

**Economic Growth and Development**  
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**Lecture – 04**  
**Growth versus development: Some indices of economic development**

Hello and welcome to the 4th lecture of the NPTEL MOOC's course on Economic Growth and Development. I have titled today's lecture as Growth versus development some indices of economic development. In today's lecture, I will introduce you to some of the basic concerns as to why growth is preferable to development or development is preferable to growth. And how there have been various concerted efforts towards bringing together various indices to this literature on growth and development. As in the case of the previous classes, let us begin with a recapitulation of the last class.

In the last class, the last class was planned as a general lecture and it was titled as the global north and the global south. Why they divide? In the last class, I tried to bring in some of the, basic concerns with regard to globalization and how globalization is at the centre of the discourse on the political divide between the global north and the global south.

We looked at what are the Bretton Woods paradigm prescription or the world bank prescription with respect to globalization and how certain there are certain intrinsic assumptions with respect to the global south which makes it possible for the world bank's prescription to work out for the global north.

We also looked at some of the discontents with respect to globalization and how there has been a backlash against globalization across the world. We then, concluded with the reorientation of discussion with respect to international poverty or world poverty, how the global north global south divide has been coming down over the period of last 2 decades or so. And how there are 2 overwhelming concerns or worldviews with respect to world poverty, the World Bank paradigm or the Bretton Woods paradigm and the UN paradigm.

In a today's lecture, I will first introduce you to, the a very important document of the human development called the human development report of 1990, the UN organ. The

United Nations development programmed for the first time brought document which is particularly spoke about the dangers of unwarranted economic growth.

And it also brought about some of the research pertaining to human development achievement levels across countries globally. Let me introduce you to this report first, which focused on human development and not just growth. And, it is also important to note here that, the 1990 human development report of the UNDP came in at a very significant juncture of the world economy.

It came at a time when the world bank and the Bretton Woods institutions comprising the IMF along with the world bank has started prescribing structural adjustment policies and programs for various countries across Africa, Asia and Latin America. Latin American countries were reeling under a debt crisis there was a clear disconnection with respect to economic growth and human development achievements in many countries across the world. And therefore, the 1990 HDR deserves special mention and it is a befitting that I introduce you to this. To the summary findings of this HDR report, report at this point of time, now let us look at what I have tried to put together here is, some of the summary findings. There are 15 significant points that this report is trying to make.

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**Human development and (not just) Growth**

The record of human development over the period 1960s to 1980s were summarized by the 1990 Human Development Report as follows:-

1. Developing countries have made significant progress towards human development in the last three decades.
2. North-South gaps in basic human development have narrowed considerably in the last three decades, even while income gaps have widened.
3. Average of progress in human development conceal large disparities within developing countries – between urban and rural areas, between men and women, between rich and poor.
4. Fairly respectable levels of human development are possible even at fairly modest levels of income.
5. The link between economic growth and human progress is not automatic.
6. Social subsidies are absolutely necessary for poorer income groups.
7. Developing countries are not too poor to pay for human development and take care of economic growth.
8. The human costs of adjustment are often a matter of choice, not of compulsion.
9. A favourable external environment is vital to support human development strategies in the 1990s.
10. Some developing countries, especially in Africa, need external assistance a lot more than others.
11. Technical cooperation must be restructured if it is to help build human capabilities and national capacities in the developing countries.
12. A participatory approach – including the involvement of NGOs – is crucial to any strategy for successful human development.
13. A significant reduction in population growth rates is absolutely essential for visible improvements in human development levels.
14. The very rapid population growth in the developing world is becoming concentrated in the cities.
15. Sustainable development strategies should meet the needs of the present generation without compromising the ability of future generations to meet their needs.

And I have I have put them all together. I will enter into a short discussion with regard to these points. So, as to set the tune for a discussion of the economic indices that we need

to know about. Now, this report talks about the record of human development over the period of 1960s to 1980s.

So, it covers a period of 3 decades across the world and this report had initially taken 14 countries which it had analyzed in the 1990 HDR. However, in the subsequent years and the subsequent HDRs, various other countries have been taken. Almost every country of the world today is ranked based upon the HDI or the human development index. One of the first summary findings of this report was that, developing countries have made significant progress towards human development in the last 3 decades.

Now, let me at this point also inform you how the term human development has been understood or defined in the human development report taking from Amartyasen's analysis of capabilities approach. Human development has mostly been defined as an expansion of choices of people and it is considered to be more than GNP growth, more than income and wealth and more than producing commodities and accumulating capital. So, a person's access to income maybe one of the choices, but it is not the sum total of all choices that an individual makes in her life or his life. Therefore, human development is considered to be a more progressive concept than a GDP or GDP per capita. Now, the elaborate discussions on human development index and the human development literature has anyway been planned in this course in the later part.

So, which is why, I will not go to the details of the human development concept in this lecture. The motivation of this lecture is simply to introduce you to the basic concerns about growth versus development. So, this is the first summary finding of the HDR report which says the developing countries have made significant progress towards human development in the last 30 years or 3 decades. It basically says that several policy exclusions, conclusions from this; he talks about some of the important indicator such as life expectancy and infant mortality rates.

Now, let me also give you a working definition of what is life expectancy and infant mortality rates. Life expectancy is basically the average number of years a newborn is expected to live. If mortality patterns at the time of birth remains constant over a given period of time and infant mortality rates are referred to the infants or who are the young children who die typically those under 1 year per 1000 live births.

Now, what was this summary finding trying to tell us was that, the life expectancy in south, the global south had risen from about 46 years in 1960 to 62 years in 1987, adult literacy rate had increased from about 43 percent to 60 percent. The under 5 mortality rate had come down drastically, primary health care was extended to 61 percent of the population and safe drinking water was provided to about 55 percent of the population and despite an addition of about 2 billion people in developing countries, the rise in food production had exceeded the rise in population by about 20 percent.

So, which means that given, despite the lowness of levels of income in the developing countries, the developing countries had made significant progress in terms of human development and in many countries. However, the report also very cautiously pointed out that in many countries of Africa and Latin America, the 1980s had witnessed stagnation or even reversal in human achievements.

The 2nd important point that, this report was making was with respect to the north south gaps in basic human development and it said that the north south gaps in basic human development had narrowed considerably in the last 3 decades even while income gaps had a widened. Now, in 1987 the average per capita income in the south was about 6 percent of that in the north, but its average life expectancy was about 80 percent of the northern average and its average literacy rate was about 66 percent. So, developing countries had reduced their average infant mortality from about nearly 200 deaths per 1000 live births to about 80 in the decades between 1950 and 1988. So, the message here was very clear that, the task of developed that the, that taking the developing world to an acceptable threshold of human development can be accomplished. So, well, the north south gaps have narrowed in.

But the report also pointed out that, the north south gap in terms of human development achievements have narrowed down, but they continue to widen in advanced knowledge and high technology; which is why, there was a lot of focus on technology transfer between the developed countries in the developing countries which is something with that I had focused on in the last lecture as well. The 3rd important point was with respect to the following, that the average of progress in human development still conceals large disparities while we are talking about the progresses made in human development in terms of life expectancy or infant mortality or safe drinking water and so on.

There are various other inequalities that still get concealed in the human development index as well; while the income the GDP estimate brings down does not take into account various inequalities the human development index also does not bring out various inequalities such as that between the urban and rural areas, between men and women, between rich and poor..

So, the rural areas in developing countries while they have declined, while they have brought about an increase in the achievement of human development levels, there continues to be a large rural urban disparity as far as the achievement of human development levels is concerned. Literacy rates for women are still only about two-thirds for those of women and this also shows that women in the 3rd world of the global south continue to be some of the most deprived communities.

Similarly, high income groups of an preempt many of the benefits of social services levels of health education and nutrition among higher income groups far exceeds of the poor in many countries. So, therefore, the inherent inequalities within the developing countries did not come out or has not come down even if large progresses have been made in human development across the country, across the developing world.

The 4th point was with respect to and this was an important point that, the human development report was making that fairly respectable levels of human development were possible even at fairly modest levels of income. There were various claims being made between the 1950 60 70s and 80s when the growth models were at its peak, that it is not possible to carry out invest in human development issues because; incomes of these countries are anyway very less.

And they should focus more on investment in foreign exchange, investment in exports of primary goods and services rather than on human development achievements. And the HDR 1990 took the example of Sri Lanka and it showed that Sri Lanka managed a while in 1990 the average world income was about 11000 US dollars the this was the per capita income of the industrial world.

Sri Lanka had a per capita income of about 400 US dollars. But in spite of this, Sri Lanka managed very high life expectancy of about 71 years which was compatible to the industrialized countries and it had an adult literacy rate of about 87 percent which was also comparable with the industrialized countries. On the contrary, Brazil had a life

expectancy of only 65 years and its adult literacy was about 78 percent; whereas, its per capita income in USD was about 2020 dollars.

Similarly, Saudi Arabia had a per capita income of about 6200 dollars. Its life expectancy was 64 years and the adult literacy rate was estimated to be about 55 percent. So, what matters is how economic growth is managed and distributed to it is for the benefit of the people in a country. So, it is so, this HDR summary finding clearly dispelled the myth that, it is only at very high levels of income, investments will be possible in human development achievements.

The 5th important point that it made was with regard to the link between economic growth and human progress and it clearly stated that this is not an automatic link. It showed that, if distribution of income is unequal and if social expenditures are very low human development will not take place. So, even if there is very high levels of income in a country, it is important to look at how this income is distributed across the population in the country.

And this was an important finding. Again, there were examples taken of Sri Lanka, also of Botswana and Malaysia which during the period of structural adjustment had ensured that some of it, some of the incomes are equally distributed with respect to social services in these countries and it and the HDR are also noted that these countries had made impressive achievements in human development because, they had well-structured social policies and expenditures. Now, distributive policies and which means that this finding was focusing on the idea of distributive policies.

How the social sector expenditure policies are carefully planned out such that, they reach all sections of the population and distributive properly planned, distributive policies can go a long way in compensating for the effects of low GNP growth of the developing countries. The number 6 point was with respect to social subsidies of the poorer income groups and this is again a significant point.

As I have already pointed out that the 1990 HDR came on the wake of when the structural adjustment program conditional loans, prescription of the World Bank and the IMF was at its peak. It was talking about bringing down of social subsidies, social sector expenditures in health, in education, in food, in agriculture, in industry and so on and so forth. That was a time when the HDR 1990 comes in and says that social subsidies are

absolutely necessary for poorer income groups and particularly for the 3rd world whether is uneven income; their incomes are not distributed properly.

And, this is also for the first time literature in this area thickened which said that growth simply does not trickled down. So, the trickledown effect does not take place. Free market mechanisms maybe vital for allocative efficiency, but they do not ensure distributive justice. The number 7 point was about developing countries are not too poor to pay for human development and they can take care of economic growth.

There was this view that, human development can be promoted only at the expense of economic growth and HDR noted that this poses a false trade off and is it mistakes the purpose of development and underestimates returns on investment in health and education. In fact, a certain calculations were carried out which showed that with a 1 percent investment made in education and health, what would be the returns to private investment? Which means that, if the enrollment, say of children in schools are increasing or if somebody is completing primary education, what will be it is effect on the overall investment in the economy.

And, for Africa, it was shown that private returns to primary education was as high as 43 percent, in Asia, it was as high as 31 percent and in Latin America it was as high as 32 percent. So, social returns private returns or private returns meaning increase in investments because, you have a more skilled population; you have more technical a workforce within the economy it leads to more of private returns to investment.

Social returns from female literacy were also shown to be much higher in terms of reduced fertility, reduced infant mortality, lower school dropout rates and improved family nutrition and lower population growth. Which basically means that if you are investing more and more on the females and the education of females, if you are spending more on the health of girls and women and so on and so forth. Then it leads to lower school dropouts, it leads to higher productivity of the labor force and so on and so forth.

The 8th point that, this report made was with respect to the human costs of adjustment or of an a matter of choice and not of compulsion and this came. This is also again significant in the wake of the world bank prescriptions which says, there which says that, you need that country is needed to adjust because of the fiscal imbalances that have taken

place the countries need to adjust. However, the report pointed out that adjustment is a matter of choice and not compulsion. While taking care of fiscal prudence within an economy, the countries across the world can decide particularly in the developing countries of the 3rd world can decide where their money should go to, whether they should sustain their expenses on the social sector such as health education food and so on.

And many countries and also during this period while many countries across the 3rd world or the global south went on to reduce social sector expenditures, the military spending had risen and the HDR 1990 was posing an ethical question of whether it is in whether it is alright to increase spending on military on the head of defense and military purposes and reduced social sector spending on education and health and food and so on.

The 9th point was regarding a favorable external environment which is vital to support human development strategies. In the 1990s, this point was made because comparable estimates showed that, the net transfers, foreign exchange, transfers from the developed world to the developing countries had come down drastically during the period of 1980s. And the estimates actually show that the net transfer of resources to the developing countries had reversed from a positive flow of 42.6 billion dollars in 1981 to a negative flow of 32.5 billion dollars in 1998. Primary commodity prices had reached their lowest level since the great depression of the 1930s.

And foreign debts of the developing countries more than 1.3 trillion dollars and it required nearly about 200 billion dollars a year in debt servicing alone. And this was the figures that was provided with the 1990 HDR the figures will be revised in the must have been revised in the recent years.

However, the important point to note here is that, a large amount of reserves went into debt a servicing which means, you are paying an interest rate on the conditional loans provided by the international financial institutions on the conditions of opening up your markets, opening up the markets of the developing countries. So, the HDR pointed out in the 1990s, it is imperative to the rich countries start transferring resources to the developing countries.

The number 10 point was that, it focused it is attention on Africa; particularly, the sub Saharan African countries and it showed that Africa continues to suffer greatest human



death and deprivation particularly, those in the south of the Sahara. And Africa has the lowest life expectancy of all developing regions, highest infant mortality rates and the lowest literacy rates its average per capita income also fell in the 1980s. So, there was a growing trend of concentration of poverty in Africa and all concerted international efforts should focus on Africa was the message provided by the human development report of 1990.

The number 11 point that the HDR made was with respect to technical cooperation which must be restructured if it is to help build human capabilities and national capacities in the developing countries. It was found that the amount of technical assistance provided by the developed countries to the developing countries mostly comprised of spending on their technical expertise.

And some of the estimates are show that technical assistance to Africa amounted to about 4 billion dollars the year which was about 7 dollars a person which means that, this much amount was being spent on the technical experts being sent from the developed world to the developing countries and this must stop, this spend, this amount of spending on technical.

So, which means that nation building exercises must take place within the developing countries and local experts must be built. There must be training of national personnel such that, such kind of expenses on technical expertise in the developed world must come down, it was also stressed that the involvement of NGOs is crucial to any strategy of a successful human development. Role of the state was redefined by in this HDR and it underline the importance of the NGO movement the non-government organization movement and also of the self-help groups.

And it clearly said that the NGOs are generally small flexible and cost effective and most of them aim at building self-rely and development. They understand the local needs well and therefore, it is important that NGOs become a part of the state machinery where the they work together with state. And therefore, there was a tendency toward, there was an effort towards the redefining the role of the state by including the role of NGOs and other organizations. The next point was with regard to significant reduction in population growth rates.

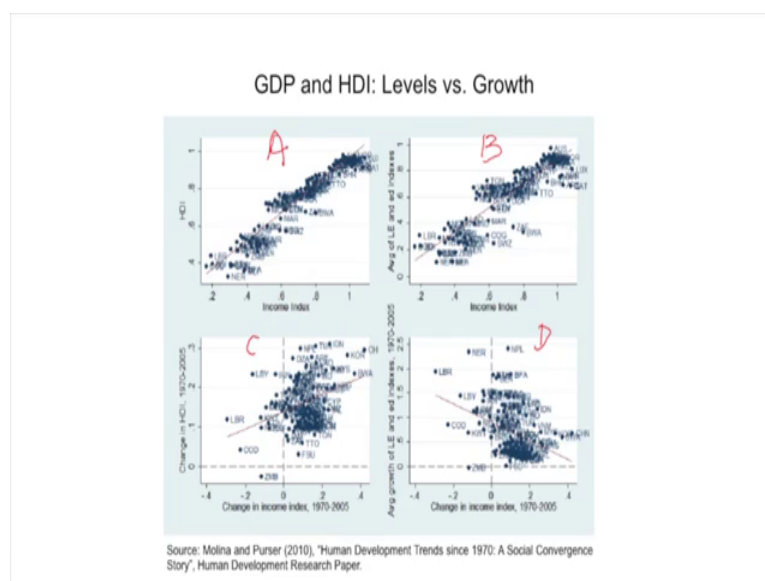
Now, if we look at the period between the 1950s and the 1980s, although the population growth rate had decline, the levels of population was still very high in developing countries. And therefore, the HDRs suggested appropriate mechanisms to contain population growth rate in the developing countries. The next was with regard to rapid population growth in the developing world becoming concentrated in the cities.

And this is something which I had discussed in the last class as well, that while, and this was also of fall out of the rapid globalization and privatization policies, that were followed in the developing countries that while the massive retrenchment of workers from the agricultural sector to place in the rural areas. And they have no way to move to other than this the cities or the urban areas. But the cities have not come up with enough industries to be able to be able to absorb the massive incoming of these workers from the rural areas. So, there is a lot of concentration in the cities without proper infrastructural arrangements, without proper health facilities, without proper education facilities and without any employment and that is a major concern.

The last point that the HDR 1990 was making was with respect to sustainable development strategies and this is mostly about not compromising the ability of future generations to meet their needs. And there is of course, a growing consensus on this, but the HDR underline the importance of broadening the concept of sustainable development by not just including protection of natural resources and physical environment, but also including the protection of future economic growth and future human development.

If I have to give you a sense of very briefly a sense of what we are arriving at here, by looking at the summary findings of HDR, this is to say that there has been a lot of discussion with regard to growth versus development. The growth of national income is not all growth of GDP per capita incomes is not all one needs; to look at the overall a human development of a country, to be able to come up with compare to be able to come up with a conclusion with regard to how far we have progressed.

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Now, taking this discussion forward in 2010, scholars such as the George grey Molina and (Refer Time: 25:31) they came up with a very interesting paper titled human development trend in 1970, a social conversion story and what they were trying to do here is very interesting. In this paper, they took a unit set of data of the human development index of 111 countries to describe how they have progressed between the period of 1970 to 2005.

And they were trying to examine a simple question that, do HDI an income measure the same thing there was certain general conclusions from this paper which I will first point out and then I will explain this figure. I will explain this figure in sometime here, but some of the general conclusions that Molina and Mark Preserver emphasizing on what is follows they found that 110 of the 111 countries had showed considerable progress in the HDI levels over this period of 1970 to 2005 over this 35-year period. Which means that it is not that, no progress took place in the developing countries, they had considerably progressed in education, in health, in drinking water facilities, in basic needs, basic facilities and so on and so forth.

The 2nd point that they were trying to make was that HDI growth was fastest for a low HDI and middle HDI countries in the pre-1990 period; which means that, post 1990, the growth of human development levels have declined in the low HDI and middle HDI countries. But in the pre-1990 period, because of various programs and policies followed

by the governments, the human development levels had increased at a rapid rate in the low H, in the so called low HDI and middle HDI countries.

They also said that, life expectancy and education components grow much faster than income in these countries. And most importantly, they found that income and non-income components of HDI change have a near 0 correlation. There is no, there is no correlation between income and non-income components.

So, as I said, they were trying to examine a very straight forward question that, does HD; do HDI and income measure the same thing and many detractors, there are many detractors of the human development concept and as well as of human development index. As there are detractors of various indices and concepts, they claim that HDI or the human development index basically follows income which means that, HDI and income have a positive correlation. If income rises, HDI rises; if income goes down, HDI comes down.

So, they say that HDI is an unnecessary addition to this literature and GDP per capita is enough. Now, there is a lot of literature trying to dispel this claim the 1996 human development report is notable among them. However, such de detractors continue to exist. But, let us look at the Molina and pursers claim, purser's examination of GDP and HDI levels in this 2010 paper that they carried out. They try to refute this claim that HDI and income are interchangeable and instead, they find that the non-income components of HDI provide valuable insights into understanding how human development has changed over time.

If you look at this graph, it has 2 panels; the upper panel and the lower panel. You need to read this graph from left to right. The upper, let us say in the upper panel, the left graph let us say, it is a graph a the panel A panel B then, panel C and panel D.

In panel A, there you see the plots of an income index against HDI for the year 2005. In panel B, shows income index against the non-income indicators of average of life expectancy and education for 2005. Panel C shows the change in income index between 1970 to 2005 and the change in human development index between 1970 to 2005 and panel D, which is the most interesting one; it shows the change in income index against the average growth of life expectancy and education indices of 1970 to 2000 between 1970 to 2005.

Let me begin explaining each of these panels one by one. The first panel of this figure shows what critics often point out in demonstrating, how closely HDI and income are related. So, this figure shows how HDI and income index levels move together or more positively correlated in 2005. And you see that there is, in fact, a very high degree of positive correlation and this paper states that, it was about 95 percent. It shows about a 95 percent correlation which means, at very high HDI levels also, necessarily means very high income levels and visa versa. Panel B plots the income index against the average of education and health indices and this shows in this relationship begins to weaken, if you see the scatter plots start falling apart from the trend line on the line that has been fitted.

However, there still seems to be a very high positive correlation and this is only for 2005 and the paper states that the correlation is about 88 percent, but the correlation seems to have weakened from panel A to panel B. In panel C, the relationship almost breaks down and this graph shows the absolute difference from 1970 to 2005 for HDI and the income index the fitted line is still upward sloping. There is some kind of a positive correlation.

But there is substantial variation among the 111 countries in the sample. Note here that, the index on the y axis here is of the human development index and on the x axis is the income index. However, the panel D shows that the positive relationship completely disappears. The line is now showing a negative relationship between change in income index and the non-income indicators of average growth of life expectancy and education. Now, one cannot of course, claim that the relationship between income and non-income components is inherently negative, but the empirical exercises carried out by various scholars based upon the data from the various countries shows us that the advances in incomes need not necessarily translate itself into advances in other human development dimensions. And it is very clear from these graphs, but the aggregates; obviously, painted a different picture as you see in panel A and panel B and panel C. But, if you disaggregate the components in terms of individual indicators, incomes need not necessarily move in the same direction as that of say life expectancy and education. And this I think is an important thing to be noted here.

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### A Physical Quality of Life Index

Morris D. Morris published a paper titled "A Physical Quality of Life Index" in the Journal Urban Ecology in November 1978. In this paper he talked about the following:

- There is an increasing interest in measuring the extent to which the very poor benefit from economic development policies. Neither per capita Gross National Product nor any other monetary measure derived from the GNP is a very satisfactory indicator of how social benefits are distributed.
- Other measures, for example those based on nutrition or health standards, tend to be very ethnocentric.
- The Physical Quality of Life Index (PQLI) is an attempt to create a practical measure of social distribution that will avoid the limitations of the GNP, that will minimize cultural and developmental ethnocentricity, and that will be internationally comparable.
- It uses three indicators: literacy, infant mortality, and life expectancy at age one.
- Each is placed on a fixed 1–100 scale. The worst (= 1)
- is set on the basis of historical experience; the best (= 100) is fixed in terms of what might be achieved within the next half-century or so. Having placed the three indicators on a common scale, the composite index is the result of an equally weighted summation.
- The PQLI is relatively neutral. It measures results, not inputs.
- To the extent that we can explain why a country like Sri Lanka, with a per capita income of \$150, has a very high PQLI, the index may lead us to less costly methods of life quality improvement (as measured by the index) than now are used.

Now, let us move on to having introduced you to this debate or concerns with respect to growth versus development. Let me now come to what has been the motivation of trying to bring these ideas to you. The motivation is simply to tell you that, while GDP per capita or national income accounts continue to dominate the mainstream thinking, the mainstream literature of growth and development. There have been concerted efforts and continuing efforts. There are efforts continuing that show that there are other estimates of importance.

There are other indices which can be more representative of telling us the levels of development of a country and it is also important to note here why we are emphasizing so much on indices, why we are emphasizing so much on an estimate, the GDP estimate or the HDI estimate or some other estimates that I will be discussing now. It is important because we are looking at compatibility of countries here.

When we are looking at growth models, when we are looking at development models, what we are interested in is, to look at how one country is performing with respect to the other, how one region is performing with respect to the other. And therefore, the emphasis on coming up with some kind of an index which will be comparable across countries.

Now, let me begin with some of the indices one of the indices that was introduced in 1970s. It was referred to as the physical quality of life index and this index was posed

directly against the GDP estimates. The, it was an attempt to measure the quality of life or well being of a country.

And this value is basically an average of 3 basic statistics; that is, basic literacy rate, infant mortality rate and life expectancy at age 1. This index was constructed for an organization called overseas development council by a sociologist named Mores; De Mores. He published a paper titled a physical quality of life index in the journal urban ecology and he said the following about this index.

One of the first thing he said was, about the this index was, a posited against the economic against the GNP or GNP measure any or any other monetary measures of development because, there was a lot of dissatisfaction with respect to the GDP and the GNP estimates as I did not sure how the social benefits are distributed. Secondly, this index came up because a various other standards of development such as nutrition and health were supposedly more ethnocentric.

In character, now ethnocentrism basically means that, you are evaluating others culture based upon the standards of your own culture. For examples, food, what we eat in India may be different from what people eat in Sudan; and if and similarly, what people eat in Sweden or in USA.

But, if we are comparing the standards of food or the standards of what should be the amount of food taken, what should be the variety of food taken, based upon what is being consumed in say Sweden or USA, then of course, we are committing an error here. And this is largely what ethnocentrism basically means. And, most and there were various nutrition and health standards of measurement that went on in the 1960s in the 70s, even in the 50s; however, it suffered from this very problem of ethnocentrism.

And, this is why, mores comes up with a more comparable estimate of physical quality of life index and he did say that it is basically to minimize cultural and developmental ethnocentricity and can be internationally comparable. So, this measure is a relatively easy to calculate measure there are all of these are indicators literacy rate, infant mortality rate and life expectancy at age 1 are converted into indices and these indices, all these indices are have equal weights.

And then, there is a simple arithmetic mean calculation that takes place based upon all of these 3 indices. The scale is from 1 to 100 and based upon historical experience, the worst is 1 and the best is 100 and then, it is simply arithmetic mean of equally weighted and all the indicators are equally weighted. Now, based upon the PQLI, various experiments were carried out, various experiments in comparing levels of development across of countries were carried out.

And it was shown that Sri Lanka which had a per capita income of 150 dollars and this was in 1970s had a very high PQLI or a physical quality of life index. And Mores also proposed and suggested that this index that may actually lead us to less costly methods of life quality improvement as done now are used.

Now, that is when the physical quality of life index was doing the rounds of measuring quality of life in the growth and development literature, various criticisms came up; various criticism came up showing that, this does not sure this does not tell us much about human welfare. However, various experiments were carried out in actually implementing the. Actually, constructing of PQLI for countries and policy interventions also took place based upon the PQLI.

The human development index I will not going to the details of the human development index as it is meant to be taken up in the later part of this course. However, just to introduce you to the basic dimensions of the human development index, this of course, came up in 1990; much later after the PQLI. But, it draws a lot from the experiences of the PQLI.

There were 3 major dimensions first was to lead a long and healthy life. It was the most he talking about health indicator to acquire knowledge, that was an education dimension. It talked about education indicators and to have access to resources are needed for a decent standard of living which basically talked about an income indicator.

So, health, education and income the 3 important indicators that were taken up in the construction of the HDI the HDI was a clear improvement over the PQLI because, the PQLI completely denied the importance of income. In the index and the importance is only on outcome indicators of literacy and health.



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### Human Development Index

- Human Development Index (HDI) on the basis of three basic dimensions of human development:
  - to lead a long and healthy life
  - to acquire knowledge and
  - to have access to resources needed for a decent standard of living
- that "the IHDI is the actual level of human development (accounting for inequality)", and "the HDI can be viewed as an index of 'potential' human development (or the maximum HDI that could be achieved if there were no inequality)".
- The index is based on the human development approach, developed by Li Haq, often framed in terms of whether people are able to "be" and "do" desirable things in life. Examples include—Beings: well fed, sheltered, healthy; Doings: work, education, voting, participating in community life.
- HDI is similar to PQLI in terms of the indicators but differs on the inclusion of income level in HDI and exclusion of the same from PQLI.
- HDI works better than PQLI as a measure of development because it represents both the physical and financial attributes of development.
- It must also be noted that the freedom of choice is central—someone choosing to be hungry (e.g. during a religious fast) is quite different to someone who is hungry because they cannot afford to buy food.
- The Human Development Index (HDI) is a composite statistic (composite index) of life expectancy, education, and per capita income indicators, which are used to rank countries into four tiers of human development.
- The 2010 Human Development Report introduced an Inequality-adjusted Human Development Index (IHDI). While the simple HDI remains useful, it stated

Whereas, income was not taken as an important indicator; but, the HDR of 1990 or the developments in the 1980s 70s and 80s has clearly shown that, while income is not the only indicator of economic development. It is definitely an important. One it needs to be associated with various other components of development as well.

So, HDI works better than PQLI as a measure of development because, it represents both physical and financial attributes. It is a composite index like the PQLI. We will see that in detail in the later classes.

In 2010, the human development report came up with an improvement over the HDI where they were adjusting for inequality in countries. And therefore, they came up with the inequality adjusted human development index and it is said that the IHDI, measure the actual level of human development because, it is accounting for inequality within the countries.

So, simple HDI remains useful. But, IHDI gives more insights into the potential of human development across countries. This is the next 2 points are about the definitions of the human development, which I believe we will keep it for the later classes.

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### Gross National Happiness

- ① The phrase 'gross national happiness' was first coined by the 4th King of Bhutan, King Jigme Singye Wangchuck, in 1972 when he declared, "Gross National Happiness is more important than Gross Domestic Product."
- ① The GNH Index is decomposable by any demographic characteristic, meaning it can be broken down by population group, for example, to show the composition of GNH among men and among women, or by district, and by dimension, for example to show which group is lacking in education.
- ① The GNH Index includes nine domains: Psychological wellbeing, Health, Education, Time use, Cultural diversity and resilience, Good governance, Community vitality, Ecological diversity and resilience, Living standards
- ① The Gross National Happiness Index is a single number index developed from the 33 indicators categorized under nine domains. The Centre for Bhutan Studies constructed the GNH Index using robust multidimensional methodology known as Alkire Foster method.
- ① The concept implies that sustainable development should take a holistic approach towards notions of progress and give equal importance to non-economic aspects of wellbeing.
- ① The concept of GNH has often been explained by its four pillars: good governance, sustainable socio-economic development, cultural preservation, and environmental conservation. The four pillars have been further classified into nine domains in order to create widespread understanding of GNH and to reflect the holistic range of GNH values.
- ① In creating the Gross National Happiness Index, Bhutan sought to create a measurement tool that would be useful for policymaking and create policy incentives for the government, NGOs and businesses of Bhutan to increase GNH.
- ① Gross National Happiness is instituted as the goal of the government of Bhutan in the Constitution of Bhutan, enacted on 18 July 2008.
- ① The GNH Index includes both traditional areas of socio-economic concern such as living standards, health and education and less traditional aspects of culture and psychological wellbeing.
- ① Criticisms are largely pertaining to the use of the term "happiness".

There is another concept which has been doing rounds in the last few years and this is referred to as the gross national happiness index. And this index has also the backing of the United Nations. Now, this is more this was first carried out in Bhutan and has now been replicated in many other countries as well. It is variously known as the wellbeing index or the national happiness index.

But, it was it came into the vocabulary of growth and development literature in 1972, in the King of Bhutan said that, gross national happiness is more important than gross domestic product and the recent estimates that have been carried out for the country of Bhutan shows us that there are 9 domains which are considered for calculation of the gross national happiness index.

The psychological wellbeing, health, time, use, cultural diversity and resilience good governance community, vitality, ecological diversity and resilience in living standards and this resilience in living standards is a proxy for income. And this index of GNH has been highly acclaimed because, it talks about sustainable development and it takes a holistic approach towards motions of progress and give equal importance to non-economic aspects of wellbeing. Various organizations have come together for providing estimates based upon the gross national happiness index.

However, the major criticism with respect to the GNH is the term happiness or the measurability of wellbeing of individuals within a country. Because, here we are talk

talking about subjective wellbeing than objective wellbeing. So, we are talking about measuring something measuring a subjective attribute, then, something which is more objective in nature.

We will also take up a discussion on the various elements of a subjectivity and objectivity in measured in measuring and index. When we come to the human development index, however, this is just to tell you that the gross national happiness index has also been forwarded or advanced as an alternative to the GDP estimate.

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**Sustainable Development Indicators**

- In the **Earth Summit in Rio de Janeiro in 1992**, the role of social and environmental indicators has become the focus of much attention.
- Rio's Agenda 21 commits all 178 signatory countries to expand their national accounts by including environmental costs, benefits and values.
- Sustainable development has been defined in many ways, but the most frequently quoted definition is from the **Brundtland Report**.
- According to United Nations World Commission on Environment and Development (WCED) in the **1987 Brundtland Report**, development is said to be sustainable if it "meets the needs of the present without compromising the ability of future generations to meet their own needs".
- There are numerous single and composite indicators of sustainability used which include environmental, social, economic and sustainable development dimensions, some of them are:

Environmental Sustainability Index (ESI),  
Ecological Footprint (EF),  
CO2 ecological footprint (EFCO2),  
Dashboard of Sustainability (DS-SDI),  
Dashboard of Sustainability Environmental Sector (DSEnv),  
Green GDP,  
Index of Sustainable Economic Welfare (ISEW),  
Sustainable Net Benefit Index.

In the recent years, there have been various sustainable development indicators if you can recall from the last class, where I mentioned about the one of the important limitations of GDP being that the environmental damages are not considered as a debit. Therefore, various efforts have gone on to come up with sustainable development indicators the notable amongst them being environmental sustainability index.

We have ecological footprints carbon dioxide ecological footprints dashboard of sustainability green GDP index of sustainable economic welfare sustainable net benefit index and so on and so forth. It is impossible to get into the details of each of these indices in these classes; however I would like to focus on one, the green GDP.

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### Green GDP

- Many economists, scientists and other scholars have theorized about adjusting macroeconomic indicators to account for environmental change. The idea was developed early on through the work of Nordhaus and Tobin (1972), Ahmad et al. (1989), Repetto et al. (1989), and Hartwick (1990).
- In 1972, William Nordhaus and James Tobin introduced the first model to measure the annual real consumption of households, called the Measure of Economic Welfare (MEW).
- MEW adjusts GDP to include the value of leisure time, unpaid work and environmental damages. They also defined a sustainable MEW (MEW-S) value, and their work was the precursor to more sophisticated measures of sustainable development.
- The green gross domestic product (green GDP or GGDP) is an index of economic growth with the environmental consequences of that growth factored into a country's conventional GDP.
- Green GDP monetizes the loss of biodiversity, and accounts for costs caused by climate change. Some environmental experts prefer physical indicators (such as "waste per capita" or "carbon dioxide emissions per year"), which may be aggregated to indices such as the "Sustainable Development Index".
- Calculating green GDP requires that net natural capital consumption, including resource depletion, environmental degradation, and protective and restorative environmental initiatives, be subtracted from traditional GDP (1). Some early calculations of green GDP take into account one or two but not all environmental adjustments.
- These calculations can also be applied to net domestic product (NDP), which deducts the depreciation of produced capital from GDP. In each case, it is necessary to convert the resource activity into a monetary value, since it is in this manner that indicators are generally expressed in national accounts.

The green GDP started the talks about green GDP started in the 1970s by economist such as (Refer Time: 43:50) and many other estimates related to green GDP have been carried out in the past such as a measure of economic welfare which adjusts GDP to include the value of leisure time, unpaid work and environmental damages.

They also define a sustainable measure of economic welfare value and their work is considered to be a precursor to more sophisticated measure of sustainable development and it is also considered to be a precursor to the estimate of green GDP. Now, efforts to account for environment in the system of national accounts has been on as you can see since the 1970s and various policy documents have emerged since then.

However, very few reports on green GDP have are available in the public domain. And one of the first green GDP accounting report was worked out for the year 2004 for China and it was published in China in 2006. And that report showed that, the financial losses caused by pollution was more than about 60 billion dollars or about 3.1 percent of the Chinese economy and as an experiment in national accounting, the green GDP effort failed and the subsequent report which was supposed to be come out in 2007 did not come out because, it became clear that, when you are adjusting for environmental damages, it had reduce the growth rate to a politically unacceptable level. And that became grave danger for showing the competitiveness of the country in the global order.

Therefore, the green GDP calculations for given up and as of now, we do not see much we do not hear much about green GDP estimates in the mainstream the so called mainstream literature of growth and development. However, that is not to say that the efforts towards this has ceased and it continues to and such efforts continue to rise in today's world.

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Now, let me summarize our discussion today. This class was devoted to introducing you to some of the basic indices of economic development and these indices of economic development are mostly posed against the dominant GDP estimate because, the dominant income model of development.

We looked at we began with the discussion of the human development report of 1990 brought out by the United Nations Development Program. And, I deliberated on this fact that, it is important to look at the HDR 1990 report because, it came at a significant juncture a where the Bretton Woods paradigm was focusing more on structural adjustment prescriptions for the global south and physical imbalances over taking place in most of these countries.

The global north south political divide was being a reoriented towards a discussion on international poverty of world poverty. And therefore, it was important to look at how income is not the most important indicator of development. Along with income, there

needs to be more components which should lead towards enlargement of peoples choices.

We also looked at a research paper which showed the progress of human development across 111 countries between the period 1970 to 2005 which is an important era in the development discourse in the world. And it showed that non income indicators and income indicators need not necessarily move together in the at the aggregate level.

When we are taking indices of income and plotting them against in the indices of human development, there seems to be an overall positive relationship. But a weak positive relationship, but when we disaggregate the index in the form of just life expectancy at birth or education, then we see that income does not have even a positive relationship. The positive relationship indeed breaks down.

So, that provides an answer to the claim of many detractors that the HDI and GDP basically mean the same. And it also challenges the politics of only of income being the only criterion of development. Moving ahead, we also try to see some of the economic indices, the development indices that are used in the literature of growth and development. There are many more indices however, I picked and chose only a few to be discussed because, these are the most important ones that are central to the curriculum of economics when we study growth and development, the PQLI the HDI the GNH and the green GDP measure, however, there are many more majors measures which may be taken up for which are taken up by researchers when they are studying development in different context. We will end today's lecture with this.

In the next lecture, I will bring up the concept of inclusive growth. We will discuss what inclusive growth means, where did it emerge from, who are the what are the countries that are advancing the idea of inclusive growth. What are the components of inclusive growth and does it also mean that it is an extension of the concept of growth as in growth of GDP or much more than that. See you in the next class.

Thank you.