

LECTURE SERIES FOR MEMBERS OF PARLIAMENT

**TALK ON "INDIA'S CHALLENGES TO MEET THE
MILLENNIUM DEVELOPMENT GOALS"**

BY

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PROF. JEFFREY D. SACHS:

Mr. Speaker, Hon. Advisory, BPST and Members of Parliament, let me thank you for this wonderful occasion. It is really great for me to Finally be in the Parliament of the world's largest democracy and have a chance to speak with you about some of the great issues of the day. For me, this is a dream come true. As a young

Student, I came here and watched Parliament from the balcony about 30 years ago and dreamt that, some day, I might be able to contribute in some small way to help India and the world on its way. I must say that it gives me shivers of excitement to be here and to join you. Moving forward to our discussion, I will make some remarks, but of course, in our discussion, in an exchange of views, in question and answers, I think, we will be able to make the most dramatic progress.

I do believe that the world is at a critical time in human history. I do not say that lightly. I think the challenges that are facing the world today are, on the one hand, more promising in terms of what we have accomplished than at any time in the past. Our science and technology are such splendid tools that we can really dream of ending extreme poverty, for example. Yet at the same time, we face risks that are absolutely unprecedented in the danger they represent. Our world is more crowded, more complicated, more under stress and certainly more under environmental stress than was ever imaginable in the past. To give one example, human economic activity is overtaking the natural climate system. So, the challenges that we have and our responsibility to our planet are of unprecedented character.

There is no doubt that India will play one of the great roles in the 21st century in facing these challenges. You are already playing that role now. But as a great civilisation and a great country where one out of every six people on the planet lives, your responsibilities are truly daunting. I have to tell you that I cannot even imagine the scale of your responsibility. I come from a country of nearly 300 million people. It is complicated enough. But a with a billion people of such diversity and with the profound challenges that India faces, I would not minimise

would be the start of India's dramatic economic take off, and we are seeing that now. Of course, India can compete. That is self-evident now and India has the possibility of tremendous dynamism, which I think is going to change the shape of planet in enormous and positive ways. When we ask, quantitatively, what the stakes are, then I would say that they are nothing less than re-balancing the world economy. For many centuries, the centre of gravity of the world economy was the North Atlantic. India, with roughly one-fifth of the world's population, found itself through the long and difficult history of recent centuries in a very diminished economic role.

It is striking that at the start of the Industrial Revolution in 1820, India commanded roughly one-sixth, or 16 percent, of the world income. India and China together were about 50 per cent of the world's GNP on the eve of industrialisation. Of course, we know that the next century in a way was painful economically and politically for Asia. Most of Asia fell into colonial domination. Industrialisation did not occur in most of the continent. A great deal of exploitation did take place. At the same time, the North Atlantic developed economically. In 1820, Europe and North America accounted for roughly one-third of the world's income and India and China together 50 per cent. By 1970, Europe and North America accounted for two thirds of world GNP, while India and China together accounted for less than ten per cent.

That is the great change that happened over that century and a half. Of course, this was completely artificial and unsustainable because Asia, with more than half of the world's population, could not be a mere 8 per cent of the world's income. But, because of the disarray of the colonial period, the wars in Asia, and the lack of industrialisation, Asia had declined to such a low share. India's share of world income is estimated at only 3 per cent of world income as of 1970, having fallen from about 16 per cent in 1820.

We are watching this process change in a most normal way now, since Asia is re-assuming the centre of gravity of the world economy. It is the centre of

gravity of the world economy because it is also the centre of gravity of the world's population, and so one would expect that the benefits of economic development would be roughly distributed in proportion to the world's population as well. By the year 2000, India had recovered from a tiny 3 per cent of world income to about 6 per cent of world income; India and China, together, from about 8 per cent to about 17 percent.

But what is happening now, I believe, is dramatic, surging growth in India, Southeast Asia, and China that will shift the whole balance of the world economy, if this process can be managed adequately. By the year 2015, I believe it is a plausible estimate that India and China together will represent about one-third of the world's population and about one-third of the world's GNP. Europe, North America, Australia and New Zealand will represent about 12 per cent of the world's population and about 22 per cent of world's GNP. So, India and China will be larger in absolute economic level than Europe and the United States combined.

Now, that is going to be quite a transition for the world - for geo-politics, economic development, and global shifts. This, I believe, is going to be one of the great challenges of managing this growth in an effective manner. But I do believe it is a natural and desirable shift because it reflects the fact that economic development and prosperity should be available for everybody on the planet. It should be an opportunity that every part of the world can share in, both in freedom and in prosperity. I think that this is a process that is now strongly underway.

But, it is not going to be easy and it could be derailed and in my view it is the great challenge to make this shared prosperity both real and sustainable in all parts of the world. As I see it, there are three profound challenges at play and India is going to have to take the lead on all of them. Your responsibility is profound; none of these challenges is simple. I believe they are all achievable, but for every positive outcome that one can see, there is the risk of something far worse as well.

So, simply coasting along or depending on the ways of history is a luxury that we cannot afford.

The three great challenges as I understand them, are - first to end extreme poverty. I believe that that is absolutely the pivotal challenge of our generation. I believe that for two reasons - first for the poor themselves ending extreme poverty is not a matter of convenience. It is a matter of survival. I define extreme poverty as poverty that kills. It is poverty so extreme that a mother in rural Rajasthan or rural Uttar Pradesh cannot be sure that she can get her child to a clinic in time for that child to survive a bout of diarrhoea or a bout of malaria. There is no doctor, there is no clinic, there is no medicine, there is no affordability.

A farmer at the place of a drought cannot be sure that he can feed himself and his family or herself and her family, to make it through a failed season. It is not just the suicides but it is the deep under-nourishment and the child deaths that are the reflection of the kind of poverty that kills.

India is home to, perhaps, the largest number of people in extreme poverty in the world today, though the share of those is coming down - thank goodness - and it is coming down rapidly. The numbers are still large. There are debates among my profession, my colleagues - how many people live in extreme poverty in India. Is it 250 million, is it only 200 million or even 180 million? These debates keep economists employed, but I can tell you, the numbers are large, they are significant and the victory is not yet in hand, even though the proportion of extreme poor in India has come down markedly.

I also believe that extreme poverty is the challenge of our time because I believe it is the root cause of instability and insecurity in the world, not only the insecurity of the poor themselves but the outbreaks of violence, wars, indignation, humiliation, that lead to unrest and instability. Of course, I do not want to oversimplify such a difficult issue. But I do not believe— in a world as crowded and as wealthy as ours is today— that we will ever face security or end the instability if there are still large communities and regions caught in absolute poverty.

It is a stunning fact, for example, that the statisticians have shown that when the rains fail in Africa, the probability of war multiplies tremendously. That is how fragile life is for hundred of millions of people. It is not unknown to this country how devastating a drought can be, though thank goodness, after the Green Revolution, the worst of the famine disasters that used to plague this country are in the past. Hungry people in drought-ridden areas fighting each other over the scarce resources that they have: that is the beginning, and almost the end, of conflict today.

My own country, I am sorry to say, puts far too much emphasis on military approaches to what are ecological and development challenges. It somehow thinks that an Army can quiet a hungry population, which is simply impossible from my own experience all over the world. I believe that unless we tackle the problem of extreme poverty, we will not have the chance for peace on the planet and poverty will not go away on its own.

Ending poverty, as I have said, is one of the three great challenges that I see between now and 2050 if Asia is to achieve this great surge of economic activity that we expect and hope for, if it is to achieve the re-balancing of the world economy. But a second part also is geo-political leadership and a sense of responsibility for those left behind. Not only does India have to face its own internal challenge of poverty, but India and China as great rising world powers need to take responsibilities worldwide.

I say this because I work most of these days in Africa, and Africa is the epicentre of the world disaster. The poverty levels are extraordinary and are not coming down as they are coming down in India. They are getting worse. Drought, famine, hunger and disease have all gotten worse in the last generation. India has a huge role to play. You may be surprised to hear this, since India has its own internal, regional challenges to resolve before crossing the Indian Ocean to Africa, but I can tell you that every time you turn around in Africa to ask what to do, it is the Indian technology, the Indian example of the Green Revolution, disease

control and the possibility of irrigation or new uses for information technology that come to mind. So, India has a major role to play.

I put as second challenge : remaining peaceful as the whole world's balance of power and economy change in the coming decades. We have never been very good at changes, what you can call economic-tectonics, in the world. Rising powers and the powers that see their relative position declining have a lot to do to manage this process. Managing India and China's rise *vis-a-vis* the US and Europe's relative diminishing power is going to be a great challenge. Managing peace with so much change in the world is going to be a great challenge. India needs to become proactive in important ways in this process. I see one major area in which India can be proactive, and that is the fight against poverty worldwide, not only internally. India is developing technology, ideas and approaches that can be an inspiration and a guide for other parts of the world.

There is a third challenge which may turn out to be the toughest of all. It is not that the first two are small. These first two challenges are so large that they are virtually imponderable. But there is a third one as well that I want to spend a few minutes on this morning. That is the challenge of combining global economic development— and especially the surge of economic activity in Asia— with global environmental sustainability. This may seem like something new because what one hears about right now is 'just leave us alone for 30 years. Let us have development. Do not talk to us about environment.' But I would hate to be here in 30 years or for our children to be here in 30 years, wondering what happened to the monsoon as the global climate became so imbalanced that the entire world process of climate, rainfall, farming patterns and disease patterns were thrown into profound instability. Unfortunately, even today we are living unsustainably on the planet. This is not India's fault, by and large. India's contribution to that global instability is quite small and certainly smaller than its global population share. My own country, which is about five per cent of the world's population, contributes 25 per cent of the greenhouse gases that are changing the global climate. What does

the US want to do? The US does not want to face up to the problem. Yet, here I am saying that India has to face the problem while you are perhaps contributing somewhere around five per cent of the greenhouse gases while you constitute 15 per cent of the world's population. It does not seem right, or fair. But the challenge is there and it is all one world, so nobody can escape from it and the risks are huge for everybody. The fact of the matter is that India is going to have to play a role in the solution for India's own sake, much less for the sake of the world. These are the basic facts I will return to.

We are unsustainable today with 6.5 billion people on the planet and world output of roughly \$ 45-50 trillion annually, of which India's share is probably around \$ 3 trillion. But even today what we're doing to the climate cannot simply continue. Take into account the rise of India and China's decades of rapid economic growth, increased energy use, increased GNP, increased demand for food which would go along with continuing rise in Indian population from one billion to 1.5 billion people by the year 2050. When you put all that through the economic grinder, what you find is that world output under favourable circumstances might quadruple or even rise six times. If we're environmentally unsustainable now, how could we conceivably absorb such a large increase of world income without throwing the entire planetary system into disarray? There may be answers to that and I want to come back to them. But these are the basic challenges.

The biggest and most urgent of these challenges is extreme poverty. In India, 40 or 50 years ago, half of the population was living in extreme poverty, the kind of poverty and risk that arose from drought, disease, or lack of access to safe drinking water. Those numbers have come down, but we know that they are still very large indeed. We know that with all the economic dynamism in this country, there are 100 million plus people not enriched by economic development. They are living mostly in rural areas, mostly in areas far from the coasts, far from ports. They are not part of international the trade boom. They live in traditional

subsistence agriculture, often fighting local environmental stress, increasing temperatures, difficulties of irrigation, dry wells, and lack of access to safe drinking water, sanitation, healthcare, etc.

My proposition is that with an economy that is growing at the rate at which India is growing, with the technological sophistication that India has, with its IITs and IIMs, you have the possibility of ending this extreme poverty, even within a decade. I can tell you as a macroeconomist that it is not just economic growth and not just markets that will do this. I am a market economist, but I am not a free market economist who believes that you can just leave things be and they will solve peoples' problems.

So, what history shows is that the way to address extreme poverty is to mobilise resources that come from economic growth and direct them to investments for the poor. Targeted public investments in health, in education, in water and sanitation, in roads, in connectivity by Internet and telecommunications - these are the things that can make the difference. How did India escape from extreme poverty in the first place? In my own view, a great deal had to do with the Green Revolution. The Green Revolution came in the mid-1960s in the wake of the great famines of 1965 and 1966. At that time, it was thought that India was going to be trapped in hunger and famine forever. In fact, one leading academic in the United States said that it was already too late, and that hundreds of millions in India will perish because of famine in the decades ahead.

But, of course, when those pronouncements were made, the tide had already turned, because M.S. Swaminathan was already at work with his friend Norman Borlaug, and they were making targeted investments, using cutting edge technology - in this case high yield variety seeds - to make a change of productivity in agriculture. Now, we know that that was imperfect, it had its ecological side effects, and it had its consequences. But it did provide the breakthrough for India.

There was another such breakthrough of targeted investments. I hope I will not embarrass the gentleman for saying it because he is sitting here, he is one of the heroes of this, Dr. Larry Bryant, who played a leading role in this country in helping to eradicate smallpox. To me that is another example of targeted investments to fight extreme poverty. Had there been a Green Revolution but no eradication of smallpox, this country would still have been in turmoil. But that was another directed application of cutting edge technology, not only a vaccine but how to apply it and how to make sure that every part of a complex country, indeed the whole world would be reached by surveillance and by immunisation.

Markets would never have ended smallpox. It is unimaginable that markets would have never promoted the Green Revolution. This is, by the way, the advice that the IMF and the World Bank gave to Africa for decades. They said 'let the markets do the work' and Africa has now gone 40 years without a Green Revolution. It is caught in deep and chronic hunger because the targeted investments have not been made.

My proposition to you is that India can make these targeted investments so that by 2015 extreme poverty is basically eliminated. I side with your President, a very wonderful and brilliant man, when he says that every village should have electricity, clinics, schools, safe drinking water, and sanitation because that is really what we are after. How can a village escape from poverty if there is not decent sanitation, if there is not a clinic that is really functioning? I toured your clinics for a decade. Half the time there is a padlock on the clinic door. There is no doctor. There is no nurse. Another part of the time you go, there is a nurse but there is no medicine. Why is this? I believe the main reason is under-investment in health. The share of India's national income devoted to health is about one per cent of GNP going through the State and the Union government budgets. This is one of the lowest ratios in the world.

In fact, I looked yesterday and found that India ranked 165th out of 177 countries with data in the rankings of the share of national income being mobilised

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market will never be able to provide healthcare for the poor. We are finding that it cannot even provide decent healthcare for the rich necessarily.

We spend 16 per cent of GNP on health now in the United States. Half of that is private and half of that is public, whereas countries in Europe that whose health spending is fully public or almost fully public, spend half of what the U.S. does as a share of income and get much greater value for their money. So, the point I would make is to vote funding for health.

Where is that money going to come from? That is a bit of a mystery. But what I would say is, among other things, that this country has a lot of poorly designed subsidy programmes. I am not against subsidies; but I am against poorly designed subsidy programmes. One place where you might work is to sharpen up how subsidies in rural areas are actually delivered.

A lot of the subsidies right now are of the kind that offers free electricity and free water to the farmers, for example. The result, of course, is that there is no water and no electricity because the State Electricity Boards are broke and there is no maintenance. The grid is drawn from without reimbursement, and it is overloaded. What my colleague Dr. Bajpai and I have seen in many parts of the world— and we have written about it in the paper we have circulated- is the idea of keeping the subsidy, because it is needed for the poor, while defining a fixed amount of subsidy which is sometimes called a lifeline tariff. That means guaranteeing poor farmers a certain amount of water and a certain amount of electricity for free, while imposing a price above that fixed amount that can recover the cost. Under the current system, large amounts of subsidy go to the rich and not to the poor farmers. They are available to the powerful in unlimited quantities and are often not available at all to the poor, even in small quantities. Our idea is to guarantee some fertilisers, guarantee some water, guarantee some electricity to poor rural households, but only up to a certain amount, and get your brilliant engineers to design low cost metering systems using smart cards so that the government can save funds. Take the savings and invest them in making

medicines, local sanitation, and education available, because that is the real priority for public investment.

I also believe that world should do more to help India on this. What I have in mind is that if India will get behind National Rural Health Mission in a serious way, then it may turn to international donors and say that for one more decade, India should receive help so that it completely escapes from poverty, thus leaving legacy of good will that can last a century. Let us help finish the transformation here, to end extreme poverty. I would say to the World Bank and others not to give the aid as loans, but to make it grants because this is for the poorest of the poor. If India shows that it is taking the lead and is committed to doing this, I believe that that added resource is available and certainly should be available. I have said on many occasions to the leaders that it would be my happiest moment to be out campaigning out for that amount of extra help, when this country is dramatically showing its own leadership, making clear that this is the decade to end extreme poverty. Now I have got a feeling that you are going to get around this. I think politics is rightly pushing in this direction. Politics is saying that markets alone will not do it and we have to focus on those who are behind. That is the right analytical message and the right political message.

I want to come to the second point. In the midst of all these big challenges and in the midst of your regional challenges, which I do not want to diminish, I would love to see India's one-sixth of humanity also playing a leadership role and achieving the Millennium Development Goals with the whole world. We want to hear your voice. I can say categorically that of all the world leaders today, your Prime Minister is the leading development specialist. He is a Ph.D. He not only has his own unique track record, but he is also has been a professional for decades and is one of the leading voices in global development. It would be the most remarkable contribution that this country could make if India champions the Millennium Development Goals for the whole world. Parliamentarians of this country are in constant connection with parliamentarians in other parts of the

world. Many of you are leaders of global parliamentary movements and assemblies where your voices are extremely important and where India could play a major role in telling other powerful countries that we must do our part to end extreme poverty, wherever it is in the world.

Africa is the epicentre of this challenge right now because in Africa about half of the population is living in extreme poverty and the share of extreme poor has been rising over time. In my view, it is because Africa did not achieve the two transformations that India has achieved - the Green Revolution and substantial disease control. So, Africa has to follow India's path. I do not know how many times I have told African leaders, parliamentarians, and members of civil society that the path India has followed is the path that Africa needs to understand and emulate. I believe the only way that this can happen is for India to establish a formal co-operation programme at a good scale. India is not counted right now as a global donor, but it should become one. I am not saying that it should be spending at the same level as the rich countries, but India can make its mark. China is doing it so dramatically. I would like to see India in Africa as well. You turn around every day in Africa and you will see Chinese projects. Yet India's experience in rural-based development, in the mobilisation of information technology, in the Green Revolution, in small-scale irrigation is the lesson that Africa needs to learn. You have your scientists, development leaders and community practitioners. You may send them to Africa as part of India's co-operation agenda. It will be world changing, and it will empower this country and Africa as well.

I believe that as the world's centre of economic gravity shifts, we are going to see a great Indian Ocean revival as well and so, it is absolutely natural that East Africa will be part of a growing trade economy in this region, both as the market and as the supplier. In that context, helping to build up the African economy today makes good sense for you in humanitarian terms, in national security terms, in stability terms, in geopolitical terms and in future economic terms as well.

I make this point in my own country all the time. We are not on the right track in my own country either. We are spending 5 percent of GNP on the military. We are spending 0.21 percent on peaceful development initiatives in official development aid. That is not a balance that is going to get us security. Those who can invest in peaceful development need to do so. The world is too dangerous to let any part of it fall behind and become a source of great risk and instability for everybody.

Let me turn to the third great challenge. I compare this with climbing a mountain. Suppose you are trekking in the Himalayas and you pass one great mountain and you say that you have got to the summit and all of a sudden, you see the next great summit ahead of you. Then, you cross the second great summit and you see a third great summit. I have to say that there is no escape from this traverse. It is our commitment. We are crossing the 21st century and we have to do so safely.

This issue of sustainability is going to rise in importance. It is going to be the geo-politics of the 21st century. If we are not careful, the struggles over natural resources, over energy, over climate, and over water will overtake all of us. There is so much to say because human activity is undermining every ecosystem on the planet. Human activity has basically taken over almost every chemical cycle: the carbon cycle through the burning of fossil fuels, the nitrogen cycle through the mass application of nitrogen-based fertilisers. We now do more in the nitrogen cycle than nature does, with terrible consequences.

We have huge challenges, and I want to talk about just one of them, and that is climate change. Climate change is real. It is not, as some of our vested interests believe, a huge scientific debate. It is not, as the *Wall Street Journal* sometimes says, "junk science." The *Wall Street Journal* editorial page is representing vested interests. It is not representing sound science, because for sound science there is a worldwide consensus that we have a serious problem. Now there is a global process of getting the scientific consensus on climate

change. It is called the Intergovernmental Panel on Climate Change (IPCC). It is headed by one of your great scientists, Dr. R.K. Pachauri, the head of TERI, The Energy Research Institute. He is the Director of the IPCC. I admire him enormously. He is one of the great leaders in this. If the Parliament has any questions on science, the world's best advice is right around the corner. What he will tell you is that there is a strong consensus. The climate change is real, and it is caused by human society. It is mainly caused by burning fossil fuels, which transform carbon into carbon dioxide which is then added into the atmosphere and warms the planet.

We are on a path of rising carbon dioxide concentrations in the atmosphere. What the scientists have shown is that if we reach a doubling of pre-industrial era carbon concentrations, the temperature rise on average by three degrees centigrade worldwide. It could even be much more. We could have a runaway process where small changes suddenly convert to very large changes. A reason, for example, is that as the permafrost in the high latitudes melt, it could release an enormous amount of methane which amplifies the greenhouse gas burning. We could find ourselves with another disaster.

What we know is that this could change everything. The change does not just affect our discomfort as temperatures rise. It affects the way we grow crops, it affects disease transmission, it affects tropical storm activity and the monsoons. Nobody knows for sure what the implications are, except that we are in the middle of the process already. I am coming from New York today to New Delhi to get out of the heat. New York today is probably at 40 degrees centigrade. There are shutdowns of power. I got an e-mail this morning telling me that there are going to be emergency shutdowns to test the backup generator systems at Columbia University. They are advising people not to go out because the air is too heavy and too polluted to breathe. This is the modern world and this is the beginning of a process.

It is going to get worse if we continue on our current path. My country has been number one in irresponsibility because we are the largest emitters, and we are not doing anything right now to get it under control. It is a shame, but it is not an example to follow. Saying 'why we should do this when the US is not doing it' is not an answer for you. The answer is 'we cannot do it, but you'd better do it' and to stand up and say that it is intolerable that this process is just being allowed to go on this way. The rich countries have to take responsibility. But India and China are simply too large a part of the world to say that they are going to develop first and that is only fair. I can only tell you that it may *be fair*, but it is not *right*, because it does not work arithmetically. If India and China just go alone, there is no solution to this problem. So, we have to find ways for major changes in the entire world energy system. You cannot cripple the economic growth of this country, but you cannot ignore the problem either, because we all share one atmosphere and one climate.

There is one basic, important point I would like to raise. We are going to need a more sustainable energy system. In our view, it is going to involve development of non-carbon sources of energy, particularly much more use of solar energy in the decades ahead and nuclear energy for nuclear power, but also proper management of fossil fuel energy. India is going to use its coal one way or the other. That is your major low cost energy source, but if you just use your coal on proven technologies, it is a disaster for the world as well as for this country. We need to find clean coal technologies, prove them, develop them and bring them into operation.

There is a lot of promise here, but we are going too slowly, mainly because my country does not want to talk about this problem and India has not yet really taken up the challenge. The main technology I want to mention is called carbon capture and sequestration. The idea is that you can use coal to fire power plant, but then you capture the carbon dioxide that is emitted from burning the coal. You concentrate it and put it in a pipeline and you pipe it back into the geological

deposits underground as a way of preventing carbon dioxide from rising into the atmosphere. This is a proven technology at small scale. There are a few such projects around the world. The chemists know how to capture carbon dioxide from the exhaust gas of the power plant. They know how to put it into a pipeline and how to deposit it under the ground. What is not known is whether it can be done at a large scale and whether it can be done economically at a large scale. We do not know how much it will cost and how safe geological deposition of carbon is. Where are there great geological deposits in India where this can be done effectively without danger, without leakage and without enormous cost that would cripple the economy? Nobody knows the answer to that. Unless we study the problem extensively, no one is going to know. The most important for us is to get some prototype power plant built in India, China, Europe, Russia, Brazil, and the US and try to prove the clean coal technologies.

I think this is really the most important issue, the reason being that if this technology works it opens up a huge vista for us of a very practical way forward. Then we can say, that India is going to develop its coal, but in a safe manner, and that is great news for this country. That is a major hope, but if we find out that it does not work, then we've got a major problem. We are going to have to address the issue in another way.

In my view, the most important early next step is testing sustainable energy technologies at a significant scale. The specific coal technology is called IGCC - Integrated Gassification Combined Cycle power plants with Carbon Captured and Sequestration (CCS). Putting an IGCC-CCS programme in India into motion, while it sounds awfully technical, is actually the most important challenge that we face. I do not think India should pay for this on its own by any means. I think this is where India must turn back to the United States and Europe and say - 'come on, you created this mess, we need to be part of the solution; we are ready to try these prototypes, but you must help us finance this.'

This is, in my view, the deal that needs to be struck, on a serious timetable. Let us actually do it. This is my main message to you. It is not a matter of ducking the issue and it is not a matter of sacrificing India's future. On the contrary, it is a matter of saving India's future and the rest of the world's as well. We are going to have to do this with technological approaches, to combine our valid desires for economic development and our need for environmental sustainability.

I would urge all governments to have a Ministry of Sustainable Development or at least a Government organisation that can provide the first-rate scientific knowledge for this. We need this very much in the United States. The *Wall Street Journal's* editorial page is not a scientific journal, but I have the feeling that our White House thinks it is. We need to get this down right and down seriously and down with urgency. Why urgency? Because even if we discover the right things to do, it is going to take forty years to make the change. Every new power plant you put up today is going to be on-line for half-a-century, and since it is very expensive to retrofit a power plant, we are locking ourselves into a half-century of greenhouse gas emission - a potentially huge risk. We've got to get on with this challenge.

Let me stop here by thanking you again for the opportunity to meet with you. It is inspiring for me. It is a great honour. In a way I am trying to warn you of the great challenges that we face. The Parliament of the world's largest democracy plays a unique role in our world. There is no question about it. You have a responsibility that cannot be shooed away. It is a responsibility not only for one-sixth of humanity, but for all of humanity. I am very confident, knowing the great history of this country, that this Parliament will surely rise to the occasion.

Thank you very much.