STUDIES RELATING TO PLANNING FOR NATIONAL DEVELOPMENT

In 1953-54 an Operational Research Unit (ORU) was established in the Institute to undertake, on a small scale, technical work relating to planning. In September 1954 the Institute was asked by the Planning Commission to undertake jointly with the Central Statistical Organization (Cabinet Secretariat) to study the possibility of solving the problem of unemployment in 10 years and at the same time to increase national income at a reasonably rapid rate. This address was delivered on 3 November 1954 when Prime Minister Jawaharlal Nehru inaugurated studies relating to planning for national development in the Indian Statistical Institute.

1. At the desire of the Planning Commission the Indian Statistical Institute in collaboration with the Central Statistical Organization has set up study groups to examine the problems relating to planning for national development. The Planning Commission is interested, for example, to know whether it is possible to eliminate unemployment, say, in 10 years with an annual rate of investment of the order of 10 per cent of the net national product. In a fully planned economy it is sufficient to state the target in the form of maximizing national income with the assigned rate of investment because it is always possible to use a part of the planned profits to create enough jobs to eliminate unemployment. In a mixed economy there is some advantage in emphasizing the need of attaining full employment with the understanding that it would be desirable, of course, to increase national income at the same time as much as possible. The emphasis on employment is essentially a short range consideration; the long term objective must be such maximization of income as is capable of being realized under any given socio-political conditions.

2. Different models of economic growth are being constructed and studied on the basis of different sets of relations (sometimes expressed in a mathematical form) between relevant varieties. The object of making different models is to explore a wide range of possibilities which would give some guidance in the choice of the basic approaches. A brief explanation is given in this note of one type of approach. It is convenient to use numerical examples to explain the general procedure. But the figures given here are used purely for purposes of illustration and no special significance should be attached to them. In fact, the aim of the group studies relating to planning is to make realistic estimates of these figures.

3. We assume that the net output of the economy is 100 of which 94 is consumer goods and services and 6 is capital goods. We desire to increase the share of capital goods to an average of 10 per cent. This would have to be done gradually. In the beginning, we may have to import much capital goods from abroad. But it would be clearly more economical to manufacture capital goods within the country. (For example, we are at present importing machinery from abroad to build factories for the production of steel. It is obviously desirable to construct a sufficiently large workshop to build factories for steel production). This means developing the capital

goods industries, that is, increasing the production of investment in capital goods enterprises as much as possible. At present only a small portion, possibly less than 10 per cent, of all investments goes to capital goods industries. From preliminary studies it seems that this proportion would have to be increased to, say, 30 per cent to double the national income in 20 years. From the long range view point, it would be still better to push up the share of heavy industries to 40 or even 50 per cent but this may be too difficult of accomplishment and too great a sacrifice of the present for the benefit of the future. We may, therefore, adopt 30 per cent as the share of capital goods industries for purposes of illustration—this means an allocation of 3 per cent of net national income or about Rs. 300 crores for investment in capital goods industries every year.

4. Having allocated 30 per cent of the investment to capital goods industries, we may proceed to give, say, 20 per cent to investments in large factories to manufacture consumer goods, 25 per cent to agriculture and small industries, and 25 per cent to services. On the basis of an initial investment rate of Rs. 600 crores per year allocated in the way mentioned above it is possible to study the changes in the national economy in 10 years. We shall assume that the ratio of new income generated to capital investment is one-fourth in the case of large scale enterprises to produce both capital and consumer goods, half in the case of agriculture and small industries, and one in planned services. We also assume for purposes of illustration that the average amount of investment required per engaged person is Rs. 10,000 for capital goods industries, Rs. 7,500 for consumer goods factories, and Rs. 1,000 for agriculture, small industries and services. On certain plausible assumptions (and using a particular form of a model of economic growth) it seems that at the end of 5 years the rate of investment would increase to about Rs. 860 crores per year; national income would increase by 17 per cent, and new jobs created every year would be so large as nearly 48 lakhs. The rate of development would, however, become more rapid as time progresses.

5. At the end of 10 years, the rate of investment would rise to over Rs. 1200 crores, national income would increase by 42 per cent, and employment by nearly 70 lakhs of jobs. (In fact such an increase of employment may not be even necessary in which case the investment in small industries may be fixed at a lower level.)

6. In addition to the planned or directed investments (through, for example, the existing control over capital issues) it is assumed that there would be an unplanned sector; and also that it is possible to work out the relation and interaction between the planned and the unplanned sectors. On the basis of such interaction it would be possible to make a rough estimate of the total increase in national income and the portion available for consumption.

7. At this stage it is necessary to consider the distribution of the increase in income among the population. In principle, the distribution of income can be

controlled to some extent through taxation and other financial measures. It is, therefore, possible, in principle, to lay down certain targets in the distribution of income. (This in fact is one of the important responsibilities of Planning Authorities).

8. Once the desired distribution of income is settled, it would be possible to consider the change in the demand of consumer goods and services. Purchasing power would increase with rising income; and the demand for goods and services would increase in a definite way depending on the nature of the commodities or services. Intensive studies have been started on the basis of the data collected by the National Sample Survey to find out how the consumption of particular commodities or services actually changes with increasing levels of per capita expenditure. For example, it seems that if the income increases by 30 per cent, the consumption of salt may increase by only 8 per cent, of cereals by 12 per cent and of cotton textiles by 25 per cent. (These are illustrative figures and should not be taken as actual estimates).

9. The above change in consumption with increasing income refers, of course, to different households or individuals at the same point of time. It is not unreasonable to assume that, as a first approximation, a similar change would take place when the income of the same household or individual increases over time. On this assumption and with any given (desired) distribution of income it is possible, in principle, to make a rough estimate of the total increases in demand of different consumer goods and services. This gives a basis to settle the supply of goods required to meet the increased demand. But it is not necessary to accept the figures exactly as estimated. It is possible, within certain limits, to make suitable adjustments from social or administrative considerations. For example, the supply of certain luxury items may be deliberately kept low or the supply of certain items like, say, education or health services may be increased. (Such adjustments would be naturally the responsibility of the Planning Authorities.) After such adjustments, the requirements of consumer goods would become available.

10. At the same time it would be necessary to decide the requirements of capital goods which would naturally depend on the programme of investment. Consideration would be also given to imports and exports. It may be decided, for example, to meet certain portions of the requirements (of both capital and consumer goods) through imports. It would be necessary at the same time to settle what additional quantities of which commodities would have to be produced and exported to meet the cost of imports. In this way the final planned bill of goods (to meet estimated requirements of consumption, investment, and export) which would have to be produced in the country, would become known.

11. Next comes the crucial step of examining whether the required additional bill of goods and services can be in fact produced and supplied with the help of the investments of different types for which allocation had been actually made.

It would be necessary at this stage to consider the detailed breakdowns of production of commodities and the supply of services. The economic and technological relations between investment, income, and employment in different industries would have to be used at this stage for which intensive studies would be indispensable. (Work on a small scale has been already started.) If the desired requirements of goods and services can be supplied through appropriate investments in different industries within the limits of the allocated resources, then a solution would have been reached. It would be then possible to proceed with the detailed planning within the broad frame of the solution adopted by the Planning Authorities.

12. Further problems would arise as the programme of investment and production becomes more and more concrete. One industry would sell its products to various other industries. Also it would get its needs form other industries. For example, to produce one additional million ton of steel it is necessary to produce (or import) two additional million tons of coal, two additional million tons of iron, and additional quantities of many other materials such as manganese ore, dolomite, magnesite, fluxes, refractories, etc. Moreover, fixed and working capital requirements of one industry would be supplied by many other industries, and its own product would be used as fixed and working capital in other industries. Thus the whole industrial structure is closely interlocked, and in order to conceive of a change in the level of production of one commodity it is necessary to give consideration to the change in output of many other industries. When an approximate allocation of investments is ready, the anticipated consumer expenditure is known, and the requirements of final flows of consumer goods have been settled, it would be necessary to work out the total output of the different industries (inclusive of all intermediate products and consistent with the bill of final goods). This can be done with the help of inter-industry relations (some time called input-output tables). Work is already in progress in 12 sectors (that is, a 12×12 table); and arrangements are being made to prepare a 90×90 table. Later on, it is proposed to consider the inter-relation and two-way distribution of fixed and working capital.

13. In the present approach the essential aim is to adopt a pattern of investments which by developing the capital goods industries would make available a larger and larger supply of capital goods produced within the country and thus make it possible to increase progressively the rate of investment and hence the rate of economic development in the desired way. A larger rate of investments would mean an increase in employment and in salary and wage payments leading to an increase in purchasing power which in its turn would create a larger demand for goods and services. One aim of planning must be to meet the increase in demand by a commensurate increase in the production of the required goods and in the supply of the required services. If this is feasible, a possible solution at the technological level would be available (which may or may not be acceptable depending on other considerations). If the expected requirements cannot be met by the anticipated production, then changes would have to be made in the investment plan until this

condition is broadly satisfied. The acceptable solution must also satisfy, as far as possible, the condition of attaining full employment in, say, 10 years. If there is more than one solution satisfying the two basic conditions mentioned above, it would be possible to introduce supplementary conditions relating to the increase of income or the distribution of income.

14. One condition in the aggregate is, of course, that the total production of consumer goods should equal the total personal income after tax deductions together with current payments by public administration other than transfers and factory incomes. It is desirable that this balance should be maintained year by year, and not merely reached at the end of the plan period. It would be difficult to attain this balance during periods of large scale capital construction because the new capital stock realised is not consumable. Gaps between demand and supply would no doubt sometimes emerge and short range correctives (in the way of price controls, rationing, etc.) may be necessary from time to time.

15. It is necessary but not sufficient to work out a plan in physical terms; the financial counterpart must also be worked out. The most important question here is to find financial means to increase investment from, say, 5 or 6 to 10 per cent of national income. It is possible to use the investment plan itself to help in this matter. For example, new investments can be made entirely or mostly in the public sector so that "profits" or the surplus can be utilised for further investments. (Ploughing back of profits in existing private enterprises can be permitted to the desired extent to enable production being increased at marginal outlay.) Excise duties can be levied at the point of production in large scale industries in the private sector and the proceeds used for national development. Further expansion of large scale manufacture of such consumer goods as can be produced through handicrafts or small industries can be discouraged or prohibited for some time which would make available more resources for capital goods industries and other sectors. Factory production of consumer goods may, however, be arranged, preferably in the public sector, in the case of essential commodities, or goods for export, or finally, "luxury" goods on which it is possible to earn very high profit.

16. The model described here, however, definitely contemplates a large increase in small industries to supply as much as possible the increasing demand in the short run. After full employment has been attained, and the capital goods industries have been developed fairly well, it would be possible and desirable to increase the rate of industrialization by drawing away labour from agriculture and small industries. At this stage there would be no danger of creating unemployment through the expansion of large scale factory industries.

17. It would be probably desirable to give immediate attention to increase production to full capacity in both large and small industries, and also to increase productivity by all other means such as working 2 or 3 shifts, because all this can be

done with a very small outlay of capacity and also because this would create a good deal of employment. The question of surplus production would emerge which may require government purchases on a large scale to build up inventories which would be used to meet the increase in demand later on. Government trading may be of help in this connexion and may also be useful in earning profits to be utilised for economic development. Suitable excise duties at the point of production and planned profits at the stage of distribution can serve the dual purpose of securing resources for investment and of promoting an equalitarian level of living by imposing higher differential duties or profits on luxury goods.

18. In dealing with the programme of industrial production one most important question would be an adequate supply of trained personnel at all levels. This may indeed prove to be a serious bottleneck. Attention would, therefore, have to be given to estimate the requirements of trained personnel and to make necessary provision to give training to the required number in each field. Input-output tables in respect of man-power would be of help in this connexion. Studies are also being started in this field. In addition, suitable provision will have to be made to ensure an adequate supply of services personnel (including health, education, research, etc.).