

Closing remarks

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In my introductory remarks at the Forum, I had said that the average standard of living has gone up in the world over the last 50 or years or so but, unfortunately, disparities have also increased. Disparities have increased within a given country and between countries as well, and it seems like the trend for the future. There are many sociological reasons for this trend, mostly man-made; there are also natural variabilities to which man has contributed. One example concerns extreme microclimates. There is no doubt that the pressures of increasing population will stress the resources of the globe. It appears that the harder one drives it, the more variabilities will arise. And we seem to be driving our globe, treated as a whole, ever harder.

I shall start with the notion that these extreme variabilities are undesirable---human or natural. This is so at least because they cannot be controlled. We must do something to mitigate them---not simply think passively that something must be done by someone else. Scientists alone cannot do much. They must partner with governments, private sector and industry, and with other like-minded individuals of prominence. Science is part of the picture but not the sole answer. The task is too huge for any one segment of the society to tackle it successfully.

This is why the Forum was organized to generate interaction between science and other segments of our societies. When we thought of how knowledge can change our society, we did not simply mean scientific knowledge: we meant the knowledge of history, culture and the societal context as well. We kept in mind that knowledge has to be accepted by a society for it to be useful, and a certain amount of ownership has to be exercised. We understood that private and public partnerships each have their specific roles. Private money usually chases more money for the benefit of its shareholders, and seeks proprietary knowledge; often, it is the knowledge generated through public investment that approaches the altruism of a shared commodity. Even so, private sector has an important role to play; in the past, it has changed the landscape of our lives and, with some sense of altruism, can enrich human lives even more.

In organizing the Forum, I have repeatedly stressed to the speakers that global and generic ideas without the needed dollars and euros behind them will not work; after all, UN organizations produce wonderful documents year after year but don't have the wherewithal to follow up on them. It is therefore best to focus on specific problems of partnership for which money can be raised; money can indeed be raised if there is a good understanding of what one wants and how one goes about it. We understand that transfer of technology, even of knowledge per se, is not as useful as shared experiences that come about by working together on common "projects". It is only this shared experience that will generate broad changes in outlook that we urgently need for global sustainability.

The discussion at the Forum has indeed been excellent. It could not have been anything else, given the caliber of the speakers and other participants. However, to simply say that

everything was perfect will miss the point of my remarks. My further remarks will not summarize the Forum but provide a brief critique. The reports of the rapporteurs, reproduced in the three Forum Newsletters as well as on the website, will tell you a bit about what went on here.

While the discussions have indeed been illuminating, they have often fallen short of being specific. This is mostly a reminder to me that it is our responsibility to distill the essence of these extraordinary talks into a few specific and attainable goals. As Prime Minister Prodi said in the beginning, the goals are attainable only if they are put in a broad political framework. He also said, both publicly and privately, that a one-page document arising out of the Forum would help him make a case in the upcoming G8 Forum under the German Presidency: globalization and Africa being the two of the themes of that meeting, they come precisely within the purview of this Forum.

In the Forum, we discussed many items from nanotechnology, ICT and other enabling technologies, ecosystems, demography, health, poverty and lack of basic amenities such as clean drinking water, security, primary and higher education, intellectual property issues, competition, world trade policies, problems of megacities, and all the other important things, with some focus on Africa. I can hardly add to these discussions. So I take the view of a university professor, which is what I have been most of my adult life, and ask: what can we, in Trieste, do?

I think it is reasonable to say that great universities are the primary source of knowledge creation and innovation. One of the speakers cited the example of MIT. In such universities, ongoing discussions take place on how to preserve their scholarship while encouraging innovation and risk-taking, how to balance intellectual property rights against the notion that knowledge is a common commodity, and that seeking truth is the responsibility of a university scholar. But there are many countries where such universities simply do not exist, and there is no forum for such discussions to take place. Most countries do not have even a single world-class university, whose definition I shall not make precise here. It is not that there are no universities at all—indeed there are many of them—but their quality and aspirations need a lot to be desired. It is not important to build more universities but the urgent need is to make some of them stand tall, first as a proof of concept that such things are possible, and then as initiators of more such universities to emerge. Ideally, establishing a world-class university in each of the 50+ countries in Africa is a great goal, but can it be done?

The running cost of a medium-sized research university is on the order of 500 million dollars in the US; although it can be expected to be less expensive in some developing countries, it will not be an order of magnitude lower. The price-tag of such an enterprise for Africa alone will thus be on the order of 10-25 billion dollars. This is too large a sum for anyone to suggest at present. The real limiting factor is, however, not the money (one must remember that the US congress just approved an additional 100 billion dollars for the Iraq war, and has spent an estimated total of 500 billion dollars already) but the people with the right attitude to learning, good governance and commitment to quality. Where shall we find them? Perhaps one should create four or five pan-African

universities in politically stable parts of the continent, with support from the G8 countries; that would be a great start.

What we in Trieste can do towards this end is small but straightforward. If these four or so universities were to come into being, we would support them in their building efforts. We can partner with any existing university and try to raise its level with the cooperation from a large network of scientists that we, the institutions in Trieste in general and my own institution in particular, have built over time. For instance, ICTP's scientific community is not just what is contained within the four walls of our building but it is also the large array of great people with whom we are associated. We can act as anchors, again with the help of our large community, for an effort to build small but world-class centers; this is an effort in which we have been constantly engaged, though with variable success. We can help create people who have the ability to discern what is best for their own country and to solve the problems that afflict them. We can create teachers for your higher level institutions. This is capacity building in its best sense; it is not about transferring what little we know; it is about helping you discover what you need to know; indeed, where it concerns sustainability, alas, the West is not a good example to follow.

This is what ICTP has been about; this is what other institutions in Trieste are also about. We are willing to partner with anyone who needs us; what we ask of them, however, is a long-term commitment and the awareness that capacity building is a slow process with no instant results that lead to headlines in newspapers; we ask for patience as well as the willingness to work hard, the same two attributes that we at ICTP will reciprocate with no reservations. We are aware that different countries are different, different age groups are different, different branches of knowledge are different, and that flexibility is the key to our joint success. This is how ICTP works; and we have no agenda but yours.

I once again thank all the speakers, chairs and rapporteurs, along with the participants, for their efforts to raise the level of the Forum.

Note: Professor Sreenivasan separately thanked many individuals and institutions who contributed to the Forum.