



LIBERIA INSTITUTE OF STATISTICS AND GEO-INFORMATION SERVICES (LISGIS)



Thematic Report on Population Projections

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2022 Liberia Population and Housing Census





Disclaimer Thematic Report: Mortality - 2022 LPHC

Dear Reader,

I am pleased to present this document as a highlight summary of the upcoming Thematic Report on Population Projections from the 2022 Liberia Population and Housing Census (LPHC). This summary offers a snapshot of the key findings and insights that will be detailed in the final report.

Please note that the full report is currently undergoing finalization, which includes comprehensive editing, formatting, graphic designing, and proofreading. The finalized version will replace this document once it is completed.

We appreciate your patience and look forward to sharing the complete report with you soon.

Best regards,

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Outline

- ⇒ Introduction and Background Context
- ⇒ National Level Population Projection
- ⇒ Urban and Rural Population Projections
- ⇒ County Population Projection
- ⇒ Sectoral Projections
- ⇒ Conclusion, policy implications and recommendation



Introduction: Background and Context

- ❑ The future trends in the size and composition of the population of any country are key in the planning of developmental policies. Population projections are key features of many planning policy studies. Understanding population patterns, trends and anticipating changes in population dynamics are key for national development planning,
- ❑ Data to support planning, implementation, monitoring and reporting on national and global goals such as the ARREST agenda, the AU Agenda 2063 (“the Africa we want”) and the 2030 Agenda for Sustainable Development Goals. Liberia is ranked 120th at the global level and 38th in Africa in terms of population size.

Population projections and SDGs

- ❑ GOAL 1: NO POVERTY - High fertility rates can trap countries in poverty. Extreme poverty due to population growth eclipse economic growth in the poorest nations.

- ❑ GOAL 2: ZERO HUNGER - Sustained population growth
- ❑ GOAL 3: GOOD HEALTH AND WELL-BEING - Funding for healthcare systems and the pressure of growing populations.
- ❑ GOAL 8: DECENT WORK AND ECONOMIC GROWTH - A high number of young dependents makes economic prosperity almost impossible and is also a recipe for social unrest.
- ❑ GOAL 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE – Population growth and providing access to modern infrastructure and technologies to everyone
- ❑ GOAL 11: SUSTAINABLE CITIES AND COMMUNITIES



Justification for the Theme

- ❑ Population size – The primary interest in the use of population projections is in the total size of the population.
- ❑ Population size data serves to determine the density in terms of occupation of expected pressure on the available surface area.
- ❑ Population size serves as an important denominator of many frequently used indicators
- ❑ The urban-rural dimensions - The place of residence (urban or rural) has always been an important dimension of a population as more countries are becoming urbanized in recent times
- ❑ Age and Sex Composition and structure of the population – To provide population projections to cover different segment of the population.
- ❑ Derived population – Generating information on derived population will essentially enable appraisal of specific needs for future planning at sectoral level in terms of needs for school, health, housing and other infrastructure and related human resources and funding.



Methodology

- The main source of data for this report is the 2022 Liberia Population and Housing Census and previous censuses
- Conduct data evaluation exercise to assess data quality issues
- Establish end of population projections period
- Determine population projection tools – DemProj module of SPECTRUM
- Build projections around component method
- Development of fertility, mortality and migration assumptions
- Generate tables
- Provide descriptions to tables and charts



Population Projection Tools and Assumptions

- ❑ The cohort-component approach was used in the population projections
- ❑ It includes assumptions on the future evolution of the fertility, mortality and migration components of population dynamics
- ❑ The DemProj module of the SPECTRUM application was used in projecting the national and rural-urban population.
- ❑ A program to make population projections based on the current population,
 - fertility,
 - mortality
 - migration
- ❑ The projections period for both the national and urban-rural was 2022 to 2065 with the reason of provide data to cover national priorities, African Union Agenda 2063 and the SDGs.



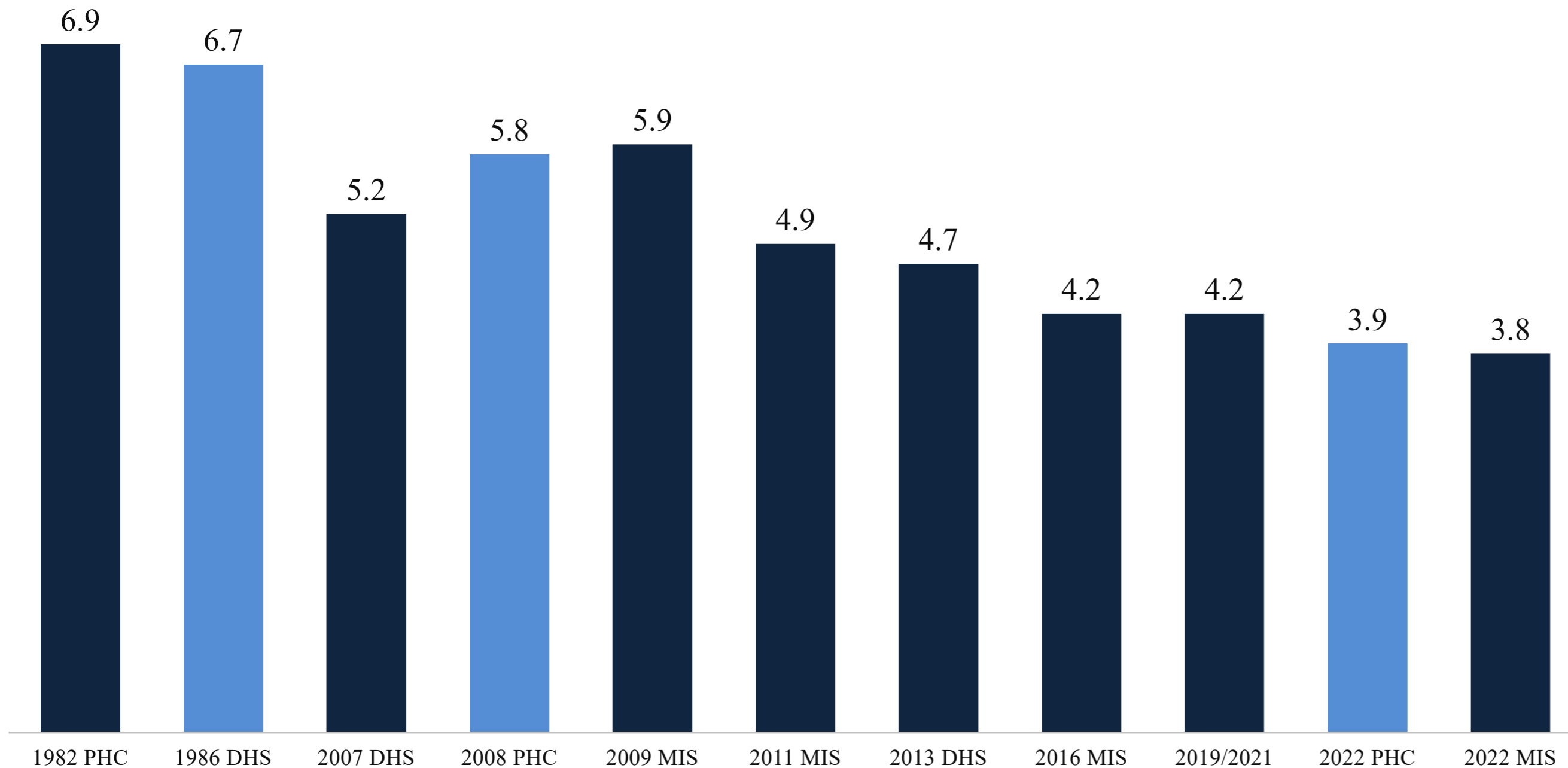
Base population data – 2022

Age	Male	Female	Total
0-4	271,732	278,220	549,952
5-9	305,694	308,910	614,604
10-14	316,719	315,903	632,622
15 - 19	315,619	322,844	638,463
20 - 24	293,896	305,640	599,536
25 - 29	213,502	227,432	440,934
30 - 34	219,223	218,837	438,060
35 - 39	170,298	167,434	337,732
40 - 44	170,868	140,960	311,828
45 - 49	100,206	85,783	185,989
50 - 54	95,866	78,708	174,574
55 - 59	48,307	40,942	89,249
60 - 64	47,888	41,159	89,047
65 - 69	26,288	22,497	48,785
70 - 74	21,094	20,341	41,435
75 - 79	9,611	9,888	19,499
80+	17,216	20,662	37,878
Total	2,644,027	2,606,160	5,250,187



Liberia Fertility Trends (1982-2022)

TFR



The TFR for Liberia between the period of 1984 and 2022 from the various PHCs, LDHS, MIS indicates gradual downward trend. Fertility rate dropped from 6.9 in 1984 to 5.8 in 2008 and it further declined to a lowest of 3.9 in 2022.



Fertility Assumptions

Year	Low Variant	Medium Variant	High Variant
2022	3.90	3.90	3.90
2025	3.78	3.85	3.90
2030	3.58	3.75	3.90
2035	3.37	3.66	3.90
2040	3.17	3.57	3.90
2045	2.97	3.48	3.90
2050	2.77	3.39	3.90
2055	2.56	3.30	3.90
2060	2.36	3.21	3.90
2065	2.16	3.12	3.90

Low variant assumption shows that TFR will decline from 3.9 children per woman in 2022 to 2.1 in 2065. Based on the assumption that the TFR target of 2.5 by 2020 set in the Revised Liberia Population Policy of 2005 had been achieved.

Medium variant assumption it is estimated that based on the pragmatic intervention programme management adopted by the Government of Liberia, TFR will drop from 3.9 children per woman in 2022 to 3.12 children in 2065.

The target set for TFR may not be achieved. High variant assumption that TFR will remain high at a constant rate of 3.9 children per woman throughout the period of 2022 and 2065

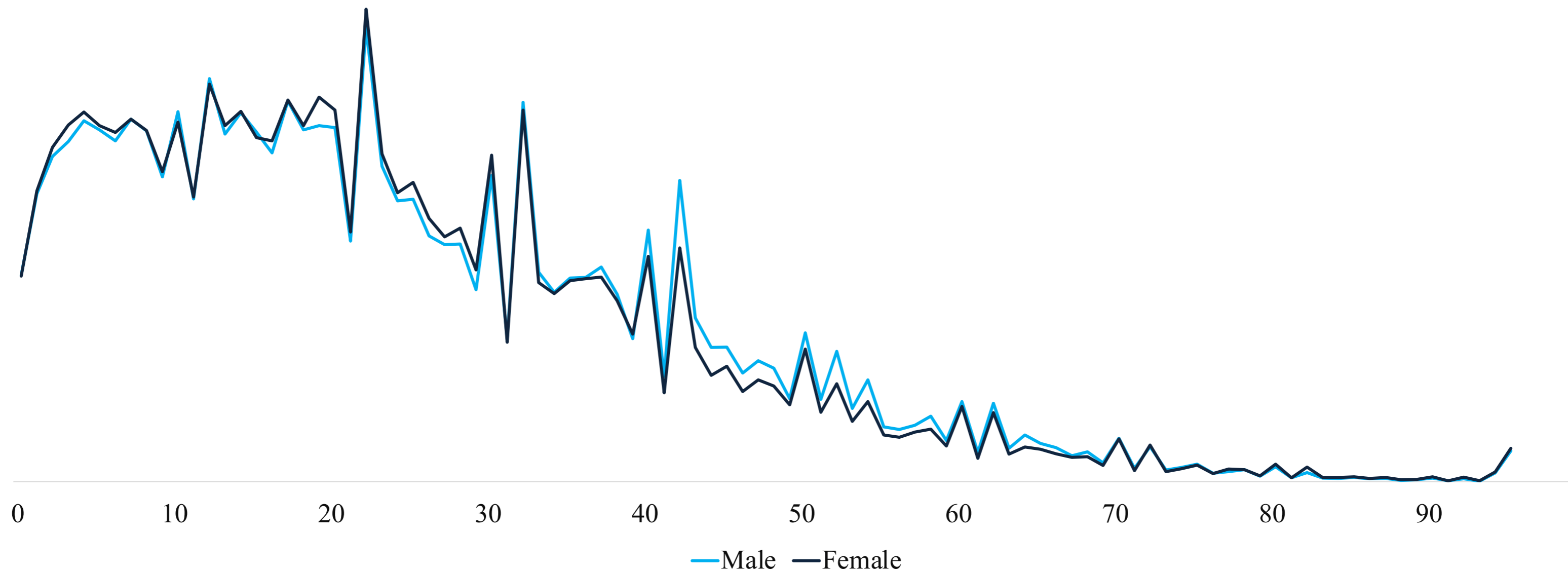


Data Evaluation

- ❑ Accurate and reliable information about a country's population is key to determining its size, age, sex, composition, residence, education, economic activity status and other attributes
- ❑ Very useful for policy formulation and evidence-based decision-making
- ❑ Evaluation of data in any demographic analysis such as population projections is very crucial.



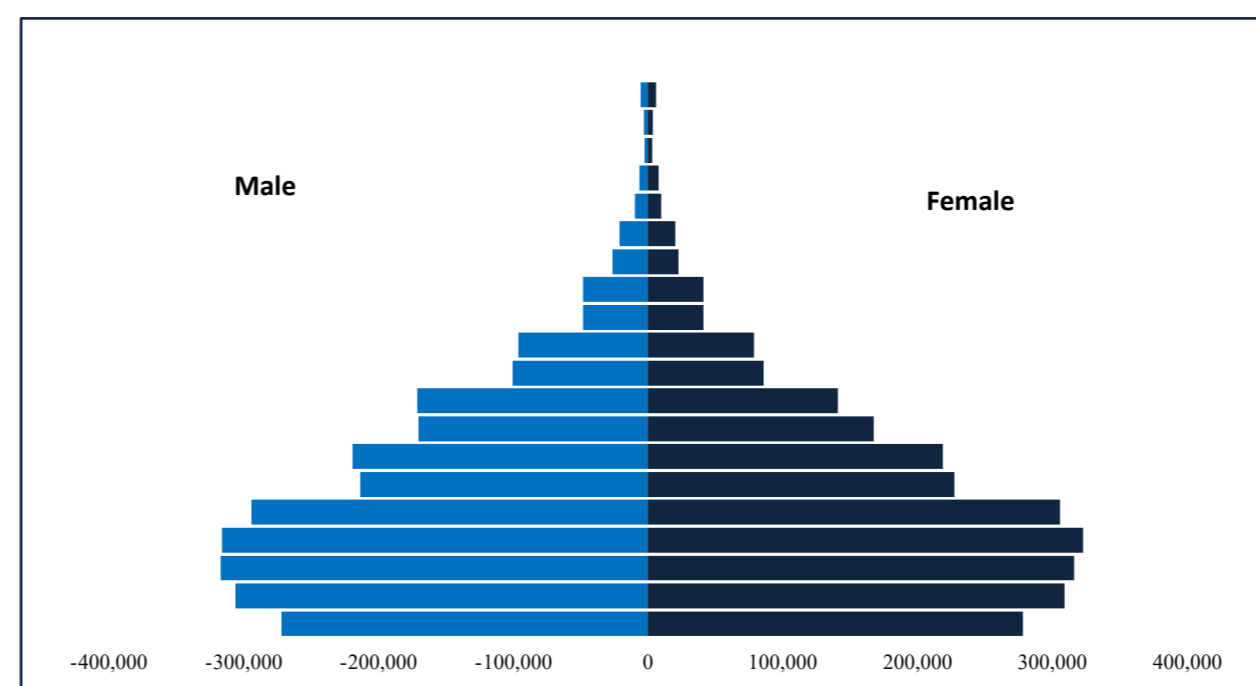
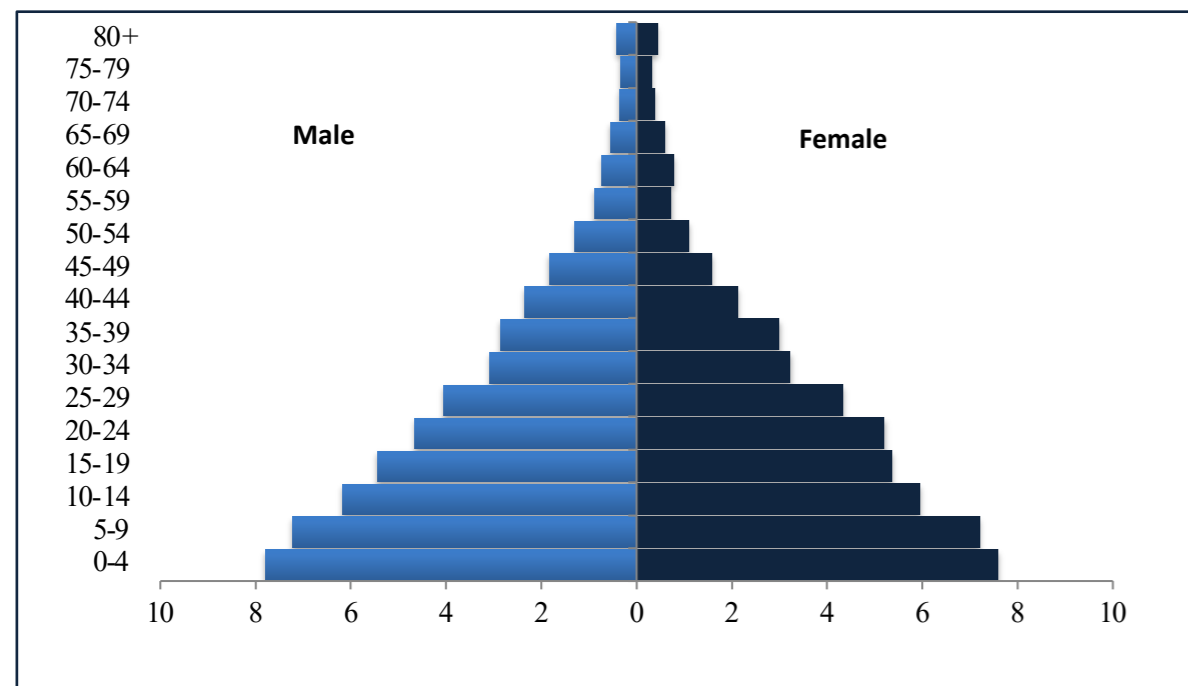
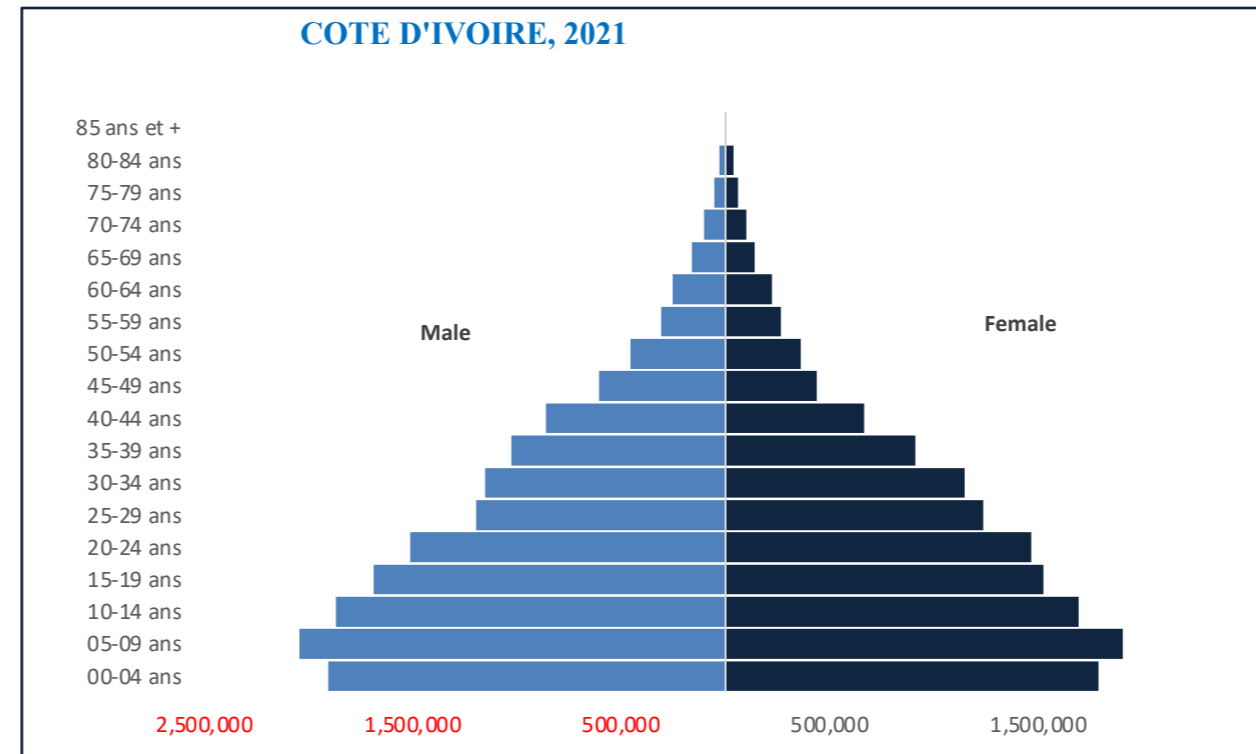
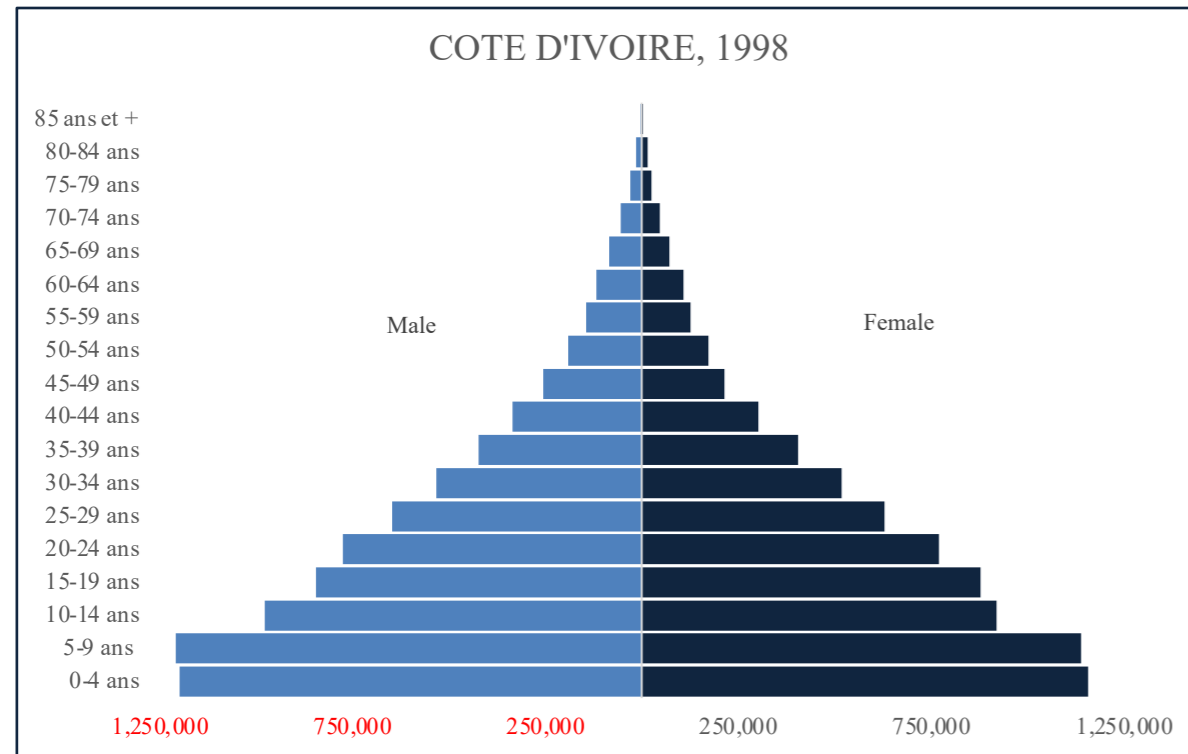
Population Distribution by Age and Sex



❑ The data depict irregularities and the normal patterns of steady and gradual declines not observed



Comparing Data



There is an evidence of transitioning of the population from children to young people as result of demographic transition with a significant decline of fertility as presented by the population of Code D'Ivoire between 1998 and 2021.



Results: Projected population by variants, 2022 - 2065

Year	Low variant	Medium variant	High variant
2022*	5,250,187	5,250,187	5,250,187
2027	5,877,566	5,896,851	5,920,178
2032	6,542,593	6,618,852	6,697,879
2037	7,178,920	7,356,092	7,526,048
2042	7,743,991	8,064,012	8,360,788
2047	8,271,643	8,792,431	9,268,416
2052	8,805,201	9,621,423	10,365,544
2057	9,310,779	10,540,409	11,671,136
2062	9,724,035	11,484,068	13,131,693
2065	9,917,187	12,051,182	14,078,162

Medium variant: 1.4 million people to be in the population in a decade (2022-2032); 2.8 million in 2042 and by 4.4 million in 2052.

Low variant: Population will increase from 5.3 million in 2022 to 6.5 million in 2032, then to 7.7 million in 2042.

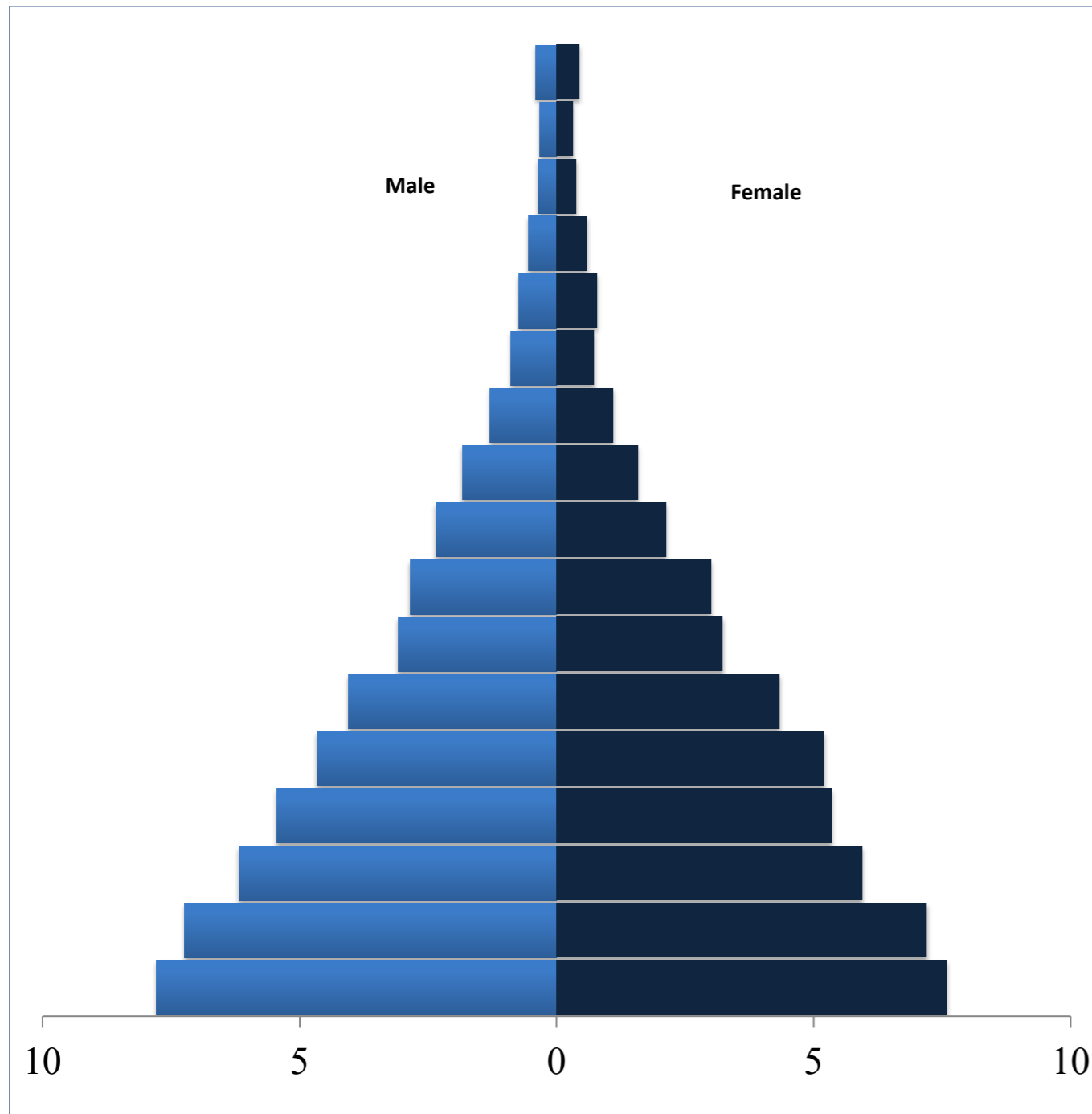
High variant: The population will grow to 6.7 million and 8.3 million by 2032 and 2042, respectively.

In 2052, the population will grow to 10.4 million and with further growth to 14.1 million by 2065.

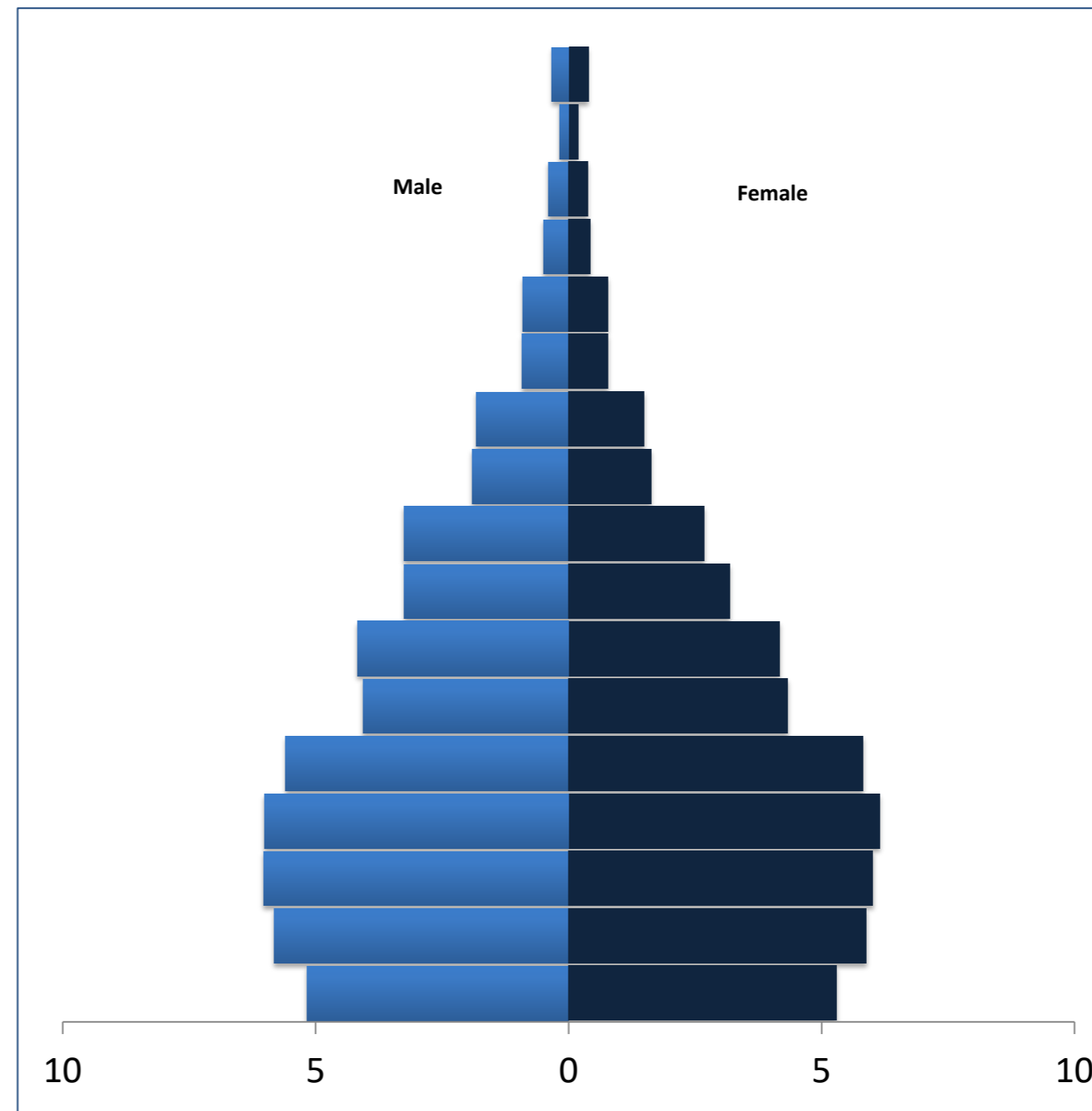


Population Structure: Population Pyramid by age of 2008 & 2022

Population Pyramid of 2008



Population Pyramid of 2022



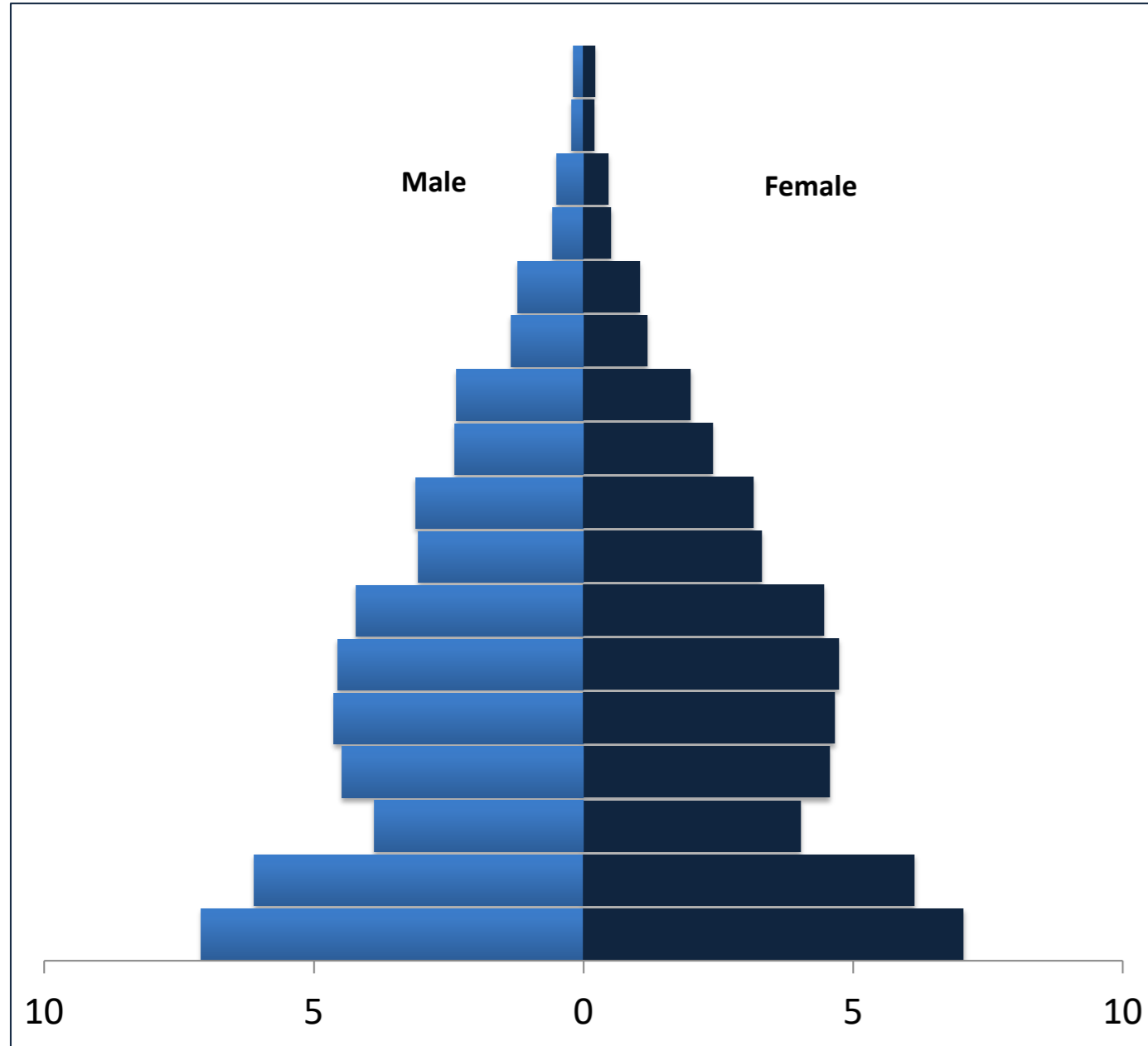
2008: Pyramid showed population size which depicted a broad-based population

2022: In contrast, population 0-9 years is different as there was a shrank in the number of new born.

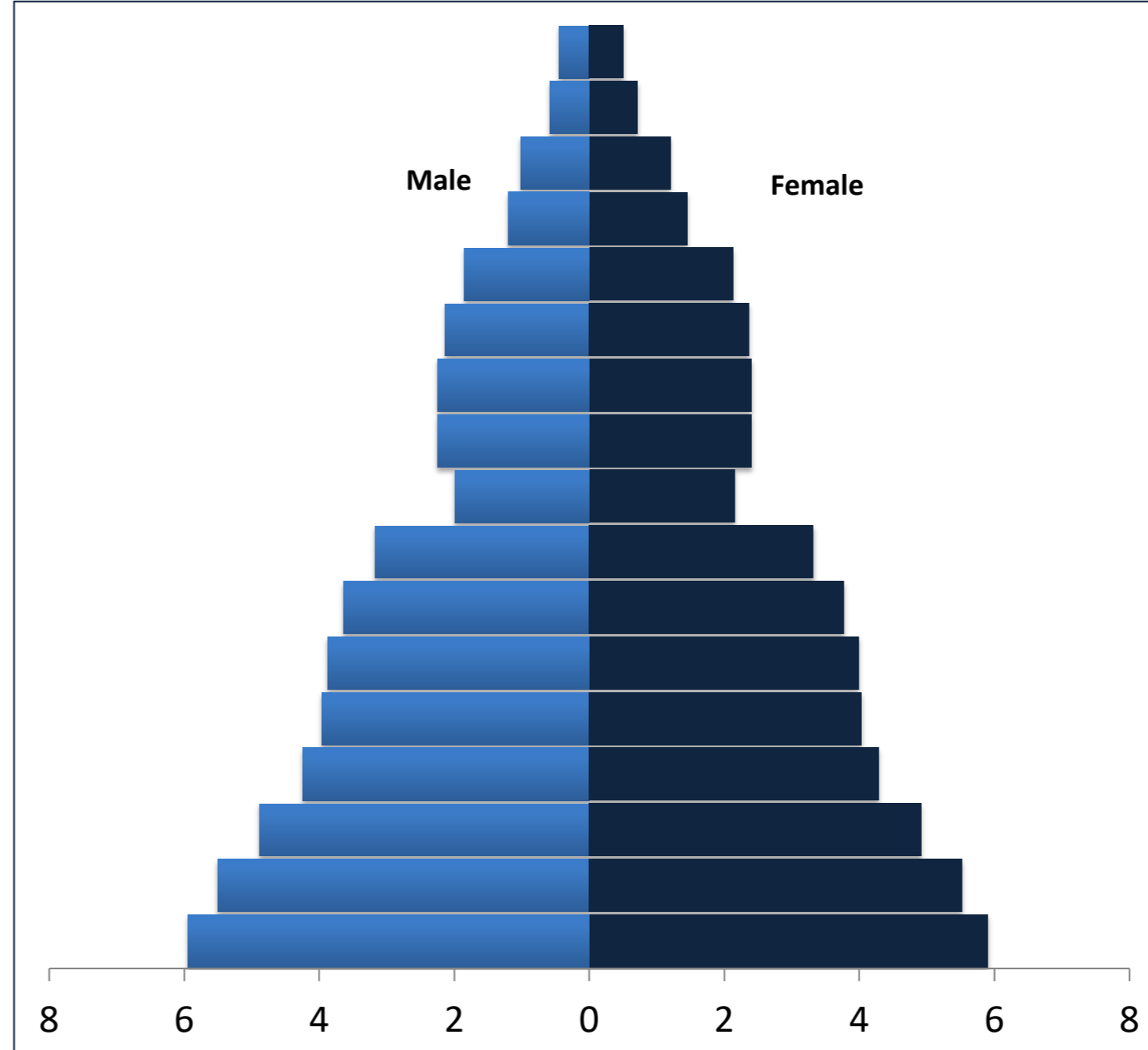


Population Structure: Respective Pyramid of 2032 and 2060

Population Pyramid of 2032



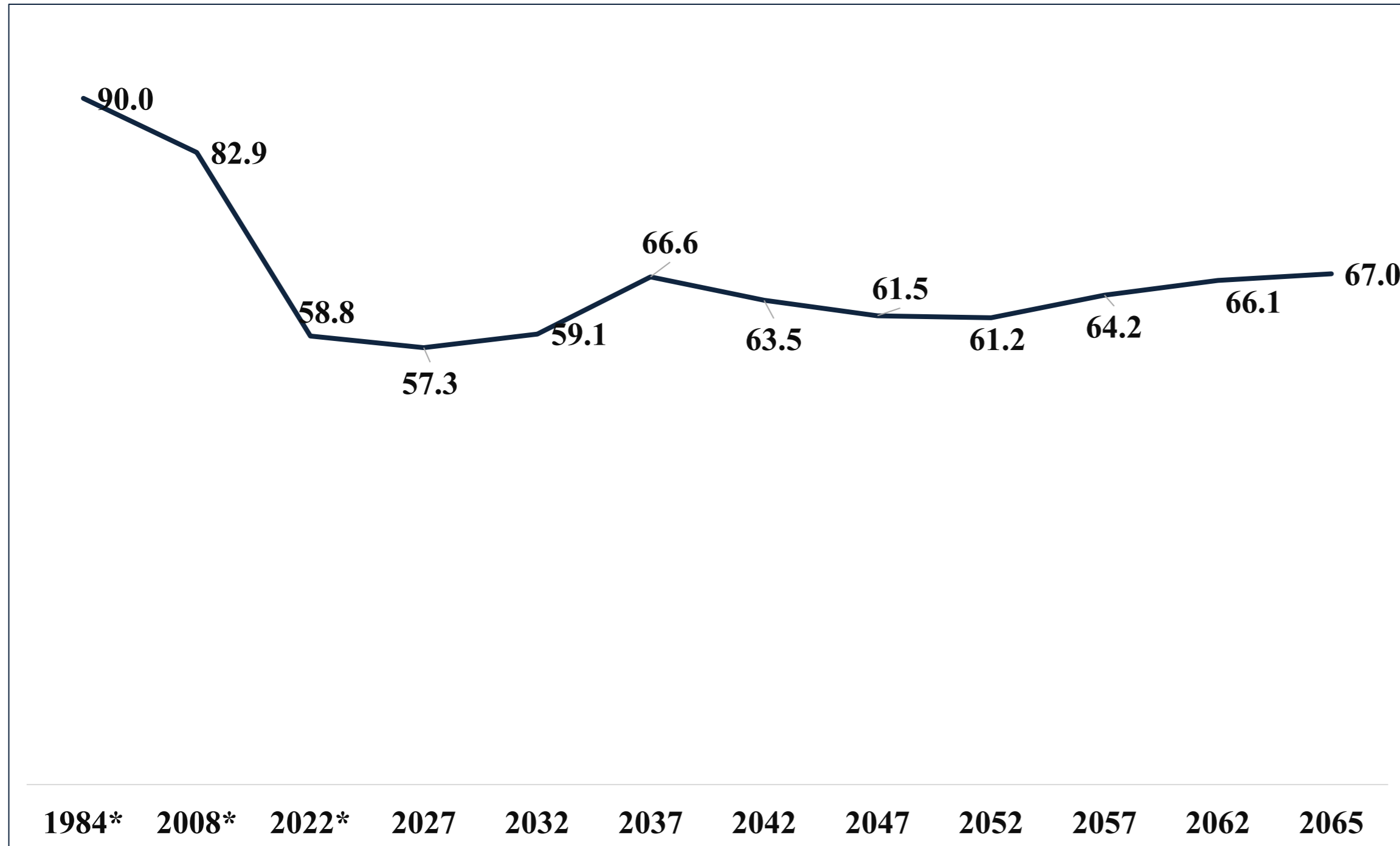
Population Pyramid of 2062



The shrank in the 2022 population of new born will continue to be reflected as that cohort moves up the age ladder as indicated in the pyramids of respective 2032 and 2062 projected populations.



Dependency Ratio (reported)



The relationship between the populations 0-14 years and 65 years and older and the population 15-64 years constitute age dependency

- measured per 100 population

Projected that age-dependency ratios will increase from 58.8 percent in 2022 to 67.0 by 2065.

The low age dependency ratio in 2022 may be attributed to:

- population going through transition
- under reporting of the population of 0-4 years and 5-9 years in 2022
- increase in the proportion of the elderly population

It is projected that age-dependency ratio will increase gradually between 2027 and 2065 and this is attributed to the increase in the proportion of the elderly population



Adolescent Population (10-19 Years)

Year	Both sexes	Males	Females	Sex ratio
2022*	1,271,083	632,337	638,746	99.0
2032	1,121,490	553,146	568,344	97.3
2042	1,688,726	839,575	849,151	98.9
2052	1,862,697	926,221	936,476	98.9
2062	2,105,589	1,048,025	1,057,564	99.1

The adolescent population (10-19 years) is projected as 2,525,456 persons in 2065

- about 2 times higher than that of 2022 (1,265,456)

Across the years, there are more adolescent females population than males

This segment of the population are about to enter or are already in their prime reproductive years, which may lead to large numbers of birth even when fertility is low.



Youth Population (15-24 Years)

Year	Both sexes	Male	Female	Sex ratio
2022*	1,237,999	609,515	628,484	97.0
2032	1,213,322	602,766	610,556	98.7
2042	1,302,106	642,215	659,892	97.3
2052	1,803,402	894,177	909,225	98.3
2062	1,897,292	941,344	955,947	98.5

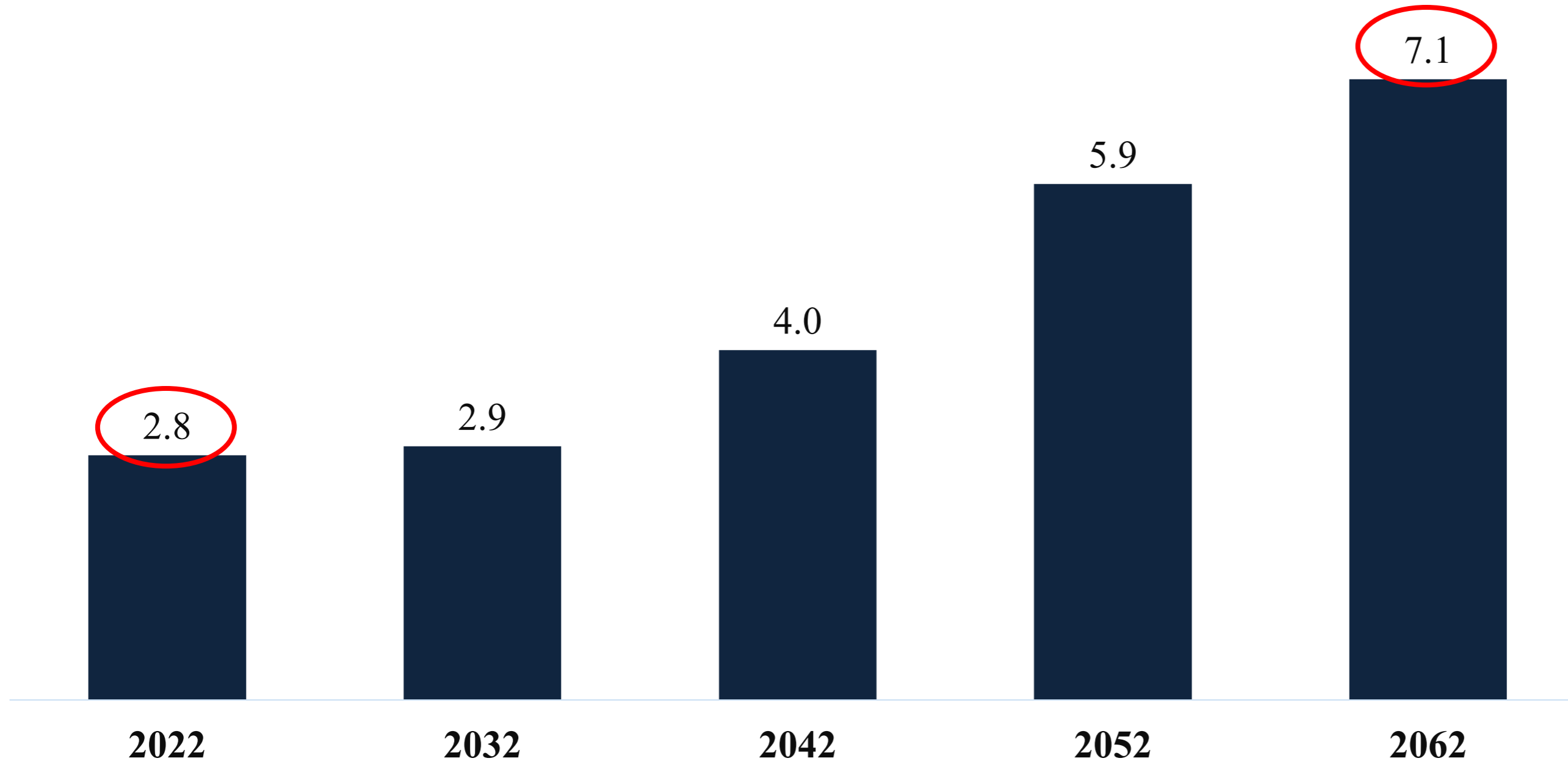
The population of the youth (15-24 years) in 2022 is about 1.2 million and it is projected to reach 1.3 million in the next 20 years (2042),

- to a peak of about 2.0 million in 2065.
- Between 2022 and 2065 projected to increase by 37.9 percent.
- The increasing population of youth will continue to stretch the available resources

The overall sex ratio across the years (2022-2065) indicates that there more females than males.



Elderly population, 65 years and older (percent)



The elderly population (65+) will grow 2.4 times between 2022 (2,8%) and 2062 (7.1%)

The high growth among the elderly population may be due to improvement in health care and increase in life expectancy

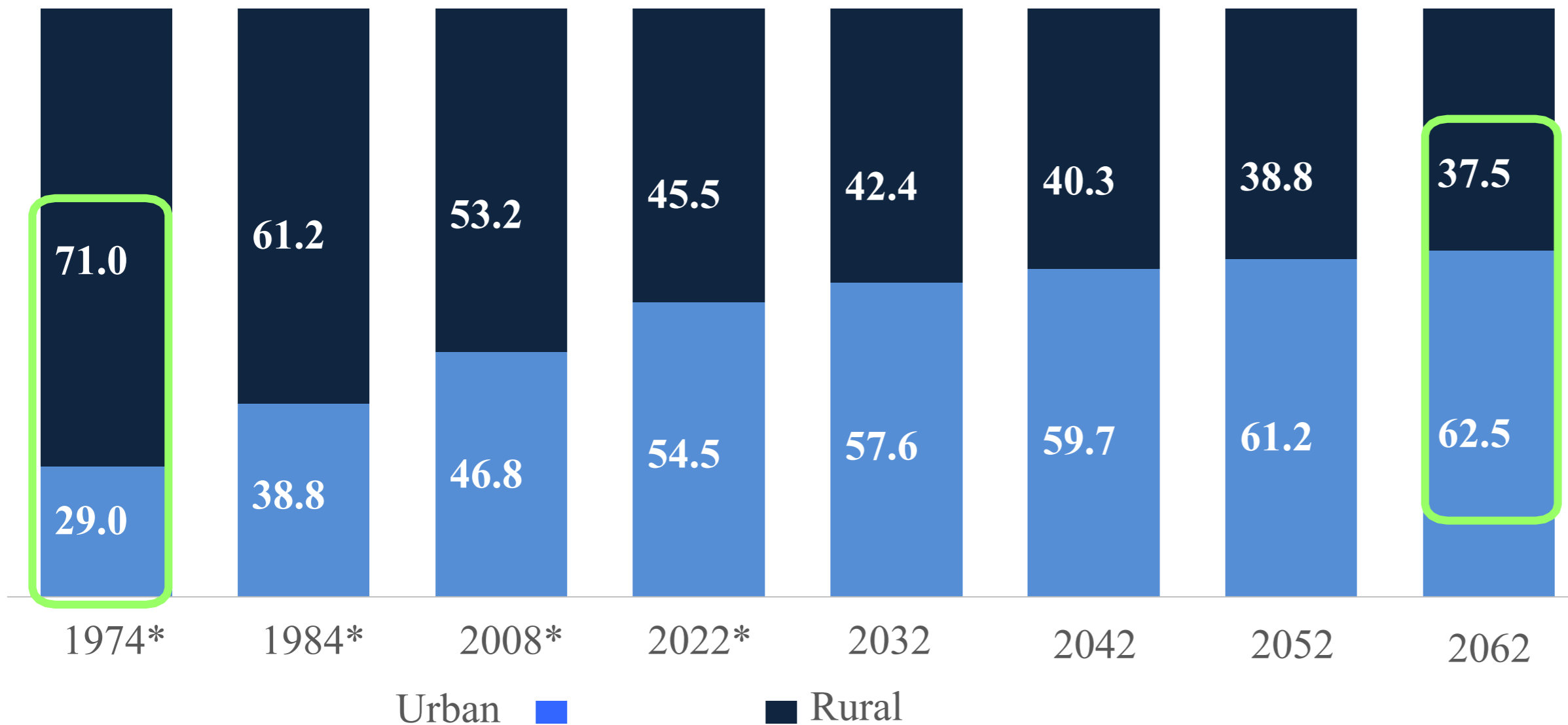


Urban and rural population projection assumptions

- ❑ Sub-national population projections are key to stakeholders in the provision of data to quantify likely needs, allocate resources across different geographical locations and specific segment of the population.
- ❑ The DEMPROJ model of the SPECTRUM application which offers the United Nations urban-rural growth differentials (URGD) method was applied as described in MANUAL VIII Methods for Projections of Rural and Urban Populations.
- ❑ It is based on the difference between urban and rural population growth rates and its logistic transformation (United Nations, 1974).
- ❑ The UN Method of URGD requires the following input data:
 - Base year urban population (2022)
 - Base year rural population (2022)
 - Urban population growth rate (2008-2022)
 - Rural population growth rate (2008-2022)
 - Urban-rural growth rate difference



Urban and Rural Population (percent change)



Share of urban population

- In 1974 - 29.0 percent
- Increase to 46.8 percent in 2008
- In 2022, first time more than half (54.5%) live in urban areas
- Projected to increase to 57.6 percent in 2032
- By 2065, urban population expected to increase to 62.5 percent

Note: * Means Census Years



Development of County Assumptions

County	Population		Population share	
	2008	2022	2008	2022
Liberia	3,489,072	5,250,187	100.0	100.0
Bomi	82,036	133,705	2.4	2.5
Bong	328,919	467,561	9.4	8.9
Gbarpolu	83,758	95,995	2.4	1.8
Grand Bassa	224,839	293,689	6.4	5.6
Grand Cape Mount	129,055	178,867	3.7	3.4
Grand Gedeh	126,146	216,692	3.6	4.1
Grand Kru	57,106	109,342	1.6	2.1
Lofa	270,114	367,376	7.7	7.0
Margibi	199,689	304,946	5.7	5.8
Maryland	136,404	172,587	3.9	3.3
Montserrado	1,144,806	1,920,965	32.8	36.6
Nimba	468,088	621,841	13.4	11.8
River Cess	65,862	90,819	1.9	1.7
River Gee	67,318	124,653	1.9	2.4
Sinoe	104,932	151,149	3.0	2.9

The method used in projecting the counties is based on the shift-share method

- i.e. the population share of each of the sixteen counties to the total population of Liberia.

Considerations made for county shares in 2008 and 2022.

The shift-share method allows for changes in population shares of the smaller areas over time. level



Projected Population by County

County	Number				Percent			
	2022	2027	2032	2035	2022	2027	2032	2035
Total Country	5,250,187	5,896,852	6,618,845	7,062,889	100.0	100.0	100.0	100.0
Bomi	133,705	151,785	171,970	184,385	2.5	2.6	2.6	2.6
Bong	467,561	516,448	571,030	604,599	8.9	8.8	8.6	8.6
Gbarpolu	95,995	100,592	105,724	108,880	1.8	1.7	1.6	1.5
Grand Bassa	293,689	319,939	349,248	367,273	5.6	5.4	5.3	5.2
Grand Cape Mount	178,867	197,750	218,834	231,800	3.4	3.4	3.3	3.3
Grand Gedeh	216,692	250,030	287,251	310,143	4.1	4.2	4.3	4.4
Grand Kru	109,342	128,093	149,029	161,906	2.1	2.2	2.3	2.3
Lofa	367,376	400,378	437,224	459,886	7.0	6.8	6.6	6.5
Margibi	304,946	339,592	378,275	402,065	5.8	5.8	5.7	5.7
Maryland	172,587	185,950	200,869	210,044	3.3	3.2	3.0	3.0
Montserrado	1,920,965	2,213,646	2,540,421	2,741,396	36.6	37.5	38.4	38.8
Nimba	621,841	680,111	745,169	785,181	11.8	11.5	11.3	11.1
River Cess	90,819	97,860	105,720	110,555	1.7	1.7	1.6	1.6
River Gee	124,653	145,751	169,306	183,793	2.4	2.5	2.6	2.6
Sinoe	151,149	168,927	188,775	200,983	2.9	2.9	2.9	2.8

- More than a third (36.6%) of the population (1,920,965) of Liberia live in the Montserrado.

The second highest population is Nimba (621,841) and Bong (467,561) is the third highest.

- The bulk of the population will continue to be concentrated in Montserrado (2,742,396),

Nimba (785,181) and Bong (604,599) through to 2065.



Future doctors that will be required for Liberia up to 2042, using Liberia's ratios

Year	Future doctors			Additional future doctors required		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	295	295	295	-	-	-
2027	330	331	333	35	36	38
2032	368	372	376	73	77	81
2037	403	413	423	108	118	128
2042	435	453	470	140	158	175



Future doctors required for Liberia up to 2042, using WHO ratios

Year	Projected Doctors			New doctors required after 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	525	525	525	230	230	230
2027	588	590	592	293	295	297
2032	654	662	670	359	367	375
2037	718	736	753	423	441	458
2042	774	806	836	479	511	541



Future nurses required for Liberia up to 2042, using Liberia's ratios

Year	Projected Nurses			New nurses required as of 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	3,201	3,201	3,201	-	-	-
2027	3,584	3,595	3,609	383	394	408
2032	3,989	4,035	4,084	788	834	883
2037	4,377	4,485	4,589	1,176	1,284	1,388
2042	4,721	4,917	5,098	1,520	1,716	1,897



Future nurses required for Liberia up to 2042, using WHO's ratios

Year	Requirement			New Nurses required from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	1,050	1,050	1,050	(2,151)	(2,151)	(2,151)
2027	1,176	1,179	1,184	(2,025)	(2,022)	(2,017)
2032	1,309	1,324	1,340	(1,892)	(1,877)	(1,861)
2037	1,436	1,471	1,505	(1,765)	(1,730)	(1,696)
2042	1,549	1,613	1,672	(1,652)	(1,588)	(1,529)



Future hospital required for Liberia up to 2042, using Liberia's ratios

Year	Projected hospitals			Difference in hospital required from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	39	39	39	-	-	-
2027	44	44	44	5	5	5
2032	49	49	50	10	10	11
2037	53	55	56	14	16	17
2042	58	60	62	19	21	23



Future hospitals required for Liberia up to 2042, using WHO ratios

Year	Projected hospitals			Difference in hospital required from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	53	53	53	14	14	14
2027	59	59	59	20	20	20
2032	65	66	67	26	27	28
2037	72	74	75	33	35	36
2042	77	81	84	38	42	45



Future health centers required for Liberia up to 2042, using Liberia's ratios

Year	Projected health centers			Difference in health centers required from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	71	71	71	-	-	-
2027	79	80	80	8	9	9
2032	88	90	91	17	19	20
2037	97	99	102	26	28	31
2042	105	109	113	34	38	42



Future health center required for Liberia up to 2042, using WHO's ratios

Year	Projected health centers			Difference in health centers required from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	105	105	105	34	34	34
2027	118	118	118	47	47	47
2032	131	132	134	60	61	63
2037	144	147	151	73	76	80
2042	155	161	167	84	90	96



Future clinic required for Liberia up to 2042

Year	Projected clinics			New clinics requirement from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	724	724	724	-	-	-
2027	811	813	816	87	89	92
2032	902	913	924	178	189	200
2037	990	1,014	1,038	266	290	314
2042	1,068	1,112	1,153	344	388	429



Education - primary school enrolment up to 2042

Year	Projected primary students			New primary students enrollment from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	1,150,254	1,150,254	1,150,254	-	-	-
2027	1,287,705	1,291,930	1,297,041	137,451	141,676	146,787
2032	1,433,405	1,450,112	1,467,426	283,151	299,858	317,172
2037	1,572,817	1,611,633	1,648,868	422,563	461,379	498,614
2042	1,696,617	1,766,730	1,831,750	546,363	616,476	681,496



Education – primary teachers

Year	Projected primary school teachers			New primary school teachers' required from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	47,453	47,453	47,453	-	-	-
2027	53,123	53,298	53,509	5,670	5,845	6,056
2032	59,134	59,823	60,538	11,681	12,370	13,085
2037	64,886	66,487	68,023	17,433	19,034	20,570
2042	69,993	72,885	75,568	22,540	25,432	28,115



Future Agriculture household up to 2042

Year	Requirement			New agriculture households as of 2022		
	Low	Medium	High	Low	Medium	High
Agricultural households						
2022*	359,075	359,075	359,075	-	-	-
2027	401,983	403,302	404,898	42,908	44,227	45,823
2032	447,466	452,682	458,087	88,391	93,607	99,012
2037	490,986	503,104	514,728	131,911	144,029	155,653
2042	529,633	551,520	571,818	170,558	192,445	212,743
Urban agricultural households						
2022*	76,224	76,224	76,224	-	-	-
2027	85,333	85,612	85,951	9,109	9,388	9,727
2032	94,988	96,095	97,242	18,764	19,871	21,018
2037	104,226	106,798	109,266	28,002	30,574	33,042
2042	112,430	117,076	121,385	36,206	40,852	45,161
Rural agricultural households						
2022*	282,851	282,851	282,851	-	-	-
2027	316,651	317,690	318,946	33,800	34,839	36,095
2032	352,479	356,587	360,845	69,628	73,736	77,994
2037	386,760	396,305	405,462	103,909	113,454	122,611
2042	417,203	434,444	450,433	134,352	151,593	167,582



Future members of agriculture household

Year	Projected Agric household members			New Agric household members as of 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	1,789,736	1,789,736	1,789,736	-	-	-
2027	2,003,603	2,010,177	2,018,129	213,867	220,441	228,393
2032	2,230,304	2,256,300	2,283,240	440,568	466,564	493,504
2037	2,447,222	2,507,618	2,565,554	657,486	717,882	775,818
2042	2,639,849	2,748,941	2,850,109	850,113	959,205	1,060,373



Future Labor Force for Liberia up to 2042, using Liberia's ratios

Year	Future Labor Force			Difference in labor force requirement from 2022		
	Low	Medium	High	Low variant	Medium variant	High variant
2022*	1,984,701	1,984,701	1,984,701	-	-	-
2027	2,221,866	2,229,156	2,237,974	237,165	244,455	253,273
2032	2,473,263	2,502,090	2,531,965	488,562	517,389	547,264
2037	2,713,810	2,780,785	2,845,033	729,109	796,084	860,332
2042	2,927,421	3,048,397	3,160,585	942,720	1,063,696	1,175,884



Policy Implications

- ❑ Results of the 2022 Liberian Population and Housing Census which indicates that compared with past censuses the population size has drastically changed. As a result of high fertility and the youthful nature of the population, the population will continue to grow
- ❑ The increase in population size will have implication for development unless measures are employed to manage the high population growth.
- ❑ The population of the elderly, which is a common measure of ageing is projected to grow from 2.8 percent in 2022 to 7.1 percent in 2062. This is likely to have implications as the number of the elderly population will continue to grow.
- ❑ Currently, there seems to be limited programme of interventions to take care of the welfare of the elderly.
- ❑ Changes in age structure, especially the decline of the young population (0-9 years) which has resulted in decline in age-dependency ratio if managed well, will lead to what has been described as the ‘demographic dividend’.
- ❑ The demographic dividend, though at the initial stage, this state is likely to increase savings and promote investment among the working age population.
- ❑ For the first time, more than half (54.5%) of the population are now living in urban areas than in rural areas. This change in the location of the population has been attributed to natural growth within the urban population and the rural-urban migration.
- ❑ The implication of this situation has led to high population concentration on only a few urban areas which will require resource needs.
- ❑ The future needs for health, education, agriculture and labor force have implications for national socio-economic developments.



Recommendations

- ❑ There is the need to improve on population distribution by ensuring that resources are evenly distributed to reduce the pressure on areas with high population density
- ❑ Training of Field Data Collection Officers base on data quality assurance framework (DQAF)
- ❑ Development of programs to take advantage of the reduction in the dependency ratio by creating more job opportunities and embarking on career training for the working age population.