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**Mahalanobis and Contemporary  
Indian Planning**

*by*

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Mr. President, Mr. Chairman, Professor Adhikari and Friends,

I recognise and appreciate the honour that your Institute has shown me by asking me to speak on this very special occasion. To people of my generation the Institute represents a unique phenomenon, an institution which combines the highest scientific standard with a strong sense of social purpose. To those who had the privilege to know its founding figure, the late Professor P. C. Mahalanobis, and there are many such people here, would remember how strongly he felt that scientific research had to be socially relevant. Being a person with broad philosophical interests, he was not unaware of the attraction that 'pure' research could exert. He was willing to grant that there were minds which were endowed with special sensibilities for whom society should make special provision for unhindered pursuit of truths, not particularly contingent on the requirements of the day. But for the great majority, he felt that a sense of direction emerging from the need to understand and solve the long standing problems of their society was extremely important. What is more, he believed that it is only through systematic pursuit of these socially relevant concerns that they could reach deeper insights which in certain happy cases can transcend the limitations of their origin. He himself practised what he preached. Thus, from being a physicist, he turned to statistics and, then when the country became independent, to the problems of planning. After retiring from the Presidency College, when he was already 55 years of age, he turned his full attention to problems of Indian planning and development. He succeeded in imparting a new orientation to the old debates of economists and possibly because he was not trained in the arcane verities of that science, he came up with astonishingly fresh insights, whose significance passing years have not dimmed.

On this special occasion when one is supposed to say something of possible interest to young graduating students, it is in the fitness of things that I say something of Indian planning. I will first try to put in a summary fashion how a man like Mahalanobis saw the problems. I will then try to say a few things about the present state of Indian planning and possible directional changes that it requires.

An elaborate mythology has recently overtaken the claims of truth. In certain circles, it is maintained that Indian planners, when they embarked upon the Second Five Year Plan, were planning for growth maximization in the

setting of a closed economy. The so-called 'heavy industry' thesis with which Mahalanobis is associated and, in defence of which he provided a beautifully simple model, is regarded by some economists as a highly restrictive special case and by many as implying an unjustified neglect of obvious requirements of employment generation and a better distribution of incomes. Those who are inclined to take a more political view of things would like to see in the adoption of this strategy a major effort by the Indian ruling class to emerge as a militarily dominant power in Asia.

On different occasions I have provided my analysis and critique of the model of growth underlying the Mahalanobis approach which was adopted with modifications as the intellectual underpinning behind the Second Five Year Plan. I can only briefly state here that the basic logic is quite robust as applied to a large sized country. While the model was a unique contribution to the mainstream of the Indian economic thinking dominated as it was by Marshall's 'principles' and in more recent years, by Keynes, a very similar exercise was carried out in the early years of this century by the Russian 'legal Marxist' Tugan Baranovski and also formed an important part of the work done by the Kiel group of economists under the leadership of Adolph Lowe, who were seeking to understand the inherent logic of Western industrial development. Mahalanobis was obviously unaware of all this work. However, with the possible exception of a handful of economists in the Anglo-Saxon world, there were few who could have claimed first hand knowledge of these works at that time and even fewer who saw its relevance to development problems in the Third World.

On the question of unemployment and distribution of incomes, it is enough to re-read the articles Mahalanobis wrote during this period. He was fully aware of the fact that the strategy of concentrating on the fastest possible expansion of capital goods sectors would not generate the needed additional employment opportunities *in the short run*. He was therefore willing to make a compromise and worked out accordingly a two-pronged approach of relying on highly labour intensive methods for agriculture and certain major consumer goods such as textiles. As regards distribution of incomes, he appeared to attach very great importance to the widest possible diffusion of health care and educational opportunities. Without using the jargon of 'human capital' theory, in a paper called 'Next Steps in Planning', his anniversary speech delivered as the President of the National Institute of Sciences of India, he came to the conclusion that removal of barriers to educational opportunities was essential to

overcome barriers posed by privileges and power. At the end of a section dealing with planning for socialism, he further affirmed that this was the only way in which a sound foundation could be laid for democracy and socialism in India.

The overwhelming impression that one receives from re-reading these texts nearly twenty-five years after they were first written is that while Mahalanobis believed in accelerated industrialization as the main key to India's progress, this was because he believed that to overcome the inherited unequal international division of labour, no other path was possible. A comparison with R. Prebisch is very instructive at this point. Prebisch who was a central banker by profession and an economist by training had come to a conclusion similar to Mahalanobis'. Unlike Mahalanobis he argued on trade theoretical grounds. He talked about secular deterioration in the terms of trade of primary producing countries and argued in favour of developmental protection, more or less on the same lines as the Rumanian economist Micail Manoilescu had done in his earlier challenge to orthodox theory. The early Prebisch position on trade in combination with the logic of expanded reproduction elegantly demonstrated by Mahalanobis would appear to suggest that economic backwardness needed as remedial measure a sharp accent on basic industries for large countries of the size of India. In the long run, no other solution was viable. In the short run, as mentioned already, Mahalanobis emphasized the cushioning role that could be performed by small industries while Prebisch recommended stabilization and improvement in the terms of trade of commodity producers.

Our experience with economic development in India as well as that of countries in Latin America would, however, suggest that the story is much more complex than these early planners had imagined. Their insights were very important and provided much needed corrections to the doctrinally dominant positions which emanated from the established centres of economic learning. But they left out certain critically important features of the relevant situations.

I am frankly quite surprised by the very cursory treatment that agriculture received in Mahalanobis' hands compared with his fairly elaborate observations on small scale industries and their potential role in sustaining employment. How does one explain it? I believe that of several possible explanations, the simplest is the best. Mahalanobis wrote his draft plan proposals at a time when agricultural output, particularly foodgrains output, after remaining nearly stagnant over decades was showing an upward trend; Mahalanobis presumably

thought along with his colleagues that only if sufficient demand were to be maintained and efforts were directed towards expanding education, better extension practices, agricultural output will continue to increase given the very large labour reserves that agriculture possessed. Years later, while writing his review of Myrdal's 'Asian Drama', Mahalanobis reverted to this theme. Here, quite interestingly he spoke of the *industrialization* of agriculture (italics mine), as a process that will take forty to fifty years to achieve full completion. This would seem to suggest that so far as Mahalanobis was concerned, the crucial question was not the growth of agricultural surplus, which he admitted to be necessary, but a much deeper structural reorientation of agriculture which will require that agriculture itself turns into an industry. Here, Mahalanobis reveals, what I may say, a fond belief that a certain generation of Marxists had cherished, a belief nurtured on the nineteenth century belief of physics as a paradigm of all sciences, even though Mahalanobis was by no means a Marxist.

How does the situation appear today? The strategy of Indian industrialization has yielded important dividends in some respects but it has also generated contradictions which so far have remained unsolved. On one level the contradiction consists in creating additional capacities in increasingly capital-intensive sectors while the growth of labour force is accelerating. This gives rise to the problem of urban unemployment. At another level, in the name of import substituting industrialization, dependence on imported products is growing while the pace and composition of exports is changing relatively slowly which gives rise to the problem of balance of payments. A very instructive example is provided here by Government's energy policy, especially as it affected choice between coal and oil. At yet another level, while the capacity of the economy to save has grown, public savings have not grown proportionately. This has happened while the need for public investment has been growing which gives rise to the problem of chronic fiscal imbalance.

These different contradictions can in my opinion be traced back to the direct and indirect benefits that the growth of public sector has conferred on the private sector, without suitably ensuring the condition of its own survival and rapid growth. I may elaborate on this point a little bit. Let us take first of all, the strategy of agricultural development. It has in recent years depended quite heavily on the increased provision of industrial and infrastructural inputs. It is quite clear that the benefits have accrued to the larger farmers to a disproportionate extent. But the fact remains that these inputs and services have

been made available most of the time at prices which are well below costs. The result has been a large increase in the volume of subsidies. Similarly, in regard to the industrial sector, tax concessions have been given in one form or another when the need for additional noninflationary sources of finance have been recognized by every one around. The result has been either a cutback in the rate of increase in public investment or a much greater resort to deficit financing, which creates as many problems as it solves. Quite clearly, the present situation cannot be sustained for a much longer period of time. There are several options available before us. Time does not permit me to elaborate on them. I can only state very briefly my own position. As I see it, India's industrial development cannot succeed unless there is adequate home demand, which, in its turn, will depend on the growth of agricultural production. The first question then, is how to ensure an adequate increase in agricultural production. I believe that irrigation will long continue to remain the leading input in Indian agriculture. Only through a massive increase in agricultural infrastructure coupled with rapid growth and optimal utilization of irrigation potential can we hope to get over the agricultural barrier. Decentralized supply of energy is an important adjunct but an even more important factor is the utilization of human labour reserve in our rural areas. Strategy of 'Green Revolution' has produced impressive results in certain crops in certain specific areas, but it is a strategy that it has run into diminishing returns, even if one were to leave out questions of equity. Obviously, I am pleading for much greater attention to the development of agriculture in Eastern and Central India, with greater attention to the needs of middle and small farmers. This strategy faces problems in the short run, but in the medium to long-run, there is no alternative.

As envisaged here, agriculture will require increasing quantities of industrial products partly to substitute for rapidly diminishing physical land availability per capita, and partly for providing additional consumer goods to keep the exchange relationships between industry and agriculture in proper realignment. This will require cost reduction in industry, especially in critical sectors such as electrical machinery, chemicals, etc. This will be possible only if our industrial sector is technically progressive.

The question of rendering industry technically more progressive is one which has recently figured in policy discussions. Issue of 'public' versus 'private' sectors has also figured quite prominently in this context. There is little evidence to suggest that our private sector, in general, is technically more dynamic than public sector. Given the fact that they generally choose 'soft areas' and rely

to a great extent on foreign collaboration, their profitability in itself is no indication of their technical progressiveness. However, one who has had opportunity to learn about the functioning of our public sector, cannot by any means afford to be complacent. Precisely because they constitute a key element in our strategy of development, they need utmost attention and immediate remedial action, beginning with personnel recruitment to the question of price policy.

There is one easy solution against which we should guard. This relates to the policy of 'liberal import' of know-how. There are many today who see the salvation of Indian industry through pursuing such a policy. I am afraid that I do not share their enthusiasm. While not denying the need for us to learn from others, I do not think that we can afford to be relaxed about building up indigenous capability in problem solving when it comes to questions of design. Even to 'internalize' successfully what is known in the world today, we have to develop an adequate research and development infrastructure. This takes us back to a theme which Mahalanobis was very fond of and that is the theme of Science and Technology for development.

This is a persistent theme throughout Mahalanobis' scientific life. It is well-known that he viewed statistics as a new technology, a technology that he felt was much more suited to the requirements of our times. In a broad sense, he has proved right. Ours is a statistical age in a sense that no previous age ever was.

However, statistics, like most modern technology, is a dual purpose technology. It can be used to promote human welfare, but equally clearly, it can be used as an instrument of disinformation and repression.

To what use statistics will be put raises much deeper questions regarding societal processes. Mahalanobis was, of course, a strong believer in the idea that technology was an ultimate solvent of most pressing social problems. He quoted the well-known American institutional economist Clarence Ayres who wrote, "The power which ideas exert by virtue of being correct is a function not of mind over matter but of technology over institution in the long run process of history." While I, for myself, would regard the dialectics of the historical process somewhat differently, I have little doubt that there is an important element of truth in what Ayres wrote.

One point needs stressing, though. Technology is not completely autonomous with respect to science, especially basic science. I think that it is in this area that we have been lagging behind, a fact which some of us may not like to admit. I have a fear that if this situation continues, our idea of catching up in the technological sphere is unlikely to materialize.

The need of the day in our educational life is to restore to the pursuit of science and inculcation of scientific temper an important place. This does not amount to what some philosophers call reification of science. Science is reified when human beings are lost sight of. We need much greater communication between natural scientists and social scientists and have to bring in philosophers into the dialogue. Mahalanobis believed in breaking down communication barriers amongst the sciences. The Indian Statistical Institute embodied his great hopes in this regard. The Institute has played a major role in the shaping of modern Indian mind. It has a still greater role to play.