

SPEECH OF SHRI PRANAB MUKHERJEE, FORMER PRESIDENT OF INDIA FOR THE 10TH DR. SATISH C. SETH MEMORIAL LECTURE

A popular Chinese proverb says, “***The best time to plant a tree was 20 years ago. The second best time is now.***”

Distinguished Guests, Ladies & Gentlemen,

2. I am happy to be here at the 10th Dr Satish C Seth Memorial Futurology lecture. Dr Satish Seth was a pioneer futurist of India who dedicated nearly four decades of his work and research to unearthing **future** - starting from the definition to its applications. He believed that systems are created to ensure safety to ourselves and to look deep into the subject and their inter relationship. His tireless research was dedicated to quantifying what the future had in store and could offer.

3. The topic for 10th Dr Satish C Seth Memorial lecture, ‘***Future is Today***’ is befitting and an apt remembrance of Dr Seth’s service towards our nation.

Distinguished Guests, Ladies & Gentleman,

4. Indian society is deeply rooted in the past. While this has helped in establishing our socio-cultural and national moorings, the flipside is that even today our school and college textbooks, especially on the Sciences, carry nearly three decade old information and knowledge. There is no significant change in our syllabus or curriculum, to adapt to the dynamic evolution in the fields of natural and physical sciences. This brings us to the question - ***“How is the future generation expected to cope and align with the new information and knowledge, which is growing at an exponential rate, rendering the past knowledge as redundant?”***

5. *Dear Friends*, the answer lies in looking for systems that encourage **creativity, innovation and conceptual clarity**. Rather than encyclopedic syllabi and textbooks that is based on rote learning, education that enables and liberates the learner to pursue knowledge boundlessly is the demand of our times. Education should aim at encouraging the student to find their voices, nurture their curiosity to do things, to ask questions and pursue investigations, to improve their ability to share and integrate their experiences with school knowledge, rather than to reproduce textual knowledge. Information is readily available at

the click of a button. Thus, what is required to cope and align with the new information and knowledge is conceptual learning rather than memorizing. Numbers can change every day, but concepts that truly bring clarity of thought are essential for learning. Furthermore, I believe that concern for peace, protection of the environment and a predisposition towards social change must be viewed as core components of education and not merely as value premises.

Distinguished Guests, Ladies & Gentleman,

6. With the oil shock of the 70s shared by countries including Japan, our past Presidents of India referred the item, futures studies/futurology to the Department of Science and technology. Members were awed by the expanding questions that propelled them to develop visions and images of long term futures. This started the exercise of exploring the futures and to look for alternatives, leading to unconventional and novel ways of looking at our resources and their sustainability within the demand and supply dynamics. This plunged the futurist to discard the Malthusian theory of **population** as a crisis but proclaimed it as a **national resource**. And I am happy to know that Dr Seth was chosen to work on this concept.

7. But today, we need to ask ourselves if we have efficiently utilized this demographic dividend? The knowledge of Population being one the most important resources and India being abundant in Human Capital was known to us decades ago. But the benefit of a demographic dividend depends on whether the bulge in working population can be trained, and enough opportunities created to employ the millions of people who join the labour force every year.

8. India has one of the youngest populations in an aging world. It is said that by next year, i.e. 2020, the median age in India will be 28 years, compared to 37 in China and the US, 45 in Western Europe, and 49 in Japan. Demographics can change the pace and pattern of economic growth. While China's spectacular growth has already benefited from a demographic dividend, India is yet to do so.

9. In my opinion, growth, education, home ownership, better economic security, and a desire for more durable goods are the cause and consequence of young demographics. A demographic dividend can be good for economic growth in the following ways:

- Increase in labour force, as more people reach working age.

- Increase in savings rate, as the working age is in the prime period for saving.
- Increased fiscal space created due to demographic dividend by investing in physical infrastructure.
- Rise in women's workforce that naturally accompanies a decline in fertility.

10. **Our future is our People** who will enable India to grow and **Now is the time to invest more efficiently in people.** Investing in people through healthcare, quality education, jobs and skills is the key to supporting economic growth, ending extreme poverty, and creating more inclusive societies.

11. I would like to bring to the notice of the distinguished audience present here that despite the presence of Futurology, where we study the future in-depth and predict the state of the world, why is it that we could not predict the climate crisis we are in. It is a known fact that limiting the global temperature increase to 1.5 degree Celsius is a necessary condition to fight the climate emergency we are knee-deep in (Paris Agreement, 2015). Why is it that despite the presence of such predictions, we did not take constructive efforts in this direction?

12. The world is expanding at an exponential rate, thanks to the boom in internet and technology, where we are at the verge of entering into the fifth industrial revolution, I have been told. In my understanding, the future truly is now, where we need to predict more than the far-fetched future and work towards solutions of the immediate nature. Gone is the time when planning for future meant, planning for the next decade, or next Five Year Plan, or the next Financial Year. The changes around us are so dynamic in nature that we need to plan not for a month from now, not a fortnight, not a week, not tomorrow but TODAY and NOW. TODAY is the FUTURE, ladies and Gentlemen, and we have to be prepared.

13. On September 23, the United Nations Climate Action Summit is to be held. It will once again re-emphasize the need for a sustainable development model to fight the climate crisis. In this context, I would like to talk about the concept of a "**Circular Economy Model**". A circular economy model is an economic system which lays emphasis on the efficient and effective usage of resources, thereby eliminating waste and ensuring continued use of resources. It is far more effective than the linear or even the recycling economic

model. Under the linear economic model, an approach of use and dispose of is used, whereas in the recycling model, a use-dispose-recycle approach is used. While the recycling model reduces waste generation, it does not entirely eliminate it. It is here when the circular model can be leveraged, which works on the principle of use-reduce-reuse-repair, thereby minimizing or even eliminating waste generation.

14. It is innovative models like the Circular economy model which will form the bedrock of sustainable development in the future where we are struggling to keep the Amazon forests from burning, the polar ice shelves from melting or the ocean-ecosystem to fill up with micro-plastics. What is also interesting to note, as well as disturbing, I must say, are environmental case studies from across the world that reveal that they are woven into each other, much like the Butterfly Effect. This effect contends that small changes in the beginning of an evolving system can lead to disruptive influences later. This means, the snow melting of the ice in Antarctica, can drown islands in the Indian Ocean and the melting in the Arctic that can generate devastating heat waves in Europe, as witnessed this summer.

Distinguished Guests, Ladies and Gentlemen,

15. We should have thought and planned way back when oil was discovered in commercial quantities that it is not an unlimited resource that is going to last forever with us. With consumption growing at a brisk pace and domestic output remaining stagnant, India's oil import dependence has risen from 82.9 per cent in 2017-18 to 83.7 per cent in 2018-19, according to the oil ministry's Petroleum Planning and Analysis Cell (PPAC). An alternative would have saved India paying exponentially each year for importing oil as well as shown the world a direction towards alternative sources of energy.

16. Another instance that we could take on, can be of the depleting resources like silver, mercury, chromium, manganese and even iron ore, coal or bauxite. Since they are scarce, the government can take an early decision limiting their export or marketing and at the same time developing sustainable alternatives. With some foresight and thinking, much waste in transportation can be avoided as a means to conserve the precious resources. But again, for that we have to think and ACT TODAY.

17. While vast studies on futures are on in the developed world, India cannot be left far behind. Our intelligence quotient is no less than others. This researched knowledge cannot be allowed to go waste and left unrecognised. Unless we start to plan right from today, we may not be able to avail of the opportunities & advantages that the future will offer.

Dear Friends,

18. Future is not illusive or a utopia. As we nurture our private futures, we have to think and plan for the future of our great country. Thus the concern for future is to build a new society where all our cultural callings and Constitutional mandates get fulfilled. Creation of citizenry that is conscious of their rights and duties, and committed to principles embodied in our Constitution must be our priority.

19. We must remember that our seers and sages thought of the world as one family when all others could not think beyond their own secluded domains. The proverbial **Vasudaiva Kutumbakam** was original in thought and perception. This only strengthens our belief that future is embedded in the Indian Culture and roots from time immemorial.

20. In contemporary times, we tend to avoid change in thinking and action. They say a competent manager is one who has studied the past and present situations and is capable of decision making in the present. But this is not acceptable fully. It will be more appropriate that a competent manager in order to act effectively is able to foresee and anticipate future as well. The new job market/environment requires individuals to be at ease, not only with technology but with uncertainty and therefore by extension, risks so as to be able to deliver desired results in the midst of chaos and complexity. Similarly, our policies have to incorporate that uncertainty of the future in their calculations today in order to get desired results for tomorrow.

21. Today long term planning has acquired tremendous global importance and acceptance both by the various governments and for the institutes of advanced learning in different fields, like agriculture, industry, health, education etc. Even though the concern for the future of society and the question of societal redesign are not yet part of an average man's thinking, but the question of future in terms of future needs and demands have become integral part of a variety of building blocks of planners and policy makers. More than 100 countries and thousands of

organisations are working in the field of futures research. It has come to my knowledge that UN agencies are now using futures research and futures scanning and analysis. It's a well established academic activity both for teaching and for research in order to provide numerous alternatives for long term planning and policy making.

Distinguished Guests, Ladies & Gentlemen,

22. There is no single tool or methodology to scan the future. Commonly used methods are Brainstorming, trend extrapolation, Delphi cross impact analysis, scenario building, simulation modelling, anticipation etc. Futurology also encompasses technology forecasting, social forecasting and technology assessment. Technology forecasting has been defined at three different levels. At the policy planning level, at strategic planning level and planning at operational level. Social forecasting relies on social science research and social indicators. Technology assessment is a thorough analysis of primary, secondary, indirect and delayed consequences or impacts present or foreseen of a technological innovation on society environment or the economy.

23. While India can be highly satisfied with the achievements in many frontier areas, much remains to be done and improved in our basic systems, approaches and ultimately the targets of nation building that we set for ourselves. It is more important to note that that it is certainly not enough for our generation to be aware of our environment and challenges. What is required is to also distil this information in the next generation. We have to protect Earth for our children who, in turn, have to do the same for theirs. Or else, as the Late Stephen Hawking predicted, the human race may not exist beyond 100 years. I wish to conclude by saying that, let us become a nation open to positive changes that is ready to give direction to a futuristic society full of new knowledge, new technology and a brand new outlook for future.

Thank you

Jai Hind