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In its broadest sense, the term "industrialisation" denotes the organisation of production in business enterprises, characterised by specialisation and division of labour, and involving the application of technology and mechanical and electric power to supplement and/or replace human labour. Conceived of in this way, all sectors of the economy (the production of consumer goods and capital equipment, agriculture and service activities) can be "industrialised". The present study, however, is concerned with a much narrower concept of industrialisation - the development of manufacturing enterprises of all kinds and in all sectors.

The industrialisation of a basically agricultural economy was seen as the means, by which the chains of dependence, forged during the colonial period, could be broken, matching the newly acquired political independence with economic independence. Industrialisation was also seen as a means by which living standards throughout the economy could be raised by diversifying the economy, reducing excessive dependence on the export of a few primary commodities, alleviating the balance of payments constraints through import substitution and creating extensive employment opportunities. The present study confines itself to mainly one

aspect of industrialisation, viz., a consideration of those strategies of industrialisation, which can lend a helping hand to the drive for elimination of unemployment.

**EARLY LITERATURE**

In the early literature on economic development, industrialisation as a source of employment has at best been a distant second to the **prima donna** of capital and its accumulation. In the pre-industrial world of classical economists, Ricardo \(^2\) did construct a model, assuming unlimited supply of labour, wherein the unconsumed surplus of the capitalist created more capital, which resulted in an expansion of employment, within the constraints of natural resources. But, in the literature derived from Western experiences, one finds the emphasis shifted to productivity of labour and entrepreneurship. This is to be expected because scarcity of labour, rather than an abundance of it, was the rule in most of these areas, especially in the newly settled areas of North America and Australia.

For the first time, John Maynard Keynes, who, by any test, ranks as one of the great economists of all time and as the most influential economic thinker the twentieth century

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has so far produced, focussed his attention on the forces which determine the employment policy followed in industrialisation. He\(^3\) propounded the theory that entrepreneurs will offer the amount of employment which maximises their output. Keynes also held the fundamental position that "employment can only increase pari passu with an increase in investment." Thus, in effect, for Keynes, the idea of an employment-oriented industrialisation strategy was nothing short of an unthinkable economic proposition.

MAJOR THEORETICAL WORKS:

In the post-second world war literature concerning the problems of the under-developed world, employment of masses in industry received at least some attention, albeit marginal only, perhaps due to history of thought until then. Before long, however, a clear nexus between employment and industrialisation, as is understood and appreciated now, was brought out in major theoretical works in early 50's\(^4\). Labour-reallocation from the agricultural sector to the industrial sector, so as to gradually shift the centre of gravity of the economy towards the latter, was visualised to be the heart of the development problem in an agriculture-predominant labour-surplus economy, like India.


W. A. Lewis, who became one of the pioneers in framing employment-oriented growth models with reference to underdeveloped countries, is of the opinion that many important works can be done by human labour with very little capital. He believes that labour can be used to make even capital goods without using any scarce factors. He says: "Witness the pyramids or the marvellous railway tunnels built in the mid-nineteenth century almost with bare hands". He, therefore, recommends capital-intensive techniques only where they are absolutely necessary. Lewis realises that shortages of skilled persons are likely to be felt, but he takes such shortages as only a "quasi-bottleneck", because, if the capital is made available, employers or government can train unskilled labour.

Galenson and Leibenstein took an opposite stand and tried to show by their analysis that to increase current employment by adopting labour-intensive techniques might generate immediate output but very little surplus, since the wage bill would be large. Capital intensive techniques, on the other hand, by minimising the wage bill, will increase the reinvest-

able surplus. In that case, the creation of less employment and output now may lead to more employment and output at a future date. The authors, therefore, suggested that the objective of even an employment-oriented strategy of industrialisation should be to maximise the reinvestable surplus generated per unit of output. Their suggested criterion has been called the "marginal per capita reinvestment quotient" criterion.

Dobb and Sen also propounded a similar criterion, the surplus maximisation criterion, but they drew out the qualification that it is not necessarily the most capital-intensive technique which will maximize the surplus. According to them, a high wage rate will dictate a capital-intensive technique, but a low wage rate, such as may be operative in less developed countries, will mean that a relatively labour-intensive technique will maximise the surplus. The lower the wage rate, the nearer does the surplus maximizing technique move to becoming one and same as the output maximizing technique. In the limiting case, when the wage rate is zero, the technique maximising output and employment also maximises the reinvestable surplus.

Ranis and Fei\(^9\) focussed attention on, what they call, the misunderstood nature of the output-employment conflict in the Indian context. They feel that only after the strategy of industrialisation has met the "critical minimum effort" criterion, can it afford to give greater emphasis to output rather than employment. By this criterion, they mean the minimum effort, which will be required to make the rate of labour absorption \(n_L\) in industry higher than the rate of population growth \(g\). To achieve this aim \(g \leq n_L\), the forces governing the rate of absorption, viz., capital accumulation and technological innovations, have to be backed suitably.

Galenson\(^10\) has shown that use of highly labour-intensive techniques in manufacturing may create more jobs in the manufacturing sector, but if this is accomplished at the expense of immediate production or of the rate of growth of manufacturing capacity, there may be an offsetting loss of job opportunities in tertiary employment. He, therefore, suggested that an employment-oriented strategy of industrialisation must take into account the impact on tertiary employment.

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and if "it seems socially desirable to sacrifice a portion of manufacturing output through the use of labour-intensive techniques in order to relieve unemployment, such policy might prove irrational unless new manufacturing employment offsets the tertiary employment foregone as a consequence of diminished output".

Prof. Gunnar Myrdal\textsuperscript{11}, who is universally regarded as an authority on the development problems of under-developed countries, particularly of Asia, recommends adoption of a strategy based on predominantly labour-intensive techniques on the ground that "the large volume of unutilised labour possessed by these countries" has a "productive potential capable of creating capital and increasing production".

Dandekar and Rath\textsuperscript{12} have presented a brilliant analysis of the pros and cons of adoption of a labour-intensive technology. According to them, there are three questions which must be asked and answered before one accepts labour intensive technology as the most suitable employment-oriented strategy of industrialisation. Firstly, does the adoption of a labour-intensive technology, which is also a technology with low labour productivity, enable a person to earn a


minimum desirable living? Secondly, is it a feasible solution in the sense of one which can be maintained in the face of economic forces operating in an economy in which the means of production are privately owned? Thirdly, if the solution is per force maintained over a period, does it create conditions for progressive economic development or is there a danger of its leading into conditions of stagnation?

Stewart and Streeten\(^{13}\) by a brilliant analysis of the issues involved, have come to the conclusion that there is no conflict between output and employment objectives in developing countries. According to them, the strategy which will maximize output will also lead to maximization of employment, because labour-intensive methods also save capital per unit of output.

A stream of thinking pioneered by Schumacher\(^{14,15}\) brings forward the suggestion for the use of "intermediate technology", which not only maximizes employment, but is also a reaction

\(^{13}\) Stewart, Frances and Paul Streeten, 1971, Conflict Between Output and Employment Objectives in Developing Countries, Oxford Economic Papers.


to the fact that modern technology and rapid industrialisation have led to many problems in the advanced countries. In a nutshell, this approach suggests the adoption of labour-intensive small-scale technologies, compatible with efficient production and as low a capital investment as possible with a view to maximize employment currently. This stream has been followed up by Dickson\textsuperscript{16}, Sen\textsuperscript{17}, Johnson\textsuperscript{18} and Vinod Vyasulu\textsuperscript{19}.

Raj Krishna\textsuperscript{20} feels that the most important ingredient of an employment oriented strategy of industrialisation is the maximisation of investment, because the investment theory of employment shows that employment expansion depends upon the rate and pattern of investment, assuming other things (like the population growth rate and the participation rate on the supply side and technical change on the demand side) constant. This has been confirmed by Dholakia\textsuperscript{21} by mathematical analysis, through which he evolved the following condition, which must be fulfilled for attainment of development with full employment.

\begin{itemize}
\item \textsuperscript{16} Dickson, David, 1974, \textit{Alternative Technology}, Fontana.
\item \textsuperscript{17} Sen, A.K., 1975, \textit{Employment, Technology and Development}, Oxford.
\item \textsuperscript{18} Johnson, Harry, G., 1975, \textit{Technology & Economic Interdependence}, Macmillan.
\item \textsuperscript{19} Vyasulu, Vinod, 1976, \textit{Technology and Change in Underdeveloped Societies}, \textit{Economic & Political Weekly}, August 28.
\item \textsuperscript{21} Dholakia, Jitendra, 1974, \textit{Unemployment and Employment Policy in India}.
\end{itemize}
\[ \Delta N/N + \Delta p/p = k w f (1 + t) + t \]

Where \( N \) is population, \( p \) is participation rate, \( k \) is investment, \( w \) is wage goods, \( f \) is fixed capital and \( t \) is the technological parameter.

According to Prof. J. Tinbergen\(^{22}\), the strategy of industrialisation has to be formulated on the well-known Heckscher-Ohlin principle, which says that the choice of activities should be such that the factor ratio required by these activities coincides, as much as possible, with the factor ratio that the country is endowed with. He, accordingly, feels that in a country like India, the strategy of industrialisation should lay emphasis on labour-intensive industries, which will create maximum employment and will also maximize income. He, however, cautions against adoption of antiquated methods and suggests the adoption of labour-intensive, but reasonably efficient techniques. He forcefully brings out the importance of labour-intensive based strategy of industrialisation in these words, "Here I see a very clear priority. First, put everybody to work, the social impact of which is the most important. When no unemployment is left, then you can make work more efficient by making it more capital-intensive; that's what has happened in developed countries too".

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While agreeing with the Nobel laureate, Dr. A.M. Khusro\textsuperscript{23} sounds a word of caution that, "if you attempt to create only employment without regard to efficiency, output and surplus, you will soon end up with neither employment, nor output, nor surplus. Many a labour intensive scheme, which seems to be giving a lot of employment per unit of capital is in fact an optical illusion. It gives employment only in the first round, but because it does not generate, owing to inefficiencies, much surplus for plough back, it fails to generate employment in the following rounds. Then as it probably peters out slowly, it throws back into unemployment or under-employment all or many of the initially employed." Dr. Khusro, accordingly, suggests formulation of a strategy which depends on "self-financing surplus generating schemes."

At a fairly general level, Henry Bruton\textsuperscript{24} has shown that more jobs and higher incomes for poorly paid workers result from an expansion of activities where: (a) the elasticity of substitution between capital and labour is high; (b) wage rates are not pushed up too rapidly; (c) technical change, which increases the efficiency of both capital and labour use, is high, and (d) the price elasticity of product demand is high.


Colman and Nixson\textsuperscript{25} feel that the orthodox approach, which advocates the factory intensive criterion for industrialisation, namely that the less developed countries should select investment projects which utilise to the full their plentiful factors (for example, labour) and economise on scarce factors (for example, capital), is too simplistic, mainly because this approach assumes that capital and labour are substitutable for one another and that a large number of alternative techniques is available. In fact, the assumption that a choice in fact exists may be incorrect in many cases. The authors further point out that the choice between labour-intensive techniques and capital-intensive techniques is basically the one between present and future welfare. This is a political question concerning the goals the society sets itself and the time horizon over which these goals are to be achieved. Can the government inflict a sacrifice on the population for the sake of benefits in the future when there is such an immediate need for output and employment now?

Steel and Takagi\textsuperscript{26}, with the help of mathematical analysis of an industrialisation model constructed by introducing an intermediate sector into the Harris-Todaro framework, show that "Intermediate sector expansion is a particularly..."
promising short-run strategy for employment and growth." The authors view the intermediate sector, in the long run, as complementary to the modern sector in the sense of providing training and experience to workers who may later be employed by the modern sector. The intermediate sector generally produces lower quality, lower price versions of modern sector goods for the lower income market. They, therefore, suggest that a policy of industrialisation at minimum cost in unemployment must include a strategy of supporting the intermediate sector as well as investing in the modern sector.

Some economists\textsuperscript{27}, albeit a minority, have argued that a small-scale strategy in India could cost more in terms of resources and give employment to fewer people than a heavy industry strategy. They also view employment in the small sector as woefully unproductive in the absence of skills and infrastructure.

L. K. Jha\textsuperscript{28}, who has put forward wide-ranging suggestions to revamp the economic strategy, agrees that "in a country where capital is scarce and manpower is going to waste, the plea for relying much more on labour-intensive techniques

\textsuperscript{27} Franda, Marcus, 1979, \textit{Small is Politics}, Wiley Eastern.

of production than on those which necessitate heavy capital outlays in entirely sound." But, he warns that "our concern is not just with creating more work, but also with ensuring that jobs bring a tolerable income to the worker." He, therefore, advises proper appreciation of the role of the technology for improving the productivity of labour, which he considers to be as important as the provision of new jobs.

Gautam Mathur, chiding the attitude of the so-called pragmatic economists towards employment creation ("employment to come automatically out of the growth of income"), theorises, "I do not think that under any economic theory, new or old, we could have expected employment to increase fast in the short or the long run when we were bent upon constantly sticking to a high capital-labour ratio for new investments in the consumption goods sector." Mathur is against undertaking programmes of employment-generation "merely because they are in high employment creating activities". He favours adoption of strategies, both long and short term, in which "the allocation of the economy's resources may be optimal."

For this optimal strategy, Mathur suggests fast expansion of heavy investment industries, "which can reproduce themselves, as well as producing the inputs directly entering into the consumption goods sector." Simultaneously, he suggests investment in the consumption goods sector to meet the extra demand of essential items, created by the expansion of heavy investment industries. Mathur feels that while the "heavy-investment sector is the proper habitat of the use of modern, advanced and capital-intensive technology," "the appropriate techniques in the consumption goods sector will be of "a low degree of mechanisation", creating "incidentally" a lot of employment per unit of investment of scarce capital.

EMPirical studies from India:

A number of studies has been conducted by government agencies as well as by private individuals in India to work out the proper strategy of industrialisation, which could help in solving the unemployment problem.

An important document in recent years, which deals with an employment-oriented strategy of industrialisation is the Village and Small Scale Industries Committee Report of 1955, popularly known as the Karve Committee Report. The Committee

notes that since a substantial number of the unemployed and under-employed belong to village and small industries group, setting up of small-scale and village industries will provide employment to them in occupations in which they have been traditionally trained and for which they possess equipments. The committee realizes the necessity of introducing better techniques in the village industries, so that they can keep pace with the progressively expanding economy and do not become unsuitable tomorrow, but the improvement in technique can be permitted only so long as it has no "deleterious effects" on employment.

On the basis of figures collected from "Census of Indian Manufactures, 1956" and studies prepared by the Perspective Planning Division of the Planning Commission in respect of capital, labour and output relations in various industries. Dhar and Lydall arrive at the finding that although small enterprises appear to employ less capital per unit of output, in general the most capital-intensive type of manufacturing establishments is the small factory using modern machinery, and employing up to 50 workers. They, therefore, conclude that the issue of choice between large and small industries for the purpose of an employment-oriented industrialisation strategy is largely irrelevant, and it

should aim at making the best use of scarce resources, instead of aiming at creating employment for the sake of employment.

Bhagvati Committee\textsuperscript{32} opposes fast introduction of mechanisation, designed to replace human labour, but at the same time, recommends introduction of "sophisticated technology" in certain areas. The Committee recommends reduction to the maximum extent possible in the installed capacity in various industries in order to generate employment in the industrial field. The Committee virtually favours creation of employment at any cost without going into the economics of the scheme.

Dholakia\textsuperscript{33} has shown that in a poor country like India, increase in employment is significantly related to an increase in the fund of wage goods.

A.K. Sen\textsuperscript{34}, who has worked out the capital-output ratios for different techniques of production, finds that the capital-output ratio is the lowest for the most labour-intensive techniques. A similar conclusion has also been arrived at by Makhajani\textsuperscript{35}

\textsuperscript{32} Government of India, 1973, \textit{Report of the Committee on Unemployment}, (Bhagvati Committee), May.

\textsuperscript{33} Op. cit.

\textsuperscript{34} Op. cit.

The NCST report on Khadi and Village industries\textsuperscript{36}, which gives statistical data on the growth of production and employment in several rural industries, paints a gloomy picture of these industries as a source of employment in industrialisation. The report shows that the "compounded rates of growth of employment in these industries, as compared to the growth of output, are very meagre".

V.K. Puri\textsuperscript{37} has, on the basis of the relationship worked out by Ranjit Sau\textsuperscript{38} between employment and production ("While factory production increased at an annual compound rate of 7 per cent during the period 1951 to 1969, employment rose at less than 3 per cent per annum resulting in increased number of unemployed at the end of each year"), arrived at the conclusion that a strategy of industrialisation aiming at production cannot per se become employment-oriented, because production and employment are neither uniquely nor directly related and more production by itself does not generate more employment.

B.C. Tandon\textsuperscript{39}, who has analysed plethora of data published by UN agencies and Government of India, arrives at the

\textsuperscript{36} National Committee on Science \& Technology, 1975, Report of the Science \& Technology panel for Khadi \& Village Industries, Government of India, August.


\textsuperscript{39} Tandon, B.C., 1977, Pattern and Technique of India's Economic Development, Chugh Publications, Allahabad.
conclusion that an employment-oriented strategy of industrialisation should not only aim at providing jobs, but should also maximise output, conserve foreign exchange and improve the distribution of income. To achieve all these objectives, Tandon is of the view that in the first phase of development, the traditional and intermediate techniques may work together, but the latter should gradually replace the former. In the final stage, modern and sophisticated technology alone would serve the purpose.

Ruddar Datt and Sundharam⁴⁰ make a strong case for small scale and household enterprises as an important component of an employment-oriented strategy of industrialisation by working out employment-output and capital-output ratios of different sectors, and employment generated in each of them. They find that while the employment-output ratio, which can serve as a measure of productivity is the lowest in the small scale sector, employment generation capacity of small sector is eight times that of the large sector. They also find that the net capital-output ratios of the small and medium sectors work out to 4 and 3.2 times respectively that of the large sector in 1965. Almost similar findings have been arrived at by N.S. Gupta and Amarjit Singh⁴¹ for the year 1974-75. They found the net


capital-output ratio of big enterprises in the factory sector to be 3 times that of small enterprises, while the latter's capacity to provide employment was about 7 times more in comparison to large scale sector.

Kripashankar⁴², studying the potentialities of growth in Ghazipur district of Uttar Pradesh, finds that "in recent past only those units in the small scale and tiny sectors have developed fast, which are vertically linked with the units in the large scale sector, producing accessories, spares and parts, and intermediate products used by large scale sector". Horizontally placed units in the tiny sector normally do not survive because of competition with the organized sector.

T.V.S. Ramamohan Rao⁴³ has made a case study of 36 firms in the large scale sector and 114 firms in the small sector from Uttar Pradesh and found that large scale firms are about 4 times more capital-intensive than the small-scale units. He has also found that the choice of appropriate technology offers only "marginal opportunities" for increasing employment and the main choice variables are the product-mix and the scale of operations.

⁴² Kripashankar, 1979, Growth Process in Ghazipur, Arthik Anusandhan Kendra, Allahabad.

A. C. Minocha, who has studied the industrial development in Madhya Pradesh, feels that the unorganised sector should be the major sector to be expanded to absorb the increasing labour force, because even if employment potential was doubled in the organised sector, it would not make any major dent on the problem of unemployment. According to the strategy proposed by him, big and heavy industries would be desirable only to the extent required for effective utilisation and exploitation of mineral and water resources of the state. He is convinced that development of a network of small and cottage industries, which emerge from the resource base and requirements of the regional economy, the cropping pattern, skills and endowments of the people only, can be an effective strategy of employment-oriented industrialisation.

K. M. Rastogi has also made a case study of Madhya Pradesh, which he calls "a unique case of growing unemployment and poverty amidst plenty". He is in favour of only small-scale and village industries, which make optimum use of indigenous resources and techniques. According to him, "there are hundreds of items which can be produced in rural and small-scale industries more economically than in large sector".

Puttaswamaiah, who has prepared a plan for Chiknayakanhalli taluk of Tumkur district of Karnataka for achieving full employment within five years, favours establishing only those industries, which are based on the resources available locally. The study also points out that the aim should be to create more opportunities per unit of output and investment.

A.K. Singh, who has made a comparative study of the development of Eastern and Western Uttar Pradesh, finds that mere dependence on such industries which process the local raw materials or which cater to local or regional demand, fail to generate a process of rapid economic development. Hence he recommends setting up of "dynamic or propulsive industries", which cater to the national market and which have been experiencing rapid growth in recent years. From Bihar experience, he shows that the location of a few big projects which remain unintegrated with the regional economy, will fail to produce the "desired result".

S.N. Bhattacharya, who has studied the economic growth and its problems in five backward districts of North Bengal, calls for "a new orientation to our industrial policy, drawing

upon the tenets of the Gandhian Philosophy of production by masses and the economics of relative resources (including labour) endowments in the country in order to encourage units of appropriate processes and sizes." This, he clarifies, does not imply that growth of larger, capital-intensive units to supply fertilisers, power, transport etc., that are needed to sustain agriculture can be entirely dispensed with. The argument is only that the potential for developing smaller and more dispersed agro-related industries should be systematically identified for each local area and exploited to the full.

LESSONS FROM ABROAD:

A large number of studies has been conducted by international agencies, as well as by private individuals in various countries, regarding different aspects of an employment-oriented strategy of industrialisation. Inspite of varying nature of political and socio-economic system prevailing in different countries, a review of the strategies and mechanisms, which have contributed to the economic achievements in these countries, can enrich the insights into the issues confronting the area of the present study, even though it may be difficult to envisage the ready transfer of these strategies from one area to another.

Dr. Wu49, who has examined relevant data from India,

Japan, Pakistan and Phillipines, has found that both the capital-output ratio and wage-capital ratio show an inverse relationship with capital intensity. He has also found that the "rate of operating profit" for small scale industries in Delhi shows a similar inverse relationship with capital intensity. Dr. Wu, therefore, recommends setting up of capital-light small-scale industries in countries with large unemployment.

L.G. Reynolds, who conducted a study of the industries of Puerto Rico, has found that the development of "modern factory style manufacturing" makes only a limited contribution to employment. He, therefore, suggests "imaginative exploration of small scale, more decentralised, more labour using forms of organisation, such as have persisted in the Japanese economy" for incorporating in an employment-oriented industrialisation programme.

A study of UNIDO, based on evidence from a number of developing countries, indicates that "small enterprises with a lower level of investment per worker tend to achieve a higher productivity of capital than do the larger, more capital enterprises".

51. UNIDO, 1969, Small Scale Industry in Latin America, Publication No. 11B 37, p.56.
Arrighi, on the basis of his study of the pattern of employment in tropical Africa, has pointed out a significant advantage of labour-intensive techniques vis-a-vis capital-intensive techniques. He has found that capital-intensive techniques are characterised by a pattern of employment in which semi-skilled labour and high level manpower predominate, whereas labour-intensive techniques make greater use of skilled and unskilled labour.

Professor Dudley Seers, who was deputed by the ILO to study the unemployment problem of Colombia, arrived at the conclusion that employment-oriented industrialisation should consist of such a strategy "which can effect employment, first, by influencing what products are made, and second, by influencing how they are made". He suggests that, while techniques of production should be influenced in favour of labour-intensive methods, it must be ensured that the relative cost of labour and capital reflects accurately their availability. Prof. Seers rejects the growth approach for third world countries by pointing out that "to try to solve the unemployment problem by just accelerating the overall economic growth is to take on voluntarily the task of Tantalus—the target recedes as one reaches for it."


According to an ILO study of Kenya\textsuperscript{54}, one of the main keys to an employment-oriented industrial strategy consists in effecting links between the "informal sector" and the "formal sector". The report notes that the bulk of activities in the "informal sector" is economically efficient and profit making, although it provides low incomes for those who do it.

Sigurdson\textsuperscript{55}, who made a case study of rural industrialisation in China, has found that rural industries, as a component of overall strategy of employment-oriented industrialisation, have miserably failed to satisfy the employment aspirations of the people. In support, he cited the figures from Zunhua country, where more than 85 per cent of the total work-force still depends on agricultural operations, which even for a developing agricultural economy is too high. On the other hand, Jan Deleyne\textsuperscript{56}, on the basis of a detailed and objective study of China's economy, arrives at the conclusion that "the creation of small industries constitutes the only means of creating a large number of jobs for the young people coming on to the labour market."

\begin{itemize}
  \item \textsuperscript{55} Sigurdson, J., 1973, Rural Industrialisation in China: A Case Study, Expert Group Meeting on Rural Industrialisation, Bucharest, September.
  \item \textsuperscript{56} Deleyne, Jan, 1973, The Chinese Economy, Andre Deutsch, p.59
\end{itemize}
Morawetz\textsuperscript{57}, who has compared comprehensive information on employment and GNP pertaining to most of the developing economies of the world, has arrived at the finding that, in the case of developing economies, the relation between output and employment is non-proportionate.

M.M. Mehta\textsuperscript{58} has made a detailed study of the industrialisation pattern of India and South Asian countries. In the light of inter-regional, inter-country and inter-industry analysis, he has suggested that "the broad framework of an employment-oriented industrial strategy should include vigorous, sustained and concerted measures for: (i) fuller and more efficient utilization of idle capacity in manufacturing industries; (ii) reducing the capital intensity of industrialization through: (a) promotion of labour-intensive manufactures, and (b) application of economically sound labour-intensive techniques of production; and (iii) rapid expansion and promotion of technically sound and economically viable small-scale and cottage industries that could secure simultaneous increase in output, employment, savings and investment".


Weiscoff has found that in China industrial employment increased at an annual average rate of 10 per cent during 1950 and 1965, which was just a percentage point or two less than the growth of industrial output. This shows that it is possible to check the growth of unemployment by a strategy of industrialisation ensuring matching growth in industrial employment and industrial output. This is contrary to the Indian experience recounted by V.K. Puri.

Richard Disney, who analysed the economics of different production techniques of nitrogenous fertilizers, has arrived at the finding that the labour-intensive techniques for each particular product are not the most socially or privately profitable in the third world countries, particularly India. While he realises the necessity for choosing intermediate technologies arising out of the concern for the presently unemployed, he has stressed that the claims for justification for choice of intermediate technology on the basis of economic optimality are based on "very thin arguments".

Stern collected evidence from South Korea, Malaysia and Yugoslavia to suggest that reliance on "simple indicators".

like measures of labour/output, capital/labour and capital/output ratios for working out labour coefficients may lead to "self defeating results", because "at a minimum, account should also be taken of the further expansion of output and employment which flows from the initial expansion".

A World Bank study\(^\text{63}\) has shown that all important requirements of more jobs and higher incomes are met by rural non-farm activities. The study suggests that these activities, which have capital-labour ratio of less than $50 at 1969 prices, deserve a high place in any employment-oriented industrial strategy.

A number of specific case studies conducted in different countries by World Bank\(^\text{64}\), leads to the conclusion that "small manufacturing firms generate more direct and probably more indirect jobs per unit of invested capital on the average". The study indicates that "in many activities, where the optimal size of production unit is small, it proves to be the most efficient organization and as firm size increases (a) capital investment per worker rises, (b) value added per worker rises, (c) the wage rate rises, and (d) value added per unit of capital falls."

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A recent study of China's industrialisation\(^6\) shows that large-scale urban industry has retained its position as the leading force in Chinese industrial expansion and, despite the expansion of small-scale rural industry, small plants provide only a fraction of overall industrial output.

Using the data from developed countries like U.K., U.S.A., West Germany, France and Austria, Adhvaryu\(^6\) shows that employment and productivity have an opposite relation, and the employment - GNP relation may not only be non-proportionate, but may be even negative. On the basis of these findings, Adhvaryu concludes that "an industrial strategy based on maximizing only one objective, i.e., employment, may lead the economy into an economic quagmire, and to extricate it therefrom may prove a sheer frustrating experience." He, accordingly suggests that, even an employment-oriented strategy of industrialisation should aim at maximization of GNP, so that the surplus generating capacity of the economy is not adversely affected.

Eyasu Sirak\(^6\), who has analysed employment data for large and small sugar and textile plants from India and for cement plants from China, finds that the employment per unit


of capital is about 9 times more for small plants than those for large ones. His analysis also shows that: (a) large plants have higher unit cost of production than small ones using appropriate technology, (b) a given capital invested in a number of small scale plants can contribute more to industrial output than if invested in a single large scale plant, and (c) small scale plants are more appropriate than large scale factories for efficiently utilizing the resources of African countries. He finally concludes that "modern small scale industries" are the most "desirable industries" in countries where chronic unemployment is pervasive.

F.A. Mehta\(^{68}\), relying upon the experience of South Asian countries, like Korea, Japan and Taiwan, believes that for the next 5 to 7 years, India's investment structure should be reoriented in favour of wage goods, because only the wage goods sector can yield "a substantial chain of employment opportunities" without sacrificing the "gains of productivity".

**LITERATURE ON JAUNPUR DISTRICT:**

There has hardly been any published work on any aspect of the economy of exclusively Jaunpur District. At best, the district finds mention in some of the regional studies. The most comprehensive work on Jaunpur to date remains the

Report of Joint Study Team. The Joint Study Team was formed after a debate in the Lok Sabha in June 1962, in which there was a critical reference to the extremely backward condition of the eastern region of Uttar Pradesh. This study team was appointed jointly by the Planning Commission and the Government of Uttar Pradesh with the following terms of reference:

"(1) to make a study of economic and social conditions and problems of development in three districts of Uttar Pradesh—Ghaziipur, Jaunpur and Deoria;

(2) to make an assessment of the progress under the two plans and development envisaged in the Third Plan in these three districts; and

(3) to suggest administrative and development measures for acceleration of progress in these three districts."

The team, which was headed by Mr. B.P. Patel subsequently added Azamgarh district to the study and submitted its report in January 1964. The report indicated in great detail the approach and methodology to be adopted in the development of backward areas and recommended specific schemes and projects in different fields. The industries suggested by the team for Jaunpur district are listed in Appendix-I.

In recent past, quite a few industrial potential surveys of Jaunpur district have been carried out by various agencies, like the Union Bank of India, which is the lead bank, 70 Small Industries Service Institute 71 and the Directorate of Industries of U.P. 72 The industries recommended by these organizations are listed in Appendices II, III and IV respectively. All these recommendations have been made keeping only the narrow consideration of demand and availability of raw materials in view.

70. IDBI, 1974, Industrial Development of Backward Regions, p. 289.


Chapter 3. An Agro-Economic Profile of the Area pp. 52-82

Topography p. 54
Climate p. 55
Administrative Set-up p. 55
Population p. 58
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Pattern of Land Utilisation p. 59
Educational Facilities p. 63
Agricultural Production p. 63
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Industrial Accommodation p. 76
Existing Industrial Structure p. 77
Cottage Industries and Handicrafts p. 78
Industrial Co-operatives p. 82
That the passing mood of a potentate sometimes leaves an indelible mark on the history of a country is illustrated by the account that Shamal Siraj Afif gives in his book "Tarikh-i-Firuz Shahi" about the foundation of Jaunpur. Sultan Firuz Shah Tughlaq set out in the year 1358-59 against Sultan Sikandar of Bengal. When he reached Zafarabad on the right bank of the Gomati, monsoon set in. Finding further advance impossible, he was obliged to stay there for about six months. One day he happened to observe on the other side of the river some buildings, which a displaced prince of the Gaharwar clan of Ratgarh had built. It was a site extremely pleasing to the eye and Firuz decided to build a new city there. The foundations of the new city were thus laid in 1359 and it was named Firuzabad after the name of the Sultan. Afif, the contemporary historian, goes on to say that one night Firuz saw Sultan Muhammad bin Tughlaq, his father, in a dream, suggesting that the city be named after him. Firuz immediately passed orders that the city's name be changed into Jaunpur, after the pre-coronation name of his father, Fakhruddin Jauna.

Jaunpur district now forms a part of Varanasi division of Eastern Uttar Pradesh (Map No. 1). It is situated in north-western part of the division, between latitudes 25°24' and 26°12' North and between longitudes 82°7' and 83°5' East.
MAP 1. LOCATION OF JAUNPUR DISTRICT IN UTTAR PRADESH.
the district is situated at a height of 261 feet to 290 feet above sea level. Boundaries of the district are as follows:

- North: Sultampur district
- North-West: Pratapgarh district
- South-West: Allahabad district
- South: Varanasi district
- East: Ghazipur district
- North-East: Azamgarh district

**TOPOGRAPHY:**

The topography of the district is plain, with occasional undulation in the vicinity of river valleys. The district is traversed by many rivers, and it also abounds in lakes and ponds. The Gomati, which cuts across the district diagonally from north-west to south-east, is the most important river. The Sai and the Pili are its tributaries. The Basuhi, the Barna, the Mangar and the Gangi are other rivers passing through the district. All these rivers are perennial, but they maintain only a sluggish current, and hence are not fit for power generation. None of these rivers is suitable for transportation or irrigation either, but they cause lot of damage due to floods in rainy season. A fascinating solid stone bridge exists on the Gomati in Jaunpur town. It is known as the Shahi Pul and has the unique feature of having flanks of tiny rooms on either side,
occupied by barber shops, tea shops etc. The bridge was built at the time of Akbar. Now a new bridge has also been built on the river at the outskirts, and demolition of the old historic bridge is being contemplated.

The district is covered by alluvial soil, which is predominantly loam or 'domat', with 'matiyar' or clay primarily in low lying tracts. Karail is found in beds of jhils and tanks.

CLIMATE:

The climate of the district is damp. During the summer (March to mid-June), the mercury shoots upto 45°C and lowers down to 3°C to 4°C during the winter (December and January). Frost is common during winters, causing some damage to gram and pea crops.

The advent of monsoons in the district is usually in the last week of June. The normal annual rainfall of the district is 1019 mm. Quite often the rains are neither timely nor adequate.

ADMINISTRATIVE SET-UP:

The district, which has its headquarters at Jaunpur, is divided into five subdivisions or tehsils, viz. Jaunpur, Kerakat, Mariahu, Machhli Shahar and Shahganj (Map No. 2).
All the sub-divisions have four development blocks each, making a total of twenty community development blocks in the district, as given below:

1. Jaunpur sub-division: (i) Dharmpur  
   (ii) Karanjakala  
   (iii) Baxa  
   (iv) Sikarara

2. Kerakat sub-division: (i) Dobhi  
   (ii) Kerakat  
   (iii) Muftiganj  
   (iv) Jalalpur

3. Mariahu sub-division: (i) Mariahu  
   (ii) Ramnagar  
   (iii) Rampur  
   (iv) Barsathi

4. Machhli Shahar sub-division: (i) Maharajganj  
   (ii) Sujanganj  
   (iii) Machhli Shahar  
   (iv) Mungra Badshahpur

5. Shahganj sub-division: (i) Shahganj  
   (ii) Khutahan  
   (iii) Suiathakala  
   (iv) Badlapur
There are six towns in the district. They are Jaunpur and Mingra Badshahpur, which are municipal towns, Shahganj, which is a notified area, and Kerakat, Machhli Shahar and Mariahu, which are town areas. There are 3402 revenue villages in the district.

**POPULATION**

The total population of the district was 20.05 lakh at the time of 1971 census. According to provisional figures released after 1981 census, the population has shot up to 25.27 lakh, giving a density of 626 persons per sq. km., against an average of 377 for the whole state. This indicates that the district has to face comparatively much heavier pressure on the land. The annual increase of population during the decade 1971-81 registered an average of 2.60 per cent, as against 1.61 during the earlier decade. The total population of the district constitutes only 2.28 per cent of the total population of Uttar Pradesh according to 1981 census. Judging by the size of the population, the district occupies the 14th position in the state. Bulk of the population (93.79 per cent) lives in rural areas and only 6.21 per cent live in urban areas. The number of females per 1000 males in the district is 1010.

Literacy percentage of the district is 26.31, as against the state average of 27.38 per cent. The percentage of
literacy amongst male population is 41.77 as against 11.00 for the females in the district.

WORKING FORCE:

Of the entire population of the district, only 28.1 per cent are workers and the rest are non-workers. The working force has been increasing at the rate of 2.16 per cent annually. Occupational break-up of the working force has been presented in Table IV. The table indicates that agriculture is the main source of livelihood of the people, and 83.6 per cent of the workers depend on it, either as cultivators or as agricultural labour. Only 5.8 per cent of the workers are employed in industries, out of which 3.7 per cent are dependent on traditional industries like blacksmithy, perfumes and perfumed oil, khandsari etc.

There are over 16,000 families, scattered all over the district, possessing traditional skills, like, weaving, silver work, tobacco processing, perfumery etc. Details of the traditionally skilled labour, available in the district, are given in Table V.

PATTERN OF LAND UTILISATION:

The district extends over an area of 4046 sq. kms. The pattern of land utilisation in the district is indicated...
### TABLE - IV

**OCCUPATIONAL PATTERN IN JAUNPUR DISTRICT**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>1971 census</th>
<th>Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (Number)</td>
<td>Female (Number)</td>
</tr>
<tr>
<td>Cultivators</td>
<td>2,94,811</td>
<td>27,033</td>
</tr>
<tr>
<td>Agricultural labour</td>
<td>86,957</td>
<td>41,159</td>
</tr>
<tr>
<td>Mining, quarrying, animal husbandry etc.</td>
<td>1,724</td>
<td>153</td>
</tr>
<tr>
<td>Household industries</td>
<td>17,118</td>
<td>1,998</td>
</tr>
<tr>
<td>Other industries</td>
<td>10,659</td>
<td>825</td>
</tr>
<tr>
<td>Construction work</td>
<td>1,550</td>
<td>19</td>
</tr>
<tr>
<td>Trade and Commerce</td>
<td>19,763</td>
<td>879</td>
</tr>
<tr>
<td>Transport and communication</td>
<td>4,098</td>
<td>36</td>
</tr>
<tr>
<td>Other sources</td>
<td>26,153</td>
<td>2,507</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,42,847</td>
<td>75,609</td>
</tr>
</tbody>
</table>

**Source:** Census of India, 1971.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Skill Item of Production</th>
<th>Place of Centralisation</th>
<th>Number of Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Handicrafts</td>
<td>Rampur, Gopalpur,</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>Carpet</td>
<td>Mariahu, Barsathi,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Machhli Shahar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sikarara, Zafarabd,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gaura Badshahpur</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Handloom</td>
<td>Shahpur, Majdiha,</td>
<td>735</td>
</tr>
<tr>
<td></td>
<td>Gamcha, Dhoti</td>
<td>Jamdaha, Kachgaon,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Zafarabad, Jalalpur</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Silver work</td>
<td>Jaunpur, Mariahu</td>
<td>1,500</td>
</tr>
<tr>
<td></td>
<td>Silver chips and ornaments</td>
<td>Mungra Badshahpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shahganj, Kerakat</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Tobacco</td>
<td>Jaunpur, Kerakat,</td>
<td>8,000</td>
</tr>
<tr>
<td></td>
<td>Biri, Zarda, Hukka</td>
<td>Mariahu, Machhli</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tobacco</td>
<td>Shahar, Mungra Badshahpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shahganj, Kheta Sarai,</td>
<td>Jaunpur</td>
</tr>
<tr>
<td>5.</td>
<td>Scented Oil</td>
<td>Jaunpur</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Essence, Hair Oil</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total** 16,270

Source: Directorate of Industries, U.P.
in Table VI. As is evident from the table, 71.5 per cent of the total geographical area of the district is under cultivation.

**TABLE VI**

**PATTERN OF LAND UTILISATION IN JAUNPUR DISTRICT**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Classification of area</th>
<th>Area in hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Geographical area</td>
<td>4,04,600</td>
</tr>
<tr>
<td>2.</td>
<td>Reporting area for land utilisation purposes</td>
<td>3,98,320</td>
</tr>
<tr>
<td>3.</td>
<td>Forest</td>
<td>216</td>
</tr>
<tr>
<td>4.</td>
<td>Barren and unculturable land</td>
<td>12,493</td>
</tr>
<tr>
<td>5.</td>
<td>Land put to non-agricultural use</td>
<td>31,318</td>
</tr>
<tr>
<td>6.</td>
<td>Culturable waste</td>
<td>16,392</td>
</tr>
<tr>
<td>7.</td>
<td>Permanent pastures and other grazing land</td>
<td>1,359</td>
</tr>
<tr>
<td>8.</td>
<td>Land under miscellaneous tree, crops and groves</td>
<td>10,124</td>
</tr>
<tr>
<td>9.</td>
<td>Fallows</td>
<td>36,981</td>
</tr>
<tr>
<td>10.</td>
<td>Net area sown</td>
<td>2,89,437</td>
</tr>
<tr>
<td>11.</td>
<td>Area sown more than once</td>
<td>1,24,249</td>
</tr>
<tr>
<td>12.</td>
<td>Total area sown</td>
<td>4,13,686</td>
</tr>
</tbody>
</table>

Source: Board of Revenue, U.P. and Directorate of Agriculture, U.P.
EDUCATIONAL FACILITIES:

There are 1689 educational institutions in the district. The break-up of the same is given in Table VII. As can be seen from the table, there are 21 technical institutions in the district. The Industrial Training Institute imparts training to 50 trainees in each of the following trades: electrician, general mechanic, welder, moulder, turner, fitter, wireman and motor mechanic. The Government Training-cum-Extension Centre imparts training to 16 trainees in each of the following trades: carpentry, electrician and general mechanic. Woollen Carpet Weaving Centres are run by the All India Handicrafts Board. The Blanket Weaving Centre functions under the State Khadi and Village Industries Board. Here raw wool is spun on ordinary wooden wheels by women and finishing is done through the blanket unit established at Gopiganj (Varanasi). There is a proposal to expand it to make it a complete weaving-cum-finishing unit.

AGRICULTURAL PRODUCTION:

Jaunpur is predominantly an agricultural district and out of its total geographical area, 71.5 per cent of the land is under cultivation. Table VIII gives the distribution of net area sown and production of various crops. From the table, it is evident that paddy, wheat, potato and sugarcane are the main crops of the district.
### TABLE - VII

**EDUCATIONAL FACILITIES IN JAUNPUR DISTRICT**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Institutions</th>
<th>Number of institutions</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Junior Basic School (Class 1 to 5)</td>
<td>1,273</td>
<td>2,68,163</td>
</tr>
<tr>
<td>2.</td>
<td>Senior Basic School (Class 6 to 8)</td>
<td>294</td>
<td>68,268</td>
</tr>
<tr>
<td>3.</td>
<td>Higher Secondary School (Class 9 to 12)</td>
<td>135</td>
<td>81,179</td>
</tr>
<tr>
<td>4.</td>
<td>Graduate &amp; Post-Graduate College</td>
<td>14</td>
<td>Not available</td>
</tr>
<tr>
<td>5.</td>
<td>Technical Institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i)</td>
<td>Industrial Training Institute, Siddiqpur</td>
<td>1</td>
<td>264</td>
</tr>
<tr>
<td>(ii)</td>
<td>Government Training-cum-Extension Centre, Jaunpur</td>
<td>1</td>
<td>345</td>
</tr>
<tr>
<td>(iii)</td>
<td>Woollen Carpet Weaving Centre</td>
<td>18</td>
<td>900</td>
</tr>
<tr>
<td>(iv)</td>
<td>Blanket Weaving Centre, Jaunpur</td>
<td>1</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Source: Sankhyikiya Patrika, 1980.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the crop</th>
<th>Area (in hectares)</th>
<th>Production (in tonnes)</th>
<th>Average production (quintals per hectare)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paddy</td>
<td>95,317</td>
<td>1,21,165</td>
<td>12.67</td>
</tr>
<tr>
<td>2.</td>
<td>Jawar</td>
<td>5,975</td>
<td>5,025</td>
<td>8.41</td>
</tr>
<tr>
<td>3.</td>
<td>Bajra</td>
<td>9,324</td>
<td>7,618</td>
<td>8.17</td>
</tr>
<tr>
<td>4.</td>
<td>Maize</td>
<td>67,580</td>
<td>77,514</td>
<td>11.47</td>
</tr>
<tr>
<td>5.</td>
<td>Pulses</td>
<td>39,817</td>
<td>40,041</td>
<td>10.06</td>
</tr>
<tr>
<td>6.</td>
<td>Wheat</td>
<td>1,21,830</td>
<td>2,17,536</td>
<td>17.86</td>
</tr>
<tr>
<td>8.</td>
<td>Potato</td>
<td>10,904</td>
<td>1,71,768</td>
<td>157.53</td>
</tr>
<tr>
<td>9.</td>
<td>Sugarcane</td>
<td>18,849</td>
<td>9,04,517</td>
<td>320.72</td>
</tr>
<tr>
<td>10.</td>
<td>Tobacco</td>
<td>293</td>
<td>274</td>
<td>9.35</td>
</tr>
<tr>
<td>11.</td>
<td>Sanai</td>
<td>5,783</td>
<td>2,527</td>
<td>4.37</td>
</tr>
<tr>
<td>12.</td>
<td>Fruits (Mango, Amla,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guava, Jackfruit,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lemon and Plum)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Vegetables (Other than</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>potatoes)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Directorate of Agriculture, U.P.
It has been estimated that the annual requirement of foodgrains for the district is 4,34,000 tonnes, while the average annual production of the district is only 3,80,000 tonnes. This shows that the district is not self-sufficient in foodgrains.

The district is, however, surplus in respect of vegetables. The total annual production of vegetables in the district is estimated at 22,000 tonnes (excluding potatoes), grown in about 12,332 hectares. Important among the vegetables grown are Karela, Parwal, radish and cauliflower. Radish, Karela and Parwal of Jaunpur are famous all over the state. Parwal is sent to western districts of U.P. and also to Delhi and Chandigarh. Radishes, about the length of a human arm are widely cultivated in this region. They have to be literally carried on one's shoulders.

Sugarcane is the only commercial crop in the district. Part of it is utilised by the only sugar mill of the district, located at Shahganj. The remaining sugarcane, grown in the district, is used for making gur. The sugar recovery in Jaunpur district ranges between 8 to 9 per cent, and gur recovery between 10 to 12 per cent.

The district does not produce many fruits. Mango, guava, amla, plum, jackfruit and lemon are the only fruits produced in the district. In the absence of any industrial use, the
fruits are mostly consumed within the district and a part thereof is also sold out at very cheap rates to the neighbouring areas. The total area under fruits is about 11,793 hectares.

The soil of the district is specially suited for Chameli, rose and other flowers, which grow in abundance. These are used for manufacturing perfumes, perfumed oil, 'keora jal' and 'rose water' etc. The main growing area for rose is 'Chaukia' in Jaunpur Tehsil. Keora is grown in Machhli Shahar.

LIVE STOCK:

Animal population of the district, as per the livestock census of 1977, has been indicated in Table IX. The district has a good population of cows, bullocks, sheep, goats and poultry birds, but the livestock, in general, is of poor quality.

ANIMAL PRODUCTS:

Important animal products available in the district are milk, hides, skins, bones, wool, bristles, eggs, fish and meat etc.

The total quantity of milk available has been estimated at 3,85,400 kg per day. The entire quantity is consumed locally. The Jaunpur Dugdh Utpadak Sahkari Sangh Ltd. has decided to set up a dairy plant of 4,000 litres chilling
### TABLE - IX

**LIVESTOCK POPULATION OF JAUNPUR DISTRICT**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Category of animals</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cows and Bullocks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Milch cows</td>
<td>61,860</td>
</tr>
<tr>
<td></td>
<td>(b) Above three years of age</td>
<td>4,46,027</td>
</tr>
<tr>
<td></td>
<td>(c) Below three years of age</td>
<td>97,499</td>
</tr>
<tr>
<td>2.</td>
<td>Buffaloes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Milch buffaloes</td>
<td>65,521</td>
</tr>
<tr>
<td></td>
<td>(b) Above three years of age</td>
<td>74,693</td>
</tr>
<tr>
<td></td>
<td>(c) Below three years of age</td>
<td>77,880</td>
</tr>
<tr>
<td>3.</td>
<td>Sheep</td>
<td>1,00,915</td>
</tr>
<tr>
<td>4.</td>
<td>Goats</td>
<td>1,28,824</td>
</tr>
<tr>
<td>5.</td>
<td>Mules and Horses</td>
<td>1,623</td>
</tr>
<tr>
<td>6.</td>
<td>Pigs</td>
<td>27,861</td>
</tr>
<tr>
<td>7.</td>
<td>Others</td>
<td>6,180</td>
</tr>
<tr>
<td>8.</td>
<td>Poultry birds</td>
<td>2,42,044</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>10,88,883</strong></td>
</tr>
</tbody>
</table>

*Source: Indian Livestock Census, 1977.*
capacity in the first phase. This will be expanded to include pasteurisation and manned bottling unit of 10,000 litres capacity. The dairy plant is to be established at village Abhaichand Patti (near Aliganj Bazar) on Jaunpur-Badlapur Road, about 5 kms. from Jaunpur.

Other important products available from livestock are hides, skins and bones, which are sent out of the district to places like Kanpur and Calcutta, for being used as raw material in industrial units. Only a fraction of the total quantity of hides and skins is tanned by local village tanners for the manufacture of deshi type of shoes. The total quantity of hides and skins collected in the district annually has been estimated at 50,000 pieces. Total bone collection is estimated to be 4,000 tonnes per annum.

Sheep and goat yield wool and meat. The quantity of wool available in the district has been estimated at 51,524 quintals per annum, most of which is exported out of the district. A negligible quantity of wool is utilised by the local Blanket Weaving Centre, established under the control of the State Khadi and Village Industries Board.

Piggeries are concentrated in Dharmapur, Sikarara, Baxa and Karanjakala blocks. Jaunpur is an important centre for collection of bristles. Bristles worth almost Rs.8 lakh are collected from within the district and neighbouring areas
annually. But there are only two units engaged in producing dressed bristles in the district. Most of the bristles is, therefore, exported out of the district.

Poultry population is quite sizeable in the district. The local demand for eggs being very limited within the district, bulk of the eggs is sent out to neighbouring cities like Varanasi etc. A poultry extension centre has been established at Siddiqpur by Animal Husbandry Department of the U.P. Government with a capacity of 400 layers along with the provision of rearing and hatching facilities for chicks.

During the year 1979-80, 335.46 quintals of fish was caught in the district. Out of this, a quantity of 272 quintals of fish was consumed locally and the remaining quantity of 63.46 quintals was exported out of the district. There are 39 departmental tanks covering an area of 408.78 hectares. They supply finger-lings to private tanks in the district to improve the production of fish. During the year 1973-74, finger-lings numbering 2.37 lakh were supplied to private tanks, having an area of 38.80 hectares, spread all over the district. Besides, there is a Gujratal Fisheries Centre covering an area of 20 hectares, where local as well as foreign varieties of fish are reared on a large scale.

FOREST:

There is no forest as such in the district except a little of jungle land. Jungles are primarily of dhak trees, which
are found in almost all the parts of the district. Other important trees found in the district are sheesham, neem, pipal, bargad, babool, mango, mahuwa and jamun. The total area under forest is about 216 hectares.

MINERALS:

The district has no minerals worth the name; only minor minerals, like kankar and sand, are found. They are used as building material. It is assessed that about 12 lakh cubic feet of kankar is dug annually for use as building material.

Saltpetre (Reh) is also available in the district in considerable quantity, estimated at about 2,164 metric tonnes. It is mainly available in the Shahganj, Miftiganj, Suithakala, Karanjakala and Dobhi blocks. It is used by washermen for washing clothes and also for making tobacco for hukka.

RAILWAYS:

Both the Northern Railway, and the North-Eastern Railway operate in the district. Northern Railway, which has broad-gauge track, covers 200 kms. in length and provides three lines, namely, (i) Mughal Sarai-Faizabad-Lucknow, (ii) Jaunpur-Allahabad, and (iii) Jaunpur-Sultanpur.
North-Eastern Railway provides metre gauge connection on two lines, namely, (i) Jaunpur-Aurihar, and (ii) Shahganj-Mau. The total length of metre gauge track in the district is 65 kms.

These railway lines connect the district with outside cities and towns like Varanasi, Allahabad, Faizabad, Lucknow, Pratapgarh, Sultanpur, Ghazipur, Mighal Sarai, Patna, Gaya, Howrah etc. Within the district, the tehsil towns of Shahganj, Kerakat and Mariah and many other important places are connected by rail with the district headquarters.

ROADS:

Roads are the most important single means of passenger and goods traffic in the district. Jaunpur district has a well-knit system of roads. The total length of surfaced roads in the district is 894 kms., out of which there are 199 kms. of state highway. The state highway and 615 kms. of other roads are looked after by the State P.W.D. The remaining roads (80 kms.) are looked after by Zila Parishad and other local bodies. The length of Kachha roads is 557 kms., making a total road length of 1451 kms. The network of these roads links Jaunpur directly with Azamgarh, Faizabad, Pratapgarh, Allahabad, Mirzapur and Varanasi. The district headquarters has road link with all the tehsil towns and other important places of the district.
The road transport in certain areas suffers from serious handicaps for want of bridges on vital points, such as, (i) a bridge on the Sai river on Sujanganj-Maharajganj road, (ii) a bridge on the river Gomati near Pilkicha and (iii) a bridge on the Gomati near village Udai Chandpur on Thanagaddi-Kerakat road. While the first two bridges will provide a direct link to Allahabad from Shahganj, the third one will link Kerakat directly with Varanasi. It is understood that the State Government has already sanctioned construction of two pontoon bridges over Gomati—one near Pilkicha and the other on Thanagaddi-Kerakat Road. The bridge on the Sai river on Jaunpur-Allahabad highway, which has been damaged by floods, is still to be repaired.

The district has bus services, connecting all the important places within the district. The State Road Transport Corporation has a fleet of 73 buses for transporting passengers on 32 different routes, and they handle approximately 80 lakh passengers every year. Besides, facilities of private bus service and taxi services are also available in the district.

**POST AND TELEGRAPH:**

There are 371 post offices, 37 telegraph offices, 5 telephone exchanges and 37 public call offices in the district. The total number of telephone connections in the district is 563
POWER:

Jaunpur district gets its electric supply from U.P. grid through Marudih Power House (in Varanasi district), which is run by the U.P. State Electricity Board. There are two agencies connected with the distribution of electric power in the district. M/s Jaunpur Electric Licensee (1934) distribute power within the municipal limits of Jaunpur town. The existing industrial and domestic connections with the company number 310 and the connected load is 2118.609 KW. The power rates of the Licensee are higher than those of the State Electricity Board.

Areas falling outside the municipal town of Jaunpur, are supplied with power by the State Electricity Board. The main sub-station of the Board is of 40 MW capacity. Besides, there are 13 sub-stations of 33 KW each established at various places for distribution of electricity in the district. The length of the high-tension line is 972 kms. and that of low-tension line is 3398 kms. within the district.

The number of villages electrified so far is 944, which comes to 29 per cent of the total number of villages. The number of existing domestic and industrial connections with the State Electricity Board are 21,380 and 620 respectively. The consumption of electricity (in KW per hour) is indicated in Table X. The consumption is much below the installed
TABLE X

CONSUMPTION OF ELECTRICITY IN JAUNPUR DISTRICT (1979-80)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Purpose</th>
<th>Consumption (in KW per hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Domestic light and small power</td>
<td>52,73,476</td>
</tr>
<tr>
<td>2.</td>
<td>Commercial light and small power</td>
<td>2,96,679</td>
</tr>
<tr>
<td>3.</td>
<td>Industrial power</td>
<td>93,78,545</td>
</tr>
<tr>
<td>4.</td>
<td>Others</td>
<td>669,81,751</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>819,30,451</td>
</tr>
</tbody>
</table>

SOURCE: State Electricity Board, U.P.

capacity. In fact out of the installed capacity of 55.91 MW of the main sub-station, only about 20 MW is being consumed in the district.

BANKS:

The Union Bank of India is the lead bank for Jaunpur district. There are 47 branches of various nationalised banks, spread all over the district. There are three branches of
other commercial banks, 24 branches of co-operative banks and 5 branches of land development banks.

**INDUSTRIAL ACCOMMODATION:**

There is only one industrial estate in the district, at Jagdishpatti bordering Jaunpur town. This industrial estate was established in the year 1966 in an area of about 3 hectares. There are 9 constructed work sheds of 50'x60' each and 8 developed plots. Of these, 6 sheds and 2 plots are occupied by 5 small scale industries, producing cane crushers, chaff cutters, power threshers, C.I. pullies and other casting items, and one unit each of G.I. buckets, woollen blankets and mining equipment. This industrial estate provides facilities like water, electricity and transportation etc. Of the remaining industrial plots, four plots have already been allotted for setting up rolling mill, battery assembling and plywood furniture industries. Application for the allotment of one plot to an engineering unit is pending for orders.

Further land has been made available for industrial estate purposes at Siddiqpur and Kauria on Jaunpur-Shahganj and Shahganj-Khutahan roads respectively. Areas, earmarked for these two industrial estates, measure 19 acres and 15.91
acres respectively. Siddiqpur industrial estate is about 6½ kms. from Jaunpur. Out of its area of 17 acres, 5 acres of land is in possession of the Animal Husbandry Department, 2 acres of land has been allotted to Varanasi Mandaliya Vikas Nigam for establishing cold storage and the remaining 12 acres of land is proposed to be utilised for 40 developed plots in different categories. The development work is in progress. Kauria is about 2 kms from Shahganj. The work on this industrial estate is still to start.

EXISTING INDUSTRIAL STRUCTURE:

Jaunpur is one of the 39 districts of U.P., which have been declared by the Government of India as backward districts, eligible for concessional finance from the financial institutions and for 20 per cent deduction in income for calculating income-tax liability. Industrially, the district is a backward one and its industrial structure mainly comprises small scale industries and cottage industries. There is only one large unit in the district - a sugar factory at Shahganj. This sugar factory, named as the Ratna Sugar Mills Co., Ltd. employs about 1000 persons during the cane crushing season. It has the capacity for producing sugar worth about Rs. 100 lakh annually. However, its actual production in 1980-81 was of the order of only Rs. 65 lakh. Besides, the unit sold mollases worth Rs. 27 lakh during the year. The daily crushing
capacity of the unit is 10,000 quintals. The unit has no ancillaries.

The small scale industrial sector of the district comprises 238 industrial units registered with the Directorate of Industries. A group-wise account of the registered units is given in Table XI. An idea about the items being manufactured by these units can be had from Table XII.

There are 16 units, which are registered under the Factories Act, but only 10 of them are presently working. They employ 1837 persons, and include one sugar mill, three cold storages, two rolling mills, and four fabrication units.

According to the economic census of 1977, there are 1209 unregistered units in the district.

COTTAGE INDUSTRIES AND HANDICRAFTS:

The traditional cottage industries of the district are pottery, blacksmithy, carpentry, leather tanning and shoe making etc, but all of them have decayed because of tough competition with formal sector and their failure to improve techniques of production. Perfumed oil units, based on natural flowers, were at one time producing perfumes and perfumed hair oil, known all over the country. But now most of these units are breathing their last. Whereas 29 perfumed oil units were in existence in past, at present there are
### TABLE - XI

**REGISTERED INDUSTRIAL UNITS IN JAUNPUR DISTRICT**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Main Industrial Group</th>
<th>Number of units registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Agro based</td>
<td>25</td>
</tr>
<tr>
<td>2.</td>
<td>Engineering based</td>
<td>105</td>
</tr>
<tr>
<td>3.</td>
<td>Livestock based</td>
<td>7</td>
</tr>
<tr>
<td>4.</td>
<td>Forest based</td>
<td>39</td>
</tr>
<tr>
<td>5.</td>
<td>Mineral based</td>
<td>8</td>
</tr>
<tr>
<td>6.</td>
<td>Chemical based</td>
<td>29</td>
</tr>
<tr>
<td>7.</td>
<td>Textile based</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Printing and Stationery</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>238</strong></td>
</tr>
</tbody>
</table>

Source: District Industries Centre, Jaunpur.
### TABLE - XII

**ITEMS MANUFACTURED IN SMALL SCALE SECTOR**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Industry Group</th>
<th>Items of manufacture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Agro based</td>
<td>Cold storage, bakery, cattle and poultry feed, tobacco, edible oil.</td>
</tr>
<tr>
<td>2.</td>
<td>Engineering based</td>
<td>Agricultural implements, mechanical workshops, automobile servicing and repairing, rolling mills, steel tubes and pipes, aluminium utensils, fabrication units.</td>
</tr>
<tr>
<td>3.</td>
<td>Livestock based</td>
<td>Dressed bristles, shoes, brief case and Suitcase.</td>
</tr>
<tr>
<td>4.</td>
<td>Forest based</td>
<td>Wooden furniture and building material, wood sawing.</td>
</tr>
<tr>
<td>5.</td>
<td>Mineral based</td>
<td>Cement pipe and meshing, glass rods, lime, bricks.</td>
</tr>
<tr>
<td>6.</td>
<td>Chemical based</td>
<td>Bone meal, candles, perfumed and medicated oil, electroplating and polishing, washing soap, ayurvedic medicines, plastic buttons and toys.</td>
</tr>
<tr>
<td>7.</td>
<td>Textile based</td>
<td>Hosiery, Surgical bandages.</td>
</tr>
</tbody>
</table>

Source: District Industries Centre, Jaunpur.
only 9 working units. Synthetic and chemical based perfumed oil units have adversely affected this famous cottage industry of the district.

Amongst other cottage industries, handloom cloth and woollen carpet are important. The woollen carpet industry is developing day by day, employing more and more persons. But the woollen carpet weavers get poor wages and the benefit is mostly taken away by the suppliers of the raw material. There are 63 carpet units in the district, registered under the handicrafts scheme. Weavers are engaged in weaving of carpets as well as in manufacture of cotton and silk cloth. Details regarding the carpet and handloom industries have been presented in Table XIII.

**TABLE - XIII**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Industry</th>
<th>Number of looms</th>
<th>Number of weavers</th>
<th>Production in lakh metres</th>
<th>Value in lakh Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Woolen Carpet</td>
<td>4,500</td>
<td>11,250</td>
<td>3.80</td>
<td>1140.0</td>
</tr>
<tr>
<td>2</td>
<td>Handloom</td>
<td>785</td>
<td>1,750</td>
<td>18.20</td>
<td>27.3</td>
</tr>
</tbody>
</table>

Source : Directorate of Industries, U.P.
Other items produced in handicraft sector are biris, silver leaves and embroidery. Details have been presented in Table XIV.

INDUSTRIAL CO-OPERATIVES:

There are 52 industrial co-operatives scattered all over the district, but most of them are now defunct. These units are, or have been, engaged in oil ghanis, carpentry, blacksmithy, khandsari, tobacco processing, weavings of dhoti, gamcha and lungi etc.

TABLE XIV

HANDICRAFTS OF JAUNPUR DISTRICT (1978-79)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Handicrafts</th>
<th>Number of families engaged</th>
<th>Labour</th>
<th>Capital Production</th>
<th>Source, Directorate of Industries, U.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>investment (lakh)</td>
</tr>
<tr>
<td>1.</td>
<td>Biri making</td>
<td>8,000</td>
<td>8,000</td>
<td>12,000</td>
<td>0.40</td>
</tr>
<tr>
<td>2.</td>
<td>Silver leaves</td>
<td>12</td>
<td>75</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>3.</td>
<td>Embroidery</td>
<td>60</td>
<td>200</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source: Directorate of Industries, U.P.