Module 4.2: Population Studies
Acknowledgements

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Papua New Guinea-Australia Development Cooperation Program
### Unit outline

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Module 4.2: Population Studies

Objectives
By the end of this module students will have an awareness and understanding of issues relating to the world’s population. These issues include:

- Population growth and density
- The impact on the environment and resource consumption
- Population control
- Population measurement (census)

This module provides an opportunity for students to apply skills acquired during the study of Module 4.1: Framework for studying issues
**Topic 1: The world’s population**

**Introduction**

The growth of world population is considered by many experts to be the greatest of all changes of the twentieth century. It is a change which has been largely dependent on the rapid development of medical sciences. Although the rates of growth have varied, population growth has continued throughout periods of world war, famines, technological development, and dramatic shifts in the world power.

![Image of world population growth](image)

Source: Graves, Lidstone & Marsh (1994): *People and Environment*

In one hour from the time you read this, 12000 babies will have been born into the world, and 4000 people will have died. The world’s total population will have increased by 8000 people in just one hour, or about 2 extra people every second. By the end of the week, the world will need the equivalent of another large city. Probably the greatest problem the world will know in our lifetime is how to feed, clothe, house and employ this rapidly growing population.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pop in millions</th>
<th>Year</th>
<th>Pop in millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>275</td>
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<td>1900</td>
<td>1571</td>
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<tr>
<td>1400</td>
<td>373</td>
<td>1980</td>
<td>4432</td>
</tr>
<tr>
<td>1500</td>
<td>429</td>
<td>2000</td>
<td>6060</td>
</tr>
</tbody>
</table>

The expansion of the world’s population Source: Graves, Lidstone & Marsh (1994): *People and Environment*
4.2 Activity 1

Convert the information in the table above to a column or line graph.

Do you think that the population and poverty problems of countries in Africa, Asia and Latin America will have any significance to your future life in PNG? Why or why not?

Population distribution and density

Where people live on the earth is referred to as population distribution. Human settlements are very unevenly distributed over the earth’s surface. Some areas are unsuited to human habitation and other areas have very favourable geographic conditions. This causes people to congregate there resulting in high population density. The four most densely populated regions are northeast USA, south and east Asia, the Nile valley and delta, and northwest Europe.

People are spread very unevenly over the land of each continent. Asia has nearly two thirds of the world’s population on only about one third of the land. Africa, on the other hand, has about one tenth of the world’s population on one fifth of the land.
4.2 Activity 2

Brainstorm four or five reasons for the uneven distribution of the world’s population. Include reasons why some areas might be densely populated and others underpopulated.

Population size, distribution and growth in PNG

The national census in 1990 put the total population of Papua New Guinea at 3.8 million. The population growth rate averaged 2.3 percent annually over the most recent inter-census period (1980-1990). PNG’s population in mid-1999 was estimated to have reached 4.6 million and is increasing at approximately 105,000 per year. The growth rate has remained almost unchanged since the 1970s. At the provincial level, growth rates between the last two censuses (1980-1990) varied from a high of 4.6% annual growth in the NCD to low of 0.3% in Chimbu province. These rates are affected by the in-flow and out-flow, respectively, of migrants. In provinces with low rates of population growth, the main reason (excluding migration) is high death rates rather than low birth rates.

Population growth in PNG, 1966 to 1999

![Population growth graph]

Note: Figures shown for 1966, 1971, 1980 and 1990 are census counts. The 1999 figure is an estimate.

Source: Department of Planning and Monitoring (1999): PNG National Population Policy 2000-2010
According to the 1990 census, population distribution between regions and provinces is uneven. Of the four regions, the Highlands recorded the highest population in the 1990 census (1.4 million), followed by Momase (1.0 million), Southern (0.8 million), and Islands (0.6 million). Over the recent decades, the regional population distribution has changed little. In
1997, the Highlands region comprised 37 percent of the population, followed by Momase (26%) Islands (21%), and Southern (16%). Population growth rates vary across regions. The Islands region has the highest annual rate (2.9%) because of the higher than average birth rate, lower than average death rate and in-migration from other regions. The Southern region follows (2.7%) mainly because of in-migration from other regions to the National Capital District.

If PNG’s current growth rate were to continue unchanged for the next two decades, the population would reach approximately 7.5 million by the year 2020. The National Population Policy 2000-2010 aims to bring the national growth rate down to 2.1 percent by 2010 and below 2.0 percent by 2020.

**4.2 Activity 3**

*Study the paragraph and the figures above and answer the following questions.*

**Why do more people migrate to the Islands region and NCD?**

**List the five most populated provinces in order from the highest.**

**Estimate what proportion of the population is found in the Highlands region.**

**Population density and living standards**

It is sometimes claimed that a major cause of low living standards in various countries is over population, and that if people had fewer children their standard of living would rise. People use the resources available within their environment for food and drink, shelter and clothing, and to
improve their quality of life. The more people there are to share these resources the more thinly they will be spread. If the population increases at a faster rate than the development of resources then people will get poorer and poorer.

High density of population and poverty

There is no question that extreme poverty and degrading living standards are found where people are crowded together in a small area. When people are directly dependent on the land and the food it produces there is a clear link between numbers, the size and productivity of the land, wealth produced and living standards. Densely settled farming areas where people live from what they produce may be prosperous, but are often poor. If they are poor, it is often because the land and produce is owned by a few relatively rich villages and the wealth is not available for everyone. Families with only small patches of land or those of landless labourers, find it hard to survive.

On the other hand the problem may not be of ownership, but that there are too many people for the land to adequately support. One solution to rural over-population has been to migrate to cities to find work, but all to often the situation in the cities is worse rather than better. Millions of people live in cramped and overcrowded shelters with inadequate amenities for a decent standard of living. These may be in inner city slum areas or, more commonly in Third World cities, in large squatter settlements on the outer fringes. Many survive from part-time and casual work, and even those in full employment often get very low wages.

High density of population and wealth

Some of the wealthiest and most advantaged people live in high-density urban areas, although rarely with anything like the number of people per room or dwelling as found in the poorest areas. In some countries millions of families with low incomes lead reasonable lives in huge, densely packed cities. In some favoured areas, where the environment is suitable and wealth and technology available, there can be quite dense and prosperous rural communities. The explanation for such wealth in high-density areas is that such people do not depend on the limited produce of the land on which they live. They are not subsistence farmers, but live by trade or providing goods and services to others. In these circumstances, there is no longer a simple relationship between numbers and area of land. Through using their skill and experience, resources, acquired wealth or control over others they can buy the food and other things they need. Space is not the great need. In this way it is possible for there to be a high density of population and relatively high living standards.
Topic 2: Population change

People are disturbed very unevenly around the world, with great variations in density from place to place. There are also marked variations in rates of population change (usually population growth) between countries. The rate of change of population is closely related to changing birth and death rates. Most would regard a reduction in the death rate as desirable, especially if it meant a drop in the needless deaths of infants and young children. However, it would lead to dramatic population growth.

A decline in the death rate is usually the result of improved health care and living standards (apart from the ending of a war). Birth- and death- rates are usually given as percentages or as a number per thousand of total population. From the figures given here, it can be seen that the death- rate in many parts of the world has fallen very considerably. Birth- rates are also falling in most places, but they still differ greatly from country to country. The average in Africa is about 46 per thousand, while in Europe it is nearer 14 per thousand. It is noticeable that birth-rates are often very high in countries that also have a high infant mortality rate.

<table>
<thead>
<tr>
<th>Country</th>
<th>Birth rate (Births/1000)</th>
<th>Death rate (Deaths/1000)</th>
<th>% of natural increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>41</td>
<td>8</td>
<td>3.4</td>
</tr>
<tr>
<td>Australia</td>
<td>16</td>
<td>7</td>
<td>1.3</td>
</tr>
<tr>
<td>Germany</td>
<td>14</td>
<td>14</td>
<td>0.0</td>
</tr>
<tr>
<td>India</td>
<td>33</td>
<td>13</td>
<td>3.0</td>
</tr>
<tr>
<td>Italy</td>
<td>11</td>
<td>10</td>
<td>0.4</td>
</tr>
<tr>
<td>Nigeria</td>
<td>50</td>
<td>18</td>
<td>3.3</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>19</td>
<td>10</td>
<td>0.8</td>
</tr>
</tbody>
</table>

The total population of the world is increasing at a rate that is now recognised as potentially disastrous. In the late 1980s, it had reached about 4800 million, and it is now over 6 billion. Much depends on what happens to birth rates and death rates, but it is calculated that the world’s population will be between 10 and 14 billion in a hundred years’ time. Pressure on global resources will be two to three times as great as now, and that is a cause of great concern. To achieve a rough stability in the balance of births and deaths, the average family should consist of two children. The average family in Europe and America has less than two, in Asia and Latin America more than four and in Africa more than six. These are average figures and mask great differences between individual families. The main point is that population increase is greatest in countries experiencing least economic growth and with lower than average standards of living. It should not be forgotten, however, that low rates of increase, or declining numbers, produce an ‘ageing’ population. This brings a different set of problems for a country.

**Birth rates**

The modern explosion of population is due mainly to the rapid decline in the death rate without an equally rapid decline in the birth rate. The natural birth rate over the centuries has been about 45 or 50 babies per year per 1000 people in any country.

The world’s major religious groups, such as the Roman Catholics, the Moslem, and the Hindus, have favoured large families. Some believe that a male heir is essential to carry on a family’s tradition and to ensure that the father is buried with honour. However, since nearly half of all births are girls, a family may have to have many children before a boy is born to perform these duties. At times in history, some governments have encouraged parents to have large families in order to provide the nation with future human resources.

**4.2 Activity 5**

*Why is the birth rate so important in influencing the rate of population growth?*

*What factors influence the number of children people have?*

*Find out what is meant by Zero Population Growth (ZPG).*

*Why do you think the Chinese government has introduced policies which penalise people if they have more than one child?*
How many children do you expect to have during your lifetime? Justify your answer as a socially responsible citizen of the world.

In most parts of the world, government action is tending to reduce the birth rate. In rich nations, this is happening almost by chance as a result of laws which have been passed for other purposes. The school leaving age is steadily being raised and there are increasing restrictions on the employment of children. These make it expensive to raise a family, while at the same time parents want to spend more on each child to give it better opportunities and better food, clothes and entertainment. Hence, for economic reasons parents are choosing to limit the size of their families so as to have a higher standard of living. In many of the less rich nations, with already large and rapidly growing populations, such as India and China, the governments are trying to limit the number of babies by advertising, persuasion, and even regulations. Some limit marriage until relatively late and some require sterilisation or abortion when a family has two or three children.

Recent progress in medicine has helped to reduce the birth rate considerably. This has happened in two ways. Firstly, modern methods of contraception, particularly the ‘pill’, make this a simple way of controlling the size of families. Hence, there are widespread efforts to encourage people to attend family planning clinics. Secondly, as modern medicine is reducing the rate of infant mortality parents are reasonably sure that their babies will survive to become adults and so they do not need to have such large families as in the past.

There is great controversy over control of birth rates, especially if it is by the use of contraception devices. Some people choose to limit the size of their families, and many governments encourage this through advertising, financial incentives or penalties, and help with programmes for family planning or sterilisation. On the other hand, many individuals and groups oppose both birth control and abortion on religious and moral grounds. In countries where children are regarded as an economic asset, security in old age, or a sign of status for men, reduction in size of families is not seen as desirable by everyone.

Death rates
The death rate is measured per 1000 of the population as a whole. Besides depending on infant mortality, disease, famine, and war, it depends on the proportion of old people who are likely to die of natural causes. The death rate will tend to be lower in countries where most of the population is young or middle aged.

Before the 18th century, the high death rate controlled the population of the world. The main cause of the increase in population is the rapid lowering of the death rate. For many centuries, death was as common as birth. Periods with relatively few deaths were followed by periods of widespread death due to disease, or famine, or war, and so the total population remained about the same. The Black Death (bubonic plague) of 1348-50 in England killed nearly half the total population. Influenza spread in 1918-19 and nearly 20 000 000 people died of it. Famine due to crop failures occurred in China in 1877-78 killing 13 000 000 people, and again in 1920-21 when 4 000 000 people died. War in Europe between 1618 and 1648, Thirty Years War, killed a third of all Germany’s people. Civil war in China early in this century killed 30 000 000 people.
4.2 Activity 6

State the reason why, until this century, populations did not increase rapidly.

Quote one example of the three causes of the formerly high death rate.

Medicine and hygiene have improved in many parts of the world. This means that people live longer and that more people live long enough to have children. There has not been a major worldwide epidemic since 1919 when influenza killed about 25 million people. Unfortunately, this does not mean that disease is no longer important. In developed countries many people die of illnesses such as cancer and heart diseases which are not so common elsewhere in the world. In developing countries people are more likely to die of infectious diseases.

Famines were a common cause of deaths in Europe before about 1750. During the 18th and 19th centuries, farming methods in Europe improved. New crops such as potatoes, maize and turnips were planted to give more food for people and animals. Cattle and sheep were bred scientifically to give more meat. New machines were developed for farming. People studied the use of chemical and natural fertilizers. There were still bad harvests, but regular famines that killed many people did not happen again. The one exception to this was the Irish famine of 1846-7.

The causes of death and the solutions are linked in many ways. War may lead to the neglect of farming and damage to crops. This helps to create physical weakness and so less ability to withstand diseases and less ability to produce good crops. Better farming raises the food supply and the people’s natural resistance to disease. Improved transport allows food to be brought to areas where there is under-nourishment or possible famine. International aid has brought relief to disaster areas where formerly death would have occurred. Diseases, such as influenza, scarlet fever and tuberculosis, have been vastly reduced by mass vaccination and modern drugs. Other diseases, such as smallpox, have been vastly eradicated from the world. Improved sanitation has reduced outbreaks of cholera, dysentery and typhoid except in some poor parts of the world.

The death of babies in their first year of life is described as infant mortality. Many may die due to infection from poor sanitation. Later, many may suffer from deficiencies in their food. Two centuries ago, in almost every country, nearly one-third of all babies died in their first year. Today, there are few countries with more than a 10 per cent infant mortality rate.

Mortality rates in PNG

Average life expectancy has risen from 41 years in early 1970s to 54 years based on estimates using data from the 1996 Demographic and Health Survey (DHS). The infant mortality rate declined by 46 percent between the 1960s and 1990s, but almost all of this reduction took place between 1965 and 1980. From 1980 to date, little improvement in infant mortality is evident at the national level. Some provinces continue to have infant mortality rates above 80
4.2 Population Studies

Deaths per 1,000 live births—similar to rates found in some of the world’s least developed countries. High mortality remains one of the main population problems facing PNG at the present time—particularly in the least-developed provinces.

In Sandaun and Gulf provinces, life expectancy is under 50 years. On the other hand, the National Capital District has a life expectancy above 60 years. Among the other provinces, life expectancy varies between 51 years in Enga and 57 years in Manus, New Ireland, and Central provinces.


Current estimates indicate that male life expectancy is higher than female life expectancy in all but five provinces, which is the reversal of the normal pattern in which females have a longer life expectancy than males. Papua New Guinea is among the few countries worldwide where this reversal exists. Southern Highlands, East New Britain, New Ireland, West New Britain, and Central are the five provinces that follow the normal pattern. However, even in these provinces, females outlive males by only 1.2 years or less. Estimates of life expectancy suggest that women are exposed to greater social and economic risk factors that affect their health status, including low nutritional levels, heavy workloads, high maternal mortality, and violence.

### 4.2 Activity 7

**Research**—what are some of the causes of high infant mortality rates throughout the world?

**Why haven’t the rates declined in PNG in recent years?**
Migration

Population change in a country is also due to migration of people into and out of the country. Immigration is sometimes a sign that there is plenty of employment available, usually in new industries or building and construction work. All too often, however, migrants are leaving an area of natural disaster, or are refugees from political persecution. In many cases, immigration and emigration occur at the same time and there may be little overall effect on the total population. A great deal of migration for work is also temporary, and doesn’t affect the population totals.

![Diagram of causes of international migration]

Over the past fifty years, the character of international migration has changed. Where in the past the international stream of migrants was mainly made up of Europeans who settled in the New World, most migrants now come from Asia and Latin America. In recent times, the demand for cheap labour has created migrations from the Caribbean to Britain, from Algeria to France, from Turkey to West Germany, and from Egypt and Pakistan to the oil-rich Middle East.

**4.2 Activity 8**

Migration could solve most of the world’s population problems. Do you agree with this statement? Give reasons to support your answer.

Collect stories from television or newspapers about illegal immigrants in PNG and Australia. Where do these immigrants come from and why?
**Topic 3: Measuring populations**

Imagine a class of 40 pupils. If two pupils move to another school, the number in the class falls to 38. If two new pupils then join the class, the total number of pupils has stayed the same. This is also true for the population of the Earth, so if the same number of people die as are born, the total population doesn’t change. The population grows when more people are born than die. The population falls when more people die than are born. Since countries are different sizes, it is easier to compare them if the figures for births and deaths are proportion of their populations. For example, in France in 1984 there were 14 live births for every 1000 people (a birth rate of 14/1000). In the same year, there were 10 deaths for every 1000 people (a death rate of 10/1000). This means that for every 1000 people in France, there were 4 more births than deaths during the year. This called the **natural rate of increase**. It is usually given as a percentage. In France in 1984, the natural rate of increase was 0.4%.

**Censuses**

According to geologists and astronomers, the Earth is about 5000 million years old. Human beings may have appeared as long ago as 25 million years. Historians and archaeologists have estimated that it took until the time Jesus Christ (the start of calendar) for the human race to reach 250 million people. By AD 1000, the number had reached 275 million. The earlier figures are based on estimates, but as more and more countries carried out population counts or **censuses**, the figures became more accurate. The population grew steadily from 1500 onwards. A high rate of population growth is often referred to as a **population explosion**.

National censuses give a government information about the people of the country. They show how many people live in each area; their ages; education; income; housing; family size; languages and religion; and their movements around the country. This information helps the government estimate the population growth and understand where improvements in health care, schools, roads and other services are most needed. Census information is also used by businesses and private organisations to plan development.

**Counting Papua New Guineans**

National censuses were conducted in Papua New Guinea in 1966, 1971, 1980, 1990 and 2000. In the first two, detailed information was taken in towns, plantations, missions and other non-traditional centres, but estimates were used for villages. In 1980, attempts were made to get basic information about each person in PNG. Information was collected over a 3-month period, most of it on patrols to rural areas.

The 2000 census was conducted over two weeks in July. Approximately 35000 census takers across the nation interviewed 60 households each. The aim was to count every person, citizen or non-citizen. The questions were directed to the head of each household and the forms were printed in English, Tok Pisin and Motu. There were 28 questions relating to personal characteristics, migration, education and training, literacy, economic activity, fertility and mortality, household agriculture and housing. There were some problems with householders declining to answer most of the questions asked and political interference from some local level government councillors. Special teams were assigned to hospitals, hotels, guesthouses and lodges.
Census points to four million

Papua New Guinea’s population has exceeded the four million mark, according to preliminary figures from the National census office.....

“The final count will come with other final counts in August this year after all the forms are thoroughly checked” said Mr Kiele, Census deputy director. “The first report we did was the hand count where we had to go through each census pad for a biological make-up to produce the first figures...”

Mr Kiele said the nationwide census cost about K48 million, of which the Australian government through its AusAID program, gave K16 million. The rest came from the National Government....

Mr Kiele commended the census workers for their tireless efforts and the people for their cooperation.

Post-Courier, 15 March 2001

4.2 Activity 9

Suggest reasons why the 1966 census did not collect information from villages. Suggest reasons why 2000 census takers did not receive complete co-operation.

Design a census questionnaire (10 questions) to be completed by your college year group. Use the raw data collected to construct a graph showing male/female ratio by province of origin. Write a summary describing other important information you discovered.
Population pyramids

Population pyramids are special types of bar graphs drawn to illustrate the age structure or age distribution of a population. A population pyramid is made up of many horizontal bar graphs laid one on top of the other. Each horizontal bar is divided into males and females, and it represents the proportion of the total population in a particular age group.

The age groups are marked at regular intervals on the vertical axis, either between the male and female sections of the pyramid or to one side. Percentage scales are marked along the horizontal axis, for both the males and females so the proportion of each sex in any age group can be calculated.

**4.2 Activity 10**

Find the horizontal bar for the 5-9 age group. How far along the percentage scale does the bar extend on the female side? The answer is 6.9. That means 6.9% of the total population consists of girls aged between 5-9 years.

What percentage of the population covers males aged 25-34?

If statistics are available from the 2000 census, construct a 2000 population pyramid for PNG.
**Topic 4: Population issues**

Population affects all spheres of life, whether economic, social, cultural, political, or environmental. In this sense, population is an important issue for all policy makers and planners.

The world is facing a number of interlinked crises which undermine the ability to achieve sustainable development. Currently about one-fifth of the world’s 6.06 billion live in desperately poor conditions. Their lives are at the edge of existence and are continuously close to famine, disease, hunger and death. Certain groups are more vulnerable than others are: in particular women, children and indigenous people. The crises include destruction/degradation of resources though pollution and misuse.

The United Nations Population Conference in Cairo in 1994, set out plans to stabilise the world’s population at about 10 billion. Even though birth rates have fallen the number of young women of child-bearing age is larger than ever before so the number of babies born will go on rising. This growth will put pressure on renewable resources such as water, land and fuel because more water will be needed for expanding cities and more forests will need to be cleared for food production. The effects of continued population growth on the environment and the quality of human life seem clear: more people will use more resources and as the resources are finite, there will be fewer of them to go around.

**Population control**


Some factors that influence the level of fertility and encourage a lower birth rate:

- The spread of family planning programmes and availability of contraceptives
- Less need for children as insurance against old age
- Decrease in children’s contribution to family labour and income
- Increase in the marriage age of women
- More education for women

A report completed in 1987 by the Population Crisis Committee (Washington) said services to control fertility are not available in eighty of the ninety-five developing countries containing 58 per cent of the population of the developing world. About 250 million women of reproductive age in the developing countries are in need of effective contraception to prevent unwanted pregnancies. Of the very poor and poor countries in the provision of contraception services thirty-six are in Africa, twelve are in the Middle East, eight in Latin America, seven are in Asia and one in Oceania (Papua New Guinea). In contrast, people living in most industrialised countries enjoy easy access to contraception and legal abortion.
Food security

Throughout history, local communities as well as the governments of nations have been concerned with the problems of feeding a growing population. The most productive and progressive agricultural systems are those of industrialized countries with slow or no population growth, while in many developing countries agricultural production keeps lagging behind a rapidly growing population. Most of the countries concerned lack alternative economic resources that would enable them to import growing quantities of food.

Another aspect of the global food equation is possibly even more crucial, namely in-country inequalities in access to food. An estimated 1300 million persons throughout the developing regions live on the equivalent of less than one US dollar a day. It is also estimated that more than 800 million people, most of them in developing countries, do not have enough food to meet their basic nutritional needs.

Leaders assembled in Rome in November 1996 for the World Food Summit (WFS) renewed the global commitment to the fight against poverty and hunger. FAO member states pledged their political will to an effort to eradicate hunger in all countries and to achieving food security for all, with an immediate view to reducing the number of undernourished people to half its present level no later than 2015. Several population issues - population growth, migration and gender relations - were recognized as relevant to sustainable agriculture and rural development and highlighted in the WFS Plan of Action and the Rome Declaration on World Food Security, which lay the foundations for diverse paths to a common and overall objective - food security, at the individual, household, national, regional and global levels.

Ageing

The ageing of human populations (i.e. the gradual increase in the proportion of adults and elderly people) emerged as one of the most significant demographic processes of the late 20th century. In developing countries, the proportion of population over 60, now estimated at 8 percent, is expected to rise to 21 percent by 2050. It is worth noting that the total percentage of dependant population will not increase, since the population under age 15, now estimated at 33 percent, is expected to decline to 20 percent during the same period; the total of these two age categories will therefore still be 41 percent. On the other hand, the fact that the elderly people will make up half of the dependant population instead of one fifth implies greatly changed needs.

Urbanisation

Migration causes changes in the distribution of populations, the most notable of which is urbanization. The UN estimates that urban areas accounted for 20 percent of the population of developing regions in 1955, and 45 percent now. Although the speed of rural-to-urban population transfers has slowed down, it is expected that by 2020 the majority of the population of developing regions will be urban.
Urbanization is commonly associated with the idea of modernization. From the rural viewpoint, urbanization can improve the development of commercial agriculture. The intensity of rural-to-urban population transfers often is determined by flight from rural poverty. In such cases, the livelihood and food security problems of urban populations are increased.

The world average for urban living is 45 percent and the average for less developed countries is 38 percent. PNG remains one of the least urbanised countries of the world with only 15 percent of the population recorded as resident in the urban centres. In the Asia-Pacific region, only Nepal (14%) and Bhutan (6%) are less urban than PNG. In general, the lower the level of urbanisation, the poorer the country in terms of material wealth. However, with a 4.3 percent annual growth rate, the urban population in PNG is growing at almost double the national rate.

There is no real overall urban development strategy in PNG, although NCD has a five-year plan. Urban growth has been concentrated in Port Moresby and Lae and most of the problems experienced in these centres stem from the fact that the growth has been unplanned and uncontrolled.

In PNG as in other countries, social indicators are superior in urban areas. In spite of its serious social problems, the NCD has the lowest infant and child mortality rates of any province other than Manus. Life expectancy is higher with NCD women living 15 years longer than Gulf women. Standards of literacy and educational achievements are substantially higher in urban areas. The 1990 census reported that 71 percent of urban residents aged 10 and over were literate compared with only 40 percent of rural residents.
4.2 Activity 11

Explain why the social indicators are higher in NCD.

Despite higher social indicators, why does NCD have serious social problems?

Health

PNG 3rd in maternal deaths

Papua New Guinea has the third worst ratio of maternal deaths in the world. For every 100,000 Papua New Guinean women who give birth, 370 die due to obstetric complications. PNG is third behind Lao and Cambodia. World wide, almost 600,000 women die each year from complications relating to pregnancy, most of which can be prevented. Some 50,000 of these deaths are in the Western Pacific region. Although the Western Pacific region may fare better in terms of maternal mortality than other World Health Organisation (WHO) regions, there are marked differences among countries. For example, for every 100,000 Laotian women give birth, 650 die due to obstetric complications. On the other hand, Australia, the maternal mortality ratio per 100,000 live births is less than three. In Singapore, the ratio is four for every 100,000 live births, in New Zealand, it is five; in Japan; it is six, in Papua New Guinea, 370; the Philippines, 172, and Mongolia, 168.

Most of these deaths are preventable. The maternal mortality ratio (MMR) reflects a woman’s basic health status, her access to health care and the quality of care that she receives. To support countries in reducing maternal deaths, the World Health Organisation held a consultative workshop on maternal mortality reduction in selected countries in the Western Pacific region co-sponsored by UNICEF in Manila from May 29 to June 2. The goal was to support countries to reduce maternal mortality ratios by 30 percent by 2003 from 1998 levels. The meeting also sought to determine why progress in reducing the maternal mortality ratio has been slow in some countries and how this could be remedied.

Training of traditional birth attendants and community based health workers has not in itself a significantly contributed to the reduction of maternal deaths, because these workers are usually trained to handle normal aseptic delivery only and not emergency obstetrics. In the past, more resources were earmarked for antenatal care than for delivery, immediate postpartum care and emergency obstetrics care, where as the vast majority of complications occur during and after delivery and in the first hours and days after delivery.

Some 30 participants, consisting of decision-makers and technical staff responsible for maternal and child health, were introduced to intervention programs, new concepts and experiences of countries with low maternal mortality to aid them in drafting national working plans to make pregnancy safer. New strategies therefore need to be adopted by countries with high maternal mortality ratios to reduce maternal mortality by 30 per cent from 1998 level by 2003. To reach this goal, the workshop identified a number of key actions that need to be taken:
* Governments need to undertake more aggressive steps to reduce high maternal mortality ratios and neonatal mortality rates.
* National action plans on safe motherhood need to identify possible sources of investments to implement programs for the years 2000 to 2005.
* Countries need to mobilise political support to implement these plans as soon as possible.
* Dr Omi urged governments to translate political commitment into action by carefully selecting intervention and allocating or identifying sources of funds.


**Life expectancy at birth (PNG)**

The average life expectancy at birth in Papua New Guinea remains the lowest in the Pacific region and among the lowest in the world. Furthermore, Papua New Guinea is among the few countries in the world where the average life expectancy at birth for females is less than that for males. The health status of women is related to their roles as child bearers, nurturers, food producers, and household workers. Much of the hard physical work that women do endangers their already poor health status.

Among the common health concerns in all provinces are high infant and child mortality rates and high maternal mortality rates. The risk of childbearing is enormous for women in Papua New Guinea. According to recent estimates based on the 1996 Demographic and Health Survey, 10 women die every week due to causes related to childbirth. This is a high rate by world standards and is of critical concern to health policy makers and planners.

![Life expectancy at birth by sex, 1971-1996](Image)

*Source: Department of Planning and Monitoring (1999): PNG National Population Policy 2000-2010*
4.2 Activity 13

What can be done to improve the life expectancy of women, and of children under 5 years old?

Education and literacy

Raising the level of general education and increasing literacy are not only key development goals, but important for a wide range of population-related areas. PNG’s current level of literacy and educational achievement is extremely low, even by the standards of other developing countries. The 1990 census revealed that:

- Of the total population aged 10 years and over, 55 percent were illiterate
- Among females aged 10 years and over, 60 percent were illiterate
- 69 percent of rural females aged 10 and over were illiterate
- 60 percent of the population aged 10 and over had not completed any level of schooling
- In the rural sector, 71 percent of females aged 10 and over had no education

4.2 Activity 14

It is a commonly accepted view that “improving education for girls may be the most important long-term policy in the developing world.” Discuss this statement in groups and decide how having an educated female population has an impact on the general health and economic well being of a country.
**Topic 5: Population policies in Papua New Guinea**

**Policy and planning**

The main objective of population policy is to ensure that the quality of life for Papua New Guineans is improved. Among several goals, the policy aims at assisting Papua New Guineans to be able to lead longer and healthier lives, gain education, and enjoy a decent standard of living. While aiming to improve economic growth, the government will also need to make efforts in sectors and at all levels (national, provincial, district, and local) to take into current and future population levels and trends for all policy and programs planning activities. Plans should reflect demographic changes that can be expected in the future. The central question is: what can be done now to ensure that those in the future will attain the quality of that they desire?

Policy and planning responses vary according to the demographic differences and concerns of each province. The goals and objectives of these policies and plans, however, should be consistent with national laws, policies, and plans. For instance, the National Capital District could not be compelled to limit in-migration from other provinces because it would be against the constitutional rights and freedom of people to move throughout Papua New Guinea.

**The National Population Policy 2000-2010**

The principle role of a population policy is to provide a coherent and transparent picture of the significance of population issues in the overall development process, and the measures that the Government proposes to address them.


**General principles**

The National Population Policy 2000-2010 has been formulated with clear guiding principles in mind. These principles have drawn from the PNG Constitution, from the ICPD Programme of Action (1994), and from the other international conventions that PNG has agreed to. In sum, these principles make it clear that individual human and freedoms guaranteed by the Constitution have been fully protected in formulated of the National Population Policy 2000-2010.

The general principles are as follows:

- The National Population Policy 2000-2010 recognizes and reflects the principle of national sovereignty
- The Policy reflects and is consistent with the five National Goals and Directive Principles of the PNG Constitution
- The Policy is consistent with rights and freedoms set forth in the Universal Declaration of Human Rights
- The Policy reflects and incorporates the principle that the human person is the central subject of development
• All couples and individuals have the basic right to decide freely and responsibly the number, spacing and timing of their children and to have the information, education and means to do so

• Population planning and policy-making is treated as an integral part of development planning and not in isolation

• The use of any form of economic or financial rewards or punishments applied to individuals and groups to achieve population goals is explicitly prohibited

• The positive aspects of PNG’s traditional values and practices are recognized and encouraged

• Numerical targets, goals, or objectives are used for monitoring, administration and planning purposes only, not to support any form of coercion or the achievement of family planning client quotas

• The implementation of the policy is based on the concept of a willing partnership between citizens, NGO’s the private sector, international agencies, and government

**General goals**

• To improve the quality of life and raise the level of living for the citizens of Papua New Guinea

• To raise the level of general education in the population to promote and facilitate broad-based social and economic development, to improve the status of women, and to contribute to raising the quality of the labour force

• To accelerate the demographic transition to ensure that population growth does not become a threat to the achievement of economic growth and development

• To ensure that the growing labour force is absorbed into the economy so as to minimize unemployment, under-employment, and their negative social consequences

• To ensure that population change (including migration) does not contribute to the degradation of PNG’s environment

• To increase the opportunities for women to participate more fully in the economic, political, cultural and social life of their communities and the country

• To strengthen and support the family as the central institution of social and cultural life and personal well-being

• To ensure that reproductive health-care services, including family planning, are accessible, affordable, and available in forms which are consistent with community values and norms

• To prevent, or reduce the incidence of sexually transmitted diseases (STDs) and to provide treatment to those affected

• To improve mother and child health by means of a rapid reduction in infant, child, and maternal mortality

• To improve understanding and awareness of the interrelations between population growth, development, and the environment among various groups, including youth, women’s groups, policy-makers, planners and parliamentarians — through targeted population education programs
• To achieve a more appropriate balance between urban and rural development and to promote a spatial distribution of population which is conductive to economic development and growth

• To improve the national capacity to produce population data and research results which meet the needs of policy-makers and planners, are available in a timely manner, meet international standards of accuracy, and are disseminated in most efficient and appropriate means available

• To integrate population into development plans and planning processes at national, provincial and district levels
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Child mortality rate</td>
<td>Deaths of children aged 1 to 4 per 1,000 live births.</td>
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<tr>
<td>Crude birth rate</td>
<td>Number of births per year per 1,000 population.</td>
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<tr>
<td>Crude death rate</td>
<td>Deaths per 1,000 live births.</td>
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<tr>
<td>Demographic transition</td>
<td>The change from high birth and death rates to low birth and death rates.</td>
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<tr>
<td>Dependency ratio</td>
<td>Ratio of the dependent population to the economically active population.</td>
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<tr>
<td>Fertility transition</td>
<td>Secular change from high to low fertility.</td>
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<tr>
<td>Human capital</td>
<td>The educational qualifications, technical skills and productivity of the labour force.</td>
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<tr>
<td>Infant mortality rate</td>
<td>Deaths under 1 year of age per 1,000 live births.</td>
</tr>
<tr>
<td>Inter-censal</td>
<td>Between two censuses.</td>
</tr>
<tr>
<td>Level of living</td>
<td>The actual degree of material well-being enjoyed by a person or group.</td>
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<tr>
<td>Life expectancy</td>
<td>Average years lived from birth assuming that present age sex specific death rates remain constant.</td>
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<tr>
<td>Maternal mortality ratio</td>
<td>Deaths to mothers related to pregnancy or childbirth per 100,000 live births.</td>
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<tr>
<td>Mortality transition</td>
<td>The transition from high to low death rates.</td>
</tr>
<tr>
<td>Net migration</td>
<td>The balance of in-migration minus out-migration.</td>
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<tr>
<td>Physical capital</td>
<td>Equipment, machinery, etc. used in the production of goods or services.</td>
</tr>
<tr>
<td>Population density</td>
<td>Persons per square kilometre of land.</td>
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<tr>
<td>Population projection</td>
<td>An estimate of the future population based on assumptions about trends in demographic variables.</td>
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<tr>
<td>Rate of natural increase</td>
<td>The difference between the birth rate and the death rate.</td>
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<tr>
<td>Replacement fertility</td>
<td>The level of fertility at which each couple exactly replaces itself allowing for mortality.</td>
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<tr>
<td>Reproductive health</td>
<td>A state of complete physical, mental and social well being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes.</td>
</tr>
</tbody>
</table>
### Sustainable development
Development which meets the needs of present generations without sacrificing the needs of the future generations.

### Total fertility rate
The number of children a woman would have at the prevailing age-specific rates.

### Under-enumeration
When a census records fewer people in an area than are actually there.

### Unemployed
A person not in employment and who is actively looking for a paid job or who is seeking to enter into paid employment for the first time.

### Urbanisation
The process whereby the proportion of the population living in towns and cities increases while the proportion living in rural areas decreases.

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**References**


