



**Projections for the Resident Population of the
Island of Mauritius from 2009/10 to 2034/9**

Working Paper NRFE 05/11

1.0 Introduction

Demographic forces form the basis for any projections of the resident population of a country. Fertility, mortality rates and migration are the determining factors accounting for different population forecasts. For the purpose of this exercise, the 1990 Census issued by the Central Statistics Office was used as the base for which projections were made based on 3 different scenarios: the high, medium and low variants. The medium variant is considered to be the most likely outcome and will therefore be discussed in greater depth and will serve as the basis for the projections scenario for Mauritius in the 2034-2039.

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1.1 A Historical Perspective of Demographic and Epidemiological trends leading to 2010 (1960's-2010)

The following section reviews the trends in Fertility, Mortality and, Migration in Mauritius over the past 50 years.

1.1.1 Fertility

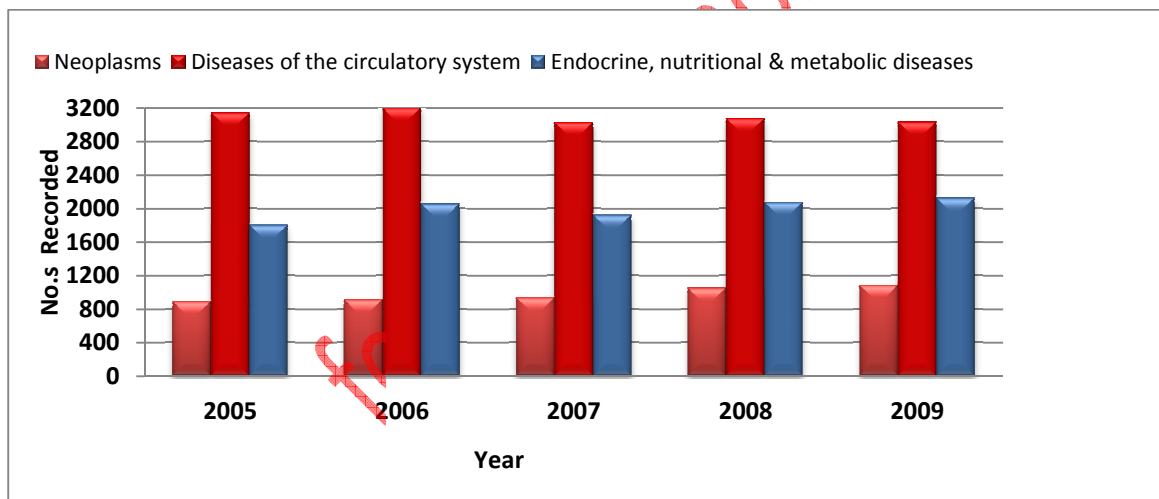
Mauritius experienced a rapid decline in fertility rates in the 60's and 70's as a result of a successfully implemented family planning programme and a general rise in the age of marriage. Total fertility decreased from 6 children per woman in 1962 to 3 in 1973. This downward trend was reversed as from the mid-70's in a period of economic prosperity, but only temporarily. Fertility further declined to reach its lowest rate of 2 children per women in 1986. From 1986 to 2000, analysts believe that favourable economic conditions were responsible for the rise in fertility rates to 2.3 children per woman, observed in Mauritius, while the corresponding trend worldwide was the postponement of marriages and births. Since the turn of the century (2000 onwards) though, the average fertility rate in Mauritius has been 2 children per woman which is below the population replacement level.

1.1.2 Mortality

In the 2nd half of the 20th century life expectancy has improved worldwide, most likely as a result of advances in medical research. Improved health and economic

conditions in Mauritius have been responsible for the rapid fall in the crude death rate from 27 per 1000 just after World War II to 6.5 in 1992. The most dramatic fall being registered was the infant mortality rate. The decrease observed in Mortality has been more favourable to women, as reflected by the wide margin in the life expectancy at birth between the sexes. Hence, women are expected to live for 73.9 years compared to 66.2 years for men. The rise in cardiovascular diseases has been the most important cause of deaths, especially for males, so far.

Based on the information readily available from the Ministry of Health, Mauritius has reached an advanced stage in its epidemiological transition. As a result Communicable Diseases, Maternal and Child Health issues have declined. On the other hand, Non Communicable Diseases (NCDs) are on the rise. They include Diabetes Mellitus, Hypertension, Cerebrovascular Diseases, Cancers (Malignant Neoplasms), Mental Illnesses and Cardiovascular conditions as seen in Figure 1 below:



1.1.3 Migration

The balance of international migration was outward in the early 60s, but there have been signs of a declining trend since then. This tendency is expected to continue because of improving economic conditions within the country and more significant control in receiving countries. Since inward and outward migration flows are

negligible in Mauritius, they can safely be assumed to cancel each other out, in most cases.

1.1.4 Age-Structure

According to the WHO Regional Office for Africa, (2009) Mauritius is facing problems associated with an ageing population. The most vulnerable component of the elderly population sub-group, or those aged 75 years and above is increasing. Whereas this group constituted 0.85% of the elderly in 1962, it represents 2.39% in 2001.

2.0 The Current Mauritian Context in 2010 (Demographic & Epidemiological)

The estimated resident population of the Island of Mauritius at the end of 2010 was 1,245,289 (613,886 males and 631,403 females) as compared to 1,239,788 in 2009.

2.1 Fertility

14,292 live births were registered, giving a Crude Birth Rate of 11.8 per 1000 mid-year resident population. According to official statistics for 2010, the population growth rate reached 0.44%, hence implying a crude birth rate of 16.9 per 1,000.

2.2 Mortality

In 2010, Life Expectancy at birth was estimated to be 69.4 for males and 76.7 for females that same year. The number of deaths registered in 2010 was 8,991, corresponding to a crude death rate of 7.2 per 1000 mid-year of the resident population in 2010. The numbers and relative percentage of deaths due to the same NCDs mentioned in section 1.1.2 was as follows:-

The distribution of deaths by *Chapter of the International Classification of Diseases (10th Revision)* as first introduced via Figure 1, showed that *Diseases of the Circulatory System* (Chapter IX) were responsible for 32.2% of the total deaths recorded in 2010. Of the 2,865 deaths due to *Diseases of the Circulatory System* in 2010, 1,611 (56.2%) were due to *Heart diseases*. *Stroke* and other *Cerebrovascular*

Diseases accounted for another 744 (26.0%) deaths. Furthermore, 25.6% of the deaths *Diseases of the Circulatory System* occurred among persons aged less than 60 years.

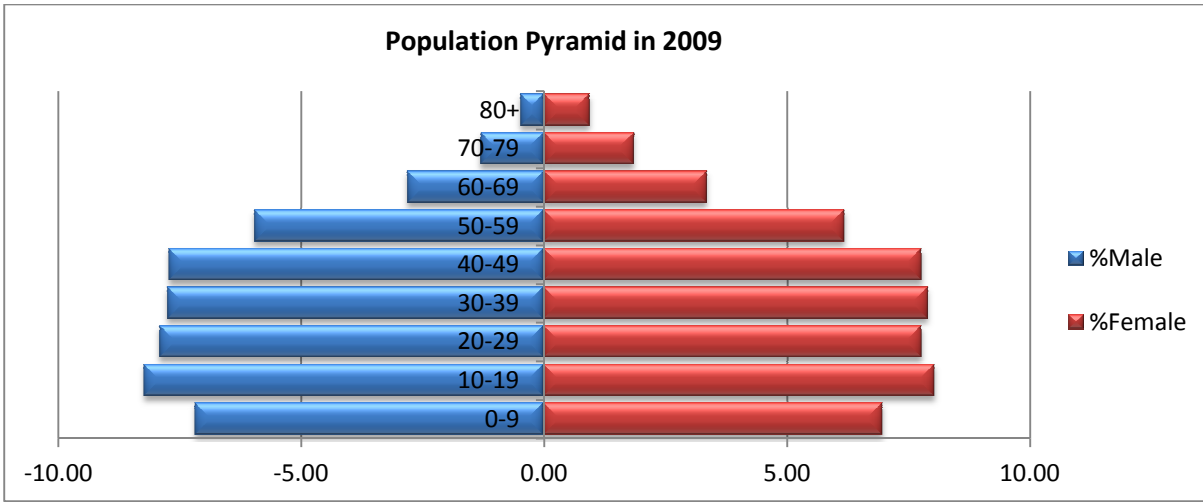
Endocrine nutritional and metabolic diseases (Chapter IV) with 24.4% of total deaths recorded in Mauritius were the 2nd leading cause of death followed by *Neoplasms* (Chapter II) with 11.6%. Of the 1,033 deaths due to *Neoplasms*, in 2010, the most common types of cancer were that of *trachea, bronchus and lung* with 12.6%, *female breast* with 10.5%, *colon* with 7.4% and *stomach* with 7.2%. 36 persons died due to *leukaemia* (3.5%)

2.3 Migration

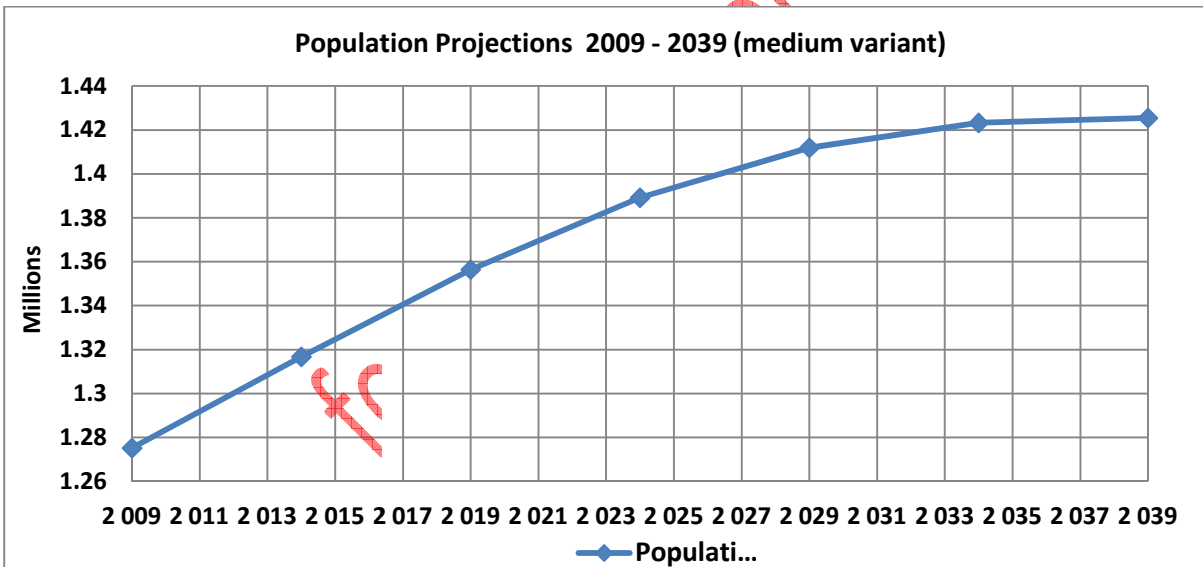
Because of the absence of reliable data on immigrants and emigrants, the net migration is taken as the difference between international arrivals and departures of residents which amounted to -50 males in 2009.

2.4 Age-Structure

As seen in the population pyramid in figure 2, those aged 0-19 account for 31.94% of the total population, while those aged 20-39 account for 30.9 % a population. Taken together, these 2 age groups already represent more than 60% of the resident population. It can thus be concluded that Mauritius has a relatively young population with the bulk being 0 to 39 years old. As a result, those aged 40 to 80 and above, would only represent 37.16% of the total population.



3.0 Demographic Projections for the island of Mauritius up to 2039



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The total Population for Mauritius is projected to reach 1,425,466 in 2039. This would represent a 14.57 % increase in population. The base for all projections is the estimated 2009 resident population by sex and age. The estimate has been obtained by adding the balance of births, deaths, and migration to the 2000 census population adjusted for underenumeration of young children. As mentioned in section 1, there are 3 options the: low, medium and high variants, approaches to fertility, mortality and migration as potential factors affecting the resident population of Mauritius. The medium variant was used by CSO as a more balanced and hence

more likely, set of assumptions with regard to the projected of the resident population of Mauritius for the 2034-2039 period.

4.0 Implications of Projections

The following section looks at possible trends in Fertility, Mortality and Migration in Mauritius for the next 30 years, based on the medium variant. The assumptions for the medium variant projections were as follows:

4.1 Fertility

Year	2009-2014	2014-2019	2019-2024	2024-2029	2029-2034	2034-2039
Projected Fertility Rate	1.80	1.85	1.85	1.85	1.85	1.85

Table 1: Projected Fertility rate, adapted from CSO (2010)

The implication behind these assumptions is that the Fertility rate would fall well below the replacement level generally estimated at 2-2.1 by CSO (2009). This would therefore imply gradual aging of the population over time.

4.2 Mortality

As noted by the CSO, Sex and age-specific survival ratios improve from current levels in accordance with the Coale and Guang, "New Regional Model Life". Mortality in table 2 below:

Projected Life Expectancy by Sex & 5 yr Range		
Year Period	Male	Female
2004 – 2009	70.19	76.67

2009 – 2014	70.21	76.69
2014 – 2019	71.16	77.23
2019 – 2024	72.05	77.72
2024 – 2029	72.88	78.15
2029 – 2034	73.60	78.52
2034 – 2039	74.24	78.81

Table 2: Projected Life Expectancy by Sex & 5 Year Range, CSO (2010)

According to these assumptions the Life Expectancy of Mauritian men would increase from 70.2 years in 2009 to 74.2. In 2034 years, representing a 5.8 % increase in Life Expectancy. For women, it would potentially increase from 76.67 to 78.84, representing an increase of 2.83 %.

One of the possible factors which will affect Mauritian Life Expectancy in the years to come will be the epidemiological progression of Non-Communicable Diseases as first seen in Figure 1. Hence potential trends for Diseases of the Circulatory System, Endocrine, Nutritional and Metabolic diseases and Neoplasms, have been modelled based on the data obtained from the past 13 years. It would appear based on these estimates that “Endocrine, Nutritional and Metabolic Diseases and Immunity Disorders”, are set to overtake circulatory diseases in terms of importance in the years to come, while the number neoplasms, cancers and tumours are expected to keep increasing in the next few years.

4.3 Migration

Year	2009-2014	2014-2019	2019-2024	2024-2029	2029-2034	2034-2039
Projected Fertility Rate	50	50	Nil	Nil	Nil	Nil

Table 3: Projected Migration, CSO (2010)

Following a projected increase in socio economic development in the next 10 to 15 years, it is assumed that the number of net migrations (arrivals- departures of Mauricians) will be negligible.

4.4 Age-Structure

Following these assumptions for Migration, Fertility, and the Life Expectancy of Mauricians, the age-structure of the resident population of the island is set to change. This would result in an apparent aging of the population in the 2034-39 periods i.e. a change in the concentrated distribution from younger age groups to older age groups. Thus those aged 40 and above would represent 49.4% of the total Mauritian population for the projected 2034-39 period, as opposed to 37% in 2009. It is important to note that those aged 60 and above would represent **21.88%** of the total population while they only represented **10.67%** of the total resident population in 2009.

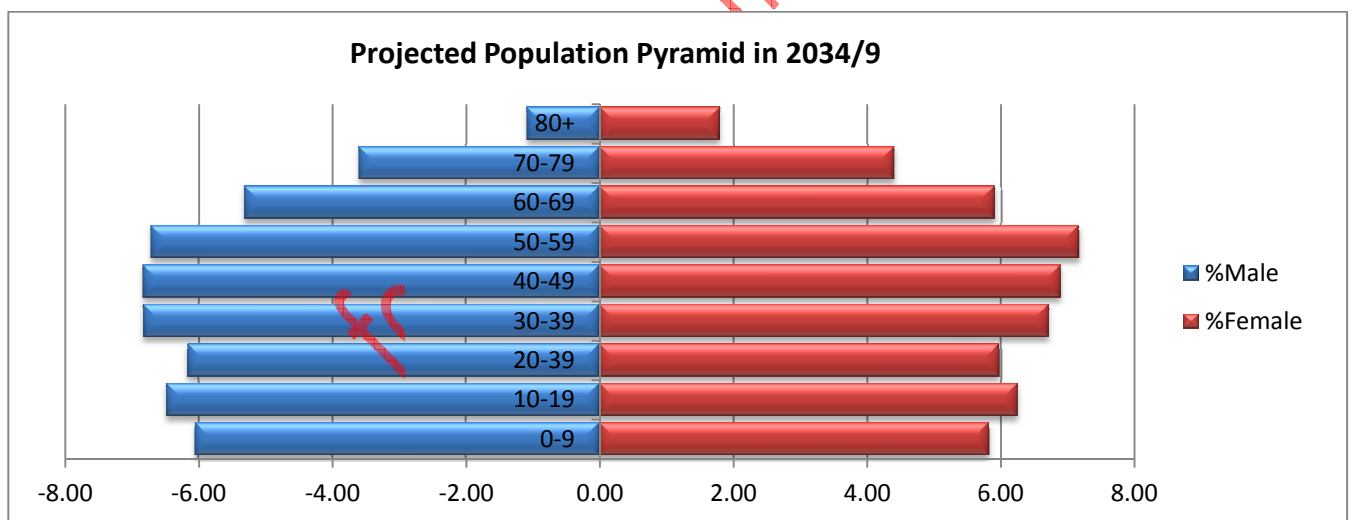


Figure 5: Population Pyramid in 2009, adapted from CS0 (2010)

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