants per year from the Atolls to Male' (using the method of the Balancing Equation, complemented with data from the Civil Registration System; (see Demmke, 2016, and Table 1.5 & Table 1.6)). Because the Atolls are losing 2,200 emigrants per year, the Greater Male' Area will gain 2,200 immigrants per year. According to the 2014 Census, a migrant (either immigrant or emigrant) is defined as a person who resides in a place other than his or her usual residence for one year or more.

Table 1.5: Vital Statistics Summary of population projections for the Maldivian Resident population, Male': 1 July 2014 – 1 July 2015

	Absolute Numbers			Annual Vital Rates		
	Males	Females	Total	Males	Females	Total
Births	1,438	1,331	2,769	0.022	0.020	0.021
Deaths	216	182	399	0.003	0.003	0.003
Migrants	1,100	1,100	2,200	0.017	0.017	0.017
Growth	2,322	2,249	4,570	0.036	0.034	0.035

Source: Demmke, 2016

Table 1.6: Vital Statistics Summary of population projections for Maldivian Resident population, Atolls: 1 July 2014 – 1 July 2015

	Absolute Numbers			Annual Vital Rates		
	Males	Females	Total	Males	Females	Total
Births	2,687	2,488	5,175	0.025	0.024	0.025
Deaths	588	403	991	0.005	0.004	0.005
Migrants	1,100	1,100	2,200	0.010	0.011	0.011
Growth	999	985	1,984	0.009	0.010	0.009

Source: Demmke, 2016

The next step was to estimate the *origin* of the immigrants in Male'. The 2014 Census (Table MG 10) provided a cross-tabulation of people by place of usual residence and place of previous residence. These data are available by sex (see Annex 2). Accordingly, numbers of emigrants were calculated per Atoll, assuming in addition that 49 percent of emigrants were males and 51 percent were females (see Table 1.7).

Table 1.7: Migrants to Male' by place of origin (place of previous residence), Census 2014

Place of usual residence	Place of previous residence					
	Male		Female		Both Sexes	
	Number	%(out of total Male migrants=79,431)	Number	%(out of total Female migrants=68,496)	Number	%(out of total migrants=147,927)
Male'	33,668	*42.4*	34,754	*50.7*	268,422	*46.3*
HA	2,218	*8.6*	2,228	*8.2*	4,446	*8.4*
HDh	1,935	*7.5*	1,903	*7.0*	3,838	*7.3*
Sh	1,360	*5.3*	1,136	*4.2*	2,496	*4.7*
N	1,301	*5.1*	1,394	*5.1*	2,695	*5.1*
R	1,800	*7.0*	1,896	*7.0*	3,696	*7.0*
B	1,376	*5.4*	1,560	*5.7*	2,936	*5.6*
Lh	1,250	*4.9*	1,311	*4.8*	2,561	*4.8*
K	1,060	*4.1*	907	*3.3*	1,967	*3.7*
AA	546	*2.1*	617	*2.3*	1,163	*2.2*
Adh	660	*2.6*	697	*2.6*	1,357	*2.6*
V	265	*1.0*	309	*1.1*	574	*1.1*
M	725	*2.8*	798	*2.9*	1,523	*2.9*
F	446	*1.7*	381	*1.4*	827	*1.6*
Dh	651	*2.5*	716	*2.6*	1,367	*2.6*
Th	1,895	*7.4*	1,912	*7.0*	3,807	*7.2*
L	1,244	*4.8*	1,301	*4.8*	2,545	*4.8*
GA	1,556	*6.1*	1,683	*6.2*	3,239	*6.1*
GDh	2,339	*9.1*	2,723	*10.0*	5,062	*9.6*
Gn	737	*2.9*	850	*3.1*	1,587	*3.0*
S	2,325	*9.1*	2,839	*10.5*	5,164	*9.8*

Source: Maldives Population and Housing Census 2014

This information was used to estimate the *age distribution* of internal migrants coming from the Atolls. A new table was generated from the 2014 Census information presented in Table MG 10, to obtain such an age distribution of migrants. The same age distribution of migrants was applied to all the Atolls. All these estimates of internal migrants, however, pertain to the year 2014, and therefore they had to be inflated over the population projection period.

The number of male and female migrants to Male' was inflated by an annual factor of 1.7 percent throughout the entire projection period. The annual factor of 1.7 percent was obtained by dividing the number of migrants to Male' by the Resident Maldivian Population of Male' in the 2014 Census (i.e., 129,381 people). Accordingly, the number of migrants from the Atolls was assumed to increase by a similar annual factor of 1.7 percent. Therefore, the number of migrants will remain consistent throughout the population projection period. Last but not least, the age distribution of migrants was assumed to remain constant throughout the population projection period.

The migration of Resident Foreigners will be discussed in *Section 2.2: Population of Resident Foreigners.*

2.1.7 Population of Resident Maldivian Population in Greater Male' Area

To project the Resident Maldivian Population in the Greater Male' Area, the six wards of Male' and the two Non-Administrative Islands (i.e., Thilafushi and Gulheefalhu), which also belong to the Greater Male' Area have been treated separately. For the population of the six wards of Male', a cohort-component projection methodology has been used for Resident Maldivian Population.

The methodology used for estimation of foreign population in the two Non-Administrative Islands of Gulheefalhu and Thilafushi, is described in the Section 2.2: *Population of Resident Foreigners* in this report.

For the calculation of the Resident Maldivian Population projections for the six wards of Male', the assumptions used are similar to those described in the Section 2.1 *Population of Resident Maldivians in Administrative Islands* in this report. For the *Base Population,* the 2014 Census base population was retro-projected to mid-year 2014. For the *Sex Ratio at Birth*, the figure of 107 boys per 100 girls was used. It was assumed that the sex ratio at birth would reach the value of 105 at the end of the projection span (values obtained by linear interpolation). For *Life Expectancy at Birth,* the estimated values in 2014 at 73.1 years for males and 74.8 years for females was used. It was projected that the life expectancy at birth would increase *moderately* during the projection period to reach 83.3 years for males and 83.6 years for females in 2054. These were the same values which were used as those described in the Section 2.1 *Population of Resident Maldivians in Administrative Islands* in this report. For the *Total Fertility Rate,* we referred to the TFR of 2.05 for 2014 assuming that the TFR would decrease to 1.8 children per woman by the end of the population projection (values obtained by linear interpolation). The fertility schedule as described in section 2.1.5 under the *Age-Specific Fertility Rates* has been applied.

Finally, for *Migration*, it was assumed that in 2014 the six wards of Male' would receive 2,200 immigrants coming from the Administrative Islands (annual estimate). An increase of immigrants will be observed every year, at the rate of 1.7 percent per year.

For the two Non-Administrative Islands of Gulheefalhu and Thilafushi, the ratio technique method was applied as described in the Section 2.1.8 *Resident Maldivian Population in Non-Administrative Islands* in this report.

2.1.8 Resident Maldivian Population in Non- Administrative Islands

The population of Non-Administrative Islands comprises the population of both the Resorts and the Industrial Islands. The 2014 Census yielded a total population of 36,624 in the Non-Administrative Islands. This figure includes both Resident Maldivians and Resident Foreigners. This section will focus on the Resident Maldivian residing in the Non-Administrative Islands.

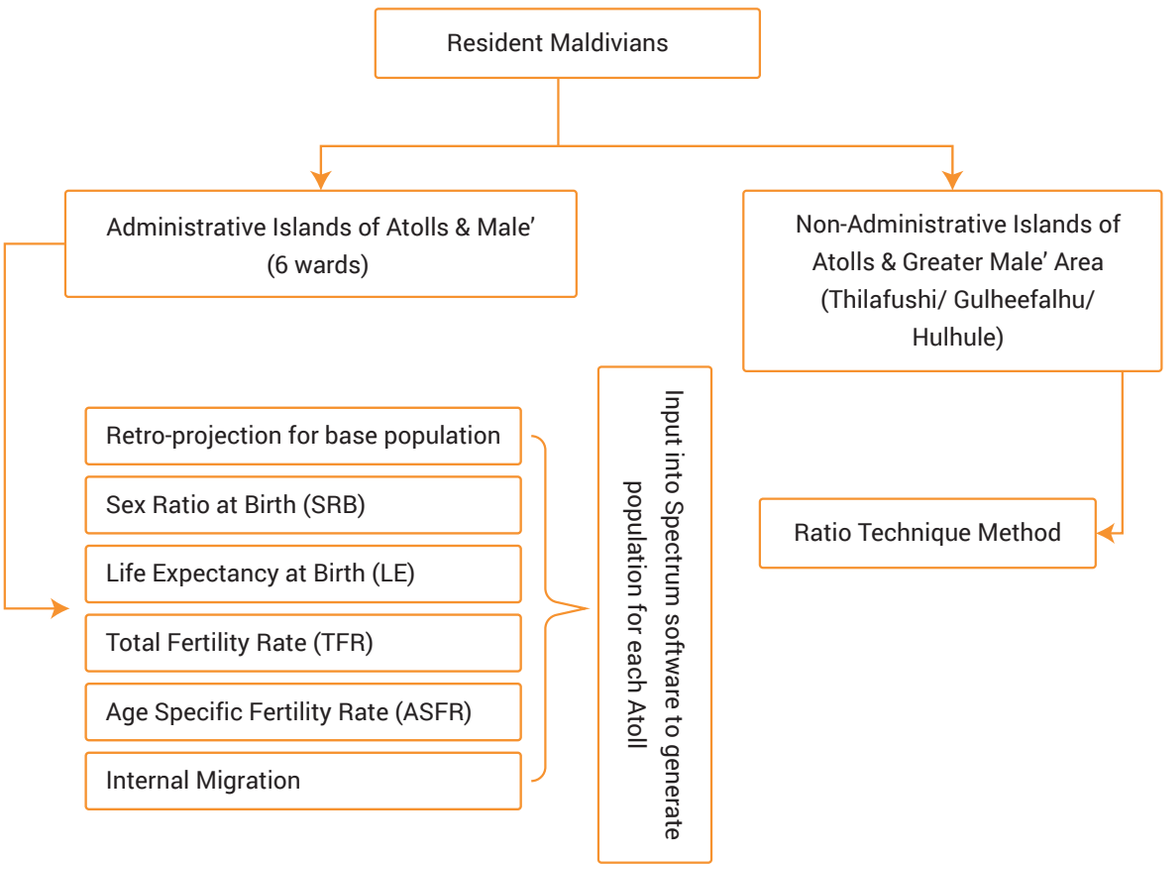
In order to project the Resident Maldivian Population residing in Non-Administrative Islands, a ratio technique method was applied. This was due to the lack of information on the demographic components for this sub-population. Because of this, we opted not to retro-project the Resident Maldivians in the Non-Administrative Islands. Hence, the 2014 Census figure of 13,631 was used as the mid-year population (including Thilafushi, Gulheefalhu and Hulhule).

Once the base population for Resident Maldivian Population has been determined, the annual growth rate of the Resident Maldivian Population in Non-Administrative Islands. The Census 2014 showed that the growth rate in the Non-Administrative Islands was of 2.6 percent (during the period 2006-2014). This annual rate of growth was used for the projection period 2014-2054.

Finally, the population of the Non-Administrative Islands has been redistributed among the 20 Administrative Atolls, using the 2014 Census distribution of the population in the Atolls.

To summarize the methodology used for projecting the Resident Maldivian Population, the diagram below gives a simplified flow of input data for getting the results.

Figure 1.2: Input data flow for projecting the Resident Maldivian Population



2.2 Population of Resident Foreigners

2.2.1 Base population for foreigners and adjustments for coverage

Data on Resident Foreigners was extracted from the 2014 Census, which captured 63,637 Resident Foreigners. However, this figure is assumed to have been under-enumerated during the 2014 Census. The challenge was therefore to try to inflate this group to obtain a figure that would be more realistic. To this end, information from the 2014 Census as well as information provided by the Ministry of Tourism and Maldives Immigration was used. The latter department provides each year data on Employment Approvals (EA) by sector of activities. Unfortunately, it is difficult to compare the EA data with the 2014 Census data. Nonetheless, the EA data indicated some sectors that were undercounted in the 2014 Census. A comparison of 2014 and 2015 EA data also showed that the construction sector had received a lot of foreign workers in 2015 as compared to 2014.

The data was then analyzed from the 2014 Census pertaining to the Resident Foreigners by industry (Annex 3: EC 6). The tourism sector data was further split between Short Stay Accommodation and Food Service Activities. The information from the Ministry of Tourism was then used to estimate the number of foreign workers in the Tourism industry.

This provided an idea of which sectors were under-enumerated in the 2014 Census. The number of foreigners in the Agricultural sector doubled while it was decided to multiply them by a factor of 12 in the sector of Electricity, Gas & Water Supply.
The Accommodation and Food Service sector in the 2014 Census was also split between Short Stay Accommodation (Hotels and Resorts, Safari vessels, and Guest Houses) and Food Service activity. To inflate the numbers of foreigners for this sector, the registered bed capacity in the Tourism sector from Statistical Yearbook 2016 was used (Annex A).

The number of beds was raised by a factor of 1.5, which indicates the number of staff per bed according to the Ministry of Tourism. Then, it was split between the number of staff, between Maldivians and Foreigners, applying a ratio of 35 percent and 65 percent, respectively (the Government's policy is to have a ratio of 45 percent and 55 percent, respectively, but this has not yet been achieved in Maldives). The information on the number of foreign staff engaged in the Tourism sector was obtained and this number was doubled for the figure given in Table EC 6 (Annex A).

A similar approach was used for the Construction workers, which was also based on the Table EC 6 of the 2014 Census. In this case, the number of workers in this sector doubled. The assumption to double the number of persons in this group was based on the 2015 EA data from Maldives Immigration and also on the number of ongoing and projected constructions in Maldives (Resorts development, Housing schemes, bridges, Airport extension, and constructions in Male' and Hulhumale').

These steps resulted in the base population of foreigners adjusted for coverage. These steps are summarised in Table 1.9 steps 1 to 5 for a better understanding and references.

As a final step, the adjusted Resident Foreigners were distributed by age and sex. In total, the estimated Resident Foreign Population derived was 97,774 for 2014 (instead of 63,637). This represents an inflation factor of 1.54. Since this is already an inflated population, it was decided not to retro-project this population to June 30, 2014.

For the period 2014-2020, the Resident Foreign Population was inflated by a factor of 10 percent per year. Thereafter, the Resident Foreigners was inflated by a factor of only 2.5 percent per year between 2021 and 2054. The reason for choosing these two different annual rates of growth was to take into account the important construction boom currently being observed in the Maldives and assuming that fewer foreign workers would arrive in Maldives after this period of heavy infrastructure development. To some extent, the rapid growth of Resident Foreigners assumed between 2014 and 2020 was supported by the Maldives Immigration data for 2014 and 2015.

2.2.2 Resident Foreign Population in Administrative and Non-Administrative Islands

As mentioned before, in order to project the population of the Non-Administrative Islands, the Resident Maldivians and Resident Foreigners were treated separately, and a ratio technique method was applied to each of these groups.

In order to obtain the total populations of the Atolls, the Resident Foreign Population was distributed across the 20 Atolls (see Table 1.8).

Table 1.8: Adjusted Resident Foreign Population by Locality for 2014

Locality	Adjusted Resident Foreign Population 2014		
	Both Sexes	Male	Female
Republic	**97,774**	**89,023**	**8,751**
Male' (excluding Greater Male' area)	**37,042**	**33,122**	**3,921**
Administrative Islands in Atolls	**24,515**	**22,141**	**2,373**
North Thiladhunmathi (HA)	1,100	938	162
South Thiladhunmathi (HDh)	1,558	1,374	184
North Miladhunmadulu (Sh)	806	657	148
South Miladhunmadulu (N)	1,130	991	139
North Maalhosmadulu (R)	1,430	1,203	226
South Maalhosmadulu (B)	1,106	996	110
Faadhippolhu (Lh)	727	654	72
Male' Atoll (K)	3,007	2,853	154
North Ari Atoll (AA)	859	742	117
South Ari Atoll (ADh)	1,467	1,385	81
Felidhu Atoll (V)	318	278	40
Mulakatholhu (M)	478	413	65
North Nilandhe Atoll (F)	367	306	60
South Nilandhe Atoll (Dh)	743	685	58
Kolhumadulu (Th)	1,149	1,018	130
Hadhdhunmathi (L)	1,362	1,259	103
North Huvadhu Atoll (GA)	1,369	1,262	107
South Huvadhu Atoll (GDh)	1,691	1,530	161
Gnaviyani (Gn)	814	755	59
Addu City (S)	3,037	2,840	196
Non-Administrative Islands	**36,217**	**33,760**	**2,457**

Source: Assumptions for Maldives Population Projections, 2014-2054

To estimate a realistic number of Resident Foreigners in the Non-Administrative Islands, the inflation factor was used to calculate the Resident Foreigners (see previous Section *Population of Resident Foreigners*). The inflation factor was 1.54 (i.e., 97,774 divided by 63,637). When applied to the 2014 Census figures, this inflation factor gave a total of 35,974 Resident Foreigners living in the Non-Administrative Islands in 2014. The same method for the annual rate of increase was applied to the Resident Foreigners, whereby an annual rate of increase of 10 percent was used for 2014-2021 and 2.5 percent from 2022 to 2054 (see previous Section *Population of Resident Foreigners*).

Finally, the population of the Non-Administrative Islands has been redistributed among the 20 Administrative Atolls, using the 2014 Census distribution.

To sum up, the Resident Foreign Population has been projected as follows:

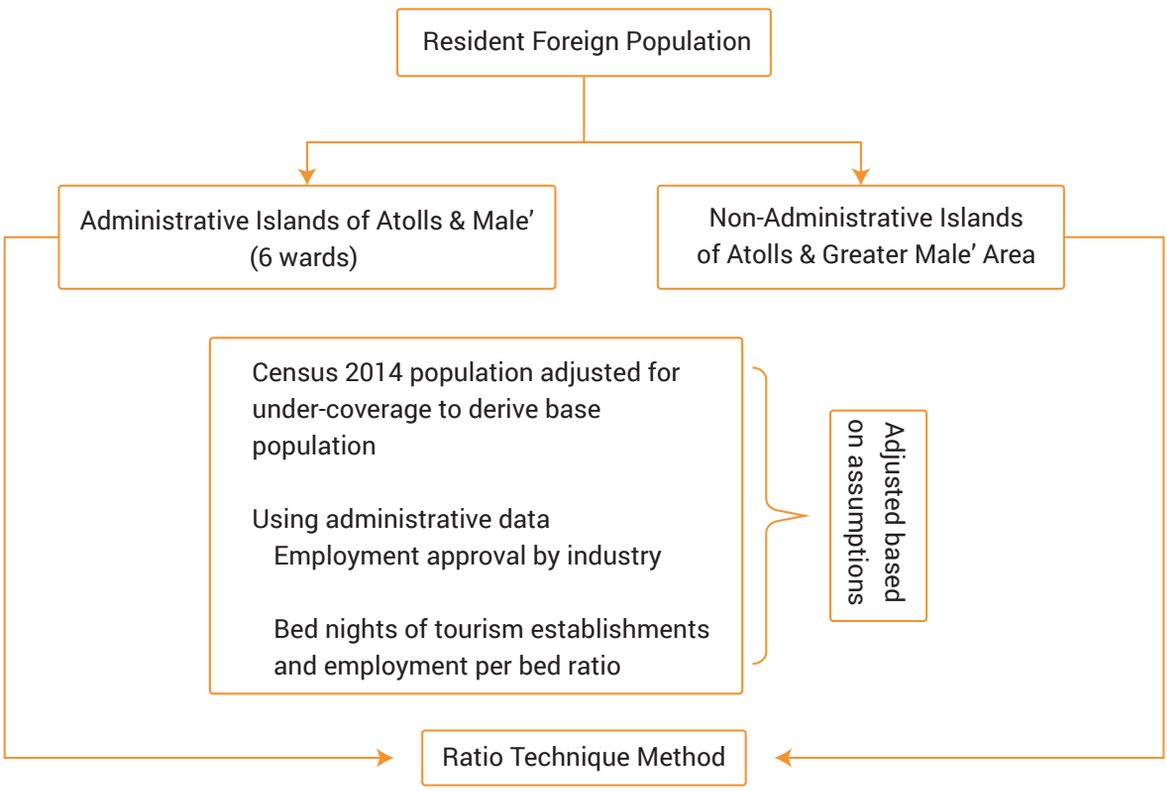
Table 1.9: Synopsis of inflating and projecting Foreign Population

	Steps	Action Taken
Step 1	Immigration Data by Industry for 2015 was compared with Census 2014	Industries where there were less Foreigners in Census 2014 identified and inflated (Step 2 to Step 5)
Step 2	Inflating Foreigners in Tourism sector (Short Stay Accommodation)	Number of beds were raised by a factor of 1.5. This was then split between number of staff by applying a ratio of 35 percent and 65 percent between Maldivians and Foreigners
Step 3	Inflating Foreigners in Agriculture, Forestry and Fishing sector	Number of Foreigners in this sector was doubled
Step 4	Inflating Foreigners in Electricity, Gas & Water Supply	Number of Foreigners in this sector was multiplied by a factor of 12
Step 5	Inflating Foreigners in Construction sector	Number of Foreigners in this sector doubled (based on EA, number of ongoing and projected constructions in Maldives)
Step 6	Distributing the inflated Foreign population by age and sex for 2014	Age-sex distribution of Foreign Population from Census 2014 was used to distribute the increased population among different age groups

	Steps	Action Taken
Step 7	Distributing the inflated Foreign population among 20 Atolls for 2014	Foreign Population by locality taken from Census 2014 and was to distribute the increased population among the 20 Atolls
Step 8	Distributing the inflated Foreign population among Non- Administrative Islands for 2014	Foreign Population by locality taken from Census 2014 and used to distribute the increased population among the Non-Administrative Islands
Step 9	Projecting Foreign Population into the future (2015-2054) in Administrative Atolls	Two steps involved in this stage: - For 2014-2020, the Resident Foreign Population inflated by a factor of 10 percent per year - For 2021-2054, the Foreign Population inflated by a factor of 2.5 percent per year
Step 10	Projecting Foreign Population into the future (2014-2054) in Non-Administrative Islands	- For 2014-2020, the Resident Foreign Population inflated by a factor of 10 percent per year (by age, sex, and locality) - For 2021-2054, the Foreign Population inflated by a factor of 2.5 percent per year (by age, sex and locality)
Step 11	Coming up with Republic figure for each year	- The Foreign Population in each Atoll and Non-Administrative Islands was included to derive the Republic figures

To summarize the methodology used for projecting the Resident Foreign Population, the diagram below gives a simplified flow of input data to achieve the results.

Figure 1.3: Flow diagram of methodology used for projecting Resident Foreign Population



2.3 Including the sub-national projections

During the final stage of the preparation of the population projections for the Republic, the sub-national projections were included. These sub-national projections have been prepared either using the cohort-component projection method and/or using a ratio technique method. The process of adding up sub-national projections required the use of Excel spreadsheets.

Once the projection assumptions were applied and run in the software and/or organized in Excel spreadsheets, each geographical area will have projection available[2] at Atoll level and Non-Administrative Atolls. Each of this disaggregation includes Resident Maldivians and Resident Foreigners by sex and 5-year age-groups as shown below.

Locality	Resident Population	
	Administrative Islands	Non-Administrative Islands
Male' (including greater Male')		
North Thiladhunmathi (HA)		
South Thiladhunmathi (HDh)		
North Miladhunmadulu (Sh)		
South Miladhunmadulu (N)		
North Maalhosmadulu (R)		
South Maalhosmadulu (B)		
Faadhippolhu (Lh)		
Male' Atoll (K)		
North Ari Atoll (AA)		
South Ari Atoll (ADh)		
Felidhu Atoll (V)		
Mulakatholhu (M)		
North Nilandhe Atoll (F)		
South Nilandhe Atoll (Dh)		
Kolhumadulu (Th)		
Hadhdhunmathi (L)		
North Huvadhu Atoll (GA)		
South Huvadhu Atoll (GDh)		
Gnaviyani (Gn)		
Addu City (S)		

Disaggregated by:

Residency status

(Maldivians, Foreigners)

Sex (Female, Male)

Five-year age groups

(0-4,5-9,……75-79,80+)

Annually

(2014, 2015…..2054)

Source: Assumption for Maldives Population Projections, 2014-2054

[2]Results of population projection at Republic, Male' and Atolls level available in Annex B. Detail tables of 20 Atolls available on website statisticsmaldives.gov.mv

An examination of the national population projections obtained by adding the sub-national projections will allow the calculation of proportion of the population of the Republic of Maldives living in the Greater Male' Area. This was particularly important because the Government of Maldives has set up a broad policy objective to consolidate 70 percent of the total population of the country into the Greater Male' Area by 2050. The population projections will therefore yield an indication of when in the future this policy goal might be fulfilled. As such, the population projections will help inform the policy formulation and implementation process in the Maldives.

Now that the sub-national population projections are completed at Atolls or Administrative Islands level, the National Bureau of Statistics will prepare Island-level population projections. This will be done with a ratio technique.

2.4 Identified data gaps that needs to be addressed

Some critical data needs to be collected and made available in order to improve the assumptions behind these projections. These include:

- Population employed in tourist resorts (at atoll level separately by foreigners and locals)
- Expatriate employment in the country (by industry, sex, age, and atoll where they work/live)
- Migration to Male'
- Assessing migration indirectly through housing developments, major infrastructure projects

2.5 Plans to update the population projections

These projections are intended to be updated on an annual basis. It is a live document that we plan to update on an annual basis using the available administrative data and newly available survey data.

Part B:

Maldives Population Projection Analysis

3.1 Introduction

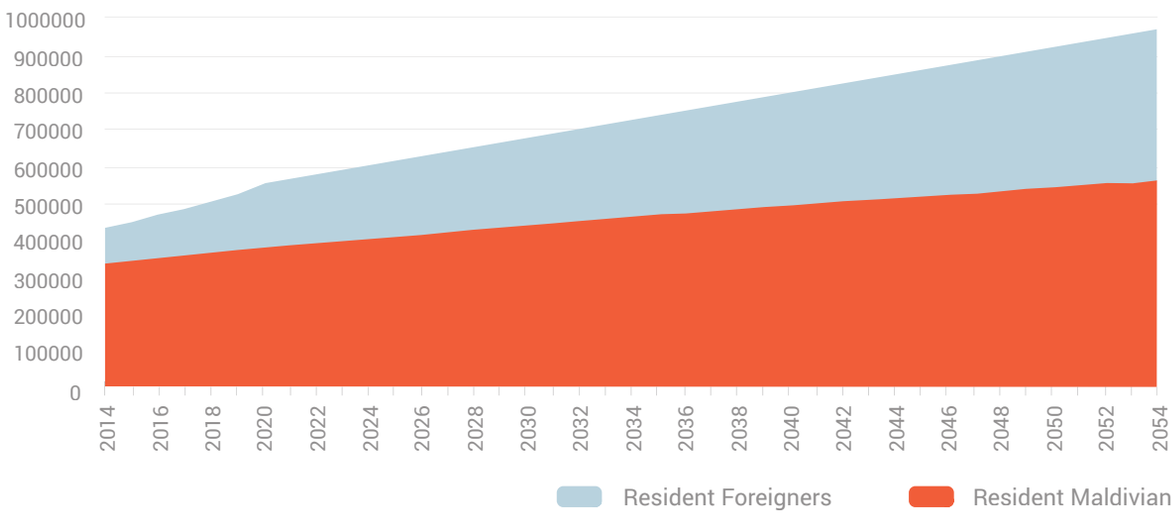
This section provides the results of the population projections, with a brief analysis of the changing population dynamic, population growth, and age-sex structure. The projections presented here provide an assessment of the future population growth of the Maldives. The projections are assumptions-based and only indicate what is likely to happen in the future. However, these results are expected to provide a useful contribution to the planning and policy-making process as they give some indication of where future pressures are likely to arise and the requirements necessary to facilitate services and facilities for the public and private sectors.

The projections present the future population for the Resident Population with breakdowns of Resident Maldivians and Resident Foreigners. This section of the report will focus the analysis on these populations separately while more in-depth analysis will be done on the Resident Maldivian Population. This is the first time that projections include the Resident Population and the Resident Foreigners in addition to the Maldivian Population. Hence it is advised for users to be cautious when using the projected populations and the different analysis presented for each sub-group of population.

3.2 Resident Population

The adjusted population based on Census 2014 gives a total of 437,535 people residing in the country in 2014. This includes 339,761 locals and 97,774 foreign residents (the latter figure was adjusted for under coverage). By 2054, the country is expected to have increased its Resident Population by 974,359 people (close to a 1 million population), with 557,537 local and 416,822 foreigners. At the end of the projection period, in 2054, the number of foreigners will be higher than the number of Resident Maldivians registered back in 2014. Figure 3.1 shows the Resident Population in numbers including Resident Maldivians and Resident Foreigners. At the beginning of the projection period, Resident Population mainly consist of Maldivians. As the Resident Population gradually increases, the Foreign Population increases mainly due to the high growth in Foreign Population experienced during the first half of the projection period. Nonetheless, while the country doubles its Resident Population by 2048, the population growth rate tends to slow down over time.

Figure 3.1: Resident Population (in numbers), 2014-2054

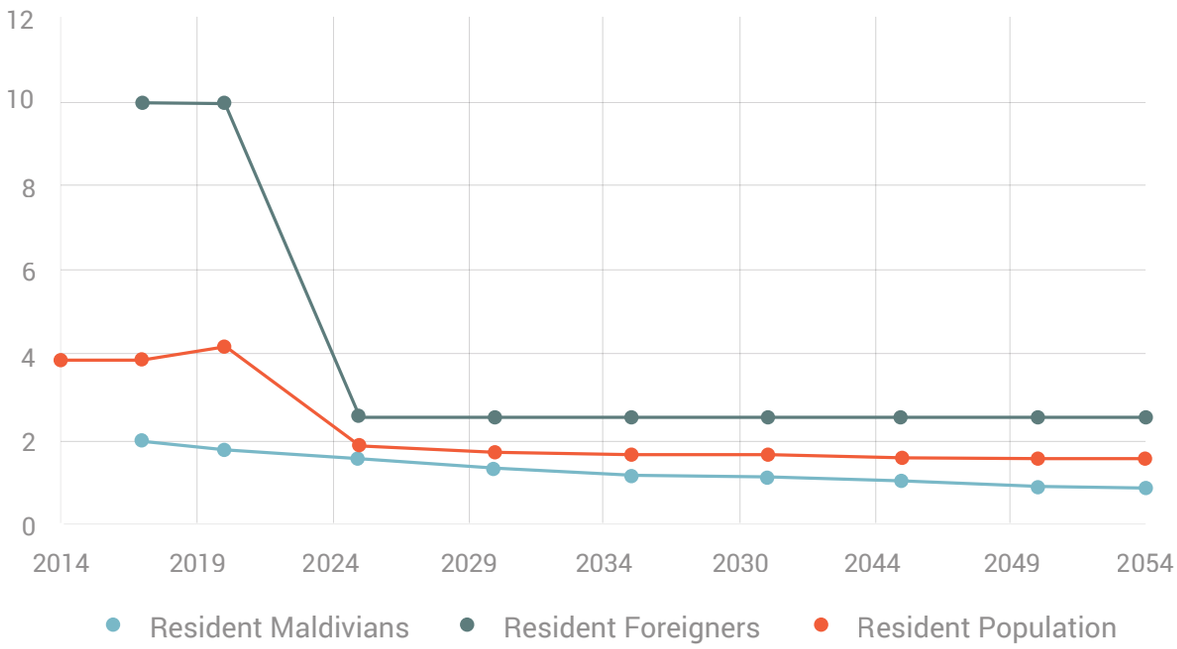


Source: Projected based on the 2014 Census data

Figure 3.2 shows how the growth in the Resident Population is expected to slow down over the projection period. While the population growth rate for the Resident Population stands at 4 percent per year at the beginning of projection period, it decreased to 1.52 percent per year by 2054. As seen from the figure, the high growth in the Resident Population until 2024 is due to the high growth rate of Foreign Population in the country assumed to grow at 10 percent per year at the beginning of the projection period, while the growth rate of the Foreign Population decreases significantly after 2020 and reaches 2.5 percent at the end of the projection period. The high growth rate in Resident Foreigners at the beginning of the projection period is due to the high international migration expected during the first 10 years of the projections period due to the infrastructure development and other investment projects implemented in the country (see the methodology section of this paper).

The growth rate of the Maldivian Population stands at 1.5 percent per year at the beginning of the projection period, which remains at a constant level and gradually decreases near the end of the projection period to 0.81 percent in 2054. Finally, at the end of the projection period the population growth rate of the Resident Population slows down due to the low fertility assumptions that is expected to prevail in the country for Resident Maldivians. The rate of growth is also slowing down due to the low rate of migration expected among the Resident Foreigners, a trend that takes shape from 2020 onwards.

Figure 3.2: Population growth rate of Resident Population



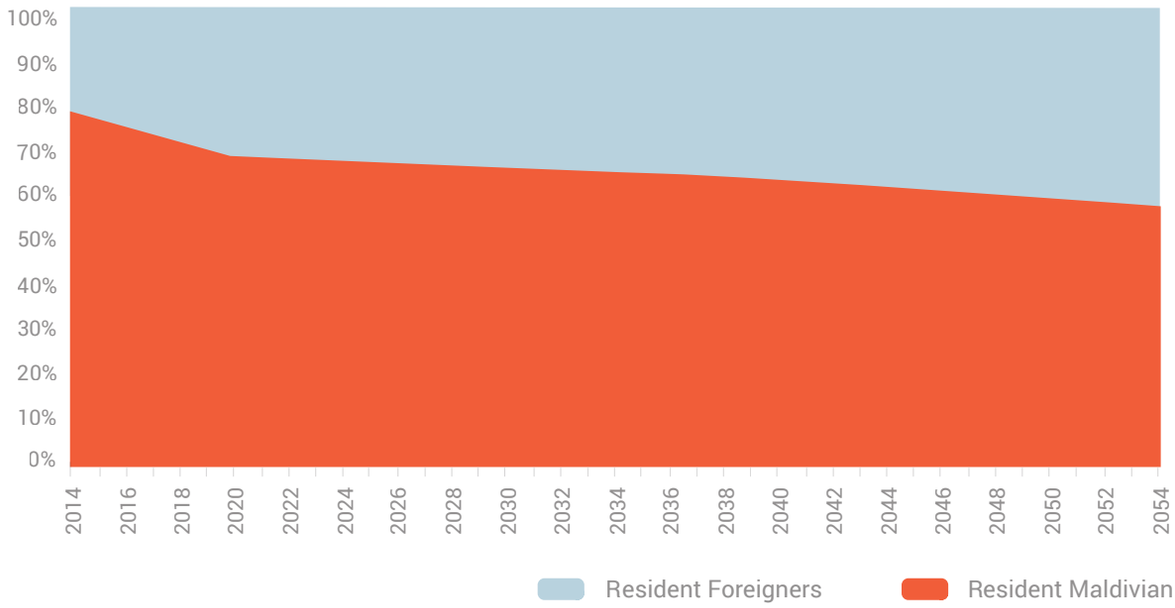
Source: Projected based on the 2014 Census data

Note: Constant growth assumed for Resident & Foreign Population for the past (2006 – 2014)

In 2014, the Resident Population stood at 437,535 comprising of 339,761 Resident Maldivians and 97,774 Resident Foreigners. This gives a share of 78 percent as Maldivians and 22 percent as Foreigners.

Owing to the high increase in the Foreign Population over the projection period, there is a huge shift in the share of Foreigners in the population by 2050. The number of Foreigners in the population increases rapidly until 2020 from 22 percent to 32 percent (see Figure 3.3). By 2054, there is a shift in the share of Foreigners, with 43 percent as Foreigners and 57 percent as Maldivians. This translates to four Foreigners per every ten persons, in the population by 2054.

Figure 3.3: Resident Population by percentage share of Maldivians and Foreigners, 2014-2054



Source: Projected based on the 2014 Census data

The age-sex structure of the Resident Population is depicted through the population pyramids presented in Figure 3.4.

Figure 3.4: Resident Population, 2014-2050

Figure 3.4a: Resident Population, 2014

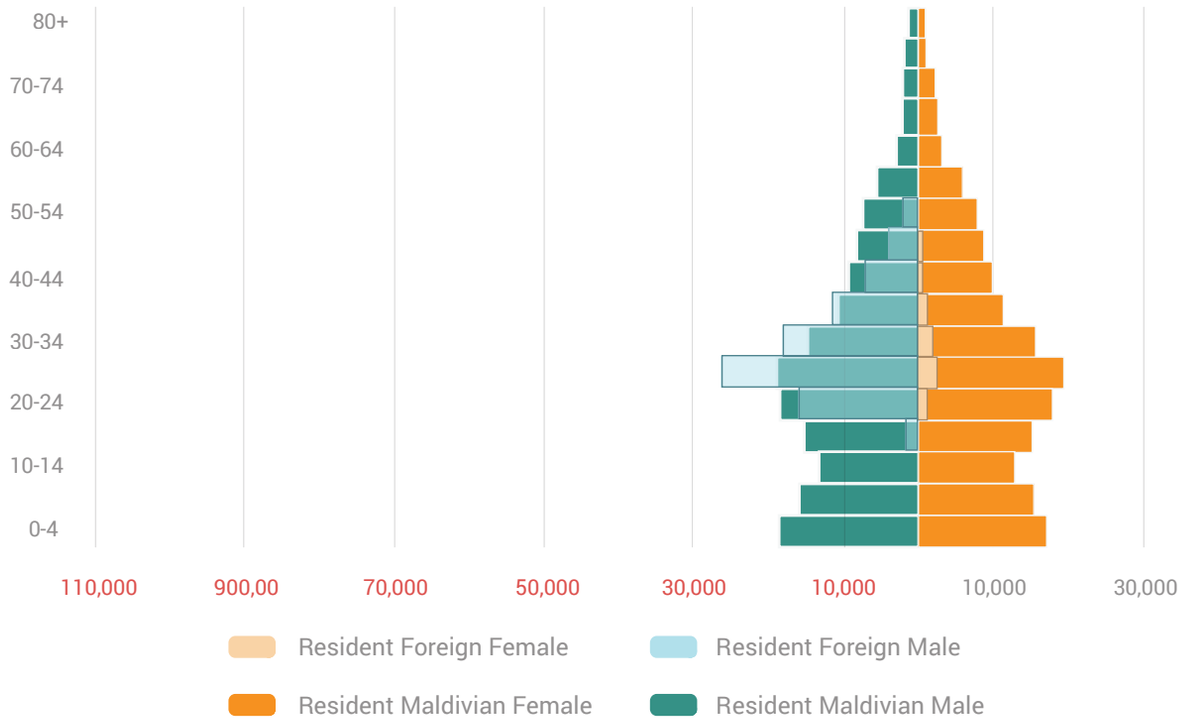
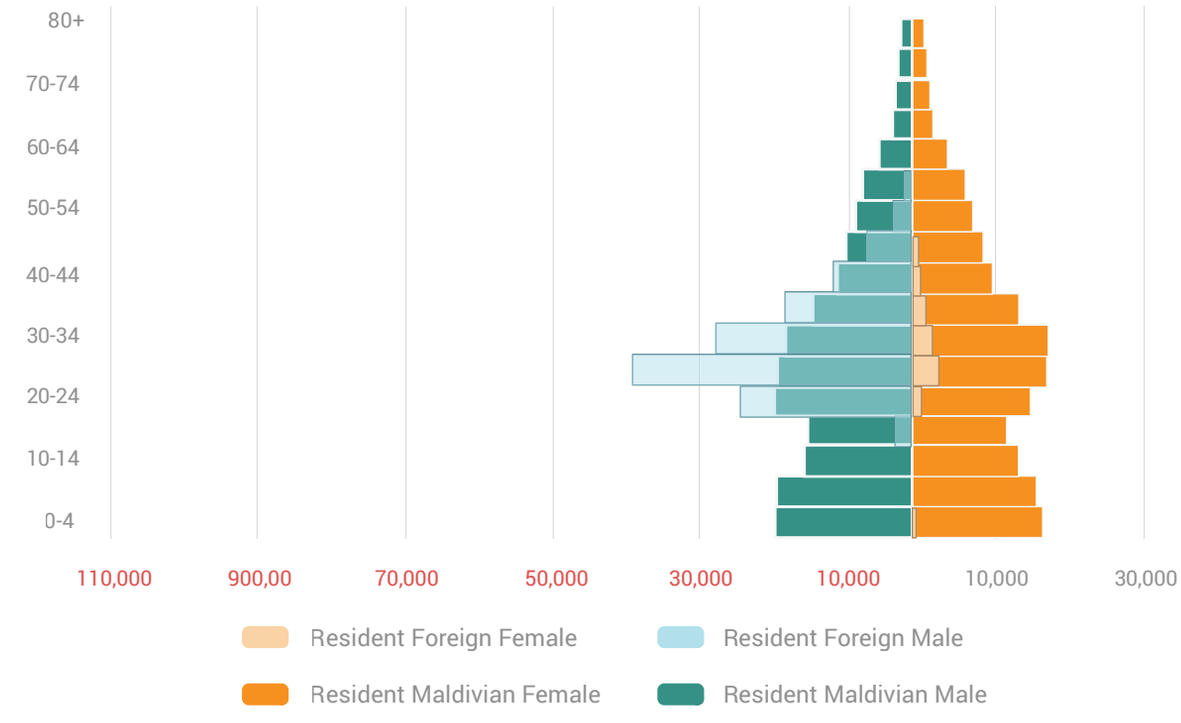


Figure 3.4b: Resident Population, 2018



Source: Projected based on the 2014 Census data

Figure 3.4c: Resident Population, 2020

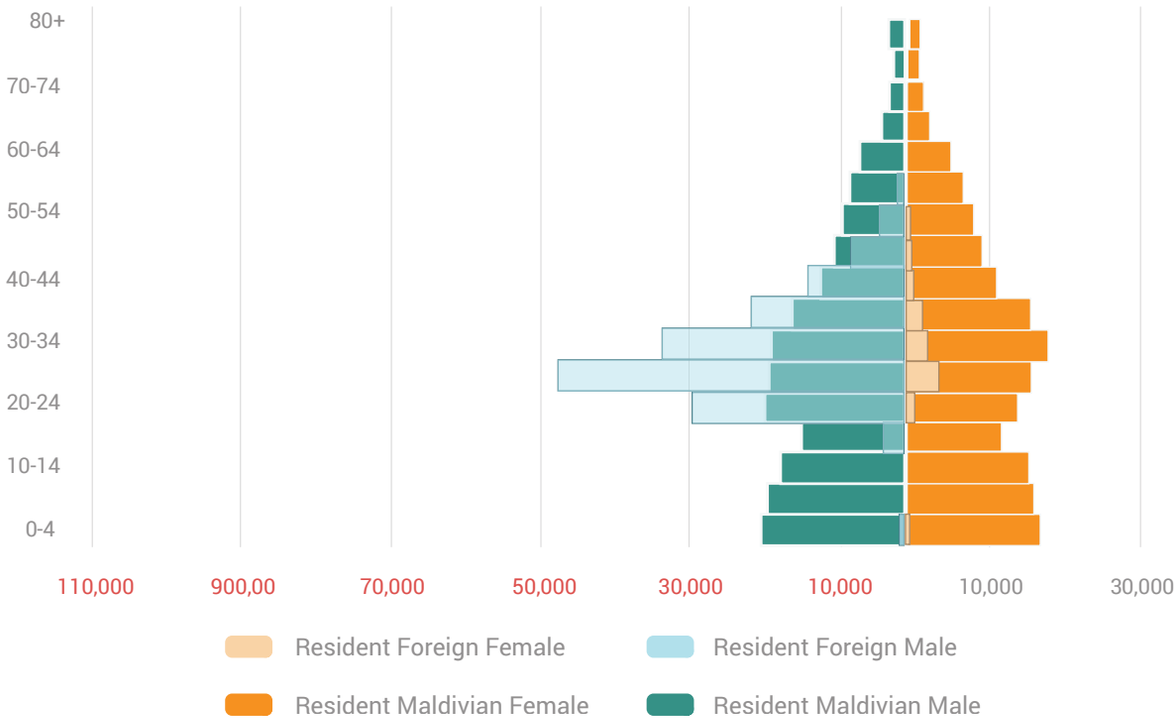
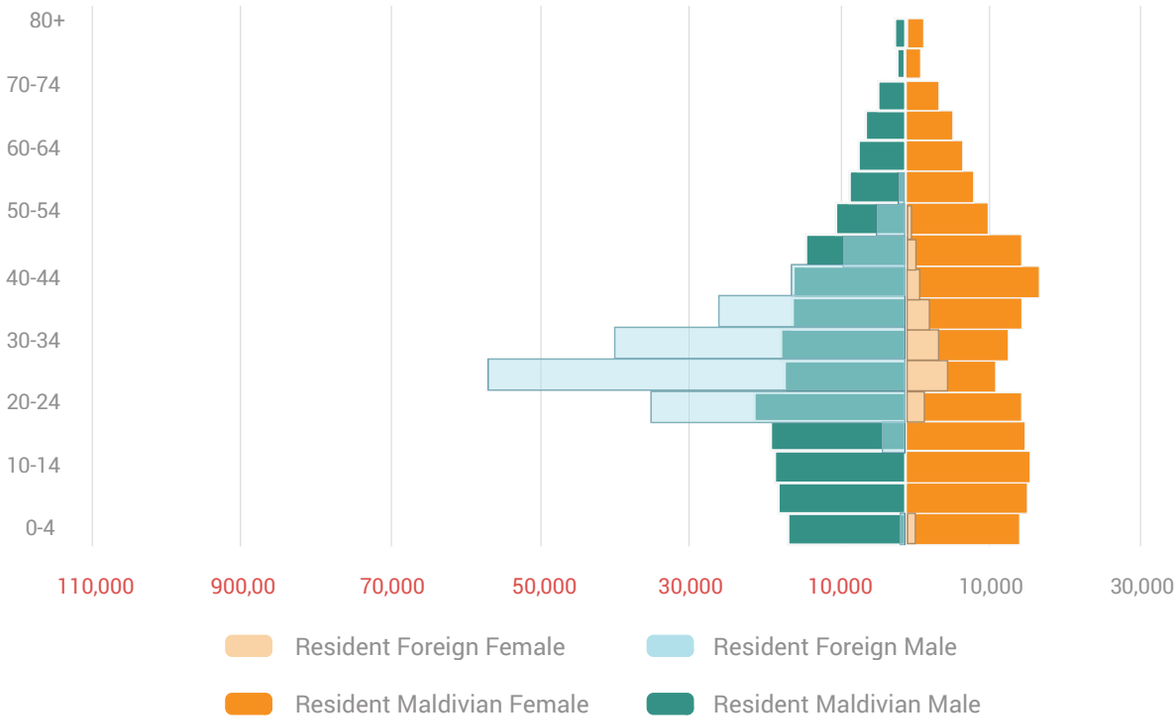


Figure 3.4d: Resident Population, 2030



Source: Projected based on the 2014 Census data

Figure 3.4e: Resident Population, 2040

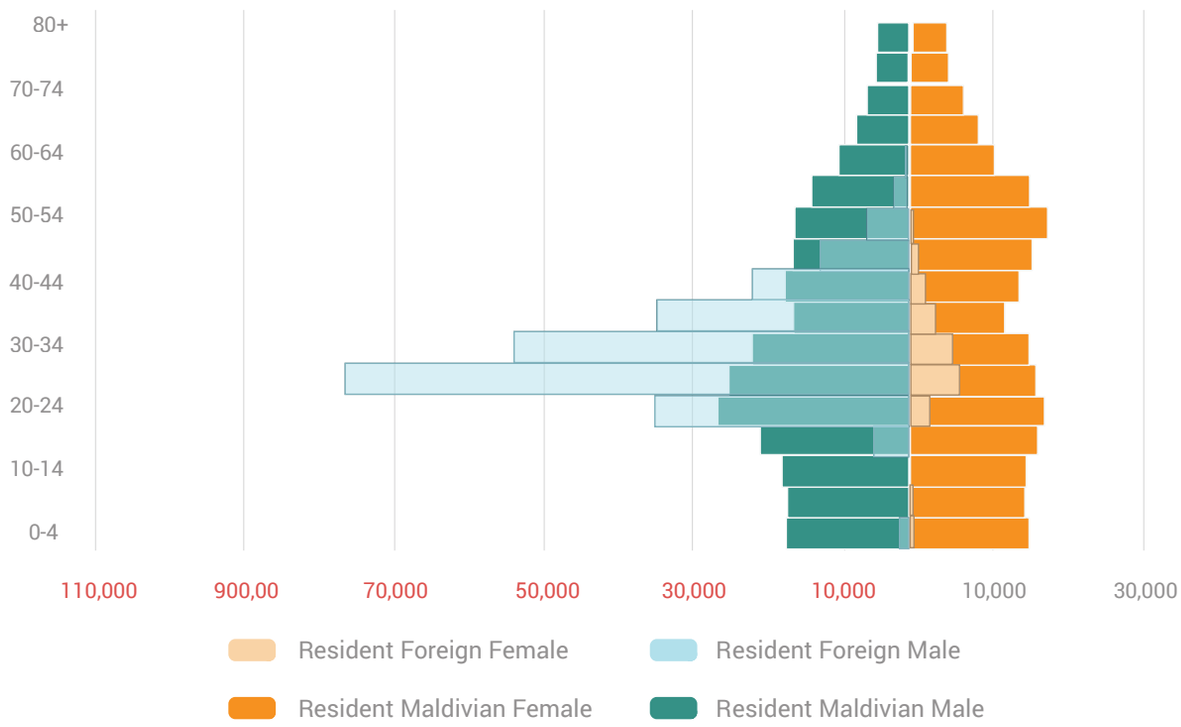
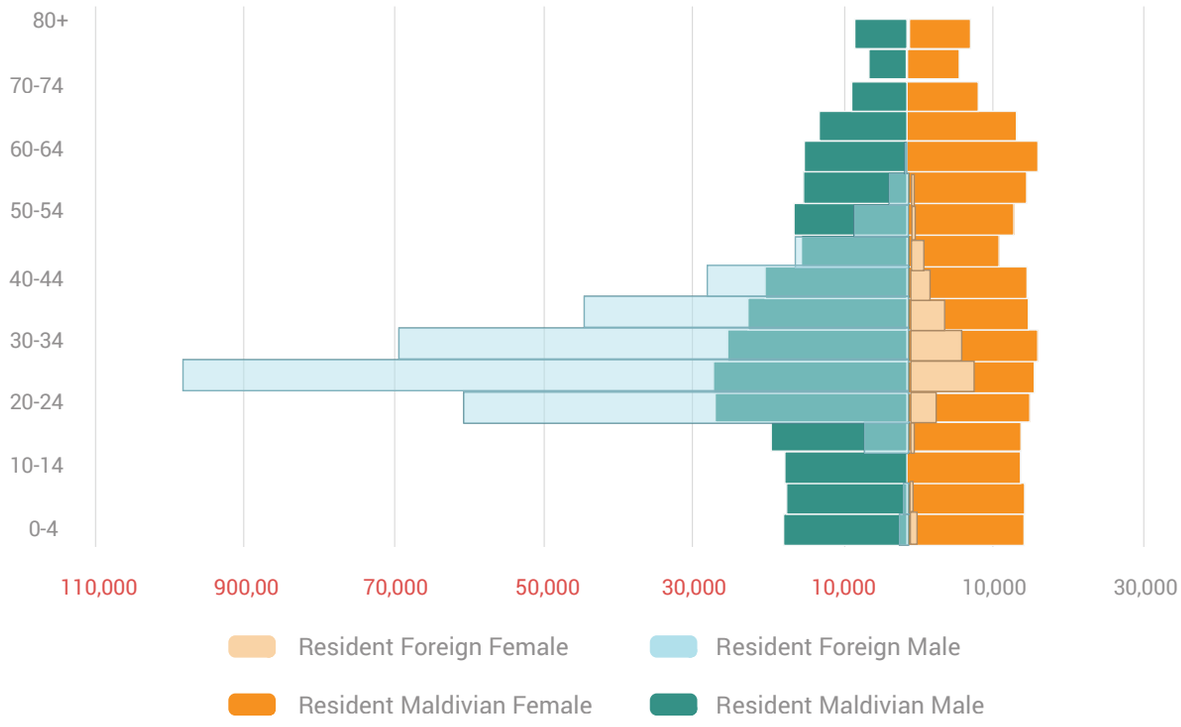


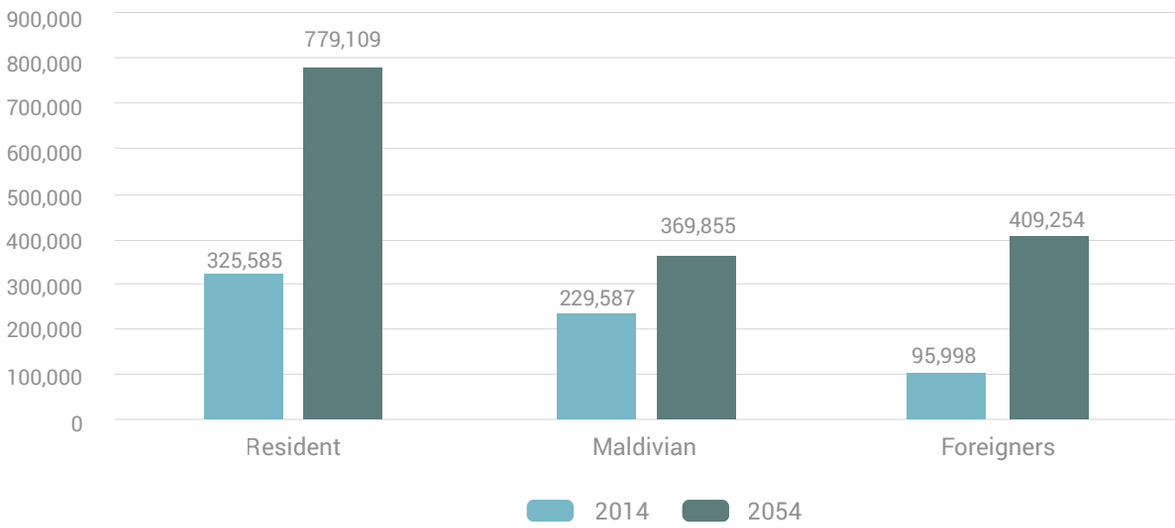
Figure 3.4f: Resident Population, 2050



Source: Projected based on the 2014 Census data

Interestingly, the population pyramid shows a large cohort of young people (working age population 15-64 years), which remains almost the same in size during the projection period. In terms of numbers, the working age population of the country doubles over the projection period from 325,586 to 779,109 from 2014 and 2054. This is much higher in the case of working ages foreigners where a four folds increase is observed (Figure 3.5). It is interesting to note that the number of foreigners in working age exceeds that of locals by 2054. This translates to five foreigners per every ten people of working age by 2054.

Figure 3.5: Resident Maldivian and Foreign Population, 2014 & 2054

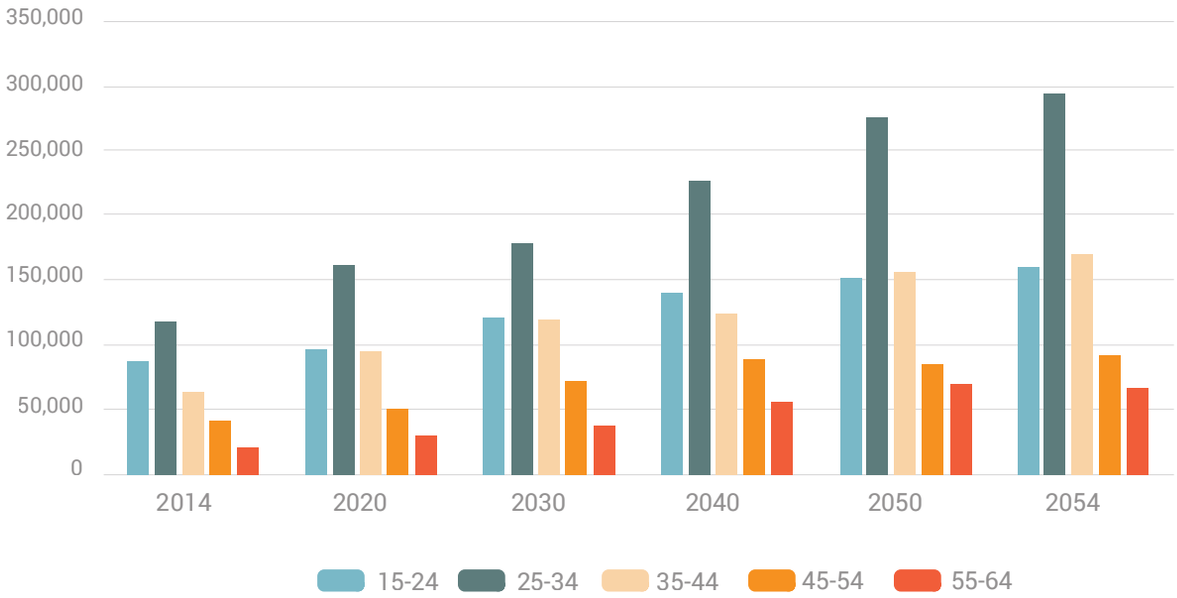


Source: Projected based on the 2014 Census data

The main consequence of this transformation is the expectation of low fertility among the locals and the immigration of working age Foreigners for employment in the country. The Resident Foreign Population is considered 'temporary in nature', with most of the workers expected to stay for less than 10 years in the country. As a result, the working population remains the largest group with 20-35 age group making for the bulk of the population. The contrast in the huge number in these cohorts between both sexes is due to a majority of male Foreign workers in the country (for every 100 female Foreigners there are 1,017 male Foreigners in 2014). Hence the sex ratio imbalance among the Resident Population will prevail over the projection period.

Considering the huge increase in the number of people in the working age group over the projection period, their percentage shares in the total population are also increasing from 74 percent in 2014 to 80 percent by 2050. Looking more closely at the composition of working age population over the projection period we will find the high and increasing numbers of young population and youth among the working age population in the country.

Figure 3.6: Composition of working age population, 2014-2054



Source: Projected based on the 2014 Census data

The transformation of the child and elderly population is also noticeable. While population by each broad age group is higher at the end of the projection period, their shares in the total population has changed substantially. The percentage share of child population continues to drop while the percentage share of older people in the population is double that of their share of 2014. This is due to the level differences in the base population in 2014 and their rates of growth over the period. This can be seen from Table 3.1 and Figure 3.7(a-c) below.

Table 3.1: Distribution of Resident Population by broad age groups, 2014-2054

Age Group	2014	2018	2020	2025	2030	2035	2040	2045	2050	2054
0-14	95,343	105,037	109,939	112,833	111,156	106,796	104,155	104,420	105,414	105,305
15-64	325,585	389,463	428,890	474,702	523,827	577,130	631,500	685,184	736,133	779,109
65+	16,607	17,539	18,598	24,692	32,320	40,479	49,124	59,271	75,404	89,945
Total	437,535	512,039	557,427	612,227	667,303	724,405	784,779	848,875	916,951	974,359

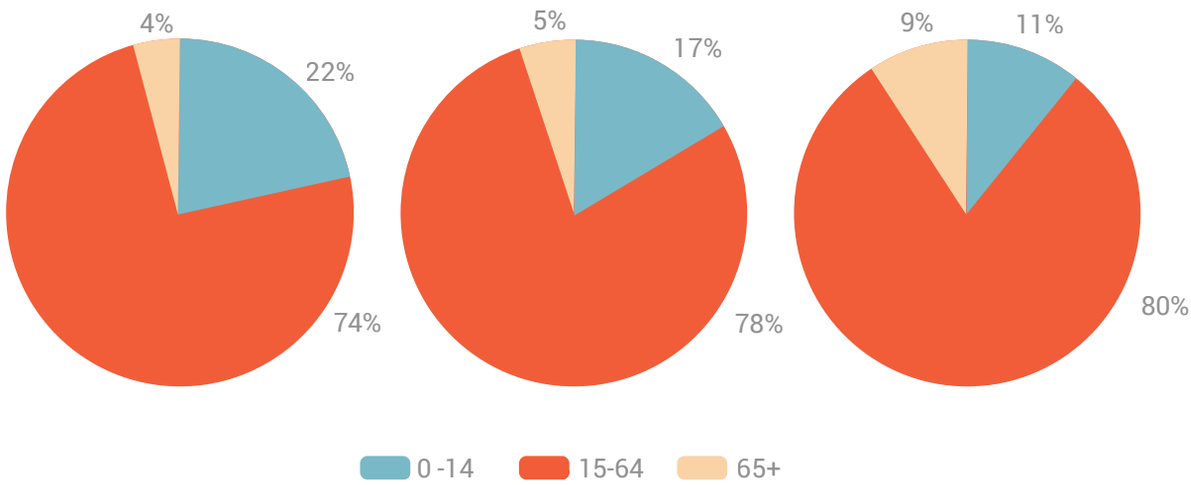
Source: Projected based on the 2014 Census data

Figure 3.7: Resident Population by broad age groups, 2014-2054

Figure 3.7a : Resident Population by broad age group, 2014

Figure 3.7b : Resident Population by broad age group, 2030

Figure 3.7c : Resident Population by broad age group, 2054



Source: Projected based on the 2014 Census data

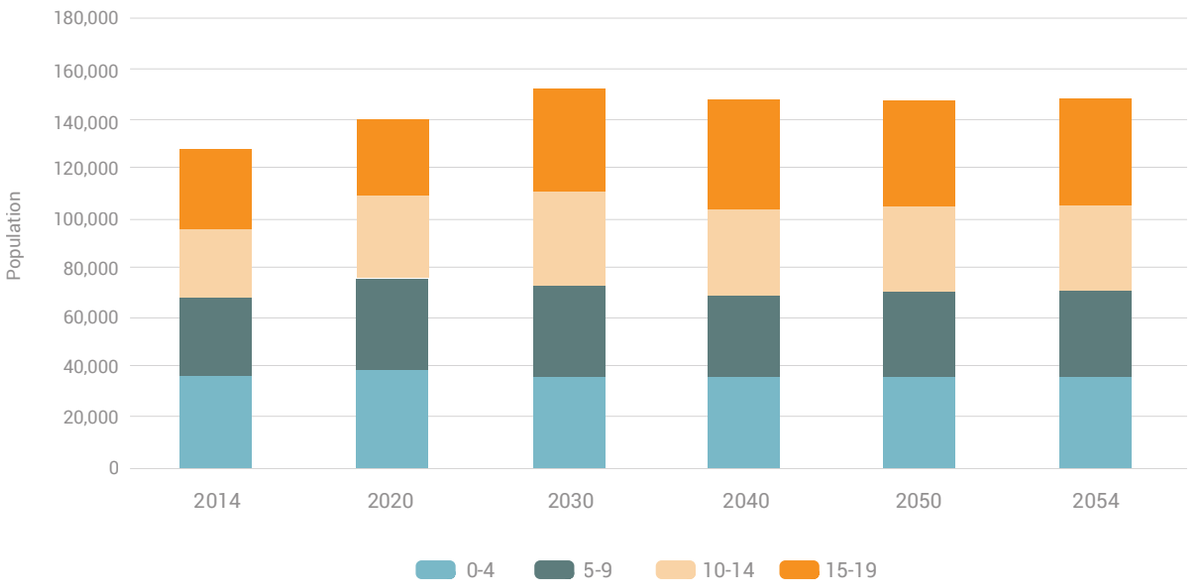
The child population (under 15 years) continues to increase and peaks around 2030. Compared to 2014 there are an additional 10,000 children (9,962) in the population. In 2014, the child population (0-14) consisted of 22 percent and by 2050 the child population is reduced to half of it. In Maldives, population under 18 years of age is considered children and for that reason Table 3.2 also includes age group 15-19, which depicts this when using the five-year age groups.

Table 3.2: Composition of child population among Resident Population, 2014-2054

Age Group	2014	2020	2030	2040	2050	2054
0-4	36,689	39,411	35,939	35,776	36,536	35,998
5-9	32,230	36,587	37,231	34,099	35,097	35,114
10-14	26,424	33,941	37,986	34,280	33,781	34,193
15-19	32,729	30,386	41,304	43,314	41,957	43,101
Total (Under 15)	95,343	109,939	111,156	104,155	105,414	105,305
Total (Under 20)	128,072	140,325	152,460	147,469	147,371	148,406

Source: Projected based on the 2014 Census data

Figure 3.8: Composition of children and young population, 2014-2054



Source: Projected based on the 2014 Census data

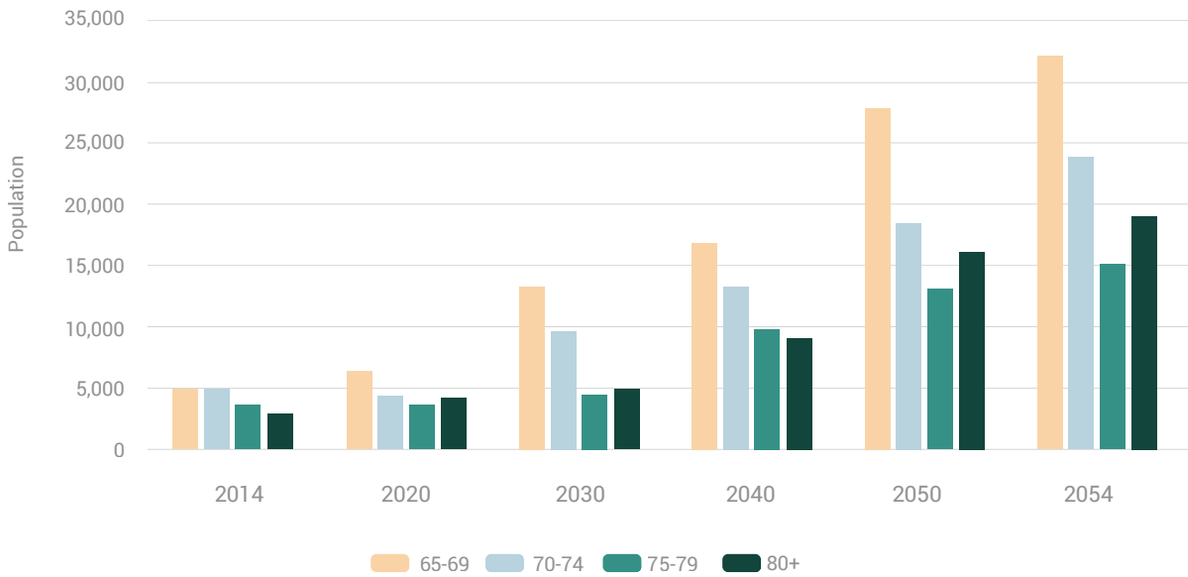
During the projection period the elderly population has increased five times its level in 2014 from 16,607 to 89,945 in 2045. The percentage share of older people in the population is double that of the 2014 share (4 percent vs 8 percent). Breakdown of elderly by five-year age groups reveals that the elderly population is getting older as well with more people falling under age 80+ in the population over this period. Those 80+ by the year 2054 are projected to be more in number than the total 65+ population combined total in 2014.

Table 3.3: Composition of elderly population within Resident Population, 2014-2054

Age Group	2014	2020	2030	2040	2050	2054
65-69	4,976	6,309	13,284	16,835	27,854	32,008
70-74	4,885	4,432	9,751	13,259	18,386	23,811
75-79	3,733	3,680	4,345	9,889	13,139	15,098
80+	3,013	4,177	4,940	9,141	16,025	19,028
Total (65+)	16,607	18,598	32,320	49,124	75,404	89,945

Source: Projected based on the 2014 Census data

Figure 3.9: Composition of elderly population within Resident Population, 2014

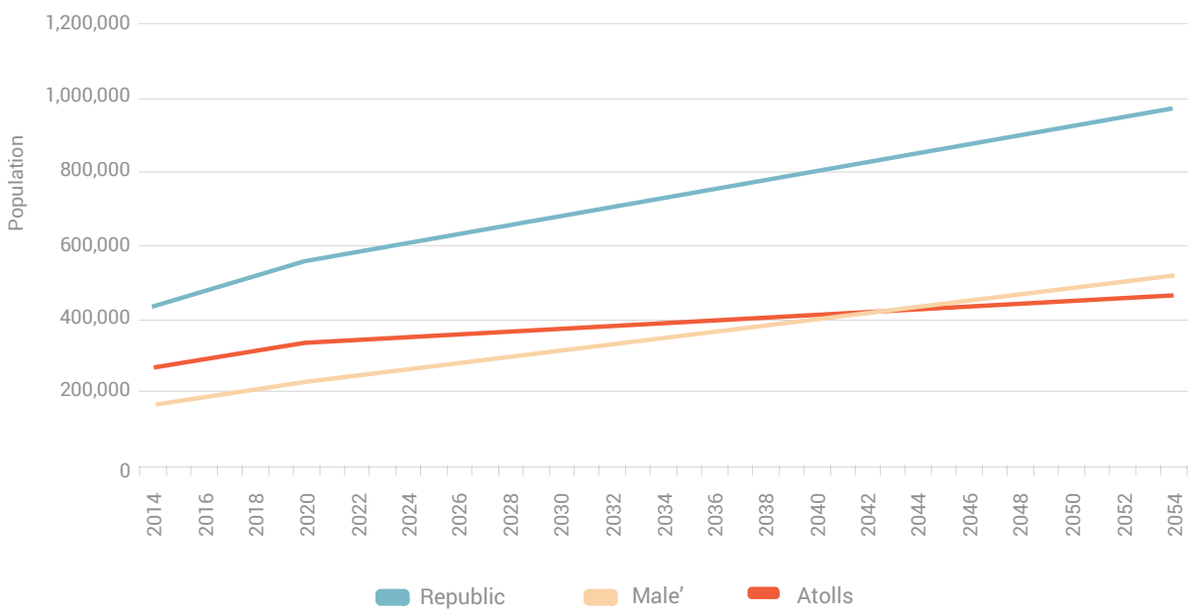


Source: Projected based on the 2014 Census data

The shift in the population dynamics is not observed here as there is a constant work force within the working age group due to the high influx of Foreign workers. The demographic transition and the change in population dynamics will be studied more closely in the *section 3.4 Resident Maldivian Population.*

Figure 3.10 depicts the distribution of the Resident Population between Male' and the Atolls. As highlighted in the figure, the majority of the Resident Population lived in the Atolls (68 percent) in 2014. However, with the decrease in the growth rate overtime, which is more pronounced for the Atolls, there is a shift in the Resident Population between Male' and the Atolls. By 2045, the Resident Population halves between Male' and the Atolls and at the end of the projection period, 53 percent of the Resident Population live in Male'.

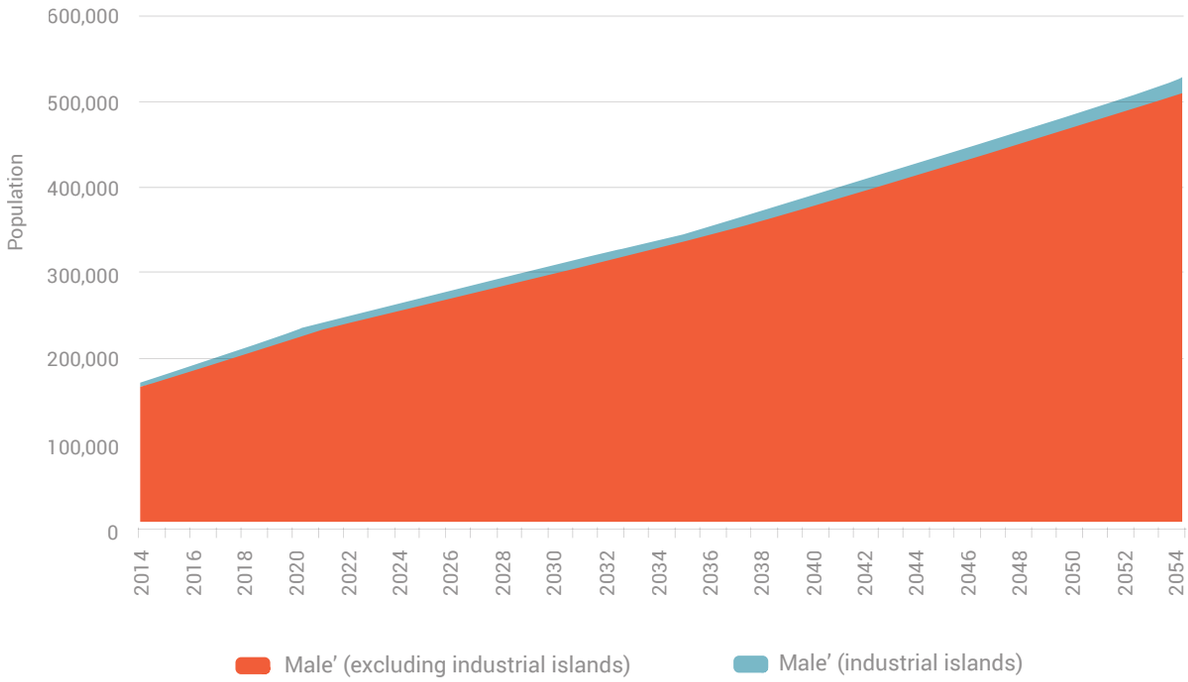
Figure 3.10: Resident Population by locality, 2014-2054



Source: Projected based on the 2014 Census data

By 2054 the Resident Population in the Greater Male' Area is expected to reach 529,101 in 2054 while in 2014 there were 171,165. In terms of percentage this is an increase from 39 percent of Resident Population to 54 percent from 2014-2054.

Figure 3.11: Resident Population of Male' (including Greater Male' Area), 2014-2054

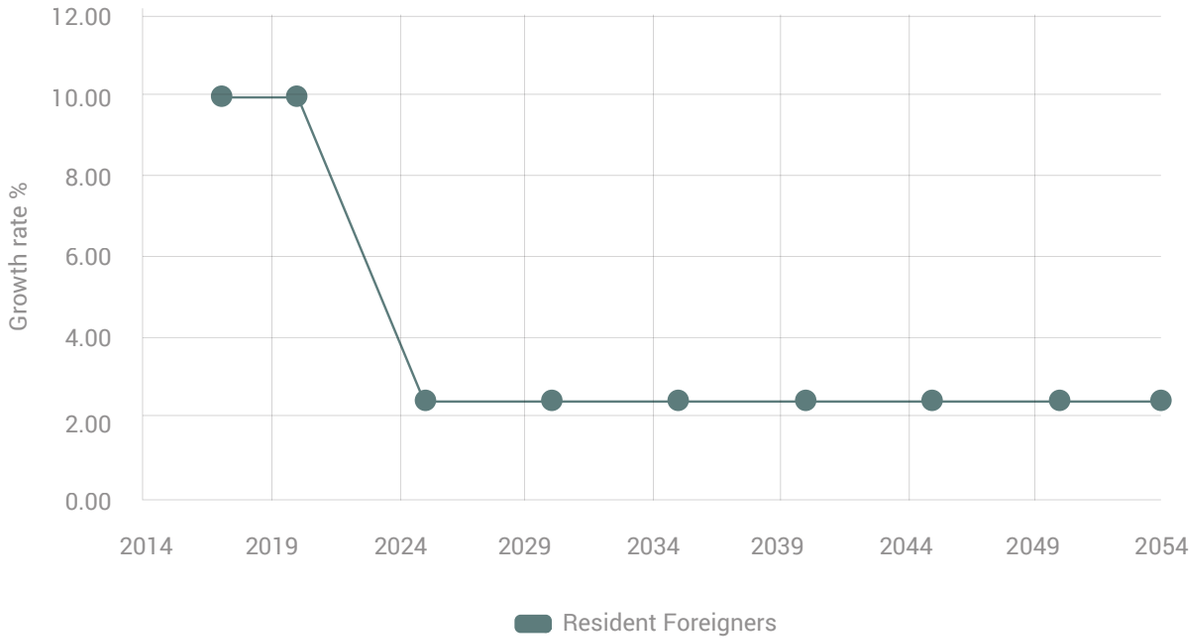


Source: Projected based on the 2014 Census data

3.3 Resident Foreign Population

The 2014 Census enumerated 63,637 Foreigners residing in the country. However, as mentioned in Part A of the report, this population was inflated to give a Foreign Population of 97,774 in 2014. Between 2014-2021, the Foreign Population is expected to grow at 10 percent per year, hence resulting in more Foreigners coming as immigrants into the country.

Figure 3.12: Growth rate of Resident Foreigners, 2014- 2054



Source: Projected based on the 2014 Census data

After 2021, the growth rate of Foreign Population slows down, but continues to grow at a rate of 2.5 percent annually. Though there is a sharp decline in the Foreign Population, the Foreign Population continues to grow and reaches 416,822 in 2054, more than a four-fold increase over the projection period.

The Resident Foreign Population is considered as a 'never ageing population' in the projection given that Foreigners working in the country is expected to remain for about 10 years before they depart. Hence, due to the 'temporary nature' of their residency, the Foreign Population has been projected keeping in mind the current age-sex structure of Foreigners as captured in the Census 2014 (Figure 3.13 (a-f)).

Figure 3.13(a-f): Resident Foreign Population, 2014-2054

Figure 3.13a: Resident Foreigners, 2014

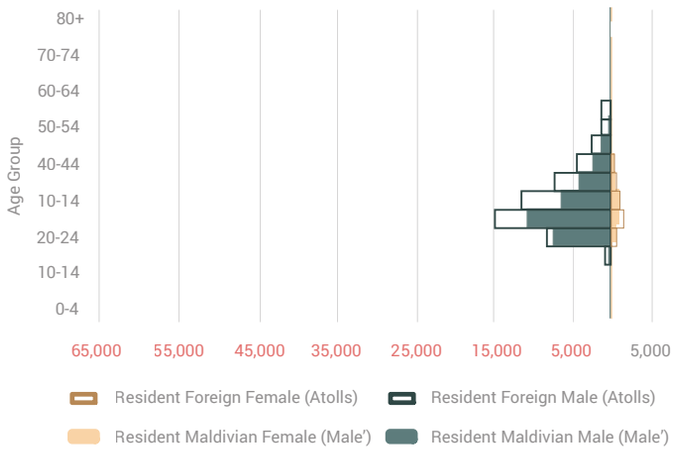


Figure 3.13b: Resident Foreigners, 2020

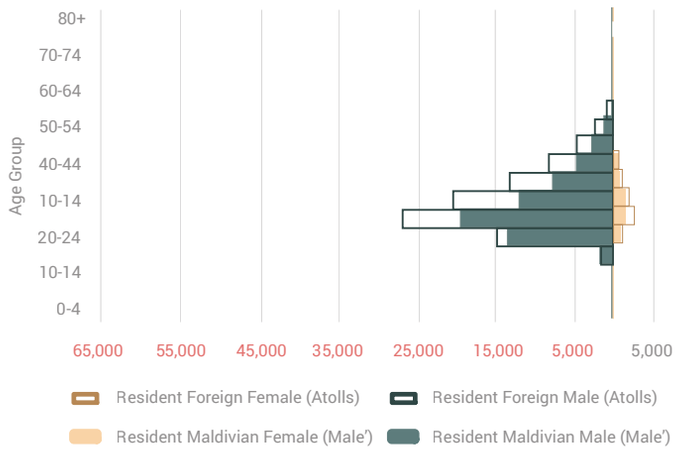


Figure 3.13c: Resident Foreigners, 2030

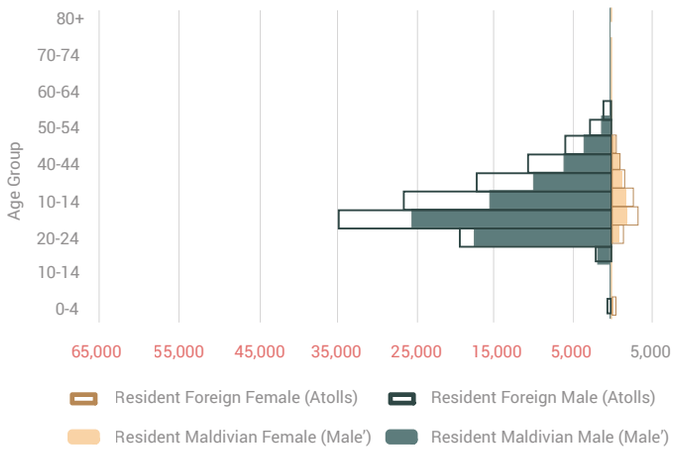


Figure 3.13d: Resident Foreigners, 2040

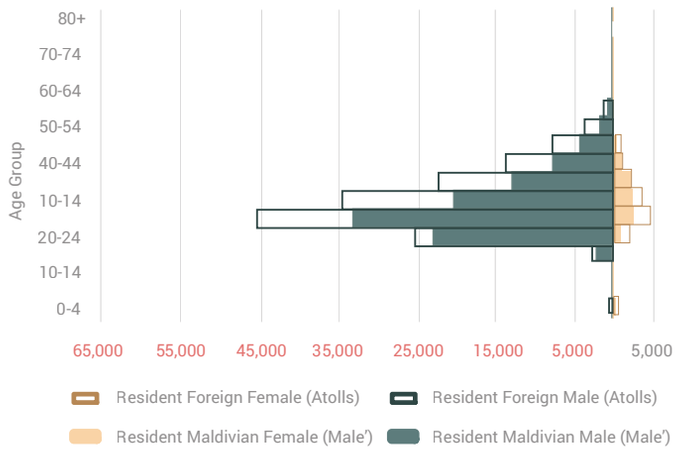


Figure 3.13e: Resident Foreigners, 2050

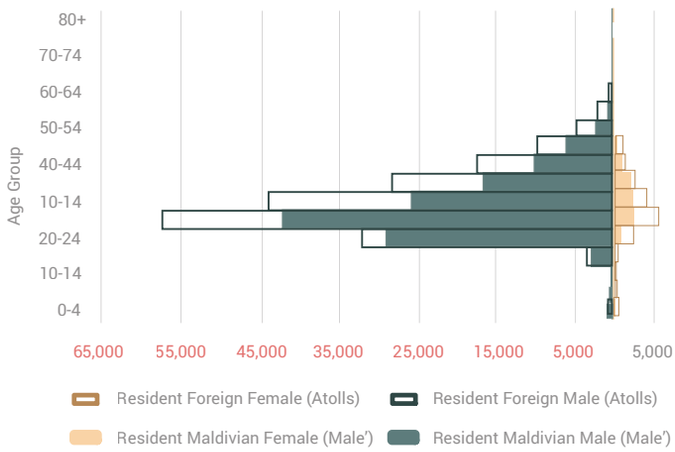
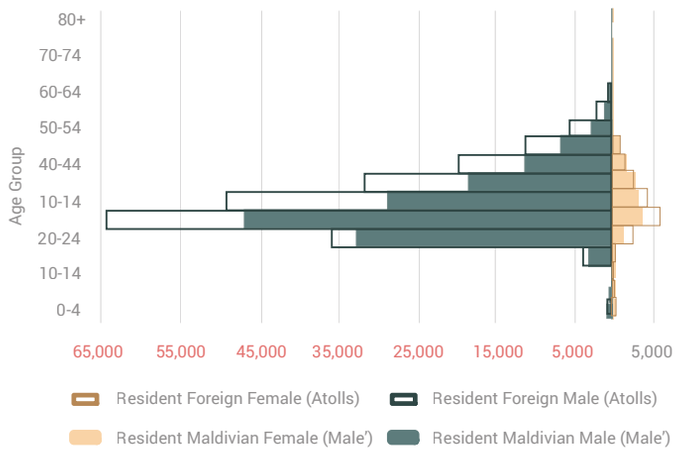


Figure 3.13f: Resident Foreigners, 2054



Source: Projected based on the 2014 Census data

As a result, the bulk of the Foreigners remain in the working age group throughout the projection period (Table 3.4). This gives 98 percent of the Resident Foreigners in the working age group (15-64) until the end of the projection

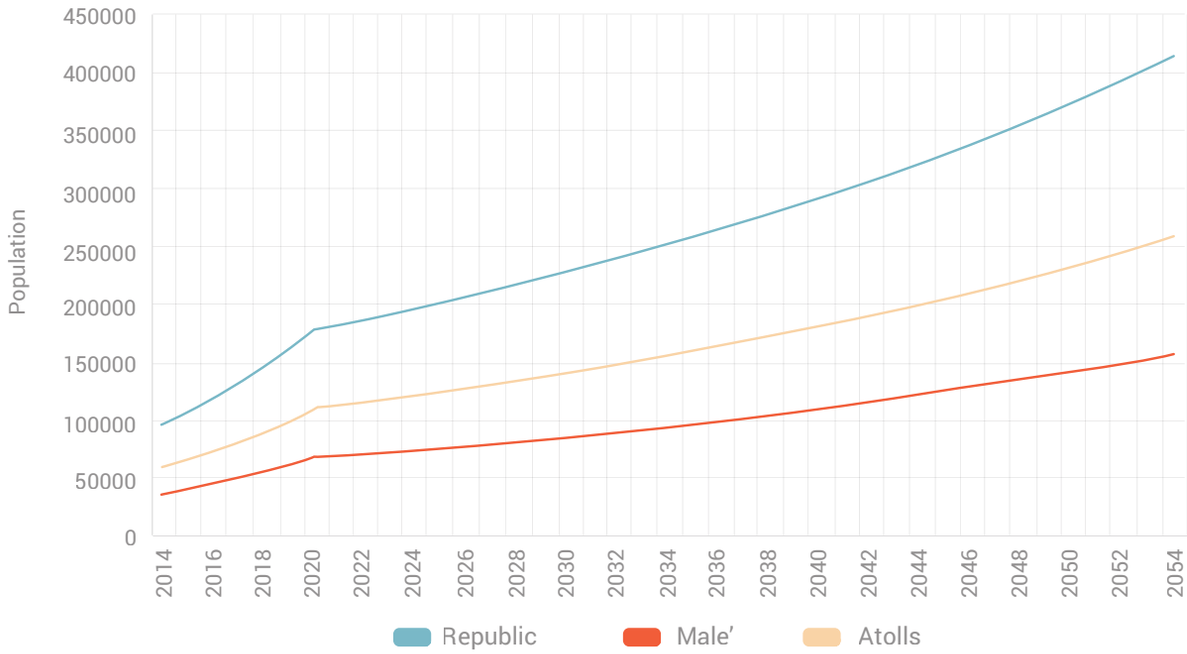
Table 3.4: Resident Foreign Population by broad age group, 2014-2054

Age Group	2014	2020	2030	2040	2050	2054
0-14	1,546	2,816	3,615	4,642	5,959	6,586
15-64	95,998	174,921	224,602	288,396	370,307	409,254
65+	230	420	539	693	889	983
Resident Foreign	97,774	178,156	228,757	293,729	377,156	416,822

Source: Projected based on the 2014 Census data

The population pyramids (Figure 3.13(a-f)) also highlight the distribution of Foreigners between Male' and the Atolls. While 38 percent of the Foreigners live in Male', 62 percent of the Foreigners are distributed across the 20 Atolls and Non-Administrative Islands in 2014. Even though the Foreign population increases, the distribution of the Resident Foreigners remains largely in the Atolls and remains at 62 percent throughout the projection period (see Figure 3.14).

Figure 3.14: Resident Foreigners by locality, 2014-2054



Source: Projected based on the 2014 Census data

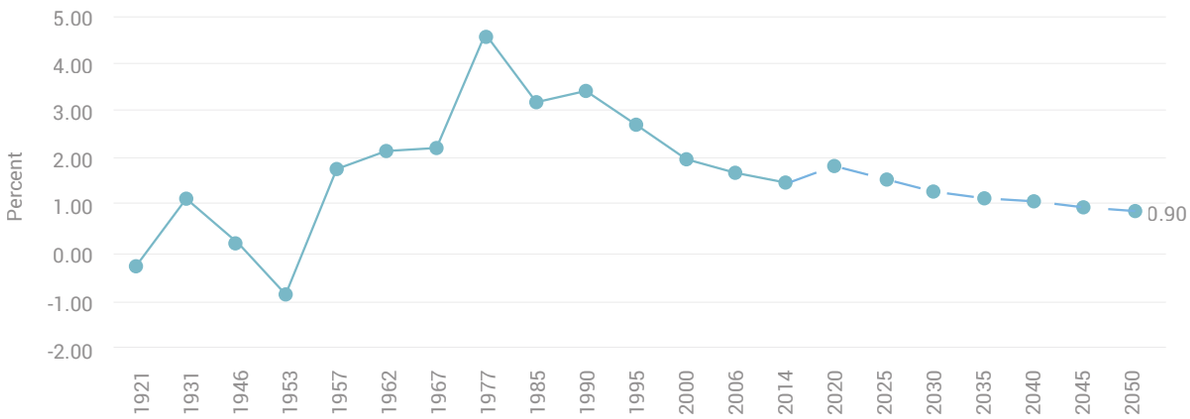
3.4 Resident Maldivian Population

The Resident Maldivian Population experienced consistent increase during the projection period. While the Resident Maldivian Population was 339,761 (adjusted for mid-year) in 2014, the population is expected to increase to 557, 537 by 2054.

3.4.1 The growth rate of Resident Maldivian Population

Figure 3.15 shows the overall trend of the population growth rate for the past few decades is decreasing. With the low fertility which is expected to reach below replacement level, the growth rate is expected to reach 0.90 percent per year by 2050.

Figure 3.15: Growth rate of Maldivian Population, 1911-2050



Source: Census Years and projected based on the 2014 Census data

3.4.2 Age-sex structure of Resident Maldivian Population

Table 3.5 presents the breakdown of Maldivian Resident Population by broad age categories. In terms of numbers the Maldivian Population has increased over the projection period.

Table 3.5: Resident Maldivians by broad age-groups, 2014-2054

Age Group	2014	2018	2020	2025	2030	2035	2040	2045	2050	2054
0-14	93,797	102,733	107,123	109,643	107,541	102,699	99,514	101,843	99,452	98,719
15-64	229,587	246,250	253,969	276,491	299,224	322,621	343,106	355,705	365,827	369,855
65+	16,377	17,196	18,178	24,216	31,783	39,870	48,432	58,486	74,516	88,963
Total	339,761	366,176	379,270	410,349	438,547	465,191	491,051	516,035	539,795	557,537

Source: Projected based on the 2014 Census data

Figure 3.16(a-f) presents the population pyramids of the Resident Maldivian Population. In 2014, the bulk of the population lies in the working age with most of the population concentrated in the cohort aged 25-29.

Figure 3.16(a-f): Population pyramid for Resident Maldivians, 2014-2050

Figure 3.16a : Resident Maldivian Population, 2014

Figure 3.16b : Resident Maldivian Population, 2020

Figure 3.16c : Resident Maldivian Population, 2030

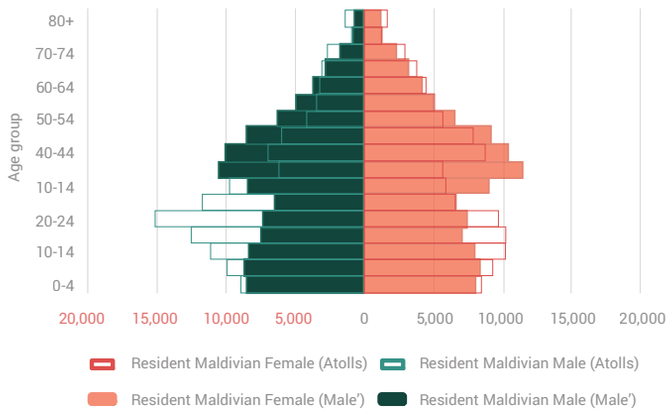


Figure 3.16d : Resident Maldivian Population, 2040

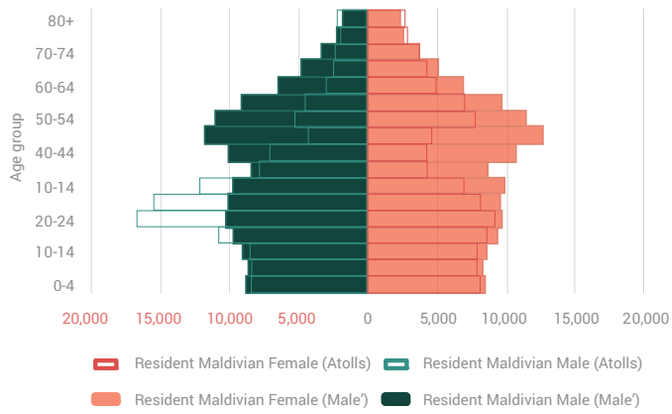


Figure 3.16e : Resident Maldivian Population, 2050

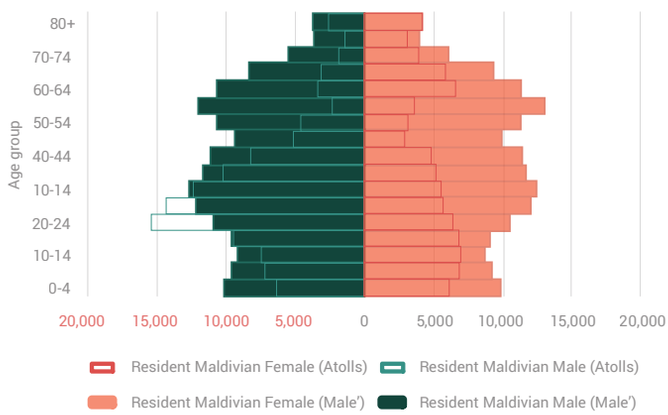
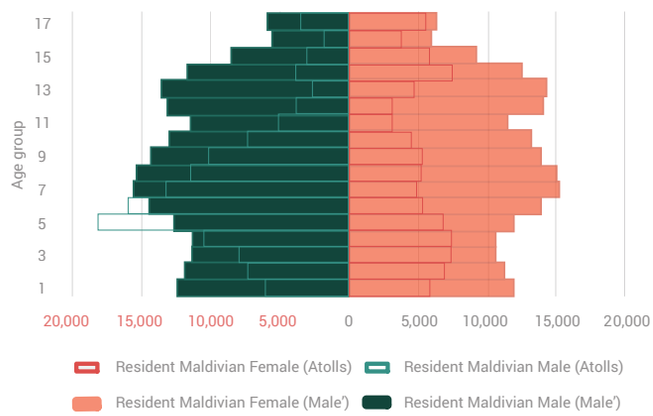


Figure 3.16f : Resident Maldivian Population, 2054



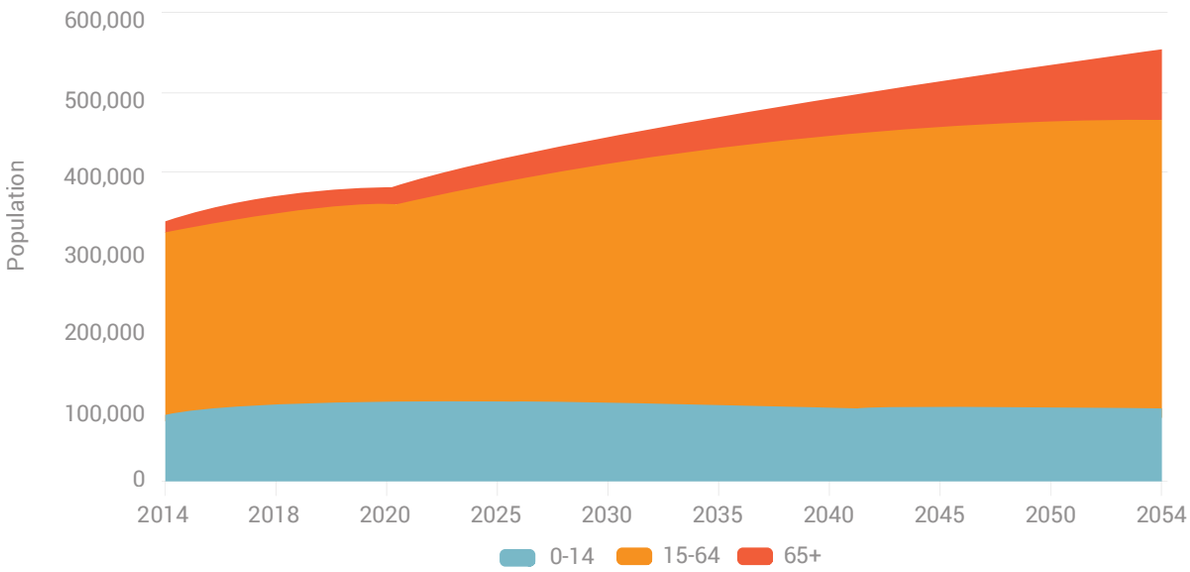
Source: Projected based on the 2014 Census data

The pyramids show that as the population gradually increases the current demographic trend in child population continues until 2030. After 2030, as the child population declines and, the elderly population increases, the current people in the working age group shift into the elderly cohort. However, the bulk of the population remained in the working age group throughout the projection period.

The most striking transformation observed in the pyramids is the shift in the population distribution between Male' and the Atolls and the demographic change that takes place in each population. While in 2014, the population is characterized by the population living in the Atolls. The Atoll population gives the population pyramid a broad base in 2014. However, as the population growth starts to slow down during the projection period and due to the effect of internal migration, the population in the Atolls decreases, reaching a population below the initial 2014 figure.

Significant changes also took place between the broad age groups of the Resident Maldivian Population. This is more closely observed for the elderly population as presented in Figure 3.17.

Figure 3.17: Resident Maldivian Population by broad age group, 2014-2054



Source: Projected based on the 2014 Census data

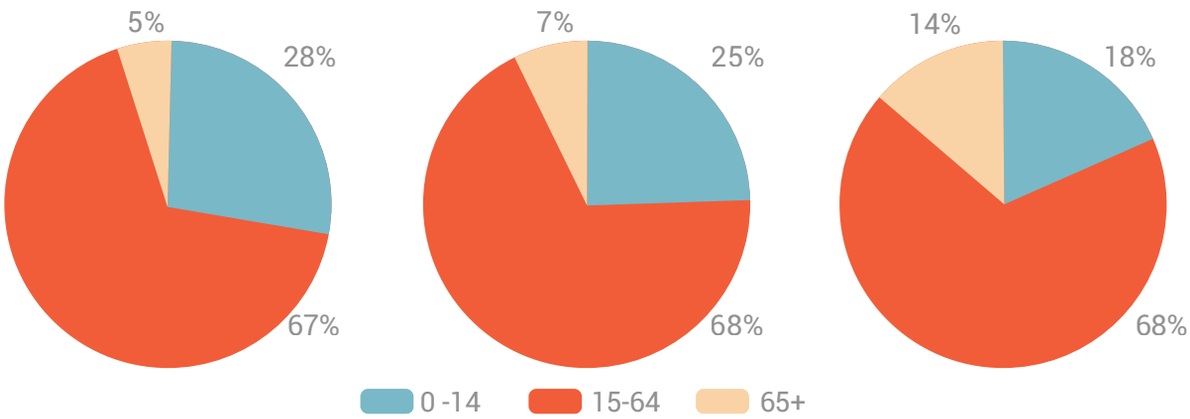
The following pie-chart gives a closer look at the changes that come in the composition within broad age group by percentages.

Figure 3.18(a-c): Resident Maldivian Population by broad age group, 2014-2050

Figure 3.18a : Resident Maldivian Population by broad age group, 2014

Figure 3.18b : Resident Maldivian Population by broad age group, 2030

Figure 3.18c : Resident Maldivian Population by broad age group, 2050

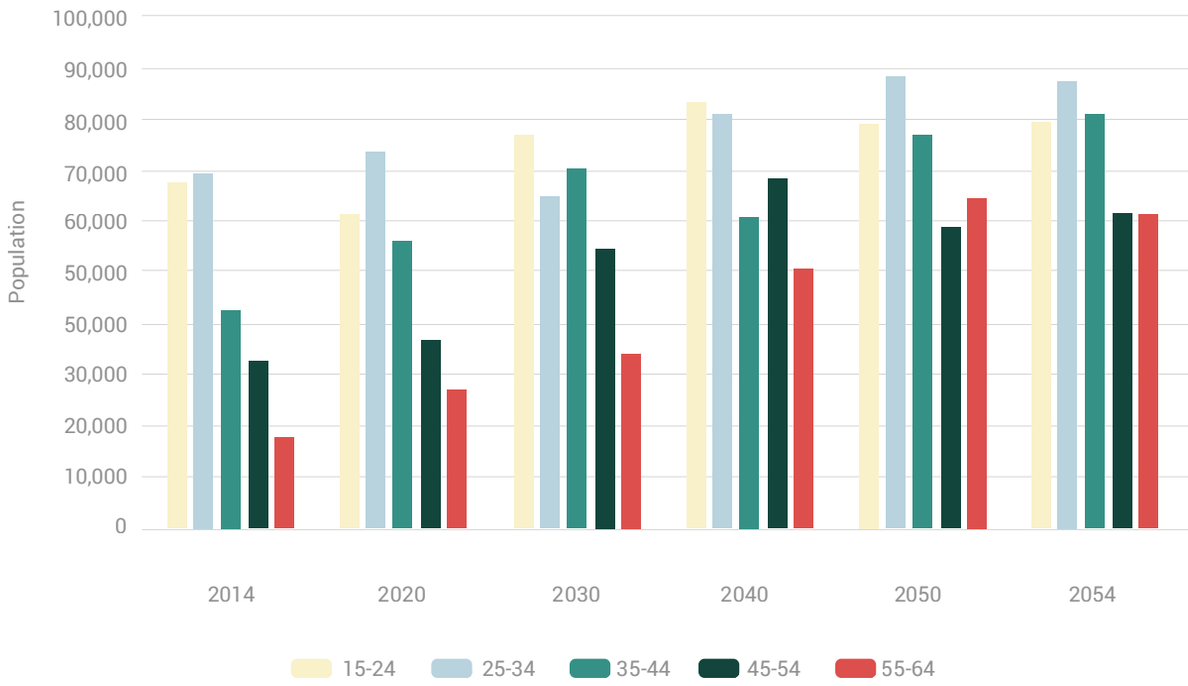


Source: Projected based on the 2014 Census data

The child population currently accounts for 28 percent of the Resident Maldivian Population. With the decline in the fertility level, it will stand at 18 percent by the end of the projection period. The elderly population will see an increase in their proportion, moving from 5 percent to 14 percent by 2050. The working age group will keep the same proportion, with a slight increase to 68 percent in 2050.

Looking more closely at the composition of working age population over the projection period we will see the high and increasing numbers of young population and youth among the working age Maldivians.

Figure 3.19: Resident Maldivian Population by broad age group, 2014-2054



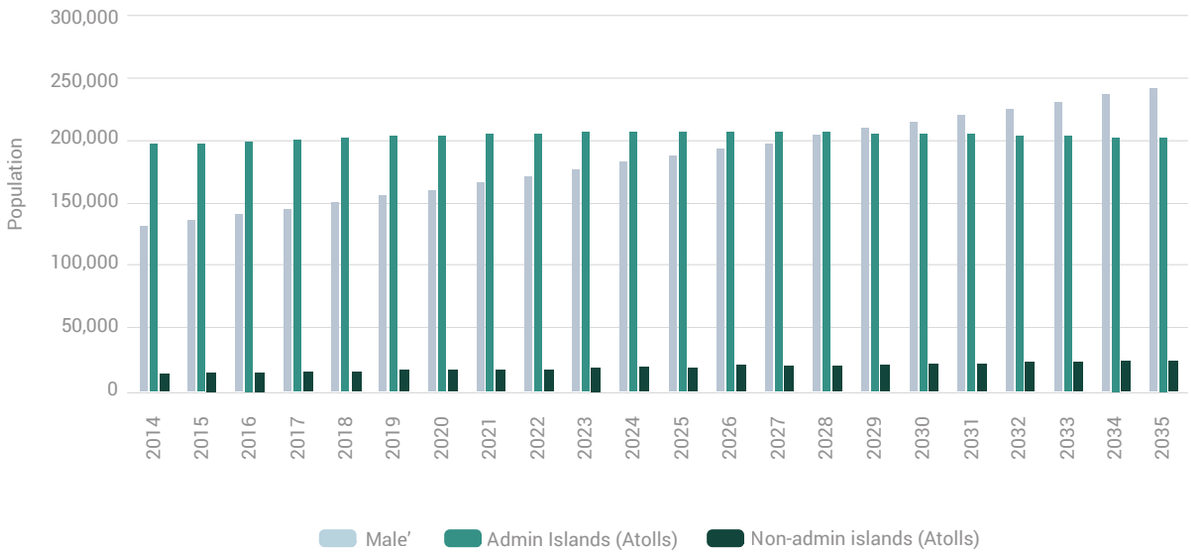
Source: Projected based on the 2014 Census data

3.4.3 Resident Maldivian Population by locality

The population projection has been prepared to highlight the impact of assumed levels of mortality, fertility, and migration on the population at different localities.

While the Resident Maldivian Population in Maldives was 339,761 people, 38 percent of this population live in Male' and the remaining 60 percent in the twenty Atolls. Among the Resident Population of the Atolls, 50 percent reside in Administrative Islands while 11 percent live in the Non-Administrative Islands of the Atolls. Non-Administrative Islands comprise of tourist resorts and other industrial islands (include industrial islands considered as Greater Male' Area in the population projections- Thilafushi, Gulheefalhu, Hulhule).

Figure 3.20: Resident Maldivian Population in Administrative and Non-Administrative Islands, 2014-2035



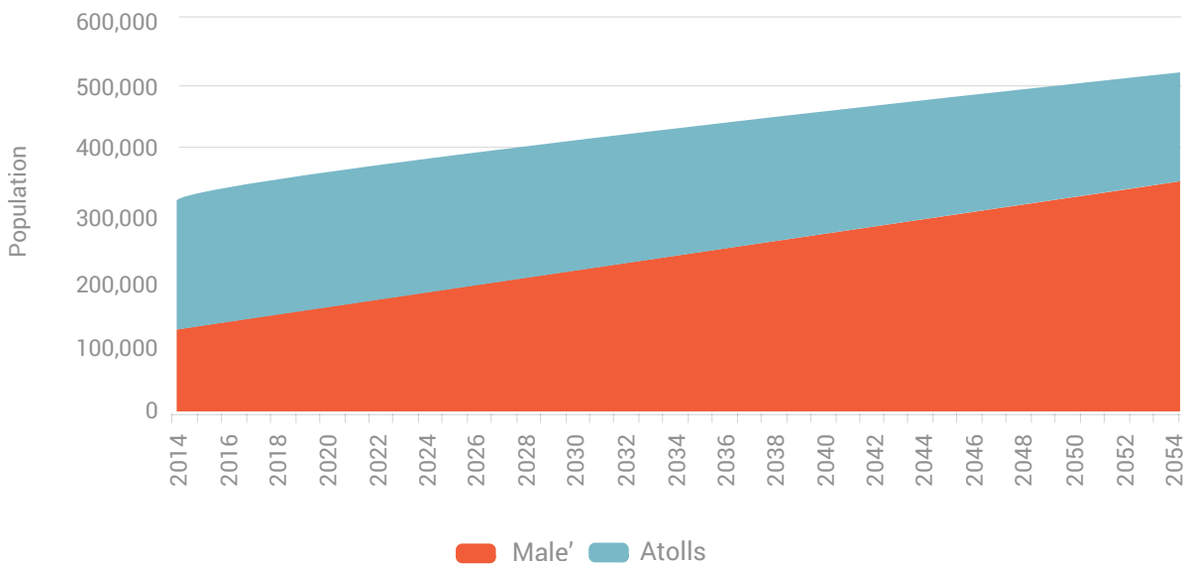
Source: Projected based on the 2014 Census data

The Resident Maldivian Population in Male' will continue to increase due to constant positive migration rate to Male', even if the fertility level goes below replacement level.

If internal migration continues at its current level, Male' will consist of more than half of the Resident Maldivian Population by 2054 (64 percent). This is an important finding as the current government of Maldives has set up a broad policy to consolidate 70 percent of the population in Greater Male' Area by 2050.

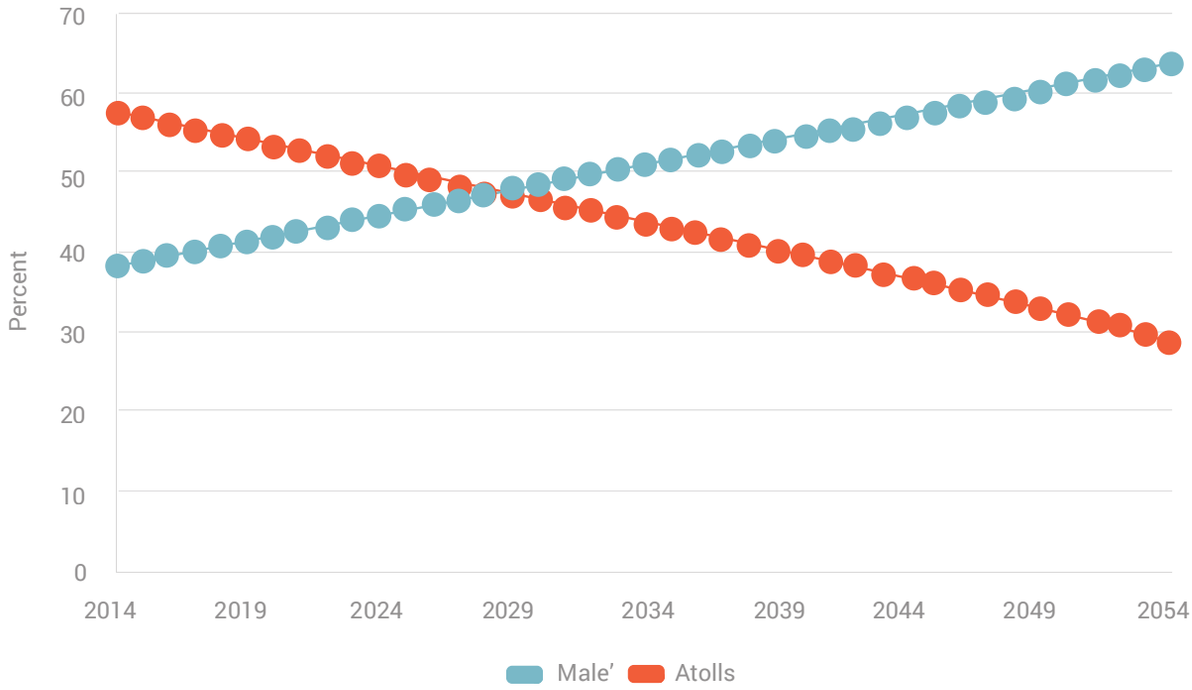
Though the population in Male' is 64 percent of the Resident Maldivian Population in 2054, the Resident Maldivian Population in Male' will double its size by 2040. The Resident Maldivian Population will halve between Male' and the Atolls by 2030 (see Figure 3.21 and Figure 3.22).

Figure 3.21: Resident Maldivian Population in Male' and Atolls, 2014-2054



Source: Projected based on the 2014 Census data

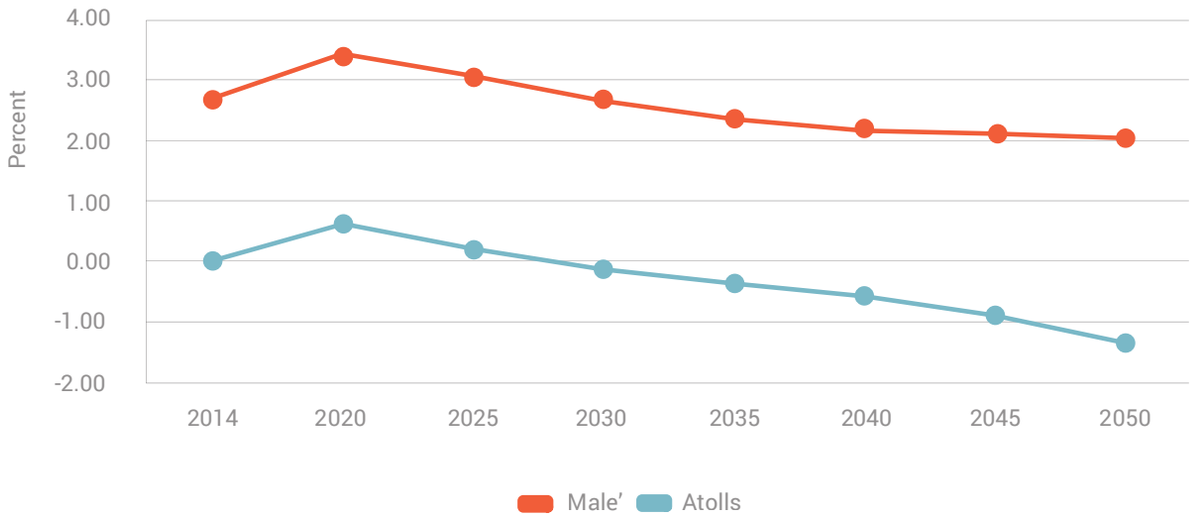
Figure 3.22: Share of Resident Maldivian Population in Male' and Atolls, 2014-2054



Source: Projected based on the 2014 Census data

Figure 3.23 shows the decline in population growth rate for Male' and the Atolls. The decline in the Atolls is significant, due to negative migration rates whereby higher outmigration than in-migration occurs and low fertility rates. At the end of projection period, the population growth rate in Male' reaches the lowest at 2.02 percent per year while in the Atolls negative growth rates persist from 2030 and beyond.

Figure 3.23: Population growth rate for Male' and Atolls, 2014-2050



Source: Projected based on the 2014 Census data

As seen from Figure 3.16 (a-f) and Table 3.6, Male' will absorb most of the Resident Maldivian Population in the future. This is mainly due to the negative migration in the Atolls, with Male' absorbing these migrants. This leads to a faster population growth in Male' than the Atolls and at the same time the population in the Atolls decreases at a faster pace too.

In Male' the population will double its size by 2040 and almost triple the population of 2014 by 2050. In the Atolls, due to negative migration rates, the population continues to decline after reaching its peak in 2030. At the end of the projection period, the Resident Maldivian Population in the Atolls is less than the population observed in 2014.

Table 3.6: Resident Maldivian Population by Male' and Atolls, 2014-2054

Year	Resident Maldivians				
	(Numbers)			(%)	
	Republic	Male	Atoll	Male	Atoll
2014	326,130	130,465	195,665	40	60
2020	363,338	159,990	203,348	44	56
2025	392,205	186,667	205,538	48	52
2030	417,884	213,476	204,408	51	49
2035	441,659	240,467	201,192	54	46
2040	464,252	268,455	195,797	58	42
2045	485,516	298,102	187,414	61	39
2050	505,039	329,739	175,300	65	35
2054	518,972	356,243	162,729	69	31

Source: Projected based on the 2014 Census data

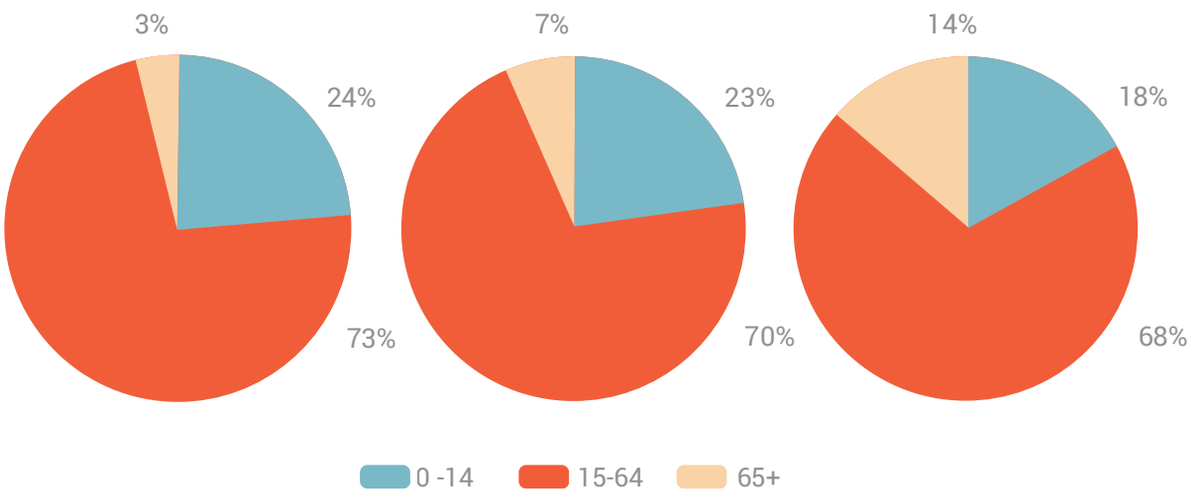
Changes in the age composition between Male' and the Atolls also show marked differences. In 2014, 24 percent of the Male' population consisted of children while this proportion went down to 18 percent by 2050. The working age group continues to grow in number but showed a decrease overtime in the proportion from 73 percent in 2014 to 68 percent in 2054. More significantly is the increase in the elderly population, which will increase from 3 percent in 2014 to 14 percent in 2050.

Figure 3.24(a-c): Resident Maldivian Population in Male' by broad age group, 2014-2054

Figure 3.24a: Resident Maldivian Population in Male' by broad age group, 2014

Figure 3.24b: Resident Maldivian Population in Male' by broad age group, 2030

Figure 3.24c: Resident Maldivian Population in Male' by broad age group, 2050



Source: Projected based on the 2014 Census data

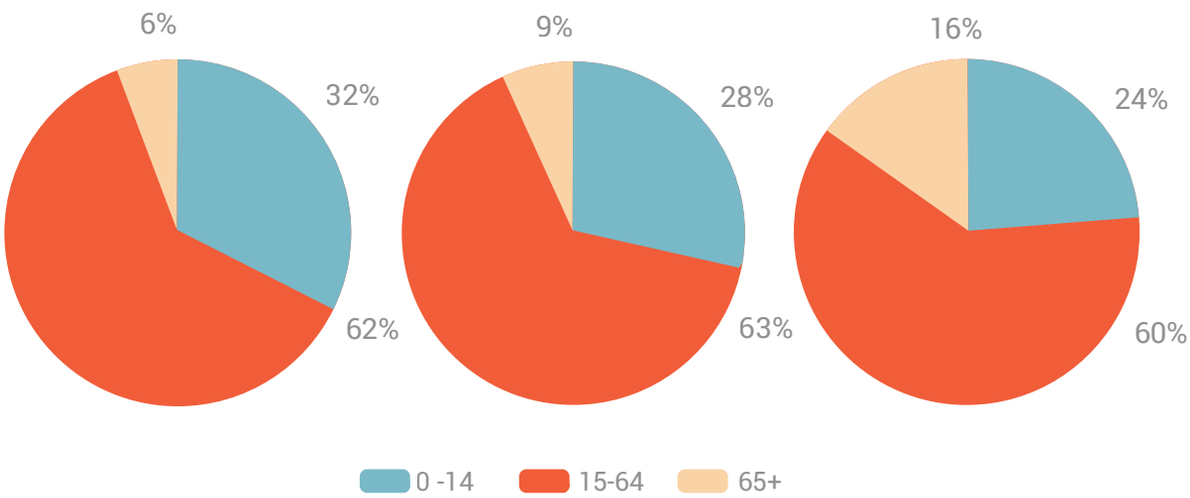
In the Atolls, the initial composition of the working age group is lower compared to Male'. But interestingly, the labour force will increase while the child population in the Atoll will decrease overtime. The elderly population also shows an increase, which is expected to go from 6 percent to 16 percent by 2050.

Figure 3.25 (a-c): Resident Maldivian Population in Atolls by broad age group, 2014-2054

Figure 3.25a: Resident Maldivian Population in Atolls by broad age group, 2014

Figure 3.25b: Resident Maldivian Population in Atolls by broad age group, 2030

Figure 3.25c: Resident Maldivian Population in Atolls by broad age group, 2050



Source: Projected based on the 2014 Census data

Resident Maldivian Population in Male'

Male' being the capital island of the country welcomes a high number of in-migrants every year, in addition to the population movements that occurs in the country. The population pyramid for Male' for the current year (2018) and twelve years down the line in 2030 are depicted in Figures 3.26 (a-b) below.

Figure 3.26a: Population pyramid of Resident Maldivian and Foreign Population of Male', 2018

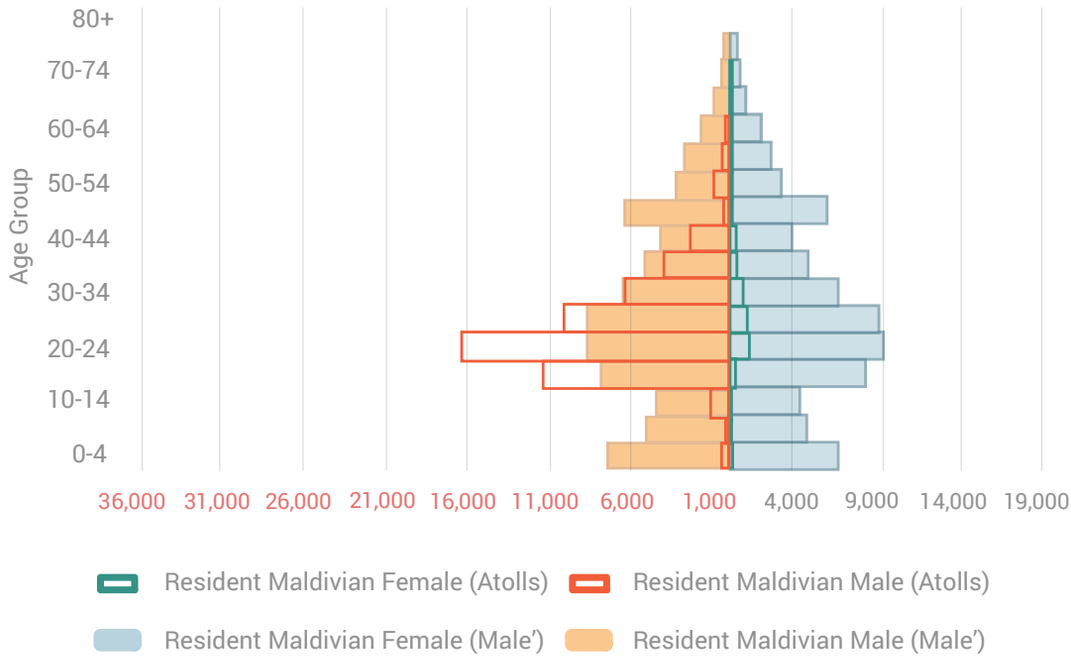
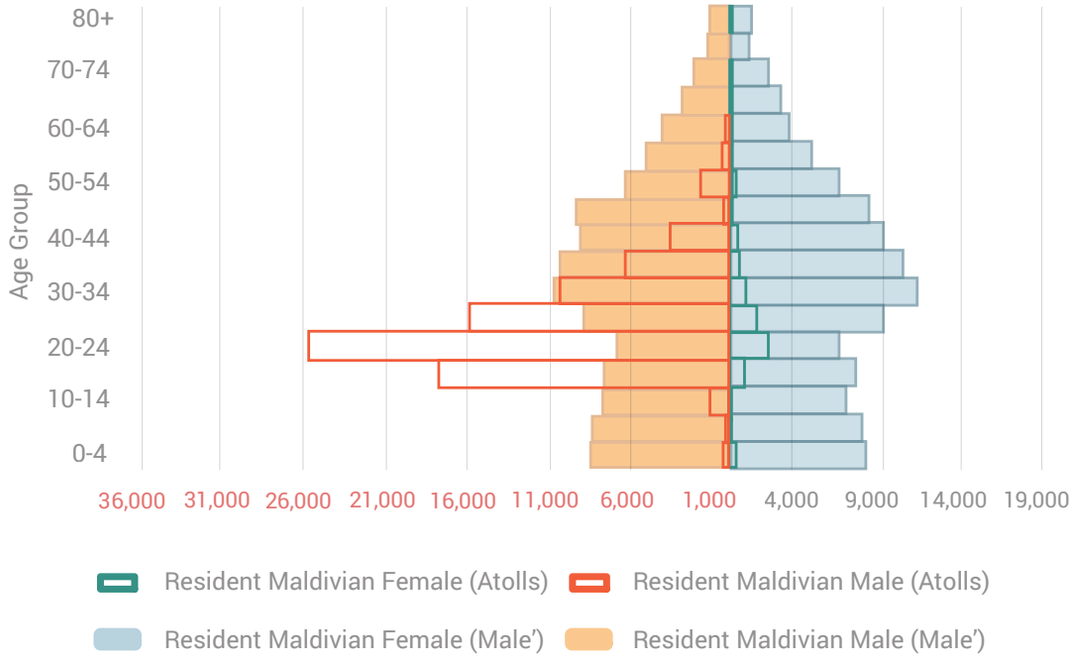


Figure 3.26b: Population pyramid of Resident Maldivian and Foreign Population of Male', 2030



Source: Projected based on the 2014 Census data

Resident Maldivian Population in the Atolls

As for the Atolls a high amount of out-migration occurs every year, mainly towards the capital Male' in search of better opportunities. The population pyramid for Atolls (include combined Maldivian Population residing in the 20 atolls) for the current year (2018) and twelve years down the line in 2030 are depicted in Figure 3.27(a-b) below.

Figure 3.27a: Population pyramid of Resident Maldivian and Foreign Population of Atolls, 2018

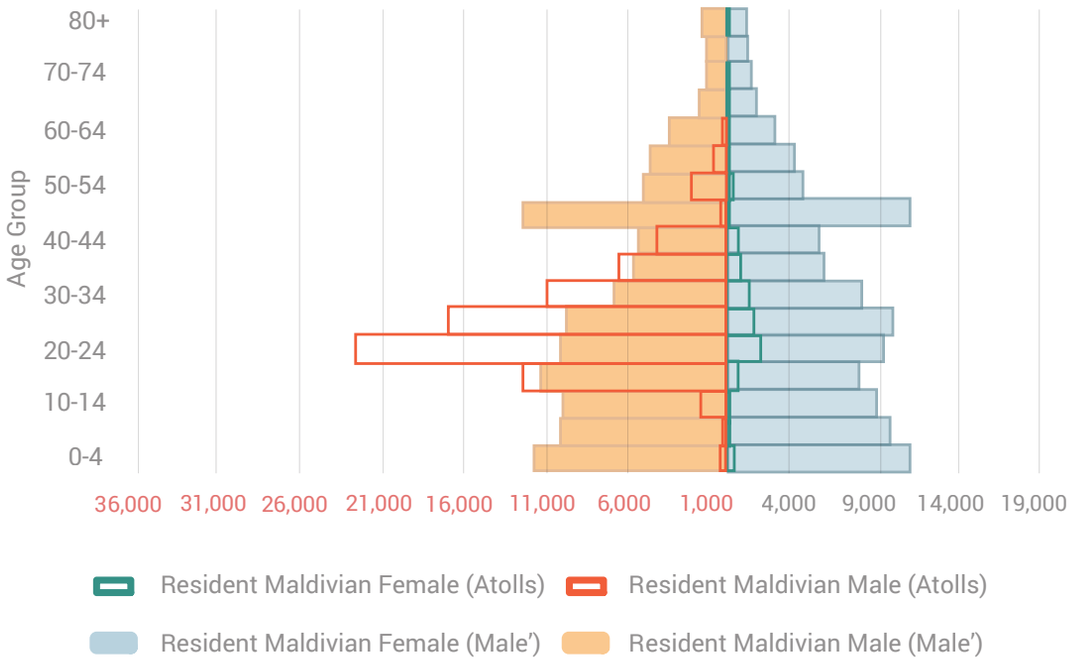
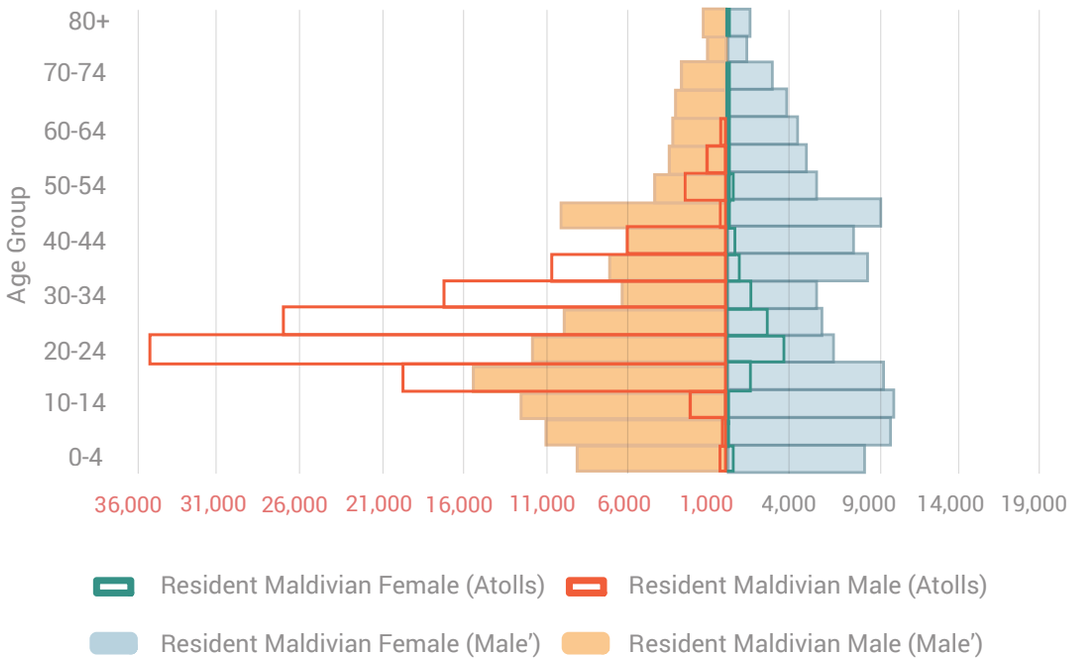


Figure 3.27b: Population pyramid of Resident Maldivian and Foreign Population of Atolls, 2030



Source: Projected based on the 2014 Census data

As seen from Figure 3.20, the Resident Maldivian Population continues to grow in Male' while the population in the Atolls decreases towards the end of the projection period. The 2014 Census showed that the Resident Maldivian Population is dispersed across the country with 9 Atolls having a population greater than 10,000 people (HA, HDh, Sh, N, R, K, L, GDh, and S).

Table 3.7: Resident Maldivian Population by locality, 2014 & 2054

Locality	Population	
	2014	2054
Male'	130,465	35,6243
North Thiladhunmathi (HA)	12,939	7,801
South Thiladhunmathi (HDh)	18,569	21,451
North Miladhunmadulu (Sh)	12,091	13,361
South Miladhunmadulu (N)	10,483	9,925
North Maalhosmadulu (R)	14,862	14,642
South Maalhosmadulu (B)	8,878	4,618
Faadhippolhu (Lh)	7,905	5,047
Male' Atoll (K)	12,221	12,953
North Ari Atoll (AA)	5,907	6,467
South Ari Atoll (ADh)	8,150	10,292
Felidhu Atoll (V)	1,601	543
Mulakatholhu (M)	4,705	2,813
North Nilandhe Atoll (F)	4,119	5,824
South Nilandhe Atoll (Dh)	5,305	4,373
Kolhumadulu (Th)	8,901	3,362
Hadhdhunmathi (L)	11,795	11,279
North Huvadhu Atoll (GA)	8,334	2,722
South Huvadhu Atoll (GDh)	11,587	3,313
Gnaviyani (Gn)	7,984	8,604
Addu City (S)	19,329	13,339

Source: Projected based on the 2014 Census data

By 2054, the pattern of population distribution will change among the Atolls where in most of the Atolls the population will decline. The projection shows that only 7 Atolls had a population greater than 10, 000 people (HDh, Sh, R, K, ADh, L, and S) in 2054. The most striking feature is that many of the bigger Atolls like GA & GDh Atoll will lose close to one-third of their population by 2050. This again owes to the negative migration rates and the decline in the fertility rate.

3.4.4 Impact of changes in population on socio-economic indicators

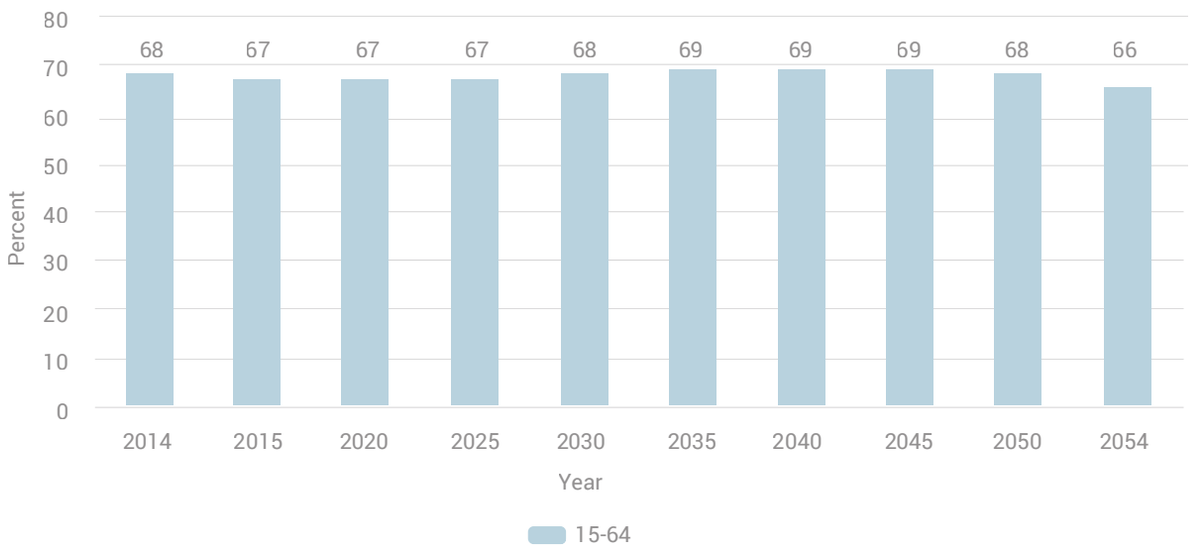
It is important to look at the different socio-economic indicators as they strongly influence the changes in the population dynamics in the future. This section introduces a brief analysis of these indicators which are required for detailed sectoral planning, policy making as well as to have a clear picture of what would happen in the future when the demographic components of population change. Population projections are also useful to look at in terms of size of work force, education, dependency ratio, and population ageing. Hence the projections will exhibit the magnitude of socio-economic sector needs for Maldives in the years to come. In the short term, only slight changes might be observed for the population. However, over a longer term, these changes become more significant.

a) Size of the work force

The size of the work force (persons aged 15-64 years) is considered as the working age population. This provides an indication of the potential size of the future labour force. It shows a rough estimate of the future number of additional jobs that need to be created given the current situation about the stock of jobs. The current labour force participation rate (LFPR) in Maldives in 2014 is 63.8 percent.

In the 2014 Census, the working age population consisted of 67 percent of the Resident Maldivian Population. It is interesting to note that the size of the work force will remain the same, with a slight increase in percentage from 68 percent to 70 percent up to 2040 and then again declining to 68 percent by 2050 (see Figure 3.28).

Figure 3.28: Share of working age group among Resident Maldivian Population, 2014-2054



Source: Projected based on the 2014 Census data

This implies that the government will need to continue its efforts to create new jobs and reduce unemployment, especially among the growing young population. Due to the constant youthful population, it is expected that the LFPR will increase in the future. Having a large size of work force while at the same time the dependency ratio remains low provides the window of opportunity when a demographic dividend can be captured. The 2006 and 2014 Census data shows that Maldives have entered the demographic window of opportunity between 2005 and 2010 (see May, 2016). Hence, the challenge lies with the government in absorbing this working age population into the labour force, and investing in their education, skills development, and training.

b) Education

Education is important as it is associated with a person's employability, reproductive health, and decision-making process. The 2014 Census showed that 82 percent of the 5+ population is currently attending school while 16 percent is engaged in other trainings/institutions.

Since the population projection has been prepared for five-year age groups, it is assumed that pre-school is 0-4 years, primary age is 5-14 years, and secondary/higher secondary is 15-19 years.

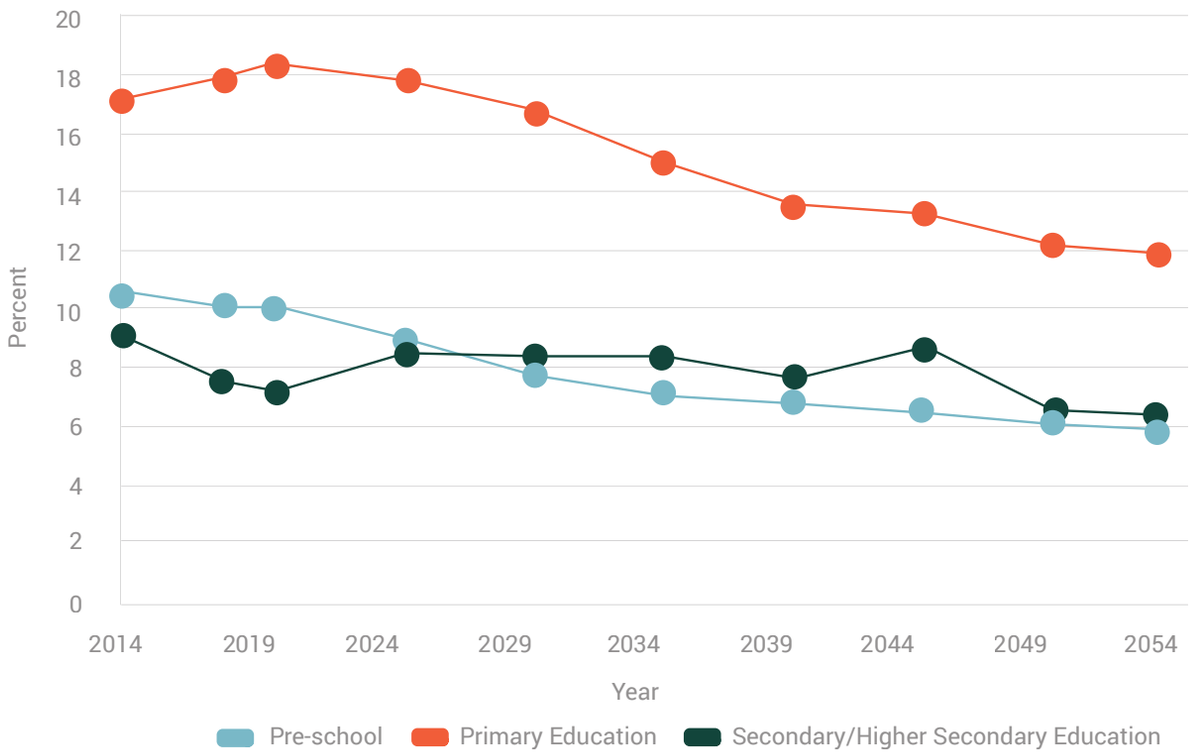
Table 3.8: Distribution of population within child age group, 2014-2054

Year	Resident Maldivian Population				Percent (out of Resident Maldivian Population)		
	Pre-school (0-4 yrs considered)	Primary age (5- 14 yrs considered)	Secondary/ Higher Secondary Education (15-19 yrs considered)	Total Population	Pre-school (considered as 0-4 yrs)	Primary age (considered 5- 14 yrs)	Secondary/ Higher Secondary Education (considered as 15-19 yrs)
2014	35,843	57,954	30,926	339,761	11	17	9
2018	37,192	65,541	27,512	366,176	10	18	8
2020	37,870	69,253	27,101	379,270	10	18	7
2025	36,464	73,179	34,784	410,349	9	18	8
2030	33,961	73,580	37,085	438,547	8	17	8
2035	32,988	69,711	39,060	465,191	7	15	8
2040	33,236	66,278	37,897	491,051	7	13	8
2045	33,590	68,253	44,991	516,035	7	13	9
2050	33,274	66,178	35,002	539,795	6	12	6
2054	32,394	66,325	35,414	557,537	6	12	6

Source: Projected based on the 2014 Census data

The effect of declining birth rates reflect on the child population (0-4 years). In 2014, the 0-4-year-old constituted 11 percent (35,843) of the Resident Maldivian Population. This number will decrease to 32,394 children, which accounts for 6 percent of the Resident Maldivian Population in 2054. The expected reduction in the births, considered as pre-school population (0-4 years), means that the demand for pre-school services will fall in the future. The decrease is also observed in the primary as well as in the secondary age group. This means that the government will now be able to gradually shift its programmatic focus from looking at quantity to improving quality of education throughout the country.

Figure 3.29: Percentage of projected population in pre-school, primary and secondary grade, 2014- 2054



Source: Projected based on the 2014 Census data

c) Reproductive age group

In the immediate future, the number of women entering into the reproductive age group (15-49 years) will have a steady increase, with the addition of about 19,000 females by 2050. However, due to the changes in the population dynamics, the percentage contributed by the women of reproductive age within the total female population will decrease from 59 percent to 45 percent.

Table 3.9: Reproductive age women, 2014-2054

Year	Population		Women in Reproductive Age group (%)
	Female Population	Reproductive Age Women	
2014	167,075	98,160	59
2020	185,331	102,902	56
2030	211,905	113,980	54
2040	234,305	113,858	49
2050	253,452	114,810	45
2054	259,855	117,770	45

Source: Projected based on the 2014 Census data

d) Demographic dependency ratio

The demographic dependency ratio shows the number of dependents, age 0 to 14 completed and over the age of 65, to the total working age population, age 15 to 64 completed. This indicator may be refined by taking young dependents in the age bracket 0 to 19 completed and/or by considering that old dependents will become dependent at an earlier age than 65 exact (e.g., at age 62 exact). An economic dependency ratio may also be calculated by taking out from the total working population those who are not taking part in the labour force (e.g., the unemployed; see May and Turbat, 2017). In this report, however, only the demographic dependency ratio will be examined, which will be referred hereafter as the dependency ratio or the overall dependency ratio.

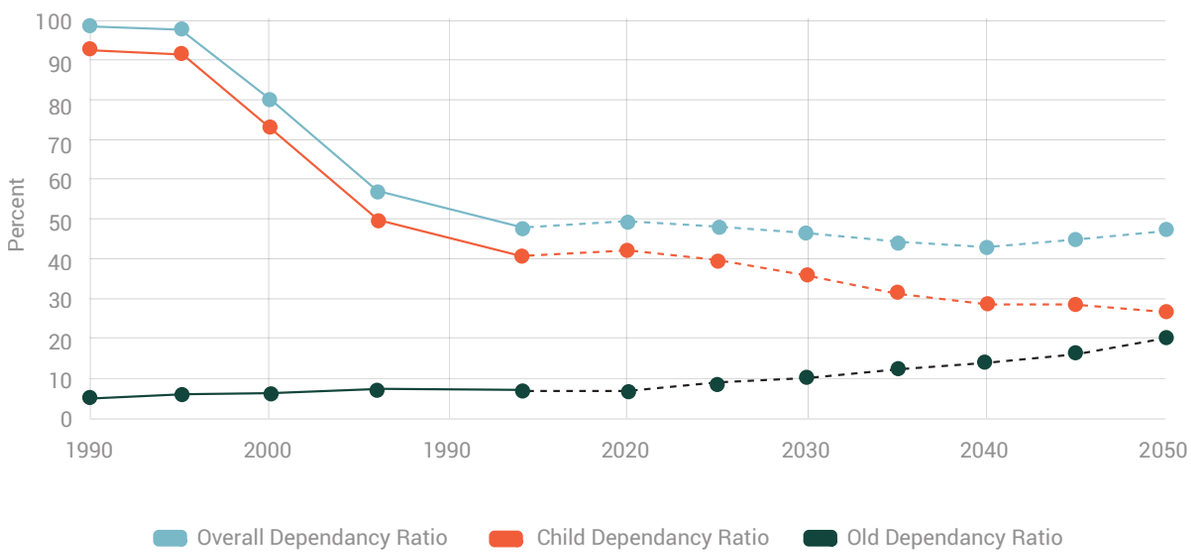
The dependency ratio indicates the pressure that dependents exert on the working age population. It indicates the potential effects of changes in the population age structure for social and economic development and this indicator may help identify areas (in particular, specific age groups) that will need social support and programs.

A higher dependency ratio indicates that the economically active population and the overall economy face a greater burden to support and provide the social services (e.g., education, health, and social security) needed by children and by older persons who are considered to be dependents.

In early 1990, the Maldives experienced a high dependency ratio meaning more children and elders were dependent on the working age population. This was also observed in 1995. By 2014, the overall dependency ratio has decreased to 48. The overall dependency ratio has shown improvement over the years meaning there was 1 dependent for 2 people of the working age group in 2014.

The projection shows that the dependency ratio is going to remain at the constant level of 48.

Figure 3.30: Overall dependency ratio, child dependency ratio and old dependency ratio, 1990-2050



Source: Maldives Population and Housing Censuses (1990-2014) and projected based on the 2014 Census data

Since improvements have been made in the overall dependency ratio at national level, it is important to look at who contributes more as dependents to the overall dependency ratio, namely the children or the elderly population. This is measured by the child dependency ratio and the old age dependency ratio.

In 1990, the high dependency ratio was due to the high child dependency ratio, which was at 98 (for every 100 persons of the working age group, 98 children were their dependents), while the old age dependency ratio was 5. However, in the future, the old age dependency ratio will increase from 5 dependents to 20 elderly persons dependent on every 100 persons of working age. As the child dependency ratio declines and the old age dependency ratio increases, this throws also some light on the population ageing process. Increase in old age dependency ratios is an indicator of the added pressures that social security and public health systems of the country will have to withstand in the future.

e) Population Ageing

Population ageing is defined by an increase of the absolute number of old people (whatever defined) in the general population, and when the older people represent a greater fraction of the total population.

Population ageing is triggered by a decline in fertility levels and an increase of the life expectancy at birth (i.e., an increase of the average length of life). The United Nations estimate that the rate of population ageing in the 21st century will exceed that of the previous century.

A population is considered relatively old when the proportion of the population age 65 and over exceeds 8 to 10 percent (Gavrilov and Heuveline, 2003: 32). In the Maldives in 2014, the number of elderly aged 65 years and more was 16,337 people which accounted for 5 percent of the total Resident Maldivian Population. By 2054, the population age 65 years and above is projected to be 88,963 persons, taking up a share of 14 percent of the Resident Maldivian Population.

Various indicators are used to measure population ageing with more accuracy. A crude indicator is often given by the median age. The median age is a statistical measure of location and defines exactly the age at which half the population is older and the other half is younger than the median age. The median age is often used to describe a population as 'young', 'old', or 'ageing'. In 2014, the median age in Maldives was 26 years compared to 17 years in 1985 (see Table 3.10).

Table 3.10: Past and projected median age of Maldivian Population, 1985-2054

Year	Median Age (in years)
1985	17
1990	16
1995	17
2000	19
2006	22
2014	26
2020	28
2030	31
2040	33
2050	35
2054	37

Source: Projected based on the 2014 Census data

Table 3.10 indicates that though the population is still relatively young, it had shown in the past – and will show more in the future - a gradual decline in the proportion of the younger population. By 2054, the median age of the population is projected to be 37 years. When the median age rises and is above 30 years, the population is said to be 'ageing'. This indicates that Maldives has transitioned into an ageing society, meaning that more adults are in the population and consequently that adults represent a larger share of the total population.

More refined indicators of population ageing include the ageing index, which is sometimes referred to as the "elder-child ratio". The ageing index is defined as the number of people age 65 and over per 100 youths under age 15 (Gavrilov and Heuveline, 2003: 33). The ageing index compares the number of elderly people to the number of children and reflects the long-term decline in fertility as well as the improvement of survival in the older ages. Therefore, the ageing index is a good indicator of changes in the age structure within the population.

Table 3.11: Past and projected ageing index, 2014-2054

Years	Children (0-14 years)	Elderly Population (65+ years)	Ageing Index
2014	93,797	16,377	17
2020	107,123	18,178	17
2030	107,541	31,783	30
2040	99,514	48,432	49
2050	99,452	74,516	75
2054	98,719	88,963	90

Source: Projected based on the 2014 Census data

The ageing index showed in Table 3.11 indicates that there were 17 elderly persons to every 100 children in 2014. However, by 2054, it will rise to 90 elderly persons to every 100 children. The ageing index has policy implications for the planning of the future economic activity, which will result from the shortfall of new entrants into the labour force who are needed to offset the gap filled by the leavers due to retirement age. It should also be noted that when the median age increases, there is a corresponding increase in the ageing index.

Finally, another indicator to assess population ageing is the potential support ratio (PSR) by age, i.e., the ratio of population by certain age groups per population 65+ or per population 70+ (see United Nations, 2017). The potential support ratio (PSR) is calculated by the number of people age 15-64 to one person of the elderly age. As the population ages, the potential support ratio tends to increase the dependency of this population on the potential workers. PSR falls from 14 persons in the working age per an elderly person in 2014 to half of that by 2040 and reduces further to 4 persons in the working age per an elderly person by the year 2054. This trend is observed in the PSR for the Maldives (see Table 3.12).

Table 3.12: Potential support ratio, 2014-2054

Years	Working age population	Elderly Population (65+ years)	Potential Support Ratio
2014	229,587	16,377	14
2020	253,969	18,178	14
2030	299,224	31,783	9
2040	343,106	48,432	7
2050	365,827	74,516	5
2054	369,855	88,963	4

Source: Projected based on the 2014 Census data

Part C:

Policy Implications and Ways Forward

4.1 Introduction

The Maldives has experienced rapid economic and social change in the past 30 years. At the same time, the population of Maldives has almost completed its demographic transition, i.e., the shift from high crude death rates and high crude birth rates to low ones, a process leading to a new demographic equilibrium (May, 2016: 2).

The population projections, which are presented in the section 2: *Calculation of assumptions by population categories* of this report are an attempt to map the demographic future of the country over several decades, namely from 2014 until 2054. These projections are based on the results of the Maldives Population and Housing Census 2014, which have been complemented with data gathered from other sources. The population projections use assumptions on future trends of the key demographic components, i.e., mortality, fertility and migration. Whereas plausible assumptions can be made rather easily for mortality and fertility (by extrapolating past trends) as well as for other demographic indicators such as the sex ratio at birth, future trends of migration are much more difficult to predict because they are mostly linked to the future economic prospects of the country.

The results of the population projections, which are discussed in the part B: *Maldives Population Projections Analysis* of this report, point to several features that can be anticipated in any population moving toward the final stage of its demographic transition and experiencing high levels of internal and international migration. In this section *Policy Implications and Ways Forward*, we will discuss the main results of the population projections for Maldives 2014-2054, the population policy implications of these findings as well as the way forward for policy formulation and implementation in Maldives.

This analysis will be carried out within the broader context of the population and development challenges in the Maldives, as outlined in the report *Maldives Population Dynamics: Policy Prospects for Human Growth and Opportunity* published in 2016 by the National Bureau of Statistics and the UNFPA Maldives Country Office (May, 2016).

4.2 Key Results of the Population Projections 2014-2054

The results of the population projections for Maldives for the period 2014 to 2054 indicate that a large increase of the population is expected. The Maldivian Resident Population will continue to grow and reach a population of 974,359 in 2054, i.e., close to one million persons. However, far more important than the sheer number of people will be the changes in the age distribution (the population pyramid) as well as in the spatial (geographical) distribution of the population.

The major features of the changing population dynamics in Maldives in the period 2014-2054, which can be derived from the population projections 2014 to 2054, can be summarized as follows:

- By 2054, more than 64 percent of the Resident Maldivian Population will be living in the Greater Male' Area, as it was defined in part A: *Projection Methodology of this report;*

- Improvements in life expectancy at higher ages imply that the subgroup of elderly people is itself ageing, which will accelerate the overall population ageing in Maldives; and

- The size of the labour force will remain at a constant rate throughout the population projection period, accounting for 68 percent of the Resident Maldivian Population in 2054 (although the percentage of the working age group is expected to peak at 70 percent in year 2040).

4.3 Policy Implications of the Population Projections

The Maldives are currently facing population and development challenges, which were outlined in the 2016 report *Maldives Population Dynamics: Policy Prospects for Human Growth and Opportunity* (May, 2016). The main population and development challenges of the country can be summarized as follows (May, 2016: 2-3):

- Improve youth's human capital and reproductive health outcomes, including gender equitable policies;

- Capture a first demographic dividend; and

- Manage internal and international migration.

The results of the population projections for the period 2014 to 2054 reinforce several of these findings. In addition, the emerging age-related transformations and changing geographical patterns of the population of Maldives will bring several demographic, economic, and social consequences. They will also have complex social and economic implications at the societal and individual levels. These emerging trends and patterns, as highlighted in the results of the new population projections, will call for a re-examination of the current policy measures as well as for new policy interventions.

Focusing on the key results of the population projections 2014-2054, one may already suggest several specific policy recommendations, as follows:

- The rapid concentration of the population in the Greater Male' Area (the population "consolidation" policy is a goal pursued by the Government of Maldives), will re-emphasize the need to continue with affordable housing schemes targeted to different level of income in order to help people relocate to the Greater Male' Area;

- The rapid ageing of the population will imply that better mechanisms need to be established to assess on the retirement system, and to determine the income, savings, and taxation policies pertaining to the elderly population; and

- The size of the labour force, which will remain almost constant throughout the projection period, indicates the need to foster education, and especially female education, if the country is to capture a first demographic dividend (which is defined as an economic surplus generated by a larger proportion of active adults who are better trained and employed).

- Additionally, the rapid ageing of the population will imply that better mechanisms need to be established to ensure sustainable and rights-based health and social protection services for the elderly, and to determine the income, savings, and taxation policies pertaining to the elderly population.

With respect to the labour force in Maldives, additional and supportive policies will also be required, especially policies that are geared at the youth and that will foster gender equality. In particular, female-centered policies will be needed to improve the human capital of Maldivian women because this sub-group is expected to play a greater economic role in the future.

4.4 The Way Forward for Policy Formulation and Implementation

The policy recommendations that are suggested herewith to address the salient population and develop features as highlighted in the new population projections of Maldives for the period 2014-2054 should not be pursued in isolation of each other. On the contrary, they should be implemented in a synergistic way and within a broader policy framework, which calls for a re-assessment of the processes of population policy formulation, implementation, and monitoring in the Maldives.

The 2016 report *Maldives Population Dynamics: Policy Prospects for Human Growth and Opportunity* had already outlined the major axes that are necessary to renew the policy process in the Maldives. The strategy proposed in this study was four-pronged, as follows (May, 2016: 35):

- Bring population issues within overall development strategies in Maldives;
- Strengthen the institutional setting to address population issues;
- Expand population and development research; and
- Enhance advocacy on population and development issues.

The time has come for the Maldives to highlight population and development issues within the overall socio-economic development strategy of the country. To do so, it will be necessary to reinforce the institutions dealing with population and development issues, especially those located in the President's Office including the Economic and Youth Council and the Social Council. More research on population and development should help support this process to this end, it is necessary that the National Bureau of Statistics (NBS) prepare additional population projections at the single island level for future planning purposes (the population projections examined in this report have been prepared at the Atoll or Administrative Island level and for 5-year age groups). Finally, it will be important to sensitize policymakers on using the population projections indicators for short and medium-term development planning as well as for the reporting on the Sustainable Development Goals (SDGs), which cover the period 2015 to 2030 (World Bank, 2017). This will also help raise the awareness about population and development issues among the Maldivian policymakers.

Annex 1:

Age-Specific Fertility Rates by Locality and age group, 2014

Locality	ASFR for 2014						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Republic	7.19	103.67	143.89	121.03	77.59	31.74	6.58
Male'	4.01	58.11	123.05	112.65	72.85	33.19	6.06
North Thiladhunmathi (HA)	1.70	155.49	172.59	142.61	70.22	19.28	20.94
South Thiladhunmathi (HDh)	7.96	131.58	161.61	131.55	105.98	30.80	11.93
North Miladhunmadulu (Sh)	9.73	150.46	155.53	117.44	69.11	29.06	0.00
South Miladhunmadulu (N)	6.21	175.60	169.34	115.47	84.80	14.12	0.00
North Maalhosmadulu (R)	13.06	152.35	153.94	129.27	90.91	44.54	2.65
South Maalhosmadulu (B)	5.15	119.89	136.27	125.58	74.53	21.05	6.78
Faadhippolhu (Lh)	13.77	158.65	153.32	101.83	79.68	7.87	3.69
Male' Atoll (K)	9.39	166.38	137.11	124.20	70.84	27.69	3.92
North Ari Atoll (AA)	8.89	178.71	172.32	106.23	91.43	23.12	7.52
South Ari Atoll (ADh)	3.57	181.40	213.02	117.96	88.56	29.79	25.51
Felidhu Atoll (V)	0.00	68.97	207.32	147.06	18.87	0.00	25.64
Mulakatholhu (M)	0.00	149.48	163.70	161.90	63.38	11.90	0.00
North Nilandhe Atoll (F)	5.08	231.16	218.62	130.43	141.67	39.22	8.93
South Nilandhe Atoll (Dh)	4.78	156.52	145.96	144.10	53.57	19.35	0.00
Kolhumadulu (Th)	16.95	163.27	166.03	135.27	77.18	26.82	8.13
Hadhdhunmathi (L)	25.34	128.34	142.22	119.27	75.43	34.16	10.17
North Huvadhu Atoll (GA)	11.43	122.03	163.64	147.24	86.38	28.99	0.00
South Huvadhu Atoll (GDh)	15.25	135.83	174.46	141.08	94.59	56.72	7.19
Gnaviyani (Gn)	13.85	119.53	150.12	113.07	76.92	72.73	4.90
Addu (S)	6.79	107.75	139.63	131.01	73.39	37.23	3.07

Annex 2:

TABLE MG 10 : POPULATION WITH A DIFFERENT USUAL AND PREVIOUS RESIDENCE, BY PLACE OF USUAL RESIDENCE AND PREVIOUS RESIDENCE, SEX AND LOCALITY (ATOLL), Census 2014

Place of usual residence	Place of previous residence																							Not stated
	Republic	Male'	HA	HDh	Sh	N	R	B	Lh	K	AA	ADh	V	M	F	Dh	Th	L	GA	GDh	Gn	S	Abroad	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Both Sexes																								
Republic	**147,927**	**29,816**	**6,881**	**6,963**	**6,009**	**5,000**	**8,513**	**5,194**	**4,499**	**6,212**	**2,378**	**3,137**	**962**	**2,425**	**1,287**	**2,756**	**5,297**	**4,723**	**4,349**	**6,865**	**2,464**	**7,936**	**14,103**	**10,158**
Male'	**68,422**	**-**	**4,446**	**3,838**	**2,496**	**2,695**	**3,696**	**2,936**	**2,561**	**1,967**	**1,163**	**1,357**	**574**	**1,523**	**827**	**1,367**	**3,807**	**2,545**	**3,239**	**5,062**	**1,587**	**5,164**	**11,872**	**3,700**
Atolls (Includes Administrative and Non- Administrative Islands)	**79,305**	**29,787**	**2,428**	**3,111**	**3,507**	**2,300**	**4,815**	**2,247**	**1,932**	**4,235**	**1,213**	**1,774**	**388**	**900**	**457**	**1,384**	**1,485**	**2,169**	**1,108**	**1,798**	**873**	**2,761**	**2,224**	**6,409**
North Thiladhunmathi (HA)	3,898	1,715	930	221	38	58	26	22	55	200	28	71	5	14	6	17	18	33	11	21	16	40	63	290
South Thiladhunmathi (HDh)	6,039	2,400	346	1,502	187	60	56	57	90	292	69	61	8	35	10	14	33	29	15	25	23	50	186	491
North Miladhunmadulu (Sh)	5,129	1,242	48	140	2,421	222	120	52	100	217	40	51	11	10	17	10	22	12	21	18	9	24	86	236
South Miladhunmadulu (N)	3,955	1,411	65	57	116	947	116	55	251	224	27	40	14	19	8	22	45	28	10	20	20	33	66	361
North Maalhosmadulu (R)	6,603	1,577	48	54	94	111	3,618	126	166	138	30	25	7	15	7	10	39	16	15	28	11	39	106	323
South Maalhosmadulu (B)	4,299	1,298	47	66	73	54	196	1,353	110	223	62	62	16	10	6	8	21	30	15	44	30	82	129	364
Faadhippolhu (Lh)	2,853	1,027	51	37	74	263	112	34	565	112	37	24	2	13	5	7	20	20	22	39	21	51	112	205
Male' Atoll (K)	9,861	3,175	442	553	223	265	248	209	298	1,364	180	258	60	112	53	224	137	137	105	162	242	544	209	661
North Ari Atoll (AA)	2,574	906	95	132	41	41	69	75	41	129	290	191	6	25	22	8	10	19	13	30	30	91	45	265
South Ari Atoll (ADh)	4,285	1,271	120	107	85	72	58	66	62	227	239	674	33	112	25	63	41	53	20	50	62	117	88	640
Felidhu Atoll (V)	758	343	9	8	10	10	12	6	4	33	5	19	165	26	9	6	3	18	1	3	5	4	23	36
Mulakatholhu (M)	1,882	932	30	33	19	27	13	18	10	57	12	23	30	343	12	42	36	37	11	11	8	27	41	110
North Nilandhe Atoll (F)	1,083	478	14	13	5	2	11	15	15	31	8	16	6	13	164	34	24	20	11	24	3	25	24	127
South Nilandhe Atoll (Dh)	2,717	1,020	46	39	20	28	38	19	11	142	24	67	9	60	45	764	44	48	11	21	17	60	38	146
Kolhumadulu (Th)	3,595	1,923	20	24	13	23	29	21	14	61	10	14	6	27	11	35	804	125	8	33	4	29	98	263
Hadhdhunmathi (L)	4,130	1,534	30	25	21	36	24	24	30	75	19	27	2	21	18	42	119	1,403	41	48	17	45	96	433
North Huvadhu Atoll (GA)	2,908	1,246	23	12	17	16	16	19	25	107	9	25	1	13	7	7	18	59	432	289	60	143	76	288
South Huvadhu Atoll (GDh)	4,042	1,922	15	19	11	14	7	14	30	68	12	21	-	8	17	19	24	32	205	655	93	220	92	544
Gnaviyani (Gn)	2,038	1,122	13	36	7	17	17	22	21	104	24	28	-	3	5	19	8	15	36	85	-	185	143	128
Addu (S)	6,656	3,245	36	33	32	34	29	40	34	431	88	77	7	21	10	33	19	35	105	192	202	952	503	498
Not Stated	200	29	7	14	6	5	2	11	6	10	2	6	-	2	3	5	5	9	2	5	4	11	7	49

TABLE MG 10 : POPULATION WITH A DIFFERENT USUAL AND PREVIOUS RESIDENCE, BY PLACE OF USUAL RESIDENCE AND PREVIOUS RESIDENCE, SEX AND LOCALITY (ATOLL), Census 2014

Place of usual residence	Place of previous residence																							Not stated
	Republic	Male'	HA	HDh	Sh	N	R	B	Lh	K	AA	ADh	V	M	F	Dh	Th	L	GA	GDh	Gn	S	Abroad	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Male																								
Republic	**79,431**	**15,440**	**3,683**	**3,623**	**3,046**	**2,684**	**4,220**	**2,805**	**2,479**	**4,761**	**1,430**	**2,044**	**521**	**1,231**	**687**	**1,394**	**2,654**	**2,418**	**2,168**	**3,264**	**1,315**	**4,064**	**7,450**	**6,050**
Male'	**33,668**	**-**	**2,218**	**1,935**	**1,360**	**1,301**	**1,800**	**1,376**	**1,250**	**1,060**	**546**	**660**	**265**	**725**	**446**	**651**	**1,895**	**1,244**	**1,556**	**2,339**	**737**	**2,325**	**6,024**	**1,955**
Atolls (Includes Administrative and Non- Administrative Islands)	**45,586**	**15,414**	**1,459**	**1,674**	**1,680**	**1,380**	**2,418**	**1,418**	**1,223**	**3,691**	**882**	**1,379**	**256**	**505**	**239**	**741**	**755**	**1,167**	**611**	**920**	**575**	**1,731**	**1,419**	**4,049**
North Thiladhunmathi (HA)	2,065	823	459	130	16	37	10	16	39	170	23	60	1	4	1	5	8	18	3	9	9	29	41	154
South Thiladhunmathi (HDh)	3,017	1,147	165	585	57	33	23	28	49	262	58	50	4	18	3	5	20	13	11	11	11	24	154	286
North Miladhunmadulu (Sh)	2,584	675	24	63	1,017	102	62	33	42	199	35	36	7	5	10	8	12	6	12	4	6	10	70	146
South Miladhunmadulu (N)	2,135	660	37	35	63	491	59	37	132	191	22	36	9	9	4	16	22	12	7	10	11	23	40	209
North Maalhosmadulu (R)	3,243	759	21	18	42	60	1,674	67	97	103	24	23	4	9	2	7	26	8	10	7	5	24	69	184
South Maalhosmadulu (B)	2,549	605	30	41	55	42	112	795	80	207	49	54	9	5	5	4	8	16	8	27	25	60	81	231
Faadhippolhu (Lh)	1,570	488	27	21	38	138	61	23	337	74	16	20	1	9	3	5	11	9	15	19	12	36	72	135
Male' Atoll (K)	7,818	2,163	394	464	194	242	198	184	245	1,227	145	230	34	78	30	142	103	109	71	121	219	501	157	567
North Ari Atoll (AA)	1,666	464	63	103	35	36	54	55	26	118	187	132	6	19	10	6	7	12	11	17	25	80	30	170
South Ari Atoll (ADh)	2,967	676	104	81	75	63	43	56	58	206	164	480	20	64	11	43	22	42	17	40	53	102	45	502
Felidhu Atoll (V)	441	167	5	4	5	6	10	4	3	23	5	16	120	11	4	5	-	9	-	3	3	4	12	22
Mulakatholhu (M)	967	442	15	15	11	17	7	9	3	47	8	17	18	180	4	22	19	15	7	2	1	11	27	70
North Nilandhe Atoll (F)	545	227	5	7	3	1	5	10	3	19	5	11	5	8	82	24	13	11	6	12	2	16	13	57
South Nilandhe Atoll (Dh)	1,544	535	26	29	17	21	25	15	9	132	22	61	6	32	25	358	16	29	9	15	15	41	22	84
Kolhumadulu (Th)	1,877	988	10	13	10	18	19	12	9	44	6	11	2	14	6	19	370	64	6	15	3	19	69	150
Hadhdhunmathi (L)	2,202	804	19	10	10	22	12	17	18	55	16	21	2	14	13	25	63	702	21	22	8	29	47	252
North Huvadhu Atoll (GA)	1,727	704	17	10	11	9	14	16	18	80	8	21	1	8	5	4	9	44	238	163	38	80	50	179
South Huvadhu Atoll (GDh)	2,158	1,070	8	14	5	7	3	4	20	57	9	14	-	4	11	7	10	16	90	289	48	114	70	288
Gnaviyani (Gn)	1,031	507	8	15	4	12	11	14	13	87	18	20	-	3	4	11	3	6	19	44	-	88	72	72
Addu (S)	3,480	1,510	22	16	12	23	16	23	22	390	62	66	7	11	6	25	13	26	50	90	81	440	278	291
Not Stated	177	26	6	14	6	3	2	11	6	10	2	5	-	1	2	2	4	7	1	5	3	8	7	46

TABLE MG 10 : POPULATION WITH A DIFFERENT USUAL AND PREVIOUS RESIDENCE, BY PLACE OF USUAL RESIDENCE AND PREVIOUS RESIDENCE, SEX AND LOCALITY (ATOLL), Census 2014

Place of usual residence	Place of previous residence																						Not stated
	Republic	Male'	HA	HDh	Sh	N	R	B	Lh	K	AA	ADh	V	M	F	Dh	Th	L	GA	GDh	Gn	S	Abroad	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Female																								
Republic	**68,496**	**14,376**	**3,198**	**3,340**	**2,963**	**2,316**	**4,293**	**2,389**	**2,020**	**1,451**	**948**	**1,093**	**441**	**1,194**	**600**	**1,362**	**2,643**	**2,305**	**2,181**	**3,601**	**1,149**	**3,872**	**6,653**	**4,108**
Male'	**34,754**	**-**	**2,228**	**1,903**	**1,136**	**1,394**	**1,896**	**1,560**	**1,311**	**907**	**617**	**697**	**309**	**798**	**381**	**716**	**1,912**	**1,301**	**1,683**	**2,723**	**850**	**2,839**	**5,848**	**1,745**
Atolls (Includes Administrative and Non- Administrative Islands)	**33,719**	**14,373**	**969**	**1,437**	**1,827**	**920**	**2,397**	**829**	**709**	**544**	**331**	**395**	**132**	**395**	**218**	**643**	**730**	**1,002**	**497**	**878**	**298**	**1,030**	**805**	**2,360**
North Thiladhunmathi (HA)	1,833	892	471	91	22	21	16	6	16	30	5	11	4	10	5	12	10	15	8	12	7	11	22	136
South Thiladhunmathi (HDh)	3,022	1,253	181	917	130	27	33	29	41	30	11	11	4	17	7	9	13	16	4	14	12	26	32	205
North Miladhunmadulu (Sh)	2,545	567	24	77	1,404	120	58	19	58	18	5	15	4	5	7	2	10	6	9	14	3	14	16	90
South Miladhunmadulu (N)	1,820	751	28	22	53	456	57	18	119	33	5	4	5	10	4	6	23	16	3	10	9	10	26	152
North Maalhosmadulu (R)	3,360	818	27	36	52	51	1,944	59	69	35	6	2	3	6	5	3	13	8	5	21	6	15	37	139
South Maalhosmadulu (B)	1,750	693	17	25	18	12	84	558	30	16	13	8	7	5	1	4	13	14	7	17	5	22	48	133
Faadhippolhu (Lh)	1,283	539	24	16	36	125	51	11	228	38	21	4	1	4	2	2	9	11	7	20	9	15	40	70
Male' Atoll (K)	2,043	1,012	48	89	29	23	50	25	53	137	35	28	26	34	23	82	34	28	34	41	23	43	52	94
North Ari Atoll (AA)	908	442	32	29	6	5	15	20	15	11	103	59	-	6	12	2	3	7	2	13	5	11	15	95
South Ari Atoll (ADh)	1,318	595	16	26	10	9	15	10	4	21	75	194	13	48	14	20	19	11	3	10	9	15	43	138
Felidhu Atoll (V)	317	176	4	4	5	4	2	2	1	10	-	3	45	15	5	1	3	9	1	-	2	-	11	14
Mulakatholhu (M)	915	490	15	18	8	10	6	9	7	10	4	6	12	163	8	20	17	22	4	9	7	16	14	40
North Nilandhe Atoll (F)	538	251	9	6	2	1	6	5	12	12	3	5	1	5	82	10	11	9	5	12	1	9	11	70
South Nilandhe Atoll (Dh)	1,173	485	20	10	3	7	13	4	2	10	2	6	3	28	20	406	28	19	2	6	2	19	16	62
Kolhumadulu (Th)	1,718	935	10	11	3	5	10	9	5	17	4	3	4	13	5	16	434	61	2	18	1	10	29	113
Hadhdhunmathi (L)	1,928	730	11	15	11	14	12	7	12	20	3	6	-	7	5	17	56	701	20	26	9	16	49	181
North Huvadhu Atoll (GA)	1,181	542	6	2	6	7	2	3	7	27	1	4	-	5	2	3	9	15	194	126	22	63	26	109
South Huvadhu Atoll (GDh)	1,884	852	7	5	6	7	4	10	10	11	3	7	-	4	6	12	14	16	115	366	45	106	22	256
Gnaviyani (Gn)	1,007	615	5	21	3	5	6	8	8	17	6	8	-	-	1	8	5	9	17	41	-	97	71	56
Addu (S)	3,176	1,735	14	17	20	11	13	17	12	41	26	11	-	10	4	8	6	9	55	102	121	512	225	207
Not Stated	23	3	1	-	-	2	-	-	-	-	-	1	-	1	1	3	1	2	1	-	1	3	-	3

Annex 3:

TABLE EC 6 : NUMBER OF EMPLOYED RESIDENT POPULATION 15 YEARS OF AGE AND OVER BY INDUSTRY, SEX AND LOCALITY, Census 2014

Industry and Sex	Total				Maldivian				Foreign			
	Republic	Male'	Administrative Islands	Non-Administrative Islands	Republic	Male'	Administrative Islands	Non-Administrative Islands	Republic	Male'	Administrative Islands	Non-Administrative Islands
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Both Sexes	**205,570**	**81,673**	**88,017**	**35,880**	**145,757**	**59,003**	**73,536**	**13,218**	**59,813**	**22,670**	**14,481**	**22,662**
Agriculture Forestry and Fishing	16,409	1,636	14,226	547	15,130	1,532	13,463	135	1,279	104	763	412
Mining and Quarrying	220	11	207	2	190	10	179	1	30	1	28	1
Manufacturing	23,093	5,416	15,895	1,782	18,574	4,059	14,242	273	4,519	1,357	1,653	1,509
Electricity Gas Steam and Air conditioning supply	2,565	572	1,986	7	2,539	560	1,976	3	26	12	10	4
Water supply; Sewerage Waste management and remediation activities	670	409	232	29	541	335	203	3	129	74	29	26
Construction	20,196	7,157	7,946	5,093	5,615	2,079	2,797	739	14,581	5,078	5,149	4,354
Whole sale and retail trade; Repair of motor vehicles and motorcycles	20,224	13,155	6,826	243	15,372	9,298	6,029	45	4,852	3,857	797	198
Transportation and Storage	12,757	8,589	3,444	724	10,223	6,883	3,127	213	2,534	1,706	317	511
Accommodation and Food Service activities	41,355	8,225	7,239	25,891	20,228	3,780	5,515	10,933	21,127	4,445	1,724	14,958
Information and Communication	2,436	1,995	424	17	2,330	1,904	411	15	106	91	13	2
Financial and Insurance activities	1,630	1,332	295	3	1,557	1,262	292	3	73	70	3	-
Real estate activities	58	55	3	-	52	49	3	-	6	6	-	-
Professional scientific and techinical activities	3,795	3,573	173	49	3,006	2,832	162	12	789	741	11	37
Administrative and Support service activities	3,457	1,839	1,418	200	2,676	1,264	1,354	58	781	575	64	142
Public Administration and Defense; Compulsory Social Security	21,896	13,206	8,049	641	21,369	12,864	7,961	544	527	342	88	97
Education	17,417	5,923	11,481	13	14,717	5,385	9,330	2	2,700	538	2,151	11
Human Health and Social Work activities	7,810	2,880	4,908	22	6,132	2,107	4,004	21	1,678	773	904	1
Arts Entertainment and Recreation	983	745	145	93	885	707	137	41	98	38	8	52
Other service activities	2,297	914	1,367	16	1,840	565	1,269	6	457	349	98	10
Activities of households as employers; undifferentiated service producing activities of households for own use	3,717	2,533	1,183	1	973	387	585	1	2,744	2,146	598	-
Activities of Extra-territorial organizations and bodies	185	164	18	3	152	132	17	3	33	32	1	-
Not Stated	2,400	1,344	552	504	1,656	1,009	480	167	744	335	72	337

TABLE EC 6 : NUMBER OF EMPLOYED RESIDENT POPULATION 15 YEARS OF AGE AND OVER BY INDUSTRY, SEX AND LOCALITY, Census 2014

Industry and Sex	Total				Maldivian				Foreign			
	Republic	Male'	Administrative Islands	Non-Administrative Islands	Republic	Male'	Administrative Islands	Non-Administrative Islands	Republic	Male'	Administrative Islands	Non-Administrative Islands
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Male	**146,059**	**56,957**	**55,682**	**33,420**	**92,371**	**36,914**	**42,584**	**12,873**	**53,688**	**20,043**	**13,098**	**20,547**
Agriculture Forestry and Fishing	14,604	1,537	12,522	545	13,340	1,435	11,771	134	1,264	102	751	411
Mining and Quarrying	217	9	206	2	187	8	178	1	30	1	28	1
Manufacturing	9,125	2,580	5,005	1,540	4,903	1,252	3,386	265	4,222	1,328	1,619	1,275
Electricity Gas Steam and Air conditioning supply	2,250	442	1,801	7	2,224	430	1,791	3	26	12	10	4
Water supply; Sewerage Waste management and remediation activities	549	327	193	29	422	253	166	3	127	74	27	26
Construction	19,841	6,927	7,834	5,080	5,303	1,873	2,695	735	14,538	5,054	5,139	4,345
Whole sale and retail trade; Repair of motor vehicles and motorcycles	14,201	10,062	3,902	237	9,463	6,287	3,133	43	4,738	3,775	769	194
Transportation and Storage	11,368	7,486	3,165	717	8,904	5,841	2,852	211	2,464	1,645	313	506
Accommodation and Food Service activities	37,144	7,257	6,100	23,787	18,092	3,032	4,413	10,647	19,052	4,225	1,687	13,140
Information and Communication	1,635	1,327	291	17	1,533	1,240	278	15	102	87	13	2
Financial and Insurance activities	827	631	195	1	760	566	193	1	67	65	2	-
Real estate activities	42	40	2	-	36	34	2	-	6	6	-	-
Professional scientific and techinical activities	2,792	2,627	119	46	2,053	1,932	109	12	739	695	10	34
Administrative and Support service activities	1,878	1,392	288	198	1,176	891	227	58	702	501	61	140
Public Administration and Defense; Compulsory Social Security	15,589	8,968	6,000	621	15,078	8,636	5,918	524	511	332	82	97
Education	5,488	1,374	4,101	13	3,628	1,026	2,600	2	1,860	348	1,501	11
Human Health and Social Work activities	2,733	974	1,746	13	1,841	515	1,314	12	892	459	432	1
Arts Entertainment and Recreation	775	571	125	79	695	537	117	41	80	34	8	38
Other service activities	1,838	683	1,139	16	1,450	396	1,048	6	388	287	91	10
Activities of households as employers; undifferentiated service producing activities of households for own use	1,295	739	556	-	118	49	69	-	1,177	690	487	-
Activities of Extra-territorial organizations and bodies	86	75	11	-	62	52	10	-	24	23	1	-
Not Stated	1,782	929	381	472	1,103	629	314	160	679	300	67	312

TABLE EC 6 : NUMBER OF EMPLOYED RESIDENT POPULATION 15 YEARS OF AGE AND OVER BY INDUSTRY, SEX AND LOCALITY, Census 2014

Industry and Sex	Total				Maldivian				Foreign			
	Republic	Male'	Administrative Islands	Non-Administrative Islands	Republic	Male'	Administrative Islands	Non-Administrative Islands	Republic	Male'	Administrative Islands	Non-Administrative Islands
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Female	**59,511**	**24,716**	**32,335**	**2,460**	**53,386**	**22,089**	**30,952**	**345**	**6,125**	**2,627**	**1,383**	**2,115**
Agriculture Forestry and Fishing	1,805	99	1,704	2	1,790	97	1,692	1	15	2	12	1
Mining and Quarrying	3	2	1	-	3	2	1	-	-	-	-	-
Manufacturing	13,968	2,836	10,890	242	13,671	2,807	10,856	8	297	29	34	234
Electricity Gas Steam and Air conditioning supply	315	130	185	-	315	130	185	-	-	-	-	-
Water suppy; Sewarage Waste management and remediation activities	121	82	39	-	119	82	37	-	2	-	2	-
Construction	355	230	112	13	312	206	102	4	43	24	10	9
Whole sale and retail trade; Repair of motor vehicles and motorcycles	6,023	3,093	2,924	6	5,909	3,011	2,896	2	114	82	28	4
Transportation and Storage	1,389	1,103	279	7	1,319	1,042	275	2	70	61	4	5
Accommodation and Food Service activities	4,211	968	1,139	2,104	2,136	748	1,102	286	2,075	220	37	1,818
Information and Communication	801	668	133	-	797	664	133	-	4	4	-	-
Financial and Insurance activities	803	701	100	2	797	696	99	2	6	5	1	-
Real estate activities	16	15	1	-	16	15	1	-	-	-	-	-
Professional scientific and techinical activities	1,003	946	54	3	953	900	53	-	50	46	1	3
Administrative and Support service activities	1,579	447	1,130	2	1,500	373	1,127	-	79	74	3	2
Public Administration and Defense; Compulsory Social Security	6,307	4,238	2,049	20	6,291	4,228	2,043	20	16	10	6	-
Education	11,929	4,549	7,380	-	11,089	4,359	6,730	-	840	190	650	-
Human Health and Social Work activities	5,077	1,906	3,162	9	4,291	1,592	2,690	9	786	314	472	-
Arts Entertainment and Recreation	208	174	20	14	190	170	20	-	18	4	-	14
Other service activities	459	231	228	-	390	169	221	-	69	62	7	-
Activities of households as employers; undifferentiated service producing activities of households for own use	2,422	1,794	627	1	855	338	516	1	1,567	1,456	111	-
Activities of Extra-territorial organizations and bodies	99	89	7	3	90	80	7	3	9	9	-	-
Not Stated	618	415	171	32	553	380	166	7	65	35	5	25

Annex 4:

ﷺ 10.2 : ﯞﯨﺰﯨﭩﯜ ﺑﯧﮈ ﺳﯩﻐﯩﻤﻰ ﺋﯘﺳﺘﯘﻗﺎﻧﻠﯩﺮﻯ ﺭﻩﺟﯩﺴﺘﯧﺮ ﻗﯩﻠﯩﻨﻐﺎﻥ ﺟﻪﻣﻌﻰ ﺑﯧﮈ ﺳﯩﻐﯩﻤﻰ ﻭﻩ ﺋﻮﺭﻧﯘﺗﯘﻟﻐﺎﻥ ﺋﻮﺭﻧﯘﺗﯘﺷﻼﺭ ﺳﺎﻧﻰ، 2008 - 2015

Table 10.2 : TOTAL REGISTERED BED CAPACITY AND NUMBER OF ACCOMMODATION ESTABLISHMENTS, BY TYPE, 2008 - 2015 (end year)

Type	2008	2009	2010	2011	2012	2013*	2014*	2015	ﺗﯜﺭ
Registered Bed Capacity									**ﺑﯧﮈ ﺳﯩﻐﯩﻤﻰ ﺗﯩﺰﯨﻤﻠﯩﻨﯩﭗ ﺋﯘﺳﺘﯘﻗﺎﻧﻠﯩﻖ ﻗﯩﻠﯩﻨﻐﺎﻥ**
Total	**23,464**	**24,978**	**25,709**	**26,896**	**28,120**	**30,133**	**31,673**	**34,105**	**ﺟﻪﻣﻌﻰ**
Resorts (including Marinas)	19,860	20,942	21,350	22,120	22,889	23,791	24,031	24,877	(ﺑﯧﺮﯨﺴﺘﯘﻟﺎﺭ ﺋﯘﺳﺘﯘﻗﺎﻧﻰ ﻗﻮﺷﯘﻟﻐﺎﻥ)
Hotels	1,110	1,368	1,449	1,603	1,627	1,708	1,704	1,648	ﻣﯩﻤﻬﺎﻧﺨﺎﻧﻼﺭ
Guest Houses	400	462	476	659	1,101	1,918	3,199	4,641	ﻣﻪﻫﻤﺎﻧﺨﺎﻧﻼﺭ
Safari Vessels	2,094	2,206	2,434	2,514	2,503	2,716	2,739	2,939	ﺳﺎﻓﺎﺭﻯ ﻛﻪﻣﺘﻪﺭﻟﻪﺭ
No. of Establishments									**ﺋﻮﺭﻧﯘﺗﯘﺷﻼﺭ ﺳﺎﻧﻰ ﺟﻪﻫﻪﺗﺘﻪ ﺗﻪﻗﺴﯩﻤﻠﯩﻨﯩﭗ**
Total	**274**	**278**	**295**	**315**	**353**	**429**	**511**	**616**	**ﺟﻪﻣﻌﻰ**
Resorts (including Marinas)	94	97	97	101	105	110	111	115	(ﺑﯧﺮﯨﺴﺘﯘﻟﺎﺭ ﺋﯘﺳﺘﯘﻗﺎﻧﻰ ﻗﻮﺷﯘﻟﻐﺎﻥ)
Hotels	13	14	17	19	19	20	19	17	ﻣﯩﻤﻬﺎﻧﺨﺎﻧﻼﺭ
Guest Houses	24	22	25	38	75	136	220	314	ﻣﻪﻫﻤﺎﻧﺨﺎﻧﻼﺭ
Safari Vessels	143	145	156	157	154	163	161	170	ﺳﺎﻓﺎﺭﻯ ﻛﻪﻣﺘﻪﺭﻟﻪﺭ

*Note: * 2013 & 2014 figures are revised*

ﺋﯩﺸﻠﯩﺘﯩﺶ: 2013 ﻫﻪﻡ 2014 ﻧﯩﯔ ﺳﺎﻥ-ﻗﯩﻴﻤﻪﺗﻠﻪﺭ ﺋﯚﺯﮔﺎﺭﺗﯩﻠﮕﻪﻥ

Source: Ministry of Tourism

ﺳﺎﻥ-ﻗﯩﻴﻤﻪﺗﻠﻪﺭ ﻣەﻧﺒﻪﺳﻰ: ﺗﯘﺭﯨﺰﯨﻢ ﻭەﺯﯨﺮﻟﯩﻜﻰ

List of Stakeholders consulted for preparing population projections

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2	Mariyam Sharmeela	Director	Ministry of Tourism
3	Mariyam Lubna Ahmed	Assistant Project Officer	Ministry of Tourism
4	Ahmed Shafeeu	State Minister	Ministry of Education
5	Yaugoob Adam Manik	Education Officer	Ministry of Education
6	Dr. Ali Fawaz	Vice Chancellor	Maldives National University
7	Zeenaz Fahumy	Quality Assurance Controller	Maldives National University
8	Ismail Shan Rasheed	Director of Planning and development	Hulhumale Development Corporation
9	Hassan Akram	Geo-spatial Analyst	Hulhumale Development Corporation
10	Moomina Abdulla	Director	Ministry of Health
11	Mariyam Mohamed	Statistical Officer	Ministry of Health
12	Fathimath Shamah	Senior Research Officer	Ministry of Health
13	Mohamed Shifau	Deputy Chief Immigration Officer	Maldives Immigration
14	Ali Sunan	Chief Immigration Officer	Maldives Immigration
15	Ibrahim Nazeem	Deputy Minister	Ministry of Housing and Infrastructure
16	Mohamed Jamsheed	Executive Coordinator	Ministry of Housing and Infrastructure
17	Ajwad Mohamed	Coordinator	Ministry of Housing and Infrastructure
18	Mohamed Azim	Director General	Ministry of Housing and Infrastructure
19	Zeeniya Ahmed Hameed	Deputy Director General	Ministry of Housing and Infrastructure

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