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PLANET GEOGRAPHY

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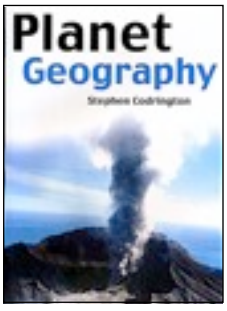

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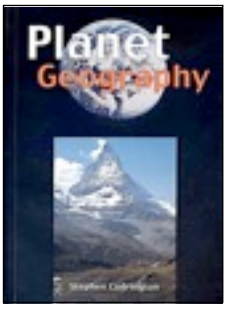

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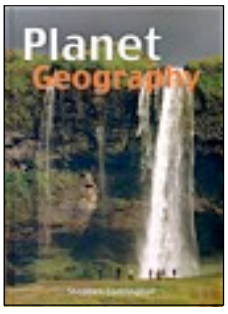

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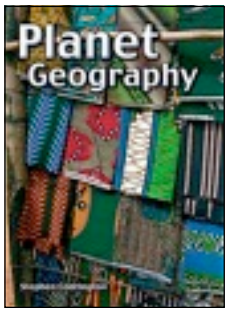

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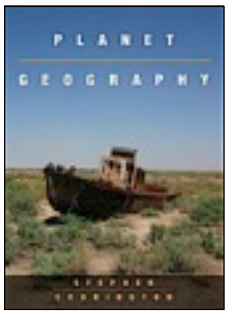

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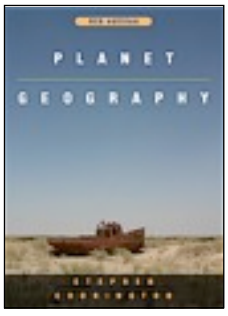

6th Edition
2011

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Proceeds from the sale of this book will be used to support the establishment of medical clinics and improved health care in poor rural areas of China's Guizhou province, as described in Chapter 10.

All photographs, except where stated otherwise in the caption, were taken by the author.

Contents

Preface

Geography provides the ideal, integrated framework to understand contemporary world issues, and more importantly, it provides an effective framework of problem solving skills. If we understand the causes of problems, we are well on the way to finding an effective solution. And the reality is that we live in a world today that desperately needs young people equipped with the skills and insights to make our world a better place!

We know that our world is becoming more and more integrated. This trend shows itself in many ways, and to reflect this trend, cultural homogenisation is the topic of study in one of the chapters of this book. Global integration has now reached the point where a single senior secondary school Geography course is now taught in over 100 countries – that program is, of course, the International Baccalaureate Diploma for which this book was written.

This book is not designed to be a textbook in the traditional sense of one reference that covers everything for a course. In today's world of the internet, the traditional textbook no longer occupies the prime role that it once enjoyed. *Planet Geography* is intended to serve as a resource for IB Geography, but just one of many resources, including the book's own support website – www.planetgeography5.com. *Planet Geography* is deliberately richly illustrated with photographs, maps and diagrams. This is important because we know now that people absorb data from many sources, and many students gain information more easily from pictures and diagrams than the written word. Colour photographs have been used extensively to illustrate the material, with almost every photograph in the book being taken by the author. Photographs, maps and diagrams have been integrated carefully with text for clarity and relevance. Case studies are an integral part of the book, and serve not as 'add-ons', but as a means of developing concepts in a way that relates effectively to the real world.

The development of thinking skills and Theory of Knowledge perspectives are also encouraged by the types of exercises presented in the book, so that students are helped to develop skills and understanding, not just a mastery of content. This is supported by at least one dedicated 'ToK Box' in every chapter of the book. Through these approaches, it is hoped that young people using this book will acquire the wisdom that is necessary for the stewardship and survival of our planet.

It would be impossible to quantify the writing (and photographing!) period taken to prepare this book, as the field research alone spans most of my career as a teacher. The subject of Geography has given me enormous pleasure over the years, and this book is my attempt to share some of the insights of this great subject with another generation of learners. This book, like the earlier editions, is my way of saying 'thank you' to the thousands of people with whom I have worked over the years in the field of Geography.

More than anyone else I must thank and pay tribute to my family, and especially my children who have grown up with the notion that any family holiday is really a geography field study in disguise! My wife, Di, and my now-adult children – Liesl, Phillip, Tim and Andrew – have sacrificed having their husband and father with them on countless weekends and evenings while this book was written. This is not a small book, and the time they have sacrificed has been considerable.

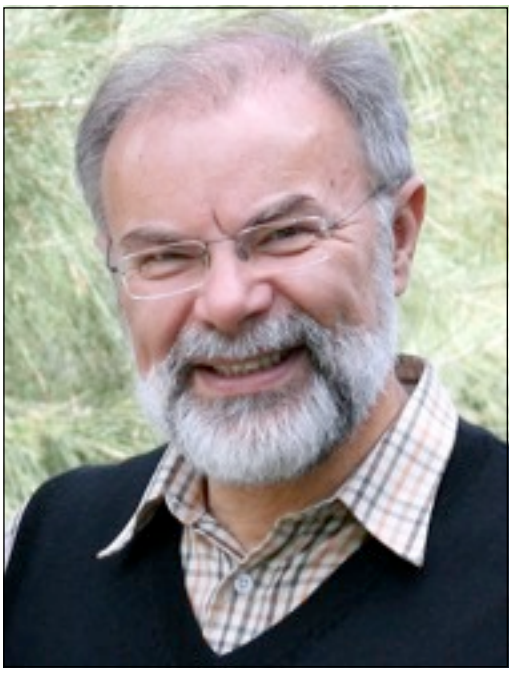
About the author

An Australian by birth, Dr Stephen Codrington is the Principal of Li Po Chun United World College in Hong Kong. This is his fourth headship, having previously served as Principal at St Paul's Grammar School in Penrith (Sydney, Australia) between 1989 and 1997, Kristin School in Auckland, New Zealand from 1997 to 1999, followed by Prince Alfred College in Adelaide (Australia) from 2000 to 2004. Prior to that he taught at schools in both Australia and England including St Ignatius College, Riverview (Sydney, Australia) and Stonyhurst College (Lancashire, UK).

He is a former President of both the Geographical Society of New South Wales and the Geography Teachers' Association of New South Wales (twice). He has led several successful geographical study tours to such diverse destinations as China, Cambodia, Russia, Myanmar, Estonia, Uzbekistan, Papua New Guinea, Indonesia (Irian Jaya) and Thailand. In 2005, he led a group of the first foreign students ever to visit North Korea – the first of six trips he has now undertaken to that unknown and often misunderstood country. Stephen's work has taken him to more than 90 countries.

He has been honoured with election as a Fellow of the Australian College of Education, the Royal Geographical Society (UK), the International Biographical Association, and the Geographical Society of NSW, as well as being elected a Member of the Order of International Fellowship. He is a former Chairman of HICES (Heads of Independent Co-educational Schools). He was named International Man of the Year (Education) by the International Biographical Centre in Cambridge (England) in 1995-96. He has been listed in Who's Who in Australia every year since 2003.

He edited Geography Bulletin, the journal of the Geography Teachers' Association of New South Wales from 1980 to 1986. He continues to teach in the classroom, to the delight of his students.



Stephen has worked intensively in the area of change management of schools and in 2000 he was presented with an Outstanding Public Speaker award by IBC in England.

From 1996 to 2001 he served as Deputy Chief Examiner in Geography for the International Baccalaureate (I.B.), setting examination papers for the I.B. and assisting with curriculum development. During his terms as Deputy Chief Examiner, he led many teachers' workshops in places such as Melbourne, Guangzhou, Singapore, Brisbane, Auckland, Adelaide, Hong Kong and Mumbai. He maintains a personal website at www.stephencodrington.com.

SECTION ONE

PATTERNS AND CHANGE

Populations in Transition

1

The changes in population today are unprecedented in the history of the planet.

Outline

Population Change Page 9
Trends in population and patterns in fertility, as well as mortality, in contrasting regions of the world. Population pyramids. Population momentum and its impact on population projections.

Responses to High and Low Fertility Page 25
Dependency and ageing ratios. The impacts of youthful and ageing populations. Examples of pro-natalist and anti-natalist policies.

Movement responses - Migration Page 37
Forced and voluntary migrations. Internal and international migrations in terms of geographic (socio-economic, political and environmental) impacts at origins and destinations.

Gender and Change Page 48
Gender inequalities in culture, status, education, birth ratios, health, employment, empowerment, life expectancy, family size, migration, legal rights and land tenure.

ToK BoX – Page 35
Theory of Knowledge

Population Change

World Population Growth

At first sight, the statistics on world population seem frightening. Global population is now almost 6.5 billion. Last year, the world's population grew by almost 80 million people. Three billion young people are entering their reproductive years, a figure that is equal to the entire population of the world in 1960. There are currently about 50 million abortions, both legal and illegal, in the world every year. A quarter of all pregnancies in developing countries end in abortion.

However, it is important not to be alarmist. Even using common but emotive terms like 'population explosion' can pre-judge the population issue. In the late 1960s, a US Biology Professor, Paul Ehrlich, wrote a book called 'The Population Bomb' that opened with these words:

"Population control – or race to oblivion? Overpopulation is now the dominant problem in all our personal, national, and international planning. No one can do rational planning, nor can public policy be resolved in any area unless one first takes into account the population bomb... The battle to feed all of humanity is over. In the 1970s and 1980s hundreds of millions of people will starve to death in spite of any crash programmes embarked upon now... Population control is the conscious regulation of the numbers of human beings to meet the needs not just of individual families, but of society as a whole."

Although there were famines and wars during the 1970s and 1980s, Ehrlich's more catastrophic predictions did not come to pass. In some respects, Paul Ehrlich was echoing the predictions made by the English demographer Thomas Malthus in 1798. Malthus argued that the earth could only support a finite population size because food supplies are limited. He said that while the human population increases in a geometric progression (1➔2➔4➔8➔

>> Some Useful Definitions

Contemporary — an event that has taken place in your lifetime.

Geographic — all the demographic, environmental, social, cultural, economic, political and geopolitical factors that could influence or be influenced by the geography of an area.

Migration — the movement of people, involving a change of residence. It can be internal or external (international) and voluntary or forced. It does not include temporary circulation such as commuting or tourism.

Pattern — the arrangement of spatial elements.

Recent — refers to an event that has taken place since the year 2000.

Socio-economic — the combination of social factors (including demographic, cultural and political) and economic factors.

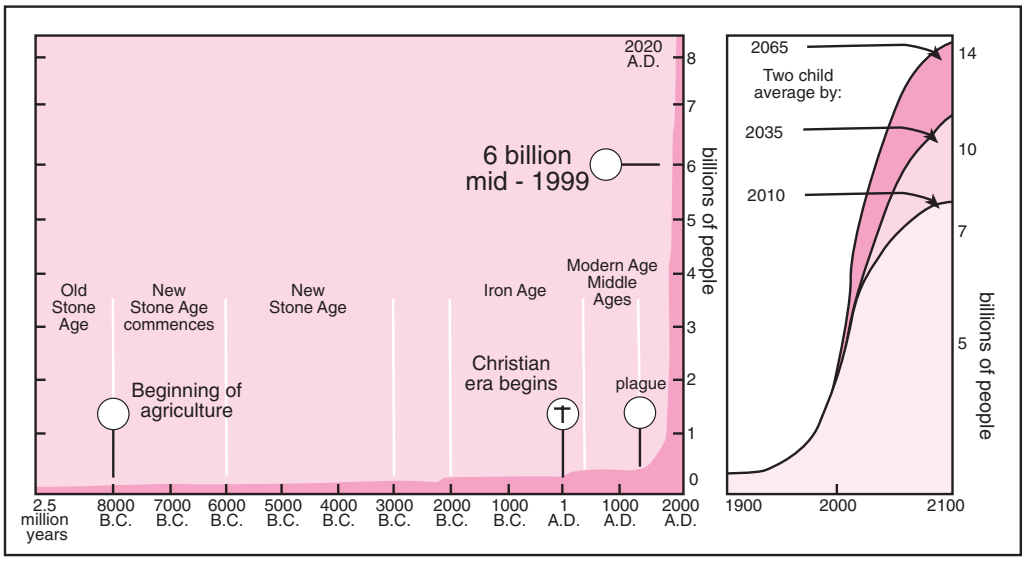
Trend — changes over time.

16➔32 etc), food production only increases in an arithmetic progression (1➔2➔3➔4➔5➔6 etc). Malthus believed this was the case because the amount of land is finite, and so food production could not continue increasing to keep pace with population growth (figure 1.1).

1.1 *Crowded scenes like this market in Djenné (Mali) might at first seem to confirm Malthusian views of population growth. However, standards of living, average life expectancies and availability of food in most countries in the world are now better than they have ever been.*

Malthus argued that when population growth outstripped food supply, as he felt was inevitable, then a correction could happen in one of two ways. On one hand, preventative checks would lower the fertility rate. This could happen, for example, if prices of food rose as it became scarcer, causing couples to delay marriage or reduce the number of children they had. On the other hand, Malthus argued that if preventative checks were insufficient, then positive checks would reduce the population size by catastrophic means such as famine, disease or war.

At the time Malthus wrote, he believed that Britain's population could not possibly grow beyond 10 million people. Today Britain's population is just over 58 million and the standards of living are much higher than Malthus could ever have imagined. Malthus' predictions were wrong because he underestimated the extent to which technology would improve farming yields. In the past 200 years since Malthus wrote, food production has increased more than population, and the vast food surpluses in many developed countries show that there is still room for food production to increase. Indeed, the world currently produces enough food for every man, woman and child to be obese. The fact that many millions of people



1.2 *The growth of world population through history.*

are still malnourished is a problem of distribution and capacity to pay, not a problem of production.

Since Malthus first raised the issue of the carrying capacity of the earth, many demographers (people who study population) have looked at the question of how many people the earth can support. In 1891, a scholarly study by Ravenstein suggested that the earth could support no more than 6 billion people, about the current population. In 1925, Penck suggested that the maximum should be raised to between 7.7 to 9.5 billion people, but in 1945 Pearson and Harper suggested lowering the figure to 0.9 to 2.8 billion, many fewer people than the world currently supports. Other estimates have varied widely, from only 7.5 million (Gilland, 1983), to 2 billion (Westing, 1981), under 5.5 billion (Ehrlich, 1993), 41 billion (Revelle, 1967), and 1 trillion (Marchetti, 1978). In 1981, the American economist Julian Simon argued there is no meaningful limit to the earth's population. He suggested each extra person is a resource that adds to our productive capacity, and should not be seen as a draining consumer of resources. Clearly, there is no consensus on the maximum number of people the earth can support.

Figure 1.2 shows the growth in world population over time, together with projections to the year 2050 based on various assumptions of family sizes in the future. This graph shows clearly the accelerating way in which population numbers are increasing, although not necessarily an accelerating rate of population increase. It took over one million years of human history for the world's population to grow to 1 billion; this figure was reached in 1830.

Table 1.2

Life Expectancy and Infant Mortality, Males and Females Combined, Year 33 to 1875

Country and Period	Life Expectancy at Birth (years)	Death Rate per 1000 people in 1st year of life
Roman Egypt, 33 - 258	24.0	329
England, 1301 - 1425	24.3	218
England, 1541 - 1526	33.7	-
England, 1620 - 1626	37.7	171
England, 1726 - 1751	34.6	195
England, 1801 - 1826	40.8	144
France, 1740 - 1749	24.8	296
France, 1820 - 1829	38.8	181
Sweden, 1751 - 1755	37.8	203
Japan, 1776 - 1875	32.2	277
Japan, 1800 - 1850	33.7	295
Japan, 1751 - 1869	37.4	216

Source: Maddison, A (2001) *The World Economy* p.29

Table 1.1

Level and rate of Growth of Population

Year	0	1000	1820	2000	0-1000	1000-1820	1820-2000
	millions of people				average annual growth rate (%)		
Western Europe	24.7	25.4	132.9	338	0	0.2	0.6
Societies established by European countries, such as colonies	1.2	2	11.2	323	0.05	0.21	1.91
Japan	3	7.5	31	126	0.09	0.17	0.7
Total of Group A (above)	28.9	34.9	175.1	838	0.02	0.2	0.88
Latin America	5.6	11.4	21.2	508	0.07	0.08	1.8
Eastern Europe and Former USSR	8.7	13.6	91.2	412	0.05	0.23	0.05
Asia (except Japan)	171.2	175.4	679.4	3390	0	0.17	0.91
Africa	16.5	33	74.2	760	0.07	0.1	1.32
Total of Group B (above)	202	233.4	866	5059	0.01	0.16	1
WORLD	**230.8**	**268.3**	**1041.1**	**5908**	**0.02**	**0.17**	**0.98**

Source: Maddison, A (2001) *The World Economy* p.28

Table 1.3

Birth rates and Life Expectancy, 1820 - 2000

	Births per 1000 population				Average life expectancy at birth (years)			
	1820	1900	1950	2000	1820	1900	1950	2000
France	3.19	2.19	2.05	1.26	37	47	65	78
Germany	3.99	3.60	1.65	0.96	41	47	67	77
Italy	3.90	3.30	1.94	0.93	30	43	66	78
Netherlands	3.50	3.16	2.27	1.27	32	52	72	78
Spain	4.00	3.39	2.00	0.92	28	35	62	78
Sweden	3.40	2.69	1.64	1.01	39	56	70	79
United Kingdom	4.02	2.93	1.62	1.30	40	50	69	77
Western Europe average	3.74	3.08	1.83	1.00	36	46	67	78
United States of America	5.52	3.23	2.40	1.44	39	47	68	77
Japan	2.62	3.24	2.81	0.95	34	44	61	81
Russia	4.13	4.80	2.65	0.88	28	32	65	67
Brazil	5.43	4.60	4.44	2.10	27	36	45	67
Mexico		4.69	4.56	2.70		33	50	72
Latin America average			4.19	2.51	27	35	51	69
China		4.12	3.70	1.60		24	41	71
India		4.58	4.50	2.80	21	24	32	60
Asia average			4.28	2.30	23	24	40	66
Africa average			4.92	3.90	23	24	38	52
World			**3.74**	**2.30**	**26**	**31**	**49**	**66**

Source: Maddison, A (2001) *The World Economy* p.30

It then took 100 years to add the second billion (1830 to 1930), 30 years to add the third billion (1930 to 1960), 15 years to add the fourth billion (1960 to 1975) and 12 years to add the fifth billion (1975 to 1987). However, the sixth billion also took 12 years to add (1987 to 1999), indicating that the rate of population increase has begun to slow.

It is important to understand that this growth in world population has not been evenly distributed across the world (see table 1.1).

The growth in world population has been caused by a combination of death rates being lowered and life expectancies increasing. The **death rate** is the proportion of the population that dies in a particular year. When we examine the death rate of young children, such as in the first year of life, or first five years of life, we refer to this as the **infant mortality rate**. The **average life expectancy** is the number of years that a child born in a particular country in a certain year can expect to live. Between the years 1 and 1820, a slow lowering of average death rates was the main cause of increasing population (table 1.2).

Table 1.4

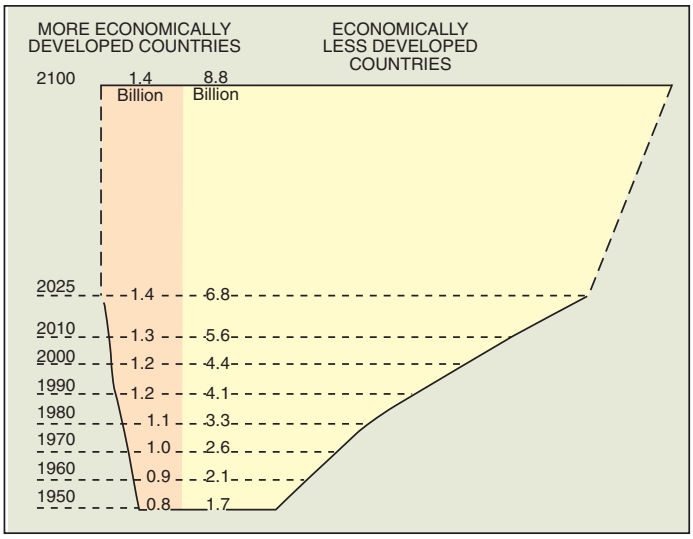
Average Life Expectancy for Group A and Group B Countries 1000 - 2000 (years at birth)

	1000	1820	1900	1950	2000
Group A	24	36	46	66	78
Group B	24	24	26	44	64
World	24	26	31	49	66

Group A and Group B countries defined in table 1.1.
Source: Maddison, A (2001) *The World Economy* p.31

Since 1820, the decrease in death rates has been much sharper, and it has been the main cause of population growth, offsetting the lowering of birth rates in the same period (table 1.3). As a consequence of the lowering of death rates, life expectancies have increased greatly – perhaps the greatest improvement in human welfare that is possible (tables 1.2 and 1.3). Between the year 1 and 1000, average life expectancy throughout the world was about 24 years. Life expectancy had risen to an average of only 26 years by 1820, although this figure was 36 years in the Group A countries shown in table 1.1, compared with 24 years in the group B countries. The changes since that time are shown in table 1.4.

Just as population growth has been unevenly distributed in the past, growth is likely to be unevenly distributed in the decades ahead. As figure 1.3 shows, 90% of future population increase will be in developing countries, the areas least able to cope with the resource demands of additional numbers. The increase in population numbers has been (and will be) greatest in Asia. In contrast, population growth in Europe seems to have stopped and population numbers have actually started to decline in Europe. About 80% of the world population today lives in less developed countries. People in the industrialised countries comprise only 20% of world population, and this proportion seems certain to come down to 16% in 2020, even though there will be more industrialised countries then. However, it is worth remembering that each baby born in the USA today will consume 80 times more resources in their lifetime than a baby born today in India.



1.3 *Growth of world population, 1950 to 2100.*

Seventy-four countries, all from the less developed world, and including Nigeria, Iran, Ethiopia, Iraq, El Salvador, Pakistan, Guatemala, Syria, Honduras and Nicaragua, seem certain to double their populations in 30 years or less. Even though a number of countries in Asia and Latin America have registered significant falls in their total fertility rates, the annual number of births worldwide will remain over 132 million for several years to come. The reason is that most of these countries already have a large population base, and a large number of women there are entering their reproductive years. Three billion people will enter their childbearing years within the next generation, while only about 1.8 billion people will leave that phase of life. This will leave a net gain of 600 million couples who could produce 1.8 billion children in the next generation at the current fertility rate of about three children per woman.

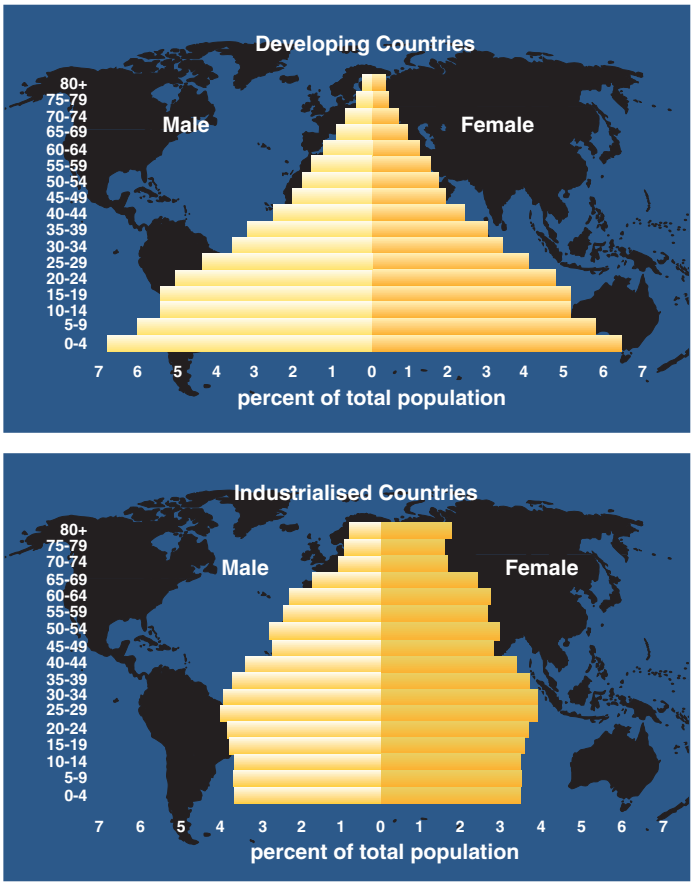
To take one example, India's total fertility rate, fell from 4.3 children per woman in 1985 to 3.2 in 1997. However, due to its already large population size of 920 million, almost 25 million babies were born there in 1997. India's fertility rate is still much higher than China's rate of 1.8 children per woman and the replacement level of 2.1 children per woman. India is likely to overtake China as the world's most populous country somewhere around 2050.

Question Block 1A

1. *Comment on Paul Ehrlich's statement from* The Population Bomb *(1969). Do you agree that 'overpopulation is now the dominant problem in all our personal, national, and international planning'? Give reasons for your answer.*
2. *Outline Thomas Malthus' argument, and explain why it did not happen as he predicted.*
3. *Examine figure 1.2. Describe the trend in world population shown in the graph.*
4. *Suggest the rationale for dividing countries into Group A and Group B in table 1.1.*
5. *Draw a line graph with seven lines, one each to show the growth in world population from 0 to 1998 in the seven regions listed in table 1.1. Do not include lines for the cumulative totals of Group A, Group B and the world.*
6. *Describe the changes shown in the average annual growth rates displayed in the right-hand three columns of table 1.1.*
7. *Using table 1.3, draw a line graph showing the changes in birth rates from 1820 to 2000 for each country shown. Describe the trend you have drawn, and discuss any significant differences between countries. Where data is missing, leave a blank section in that part of the line graph.*
8. *Using table 1.3, draw a series of column graphs showing the changes in average life expectancy from 1820 to 2000 for each country shown. Describe the trend you have drawn, and discuss any significant differences between countries.*
9. *Describe the pattern shown in table 1.4.*
10. *In the light of what you have read here, how would you define 'overpopulation'?*

Population Structure

The **structure** of a population refers to the age and sex distribution of the population. This is often shown as a graph with the number or proportion of each age group shown as horizontal bars from a central vertical column that represents age groups, as in figure 1.4. In general these graphs show males on the left hand side of the diagram and females to the right. These graphs are known as **population pyramids**, or **age-sex diagrams**. The graphs can show varying degrees of detail with the horizontal bands commonly representing age bands of one year, five years (as in figure 1.4), or ten years.



1.4 *Population structures for developing countries (top) and industrialised countries (bottom).*

Population pyramids reflect past and present demographic trends in the population being described. A population pyramid with a wide base that narrows quickly upwards represents a population with a high birth rate, a high proportion of young people and a rapidly growing population. A population pyramid with steep vertical sides represents an ageing population with a low birth rate. Such population pyramids typically have an excess of elderly females over males because females tend to have longer life expectancies than males.

As a result of the difference in population growth rates in developed and developing countries, a contrasting set of population structures has emerged (figure 1.4). Developing countries (Less Economically Developed Countries, or **LEDCs**) tend to have population structures with a wide base, indicating that a large proportion of the population is below 15 years of age. This has important implications for future population growth in these nations as the young people reach adulthood and begin to have children of their own, and it is evidence that the population size is growing rapidly. On the other hand, developed countries (More Economically Developed Countries, or **MEDCs**) have a population pyramid that has a narrower base. Because there are fewer young people entering their reproductive years, the size of the population can remain stable over time. Population pyramids with a narrower base are evidence of an ageing population and a slower rate of population increase, or even a declining population size.

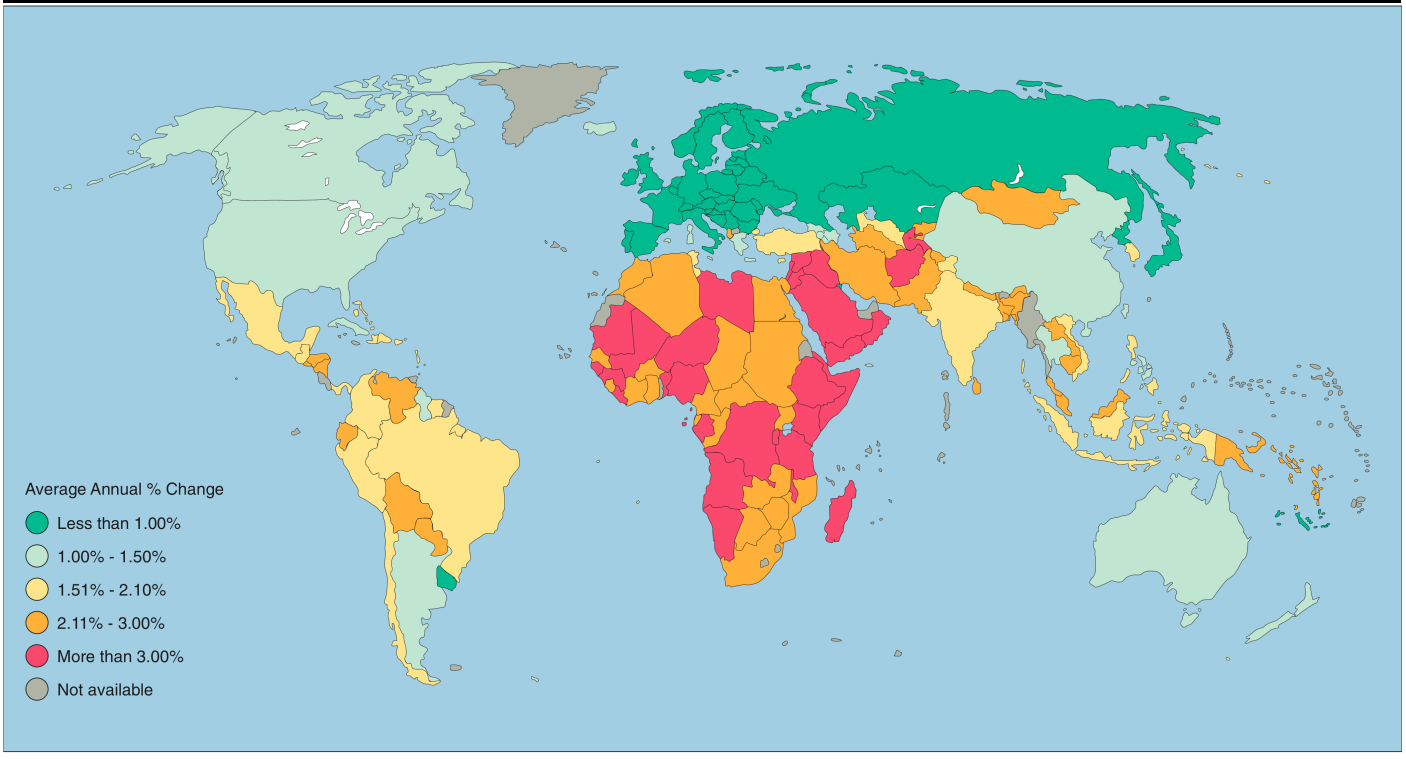
Another way of looking at population growth trends is to consider **fertility rates**, or the average number of births per woman. As figure 1.5 shows, fertility rates are very high in developing regions such as Africa and the Middle East and low in most industrialised regions, especially Europe, where some countries have fertility rates below the replacement level. Indeed, almost all the countries in Europe, except Iceland and Albania, have below-replacement fertility rates. Spain (1.2 births per woman), Italy (1.2), Germany (1.3), Estonia (1.3) and Slovenia (1.3) have some of the world's lowest fertility rates. In Asia, China (1.8), Japan (1.5), Singapore (1.8) and South Korea (1.7), all have below-replacement fertility rates.

Sub-Saharan Africa and south central Asia continue to be the areas with the fastest population growth. Even in these regions, fertility fell between 1980 and 2000 in a number of countries. In Bangladesh, it dropped from 6.7 children per woman to 3.1; in Turkey from 4.3 to 1.7; in Myanmar from 5.3 to 3.3; and in Kenya from 8.1 to 4.9. The fertility level for Africa as a whole, however, is 5.3 births per woman, and in south central Asia 3.8. The current global average is 2.8 children per woman, well above the replacement level. It seems certain that Africa will double its population in 25 years.

The number of countries with a below-replacement fertility rate increased from 19 in 1970 to more than 50 today. Indeed, some demographers are claiming that the "population explosion is over", and there are even concerns about a "population implosion" as more and more countries fall below replacement level. Some estimates suggest that between 2040 and 2050 world population will decline by a total of 85 million.

Question Block 1B

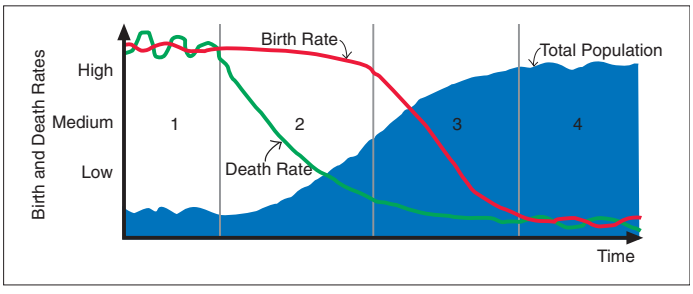
1. *Contrast the population structures of LEDCs and MEDCs, and account for the differences.*
2. *What is the relationship between fertility rates and rates of population growth?*
3. *Describe the broad world pattern of fertility.*



1.5 *Population growth rates per annum, 2000-2008.*

Demographic Transition Model

The rate of population increase in any area can be calculated by adding the rate of natural increase and the rate of net migration. The natural increase in turn is the difference between the birth rate and the death rate. The birth rate is the number of live births per 1000 people per year, while the death rate is number of deaths per 1000 people per year. If the birth rate exceeds the death rate, then the total population size will increase as long as this natural increase is not offset by losses due to migration.



1.6 *The demographic transition model.*

These changes are often analysed with reference to the **demographic transition model** (figure 1.6). In this model, a society passes through four stages. In stage 1, both birth rates and death rates are high, so there is a small (if any) increase in population size. Stage 1 societies are those that are very traditional, such as might be found in isolated regions of the Himalayas, Irian Jaya, central Africa and the interior of South America. Birth rates are high for several sound, logical reasons. One important factor is that the infant mortality rate is high and many children die at a young age, so families often have additional children to compensate. Children are seen as economic assets as they do useful work for the family from the age of six

1.7 *In many countries, children are seen as an investment in the family's future. In countries where governments do not provide old age pensions, children provide security for parents in their old age. These children are with their father outside the family yurt in Mongolia.*

or seven. By the time children reach the age of 10 or 12 they are often producing more for the family than they consume. Moreover, children provide security for their parents in old age, an important consideration in countries that have no old age pension schemes (figure 1.7). The religious beliefs of people in traditional societies also encourage large families, and even where this is not the case, children may be seen as a sign of virility. Death rates are high because medical care is often inadequate and because poor sanitation allows the spread of disease.

Stage 2 occurs when death rates fall as a result of advances in medical care and sanitation. However, birth rates remain high because the cultural factors that lead to high birth rates are unaltered. Because there is a large gap between birth rates and death rates, population grows very rapidly. For example, in a society where the birth rate was 35 per 1000 people (i.e. 3.5%), and death rates had fallen to 20 per 1000 (i.e. 2.0%), then the rate of population increase would be 1.5% per annum. Countries at this stage of the demographic transition include Kenya, Paraguay, Afghanistan, Nepal and Ethiopia.

1.8 *A major factor in reducing birth rates in stage 3 countries such as Malaysia is the availability of family planning facilities, like this one in Kuala Trengganu.*

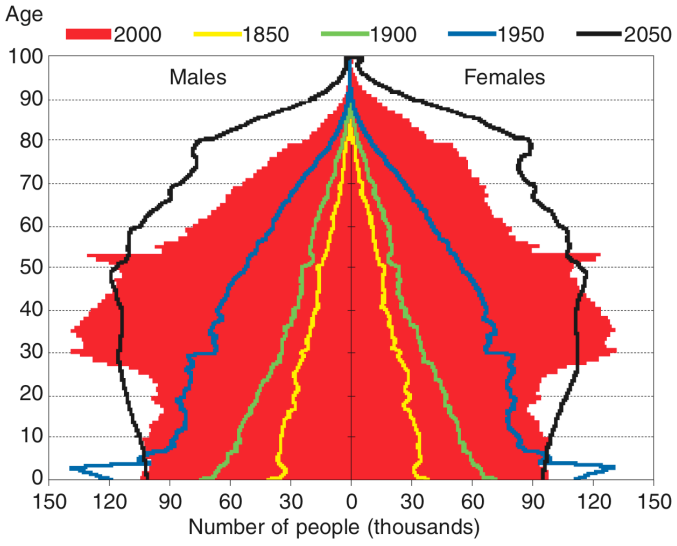
After a while, birth rates begin to fall, and this marks the beginning of stage 3. A fall in birth rates often follows a fall in death rates, as farmers and others realise that large families are no longer necessary to compensate for a high death rate. The birth rate may also be lowered as family planning facilities become available, as parents come to favour more material possessions rather than large families, and as women become more involved in the workforce (figure 1.8). As the birth rate lowers, the death rate continues to be reduced, although the decrease in the death rate is less than the fall of the birth rate in stage 3. Because the gap between the birth rate and the death rate is closing in stage 3, the rate of population increase slows down from stage 2, but as birth rates are still higher than death rates, the population continues to grow in size. Countries at stage 3 of the demographic transition include Malaysia, Israel, China and Chile.

1.9 *In countries at stage 4 of the demographic transition, even places normally associated with children, such as beaches, are dominated by the presence of adults. Only two children can be seen among hundreds of adults in this view of Scheveningen Beach, Netherlands.*

Stage 4 is reached when both birth rates and death rates are low. Like stage 1, the small gap between birth rates and death rates in stage 4 gives a slowly growing or declining population. This stage has been reached in several countries, especially in Europe, including Bulgaria, Latvia, Russia, Netherlands and the United Kingdom (figure 1.9). Today, Europe has a larger percentage of older people than any other continent (15% of the population over 65 years), and for this reason has a higher average death rate (12 deaths per 1000 people) than any continent other than Africa. The economies of Eastern Europe that are emerging from communism into capitalism, such as Russia, Ukraine and Latvia, are experiencing a gradual increase in death rates, largely due to the growing pressures of economic transition which have increased the rates of suicides and deaths caused by excessive alcoholism.

The demographic transition model is based on Europe's experience through its pre-industrial phase before the late 1700s (stage 1), through the Industrial Revolution in the early 1800s (stage 2), the expansion of manufacturing through to the 1960s (stage 3) and post-industrialisation (stage 4). The demographic transition leads to changes in

a country's population structure as can be seen in the case of the Netherlands (figure 1.10).

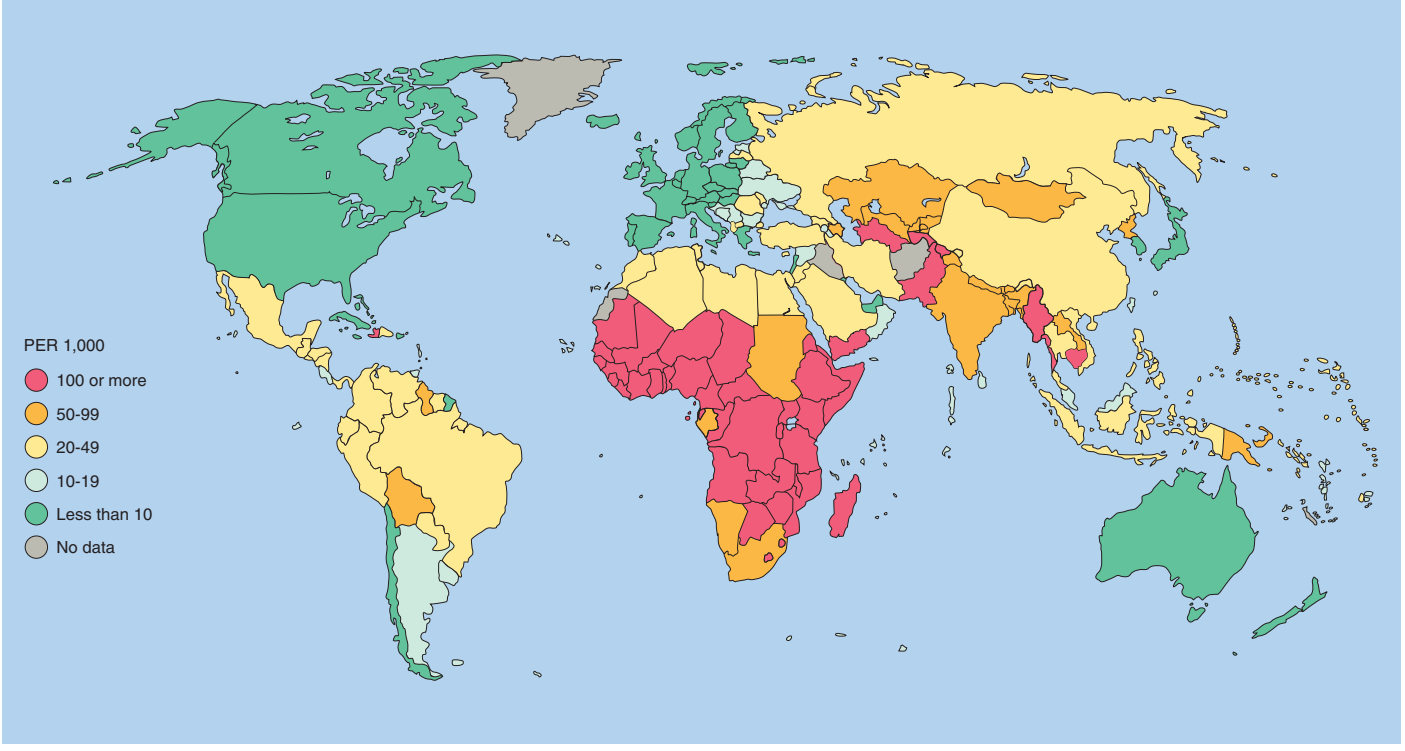


1.10 *Population in the Netherlands by age and sex, 1850 to 2050.*

Countries in other parts of the world such as Asia and South America seem to be passing through the stages of the demographic transition much more quickly than Europe. The demographic transition gives great hope to those people who are concerned about the rapid population growth in poorer countries, as it seems to suggest that as people become more affluent they will voluntarily reduce their family sizes.

Although the demographic transition has described the experience of many places in addition to Europe, it is possible that other countries in the future will not follow the pattern predicted. For example, most parts of Africa are at stage 2 of the demographic transition at present, and in the years ahead we would expect their birth rates to drop dramatically as the death rates continue falling slowly as they move into stage 3. However, Rwanda, Liberia and Burundi in Africa and Iraq in western Asia have seen their death rates increase due to war. Furthermore, the spread of AIDS is increasing death rates quite dramatically in Africa. It is estimated that without the deaths caused by AIDS, the population of Africa would have been about 25% more than it is today. AIDS has also sharply reduced the life expectancy of people in Africa, and life expectancy in Eastern Africa is now estimated at 46.7 years, nearly four years lower than an earlier UN projection a few years ago (figure 1.11).

1.11 *This sign in central Dar-es-Salaam, Tanzania's largest city, reflects the huge concern about AIDS in Africa and the impact it is having on East Africa's death rates.*



1.12 *Under-five infant mortality rate, 2008.*

The impact of AIDS has been most severe in sub-Saharan Africa where about 4.5 million people were killed by the disease between 1985 and 1997. Botswana, Malawi, Uganda, Zambia and Zimbabwe have been hit the hardest by the AIDS epidemic, and currently more than 10% of the adult population in these countries are infected with HIV. Sierra Leone in western Africa now has the world's highest death rate with 25.7 deaths per 1000 people, followed by 22.4 in Malawi and 21.0 in Uganda.

The contrast between countries at stages 2 and 4 of the demographic transition today – the rich and poor countries – can be seen by comparing their infant mortality rates (figure 1.12).

Infant mortality provides an even stronger measure of the contrasts. **Infant mortality** is defined as the proportion of children who die before they reach the age of one year. In Africa, the average number of infant deaths per 1000 live births is 86, reaching a peak at 283 in Sierra Leone and 235 in Liberia. The average infant mortality rate for South America is 36 and for Asia 56. On the other hand, in Western Europe, North America, Japan and Australia, infant mortality is 10 or less per 1000 live births.

Question Block 1C

1. *Outline the main characteristics of each stage of the demographic transition model.*
2. *The birth rates and death rates for selected countries are given in table below for the year 2008. For each country, calculate the rate of population increase.*

Country	Birth Rate (births per 1000 people)	Death Rate (deaths per 1000 people)
Australia	14	7
China	12	7
Czech Republic	11	10
Italy	9	10
Malawi	48	16
Malaysia	21	5
Myanmar	19	10
Nepal	29	9
Papua New Guinea	31	10
Swaziland	31	31
Uganda	48	16
United Kingdom	13	9

3. *Give three examples of countries (or regions) at each stage of the demographic transition.*
4. *Draw a sketch of the shape of the population pyramid you think would apply at each stage of the demographic transition.*
5. *What causes the change between each stage of the demographic transition?*
6. *Why do developed nations such as the United Kingdom and Italy have higher death rates than developing countries such as China and Malaysia?*
7. *Three LEDCs listed in question 5 are Papua New Guinea, Swaziland and Uganda. Suggest reasons for the different rates of population growth in those three countries.*
8. *How reliable do you think the demographic transition is in predicting future changes in population in developing countries?*
9. *Describe the pattern shown in figure 1.12.*
10. *Compare the patterns shown in figures 1.12 and 10.2 (in chapter 10), and suggest reasons for any similarities you can identify.*

Population Momentum and World Population Growth

As shown in the sections above, total fertility is declining in most countries of the world. Even when this occurs, however, there is a lag period before the rate of natural increase declines. This is because children and youths who have already been born but who have not yet reached childbearing age give the population momentum to continue growing. **Population momentum** is the tendency for a population to continue growing even after the time that a replacement level of fertility has been achieved. It occurs when a population contains quite high proportion of people at or before their childbearing years.

The population momentum factor (PMF) is calculated by multiplying the crude birth rate (CBR) with the average life expectancy at birth (LEB). A PMF of 1 indicates that natural increase is not contributing to population growth. A PMF greater than 1 means there is positive momentum in the population that will lead to future growth, while a PMF of less than 1 means there is negative momentum, or a high probability that the population will decline in size. The higher the PMF, the greater will be the population momentum for that country.

The population momentum for a selection of countries is shown in table 1.5. The figures are calculated using the formula PMF = CBR x LEB. Thus, the PMF for Nigeria is 0.043 x 47, or 2.021. This is a fairly typical situation for many countries in Africa where the population experiences short life expectancies but which are continuing to increase because of high fertility rates.

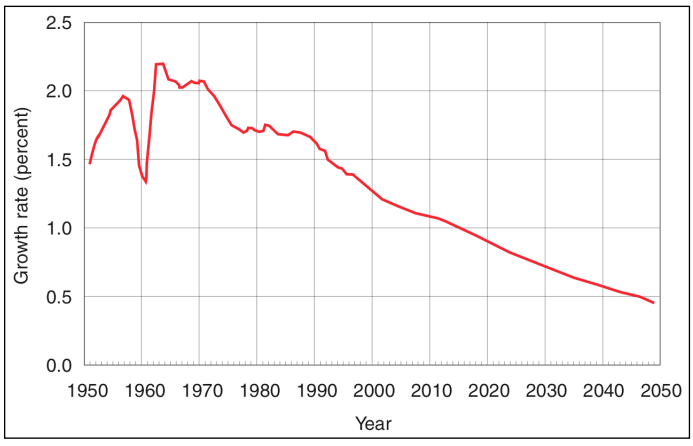
Table 1.5

Demographic Characteristics and Population Momentum for Selected Countries, 2008

	Population 2008	Estimated Population 2025	Estimated Population 2050	Projected Population Change 2008-50 (%)	Crude Birth Rate (CBR) in births per 1000 population	Life Expectancy at Birth (LEB) in years	Population Momentum Factor (PMF)
HIGH HUMAN DEVELOPMENT							
Norway	4.8	5.6	6.6	38	12	80	0.960
Australia	21.3	24.7	28.1	32	14	81	1.134
Sweden	9.2	9.9	10.4	13	12	81	0.972
Japan	127.7	119.3	95.2	-25	9	82	0.738
USA	304.5	355.7	438.2	44	14	78	1.092
United Kingdom	61.3	68.8	76.9	26	13	79	1.027
South Korea	48.6	49.1	42.3	-13	10	79	0.790
United Arab Emirates	4.5	6.2	7.8	75	15	78	1.170
Mexico	107.7	123.8	131.6	22	20	75	1.500
Malaysia	27.7	34.6	40.4	46	21	74	1.554
MEDIUM HUMAN DEVELOPMENT							
China	1,324.7	1,476.0	1,437.0	8	12	73	1.533
Iran	72.2	88.0	100.2	39	20	71	1.420
Vietnam	86.2	100.1	112.8	31	17	73	1.241
Indonesia	239.9	291.9	343.1	43	21	70	1.470
Bolivia	10.0	13.3	16.7	67	29	65	1.885
India	1,149.3	1,407.7	1,755.2	53	24	65	1.560
Myanmar	49.2	55.4	58.7	19	19	61	1.169
Nepal	27.0	36.5	48.7	81	29	64	1.856
Papua New Guinea	6.5	8.6	11.2	73	29	57	1.653
Kenya	38.0	51.3	65.2	72	40	53	2.120
LOW HUMAN DEVELOPMENT							
Eritrea	5.0	7.7	11.5	129	40	57	2.280
Nigeria	148.1	205.4	282.2	91	43	47	2.021
Tanzania	40.2	58.2	82.5	105	38	51	1.938
Rwanda	9.6	14.6	21.7	126	43	47	2.021
Malawi	13.6	20.4	30.5	124	48	46	2.208
Zambia	12.2	15.5	19.3	58	43	38	1.634
Ethiopia	79.1	110.5	147.6	87	40	49	1.960
Mali	12.7	20.6	34.2	169	48	56	2.688
Niger	14.7	26.3	53.2	261	46	57	2.622
Sierra Leone	5.5	7.6	10.9	99	48	48	2.304

Source: Derived from the Population Reference Bureau 2008 World Population Data Sheet, *Countries arranged by descending HDI (see chapter 2)*

Vietnam, also shown in table 1.5, is experiencing a different situation. Vietnam has experienced very rapid economic development since the early 1990s, and as we would expect from the typical trends of the demographic transition, it has seen a large decline in population fertility. However, Vietnam's population continues to grow because of the increase in life expectancy which has accompanied the improving living standards.



1.13 *World Population Growth Rate, 1950 to 2050.*

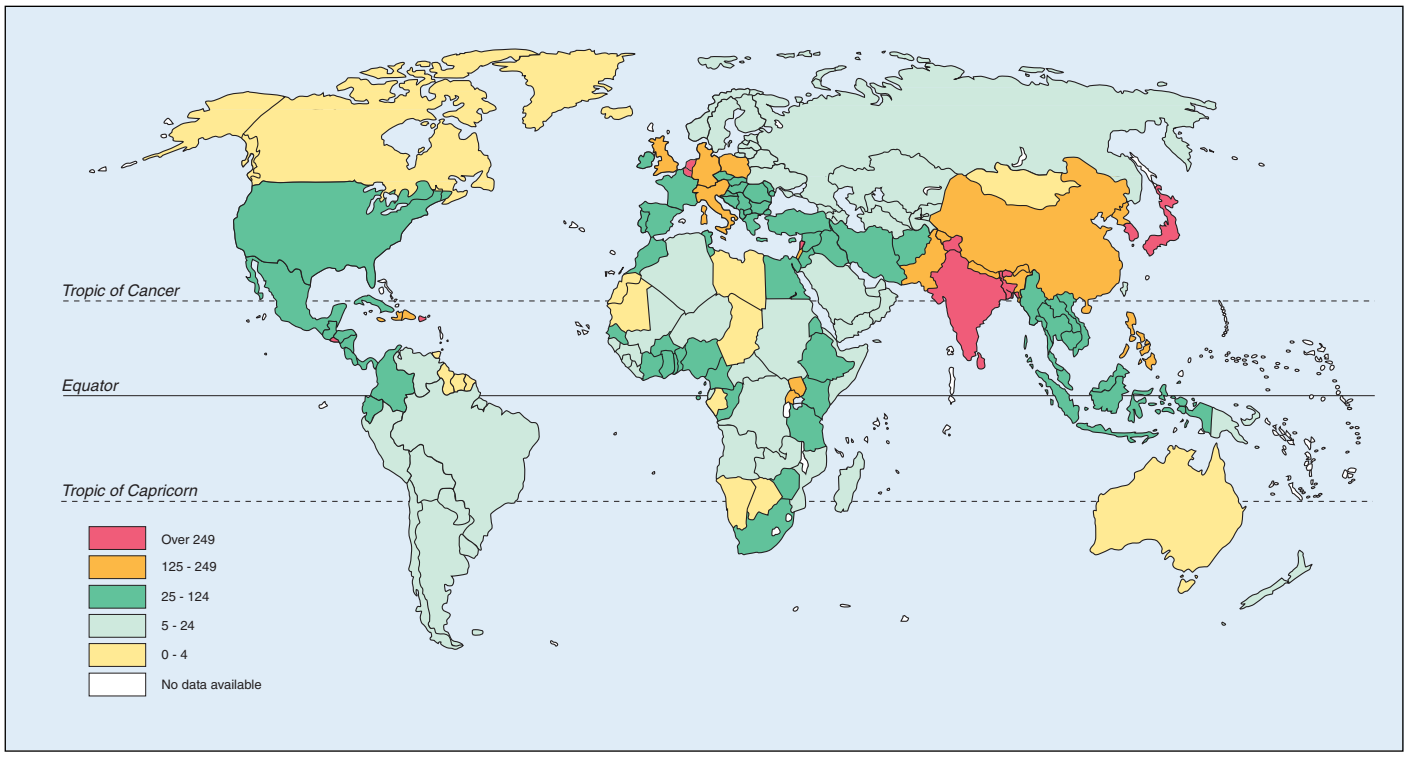
Japan has a momentum factor of 0.738, which is well below 1, suggesting that Japan is confronting the challenges of a declining population. Like many more economically developed countries (MEDCs) that experience both declining birth rates and increasing life expectancies, Japan has a large elderly population that is supported by welfare programs that must be funded through income taxes. As the number of people in the working population declines, Japan will struggle increasingly to maintain its economic growth as well as providing for the needs of the elderly.

As a result of all the factors described so far in this chapter, the world population growth rate has been slowing in recent decades, and this trend is expected to continue (figure 1.13). This does not mean that world population size will decline, merely that it will grow at a slowing rate of increase.

Figure 1.14 shows the density of the world's population. However, it is important to remember the limitations of a map such as this. The shadings shown are national averages, and population is seldom distributed evenly throughout an entire country. In Australia, for example, population is concentrated along the south-east coastline, in China in the eastern half of the country, and in Egypt along the Nile River valley.

In order to understand the density of world population, it is necessary to know something about the nature of individual countries. For example, many countries have topographic and climatic barriers to settlement over much of their land areas, resulting in uneven distributions of people. For example, China has high mountainous areas in the south-west, deserts in the north-west and very cold areas in the north-east, all of which combine to concentrate population in the east and south-east. Egypt has a narrow strip of well-watered land along the Nile River, and most of the country's population is concentrated along that strip. Most countries of the world have an uneven distribution of population within their borders (figures 1.15 and 1.16). On the other hand, some countries such as the Netherlands have almost nowhere that is unsettled.

In some parts of the world, humans have enhanced the natural environment to improve its capacity to house



1.14 *Density of world population, measured in persons per square kilometre.*

people. In other words, the productivity of the resource base of the land has been increased, and this has allowed an increase in population density. A good example of this process is found in several countries in Asia (such as Philippines, Indonesia, Nepal and China) where hillsides have been terraced to allow irrigation of rice fields (figure 1.17).

1.15 *Although Germany is one of the world's most densely populated countries, there are variations in population density, as seen in this view of Berlin, compared with the view in the next photo.*

1.16 *A sparsely populated area of Germany; the Black Forest, near Freiburg in the south-west.*

1.17 *Terracing has enabled farmers in Nepal to transform steep hillsides into rice padis that can be irrigated and flooded, enabling the land to feed a much greater population density.*

Canada and Australia are also examples of countries where the impact of difficult topography and climate has affected the population distribution. In these two countries, the indigenous people did not develop an agricultural culture before European settlement. This limited the capacity of these populations to grow prior to European intrusion a little over two centuries ago. Both Australia and Canada occupy a large land area, and yet each has a very low total population and low population density.

China is perhaps an even more extreme example of these factors. China's population density can be described as following an 80-20 distribution, where 80% of the population occupies the eastern 20% of the land where the land is most fertile. On the other hand, only 20% of the population is found in the western 80% of the country where high mountains and arid deserts dominate the landscape.

Question Block 1D

1. *Examine figure 1.14, which shows the density of world population. Explain how a map such as this that shows national averages may be misleading when trying to locate concentrations of population.*

2 *Using the information in the table below, classify each of the countries shown into either (a) sparsely populated or (b) densely populated. Then comment on the relationship between population density and economic development.*

Country and its population	Population in millions 2008	Area of the country (sq. km)	GNI per capita 2007 ($US)
Australia	21.3	7,741,220	35,960
Bangladesh	147.3	144,000	470
Botswana	1.8	581,730	5,840
Canada	33.3	9,984,670	39,420
Germany	82.2	357,050	38,860
India	1,149.3	3,287,260	950
Japan	127.7	377,910	37,670
Mauritania	3.2	1,030,700	840
Mongolia	2.7	1,566,500	880
Netherlands	16.4	41,530	45,820
Singapore	4.8	699	32,470

3. *With reference to your answers to the last two questions, how would you define 'overpopulation'?*

4. *Using the statistics on the next page, calculate the population momentum factor for each country listed:*

Country	Crude Birth Rate (Births per 1000 people)	Life Expectancy at Birth (years)
Afghanistan	47	43
Bangladesh	24	63
Bulgaria	10	73
Canada	11	80
Germany	8	79
Israel	21	80
Liberia	50	46
Russia	12	67
Singapore	11	81
Swaziland	31	33
Uganda	48	48

5. *With reference to the statistics you calculated in the previous question, comment on the likely future trends of population growth in each of the countries listed.*

6. *Describe the pattern of population density shown in figure 1.14, and suggest reasons why particular areas of the world are more densely populated than others. In suggesting reasons for particular areas, you may find it helpful to use these sub-headings: climate, availability of water, topography, soils, resources, and history.*

7. *Outline the factors that can cause population within a country to be unevenly distributed.*

Case Study – Papua New Guinea

One of the features that identifies Papua New Guinea as a developing country is its population growth pattern. The growth in Papua New Guinea's total population over the past few decades is shown in table 1.6.

Of Papua New Guinea's total population in 2000, 40% were under 15 years of age (the equivalent figure for Australia was 21%). This shows that Papua New Guinea's population will continue to grow rapidly for some time to come. However, the proportion of people under 15 years of age in Papua New Guinea is becoming smaller – in 1980 the figure was 43%. This shows that the birth rate of Papua New Guinea's population is also slowing a little, from 41 births per 1000 people in 1970-75 to 32 births per 1000 people in 1995-2000. Nonetheless, any village in Papua New Guinea will be noteworthy for the large number of children present (figures 1.18 and 1.19).

An important point to realise regarding Papua New Guinea's population is that it is spread very unevenly across the country (figure 1.20). In fact, the pattern of

Table 1.6
Population Growth in Papua New Guinea, 1950 to 2050

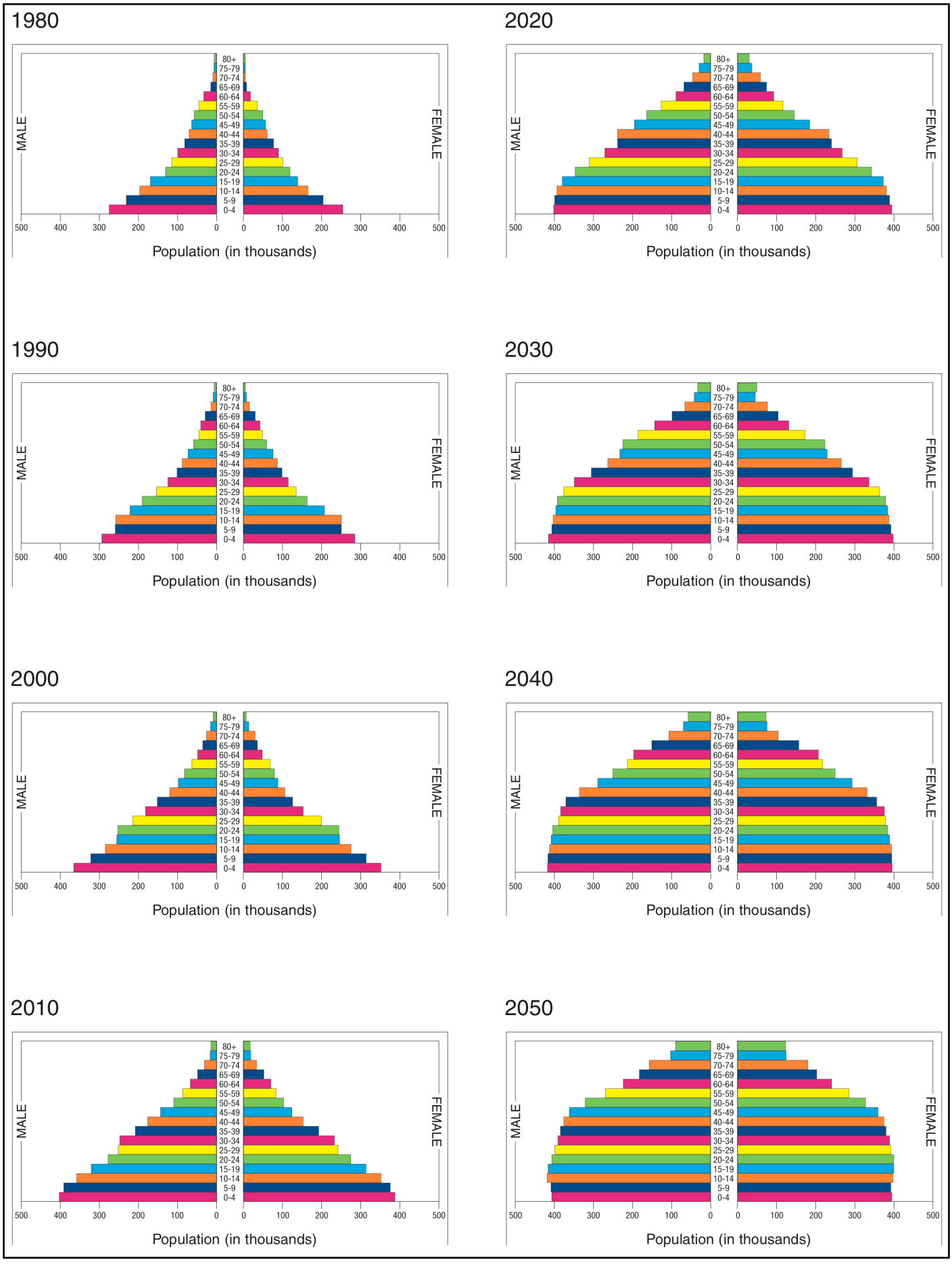
Year	Total Population
1950	1,412,000
1960	1,747,000.00
1970	2,288,000.00
1980	2,991,000.00
1990	3,825,000.00
2000	4,927,000.00
2010 (estimate)	6,771,000.00
2020 (estimate)	7,400,000.00
2030 (estimate)	8,592,000.00
2040 (estimate)	9,707,000.00
2050 (estimate)	10,670,000.00

Source: US Census Bureau

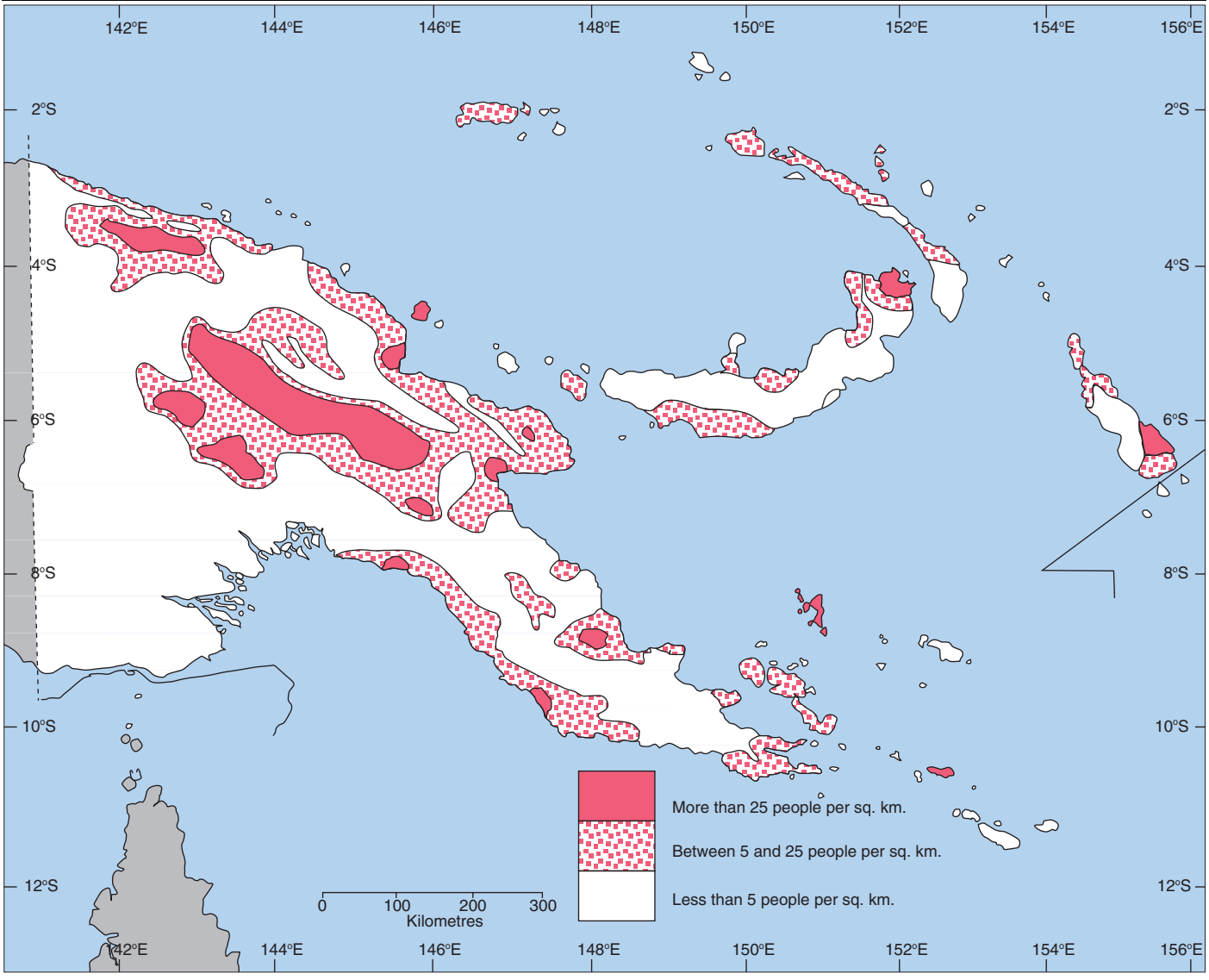
1.18 *Children are evident in most Papua New Guinean villages because 40% of the country's population are aged 15 years of age of less.*

population distribution is quite different to that expected in most countries. Whereas most countries have the highest population densities in coastal areas, Papua New Guinea's Guinea's population density is greatest in the mountain valleys of the Highlands, with altitudes of between 1500 and 2000 metres. In this respect, as was the case in medieval Europe, the population is concentrated in the highest areas for safety, and are thus remote from roads and communications (figures 1.20 and 1.21).

This was a great surprise to the early European explorers who had presumed that the inland areas were uninhabited. A high mountain chain ran along the island of New Guinea like a spine from west to east. When viewed from the coastal areas on either side of the Highlands, the mountains appear to be an inhospitable, solid mass. However, when an Australian group ventured into the mountains for the first time in 1930 looking for gold, they discovered that a series of rugged valleys ran through the



1.19 *Population pyramids for Papua New Guinea, 1980 to 2050.*



1.20 *Distribution of Papua New Guinea's population.*

elevated parts of the Highlands. These valleys contained almost one million people whose existence the rest of the world had not suspected.

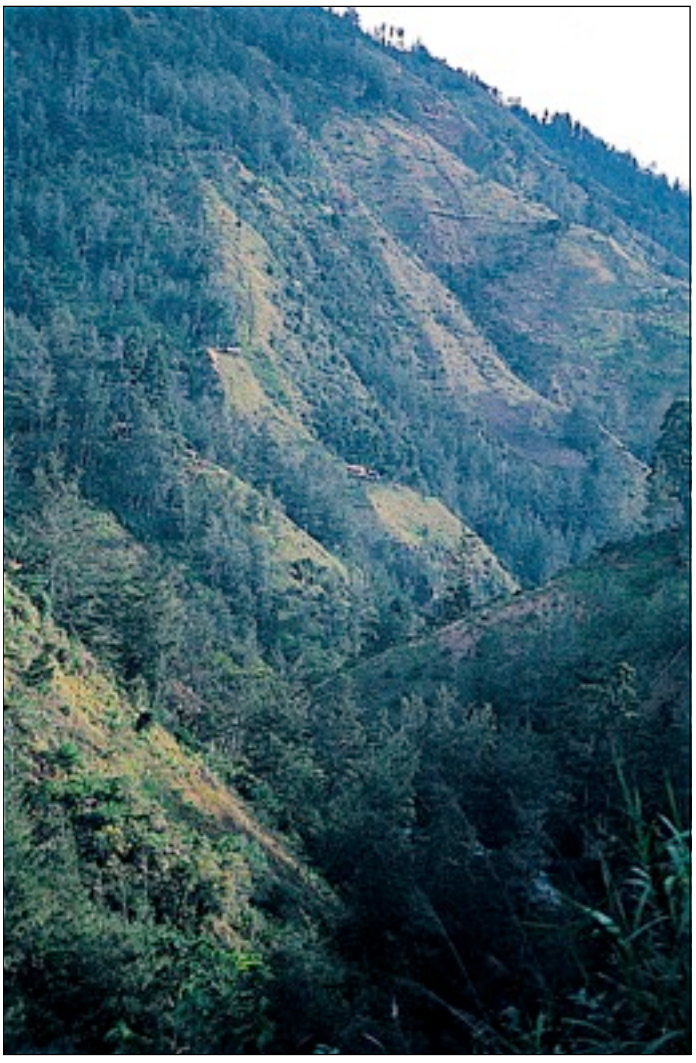
There are good reasons for the high population density of the Highlands. These areas have rich volcanic soils that are well drained, a reliable and abundant rainfall, and unlike the low lying swampy coastal areas, they are free from malaria. Other areas with high population densities include the northern end of New Britain island, where the rich volcanic soils have encouraged plantations to be established, and the copper mining areas of Panguna, Arawa and Kieta in the outlying North Solomon Islands. In total, the Highlands comprise 37% of Papua New Guinea's population, with 28% from the rest of New Guinea, 20% from Papua and 15% from the islands.

The average population density of Papua New Guinea as a whole is 10 people per square kilometre. This is quite a low population density, and so in contrast with many developing countries, Papua New Guinea is generally regarded as being underpopulated. This means that the country has insufficient people to develop its resources

Table 1.7
Average Population Density of Selected Countries, 2006

Country	People per square kilometre
Australia	3
Bangladesh	1,178
China	140
Indonesia	122
Namibia	2
Netherlands	482
Papua New Guinea	13
Singapore	6,302
United Kingdom	249
United States	32
Zimbabwe	34

Source: World Bank



1.21 *In spite of its appearance, this is one of the most densely populated parts of Papua New Guinea. All the land in this view of Chimbu Gorge, in the rugged Highlands, is being used productively for cultivation, hunting or gathering.*

adequately. To place this figure in perspective, the average population densities of some other countries are shown in table 1.7.

Underpopulation can lead to a number of problems. Examples of significant problems include too little tax revenue to provide basic services such as schools and health clinics, too few roads to service an area, and low prices for cash crops due to the high cost of transport and lack of competition.

However, not all parts of Papua New Guinea are underpopulated. Some areas are overpopulated, which means that there are too many people for the amount of land and the resources available. Overpopulation can lead to:

- food shortages when too many people compete for too little food;
- over-exploitation of the land (which can lead in turn to soil erosion and land degradation), and
- land disputes as people fight over scarce resources.

Because of the unequal distribution of Papua New Guinea's population, people tend to move (or migrate) from areas of high population density into areas of lower population density. When people move from rural areas into urban areas, the movement is called rural-urban migration. Rural-urban migration is one of the main causes of urbanisation in Papua New Guinea.

Question Block 1E

1. *Draw a line graph showing the change in Papua New Guinea's population over the period 1950 to 2050.*
2. *On the basis of the information in this section, describe the changing shape of Papua New Guinea's population pyramid from 1980 to 2050.*
3. *Using figure 1.20, describe and account for the distribution of Papua New Guinea's population.*
4. *List the problems of (a) underpopulation and (b) overpopulation.*
5. *What is 'rural-urban migration'?*

1.22 *This Dani family is unusual because there are three children, two of whom are twins. The mother has followed the traditional custom and induced early menopause as a means of population control by Dani society, even though she is in her early twenties.*

Responses to high and low fertility

Dependency and Ageing Ratios

When a country has a declining population, as many in Europe now experience, it places great strains on social security and pension funds. This is because an increasing proportion of the population become dependent on the wealth produced by a declining workforce. The **dependency ratio** attempts to measure this phenomenon. For the purposes of international comparisons, the economically active, or working, population is usually defined as those between the ages of 15 and 65 years of age. The dependent population is defined as those under 15 or over 65

years of age. The dependency ratio can therefore be calculated using the formula:

$$\frac{\text{Number of dependent people} \times 100}{\text{Number of people of working age}}$$

In Australia, the calculation using 2008 figures would be as follows:

Total population size = 21 300 000 people
Percentage of people under 15 years = 19%
Percentage of people 15 to 65 years = 68%
Percentage of people over 65 years = 13%

Therefore the number of people of dependent ages was (19 + 13)% of 21.3 million, or 6,816,000 people (rounded off to 6.8 million).

The number of working age people was 68% of 21.3 million, or 14,484,000 people (rounded off to 14.5 million).

Therefore, Australia's dependency ratio was:

$$\frac{6.8 \times 100}{14.5}$$

or 46.9%. This means that for every 100 people of working age, there were 46.9 people dependent on them. Back in 1975, Australia's dependency ratio had been 57%, so although the proportion of elderly people has increased since 1975, it has been more than offset by a decline in the proportion of school age children.

Question Block 1F

1. *Use the data in the table below to calculate the dependency ratio for each country shown (except Australia which is shown in the text as an example):*

Country and its population	*Size in millions 2008*	*% under 15*	*% 15 - 65*	*% over 65*
Australia	*21.3*	*19*	*68*	*13*
China	*1,324.7*	*19*	*73*	*8*
Iran	*72.2*	*26*	*69*	*5*
Japan	*127.7*	*13*	*65*	*22*
Papua New Guinea	*6.5*	*40*	*58*	*2*
Singapore	*4.8*	*19*	*72*	*9*
Uganda	*29.2*	*49*	*48*	*3*
United Kingdom	*61.3*	*18*	*66*	*16*

2 *Select three countries with contrasting dependency ratios from the previous question, and discuss the implications of the dependency ratios on the provision of services such as schools, hospitals and transport in the countries selected.*

Population Policies

Although traditional societies often have high birth rates and high death rates characteristic of stage 1 of the demographic transition, it would be wrong to think that people in such societies have no control over their population growth. For example, the Dani people of the Baliem Valley in the Highlands of Irian Jaya, Indonesia (discussed in more detail in chapter 16) represent a society which continues to function largely according to traditional customs. Even today, some polygamy is practised, as is common in many traditional societies where warfare is common and so the ratio of women to men might be artificially high. Among the Dani people, few men have more than two wives, and only very wealthy men would have as many as three or four wives. Indeed, just over half of Dani men today have only one wife, largely because of the impact of Christian missionaries.

As the average life expectancy of Dani people is only 38 years, men usually marry at the age of 20, but girls often marry earlier, usually at around the age of 12. It has always been very uncommon for Dani women to have more than two children as the Dani have known the need to live within the resource limits of their difficult mountain environment. After a Dani woman has given birth to her second child, usually at around the age of 18 to 20, she eats the sap of a particular species of tree that induces early menopause (figure 1.22). This causes her to stop menstruating and she becomes incapable of having any more children. In this way, the Dani population has remained stable for a long period of time.

However, many people are concerned at the effects of rapid population growth in countries at stages 2 and 3 of the demographic transition. Governments often feel the need to introduce policies to control the growth of their populations. Most of these policies are **anti-natalist**, which means they discourage births and try to slow population growth. A few countries with slow rates of population increase have introduced **pro-natalist** population polices which are designed to encourage more births. There are three approaches to anti-natalist population polices. The first is the **regulatory** approach, where governments impose regulations and restrictions that control the number of births. A second approach is to offer **incentives**, such as prizes or money to families that limit the number of children they have. The third anti-natalist approach is to argue that according to the demographic transition, fertility will decline as people become more affluent. Therefore, policies are implemented to **raise people's standards of living** in the hope that this will result in reduced population growth.

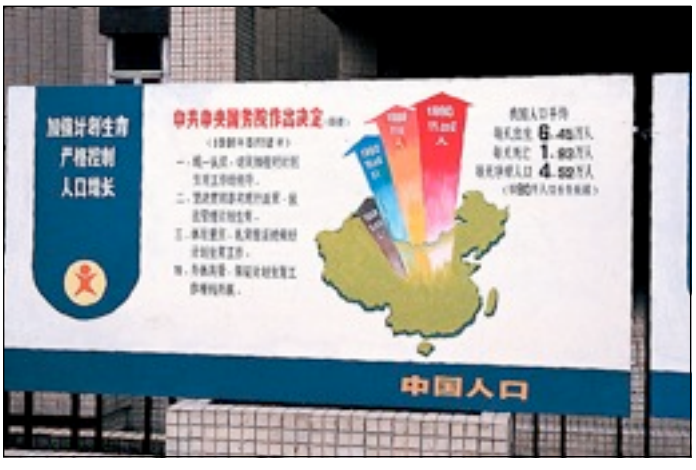
In reality, governments often use a mixture of these policy types, and this can be illustrated by examining the population policies of several countries.

China's Population Policy

China has the world's largest population, and its cities are among the most densely populated places in the world, as shown in figure 1.1 at the beginning of this chapter). China's anti-natalist population control policy is perhaps the best known such policy in the world. China's policy is certainly one of the most rigid of any country, and because it insists that each family limit itself to having only one child, it is commonly known as the 'One Child Policy'.

Before 1949 when the Communist Party came to power in a revolution, China was at stage 1 of the demographic transition. Birth rates were high, with the typical number of children per family being between five and eight. However, death rates were also high and life expectancies were short – in 1930 these were 23.7 years for females and 24.6 years for males. Infant mortality rates were high (about 300 deaths per 1000 live births), and so with both death rates and birth rates being very high, population growth was slow.

By 1949, China's population had reached 538 million people. In the early years of Communist rule, China followed a pro-natalist population policy in which large families were encouraged. This reflected traditional attitudes that had existed in China for many centuries, but it was supported by the leadership of the time. The new Communist government saw a large population as making China's position in the world stronger. When Mao Zedong announced the beginning of the People's Republic in 1949, he said "The Chinese people have stood up". Mao saw a large and healthy population as being necessary for China to take its proper place in the world as a nation-state of significance.



1.23 *Information outside a birth control office in Shanghai drawing attention to China's growing population — from 540 million in 1949 to 1.008 billion in 1982 and 1.133 billion in 1990.*

In the 1950s, however, a census revealed that China had 100 million people more than previously thought. This information came to light at the same time as many people were experiencing hardship and malnutrition as a result of the Great Leap Forward, a political campaign designed to catapult China into modern industrialisation that went terribly wrong. Indeed, many people died during the Great Leap Forward when abnormal floods and droughts reduced food production. Against this background, China entered stage 2 of the demographic transition in the early 1960s as a result of improvements made to medical services.

However, with Mao's death in 1976, the Chinese government began to advocate voluntary population control to reduce the birth rate and accelerate the beginning of stage 3 of the demographic transition. The argument put to the Chinese people was based on Malthusian logic – China was modernising, but there was only a certain fixed amount of wealth to divide among the population. If people would limit their family sizes, then 'a larger slice of cake' would be available for each person. From the 1970s, birth control offices were established throughout China to give advice about limiting family sizes and to distribute information about the need to control population growth (figure 1.23).

Table 1.8

Marital Status by Age Group in China, 1982
(all figures are percentages)

Age	Unmarried	Married	Widowed	Divorced
15 - 19	97.38	2.59	0.0004	0.02
20	84.12	15.76	0.02	0.10
21	74.79	25.06	0.03	0.12
22	62.73	37.07	0.04	0.16
23	48.88	50.87	0.06	0.19
24	36.60	63.09	0.09	0.22
25	25.70	73.91	0.12	0.27
26	18.09	81.45	0.15	0.31
27	12.69	86.76	0.20	0.35
28	9.42	89.91	0.26	0.41
29	7.32	91.91	0.32	0.45
30 - 34	4.93	93.49	0.55	0.58
35 - 39	3.70	94.33	1.23	0.74
40 - 44	3.13	93.39	2.54	0.94
45 - 49	2.39	91.45	5.00	1.16
50 - 59	1.66	84.48	12.58	1.28
60 - 79	1.37	56.70	40.98	0.95
80+	1.11	17.72	80.80	0.37

Source: Li Chengrui (1992) p.173

At the same time, the minimum legal age for marriage was raised to 20 for females and 22 for males so that couples would have fewer childbearing years available to them (figure 1.24). Moreover, the Marriage Law adopted in 1980 requires that 'husband and wife are duty bound to practice family planning'. At about the time the new Marriage Law was passed, half of Chinese people were married by the age of 23 (see table 1.8). The table also shows that China has a high marriage rate, low divorce rate and that marriages in China tend to be very stable. The marriages that occurred before the legal minimum marriage age were usually in remote areas among minority ethnic groups.

1.24 *A Chinese couple in Harbin on their wedding day. It is a condition of marriage in China that couples practice family planning.*

1.25 *A special music school for single children in Tangshan, China.*

In 1980, the One Child Policy was introduced, providing rewards and benefits for couples that agreed to have only one child. Additional health care subsidies were granted to one-child families, together with priority health care, priority in housing allocation, priority in educational provision, extra land for private farming and extra food rations (figure 1.25). Furthermore, every member of a work unit that meets its standard target of 100% one-child families receives a financial bonus, and this encourages fellow-workers to put pressure on their colleagues to have only one child. If parents change their minds and have a second child, all the privileges that have been given are taken away.

Although the one-child policy is officially policed by the promise of incentives and rewards, in reality there are also punishments for violating family planning regulations. Punishments may arise for refusal to abort unapproved pregnancies, an unapproved birth for couples under the legal marriage age, or having an approved second child too soon. Family planning staff who violate regulations by accepting bribes, making false reports, or issuing false birth certificates are also open to be punished. Penalties generally include fines, losing government benefits, demotion or dismissal from employment or from Communist Party membership.

The punishments for violating family planning policies vary for urban and rural couples. Penalties for rural couples include loss of government land grants, food, loans, and farming supplies. For example, a rural couple with an unauthorised child may be disqualified from receiving plots of land for growing grain for the next seven years or, if they have another unapproved birth, for 14 years. For workers in urban areas who violate birth control policy, fines are imposed on a percentage of their income, usually between 20% to 50% of annual salary.

There are only a few exceptions to the one-child policy. The first applies to families in some backward rural areas who may have two children because children are a vital part of the farming work force. The second exception has applied since 1995 to couples where both husband and wife are themselves single children – they may have a second child. Other exceptions include families whose first child is disabled and unable to work, pregnancies occurring after a childless couple has adopted a child, couples facing difficulties in continuing the family line, and Chinese people returning to China after living abroad. In rural areas, couples with 'real difficulties' and certain peasants may be allowed a second child; the phrase 'real difficulties' is generally understood to include situations in which a couple has a single female child. In China, it is still common to say 'a little happiness has arrived' when describing the birth of a girl, but 'a great happiness has arrived' when a boy is born.

In the early 1990s, the guidelines were tightened further. The 'Decision on Strengthening the Family Planning Programme to Strictly Control Population Growth of 1991' (known as the '1991 Decision') contains provisions suggesting the use of IUDs and sterilisation, and allowing forced pregnancy termination (abortions) in certain circumstances. However, the official policy is that coercive action should not be used as part of the country's population policies.

The one-child policy is implemented in a manner that would be described as heavy handed outside China. Women's menstrual cycles are monitored publicly by the

work unit, and compulsory pelvic examinations are performed on all those suspected of being pregnant. Insertion of IUDs in women with one child is usually mandatory, and these are checked by x-ray from time to time to ensure they have not been removed. Unauthorised pregnancies are usually terminated by abortion when detected, often regardless of stage of pregnancy.

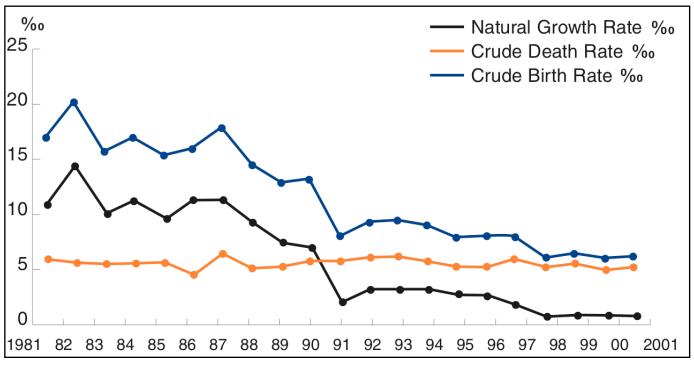
1.26 *A typical 'One Child' propaganda poster in Beijing.*

There have been many reports of infanticide by drowning of girl babies in rural areas when couples have desperately wanted a son as their single child. According to Chinese tradition, daughters join the families of their husbands when they marry. Therefore, girls are seldom able to support or care for their parents in old age. By the 1990s, thousands of ultrasound machines were being imported to China so that couples could check the sex of their unborn baby. Domestic factories in China began manufacturing ultrasound machines at the rate of 10 000 a year. However, in 1993 authorities banned the use of ultrasound for the purpose of sex selection, but this ban cannot be enforced. Some parts of China report sex ratios at birth for of 300 males to 100 females, and reports predict that early next century China will have an excess of 70 million bachelors because of the abortion of girl babies.

1.27 *A 'One Child' painted ceramic tile street display in Guangzhou.*

This policy was supported in China's laws. Although China does not have a formal national family planning law, the idea of family planning is firmly embedded in national and provincial laws and regulations. Article 25 of China's Constitution affirms the importance of family planning to curb population growth, calling family planning a necessary part of development. Article 49, which grants government protection to marriage and the family, confirms the 'duty' of both wife and husband to 'practice family planning'. Under a 1982 regulation, couples with two or more children may be compulsorily sterilised, although the Women's Protection Law expresses this as 'women enjoy the freedom of choosing not to bear children'.

Since 1980, large propaganda posters encouraging families to have only one child have been a prominent feature of the Chinese landscape (figures 1.26 and 1.27). These posters almost always show two modern, well-dressed, smiling parents and their single daughter. Showing a girl counters the traditional Chinese preference for boys, as it is boys who carry on the family name. The posters carry slogans such as 'One child is best for you and best for the country' and 'Limit the numbers but raise the quality'.

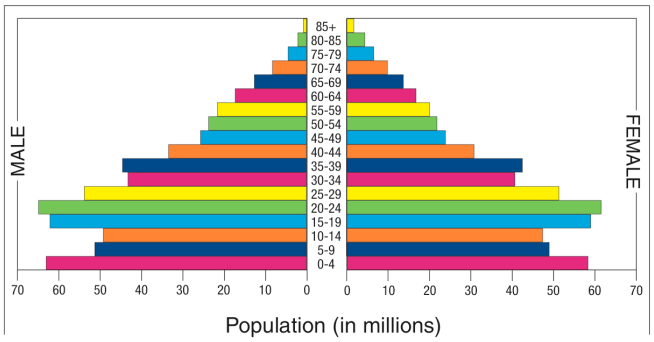


1.28 *Changes in Beijing's population growth rates, 1981 to 2001.*

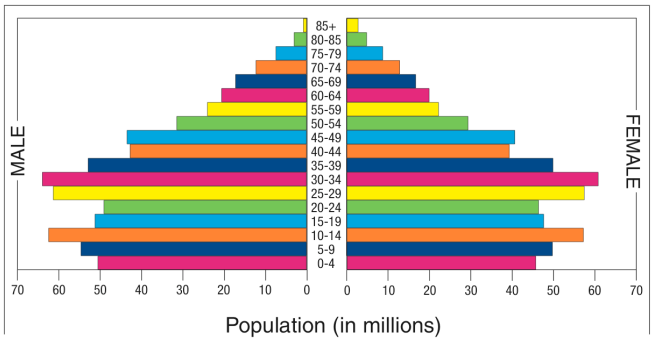
In introducing the one-child policy, the Chinese government's stated target was to limit its population to 1.3 billion people by 2000 and to lower the natural population growth rate to less than 10 per thousand (i.e. 1%) by the year 2000. The introduction of the one-child policy certainly had an immediate effect on population growth in China (figure 1.28). In 1960, China's birth rate was 37 births per 1000 people. By 1988 this had fallen to 21 per 1000, and by 1998 to 16.2 births per 1000 people. In 1960, China's population was growing at an overall rate of 2% per annum. By 1978, shortly before the One Child Policy was introduced, the rate had fallen to 1.4%. In 1980 when the new policy was introduced, the growth rate fell to 1.2%. Further drops since then have continued slowly, and in 1998, the growth rate was 1.042%, still short of the target figure of 1.00%.

By 2008, China's population (including 7.6 million in Hong Kong and Macau) was 1.332.3 billion. As a result of the One Child Policy, it is now predicted by the Chinese authorities that the country's total population will peak at 1.519 billion by 2033. The proportion of women of childbearing age decreased to 26.7% in 2000, and predicted

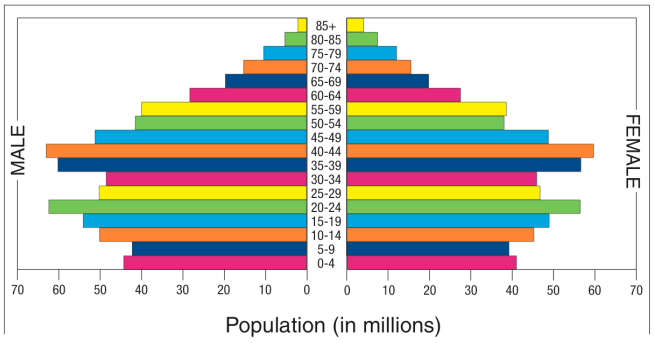
1990



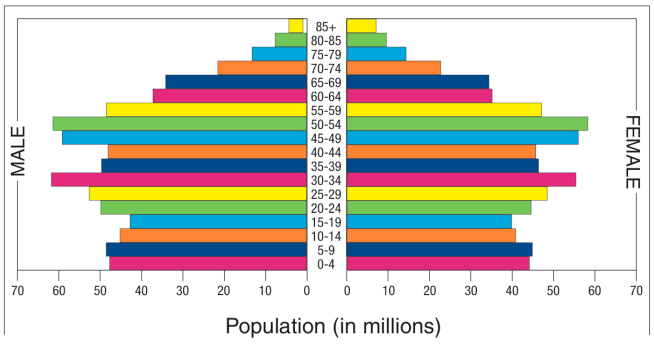
2000



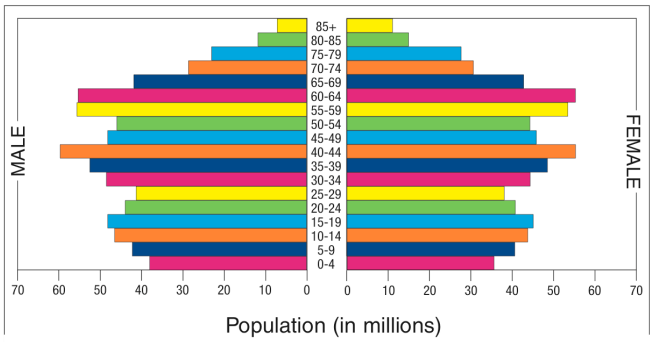
2010



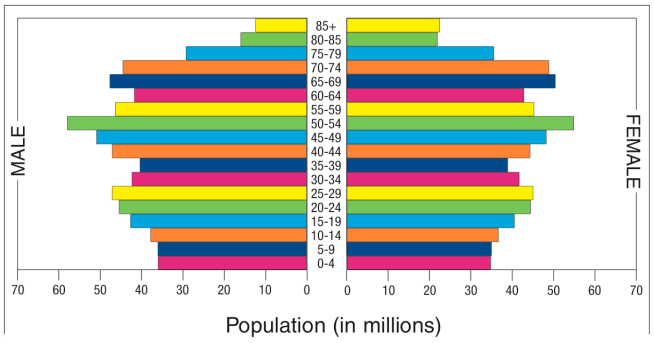
2020



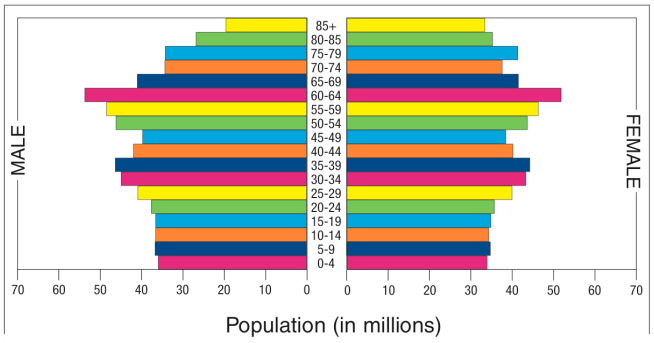
2030



2040



2050



1.29 *China's changing population structure, 1990 to 2050.*

decreases will lower the figure to 24.5% by 2020 and 21.9% by 2040. Meanwhile the percentage of aged people increased from 7.63% in 1982 to 9.84% in 2000, and it is expected to increase to 21.9% by 2030. By 2050, the proportion of China's population that is aged will be 27.43%, and this will pose significant challenges for the provision of services for the elderly (figure 1.29).

1.30 *Many single children in China are dressed as 'little emperors' on special occasions. There is concern that China's single children are growing up to be very self-centred, an unforeseen consequence of the one-child policy.*

However, there have been consequences of this population control. In 1983 (the peak year), family planning work teams carried out 21 million sterilisations (79% on women), 18 million IUD insertions, and 14 million abortions. There is also concern that those children who are born and grow up without brothers or sisters are becoming very spoilt and selfish. Single children in China tend to have every desire fulfilled by doting parents and other adults, and they are commonly known in China as 'little emperors' (figure 1.30). In another generation, the concepts of 'aunt', 'uncle' and 'cousin' will have disappeared along with 'sister' and 'brother'.

1.31 *A family with TWO children rides on a motorbike Pingyao, China.*

In recent years, China's 'One Child' Policy has come to be treated less seriously in some parts of the country than others. In Guangdong province in China's south-east, for example, families with two children were becoming quite common by the early 2000s, and by 2010 it was almost the norm in many coastal areas and elsewhere (figure 1.31). This was because the province was quite wealthy and many people felt they could afford more than one child – the opposite of what the Demographic Transition Model might predict! People who were self-employed felt free to have more children because, unlike government employees, they did not need official permission to have a child.

US Population Policy

In strong contrast with China, the United States does not have any formal population policy apart from its laws governing immigration. Where the US government has legislated in the area of population, it has intended to enhance individual people's right to choose their own family planning. This is the opposite of the Chinese approach, which is to make the overall goals paramount over individual people's rights.

Thus, the US government has enacted laws providing funding or refunds for family planning services. In this way, women with low-incomes have access to birth control. In most US states, a woman must have had a child or be pregnant, be single, and have an income that is less than 50% of the poverty level to be eligible for refunds for family planning.

In 1970, the US government established a national family planning programme. This programme now provides financial support to 76% of all family planning agencies in the US Each year, four million Americans use government funded family planning programmes to obtain abortions or sterilisations. As a condition of government funding, family planning agencies must provide services for adolescents including contraceptive information and devices, gynaecological examinations, pregnancy tests, and screening tests for STDs, HIV, and cancer.

Nigeria's Population Policy

Nigeria has one of the fastest growing populations in the world. In 1975, its birth rate was 46.3 per 1000 people and its death rate was 20.2 per 1000. Thus, Nigeria's annual population growth rate at that time was 2.61%, one of the highest in the world. In 2008, birth rates remained high at 43 per 1000 people, while death rates had fallen to 18 per 1000. Therefore, the population growth rate remained almost the same at 2.5%. In 1950, Nigeria's population was 32.9 million people. By 1990 this figure had climbed to 96.2 million, and by 2008 to 148.1 million. Current projections are that Nigeria will have a population of 205.4 million by 2025 and 282.2 million by 2050.

In 1981-82, Nigeria's fertility rate was 5.94 children per woman. In 1990, this had climbed to 6.01 and it is currently estimated to be 5.9. One reason for Nigeria's high level of fertility is the very low level of contraceptive use. Only about 6% of married women currently use a method of contraception. Knowledge of contraception is very low, with fewer than half of all women aged 15 to 49 knowing of any method.

At present, the average ideal family size desired by women in Nigeria is essentially the same as the total fertility rate: six children per woman. According to a government survey, half of women with five children say they want to have another child.

Another factor leading to high fertility is the early age of marriage and childbearing in Nigeria. Half of all women are married by age 17, and 50% of all women become mothers by age 20. More than a quarter of Nigerian women aged 15 to 19 are either pregnant or already have children.

The Nigerian government became concerned about the consequences of such rapid increases in population, and in 1988 it adopted the National Policy on Population for Development, Unity, Progress and Self-Reliance. This policy was designed to slow the rate of population growth and improve the standards of living for the people. The policy worked on a voluntary basis, assuming that couples wish to determine the number and the spacing of their children.

The National Policy on Population identifies several objectives that include:

- promoting an awareness of population problems and the effects of rapid population growth;
- providing information on the benefits of small family size; and
- making family planning services easily accessible to all couples at an affordable cost.

The specific targets of the policy included:

- reducing the proportion of women who marry before the age of 18 by 80% by the year 2000;
- reducing the number of children a woman bears over her lifetime from the average of more than six children to an average of four;
- reducing the percentage of women having more than four children by 80% by the year 2000;
- reducing the rate of population growth from 3% per year to 2% by 2000;
- extending family planning coverage to 80% of women of child bearing age by 2000;
- reducing the infant mortality rate from the 1975 level of 111 per 1000 live births to 30 per 1000 live births by 2000; and
- providing 75% of rural communities with basic social amenities by 2000 to stimulate and sustain self-reliant development.

The main way of implementing this policy has been through an aggressive campaign, organised by the government to educate people about the importance of small family sizes, both for their own good and for the benefit of the nation. The policy has particularly tried to promote the use of family planning methods, a difficult task in a nation that is mainly Muslim. Contraception has been promoted through day care centres that have been established for employed women to leave their children while they are working. In order to encourage women to use these centres and obtain the information, legislation has been introduced to eliminate discrimination against women in education and employment and the minimum age of marriage has been increased to 18 years.

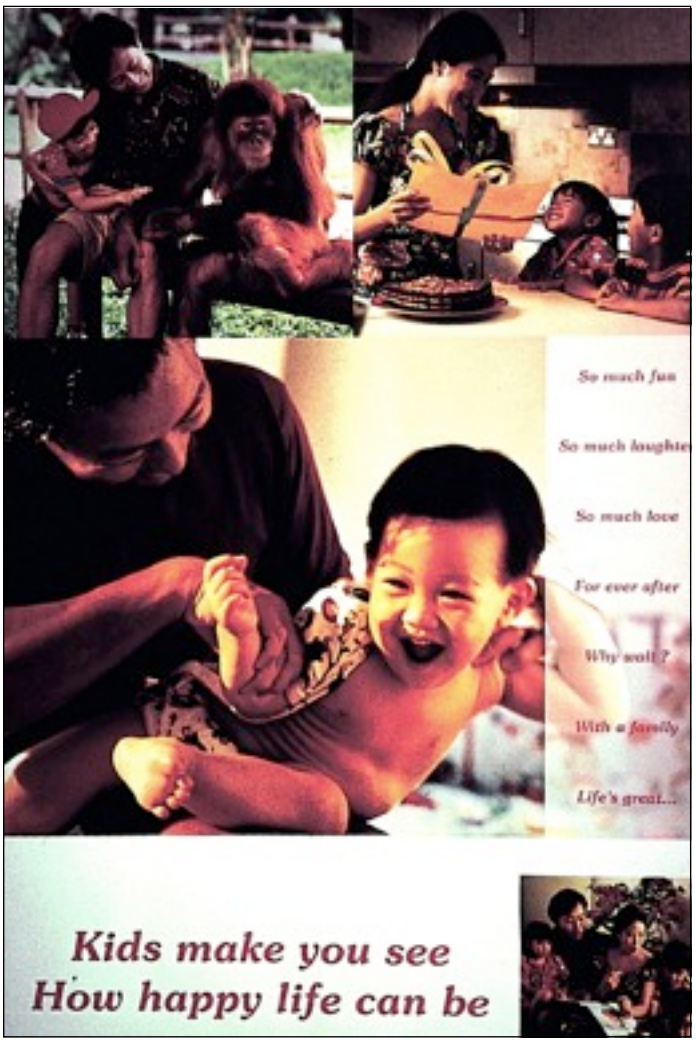
1.32 *This young Nigerian mother near the northern town of Jos has two young children and is pregnant with a third. Any anti-natalist population policy in Nigeria must change the attitudes of women such as her.*

So far, the Nigerian policy has not achieved the ambitious targets set. However, some gains have been made even though aspects of the policy violate the religious beliefs of many Nigerians. Any policy in Nigeria can only be successful if it is communicated to people in the countryside where most people live, and if it works within rather than against people's cultural sensitivities (figure 1.32). However, while most families retain a preference for having large numbers of children, the government's policy to limit population growth is unlikely to succeed.

Singapore's Population Policy

Unlike many other countries in the world, Singapore has a pro-natalist population policy. The words of a Singaporean Government publication summarise the rationale for the policy:

"People are, and always will be, our most precious resource. More than anything else, it is the effort of Singaporeans, with their drive and talent, that has made the country what it is today. Overcoming great odds as a newly-independent nation without natural resources, we have turned our city-state into a thriving and modern economy.., In the next lap, the size of our population and the quality of our people will determine how successfully we fare. (But) the population is not growing fast enough to replace itself in the long term; many Singaporeans remain unmarried; and those who do marry tend to have fewer children... Too small a population will hinder our development."



1.33 *A pro-natalist population poster in a subway in Singapore.*

At first, the claim that Singapore is underpopulated might seem surprising for a country with 4.8 million people in an area of only 685 square kilometres; its population density of 7,742 people per square kilometre is among the highest in the world. Furthermore, Singapore's birth rate of 11 births per 1000 people easily exceeds its death rate of 5 deaths per 1000 people. However, Singapore's population is ageing, and if current trends continue population numbers will peak in 2030 and then start to decline.

During the 1960s, when Singapore became an independent nation, it was rapidly rising population numbers that were causing concern. Large numbers of people had migrated to Singapore from China, Malaysia and India, and it was feared that the large numbers might cause strain in the new independent nation. At the time, an anti-natalist government policy of 'stop-at-two' was introduced. The policy was so successful that Singapore's population growth is now falling below replacement level.

In response to this situation, a new pro-natalist policy known as the New Population Policy was introduced in 1987. The target of the policy was young couples who were choosing to put their careers, leisure and personal interests above marriage and parenthood. Posters were placed on buses and trains with slogans such as 'Children – Life would be empty without them' and 'Now that you've married, take the next step' (figure 1.33).

The aim of the New Population Policy was to increase Singapore's fertility rate to 2.1, which is replacement rate. In 1986, the year before the policy was introduced, fertility in Singapore fell to a record low of 1.4. In 1988, the first full year of the pro-natalist policy, fertility rose to 2.0, a significant increase but still less than replacement level. If the New Population Policy is unsuccessful and fertility remains in the 1.8 to 2.1 range, Singapore's population will peak in the year 2030 at 5.3 to 5.4 million, and then decline. Furthermore, the proportion of elderly people in the population will rise as the post-war baby boomers reach old age; in the year 2030 25% of Singapore's population will be aged 60 or older compared with 9% today. The Singapore Government believes that the country can comfortably accommodate over 5 million people with substantial gains in the quality of life.

The New Population Policy particularly targets intellectually talented people. Whereas the policy in general encourages each married couple to have two children, couples that are university graduates are encouraged to have four children. In an effort to raise the talent level of the population further, Singapore is encouraging the immigration of well-educated people from other parts of Asia and actively discouraging the emigration of university graduates.

India's Population Policy

The Indian government was one of the first in the world to introduce an anti-natalist population policy. In 1952, a well-publicised programme was launched which offered incentives such as transistor radios to men who volunteered to be sterilised by having a vasectomy. The campaign was only partly successful, largely because many men became disillusioned when they realised that sterili-

sation was permanent whereas the batteries of transistor radios are not.

The campaign to encourage male sterilisations was strengthened during the 1970s when many men were forced to be sterilised against their wishes. This lowered birth rates, but gave population policies in India a bad reputation. One of the problems faced by population workers in India is that, like China, boy babies are traditionally favoured over girls. Although there are many reasons why this is so (see extract 1.1), the pressure remains on families with many daughters to continue trying to have a son.

Today, India's population policy aims to reduce fertility rates, largely by encouraging the use of contraceptives. The current Five Year Plan for India's economy identifies controlling population growth as the sixth most important objective of national government policy. The government established the specific target of reducing the birth rate from 29.9 per 1000 in 1990 to 26 per 1000 by 1997 and achieving an average of 2.1 children per family by 2000. The policy also set targets for the numbers of users of specific types of contraception, particularly sterilisation, abortions and IUDs.

The Indian government tries to use incentives to encourage people to achieve the targets set. Among the incentives offered are new schools, provision of drinking water facilities and new road links for areas that reduce their population growth. There are also cash incentives for people willing to be sterilised or have an IUD inserted, as well as commissions for health workers who successfully motivate individuals or couples to become sterilised. In an effort to promote population control, the central government proposed an amendment to the Constitution in the mid-1990s to disqualify from election to national Parliament or state legislatures any candidate with more than two children. This bill has not yet been passed, but the proposal remains pending.

To support its population policy, the Indian government provides large-scale family planning services. The network of population control centres is placed within government hospitals, clinics, and workplace sites. All services in these centres are provided free of charge to the user. The policy also aims to increase public awareness of family planning and to train medical personnel. The government organises mass public information campaigns, primary and adult education programmes, and the training of community workers to promote family planning in rural areas. Many of the government programmes feature motivators who talk with couples and maintain a register of their reproductive activities.

Despite the great efforts put into population control in India, the successes have been modest. In 1975, India's birth rate was 38.2 per 1000 people, and by 1995 this had declined to 29.1 births per 1000, falling further to 25.2 births per 1000 by 2000 and 24 per 1000 in 2008. However, there are significant differences between different regions of India which provide some useful insights – in the state of Uttah Pradesh the birth rate is 40 per 1000, but in the southern state of Kerala the birth rate is only 18 per 1000. The reasons that Kerala has been so successful in controlling births are examined in the section that follows.

The Kerala Approach to Population Control

Kerala is a state in southern India with an area of 38,864 square kilometres and a population of 30 million people (figure 1.34). It is largely an agricultural state with coconut plantations and rice farms, and its other crops include black pepper, rubber, tapioca, oilseeds, sugar cane, tea, coffee and teak timber. The capital city is Trivandrum with a population of 600,000, although the town of Cochin is larger (with over 700,000 people) and is one of India's largest ports.

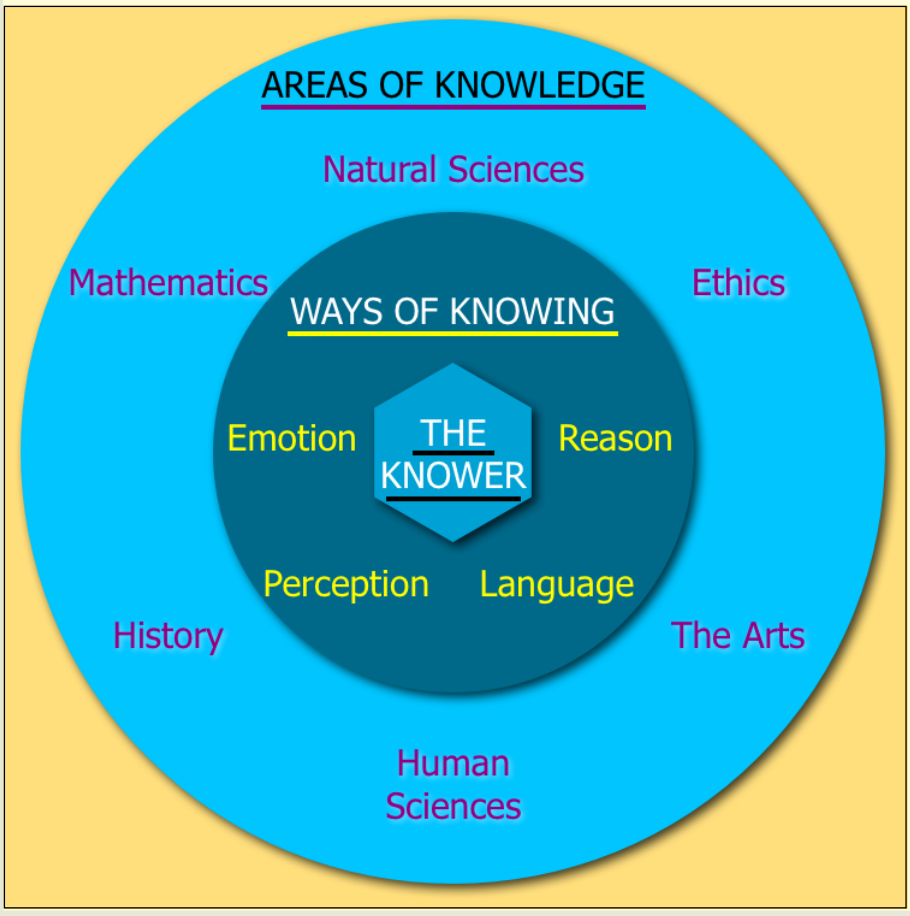
1.34 *Map of Kerala.*

Kerala has had spectacular success in lowering its birth rate without any strong regulations like China or even any financial incentives like other parts of India. Kerala is also attracting international attention for its success in controlling deaths, and especially for lowering its infant mortality rates. According to the demographic transition model, lowering birth rates occurs only when substantial economic changes such as industrialisation and urbanisation occur. However, Kerala's fall in fertility occurred at a time when Kerala had a dismal record in industrial and agricultural production and when there was high unemployment.

ToK BoX

Link to Theory of Knowledge.

In the IB Diploma Geography course, it is important to remember that Geography is just one subject within the wider context of all knowledge. The study of the 'Theory of Knowledge' is also called **epistemology**, and it is one of the most important branches of philosophy. It is the 'umbrella' that spans the entire scope of knowledge and understanding. The diagram in this ToK BoX shows one way to represent the Theory of Knowledge framework. The starting point is the centre of the circle, which is you — the knower. On the outside of the circle there are six broad areas of knowledge.



Most subjects fit into one of these six broad areas, but geography is somewhat different. Geography spans both the natural sciences (in physical geography) and the human sciences (in human geography). Indeed, one of the great distinctive features of geography is the way it links (or integrates) the physical and human facets of our world. Geography is therefore a good example of why the classification of knowledge into these six broad areas is somewhat imperfect.

The knower (you!) accesses the six broad areas of knowledge through four 'Ways of Knowing" — reasoning, the emotions, sense-perception and language.

In each chapter of this book, there will be a "ToK BoX" which is designed to help you place the understandings you acquire in Geography within the wider context of the areas of knowledge and the ways of knowing.

The next ToK BoX is on page 61.

Kerala has always been one of the most densely populated parts of India. As long ago as 1901, Kerala's population density was double that of India as a whole. In the most recent census (1981), Kerala's population density of 654 people per square kilometre was three times India's national average. Kerala is also unusual in that unlike the rest of India (and most of the world), Kerala gives birth to more girls than boys, and the female to male ratio has been increasing over the years. In 1901, Kerala had 99.6 males for every 100 females; this figure fell to 98.9 in 1921, 97.3 in 1951 and 96.7 in 1981.

Traditionally, Kerala has had the highest fertility rates and one of the lowest death rates in India. Therefore, its population growth rate was among the fastest in India. In the mid-1960s, Kerala's birth rate was about 42 per 1000 people, but with the impact of the Indian government's population policies this fell to 35 per 1000 in 1970. By 1980, the birth rate had fallen to 30 per 1000 and by 1990 to 20 per 1000. The decline has continued since then, reaching 17 per 1000 in 1993 and 15 per 1000 in 1997. With a fertility rate of 1.7, Kerala's population growth has slowed to less than replacement level, a remarkable decline in fertility in the space of just over 30 years.

In the period 1991 to 1996, the average number of births in Kerala was 466 000 per year, but by 2021 to 2026, this figure will fall to 205 000. Today, many schools are already empty and industries catering to children's needs are likely to have a bleak future. On the other hand, the proportion of aged people in Kerala will grow in the years ahead. The proportion of people in Kerala aged 60 and over in 1961 was 5.8%. By 1981, this figure had risen to 7.5% and it is expected to rise further to 10.2% in 2001 and 18.4% in 2026.

The decline in birth rates has been matched by large falls in the death rates also. Although Kerala has traditionally lower death rates than the rest of India, it reached 13 per 1000 people in 1993 and has stayed at that level since that time. Between 1991 and 2031, the number of elderly people in Kerala will increase by 289% – from 2.6 million to about 9.6 million. In 1991, there were only 16 elderly people for every 100 people in the working ages of 20-59 years; by 2031 this figure will have risen to 60.

It is important to understand that even within Kerala, there are substantial differences in mortality rates depending on educational level, religion and occupation of the

people concerned. This can be seen with reference to infant mortality rates, as shown in table 1.9.

Such major changes in birth rates and death rates in a relatively short period of time have significant implications. In the past, many resources have had to be allocated to the needs of children, such as in education, children's health, clothing and toys. In the future, these resources will need to be diverted to care of the needs of the elderly – housing, food, medical care, and so on.

Table 1.9

Infant and Child Mortality rates in Rural Areas of India and Kerala

Mother's Characteristic	Infant Mortality Rate		Under 5 Mortality Rate	
	Kerala	India	Kerala	India
Educational level				
Illiterate	55	145	100	176
Below Primary	44	101		
Primary			67	123
Middle			46	88
Matriculation	29	71	33	66
Graduate			25	46
Religion / Caste				
Hindu	45	138	74	168
Muslim	43	126	82	148
Christian	27		56	108
Lower caste	85	152	113	203
Tribal		120	157	193
Occupation				
Main Worker	74	142	96	177
- Cultivator			89	164
- Farm Labourer			111	190
- Non-manual			41	111
- Manual			103	171
Marginal Worker			87	188
Non Worker	34	134	64	154
All Women	**42**	**136**	**72**	**164**

Source: Zachariah & Rajan (1992) p.44

Why have such significant demographic changes occurred in Kerala? At first the changes seem puzzling, especially as Kerala lags behind the rest of India according to most economic measures. Kerala's elected state government has had long periods of Communist control. The Communists have believed that as most of Kerala's people live in the rural areas, then improving the quality of life of rural people is the key to economic development. Therefore, most government expenditure has gone into education and health care in rural areas – village schools and rural health clinics. The Kerala officials have not spent any more money on health and education than other Indian states, but they have ensured that money is spent on low cost rural facilities where the people live rather than on large prestigious projects in the cities. In 1988, there were 259 hospital beds per 100 000 people in Kerala compared with an average of only 77 for India as a whole. Of these beds, 56% were in rural areas, whereas for India in general, only 18% of hospital beds are in rural areas. In Kerala, 47% of villages have a health clinic within two kilometres, but for India in general the figure is only 12%.

Particular attention was placed on raising female literacy. Traditionally in India, girls were often denied an education, but in Kerala girls were treated equally with boys. At the last census for which data has been released (1981), 71% of all women in Kerala aged 15 and above were literate, compared with 26% for all of India. In Kerala, 13% of women had been educated to the end of senior high school or beyond, compared with 6% for all of India. As table 1.9 showed, the inverse relationship between a mother's education and early deaths of children is extremely clear. It is believed that more education makes mothers less fatalistic about illness, bolder to question their mother-in-law's authority, more demanding of better health care and better food for their children, and raises incomes and therefore standards of living.

With the exception of the rise in female literacy, there has been no substantial change in Kerala's economy that might have accelerated the demographic transition in the way that seems to have happened. However, there has been a fundamental shift in the attitudes of people of Kerala to want fewer children but to give each child a better quality of life. The decline in Kerala's fertility is a good example of diffusion. i.e. that an idea begins at one point and spreads from there. The evidence that the fertility decline is an example of diffusion is as follows:

- The increase in the minimum age for females to marry was not an important factor in Kerala's fertility decline; it accounted for only 15% of the decline between 1961 and 1981.
- Fertility declined at the same time as knowledge about contraception was becoming more widespread.

- The decline in fertility happened very quickly; over a period of 30 years fertility went from a typical developing country situation to below replacement level.
- The decline in fertility and the rise in female literacy seem very closely linked.
- Fertility declined more among non-Muslims than Muslims, suggesting that contraception is more likely to be adopted where it does not violate religious and social norms.

Does Kerala's experience have applicability to other areas of India and the world? For Kerala, the key to lowering fertility seems to have been raising the level of female literacy. Kerala has been successful in raising female literacy for three reasons. First, mass education has been a central policy of governments in Kerala for many decades. Second, Kerala has a high proportion of Christians in the population, and this group is more open to the education of females than most other religious groups in Kerala. Finally, the high population density in Kerala increases people's accessibility to schools, raising the participation rate in education. The rest of India lags some 40 years behind Kerala in the level of female literacy, and it is even possible that the rest of India will never bridge this gap because of the traditional barriers to educating females among many groups in India.

Question Block 1G

1. *Explain how a traditional, isolated society might limit their population growth.*
2. *Draw a diagram to show a classification of the different types of population policies which are possible. Under each type of policy, list an example of a country which implements this type of policy.*
3. *Why did China have a pro-natalist population policy in the 1950s?*
4. *In what way does raising the minimum age for marriage control population growth?*
5. *Show the information in table 1.8 on a line graph. Draw the horizontal axis to show 'age' and the vertical axis to show 'percentage of population'. Remember to make the intervals on the horizontal axis proportionately spaced to reflect the gap in ages accurately.*
6. *What are the main findings you can draw from the information in table 1.8?*
7. *Outline the aims of China's 'One Child' Policy, and describe the ways in which the policy is implemented.*
8. *What exceptions are made under the 'One Child' Policy?*
9. *How successful has the 'One Child' Policy been in China?*
10. *What problems have been encountered with the 'One Child' Policy?*
11. *Contrast the aims of the U.S. and the Chinese population policies.*
12. *Comment on the rate of population increase in Nigeria. Use figures to quantify your answer.*
13. *Why is the rate of population growth in Nigeria increasing?*
14. *How successful is Nigeria's population policy? Give reasons why this is so.*
15. *In what way is the aim of Singapore's population policy different to population policies in China and Nigeria?*
16. *In what way has the aim of Singapore's population policy changed over the past decades?*
17. *Why is Singapore's population policy particularly targeting university graduates?*
18. *How successful has Singapore's population policy been?*
19. *What are the aims of India's population policy?*
20. *How does the Indian Government encourage people to conform to its population policy?*
21. *How successful has India's population policy been?*
22. *Describe the location of the Indian state of Kerala.*
23. *Write about half a page to describe the demographic change which has occurred in Kerala.*
24. *With reference to table 1.9, describe the relationship between infants' and children's mortality rates and the educational level of women.*
25. *What will be the impact of Kerala's demographic changes in the years ahead?*
26. *List and then briefly describe the factors that have caused Kerala's large demographic changes.*
27. *What is meant by the claim that 'the fertility decline (in Kerala) is an example of diffusion'?*
28. *To what extent could Kerala's approach in controlling population growth be applied to other parts of the world such as China and Nigeria?*

Movement responses – migration

Migration

It was stated earlier in this chapter that total population is a function of natural increase plus net migration. **Migration** is the movement of people. It can be permanent or temporary, and if temporary it can be long-term (more than a year) or short-term. If a migrant returns home periodically, as is common with seasonal farm workers or

rural-urban migrants in developing nations, it is known as circular migration. Although commuting each day to and from work is a movement of people, it is not usually classified as 'migration'. Migration can be within a country (internal migration, involving out-migration from one place and in-migration to another) or between countries (international migration, involving emigration from one country and immigration into another). Migration can be **voluntary**, such as for finding employment or moving to obtain an education, or **involuntary**, as with refugees or rural workers who have been evicted from their farms.

In 1885, the British Geographer E.G. Ravenstein proposed seven principles of migration. Although these principles were based on his research in the United Kingdom, they are often regarded as applying more widely. The seven rules were:

1. Most migrants move only a short distance;
2. Migration occurs as a step-by-step process, and as one group of migrants moves on to the next step, the people will be replaced by a new group from elsewhere;
3. Emigration is the opposite of immigration;
4. Each wave of migration encourages a counter-current in the opposite direction, and net migration is the balance between the two movements;
5. Migrants who travel long distances are more likely to finish up at a major centre of industry or commerce;
6. People in rural areas are more likely to migrate than urban dwellers;
7. Females are more likely than males to migrate within their own country, but males are more likely than females to migrate to another country.

Other geographers have added to Ravenstein's work, and proposed several additional 'rules' such as the following:

1. Large towns and cities grow more by migration than by natural increase;
2. People migrate mainly for economic reasons;
3. Most migrants are single and in the 20-35 age bracket;
4. Migration increases as towns, industries and transport links develop;
5. Many migrants are unable to find work when they arrive and eventually return to their place of origin.

The decision of whether or not to migrate is not taken lightly by any migrant. Often the decision is related to difference in wealth or development between a migrant's home and the intended destination. Factors that might force a person to leave their place of residence are called **push factors**, and these can be broadly divided into 'hard push factors' and 'soft push factors'. Hard push factors include war, starvation and environmental catastrophes, while soft push factors include persecution, poverty and social loneliness.

Table 1.10

Factors Influencing a Rural-Urban Migration Decision

Push Factors	Pull Factors	Restraining Factors
Not enough land for farming due to rising population	A perception that many jobs are available in the city	Desire to stay with the family in the rural area
Boredom with rural farming life	A wish to get a better education	Security of being supported by the family at home
Forced off the land by a landlord	Easy access to the city along roads or railways	The cost of moving to the city
Low standard of living in a rural village	Better health facilities in the cities	People in the city may speak a different language
Risk of famine if the crop fails	Better entertainment in the city	Cost of living is higher in the cities
Work on the farm is too hard		Diseases spread more easily in the cities

The decision whether to migrate or not will often be based on a perception of the destination that may be quite different from the reality. Other factors that might be considered include where other members of the family live, whether or not employment is likely, the ease of transport and social factors. For migrants considering moving from the countryside to a city (**rural-urban migrants**), the decision on whether to migrate or not depends on a series of push factors, pull factors and restraining factors. As already described, **push factors** are forces that repel a person from their place of residence. **Pull factors** are forces that attract a person to a new area. **Restraining factors** are forces that encourage a person not to move but to remain in their present area of residence. Some of these factors are listed in table 1.10.

For many rural-urban migrants, the move to the city results in disappointment. Many migrants are unable to find employment and therefore they are unable to afford housing, living in shanty settlements instead (figures 1.35 and 1.36). **Shanty settlements** comprise self-help housing made from scrounged materials such as packing cases, corrugated iron and disused plastic sheeting. Rural-urban migrants who are even unable to obtain shanty housing become street-dwellers (figure 1.37).

The process of rural-urban migration has been responsible for more than half the massive growth in cities in the developing world over the past few decades. For example,

61% of Port Moresby's population were born elsewhere, while in Bangladesh's capital city, Dhaka, 80% of the city's growth is coming from rural-urban migration. In cities throughout the developing nations, rural-urban migration has given rise to massive urban sprawl and the establishment of sub-standard housing (figure 1.38).

1.35 *An area of shanty housing in Addis Ababa, capital city of Ethiopia.*

1.36 *Shanty housing on the outskirts of Djibouti City, Djibouti.*

1.37 *Street dwellers have taken over the entire pavement of this street in Addis Ababa, Ethiopia.*

Although most migrants make their own decisions whether or not to migrate, this is not always the case. In Indonesia, a planned programme of forced migration has moved almost 2 million people from the densely populated islands of Java and Sumatra to more sparsely settled islands such as Sulawesi and Irian Jaya (the western half of the island of New Guinea). The motive for this migration is partly political. The Indonesian Government asserts sovereignty over Irian Jaya even though the people living there are Melanesian and have no ethnic connection with the other peoples of Indonesia. By moving large numbers of migrants into Irian Jaya, the Indonesian government can claim that a large proportion of the residents of Irian Jaya are Javanese or Sumatran, legitimising the government's claim to the area.

1.38 *La Paz, the capital of Bolivia, is a city of over one million people. Most of the people are rural-urban migrants who live in sprawling housing areas like this on the escarpment overlooking the central part of the city.*

Refugees are migrants who are forced to move because of political unrest or persecution. Over recent decades, there have been refugees from conflicts in many parts of the world. Wars have forced refugees to move from Tibet to Nepal, from Vietnam to Canada and Australia, from Congo (formerly Zaire) to Tanzania, from Cambodia to Thailand, and from Kosovo to Albania to mention just a few examples (figure 1.39).

1.39 *Refugees in Bhodnath, Nepal. The Tibetan Buddhists felt constrained in practising their religious beliefs and therefore migrated to Nepal.*

On the other hand, economic circumstances have encouraged migration from Mexico and Puerto Rico to the USA, from Bolivia to Argentina, from Turkey to Germany, and from India to various Arab states in the Middle East among other examples (figure 1.40). In this respect, migration may be seen as a means of equalising economic inequalities between regions. If people migrate from areas where there is an excess of labour to an area where there is a shortage (and therefore higher wages), then pressure can be relieved both where are too many workers (as some leave) and where there is a labour shortage (because more workers arrive).

1.40 *The movement of migrant workers from Turkey into the European Community has caused ethnic tensions. This poster in Paris appeals for equal rights for migrants.*

Question Block 1H

1. *Draw a diagram or a table to classify the different types of migration.*
2. *How accurate are Ravenstein's seven laws of migration today?*
3. *If you were to add three extra 'laws' of migration to the list of 12 presented in this section of the text, what would they be?*
4. *What is the difference between push factors, pull factors and restraining factors? Give two examples of each.*
5. *Why do many rural-urban migrants have trouble finding employment in the cities?*
6. *Give an example of each of the following types of migration:*
   a. *international refugee*
   b. *international voluntary*
   c. *rural-urban*
   d. *intra-urban*
   e. *inter-urban*
   f. *circular*
   g. *internal forced*

Case Study of Internal (National) Migration – Papua New Guinea

Any movement of people is called migration. When people leave a country, it is called **emigration**, but when people enter a country from overseas it is termed **immigration**. The movement of people within a country is called internal migration. When people move away from a particular district or town, it is called out-migration. On the other hand, in-migration is the movement of people into a particular town or district.

Table 1.11

Urbanisation in Papua New Guinea, 1960 - 2015

Year	Urban Population in PNG	
	in thousands of people	as a % of total population
1960	58	3
1970	240	10
1975	326	12
1980	403	13
1985	476	14
1990	582	13
1995	690	13
2000	766	13
2005	824	13
2015 (estimate)	1,095	15

Sources: Various

Table 1.11 shows that Papua New Guinea has experienced a spectacular increase in the number of people living in urban areas since 1960. This came about due to three factors:

a. about 20% of the growth was due to biological increase (the number of births exceeding the number of deaths) in the towns;

b. about 7% of the growth was due to urban boundaries being expanded to take in surrounding villages (i.e. a reclassification of existing settlements); and

c. the remainder of the growth (and thus the overwhelming majority) was due to rural-urban migration.

Rural-urban migration has been so important that today, well over half of Papua New Guinea's urban population are people who were born in rural areas. Papua New Guinea's two largest towns, Port Moresby and Lae, have 61% and 62% respectively of their populations born outside their areas (figure 1.41). In mining towns on Bougainville Island, the figure is 84%, with some towns (Arawa, Kieta and Panguna) having over 90% of their people having been born elsewhere.

1.41 *Due to rural-urban migration, over half the population of Port Moresby were born elsewhere.*

Question Block 1I

1. *Use the information in table 1.11 to construct (a) a column graph of Papua New Guinea's urban population numbers from 1960 to 2015, and (b) a line graph to show this data as a percentage of total population.*

2. *What evidence is there that rural-urban migration has been important in Papua New Guinea?*

Before World War II, there was some migration of Papua New Guineans under contract to coastal plantations. Most of these labourers came from coastal provinces such as Sepik, Gulf, Morobe and Milne Bay. Few migrants left the Highlands before World War II, as the area was still very isolated from the rest of the nation – Europeans only discovered that people lived in the Highlands in the early 1930s. However, after World War II, the Highlands became the main source for contract labour in the coastal provinces and islands. The movement of people under contract to work on plantations was circular migration, which meant that the workers returned home after a certain 'contract' period. Contract labourers who returned to their villages often spread wondrous, fanciful tales of city life, and this encouraged others to join the scheme. Thus, in recent years, there has been a shift towards chain migration. **Chain migration** is a 'one-way' movement of people in steps, first from villages to small towns, then to larger towns, and finally to cities.

1.42 *Map of Papua New Guinea, showing the provinces.*

Table 1.12

Migration in Papua New Guinea

Province	Out-Migrants		In-Migrants	
	Number	% of people born in the province	Number	% of people living in the province
HIGHLANDS				
Chimbu	30,000	15	2,500	2
Eastern Highlands	20,000	7	12,500	5
Enga	12,500	7	2,500	1
Southern Highlands	20,000	9	2,500	1
Western Highlands	7,500	3	35,000	13
REST OF NEW GUINEA				
East Sepik	25,000	11	7,500	4
Madang	15,000	7	12,500	6
Morobe	25,000	8	32,500	11
West Sepik	7,500	6	2,500	3
PAPUA				
Central	20,000	17	10,000	9
Gulf	15,000	20	2,500	4
Milne Bay	10,000	7	2,500	2
Port Moresby	10,000	18	65,000	61
Northern	7,500	9	5,000	8
Western	5,000	7	2,500	2
ISLANDS				
East New Britain	15,000	13	20,000	16
Manus	5,000	19	2,500	8
New Ireland	5,000	9	7,500	12
Bougainville	2,500	3	17,500	13
West New Britain	5,000	7	20,000	23

Source: Based on tables in Ranck and Jackson (1986)

The movement of people in Papua New Guinea has certainly not been uniform, however. The pattern of movement can be described with reference to table 1.12 and figure 1.42.

Question Block 1J

1. *What type of provinces have experienced large scale out-migration?*
2. *What type of provinces have experienced large scale in-migration?*
3. *Suggest the effect of each of the following on migration in Papua New Guinea:*
   a. *The Highlands have the highest population densities in Papua New Guinea.*
   b. *The copper mines on Bougainville Island (Panguna, Arawa, etc) are in North Solomons Province.*

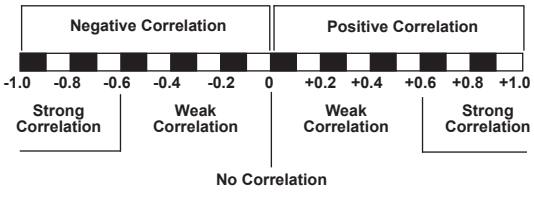
c. *The range of goods and services available in Port Moresby is much greater than anywhere else in Papua New Guinea.*
d. *There are many oil palm re-settlement schemes in West New Britain.*
e. *The world's largest single deposit of copper is located at Ok Tedi in Western Province. However, the mine is still being developed and is not yet fully operational.*

4. *Calculate Spearman's Rank Correlation Coefficient using the percentage figures in table 1.12. To do this:*
   a. *Draw up a table with five columns. In the first column, list the names of the twenty provinces.*
   b. *For each province listed, calculate its 'out-migrants' rank with '1' being the highest figure and 20 being the lowest. Where two figures are the same, split that ranking (i.e. two equal figures which would have been in 2nd and 3rd places receive a value of 2.5 each). Write the figures for each province in the second column.*
   c. *For each province listed, calculate its 'in-migrants' rank with '1' being the highest figure and 20 being the lowest. Where two figures are the same, split that ranking. Write the figures for each province in the third column.*
   d. *For each province, calculate the difference between the two rankings (i.e. for each province, subtract the column 3 figure from the column 2 figure). Write the answers in column 4 for each province.*
   e. *In column 5, calculate the square of each of the figures in column 4. At the foot of column 5, calculate the sum of the squared differences (i.e. calculate $\sum d^2$).*
   f. *Calculate Spearman's Rank Correlation Coefficient by applying the formula:*

$$Rs = 1 - \frac{6 \times \sum d^2}{n(n^2 - 1)}$$

where,
Rs = Spearman's Rank Correlation Coefficient,
$\sum d^2$ = the sum of column 5 (the sum of differences squared), and
n = the number of cases (in this case, the number of provinces).

5. *Use the following diagram to interpret the result you calculated in question 2.14 and draw conclusions:*



Overall, there has been a movement from densely populated interior regions (the Highlands) to the New Guinea Islands (plantations, Rabaul and mining towns on Bougainville) and to the coastal towns of Port Moresby, Lae, Madang and Wewak. The largest rates of out-migration are from Gulf, Manus and Chimbu Provinces. Between 13% and 20% of the people from these provinces now live outside them.

Because Chimbu Province is the most densely settled part of Papua New Guinea, migrants from that area tend to become very significant minorities in the coastal towns. This has led to some tension between Chimbu and people from other areas in the towns. Like most groups of rural-urban migrants, the Chimbu people tend to cluster together in certain parts of the towns, and this can attract hostility at times from other ethnic groups. The large community of poor rural-urban migrants living in shanties at the Six-Mile Rubbish Tip in Port Moresby, for example, often draws criticism from less poor people who have migrated from other parts of the country (figure 1.43).

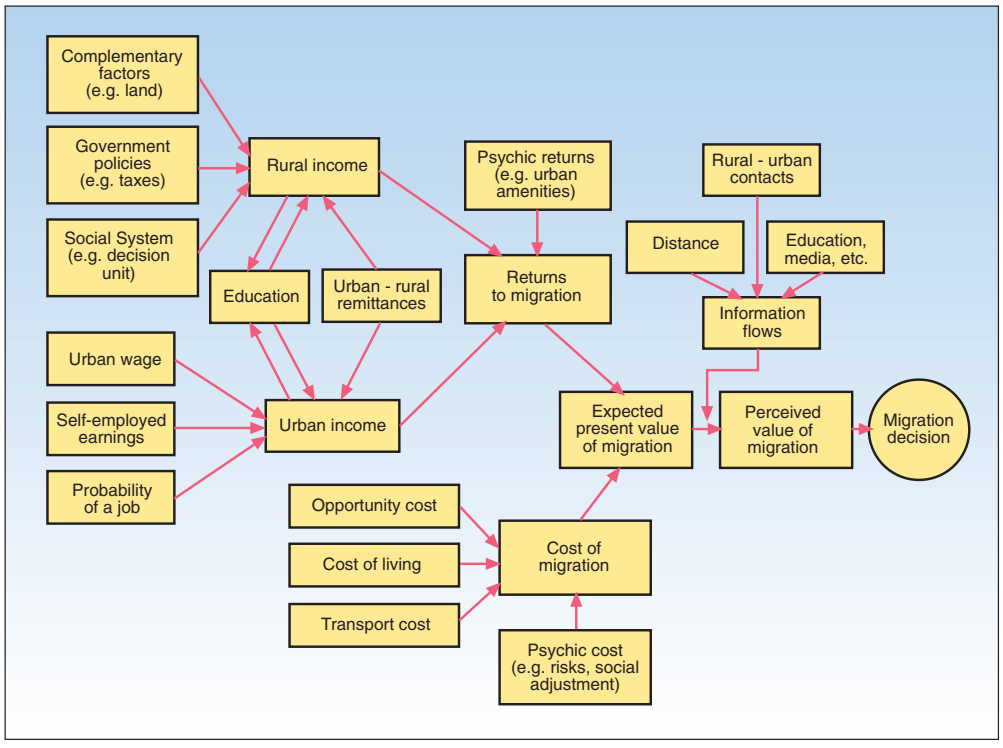
1.43 *Squatters from the Highlands living at Six-Mile Rubbish Tip in Port Moresby.*

Circularity (returning home) is very common among rural-urban migrants in Papua New Guinea. Indeed, over 50% of rural-urban migrants return home within five years of their move. However, the situation is somewhat complex because many of these people return to the towns at a later time. Because work is easier to find for males, the typical rural-urban migrant in Papua New Guinea is a young, single, somewhat adventurous male.

The decision of whether or not to migrate is a complex one and it is not made lightly. Figure 1.44 describes the decision making process involved. The migration decision is influenced by a number of push factors and pull factors. **Push factors** are forces that repel a person away from an area. **Pull factors** are forces that attract a person into a particular area. In the specific case of Papua New Guinea, important push and pull factors include:

a. Push factors

- Pressure on the land due to rising population (especially in the Highlands)
- The need to raise fast cash (for tax, consumer goods or a bride price)
- A desire to avoid traditional obligations and authority
- An extended adolescence, due to abolition of initiation ceremonies
- Personal factors (such as arguments or family problems)



1.44 *The decision making process of a potential rural-urban migrant.*

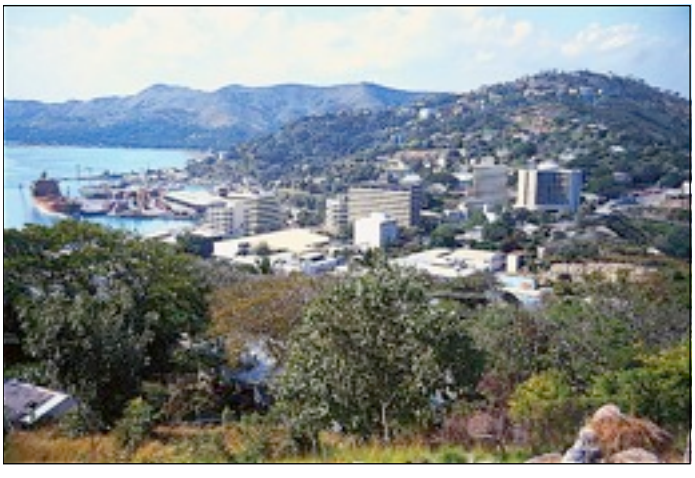
influence the decision whether or not to migrate. Another term for this is **psychological motives**.

Although most Papua New Guineans have adequate amounts of land for subsistence farming, land pressure is growing with rising population and increased cash cropping. In areas where subsistence cultivation is hardest and where cash cropping does not occur (such as in Sepik, Gulf and Western Provinces), high rates of out-migration and low rates of circularity occur. Migration from the Chimbu area of the Highlands is also mostly due to shortages of land, although no-one is ever forced to move to avoid starvation.

- Boredom with village life (particularly among the young)

b. Pull factors

- A wish to acquire skills or education
- Easy access to towns (roads, air, shipping)
- Desire to join urban resident kin
- Belief that many more services are found in the towns
- Perception of migration as a rite of passage into manhood.



1.45 *The downtown centre of Port Moresby is the image that many people in Papua New Guinea's villages have of urban life.*

Often, **opinions** may be more important than reality. Many people in Papua New Guinean villages think of the tall buildings and bright lights of the centre of Port Moresby when they consider migrating (figure 1.45). However, for most of them, migration to Port Moresby brings unemployment, poverty, poor accommodation and misery (figure 1.46). Nonetheless, it is people's opinions that

1.46 *This settlement for rural-urban migrants from Sepik Province is typical of the housing occupied by many people who have migrated to Port Moresby.*

1.47 *Where community schools have been established, such as here at Maramba, rates of our-migration are reduced.*

In areas where plantations have been established, out-migration is much lower. This is because the plantations offer local work, and often lead to the establishment of local schools, shops, and so on (figure 1.47). Of course, since most subsistence cultivation in Papua New Guinea is done by women, men are relatively free to migrate *and* to increase their cash-cropping activities if they leave their wives at home to do the weeding and harvesting. Different towns have different attractions for migrants. For example, people from the Mount Hagen in the Western Highlands do not like to migrate to Lae because it is reached too easily by their relatives who might follow them! Therefore, people from Mount Hagen usually prefer to migrate to Port Moresby, even though that means an expensive flight.

Question Block 1K

1. *Would you say that rural-urban migrants consider carefully whether or not they will migrate? Give reasons for your answer.*

2. *Do you think push factors or pull factors are more important in influencing rural-urban migration in Papua New Guinea?*

Villages that have lost rural-urban migrants tend to have unbalanced population structures, with an excess of children, old people and women (figure 1.48). However, this does not usually affect food production as it is traditionally the women's role to tend the gardens. The traditional role of men was to fight, and as there is little calling for fighting nowadays, the men tend to spend their time sitting, talking and making money. In general, the loss of even the village's most able-bodied men is seldom a major economic problem.

1.48 *A typical scene in a village that has lost many of its young men to the towns as rural-urban migrants. The population structure of such villages is quite unbalanced.*

Migration is seen by Papua New Guineans as part of the process of 'modernisation'. So far, rural-urban migration has not led to great differences in attitudes between urban dwellers and rural dwellers, as has occurred in parts of Asia. Most townspeople are first generation migrants who have maintained strong contacts with their villages, and rural-urban circulation is high. However, the absence of young men from the villages means that many traditional ceremonies are beginning to die away. For example, the *turnim het karim leg* ceremony has traditionally been an important part of courtship in the Highlands (figure 1.49). However, with the young women outnumbering the young men in many villages, the ceremony is declining in importance. Young people are now tending to choose their partners in what they see as the more modern fashion.

1.49 *In the 'turnim het karim leg' ceremony, young men and women get dressed up and go through a ceremony where they chant courtship songs. As they sing, they shake their heads and cross legs with each other. After several hours they pair off and go into the gardens to have sex.*

Naturally, there is some economic dislocation in the rural areas that the young male migrants have left behind. This dislocation is greatest in areas where migration has been greatest and where circulation least frequent. Migration to Port Moresby has so depopulated some Gulf Province areas that gardening has stopped in some places. Indeed, in some cases, settlements have broken up as people scatter to collect wild sago.

In most areas, however, the effects have not been as severe. The Orokaiva people from Northern Province always send money home to the villages to help those remaining behind, and their district does not seem adversely affected by its 30% absentee rate. The young people who leave the Mount Hagen district of the Western Highlands have no real productive role in their villages. Even when older Highlanders leave, there is little effect because their wives continue to care for the crops and they either send money home or visit periodically. The large number of Sio (an Islander group) working away from home also send money back and return when middle-aged to responsible positions in the community. In such circumstances, rural-urban migration is not disastrous for the village.

Question Block 1L

1. What are the good and bad effects of rural-urban migration on the rural villages which the migrants leave behind?

In traditional Papua New Guinean society, there were no towns. People lived in small, self-reliant villages. The way of life of the people was based on farming which avoided complex technology, and there was only limited trade between most villages (figure 1.50).

1.50 *A typical, traditional self-reliant Papua New Guinean village, west of Vanimo. Even in this village, the corrugated iron roofs provide evidence of contact with the outside world.*

The first towns in Papua New Guinea were built after the arrival of Europeans in 1884. Being built by European traders, missionaries and government officials, the towns were centres of trade, religion and administration. At first, local Papua New Guineans were not permitted to live in the towns. However, following World War II, this regulation became difficult to enforce, and local people began moving into urban centres. It was during this period that large scale rural-urban migration began in Papua New Guinea. Today, the rapidly growing size of Papua New Guinea's urban population reflects the importance of rural-urban migration.

In 1966, there were two males living in Papua New Guinea towns to every female. Since that time, more women have begun migrating to the towns (often to join their husbands), and today the ratio is 1.38 males to each female. Most towns have an abundance of young people of working age. One quarter of Papua New Guinea's males between 15 and 44 years old live in towns where they make up 50% of the urban population. This is particularly strong in the mining towns on Bougainville, which are almost entirely populated with single males from all parts of Papua New Guinea. In Port Moresby, the ratio of males to females is 3:2. However, for Highlanders in Port Moresby, there are almost six males for every female.

Over 95% of the migrants who come into the towns have had no formal job training. In Port Moresby, 46% of in-migrants have not even completed one year of schooling and only 1% received a leaving certificate. This means that employment in skilled and semi-skilled fields often eludes in-migrants, who wind up either working as houseboys or cleaners, or remaining unemployed. Port Moresby's crime rate is very high by any standards, and much of this crime is by 'raskals', unemployed young male in-migrants. Street bashings are unfortunately extremely common. Many residences in the towns are surrounded by two-metre-high barbed wire fences, often featuring security devices (figure 1.51). Unlike the situation in Africa or Asia, very few unemployed in-migrants turn to prostitution.

Unemployment is a problem in the towns. Between 15% and 25% of working age males and 80 to 90% of working age females are currently unemployed in Papua New Guinea's seven largest towns. These figures are a little misleading, however, as a substantial number of these people are not, in fact, looking for work. In Goroka, for example, about 20% of the unemployed are voluntarily outside the formal economy. In other words, they are engaged in subsistence activities or just visiting relatives, occasionally selling produce, and so on. Thus, the true unemployment rate is estimated as being between 5% and 12%.

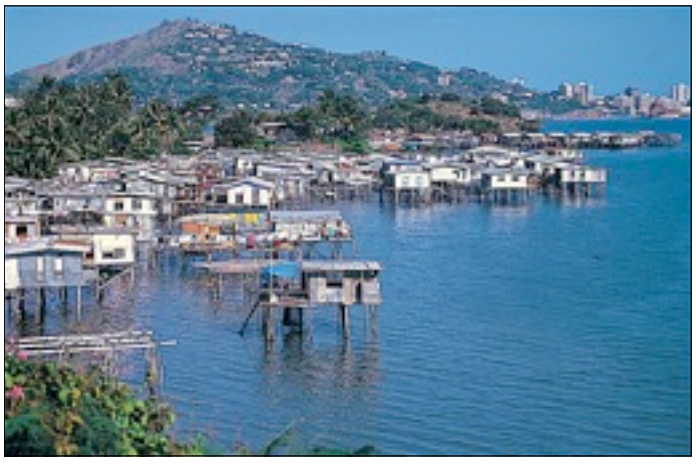
1.51 *Typical security measures in Boroko, a suburb of Port Moresby.*

1.52 *Unemployed rural-urban migrants scavenging at Port Moresby's Six-Mile rubbish dump.*

Few of these unemployed people are really trapped in the towns. People who do not have work and would like to go home, but cannot, number only about 1% of males and 3% of females. An important exception to this, however, is the many Chimbu people who live in Port Moresby's Six-Mile rubbish dump (figure 1.52). They have a 27% unemployment rate as travel back to the Chimbu can only be undertaken by air, making the trip quite expensive.

Papua New Guinea is divided into four broad regions: Papua, the Highlands, the New Guinea coast and the New Guinea Islands. These divisions sometimes become the basis of ethnic conflict in the towns. In most towns, New Guinea Islanders and Papuans are the most educated and qualified for skilled positions, with Highlanders being easily the least qualified. In Mount Hagen, for example (which is in the Highlands), 18.5% of the Islanders, 7.4% of the Papuans, 3.0% of the New Guinea Coastals and only 0.7% of the Highlanders have formal job certification. Highlanders are the most recent group to begin living in towns, even in Highland towns.

Being the least educated and qualified, the Highlanders are concentrated in the lowest paying jobs, positions that are the least secure and hold the fewest opportunities for advancement. They are the least likely to have their wives and children in town, and tend not to reside in one urban centre continuously.



1.53 *Two views of a well-established area of poor housing at Hanuabada, a coastal suburb of Port Moresby.*

The shortage of housing in Papua New Guinean towns is very severe. Every night, thousands of rural-urban migrants sleep under shop awnings and petrol station fronts. In Papua New Guinea, nearly half the urban population live in **squatter settlements**. These consist of areas of land which are not zoned for a specific purpose which are then settled by people who do not own the land who construct shanty housing using scrounged materials (figure 1.53). Unlike many cities in Asia and South America, squatter settlements in Papua New Guinea do not generally have services such as electricity, street lighting, sewerage, rubbish collection or running water, as the authorities do not wish to encourage rural-urban migration.

Most squatter settlements are located on land not wanted by any other users, and close to possible places of work. These squatter settlements tend to be settled by people from the same ethnic background, and become, in effect, like a rural village moved into a town. The residents in squatter settlements cannot afford to buy, or even rent, the cheapest type of house, and have to make do with what they can build themselves. If possible, they will use the traditional village construction materials of sago leaves, bamboo or black palm, but generally all that will be available will be pieces of corrugated iron or packing cases. They are built in no apparent pattern, and certainly not in the neat ordered rows that the Europeans seem to prefer.

1.54 *In southern coastal areas of Papua New Guinea, the shortage of land encourages people to build houses over the water. Traditionally, this was also useful for defence. This view shows houses built over the water in the Port Moresby suburb of Koki.*

Overcrowding is a problem in the squatter settlements. Housing is scarce in most urban areas of Papua New Guinea. In part, this is because the colonial administration deliberately built few houses in order to discourage rural-urban migration. However, another reason is that there is so little flat land available in Papua New Guinean urban areas (figure 1.54). In nearly every major town, most of the land suitable for future urban expansion is under customary tenure, which means it is owned by the local native population who do not want to part with it. The average household in a squatter settlement has seven residents, compared with five residents for Papua New Guinean urban areas as a whole.

Traditional social systems tend to break down in the urban towns. In the villages, there is usually a 'big man' who has the charisma and oratory to influence people and settle disputes. However, no 'big man' would ever migrate from the Highlands to Port Moresby. The lack of 'big men' has led to problems of social control among Highlanders, since there is no-one with the ability to manage people and the social prestige necessary to settle disputes effectively.

Question Block 1M

1. *Make a point form list of the effects of rural-urban migration on the towns of Papua New Guinea.*

Gender and Change

The Role and Status of Women

The role and status of women varies from country to country. It varies from culture to culture even within one country, and is changing at different rates in different places. It is very difficult to generalise, but some statistics are so significant that they cannot be ignored. Particularly in LEDCs, the situation faced by women is generally inferior to that of men. In the words of a brochure produced by the NGO Community Aid Abroad, "(Women) often work twice as many hours as men, earn only one tenth of the income of men, consume less of the food than men and own only one hundredth the property of men."

In most LEDCs, women have much less scope than men to earn an income. In many cases where women cannot be supported by income earning men they must resort to begging to survive (figure 1.55).

1.55 *Buddhist nuns begging for alms near Mandalay, Myanmar.*

Since its formation in 1945, the United Nations has mirrored the practices in most of the world in having a high proportion of men as its national representatives, and also in its staff, where women have comprised less than 10% of the employees for most of its history. Nevertheless, the United Nations has been aware of the great inequalities faced by women and as long ago as 1975, it produced guidelines for release at the end of the first International Women's Year.

Among the points in the document were the following:

- The achievement of equality between men and women implies that they should have equal rights, opportunities and responsibilities to enable them to develop their talents and capabilities for their own personal fulfilment and the benefit of society.
- Governments should strive to ameliorate the hard working conditions and unreasonably heavy work loads that fall upon large groups of women in many countries, particularly among underprivileged social groups.

In many MEDCs, women have battled for many years to be able to enter forms of employment that have traditionally been regarded exclusively, or almost exclusively, as men's work. In spite of the widespread understanding that women and men are equally capable of performing most jobs, very low numbers of women continue enter many occupations that are still regarded in some societies as "men's work", especially those which have a component of great physical effort.

1.56 *Women carrying heavy goods by hand, Djibouti.*

It is worth noting that the United Nations' concern is somewhat different. In many countries, women continue to perform do the heavy – even unreasonably heavy – labour (figures 1.56 and 1.57). In some LEDCs, it is not uncommon to see men filling head baskets with rocks at a road construction site and then lifting them onto women's heads to be transported some hundreds of metres, or to see women engaged in heavy manual labour at road or building construction sites (figure 1.58).

Such expectations of women to be beasts of burden is seen as the norm in many nations. In some cases it is so blatant that a man may be seen walking along a road or track carrying nothing, while his wife is a short distance behind loaded with firewood and even a child as well. The prac-

tice begins at an early age where even young girls are often seen carrying heavy loads (figure 1.59).

1.57 *A woman carrying a heavy load of fuelwood, Addis Ababa, Ethiopia.*

1.58 *Women doing road work, near Kinka, Ethiopia.*

In many MEDCs, the exclusion of women from some work might once have been excused on the grounds of different physical strength. However, this could hardly explain the small numbers of women in fields such as law, academia or engineering. Perhaps it was once a valid argument in more strenuous occupations such as building and construction, factory employment, or driving heavy vehicles, but during the male labour shortage during World War II, thousands of women proved they could handle such jobs. With improved technology, the heavy lifting component of most jobs has now disappeared.

Another reason that was once given for women to be denied a full education or access to top positions was that any investment made in their professional development would have less return than the equivalent investment in a man. The argument was that men tend to work fairly constantly from the age of 20 to about 60 or 65, while many women spend a number of these years outside the workforce having children or raising families. Whatever the truth of this argument, it is regarded as an unacceptable reason to deny women educational or employment opportunities in most MEDCs today. As seen in the adult literacy rates shown in table 1.13 a little later in the chapter, the same cannot usually be said for LEDCs.

1.59 *Girls carrying heavy loads in southern Ethiopia.*

Any bias in favour of men in MEDCs now seems to be a clear, if not always admitted, attempt to give men the first opportunity at key positions. Even with equal opportunity policies in place and positive discrimination in favour of women in many cases (i.e. deliberately giving women more than 50% of new promotion positions), many women feel that they hit a 'glass ceiling', an invisible but nonetheless real barrier to further promotions.

The male literacy rate is low in a number of the countries shown above, but in every case it is higher than that for women. Since education is crucial in gaining employment, the graph shows why the United Nations' action plan is really needed nearly 20 years after its implementation.

Question Block 1N

1. *It is obvious that males and females are physically different. In our society there are many people, both men and women, who insist that the differences between the sexes are very important and that they result in quite different attitudes, thoughts, talents, speech patterns, behaviour, occupations and so on. They feel that men and women are totally different in almost all aspects of their lives. On the other*

hand, many others – again both men and women – support the view that although there are obvious physical differences, people should be treated the same. They maintain that a person's gender should make no difference if they are being considered as a pupil in school, a parent, a worker, a professional or whatever. In this context, what is your opinion of the accuracy of the assertion "men and women are different, but that does not mean they are not equal". Give reasons to explain your viewpoint.

Women in China

China is one of the best examples of how long-term attitudes of gender inequalities that suppressed the place in women could be largely overcome within a generation or two.

For thousands of years Chinese women lived under prolonged oppression, degradation and abasement in a very hierarchical, patriarchal (male-dominated) society. Women were considered inferior to men and this was shown in many ways:

- women had no political rights
- women were excluded from political and social life
- women were economically dependent on men
- women had no property or inheritance rights
- women were denied all sources of personal income
- women had no social status (they were kept at the 'bottom of society'
- women were forced to obey fathers and then husbands (or sons, if widowed)
- women were forced to marry men chosen by their parents and matchmakers
- women were not allowed to remarry if widowed
- women had almost no personal dignity
- women were denied formal education
- women were harassed by systems of polygamy and prostitution
- many women were forced to have their feet bound from childhood

When the Communists came to power in 1949, they promised to change this situation. From that date, a popular phrase became "Women hold up half the sky", and great steps were made to accept Chinese women as the full equals of men. Since 1949, Chinese women have certainly made extremely important contributions to such projects as industrial and agricultural production, science, culture, politics, education and health care.

The first meeting of the Chinese People's Consultative Conference (the forerunner to the National People's Congress) in 1949 was attended by 69 women, or more than 10% of the delegates. Although this figure may sound like a small percentage, in the context of traditional China it represented an earth-shattering change from previous practice.

In the years following the Communist Revolution (called Liberation in China), women were given the vote, given the right to own land, given the right to move out of the home to work or socialise, and prostitution (a form of slavery in pre-revolutionary China) was banned. A campaign to eradicate illiteracy was started, and the female illiteracy figure declined from over 90% in 1949 to 38% in 1992 and just 13% by 2005. New marriage laws were introduced making forced marriages illegal from 1950, prohibiting polygamy, and guaranteeing the rights of women and children. As a result of the changes, there was a reduction in wife bashing and arranged marriages.

Today, China's women are more liberated than many other parts of the world, and certainly much more than they were in the past. Chinese women occupy significant senior positions in industry, education, commerce, and politics. They are educated to very high levels and they often travel overseas to further their education. Chinese women today can be seen working in almost every job on an equal basis with men, including labouring and technological jobs (figure 1.60).

1.60 *A female doctor dispenses medicine at a medical clinic from a new medical clinic in Gonghe village, a poor rural area of China's Guizhou province.*

This is not to say that the situation is perfect. In rural areas, some families still feel that having a boy baby is preferable to having a girl baby. Often, the reason behind this attitude is that when they marry, girls leave their parents and become part of the husband's extended family, helping with the work to support that family rather than her own parents. Furthermore, boys carry the family name into the next generation, and in many isolated farming communities, reverence for ancestors is still an important part of the culture.

Question Block 10

1. *Write your opinion of the rules and restrictions which governed the lives of Chinese women before 1949. Would you like your lives and your bodies to be controlled in such ways?*
2. *Research the topic of "foot binding" in China. Find out just how cruel this treatment was and imagine how Chinese girls suffered.*

3. *Summarise the impact of gender reforms in China upon women, children, and men, and on the social, political and family aspects of life in China.*

Women in Muslim (Islamic) Countries

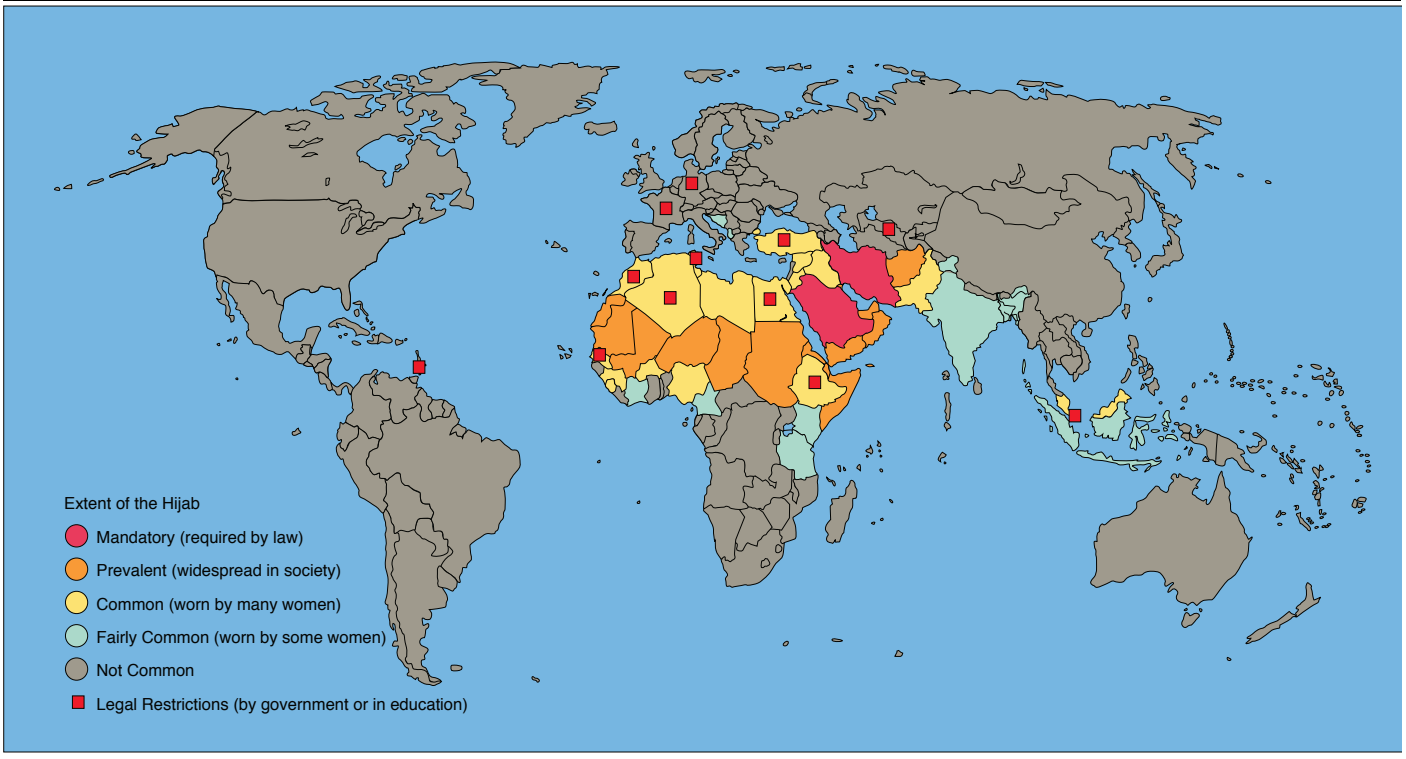
1.61 *Women leaving a mosque at Jamal ad-Din, Turkmenistan.*

Few issues have greater potential to cause misunderstanding between the Islamic world and the West than the role and place of women in Muslim societies. To some extent, it is very difficult to make generalisations about this subject because of the extreme diversity across the Muslim world, a vast area that extends from Morocco in the west to Indonesia in the east, spanning many different countries, ethnic groups, communities, races and cultures. The one common factor is the Muslim religion, known as Islam, although there are variations within the beliefs and practices of Islam that influence the role of women in different Muslim countries. As the noted Muslim Pakistani development activist and writer on gender issues, Ms Khawar Mumtaz, commented: "The situation of Muslim women is differentiated by country and also, within each society, by class, ethnicity, rural or urban location, and level of development." Despite these different backgrounds, there are some aspects of Muslim women's lives which appear common to most of them. Again quoting Ms Khawar Mumtaz, "The desire to control women seems to pervade all Muslim societies."

According to the Qur'an (the Holy Book of Islam), men and women are equal before God (Allah). The Qur'an regards men and women as two units of a pair, complementing each other each other in various physical and psychological ways. Islam does not assign a lower status to the women, but it does assign different responsibilities to men and women. For example, in the family structure that the Qur'an prescribes, women are responsible for raising the children and domestic duties while men are responsible for providing security and livelihood for the family. When the practices of different countries are compared, there is less uniformity than the Qur'an might seem to suggest, and different Muslim countries assign women varying degrees of rights with regards to marriage, divorce, civil rights, legal status, dress code, and education. This is especially so for countries that have had greater exposure to international linkages, and in such countries, many people have found themselves caught between tradition and change. In such situations, women may be used as symbols of both tradition *and* change, with some women being given equality with men and social position, while others were kept hidden behind the veil and in submission.

1.62 *Malaysian schoolgirls riding home on bicycles.*

1.63 *Women in Yemen dress more conservatively than in many other Muslim countries. This woman is in Sana'a, the capital city.*



1.64 *Prevalence of Hijab clothing, and countries where there are restrictions on its display.*

1.65 *Women in the central market of Sana'a, Yemen.*

In countries such as Tunisia, Malaysia, Egypt and Turkey the emancipation of women has progressed further than in more isolated societies such as Saudi Arabia, Yemen and Afghanistan (figures 1.61 to 1.63). Perhaps the most visible symbol of this difference is clothing and dress. The Qur'an instructs all Muslims (men and women) to dress in a modest way. When this is applied to women, it is often referred to as *hijab*, which comes from the Arabic word meaning 'cover' but which in the context of clothing is used more broadly to mean 'modest dress for women' (figure 1.64). In most Islamic countries, *hijab* implies using loose clothing to cover all parts of the body except for the face, feet and hands when in public. Tight fitting clothing conflicts with the standards of modesty implied by *hijab*, so loose clothing that hides the shape of the body is the norm for Muslim women, and in some stricter societies, even the face must be covered (figure 1.65). In recent years, *hijab* has become a symbol of Muslim identity and morality that stand in defiance of Western values such as materialism, commercialism, and values. *Hijab* is a source of pride and distinctiveness for many Muslims, while for many Westerners it is a symbol of gender oppression.

Since the Islamic Revolution of 1979 in Iran, wearing the *chador* has been the usual way for women to comply with *hijab* when outside the house. The *chador* is a piece of (usually) black full-length fabric that is thrown over the head and held closed at the front (figure 1.66). Wearing the *chador* is not compulsory for Iranian women (although modesty in dress is enforced). Almost all Iranian women do choose to wear the *chador*, however, claiming simply that it is a respectable and pious way to dress. A smaller number of women claim to wear the *chador* as a sign of support for the country's Islamic rulers. Most Iranian women claim that they find the chador to be a very comfortable and liberating way to dress, as they can wear whatever they like underneath – including blue jeans and

western clothing – and it is said to be extremely comfortable (figure 1.67). In the West, on the other hand, the *chador* is seen as a symbol of suppression of women's rights to express themselves as individuals in Iran.

1.66 *An Iranian woman wearing the chador.*

Perhaps the strictest expression of *hijab* for women in recent years occurred in Afghanistan during the period from 1996 to 2001 when the Taliban controlled Afghanistan. The Taliban adopted an extremely strict, fundamentalist ideology that opposed outside (especially Western) influences and took a very narrow interpretation of the Qur'an on moral and legal issues, imposing a code of Islamic law (called *sharia*) that included punishments that many outsiders saw as extremely harsh. One expression of Taliban rule was the requirement that all women wear the *burqa*, a traditional Afghan cloak that covered women completely, including the eyes. The perception outside Afghanistan (especially among women's groups in North America and Western Europe) that enforcing *burqa* wearing was a violation of women's rights became a significant issue in 2001 as the US Government was seeking support for an invasion to overthrow the Taliban. To many people in Afghanistan, enforcing the *burqa* was seen as more legitimate than many other Taliban actions that did not seem to stem from the Qur'an or sharia law, such as bans on clapping at sports events, bans on flying kites, bans on trimming beards and bans on sports for women.

Ironically, several of the European nations that protested about enforcing wearing the *burqa* on the grounds that it restricted women's right to choose are now debating whether to ban *burqas*, head scarves and other items of clothing associated with Islam such as the *niqāb*, which is the face veil shown in figures 1.63 and 1.65. France and several states in Germany have banned the wearing of head scarves in schools, the Netherlands announced in late 2006 that it would ban the *niqāb*, and in 2006 the British Foreign Secretary, Jack Straw, called on British Muslim women to abandon the full veil, a view that was subsequently endorsed by the then-Prime Minister Tony Blair (figure 1.68).

1.67 *Two women in a mosque in Esfahan, Iran, show how the chador is often combined with blue jeans.*

Some countries with large Muslim populations adopt very different approaches to the wearing of *hijab*. For example, 99% of Turkey's population are Muslims, and over 60% of women wear the *hijab*. However, Turkey has a strong tradition of secularism which separates government from any spiritual or religious basis. As a consequence, wearing headscarves is banned in private and state universities and schools, and it is not permitted in public offices, including all government buildings. Un-

derstandably, this policy is somewhat controversial, and many Muslim women claim that the bans represent discrimination against them.

Of course, the issue of gender equality in Muslim countries affects many more areas than clothing. Like clothing, however, the issues confronting women vary from country to country. One of the stricter Muslim societies is Saudi Arabia, where women are not allowed to leave their houses without a male relative such as their father, brother or husband. Women can only be educated in segregated (single-sex) schools, and when women demonstrated to be allowed to drive cars, their movement was crushed because they wanted something which was labelled as 'un-Islamic'. Under Saudi law, a male relative is permitted kill his female relative for offences such as premarital or extramarital sex, refusing an arranged marriage, attempting to obtain a divorce, or simply talking with a man without permission.

1.68 *A Muslim family in Blackburn, Lancashire, a city where Islam is the dominant religion.*

During law cases in Pakistan, the testimony of one man is equal to that of two women. For a woman to prove she has been raped, four adult males of 'impeccable character' must testify that they have witnessed the penetration. Understandably, as a result of this requirement, very few men are charged with rape in Pakistan. According to western media reports, 60% of Pakistani women finish up being charged with adultery if they are raped, for which the punishment is either imprisonment for the woman or an enforced marriage to their rapist.

In spite of these somewhat extreme examples, it would be wrong to label Muslim societies as looking down upon women. Such a view would be judging a culture by standards that are not its own. Indeed, many people in Muslim societies argue that their treatment of females elevates women to a much higher place than is common in Western societies. Most people in Muslim societies would argue that their women are protected from the kinds of exploitation that are often common in Western societies – one would never see a semi-nude woman draped over the bonnet of a motor car for advertising purposes in a Muslim society, for example.

It would also be wrong to claim that women can never rise to positions of power in Muslim societies. Among the Muslim women who have become heads of state in substantially Islamic countries are Benazir Bhutto of Pakistan, Mame Madior Boye of Senegal, Tansu Çiller of Turkey, Kaqusha Jashari of Kosovo, and Megawati Sukarnoputri of Indonesia. Furthermore, Bangladesh was the first country in the world to have two successive female heads of state as Khaleda Zia and Sheikh Hasina replaced each other as Prime Minister in 1996 and 2001.

The status of women in Muslim (Islamic) countries will probably continue to be a subject of debate between Muslims and non-Muslims. Women may be treated differently from men in Islamic societies, but it depends on one's point of view whether these differences also necessarily mean inferiority.

Question Block 1P

1. *With reference to figure 1.64, describe the distribution of the different ways in which* hijab *is practised.*
2. *Compare the dress and the relative numbers of men and women in the photos in this section. Do the differences imply any differences in the place of men vs women in these societies?*
3. *Giving reasons, explain why you think the differences between laws and expectations of men and women in Muslim societies imply (or do not imply) inferiority.*

Gender-related Equity Issues

When the issue of gender inequality is examined on a global scale, we find that on many measures females appear to be disadvantaged compared with males. Several measures of gender equality are shown in table 1.13.

One approach when examining gender equality is to try and develop a composite measure that quantifies the extent of the disadvantage faced by females. The United Nations Development Program has developed two such indices, the Gender-related Development Index (GDI) and the Gender Empowerment Index (GEM).

The **Gender-related Development index** (GDI) is calculated by averaging three measures:

a. **longevity**, as measured by the female and male life expectancy at birth;

b. **knowledge**, as measured by (1) female and male literacy rates, and (2) female and male combined school enrolment ratios; and

c. **income** per capita, in Purchasing Power Parity US dollars, based on female and male earned income shares.

The GDI figures for a number of countries is shown on the left side of table 1.13, together with some of the measures that have been used in its calculation.

It is often useful to compare a country's GDI to other composite measures of development, as discussed in detail in chapter 2, such as the Human Development Index (HDI) which is an overall measure of a country's development. In general, the closer a country's HDI and GDI rankings are, the greater gender equity that exists in that country. Where the GDI ranking is lower than the HDI ranking, there is a degree of gender inequity against females.

According to the United Nations Development Programme, the GDI rank is below the HDI rank in 43 of the 143 countries for which calculations have been completed. In these countries, gains in economic development have not brought as many benefits to women as they have to men (figure 1.69). The greatest negative differences between GDI and HDI occur in Arab territories such as Palestine (-15), Libya (-9), Saudi Arabia (-9), Oman (-8) and Yemen (-6).

1.69 *In many LEDCs, women must continue to raise children as well as earn an income, often by heavy physical work. This Malian woman carries her child on her back as she carries a heavy load of freight on her head.*

On the other hand, there are 60 countries for which the GDI rank is greater than the HDI rank. In these countries, economic development has served to advance the interests of women and reduce the inequities in quality of life between men and women. The countries where this has happened are very diverse, and include MEDCs such as Australia and Sweden, medium human development countries such as Russia and Brazil, and LEDCs such as Tanzania and Gambia. This suggests that it is possible to address gender equity issues in different countries regardless of levels of their economic development or culture.

The **Gender Empowerment Measure (GEM)** is a measure of the extent to which females as well as males participate in the decision making processes of a country. The GEM includes three components:

a. **political participation**, as measured by the percentage of seats held by women in national parliaments;

b. **economic participation**, as measured by as measured by the percentage of women among legislators, senior officials and managers, as well as in professional and technical fields; and

c. **power over economic resources**, as measured by the income earned by females compared with men's incomes.

GEM statistics are shown for a selection of countries in table 1.13. Unfortunately, many LEDCs do not collect the data required to calculate their GEM, which explains the large number of 'n.a.' (not available) entries in the table. Of course, the fact that a country does not even collect data on gender empowerment is itself a measure of the low importance placed on this issue by government decision-makers!

The right hand side of table 1.13 shows several measures of gender inequality, some of which are included in the calculation of either the GDI or GEM, while others are not. It can be seen from the data that males are the disadvantaged group in some areas, such as life expectancy (which is shorter for men in almost every country of the world), and in the proportion of prisoners who are male, which exceeds 90% in all the countries listed except two.

When issues of gender equality are discussed, it is usually matters of wealth, power or influence that are discussed. In these areas, females are almost universally disadvantaged compared with males, as the statistics in table 1.13 show. Compared with males, females tend to have fewer educational opportunities, they are less likely to assume positions of power in government or business, and they tend to earn lower wages for equivalent work. Although these generalisations are true globally, the extent to which they apply to individuals varies from country to country, and females tend to be less disadvantaged in more economically more developed countries.

Table 1.13

Gender-Related Development Index (GDI), 2008, for the same countries listed in table 2.1 (order of countries shown follows that in table 2.1)

	Measure of Gender Equality		Life Expectancy at Birth (years)		Adult Literacy Rate (%)		GDI as % of HDI
	GDI	GEM	Female	Male	Female	Male	
HIGH HUMAN DEVELOPMENT							
Norway	0.957	0.915	83	78	100	100	98.8%
Australia	0.960	0.866	84	79	100	100	99.8%
Sweden	0.955	0.925	83	79	100	100	99.9%
Japan	0.942	0.575	86	79	100	100	98.8%
USA	0.937	0.769	81	75	100	100	98.5%
United Kingdom	0.944	0.786	81	77	100	100	99.8%
South Korea	0.910	0.540	82	76	100	100	98.8%
United Arab Emirates	0.855	0.698	81	77	88	89	98.5%
Mexico	0.820	0.603	78	73	90	93	98.9%
Malaysia	0.802	0.538	76	72	85	92	98.8%
MEDIUM HUMAN DEVELOPMENT							
China	0.776	0.526	75	71	87	95	99.8%
Iran	0.750	0.345	72	69	77	88	98.8%
Vietnam	0.732	0.555	75	71	100	100	99.8%
Indonesia	0.721	0.441	72	69	87	94	99.1%
Bolivia	0.691	0.509	67	63	81	93	99.5%
India	0.600	n.a.	66	65	48	73	97.0%
Myanmar	0.575	n.a.	54	58	86	94	98.6%
Nepal	0.520	0.485	64	63	35	63	97.4%
Papua New Guinea	0.529	n.a.	60	54	51	63	99.7%
Kenya	0.521	n.a.	53	53	70	78	99.9%
LOW HUMAN DEVELOPMENT							
Eritrea	0.469	n.a.	59	54	21	43	97.0%
Nigeria	0.456	n.a.	47	46	60	78	96.9%
Tanzania	0.464	0.600	52	50	62	78	99.4%
Rwanda	0.450	n.a.	48	47	60	71	99.6%
Malawi	0.432	n.a.	47	45	58	77	98.9%
Zambia	0.425	0.425	37	38	72	79	97.9%
Ethiopia	0.393	0.474	51	48	23	50	96.8%
Mali	0.371	n.a.	59	54	16	33	97.6%
Niger	0.355	n.a.	56	58	15	43	94.9%
Sierra Leone	0.320	n.a.	49	48	24	47	95.2%

Source: Derived from data supplied by the UNDP, Population Reference Bureau, International Centre for Prison Studies

Ratio of girls to boys in primary & secondary schools	Ratio of female to male earned income	% males aged 15+ in the labour force	% females aged 15+ in the labour force	% of males who live to age 65	% of females who live to age 65	Women in Parliament % of total seats	% of prisoners who are female	
								HIGH HUMAN DEVELOPMENT
101	0.79	73	64	86	92	38	5.2	Norway
97	0.73	70	56	87	93	25	6.8	Australia
100	0.84	67	59	88	93	47	5.2	Sweden
100	0.46	73	48	87	94	9	5.9	Japan
100	0.64	73	60	81	88	16	8.6	USA
101	0.70	69	55	85	90	20	5.7	United Kingdom
96	0.52	74	50	81	92	13	5.3	South Korea
101	0.25	93	41	86	91	23	n.a.	United Arab Emirates
99	0.42	80	40	78	86	23	5.0	Mexico
105	0.44	81	47	32	37	9	6.5	Malaysia
								MEDIUM HUMAN DEVELOPMENT
100	0.65	82	69	75	82	20	4.6	China
105	0.41	74	40	73	81	4	3.5	Iran
97	0.71	78	72	78	84	26	12.4	Vietnam
97	0.46	85	51	71	79	11	4.7	Indonesia
98	0.58	84	63	63	71	17	7.0	Bolivia
91	0.32	82	34	59	69	8	4.0	India
101	0.61	86	68	54	66	n.a.	17.8	Myanmar
93	0.50	78	50	61	65	17	8.3	Nepal
80	0.70	75	72	41	55	1	5.0	Papua New Guinea
96	0.82	90	70	42	47	7	3.6	Kenya
								LOW HUMAN DEVELOPMENT
72	0.50	90	58	41	54	22	n.a.	Eritrea
83	0.40	85	46	37	40	7	1.9	Nigeria
97	0.72	90	86	40	45	30	3.3	Tanzania
102	0.73	84	80	33	39	49	2.6	Rwanda
100	0.74	90	86	32	37	14	1.2	Malawi
96	0.54	91	66	23	26	15	2.6	Zambia
81	0.61	89	71	44	49	22	n.a.	Ethiopia
74	0.66	82	72	48	58	10	2.0	Mali
70	0.56	95	71	59	57	12	n.a.	Niger
86	0.45	94	56	33	39	13	n.a.	Sierra Leone

In many people's minds, the status of women and their perceived importance in society are indicated by the work they are allowed to do. The pictures in figures 1.70 to 1.73 show women from several nations working in occupations which are typical of countries at different levels of economic development.

1.70 *Most teachers in Russia are women.*

1.71 *A Dani woman using a digging stick for cultivating sweet potatoes in Irian Jaya.*

1.72 *A cartographer using computing equipment at the National Geographic Society in Washington DC (USA).*

1.73 *Women selling jewellery in the main market of Ashgabat, Turkmenistan.*

Women have been seen as 'beasts of burden', as sex objects, as inferior persons, or as not worthy of having a vote. Such perceptions can diminish the status of women and reduce their self esteem. It is in everyone's interests, men and women alike, to release the female half of the world's population from ideas and practices which may keep women in bondage, suffering and slavery.

Question Block 1Q

1. *Look at the female and male literacy rates shown in table 1.13. Draw column graphs for each country shown to compare the male and female literacy rates.*

2 *Describe the different patterns of female and male literacy rates in developed and developing nations.*

3. *Explain how the GDI can be used to indicate how effectively gender equity is being achieved in a country.*

4. *Which types of countries are (a) most effective, and (b) least effective in achieving gender equality?*

5. *For each of the variables shown on the right hand page of table 1.13, name the country that appears to be (a) most advantaged, and (b) most disadvantaged. What generalisations can you draw from these results?*

6. *In the text, it is stated that ' females tend to be less disadvantaged in more economically more developed countries'. Do you think some countries are more wealthy because their females are more empowered, or do you think the females in those countries are more empowered because the countries are more wealthy? In other words, is there a cause-and-effect between female empowerment and national wealth, and if so, in which direction does it operate? Give reasons to support your answer.*