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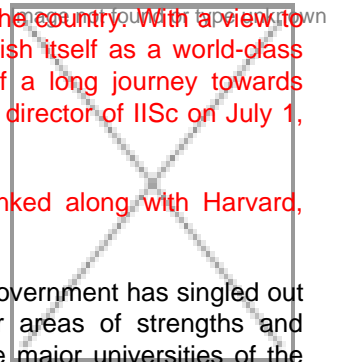
"The Rs 100-crore Grant Will Just Be the Seed"

-Prof. P Balaram, director, IISc, Bangalore.

The government may have finally realized the need for advanced centers for scientific learning in the country. With a view to give a fillip to the efforts, the Centre even announced a Rs 100-crore grant to the IISc to establish itself as a world-class institute. But Prof Padmanabhan Balaram, director, IISc, feels this is the just the beginning of a long journey towards achieving the goal. Excerpts from an interview with Prof. P Balaram, who took charge as the new director of IISc on July 1, 2005:

The Central government has allocated Rs 100 crore to make IISc a world-class university ranked along with Harvard, Cambridge and Stanford. What are your plans and priorities?

This Rs 100-crore grant was announced somewhat unexpectedly. We are rather pleased that the government has singled out the institute as the first place to experiment on raising standards dramatically. We have our areas of strengths and weaknesses. That we are very conscious of. Harvard, Cambridge and Stanford, Oxford ... all the major universities of the world are certainly models that one should keep in mind. But it is important to realize that a Rs 100-crore grant alone will not be enough to transform an institution along the lines of those mentioned. IISc is arguably the best institution for research in science and engineering in India. And the question we are asking ourselves now is how do we raise the level of research performance to the highest possible level given the constraints under which any Indian institution works. We work under the



constraints of history, under constraints of geographic location and also the environment in which you are located.

We are now attempting to start a program of modernization of our laboratories. Our laboratories are very old but we have excellent faculty and students. And they definitely deserve the best labs that money can buy in order to carry out their research. This is not a very easy undertaking in an old institution ... it is easier to build a new institution than to transform an old institution into a completely modernized place. We have begun the process of discussion with our faculty and I hope that in the next few months we would have put together a comprehensive plan of modernization. By modernization I also mean providing special thrust to collaborative programs, to inter-disciplinary research programs and also to new faculty members who will come into the institute. It is the younger faculty who eventually are the ones on whom the institute will really depend on in the future. So we hope that some of this money can be used in this direction.

Do you plan to seek more funds from the Central government for the modernization program?

Definitely yes! A Rs 100-crore grant, I think, would really just be the seed of a modernization program. I would estimate that a modernization program in a major institution like this to bring it to world standards might run anywhere between Rs 700-1,000 crore. It is certainly not going to be done in a hurry. But I think in different phases complete modernization of this institution is on the cards. And it would be the right time now, more so because we will be completing 100 years and one might ask what about the next 100. I'm not sure that we have people with the vision of JN Tata around. But I think there is a responsibility to see that all the inputs that we get in this period are used to plan for a long-term realization.

The Institute was established in 1909, after a committee headed by JN Tata proposed its setting up to "promote original investigations in all branches of learning and to utilize them for the benefit of India". To what extent has the Institute realized this vision?

It is almost a 100 years since JN Tata's vision of an institute was realized. I think JN Tata's vision has been fully realized, in that the institute has in fact been pursuing research and higher education in all branches of science and engineering. And over the past 97 years or so, the institute has contributed greatly to the development of science and technology in India. Many major national programs have benefited enormously from the faculty of the institute and also from students who have gone to work with organizations like the Department of Atomic Energy and other companies. The institute has given birth to other institutions. Homi Bhabha was here before he went on to start TIFR. And more recently, the Jawaharlal Nehru Centre for Advanced Scientific Research began here. We also provided a home for the National Centre for Biological Sciences. The institute has been a very hospitable place for promoting other institutions. So, all of this, one might say, is for the benefit of India.

The world's biggest universities, such as Harvard and the MIT, place great emphasis on their undergraduate programs. Why is it that the IISc does not offer undergraduate courses?

When the institute was originally founded, India already had great universities like the ones at Madras (Chennai), Delhi, Calcutta, Banaras and Allahabad-they were all major centers of learning. The institute was founded with the idea of an advanced research institution in mind and not as an undergraduate institution. What has really happened in the last 30 years or so is that the universities have gone into a phase of decline and undergraduate programs in science have lost their importance in most universities in India. There has been a general process of decay in universities, which has been written about by analysts. State universities have had financial troubles. The science courses have become less popular as other areas have become more lucrative. So, much of the discussion on the institute offering undergraduate programs, is of recent origin. IISc has maintained its status as a leading national institution with emphasis on research and post-graduate programs. And now it is very difficult for us to start an undergraduate program because that would require commitment of a different sort on the part of the faculty, infrastructure, space ... we would like to keep large parts of the campus as they are because this is one of the few green areas left in Bangalore. We are sort of hemmed in on all sides by development. We are not on the edge of the city where we can grow. So it is something that we think about from time to time - what can we do for undergraduate science teaching? There is a lot of discussion now on whether the institute should participate in raising the quality of undergraduate science education in India. But we don't have any concrete plans at the moment.

The Centre has okayed a modified Block Grant Scheme (BGS) that will help IISc to receive a matching grant depending on the savings effected in the non-plan expenditure. What is your plan of action?

There has been no communication from the government in this regard. So I know nothing more than what I have read in the newspapers. But I don't believe that it would be dramatically be different from what we are because we are still funded by the Ministry of Human Resource Development for all our regular expenditures - plan and non-plan. Roughly, we would probably get about a little less than a Rs 100 crore ... about Rs 85 crore to Rs 90 crore as our regular non-plan grant and we would raise another Rs 8-10 crore on our own resources. And we would raise an equal amount, say, another Rs 100 crore from sponsored projects. Each one of our faculty members actually goes out to get projects to carry out their research. So we get a lot of government grants and have a lot of interaction with the industry, which fetches almost the same amount. This money that we have generated from the industry collaboration is about Rs 8-10 crore, which is only a fraction of our total revenue. In externally sponsored projects, a large amount comes from major government agencies like the DST, DBT, DRDO and ISRO.

P&G entered into a tie-up with IISc for molecular modeling. Are there other strategic alliances in the pipeline?

This is a project, which Procter & Gamble has taken up with the faculty members in our chemical engineering department. It is really a sort of research project. I wouldn't call it a strategic alliance because it is a very moderate kind of project of about Rs 45 lakh or so. I think there is more publicity in the newspapers about this project but the publicity is quite out of proportion as we have many such projects. They do come through our Centre for Scientific and Industrial Consultancy and also through our Society for Innovation and Development. And there are probably projects of a larger magnitude than this.

How do you think the government can improve our education system at all levels?

This is the kind of question that one can't really answer because there have been commissions, committees which have all attempted to provide recipes for improving education at all levels. I am, of course, more comfortable with thinking about higher education rather than primary and secondary education. Collegiate education, may be, and university education. I think one of the reasons why higher education, at least in science, has deteriorated over the years is the gradual divorce of undergraduate education from the universities to colleges and institutions. Today, most universities have no undergraduate programs. Undergraduate programs are only held in constituent colleges. Slowly, even masters degree programs are being held in constituent colleges. And the university itself is becoming an administrative entity. This is something that one needs to sort of address and maybe reverse also. The government has new initiatives. Now there are two new national institutes of scientific research and education that will be set up in Pune and Kolkata. They will have undergraduate and research programs. These institutions should hopefully admit their first batch of students in 2006. But it involves a long process. Government approvals are being obtained. I think there are major issues still to be sorted out, like how will the government set up these institutions: will it be by an Act of Parliament or will there be some other mechanisms. This would be like creating two institutions for science, which would be like the IITs have been for engineering.

IISc does not face any competition within the country. Do you think this will make the Institute complacent?

I wouldn't say there is no competition in the country now. In specific areas I think there are institutions that compete with this Institute. But they are in specialized areas. Like in the area of biology, which I am most familiar with, many new institutions have been set up. But they are all small and they are specialized. But they are a challenge for our faculty in our departments related to biology. Whether it is the National Institute of Immunology or the Centre for Cellular and Molecular Biology (CCMB) in Hyderabad or the National Centre for Biological Sciences (NCBS)-they are now both our colleagues and competitors. I would like to really think of them as friendly competition so that the general level of biological research in India will go up as these institutions produce more and more people and do better. So I think it is actually very good for the Institute that other institutions do very well in their specifically chosen areas because they do challenge us and make us do better. But if you take the Institution as a whole, I would like to believe that there is no comparable institution in India. It is nice in one way but it is also dangerous in another as it can make people complacent. But the world has become a very small place now and therefore I don't think we are really comfortable comparing ourselves with other institutions in India. We ought to be and this is what I think the government has challenged us to do by giving the grant. We ought to be comparing ourselves with the best institutions in the world and trying to raise the level of performance. So I don't think complacency is something that is going to be around for long. I'm certainly not complacent and I don't believe that most of my colleagues are complacent. We know that competition is everywhere.

Do you plan to start a biotechnology department?

I personally believe in many cases wherever we use the word "biotechnology", it has been used incorrectly. Most of the major universities that we talk about have no department of biotechnology. Because biotechnology is an outcome of the research done in all these departments. It is not really a discipline on its own. It is not an academic pursuit on its own. These academic disciplines feed into the technologies, which we are going to use, which are biological departments.

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