

CONVOCATION ADDRESS

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SCIENCE & TECHNOLOGY AND OCEAN DEVELOPMENT
GOVT. OF INDIA**

AT

**THE 2ND CONVOCATION OF
INDIAN INSTITUTE OF TECHNOLOGY, GUWAHATI**

29TH MAY, 2000

Governor of Assam and Chairman of the Board of Governors, General S.K. Sinha, Director, Professor D.N. Buragohain, Members of the Board of Governors of the Institute, Deans, Heads of Departments, Members of the Senate, Faculty Members, Staff and Students of the Institute, distinguished guests, ladies and gentlemen,

It is my pleasure to be with you this morning for the 2nd Convocation of IIT, Guwahati. It is indeed a special occasion for all of us. This is the time when we can reflect and assess our achievements and perhaps talk about the future. Institutions of higher and specialized learning are grounds for stimulating thought and, therefore, I wish to share some of my ideas with you. But before that let me refer to Northeast and this distinguished institution.

Development of the Northeast Region and particularly the development of its people have always been a high priority with the Central Government. It is for this reason that the present Government has given special thrust to development of education in the Northeast. Towards this end, the Government has taken initiatives in recent times. These are :

- Parliament has enacted legislation for setting up a new Central University in the Northeast i.e. Mizoram University and steps are being taken for early setting up of the University. Government has supported setting up a campus of Assam University at Diphu in the Karbi Anglong Hill Council Region.

- For upgradation of the Polytechnics in the Northeast, discussions are on with World Bank for an assistance of Rs. 300 crores approximately in the form of IDA credit.
- The North Eastern Regional Institute of Science & Technology (NERIST) at Itanagar is yet another institution for generating skilled manpower in the field of engineering and technology and applied science streams for development of the region. Facilities in NERIST are being upgraded with liberal financial assistance from the Central Government. NERIST has been granted provisional affiliation with the North Eastern Hill University (NEHU) and proposal for granting of deemed university status to this institute is under consideration.
- Ministry of Human Resource Development is committed to spend 10% of its Plan allocations in the North East. In case of any shortfalls, the funds are surrendered under a Non-lapsable Pool and then spent on the North East itself. During the last year projects worth Rs.53.77 crores were sanctioned and released for the North East region in the education sector from the non-lapsable pool for different projects. Ministry of Science and Technology also released Rs.20.01 crore for the projects in North-East Region during the last year.

The finest achievement of the post independence education is the setting up of IITs when the first IIT at Kharagpur was set up in 1952 followed by IIT Mumbai, Chennai, Kanpur, Delhi and finally IIT at Guwahati, the sixth member of this prestigious fraternity. This is the emergence of a new academic culture in the Northeast region. Apart from addressing the latest advances in technological and scientific development to the overall benefit of the nation, IIT Guwahati has the added

responsibility of leading the way for an industrially potential North East.

Addressing the World Congress on Sustainable Development in Calcutta in January our beloved Prime Minister Shri Atal Behari Vajpayee underlined the role of engineers and said "Engineers will have to become the mainstream planners and play a more significant role in the development perspective. In this march towards competitive development, the issue of upgrading engineering and technological skills will become more important. The Government in developing countries are becoming more concerned about accountability and sustainable development which will result in involving people in the developmental process. This will necessitate the engineers to have strong behavioural, social, human relations and communication skills".

The ancient city of Pragjyotishpur, which is the Guwahati of today, was a celebrated seat of learning in all spheres. It was also acclaimed as a distinguished center of rich cultural and religious activities with scholars coming from far and near. This land of Kamrupa also carried glorious chronicles of events and classical renaissance at different turns of history. Today, the IIT brings about a resurgence of learning with the inflow of students and teachers from all over the country.

India has a great recycling culture. I have always been aware of the recycling enterprises and traditional artisan technologies of the North East. Against the backdrop of growing global concern for adopting environment friendly technologies, this IIT could be the most appropriate place where fusion and innovations of time tested traditional methods can take place with the help of the state of the art technologies currently available. I ardently believe that an institute like an IIT will

immensely help in changing the entire technological and economical scenario of the region. Located at the midst of vast natural resources, IIT, Guwahati can be instrumental in developing technological skills of the highest order to utilize and usefully harness this wealth. It can generate tremendous positive activity to ensure appropriate technological intervention in demanding areas like roads and transport, flood, earthquakes and other disasters mitigation, hydro-electric power generation, rain water harvesting, river navigation and above all, sustainable development of the green resources.

The world of ours is changing very fast and we have to urgently address ourselves to most fundamental question of our times. These are sustainable development and sustainable consumption. It is heartening that the world has started serious discussion on these questions. I have been recently browsing through the BBC Reith Lectures-2000, in which outstanding personalities from various spheres of activities participated. His Royal Highness Prince Charles referred to sustainable development as 'a matter of enlightened self-interest,' 'spiritual dimension of existence', 'sacredness between mankind and creator' and said "I believe that if we are to achieve genuinely sustainable development we will first have to rediscover, or re-acknowledge a sense of the sacred in our dealings with the natural world, and with each other..... Fundamentally, an understanding of the sacred helps us to acknowledge that there are bounds of balance, order and harmony in the natural world which set limits to our ambitions, and define the parameters of sustainable development".

This is indeed important. We have to understand that there is a difference between using science to understand what nature is and the use of science to change the nature. There is a beautiful and sacred alliance between God, man and nature

and it should always be respected for the good of mankind. Our philosophy has been emphasizing the sacredness of nature and the beautiful bond between man and nature for several thousand years.

The Western mindset has not been able to rid itself of the colonial philosophy of exploitation of man and nature. Is it not paradoxical that the vast humanity all over the globe barely sustains life and a small fraction of prosperous countries have all the benefits at the cost of vast humanity? According to World Bank, about 3 billion people worldwide lived on an income of less than 2 dollars per day in 1993. Indeed, nearly 1.5 billion of the world population of 6 billion is predicted to live in severe poverty at the beginning of the millennium. The gap between the rich and the poor is increasing day by day. 800 million people sleep hungry everyday. One billion people around the world suffer from micronutrient deficiency. Global per capita water supplies are declining and are now 30% lower than they were 25 years ago. It is predicted that by 2050, as much as 42% world's population will live in nations, which will not have sufficient freshwater stocks to meet their combined needs of agriculture, industry and domestic use.

Thus we may talk of upliftments of humanity and distribution of resources from the haves to have-nots, yet the exploitation by a few continues to dominate in some form or another. In the same Reith Lectures I referred to earlier, Vandana Shiva said " When the World Bank and IMF actually go for replenishments - they lay out figures and say that for every dollar they put into poor countries they made three dollar for the rich countries and that's the justification which keeps them running. My own lifetime of being an environmental researcher and campaigner has brought me against project aid after project aid from the World Bank that has devastated our

people and our eco-systems. The entire conversion of our rich forest biodiversity into eucalyptus mono-culture is financed by the Bank, the destruction of the mangroves along our coasts leading to huge cyclone damage, salinity for coastal areas financed by the Bank for Industrial shrimp farming, the erosion of our genetic diversity in agriculture financed by the Bank for the green revolution- the list is absolutely endless, and in fact if the World Bank is an issue for northern environmentalists and northern campaigners, it's because movements of hundreds and thousands of tribals and peasants in the Third World have talked about the threat to their very survival". This is the reality of the world and that is why we have been talking of self-sustainable economy and reliance, as far as possible, on our own resources.

The discussion of sustainable development has been going all over the world for almost a decade now, but there is hardly any headway. I have been, therefore, emphasizing the need for a new paradigm of sustainable consumption. Unless we globally arrive at a consensus on a philosophy of sustainable consumption, there cannot be sustainable development and in fact the gap between the haves and have-nots we have been talking about, will go on increasing. At a fundamental level we must change our value systems, which must percolate to all levels including the way we look at capital. We must understand that pure water, clean air, virgin forest are not free goods but are all a part of our natural resources which must be preserved at all cost. Respect for natural capital will automatically mean respect for sustainable consumption. It is impossible for the world as a whole to sustain a western level of consumption for all.

Sustainable consumption and the issues related

therewith are indeed complex. They have to be debated internationally and within the nations because fundamentally it will boil down to the question, namely, how to reconcile developmental goals with ecological capabilities? The carrying capacity based planning process, innovative technologies for enhanced material and energy efficiency of production and consumption, structural economic changes towards less resource intensive sectors, and preventive environmental management through increasingly interventionist policies are some of the strategies for reconciling developmental goals with ecological capabilities.

R&D linked to the issues of 'sustainable consumption' will have complex dimensions. After all, the consumption is all about human transformation of materials and energy. Consumption becomes a concern to the extent that it makes the transformed materials or energy less available for future use, or creates a negative impact on the eco-systems in such a way as to threaten human health and welfare of people. 'Sustainable Consumption' movement will require a truly transdisciplinary effort. Indeed, several different disciplines, such as economics, physics, chemistry, biology, ecology or sociology will impinge on the issue of consumption. Therefore, they must all come together. In many cases, research will be needed to assess what consumption rates are sustainable. For example, the rate of regeneration of renewable resources must be understood, alternative resources must be identified, and pollutants and their effects must be analyzed further.

We need a complete shift in our strategies on research and technology. The industrial societies use technologies, which depend on petroleum and petrochemicals and which are material intensive by definition. These systems end up in pollution, acid rain, greenhouse gases, etc., which have caused serious

damage to environment and social systems. If we employ large-scale energy and material and intensive manufacturing methods, then we cannot achieve sustainable consumption. For India, in particular, I would urge that we do not blindly follow the practices in the western world, but develop our own technologies, which operate at low temperature and low pressure and are less energy intensive and less polluting.

Finally, sustainable consumption will require changes of mindsets everywhere, in the government, in industry, among citizens and so on. New and different decisions will have to be made in corporate boardrooms as also in national capitals. Such decisions will have to put the needs of the planet ahead of the profits of the corporations and its shareholders. The Chief Executive Officer of tomorrow will have to view himself as Chief Environmental Officer. We will need to generate a new breed of 'ecopreneurs', who will lead the governance of the globe due to their 'eco-consciousness' on one hand and their entrepreneurship on the other. India can certainly take a lead in this movement.

Our own philosophical thought in this regard is sublime and we have always believed in sharing with others what we have. This means that consumption for us become secondary. In many of our scriptures specially Bhagwatam it is said that one is entitled to only that amount of wealth which is enough for ones upkeep and to consume more is the theft of the share of the society. We have been worshipping nature and call earth our mother माता भूमिः पुत्रोऽम् पृथ्वियाः ।

I am deliberately sharing these ideas with you because you are the cream of our educational system. You are indeed the most privileged because even now we are working hard to secure primary education to 6 crores children between the age

group of 6 and 14, who are not able to go to any primary schools. We are also trying to bring literacy to 75% of our population by the year 2005. In this scenario you are the leaders and can do much to help the nation.

I am heartened to learn that IIT alumni are now at the top of several national and international corporations and business establishments and that many are helping their Alma Mater in various ways. It is also time for you to participate actively in the process of transforming India from a developing to a truly developed nation. Let me remind the graduating students that this is the right time for coming to grips with the economic cosmopolitanism, by accepting the new global challenges. A development of a socio-economic culture that would deal with an engagement, not with oneself but with others as well; where there is a synthesis of an inner resilience and integrity, of shared ideas and idioms, together with a sensitive blend of ethos and values. I am confident that each one of you, in the years ahead, would arrive at a new concept of development, which would enhance human life, not marginalise it.

On all auspicious occasion our prayers are ॐ द्यौः शान्तिः
अन्तरिक्ष ५ शान्तिः पृथिवी शान्तिः आपः शान्तिः ओषधयः शान्तिः वनस्पतयः शान्तिः
विश्वेदेवा शान्तिः ब्रह्म शान्तिः सर्व ५ शान्तिः शान्तिरेव शान्तिः सामा शान्तिरेधिः. Let
there be peace in the entire cosmos; let there be peace in the
skies, let there be peace on earth, let there be peace in the
waters, let there be peace in herbs and vegetation, let the divine
bring peace to us, let all the knowledge bring peace and let
everywhere be peace, peace and peace. This is symbolic of
the respect of not only nature but of the entire cosmos we have
been talking about.

There is a whole chapter in Upanishad, called
'Shikshavalli' in which the Acharya gave his last sermon to the

Brahmacharins before they left the Gurukula. I have no intention to preach you, nevertheless I am tempted to give a few words of advice. In 'Deekshantopadeshah' there is a beautiful sentence. मनसा वाचा कर्मणा च सर्वथा लोक कल्याणाय प्रयत्नीयम्। अनुशासनप्रियः सदा भाव्यम्. It says with your mind, speech, action always try to do good to others and ever remain disciplined. I would add to it what Shruti has said, स्वाध्यान्माप्रमदितव्यम् Never give up your search for knowledge, never neglect the quest for it. Swadhyay is important. It helps us in understanding ourselves as also understanding others. The Bhagwadgita says नहि ज्ञानेन सदृशं पवित्रमिह विद्यते - there is nothing sacred than true knowledge. Here knowledge is more than simple knowledge. It is the knowledge of the Infinite. All quest for knowledge leads us to divine knowledge which is the realization of 'Self'.

Try to understand deeply our own cultural heritage and the values of life. Our cultural values are different than the Western mindset. Our concept of happiness is different. We say सुखस्य मूलम् धर्मः that is the righteous way of living is the root of happiness. The wealth is important but it is meant for Dharma or righteousness. Dharma, mind you, is not the synonym for religion. Following the righteous path and way of life leads us to happiness. That is why we say 'धनात् धर्मः ततः सुखम्'. The wealth is a means to perform righteous duties and happiness is derived out of that. In our country the honour given to a recluse, a Sanyasi or a holy person is much more than a wealthy person or a man in authority. The wealthy feels honoured to sit at the feet of a realised soul. This is the difference of basic value system I was referring to.

Dear friends, all of you had the best education that your country could give you. You may earn money and fame. But there is nothing compared to your country and your culture. Your motherland has given to you so much to be proud of and,

therefore, always think of this great country and contribute your might for the welfare of your nation. Rama had said : अपि स्वर्णमयी लंका न मे लक्ष्मण रोचते, जननी जन्म भूमिश्च स्वर्गादपि गरीयसी. The land of gold does not fascinate me at all, O' Lakshman, my motherland is dearer to me than the heaven itself.

I congratulate each of the graduating students for successful completion of their studies. I also place on record my sense of appreciation for the contribution made by the faculty members. I also congratulate the proud parents. I thank Gen. S. K. Sinha for his gracious presence. Thanks to Prof. D.N. Buragohain and all the members of the staff and students for making this Convocation a memorable event. I thank you ladies and gentlemen for gracing the occasion.

