

**Population and Society**  
**Prof. A. K. Sharma**  
**Department of Humanities and Social Sciences**  
**Indian Institute of Technology Kanpur**

**Lecture No. #16**  
**Demographic Schism between Developed and Developing Countries and Future prospects**

Well friends, this is the third lecture, on the world population growth. In the first lecture, I talked about population growth in ancient society, and showed how for lacks of years world populations remain stable, because in the ancient society, fertility was around seven children per woman. In entire lifetime a woman produces around seven children, which was much below the biological maximum level of fertility, but this seven much below maximum level was maintained due to cultural, and social constraints. Mortality in normal years was perhaps as high or as low as today, but periodically due to epidemic, wars, violence shortage of rainfall or excessive rainfall attack by wild animals, fire, natural devastation, mortality jump to very high level.

(Refer Slide Time: 01:28)



So, periodically there were fluctuations, and in extreme cases mortality went up to may be 250 or 300 per 1000 population per year. I give you the example of European cities, in which when Plague - Bubonic Plague broke out, then in a few days time, nearly 20 to 25

percent of the whole population and sometimes more was wiped out, giving a mortality rate of about 250 per 1000.

So, this was the level and as a result of that world population of the world remain stationary and you have seen that it took at least 5 lakh years to world population to reach the first billion mark. In the second lecture than that I said that in 19th and 20th century world population is started growing. World population do first in the developed countries fair improvement in mortality started in the middle of 18th century sometime. And it continued it took more than 200 years or one can even say 300 years to reach the present day low levels mortality in European countries. Population in developing countries, I have also given you the classification of countries into developed and developing. Population of developing countries remained stable and it was after 2nd world war in the second part of 20th century that when these countries of Asia, Africa, Latin, America, became politically independent and their national government started implementing programs for improvement of health.

Particularly with regards to reduction of mortality and morbidity due to infection diseases special mansion must to be made of malaria diarrhea dysentery tuberculosis, then birth rate is started falling. This fall in birth rate in less developed countries was sudden and as a result of that in the second part of 20th century world population started growing at a fast rate.

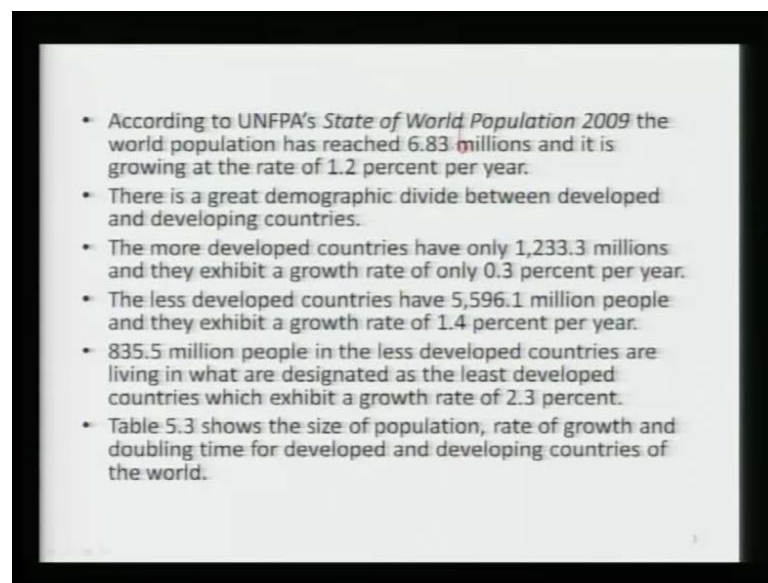
(Refer Slide Time: 04:02)

TABLE 5.2: LANDMARKS IN WORLD POPULATION HISTORY

Billion mark:	Year when the billion mark was reached (AD)	Time to add one billion
1st	1820	Cannot be estimated exactly but it is believed to have taken 5-10 lakh years
2nd	1930	110
3rd	1960	30
4th	1974	14
5th	1987	13
6th	1999	12

Now, just to repeat for maintaining continuity between the last lecture and this lecture, let me repeat that it was in 1820 that the world population is first billion the second billion was reach in 1930 only at a gap of 100 and 10 years. The third billion was reached in 1960 at a gap of 30 years fourth billion in 1974 at a gap of 14 years then fifth billion in 87 and sixth billion in 1999 at gaps of 13 and 12 years respectively. So, this the rate at which world population is growing today. Now, in this lecture I am focusing on the differences between the developed and developing country, the present day developed countries and the present day developing countries.

(Refer Slide Time: 05:01)



According to U N F P A's state of world population in 2009 the world population has been reached 6.83 billion and it is growing at the rate of 1.2 percent per year. U N F P A united nations fund for population activities publishes state of world population every year, according to the latest report available to me world's population report of 2009 the population as reached 6.83 billion. I am sorry it should be billions and it is growing at the rate of 1.2 percent per year. There is a great demographic divide between developed and developing countries and we are talking about this divide today. The more developed countries have 1,233.3 million means 1.2 billion and they exhibit a growth rate of only 0.3 percent per year. So, out of 6.8 billion people in the world 1.2 billion are living in so called developed countries, and the rate of growth of the developed countries is 0.3 percent per year for all the developed countries combined.

There are some developed countries which are experiencing negative rate of growth, and there are some other developing some other developed countries which have a slightly better rate of growth. On the other hand less developed countries have 5596.1 million people means 5.59 billion people and they exhibit a growth rate of 1.4 percent per year. Here also in Asia, Africa, Latin, America there are some countries which have growth rate much below this 1.4.

China for example, second largest country of the world in population has rate of growth much below this but, there are other countries which have rate of growth is still above 2.5 percent per year overall all the all less developed countries combined have population of size 5.59 billion and the growth rate of developing countries is 1.4 percent per year.

Now, I also mentioned that in the category of developing countries a certain number of countries mostly of Africa some of Asia they are also categorized as the least developed countries. 835.5 million people in less developed countries are living in these countries which are designated as the least developed countries and these least developed countries show a growth rate of 2.3 percent per year. You can also see that there is a relationship between development and growth rate, most developed countries have growth rate 1.2, less developed countries in general have growth rate of 1.4, and the least developed of all the developing countries have a growth rate of 2.3. So, there is a negative relationship between development and growth rate of population I will show you a table 5.3, which shows the relationship or data on size of population rate of growth doubling time for developed and developing countries.

(Refer Slide Time: 08:45)

**TABLE 5.3: SIZE AND GROWTH OF WORLD POPULATION AND MAJOR REGIONS, 2009**

World region:	Size of population (millions)	Growth rate, 2005-2010	Doubling time (years)	Projected population in 2050
World:	6,829.4	1.2	58.3	9,150.0
More developed countries:	1,233.3	0.3	233.3	1,275.2
Less developed countries:	5,596.1	1.4	50.0	7,875.0
Least developed countries:	835.5	2.3	30.4	1,672.4

What as a whole size 6829 million growth rate 1.2 doubling time 58.3 and projected population in 2050 is 9150 millions or in billions 9.1 billions.

More developed countries have a population of 1233 million their growth rate 0.3 doubling time is 233 year now, and projected population in 2050 is 1.275.2 million which is not much higher than the present size of population. Less developed countries have present population 5596 million the rate of growth is 1.4 doubling time is only 50 means in 50 years they will double and therefore, in 2050 means around 42 years from now their population would be 7875.0. I am saying 42 because this 5596 is not the population of 2010 this is the latest population given in 2009 report of U N F P A. The least developed countries have population 835.5 and the rate of growth is 2.3 doubling time is 30.4 in 30 years time their population us doubling this is the rate of growth and therefore, in 2050 the total population of the least developed countries will reach 1672.4 millions. That means in 2050 the total population of these least developed countries will become larger than the pop then the present population of most developed countries.

(Refer Slide Time: 10:57)

**TABLE 5.3: SIZE AND GROWTH OF WORLD POPULATION AND MAJOR REGIONS, 2009**

World region:	Size of population (millions)	Growth rate, 2005-2010	Doubling time (years)	Projected population in 2050
World:	6,829.4	1.2	58.3	9,150.0
More developed countries:	1,233.3	0.3	233.3	1,275.2
Less developed countries:	5,596.1	1.4	50.0	7,875.0
Least developed countries:	835.5	2.3	30.4	1,672.4

The divide in population dynamics of developed and developing countries has implication for economic political and social divides, there are also such divides within the less developed countries caused by their colonial past and unequal and capitalist development. So, not all less developed countries are at the same level of development in less developed countries for example, Malaysia, Indonesia, Sri Lanka, India, Kenya, Ghana, Pakistan, Bangladesh they are not at the same level of development there are differences in level of development and these differences in level of development are further reflected in differences in growth rate of population.

Within countries also you find similar, differences in a country like India we have been talking about this that there are tremendous regional differences because westernization started more in urban areas than in large cities and that too in coastal regions. So, no wonder that there are very significant state wise urban rural and regional differences in growth rate of population. Kerala I often call Kerala is the Europe of India and Bihar as the Africa of India so there are very significant differences.

(Refer Slide Time: 12:25)

TABLE 5.4: EXPECTANCY AND OTHER MEASURES OF MORTALITY FOR SELECTED COUNTRIES, 2009

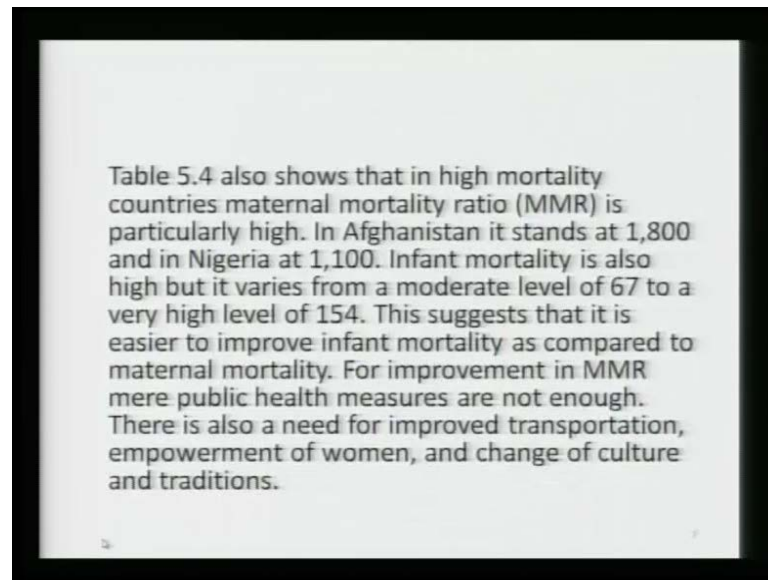
Level of life expectancy:	Country:	IMR per 1000 live births	Life expectancy (NIF)	Maternal mortality ratio
High	Japan	3	79.4:86.5	6
	Hongkong	4	79.6:85.3	-
	France	4	78.0:84.9	8
	Italy	4	78.3:84.3	3
	Switzerland	4	79.6:84.3	5
	Iceland	3	80.4:83.5	4
Low	Mali	104	48.1:49.2	970
	Mozambique	86	47.4:48.8	520
	Nigeria	108	47.6:48.7	1,100
	Lesotho	67	45.0:45.7	960
	Swaziland	62	47.1:45.5	390
	Afghanistan	154	44.3:44.3	1,800

If you look at some extreme cases in developed countries you have Japan, Hongkong, France, Italy, Switzerland which are perhaps the best of demographic indicators. And there are countries in less developing countries Mali, Mozambique, Nigeria, Lesotho, Swaziland, Afghanistan which are at the worse level of demographic indicators, take just I am r in Japan infant mortality rate is three that means in Japan if thousand children are born only three children die during infancy means between zero and one years and all others 997 survive. While in a country like Afghanistan when thousand children are born 100 and 54 of them die in very first year of life in age group 0 to one and only 846 survive to age one. Differences in maternal mortality rate in tremendous in Japan when 100 1000 children are born means one lack children are born only 6 woman died due to factors associated with child birth.

In Afghanistan when equal number of children are born than 1800 women due to reasons associated with child birth differences in maternal mortality ratio are actually much more pronounced in than differences in infant mortality. There are also difference in life expectancy the best life expectancy is for Japan 86 point 5 for females that means a new born girl child in Japan today can expect to survive for 86 years, while a new born girl child in Afghanistan is expected to survive for only 44 years this is the gap from 44 to 86 this is the gap in life expectancy of females.

You also notice that there are gaps in life expectancies of males and females. So, while in Japan life expectancy for females is 86.5 for males it is 79.4 nearly seven years less than for females in Afghanistan life expectancy is low there is no gap between males and females .

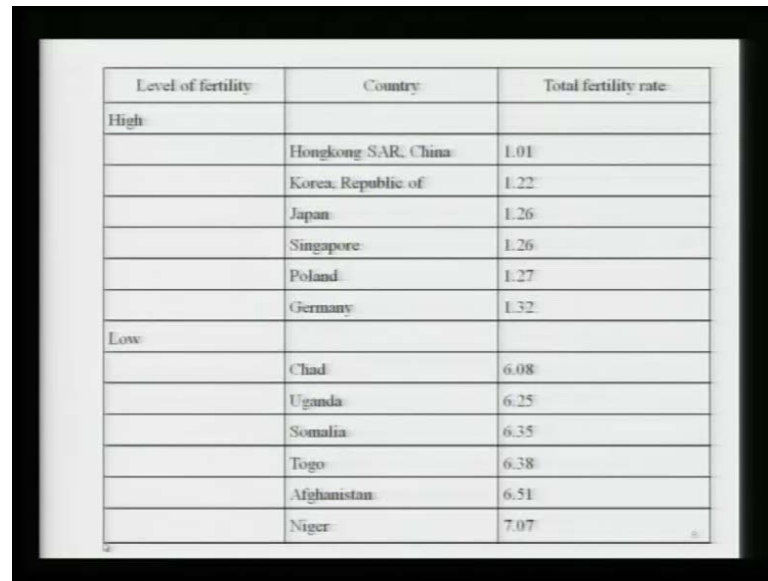
(Refer Slide Time: 15:01)



Now, this table also shows that the differences in maternal mortality are much more pronounced than difference in infant mortality rate. And this suggest it is easier to improve infant mortality by providing basic medical facilities at the time of child birth and by providing clean drinking water, by providing vaccinations perhaps you can reduce infant mortality rate to very low level but, the reduction in maternal mortality rate requires more serious and more concentrated efforts and efforts in diverse areas. Just public health measures are not enough you need to reduce anemia among women, you need to provide transport and communication facility, you have to provide for empowerment of women and many cultural and social factors which affect women's health or health utilization by women those factors will also have to be taken care of then only maternal mortality can decline.



(Refer Slide Time: 16:18)

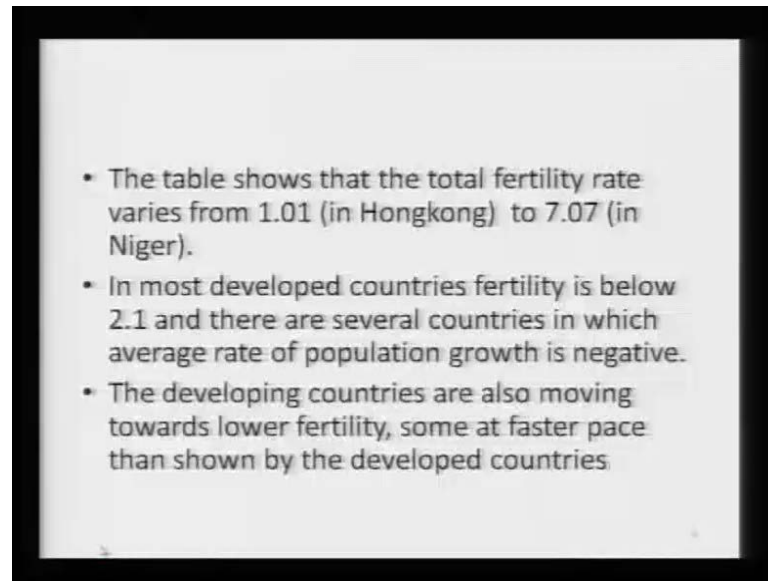


Level of fertility	Country	Total fertility rate
High	Hongkong SAR, China	1.01
	Korea, Republic of	1.22
	Japan	1.26
	Singapore	1.26
	Poland	1.27
	Germany	1.32
Low	Chad	6.08
	Uganda	6.25
	Somalia	6.35
	Togo	6.38
	Afghanistan	6.51
	Niger	7.07

If you look at fertility you find that the differences in fertility are equally pronounced. So, in the countries in the developed countries extremes are Hongkong, Korea, Japan, Singapore, Poland, Germany. In Hongkong total fertility rate is only 1.01 that means a couple means two persons of this generation are being replaced by only one child in the next generation. So, common sense is in the next generation population of hongkong would be just half of the existing population similar, is the case in Korea, Japan, Singapore, Poland, Germany, Germany in these country Germany has slightly better total fertility but, that is also much below 1.5. 2.1 is called the replacement level fertility and all these countries increasingly most of the developed countries are having the fertility below the replacement level. And on the other hand in less developed countries you have Chad, Uganda, Somalia, Togo, Afghanistan and Niger where fertility is 6 or above.

In the extreme case in Niger fertility is 7.07 while talking about fertility in ancient society I was saying that normally fertility of ancient society was at 7 that means, in Niger fertility level corresponds to the level which prevailed in the world 5 lakhs years ago. So, in Niger fertility level is not changed at all so these are the differences in fertility levels.

(Refer Slide Time: 18:17)



The table shows that the total fertility varies from 1.01 in Hongkong to 7.07 in Niger. In most developing countries fertility is below 2.1 and however, the developing countries are also moving towards lower fertility, several developing countries have already moved towards lower fertility Srilanka, China, Indonasia and you can name many other countries where fertility is declining at a fast rate, even in our own country now we do not have a fertility level of 6 which were the case in fifties we are very close to replacement level. And some state of our country we have already reached the replacement level or have gone below the replacement level like Goa or Kerala or Himachal Pradesh. Now, the another factor involve population growth with respect to which you would like to compare developed or developing countries is international migration.

(Refer Slide Time: 19:24)



International migration is a factor which is hard to ignore and perhaps in the future. International migration will affect the world population it is society and culture civilization more than fertility or mortality. The net migration rate in the more developed countries is three per thousand population that means in net term means in immigrants minus emigrants, they have on every 1000 person in developed countries as a whole they have 3 immigrants net immigrants . And according to population division of united nations estimates made in 2005 in some countries like USA, Russian federation and Germany, which come in the category of top 20 countries having largest number of international migrants the migrants constitute more than 5 percent of the total population of the country. This is more than 5 percent of the total population of the country but, within the country there are several regions where percent of immigrants can reach as higher level as 50 percent, in united states in Canada there are several regions which are now full of migrants from Asian and Latin, American countries.

(Refer Slide Time: 20:54)



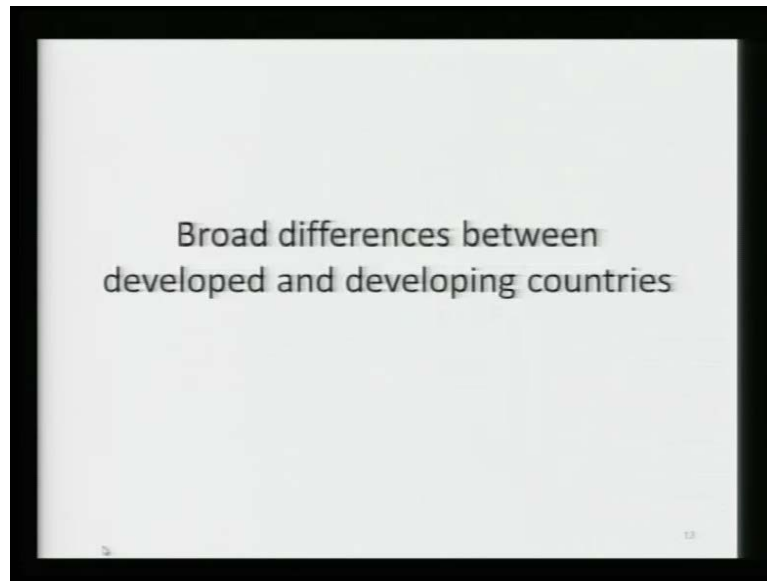
When you came to developing country the net migration rate in developing countries is minus 1 per 1000 means developing countries are receiving migrants they are also sending migrants in terms of net migration . Net migration is negative that means, there are more of sending migrant type and on every 1000 person are sending 1. The 2 rates plus 3 per 1000 for developed countries and minus 3 for less developed countries suggest, that the same amount of migration affects developing countries more than it lessens the demographic burden in the developing countries. Because developing countries have large population base so in net terms their migration is only minus 1 while the developed country which have smaller population about say 30 percent of the world population there the net migration rate is plus 3. Moreover, there are many developing countries within large immigration rate above 5 per thousand and there are many countries like gulf countries there are many gulf countries where the proportion of migrants is quite substantial and in country like western Sahara, Burundi, Seychelles, Botswana, Bahrain, Cyprus, and united Arab emirates.

(Refer Slide Time: 22:17)

Development group and major area	Number of international migrants (millions)		Increment (millions)	Percentage distribution of international migrants	
	1990	2005		1990	2005
World:	154.8	190.6	35.8	100.0	100.0
More developed regions:	82.4	115.4	33.0	53.2	60.5
Less developed regions:	72.5	75.2	2.8	46.8	39.5
Least developed countries:	11.0	10.5	-0.5	7.1	5.5
Africa:	16.4	17.1	0.7	10.6	9.0
Asia:	49.8	53.3	3.5	32.2	28.0
Latin America and Caribbean:	7.0	6.6	-0.3	4.5	3.5
Northern America:	27.6	44.5	16.9	17.8	23.3
Europe:	49.4	64.1	14.7	31.9	33.6
Oceania:	4.8	5.0	0.3	3.1	2.6

We have a very large proportion of migrants, in terms of numbers if, you want to compare developed and developing countries in the world as a whole in 1990 number of international migrants was 154 in 2005 it increased to 190. So, there is an increase of 35.8 million and the percentage distribution of these migration in various regions of the world is like this that 8.4 percent in 1998 2.4 percent of the total international migrants were found in developed regions. 72.5 percent were found in less developed regions and 11.0 percent in the least developed regions. You can also see what is the percentage of Africa, Asia, Latin, America, northern America, Europe, Oania. When you compare this percentages with this percentages is 1990 and the same in 2005. You find that number of migrants has increased in more developed countries, has not changed much in less developed countries and the number of international migrants in least developed countries has actually declined. In terms of percentage share percentage of migrants in more developed regions have increased from 53.2 to 60.5 in least developed countries it has declined from 46.8 percent to 39.5 and in least developed countries it has declined from 7.1 percent to 5.5 percent.

(Refer Slide Time: 24: 20)



There are broad difference between developed and developing countries. I thought that for the purpose of this class.

(Refer Slide Time: 24:27)

Characteristic	Developed countries	Developing countries
Density of population	Varies greatly	Varies greatly
Growth rate	Near zero or negative	Varies from a low growth rate to continuing high growth rate (1-2.5)
Fertility	Below replacement level (1.64)	Declining from moderate to low level (3-4)
Mortality	High life expectancy with a difference of 4-7 years between males and females (above 80 for females)	Low to moderate level of life expectancy with less differences between males and females (58-68 for females)
Migration	Emigration often leading to internal reaction against liberal migration policies	Varies. While most countries sending migrants to other countries, several countries are having significant migration of professionals and workers
Average age of population	Going up. Not only proportion of aged is high, among the aged (60+) proportion of more aged (80+) is increasing.	The process of aging is on. Several countries like have the advantage of opening of demographic window

I can broadly talk about differences in various components and processes of population between developed and developing countries. Density of population in developed countries density of population varies greatly there are some developed countries where density of population is very high mostly European countries there are other developed countries where density of population is less Canada even in united states density of

population is less. In developing country also density of population varies greatly in Africa it is little less, in south Asia it is more and within countries again there are significant variation growth rate in developed countries growth rate of population is either 0 or negative in developing countries it varies from a low growth rate of 1 percent to a high growth rate of 2.5 percent. Fertility, in the developed countries has gone below the replacement level universally and in developing countries, it is declining in a typically developing countries fertility level means, total fertility rate is between 3 and 4 children.

Mortality in developed countries life expectancy is very high, above 80 years for females and there is gap of 4 to 7 years between males and females. Females live longer females are believed to be biologically a stronger sex than males women lives 4 to 7 year longer than males in developed countries. In developing country there is low to moderate level of life expectancy with less difference in males and female. For females life expectancy normally varies from 58 to 68 there are some outliers but, by enlarge life expectancy varies from 58 to 68.

Migration with respect to migration there is emigration often leading to internal reaction against Libran. It should be immigration in the developed countries there is immigration means, some people are living developed countries for other developed countries or less developed countries but, more are coming inside from less developed countries.

Insides of employment, as political refugees and often as a result of climatic change or internal conflicts violence or because of westernization modernization. In developing countries it varies while most countries are sending migrants to other countries several countries gulf countries I mention are having significant in migration or immigration of professionals and workers. Afghanistan, today in as a large number of immigrants who are involved as professionals and workers in reconstruction of Afghanistan. Averages of population is growing up in developed countries. Because, they have low fertility and high mortality means low fertility high life expectancy not mortality thy have low fertility and high life expectancy. So, the average age of population is growing up not only proportion of aged is high among the aged 60 plus proportion of more aged 80 plus is also increasing.

In developing country the process of aging is on several countries have the advantage of opening of demographic window countries like India countries like Pakistan countries like India, Pakistan they have the advantage of opening of demographic window.

(Refer Slide Time: 28:52)

Income levels	Very high	Low to moderate, with some countries having high income (one ninth of the world income level)
HDI	High	Low to medium
Share in the world population	Decreasing	Increasing
Future predictions	Negative natural growth rate	Low to moderate, yet positive growth rate. Population to stabilize at much higher levels
Population policy	Pronatal – aiming at raising the fertility rate	Antinatal – aiming at reducing the fertility rate
Are policies effective?	Not effective or less effective	Difficult to assess as both population policy and improvement in social development are leading to reduction in fertility

In terms of human developing index all the developed country show a high human development index, less developed countries show low to medium, and that is because income the major component of human development index is very high for the developed countries. And in developing countries it goes from low to moderate levels with some countries having high income also but, if these countries have high income then they are poor in terms of other thing like adult literacy or school enrolment rate or life expectancy these are two other indicators of human development So, there are some developing country which are high in income buy they are poor on adult literacy and school enrolment rate and life expectancy. So, they have low to moderate levels of income and low to medium level of human development index .

Share of developed countries in the world total population of decreasing because, there fertility is low and share of developing country is increasing. The future predictions are that all the developed country will have a negative natural rate of growth. Overall growth rate of population may be positive for some but, that will be because the negative natural growth rate birth rate minus death rate is neutralized or more than neutralized by immigrants from the less developed countries. In less developed countries you have low

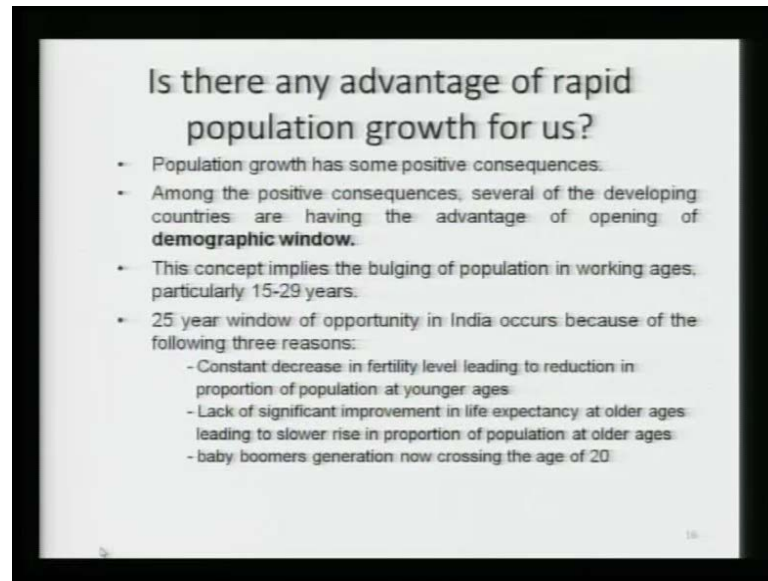


to moderate growth rate yet positive growth rate and population will be stabilized at much higher levels may be in 2050 or 2060 at different dates in different countries population will be stabilized at a much higher level.

Then the regarding population policy because of this region low fertility aging high life expectancy, high human development index, and high requirements of economy. Most of the developed countries are going for pronatal population policy pronatal means in favor of increasing fertility, while less developed countries because they are passing through a phase of demographic transition of population explosion they are going for antenatal policies or policies which discourage reproduction. In some extreme cases like china they have even gone for one child policy but, in some other form most of the less developed countries have antenatal or fertility discouraging policies, or policy is effective in case of developed countries it appears that the policies are not effective and despite incentives to produce more.

The total fertility rate of the developed countries is constantly decreasing. There are some indications in some small number of cases where fertility shows some sign of improvement or stagnation and has stopped declining this called third demographic transition. But, this third demographic transition is only an anticipation we are yet to see how many developed countries will see third demographic transition in which fertility starts improving at least to some decimal points. In less developed countries it is difficult to assess how effective the policies are because at a time when population policies or family planning program is discouraging fertility. There are other factors modernization, westernization, rationalization, circularization improvement in education improvement in transport and communication media messages because of which in even in absence of family planning programs near fertility rates would decline and eventually come to some lower levels. Is there any advantage also of rapid population growth for us we are all the time talking about negative effects of growth rate of population in developing countries.

(Refer Slide Time: 33:45)



Are there advantages also **yes** there are some advantages also. Population growth in less developed countries has some positive consequences, among the positive consequences several of the developing countries are having the advantage of opening of demographic window. This concept implies the bulging of population in working ages particularly in the age group 15 to 29 years is proportion of population is 15 to 29 is prime working ages, proportion of people in prime working ages is increasing, and proportion of people below 15 means children above 60 old, and 30 to 60 older working population is decreasing. In India also we have 25 years window of opportunity, because of the following three reasons, 11 th 5 year documents of India shows that in India we have the advantage of opening of demographic window. There are three reasons. Constant decrease in fertility level leading to reduction in proportion of population at younger ages, because of fertility is constantly declining. So, the proportion of children in age group 0 to 15 is declining.

Second lack of significant improvement of life expectancy at older ages at older ages means 60, 65 there is some improvement in life expectancy but, not much overall life expectancy of India has increased because of reduction in infant mortality rate. So, there is not significant improvement in conditional life expectancies at higher ages. And third baby boomers generation baby boomers generation means, when fertility was high in 70s 80s fertility was high and you know the children were born say in late 80s they are now crossing the age of 20. So, in 15 to 29 you have proportionately more number of people.

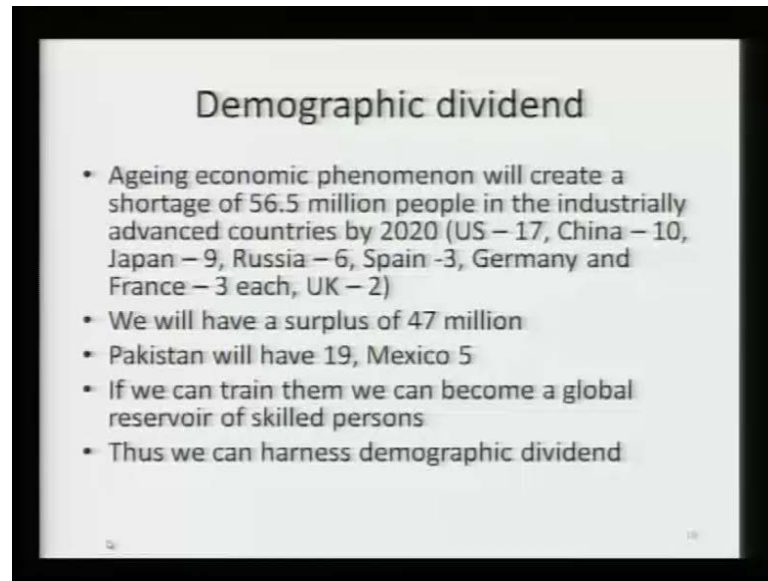
An expansion of the base of age pyramid and gradually as demographic transitions proceed further it becomes a sort of triangular shaped age distribution. So, the children born more than 20 years ago in India when fertility was high are now entering the age group 20 and above, and as a result of that we have a more number of working age people at young at younger ages.

(Refer Slide Time: 36:51)



And if they can be provided enough resources skills training employment then India can give the advantage of that. We are the youngest population of the world median age of population in India means the age below which nearly 50 percent population is found and above which again 50 percent population is found median age of India is 24. Compare this with median age of Europe median age of Europe is 38 years Japan highest Japan median is 41 50 percent population of Japan is above 41 years. So, even china comes under less developed country or developing countries, even in china average age the age distribution of population is such that the median age is the average age of china is 30. More than 50 percent population in china is of age more than 30. So, India has the advantage of being youngest population of the world today.

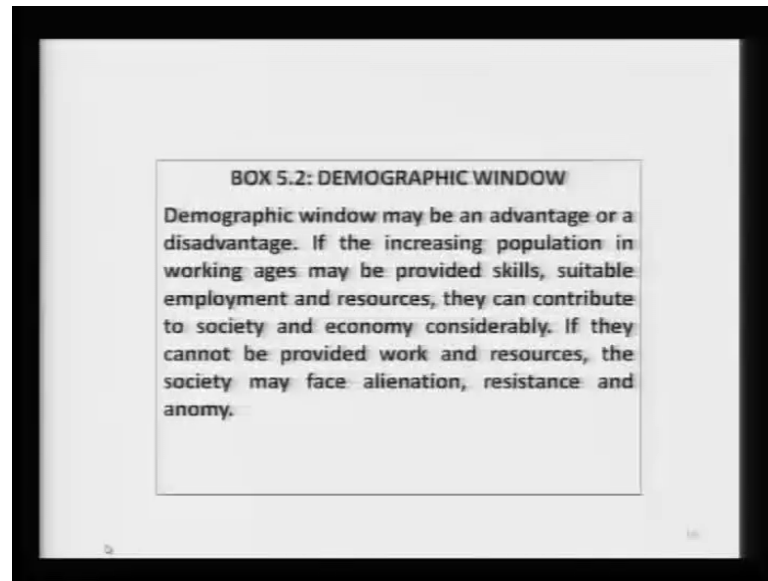
(Refer Slide Time: 38:07)



I have taken these figures from the 11th 5 year plan again, from the chapter on discrete development it shows that aging economic phenomenon will create a shortage of 56.5 million people in the industrially advanced countries by 2020. Because their fertility has gone below the replacement level a couple is replaced by only one child. So, by the time by the year 2020 there will be a shortage of 56.5 million people in industrially advanced countries. In U S alone will be a shortage of 17 million, China 10 million, Japan 9, Russia 6, Spain 3, Germany and France 3, and U K 2 million India will have a surplus of 47 million. So, developed country will be in deficit and India will be having a surplus of 47 million. Pakistan will also have surplus 19 million and Mexico 5. So, if we can train these people if we can so while a industrially advanced countries are going to have a deficit of 56.5 million. We are going to have a surplus of 47 million and if we can provide them resources training then our people can go to the developed countries fill their gap earn money and send them back.

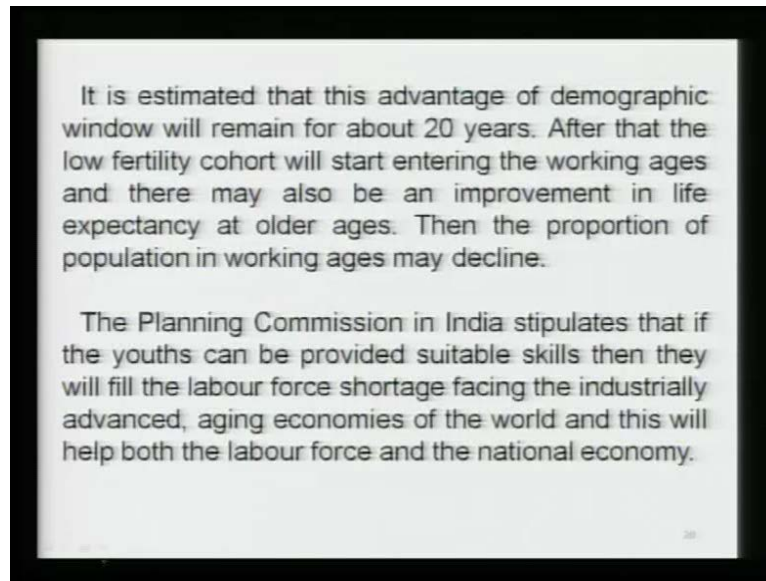
We can our economy can gain tremendously from remittances sent by those people and also from ideas and cultures to be carried by them to our country back, then this way we can harness the demographic dividend to give you a more precise definition of demographic dividend to demographic window.

(Refer Slide Time: 40:19)



I have taken this definition from somewhere it say that demographic window may be an advantage or a disadvantage. If the increasing population in working ages may be provided skills suitable employment and resources they can contribute to society and economy considerably, if they cannot be provided work and resources the society may face alienation resistance and anomy. Remember see, in developed country going to have deficit of 56 they are not totally depending on us suppose, we fail to provide resources and skills to our surplus then they are not going to find any employment in the developed countries. And if Pakistan can do this, if Mexico can do this, if other developed developing countries can do this then those people can be absorbed in the developed countries and 47 million surplus population of India. If they does not have employment then it can only create violence conflicts suspicion disloyalty and distrust in society.

(Refer Slide Time: 41:31)



It is estimated that this advantage of demographic window will remain for about 20 years. Because after that after 20 years some sometimes they say 25 years after 20 or 25 years our fertility will also come below fertility level. Our life expectancy at higher ages is also going to increase. So, this opening of demographic window exist for us only for 20 or 25 years after that our economy will also start aging like economy of the developed countries. The planning commission in India stipulates that if the youth can be provided suitable skills then they will fill the labor force shortage facing the industrially advanced. Aging economies of the world and this will help both the labor force and the national economy in India.

(Refer Slide Time: 42:25)

TABLE 5.8: PROJECTIONS OF WORLD POPULATION AND MAJOR REGIONS

World region	Size of population (millions), 2009	Share in world population, 2009	Projected population in 2050	Share in world population, 2050
World	6,829.4		9,150.0	
More developed countries	1,233.3	18.06	1,275.2	13.94
Less developed countries	5,596.1	81.94	7,875.0	86.06
Least developed countries	835.5	12.23	1,672.4	18.28

Future prospects future is future it is all uncertain will not take much time, but I can say that in 2009 our world population is 6829 and projected population in 2050 going to be 9150 million out of which 1275 will be living in the developed country 7875 will be living in less developed countries and 1672.4 million in the least developed countries. So, the share of world population is going to reduce share of world population in the developed countries is going to reduce to 13.94 only 14 percent of the world population will be living in developed countries, actually much more than that will be living in today's least developed countries 18.28 percent.

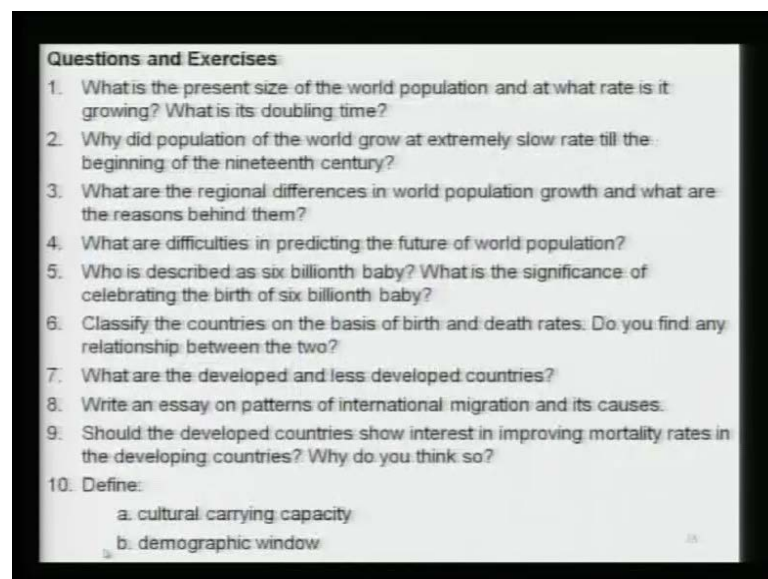
(Refer Slide Time: 43:34)

- ### Various scenarios
- Universally low fertility, characteristic of second phase of demographic transition and national governments worried about it, but not doing anything to raise fertility, leaving it to market forces, civil society and individuals
  - Universally low fertility, and national governments using ideology and political resources at their disposal, to encourage women to withdraw from work temporarily and produce right number of children
  - While most parts of the world have low fertility, some countries, for cultural, religious, political or socio-economic reasons, continue to maintain moderate fertility levels and they fulfil the demographic need of the world community, partly or more than fully
  - There is another demographic transition and after reaching a below replacement fertility levels more and more countries move towards a replacement level fertility or higher fertility.

Now, there are various scenarios universally low fertility, characteristic of second phase of demographic transition and national governments worried about it but, not doing anything to raise fertility, or universally low fertility, and national government using ideology and political resources at their disposal, to encourage women to withdraw from work temporarily and produce right number of children. There are already warning signs and people are saying that there is a negative nathan keyfits denoted demographer say that there is a negative relationship between women's empowerment and society's capacity to survive. If society as a whole feels that too much of education employment and improvement in status of women is leading to such a situation that fertility has gone below one or you will or may be who knows that a large number of women refuse, to produce any child then society may sort of force women to withdraw from work force and expend some times in their life time in producing children.

Then why most parts of the world have low fertility, some countries for cultural religious political or socio economic reasons, may continue to maintain moderate fertility levels and they will fulfill the demographic need of the world community, partly or more than fully. There is or more than fully means more migrants will go to developed countries then they require and there is another demographic transition and after reaching a below replacement level fertility more countries move towards a replacement level.

(Refer Slide Time: 45:18)



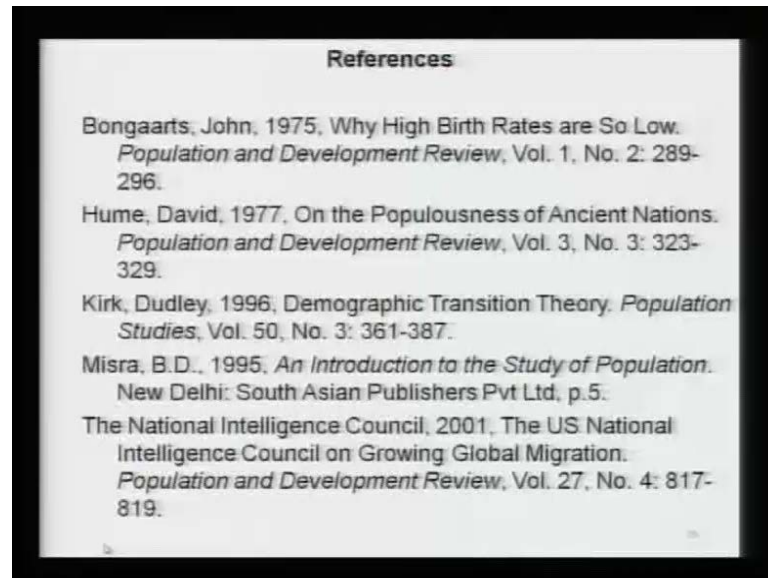
**Questions and Exercises**

1. What is the present size of the world population and at what rate is it growing? What is its doubling time?
2. Why did population of the world grow at extremely slow rate till the beginning of the nineteenth century?
3. What are the regional differences in world population growth and what are the reasons behind them?
4. What are difficulties in predicting the future of world population?
5. Who is described as six billionth baby? What is the significance of celebrating the birth of six billionth baby?
6. Classify the countries on the basis of birth and death rates. Do you find any relationship between the two?
7. What are the developed and less developed countries?
8. Write an essay on patterns of international migration and its causes.
9. Should the developed countries show interest in improving mortality rates in the developing countries? Why do you think so?
10. Define:
  - a. cultural carrying capacity
  - b. demographic window



This is the third demographic trends so this is all I wanted to say today. There are some questions, you will be able to answer them on the basis of this three lectures is a world population growth.

(Refer Slide Time: 45:35)



**References**

Bongaarts, John, 1975, Why High Birth Rates are So Low. *Population and Development Review*, Vol. 1, No. 2: 289-296.

Hume, David, 1977, On the Populousness of Ancient Nations. *Population and Development Review*, Vol. 3, No. 3: 323-329.

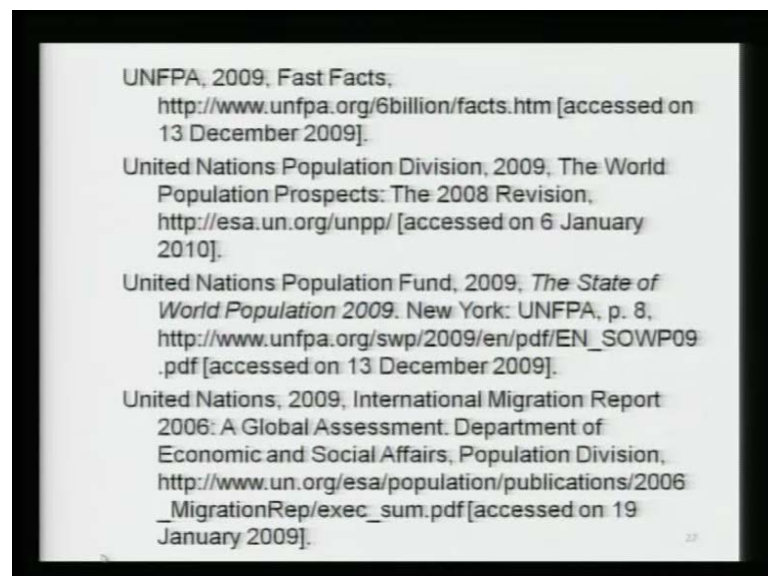
Kirk, Dudley, 1996, Demographic Transition Theory. *Population Studies*, Vol. 50, No. 3: 361-387.

Misra, B.D., 1995, *An Introduction to the Study of Population*. New Delhi: South Asian Publishers Pvt Ltd, p.5.

The National Intelligence Council, 2001, The US National Intelligence Council on Growing Global Migration. *Population and Development Review*, Vol. 27, No. 4: 817-819.

There are some references, if you like to read more on this, you can read from ancient fertility from Bongaarts, on demographic transition, we will talk more on demographic transition later from Dudley Kirk, you can read there is an introduction from to the study of population by B. D. Misra basic book.

(Refer Slide Time: 45:52)



UNFPA, 2009, Fast Facts, <http://www.unfpa.org/6billion/facts.htm> [accessed on 13 December 2009].

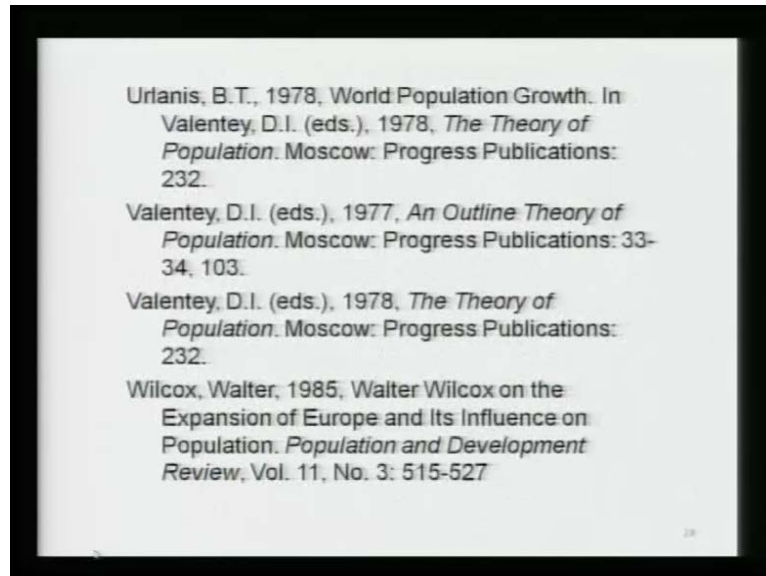
United Nations Population Division, 2009, The World Population Prospects: The 2008 Revision, <http://esa.un.org/unpp/> [accessed on 6 January 2010].

United Nations Population Fund, 2009, *The State of World Population 2009*. New York: UNFPA, p. 8, [http://www.unfpa.org/swp/2009/en/pdf/EN\\_SOWP09.pdf](http://www.unfpa.org/swp/2009/en/pdf/EN_SOWP09.pdf) [accessed on 13 December 2009].

United Nations, 2009, International Migration Report 2006: A Global Assessment. Department of Economic and Social Affairs, Population Division, [http://www.un.org/esa/population/publications/2006\\_MigrationRep/exec\\_sum.pdf](http://www.un.org/esa/population/publications/2006_MigrationRep/exec_sum.pdf) [accessed on 19 January 2009].

You can learn a lot of facts about world population and developed and developing countries from there and that various UN sources.

(Refer Slide Time: 46:01)



Or UN sources are given on the net so this is all I will be happy if you ask one or two questions on the material covered today or population material in general thank. Thank you sir, for such a wonderful lecture, I have a few questions as you said the same amount of migration affects the developed country more than the developing countries. Could you please elaborate how is that lessening the burden of the developing countries. Well roughly speak I said that the rate of immigration the net rate for developed countries is 3 per 1000, for less developed country it is one and that one is negative, is less developed countries sending migrants and developed countries are receiving migrants. Since the share of developed countries in the total population of the world is only one third. So, that shows why the same number when you divide the same number by one thirds it becomes three times. So, the same number of migrants produce plus three in the developed countries and minus 1 in less developed country.

The implications of this is that the number of migrants is same in terms of net migrants the number is same but, this same number has greater impact on the composition of population of the developed countries because there it is 3 per 1000 but, it not lessen the burden of less developed countries so much because there it is 1 per 1000.

Can we say that, because I meant is more on developing countries they have fertility rate.

Yes very good very good question, when we talk of the causes or determinants fertility, when it is said that high mortality is for major determinant of fertility in the less developed countries. Actually three types of factors are often main determinant of fertility one the desired family size, the people in less developed countries want more number of children, and because of mortality and specially in infant child mortality is high so they want more number of children than they actually want to have in their life time due to that fear that some of them might die.

Then there is animate need for family planning there are many couples in less developed countries including India. Who have already produced that much of children with which they are satisfied and they do not want any child more but, due to lack of effective and accessible contraceptive method.

So, if you look at the statistics of family planning in the countries like India. The share of industrialization is too much most users of family planning or most users of modern methods of family planning in India have gone for externalization perhaps say that was the only method that was popularized or forced on people by the health infrastructure of government of India. Knowledge of special methods like condoms is very little and the third factor is age distribution of population itself at least as per as the birth rate is concerned age distribution of population also effects the birth rate or the fertility rate of the country

So, in this certainly you are right that one reason why less developed countries have high fertility, is that they are high mortality and specially in infant and child mortality and there is always a fear. I remember in one of our field work done about 30 years back in a revering district of up in Etah district of up in rural area they connected with study and people used to say that father or parents of one son are like one eyed persons. When I ask them how many sons and daughter, they would like to have they said two sons and one daughter.

Two sons why not one son because father of one son is like one eyed person they wanted to say that as one eyed person in Hindi is always under tremendous anxiety about safety of his only eye. So, if you have only one son and suppose it dies at the time of infant mortality rate of 100 then what do they do. So, since the usefulness of son is very high in agrarian society like ours and infant mortality is also high even today it is not below 50.

So, that is one reason why people want to have more children than they actually desire in their life time you are right.

Sir when you talk about the future predictions you said that negative natural growth rate is in developed countries so what this that negative natural growth

You see as I defined one day natural growth rate refers to difference between birth rate and death rate. A large number of developed countries because their birth rate has gone below the death rate are facing to a situation of negative natural rate of growth, there is the difference between growth rate and natural rate of growth natural growth rate is birth rate minus death rate and overall growth rate also depends on migration

So, there are some countries where birth rate is lower than death rate because of migration because of more immigration from our countries they are able to maintain a non 0 or some positive rate of growth. So, whether developed countries in the future will have somewhat positive rate of growth or a negative rate of growth, while almost all of them will have negative natural rate of growth will depend upon net rate of international migration. If they are able to attract migrants from less developed countries we are going to have a non 0 somewhat positive rate of growth, and if they are failing to attract international migrants from less developed countries then their overall growth rate can be negative because the natural growth rate is negative.

And lastly also why are policies inefficient in developed countries, what are the reasons behind their in efficiency.

Yes both developed countries and developing countries are finding difficult to implement their policies. **Policies** are different in developed country they have pronatal policies and in less developed countries we have antenatal policies, and its not we are finding it difficult to reduce birth rate the developed countries are equally finding it difficult to raise birth rate.

One reason is it that all the developed countries they are democratic countries they are totalitarian countries anymore, and they cannot force anything on people and once their women are educated and women are participating at par with men in socio economic cultural life, they do not want to produce children they do not identify themselves with family and reproduction as a national level country they do. So, for a woman for a girl

like you in developed countries carrier as important as for your husband or as for your father and you are not so much interested in producing in bearing, and Dearing of children as your mothers and grandmothers were so that is the reason.

That is why developed countries are finding it difficult either they have to force women to produce children by withdrawing temporarily or fully from their socio cultural economic life of society or they are going to have this problem of ill effective policies, thanks.