

## Opening Remarks by the Chair

### Dr Kasturirangan

Honourable Union Minister of Science, Technology and Earth Sciences, respected Shri Kapil Sibal-ji, respected Dr C N R Rao, Dr Norman Neureiter, Prof. Mu Rongping, Prof. Dahlman, Prof. Balram, Prof. Ramachandran, distinguished colleagues from China and the United States, my esteemed friends from NIAS and other participants. Good evening and welcome to India, to Bangalore and to the National Institute of Advanced Studies.

This is the centenary year of the Indian Institute of Science, on whose campus we are meeting today. I am saying this because we have the Director of the Indian Institute of Science here, Prof. Balram. The Indian Institute of Science was a tripartite agreement between a private individual, an industrialist and philanthropist Shri J N Tata, the princely state of Mysore and then the colonial British Government. Eighty years later, the National Institute of Advanced Studies was created again with a three-way understanding between the late Mr J R D Tata of the same family, the Indian Institute of Science and the state government of Karnataka. This institute was a result of the vision of Shri J R D Tata. He was convinced that the complex problems that confront our societies need multi-disciplinary approaches for their solution and new generations of leaders who are comfortable interacting with academics. This institute was set up as a non-governmental, not-for-profit, registered society. Last month, it celebrated twenty years of its existence. I am saying this only to bring out that private-public partnerships have a long history here. The Institute is really a unique experiment in our country. We have few role models to emulate. Excellence and convening power that would be the envy of institutions many times its size is the character of this institution. Although we are small, we do provide a non-partisan platform for discussion of the many problems that confront us. This institute will always remain small. We are currently about 30 academic staff. Five years from now, it is unlikely to be more than twice its present size. Yet we aspire that, despite its small size, it will be a world-class institution dedicated to finding solutions to the problems, both of our country and the planet.

Administratively, we are organized into three schools – the Natural and Engineering Science, Social Sciences and Humanities, and a program on International Strategic and Security Studies. We have a centre dedicated to Philosophy and are considering setting up centres devoted to Urban Affairs, Water Problems, Climate Change, Solar Energy, Conflict Resolution and such other themes.

We would, at this point, like to say a few words about our honourable guests. At the outset, I would like to say that we are very fortunate to have the honourable minister with us today. He just returned from a trip to the Arctic Circle and cancelled his plans for going to ASEAN in Manila to keep up the word that he gave me six months ago. He is one of the busiest men in the country, and to give a word six months ago and to keep it up would probably have been more difficult than going to the Arctic. But he is a person with a tremendous diversity of interests. Adventure, as you have already seen – he has gone to the Arctic and come back – is one character. He is a very eminent lawyer. His arguments

in the Rajya Sabha, the Upper House of Parliament, which I have had the privileged association of hearing, I think are some of the extraordinary speeches that the country has heard in the parliamentary debates. That comes out of his eminence – being good in arguments and excellent in winning debates. And, of course, he is a great leader. Normally, the Science and Technology portfolio was one of the many portfolios looked after by the Prime Minister, assisted by a Minister of State. This is the first time that a Cabinet Minister has been assigned to look after Science and Technology and Earth Sciences, and he has been outstandingly effective. I know very well of some of the things he has done to bring in innovation in the various aspects of science and technology management. One thing he has taught us is that it is not necessary to be a scientist to lead a scientific department. He has more than effectively demonstrated this aspect. We are very happy to have you, Sir, and we welcome you to this Institute and to this meet.

Prof C N R Rao is the personification of Indian science today. We all listen carefully to whatever he has to say. Among the many positions he has held in this country, I would like to recall his role as Scientific Advisory Committee to the Cabinet, Scientific Advisory Committee to the Prime Minister, Director of the Indian Institute of Science, Professor at IIT-Kanpur, and as a Visiting Professor to different universities across the world, and being a Fellow in all the important academies across the world. I should also say that with regard to this institute, he was one of the original signatories that registered NIAS and also served in the first NIAS Council. We are also thankful to him for arranging the lease of the land on which we are located. He did this as a pioneering step to bring this institution into operation. He was also the acting Director of this institute when late Dr Raja Ramanna, the Founder-Director of this institute was a minister in the Union Cabinet. We are very grateful to you, Sir, for being here with us this afternoon to deliver the keynote address.

I should also say a few words about my friend Dr Norman Neureiter with whom I had the privilege of associating many years back as the Secretary to the Department of Space. Dr Neureiter has been an exceptional colleague from the United States. All I can say is to narrate one evening – we had some discussions in the State Department regarding questions related to exports. He is very sympathetic and he really wanted to make sure that India gets all the technologies. But I wasn't very happy with the way that the discussions went at the State Department. He had asked me to deliver a dinner speech at the George Washington University and he came there. And all the time during my talk, he was only watching my face. At the end of the talk, he said, 'you look much more cheerful than when I saw you at the end of the meeting at the State Department.' He is a very humane person and he really would like to help India. He is a great friend of India, and I am sure that whenever he gets an opportunity, he makes it a point to be with us. We are very happy to see you here, Dr Norman, and welcome you to this institute.

We also would like to welcome two of our very distinguished guests – Prof. Mu Rongping from China and Prof. Dahlman from the United States. I am very happy that both of you could make it to this particular meeting. I would also like to invite and welcome all of you to this meeting – both the important and esteemed delegates from the United States and the esteemed delegates from China.

I would also be failing in my duty if I don't say a word about my colleague Dr Dilip Ahuja, who was the key person from the NIAS side to organize this entire meeting. It was his idea; it was his proposal. And we had the great privilege of just making sure that he was able to do it under the umbrella of the National Institute of Advanced Studies. He has been working very hard for this for the last several months. We thank you, Prof. Ahuja, for this initiative and the excellent arrangements that you have made for this particular meeting.

At this point, I don't want to take too much time in terms of welcoming. All I have to say is that this is about innovation – science and technology and innovation. I come from a department which is the Space Department, which is well known in this country for not just building rockets and satellites but bringing the benefits of the space system for grassroots-level development – not only a strategic capability, not only a capability to just do front-ranking science. Space, for India, has been a key element in trying to bring the benefits to many areas of societal relevance. So that is where the Space is. There are many innovations that were brought in – not only in technology, not only in the directions of application, but equally importantly, the institutional framework in which this has been carried out.

A word about the workshop. We have had many bilateral workshops, and also some international ones. But this is the first time that we are organizing a trilateral workshop. While Europe dominated science in the 19th century, 20th century science has largely been taken forward by the United States. Both India and China have a lot to learn from the United States. The role that science and technology play in national security has been recognized in both the countries. But the role innovation plays in economic development or the role science and technology could play in making this growth inclusive have received inadequate attention. What Prof. Don Price of the Kennedy School wrote 50 years ago is as true today as it was when he wrote it. While science is rarely sufficient to solve any problem completely, there is no problem to whose solution it cannot make a contribution.

That is why this workshop is timely. We need an increased understanding of the Science and Technology policies, and the changing nature of institutions and technical manpower for research and innovation in the three countries. I do hope that future collaborative research projects will result from this workshop that will look in-depth at science policies and capabilities in our countries. Publishing the proceedings of the workshop will enable us to reach many more people than could be present here today. Once again, a very warm welcome to all of you, and thank you.

