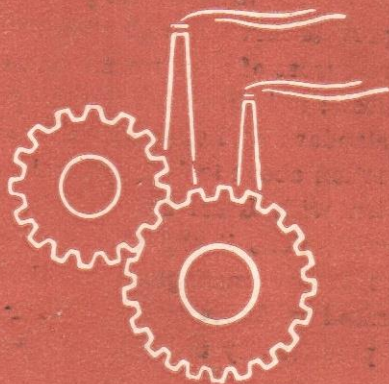


special on small industry

# PRODUCTIVITY

JOURNAL OF NPC



Gandhiji's economics  
out of alignment  
total social productivity  
the hopeless race  
indian socialism  
reductio ad absurdum  
a sure sign of take off  
live by productivity alone  
punjab miracle  
his own foreman-manager  
in the world perspective  
calculus of khadi  
rural industrialization  
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productivity analysis  
the panchagram  
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sharing the gains  
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a slant on productivity  
ergonomics  
operations research  
steel fabrication  
electroplating  
in-basket game  
better scheduling  
case problems  
questions answers

NATIONAL PRODUCTIVITY COUNCIL, INDIA

Vol. 3 No. 5 & 6

Aug-Sept, Oct-Nov'62

## NATIONAL PRODUCTIVITY COUNCIL

The National Productivity Council is an autonomous organisation registered as a Society. Representatives of Government, employers, workers and various other interests participate in its working. Established in 1958, the Council conducts its activities in collaboration with institutions and organisations interested in the Productivity drive. 45 Local Productivity Councils have been established practically all over the country and work as the spearhead of the productivity movement.

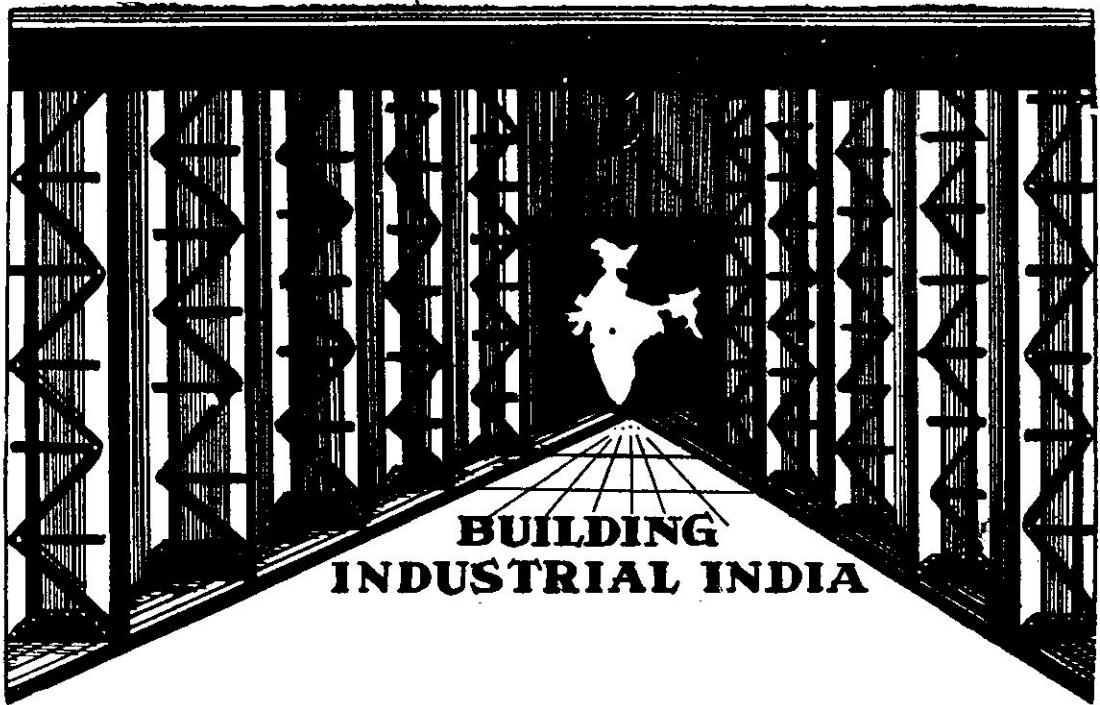
The purpose of NPC is to stimulate productivity consciousness in the country and to provide services with a view to maximising the utilisation of available resources of men, machines, materials and power; to wage war against waste; to help secure for the people of the country a better and higher standard of living. To this end, NPC collects and disseminates information about techniques and procedures of productivity. In collaboration with Local Productivity Councils and various institutions and organisations it organises and conducts training programmes for various levels of management in the subjects of productivity. It has also organised an Advisory Service for industries to facilitate the introduction of productivity techniques.

NPC publications include pamphlets, leaflets and Reports of Productivity Teams. NPC utilises audio-visual media of films, radio and exhibitions for propagating the concept and techniques of productivity. Through these media NPC seeks to carry the message of productivity and to create the appropriate climate for increasing national productivity. This Journal is an effort in the same direction.

The Journal bears a nominal price of Rs. 2.00 per issue and is available at all NPC offices. Annual subscription (Rs. 12.00 to be sent by cheque in favour of National Productivity Council, New Delhi) is inclusive of postage! Subscription for three years, however, can be paid at the concessional rate of Rs. 32.00.

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Aug--Nov '66

editor DH BUTANI

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**PRIME MINISTER'S MESSAGE**

**The remarkable growth of small industries in India in the last few years has been a significant feature of our economy. That itself has created new problems for us in regard to raw materials, coal and power. But it is a sign of growth....**



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# The Large Area of Small Industry

THIS SEVENTH SPECIAL ISSUE\* OF THE NPC PRODUCTIVITY JOURNAL DEVOTED TO THE PRODUCTIVITY of Small Industry marks a departure again from established practice, for so far we have examined the applicability of various productivity techniques—Incentives, Personnel Management, Work Study, Quality Control, Materials Handling and Plant Layout—to the whole area of industry. Now it is the large area of small industry that we are examining as a Field of Productivity.

## Out of Alignment

The issues involved are vital, for the main handicap of the Indian people has been the abnormally low productivity potential of the economic organisation as we have inherited it from the British: a bit of large industry, a disabled handicraft sector and the large sink of agriculture. It was the uncanny insight of Mahatma Gandhi who perceived immediately that this type of economy was totally out of alignment with our peculiar resource-endowment; and *a productivity programme is nothing but a particularly dynamic type of resource-mobilisation, considering all the circumstances of the case, for maximum mass welfare.* In fact one of the major obstacles to the realisation of a massive increase in productivity in this country is the failure to think it out in terms of the basic facts of the Indian economy, the most important and intractable being a large population, nearly 450 million at the moment growing at the compound rate of over two per cent per annum. As such, *a productive development of small industry is as it were written into the very facts of the Indian economy;* for even now after more

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\* This is really not a special issue but a general issue dealing with the various productivity problems of small industry. In addition, in deference to the wishes of the Governing Body of NPC, a number of articles have been added for the benefit of the general practitioners of Productivity Techniques. This was taken into consideration by the Governing Body of NPC and it was decided at the time the Special Issue on Materials Handling was in print that while the system of special issues may continue, there should be, extending over nearly half the Journal, a number of articles, which should interest the general reader, review the recent literature on Productivity and make a general round of techniques and areas, not covered by the special issue. As, however, extensive commitments had already been made in respect of the special issues on Small Industry and Cost and Budgetary Control, we have, as a transitional measure towards implementation of the Governing Body directive, combined two issues: a special issue dealing with Small Industry and a general issue going over a fairly extensive range of other productivity areas. . . . With this issue, the NPC Productivity Journal completes its third year. Editor takes this opportunity of thanking the many contributors and patrons, who have really made this venture so successful as it actually has been. Needless to say that the production of this Journal and the maintenance of its quality could not have been possible but for the consistent support the editor has received from the Chairman and members of the Governing Body and last but not the least, the Executive Director of NPC. . . . The readers, however, make the Journal what it is. They are invited to comment unreservedly on the pattern of the Journal; and we shall make it what they want it to be, because Productivity means essentially nothing but the Sovereignty of the Consumer. . . . In the meanwhile, the system of special issues (with half the space reserved for the general reader) will continue; and we have a programme, beginning with the very first issue of the next volume which will be a special one on Cost and Budgetary Control. We have a fairly long-term programme of special issues: Productivity and the Worker, Operations Research, Production Planning, Inter-Firm Comparison, Productivity and Safety, Job Evaluation, Productivity and Office Management, Inventory Control, Training in Industry, Productivity and Marketing etc. . . . The general practitioner of productivity techniques, however, will have enough to feed on. With half the space reserved for the generalist, contributions would be necessary from the large number of specialists in different techniques.

Editor specially invites the general practitioners to write. . . . The next issue will be printed early (Jan-Feb.) 1963. Contributions particularly on Cost & Budgetary Control and generally on any other productivity subject are invited upto mid-December 1962.

than a decade of economic development, registered factories employ less than four million out of a working population that may reasonably be computed at 200 million.

### Total Social Productivity

A productivity programme embracing the field of factory industry will thus cover about 2 percent of the working population. If the remaining 98 percent of the labour force remain unaffected by productivity ideas, then the net social productivity of the economic system will not be materially affected by any rise that we may be able to effect in the productivity of the two percent. Gandhiji's ideas were based on this fundamental of total social productivity: "...we are poor but we have an ocean of labour wealth. . . planning has to coordinate the available factors of production to produce the best possible results not only material but social and cultural. *Any planning in our country that ignores the absorption of labour wealth will be misplanned.* Our analysis has shown that centralised method of production, whatever may be its capacity to produce is incapable of finding employment for as large a number of persons as we have to provide for. . ."

### Gandhi's Economics

In the article quoted above which Gandhiji wrote in *the Harijan* in August 1939, the Mahatma in fact used the language and techniques, later adopted by the growth economists (the capital-employment and the capital-output ratios) to prove that the small rural industry organisation would alone make the most productive use of our ample manpower resources. That developmental economics should have come to the same conclusion is a tribute to the economic statesmanship of the Mahatma. Jan Tinbergen in discussing the Choice of Technology for an underdeveloped but overpopulated country came after long reasoning to a conclusion which looks surprisingly Gandhian: "...*an economic system should be run in the interest of all citizens; if part of them are excluded from the production process, serious strains may occur in the long run in the political and economic structure of the economy.*"

It is the realisation by government of the essential soundness of Gandhi's economics that has led to a larger and larger provision being made for the productive development of village and small industries. The First Plan allocated only Rs. 430 million to the development of small industries and village handicrafts. The corresponding Third Plan allocation is Rs. 2640 million; and the whole approach of the Planning Commission is based on Productivity: "The main objectives to be kept in view in implementing programmes for village and small industries in the Third Plan will be: (i) to improve the productivity of the worker and reduce production costs by placing relatively greater emphasis on positive forms of assistance such as improvement of skill, supply of technical advice, better equipment and credit etc; (ii) to reduce progressively the role of subsidies, sales rebates and sheltered markets. . ."

### Productivity Approach

This productivity approach is further elaborated in the Planning Commission's exposition of the Role of Village and Small Industries in Planned Development: "With improvement in techniques and organisation, village and small industries offer possibilities of growing into an efficient and progressive decentralised sector of the economy providing opportunities of work and income all over the country. One of the principal aims of planning in this field, therefore, is to assist in the adoption of improved techniques and more efficient forms of organisation, so that full advantage is taken of the basic facilities and services available as a result of general economic development, and over a period the entire sector becomes self-reliant and self-supporting."

And the whole experience of the last decade shows what vital part productivity can play in the survival and prosperity of the small industry sector, for the Planning Commission has recorded "that where individual small industries, including village industries, have failed to adopt improved techniques or to achieve economies of scale and organisation through cooperation, production costs have remained relatively high and problems of unsold stocks and of decline in production and employment have arisen. These problems have come up in some of the traditional industries. Constant adaptation to the conditions of rapid change in a dynamic economy and the adoption of new techniques, methods and forms of organisation are important factors in the stability and development of various village and small industries."

### The Hopeless Race

As early as 1955, the first International Planning Team sponsored by the Ford Foundation had come to the same conclusion regarding the productivity orientation of small industry : "The study team's major impression is that the basic causes of present deficiencies in small industry are methods of management and production which fall far short of meeting modern demands for efficiency; plus reluctance or failure to adopt improved rationalized methods... *Without rationalization, the natural talents of Indian workers and craftsmen are being wasted in a hopeless race against modern technology.* Unless and until these workers are helped to produce more goods and more wealth, neither wages nor living standards can be raised."

### Gandhiji and Machinery

Probably the case for machinery, particularly in the context of the socialist pattern of society that has been decided upon by our sovereign Parliament could not have been better stated than by Gandhiji himself : "*If we could have electricity in every village home, I should not mind villagers plying their implements and tools with the help of electricity.* But then the village communities or the State would own power-houses, just as they have their grazing pastures. But where there is no electricity and no machinery, what are idle hands to do ? *I would prize every invention of science made for the benefit of all...* The heavy machinery for work of public utility which cannot be undertaken by human labour has its inevitable place, but all that would be owned by the State and used entirely for the benefit of the people. I can have no consideration for machinery which is meant either to enrich the few at the expense of the many, or without cause to displace the useful labour of many.. Take printing presses. They will go on. Take surgical instruments. How can one make them with one's hands ? Heavy machinery would be needed for them..."

### The All Out Programme

The main fundamental of Gandhi's economics was the welfare of the entire people. It is only in that context that Gandhiji's whole attitude to machinery and the socialist programme can be reasonably interpreted; and the statement recorded above is unequivocal. In fact it is only correct to record that the entire economy is being productively transformed according to Gandhi's ideas. Practically the whole of the governmental machinery including the large banking structure, the State Bank with all its ramifications in the rural areas, the Reserve Bank of India, the State Departments of Industry, the Industrial Estates which are now being extended to the rural areas, the Prototype-cum-Production Centres, the large rural electrification programme: all these are really designed to make the large sector of small industry as productive as possible and thus raise the general level of productivity in the country.

## Indian Socialism

It is becoming increasingly clear that *the main content of the government's socialist programme is to make the small man productive and stand up on his own against the general pressure of economic and social circumstances.* This is probably the Prime Minister's own language as recorded in the exposition of the Objectives of Planned Development in the introductory chapter of the Third Plan : "... the problem is to create a milieu in which the small man who has so far had little opportunity of perceiving and participating in the immense possibilities of growth through organised efforts is able to put in his best in the interests of higher standard of life for himself and increased prosperity for the country... A socialist economy must be efficient, progressive in its approach to science and technology and capable of growing steadily to a level at which the wellbeing of the mass of the people can be secured...."

### Industrial Estate Idea

And the results achieved so far have not been inconsiderable. In spite of the shortages of certain basic raw materials, many small industries producing bicycles, builder's hardware and tools have expanded considerably, the increase in output being as large as 25 to 50 per cent per annum. The number of registered companies with an authorised capital of less than Rs. 5 lakhs each and engaged in processing and manufacturing have during the last few years increased by more than a thousand. Industrial Estates have added to industrial capacity and employment potential. The more interesting part of the Industrial Estate idea is that it has spread to the sphere of large industry both in the private and the public sectors. The Hindustan Aircraft at Bangalore, the Heavy Electricals at Bhopal, and the Royal Enfield in the South have actually organised industrial estates on their own, which means an extension through ancillaries of the small industry sector.

### Phenomenal Expansion of Handloom Sector

In the handloom sector, increases in output which at one time used to be a point of debate, have been almost phenomenal, the output of handloom cloth in the first decade of economic planning having increased from 742 to 1900 million yards providing fuller employment for nearly three million people. Production of traditional khadi (cotton, silk and woollen) has increased in the same period from 7 to 74 million yards, providing whole-time and part-time employment to more than 1.5 million persons.

### *Reductio Ad Absurdum*

In the context of Indian economics, this necessitates a rethinking of the whole idea of productivity, as it has come to us from western experience. Productivity has been measured in terms of the financial cost per unit of output. This is in itself a very valid measure of Productivity. But it is obvious that a rigid mathematical application of this productivity formula would lead us straight to a *reductio ad absurdum*. Thus narrowly interpreted, productivity would increase in proportion to output, with employment remaining constant but with employment remaining constant we would be shutting out a large mass of people from a productive contribution to the social dividend; we would also be depriving them of the incentive to contribute. Hence in the context of Indian economics, *increases in employment do constitute a direct and powerful contribution to productivity because such programmes enable otherwise unemployed people to contribute something to the community which they were unable to do before.*

## The Punjab Miracle

Probably the presentation would become more realistic if we were to put it in the context of the Punjab experience of small industry development in the post-partition period. As against less than 4 million people employed in the whole of factory industry in the entire country, the Punjab alone employs more than a million persons in small industry. *On its own scale and in its own context small industry development in Post-Partition Punjab is as much a miracle in the rehabilitation of a shattered economy as the lot more famous German miracle and the post-war resurgence of Japan.* For every person employed in large scale industry in the Punjab, 7 to 8 persons are employed in the small industry sector; and this small sector is by no means less productive than the large industry sector, considering the output per worker per unit of capital employed—which appears to be the only reasonable criterion for judgment. The small engineering industries of the Punjab employing about a million persons produce goods worth Rs. 30 crores per annum at a total capital investment of less than 10 crores! Probably in no part of the country and in no sector of industrial enterprise, would the capital-output and the capital-employment ratios be more favourable than in the small industry sector of the Punjab.

## The Japanese Experience

Because of the richness of the Japanese experience in small industry development, a whole section in this Journal has been devoted to the exposition of the various aspects of the Japanese experience in the line. Japanese definition of small industry is statistically quite different from ours, their employment criteria being very much higher but their capital criteria being very much lower. According to their definition, small industry which includes medium-size industry, covers 99 per cent of the industrial working force. Within this, cottage industry employing less than 4 persons per unit employs more than 80 per cent of industrial population. Obviously, on a purely statistical basis it would be difficult to establish a comparison between the experience of Japan and India but making all allowances, it would be reasonable to presume that more than half the population of Japan depends on small industry in the sense in which we understand it. Though external observers have for various reasons been struck with the high productivity of the Japanese small industry, Japanese experts including international experts like Prof Eugene Staley rate the productivity of Japanese small industry as distinctly lower than that of large industry in Japan. The voluminous literature published by the Japanese Productivity Centre has fulsome references in it to the outdated methods and techniques of small industry in Japan: "...majority of small manufacturers can make only lower grade products...There is no steadiness in the quality of goods produced...*Small business remains the weak and dark part of Japan.*... They will remain as long as our population continues to supply labour for jobs of a traditional nature." In fact one could quote *ad infinitum* from Japanese literature along these lines; and if the name of Japan were taken out, the name of India could be substituted without any damage to the nature of the statements made regarding small industry. Yet it is of the utmost importance that the Government of Japan not only in the Ministry of Industry but also in the Ministry of International Trade is all out to help the small entrepreneur. Probably all that the Government of India now does for small industry, the Government of Japan has been doing for quite a long time, besides one more factor to which attention may be drawn. What is known as *industrial consultancy* has been organised by the Government of Japan as a free public service particularly for small industry.

In the context of the Japanese experience it is reasonable to presume that but for the investment and organisation of the Government of Japan in the small industry sector, the rate of economic growth of that country would have been much slower. It is the small industry development that has enabled Japan to draw upon what our Planning Commis-

sion called our population as the investment potential: "... The rate of economic growth of Japan since 1870 was higher than that of almost any other country and Japanese industry is efficient—highly efficient" This judgment of Dr Abegglen, who spent more than a year in Japan studying its highly differentiated and highly complex industrial organisation relates in its productivity aspects probably to large industry but the rate of economic growth covers also the small industry sector, which has been by far the more important and statistically the overwhelmingly important part of the Japanese economy.

## Economic Growth & Small Industry

*If therefore we want to attain the highest possible rate of economic growth, we have to draw upon the productive capabilities of the small man and that in a fairly large way; and the situation for such a productive orientation of the economy is favourable if we view small scale industry development as an integral part of the dynamics of the current social situation.* Small industry both in ancient and medieval India flourished actively on the patronage of governments, emperors and *nawabs*. It was a part of the dynamics of that social situation. Similarly, small scale industry in modern times is a part of the process of social growth. Government's large scale enterprises, the huge metropolitan areas calling out for enormous quantities of goods and services which can only be produced profitably on small scale partly because of the large variety of small things that are needed and partly because the demand appears and disappears rapidly so that large scale investments cannot be profitably undertaken; yet at any point of time there does exist a volume of aggregate demand that is sufficient to keep up a fairly large volume of employment. This type of work requires a degree and type of enterprise, particularly suited to the talent and resources of the small entrepreneur who is prepared to do all types of jobs, conceive and organise them rapidly, deliver the goods to the satisfaction of the consumer; and then switch on with equal rapidity to some other line that is pointing itself out. In that dynamic sense, small industry is ancillary to large scale economic and social development.

## Future Pattern of Industry

From the point of view of socio-economic development small scale industry may also be viewed in another aspect. The Indian economic organisation has been generally discussed in terms of the private and the public sectors. In real terms, the future pattern of industry will consist of the small private enterprise sector on the one hand and the corporate sector on the other, which will include all enterprises whether in the private or in the public sector, for as soon as an enterprise becomes sufficiently large either in terms of employment or the capital invested, it comes necessarily within the jurisdiction of the State. The state might either take it over or regulate it but since the stake of the community in a big enterprise is large, it becomes either a government enterprise or a government controlled or regulated enterprise and the essential element of entrepreneurial risk disappears. Thus from the point of view of social development, entrepreneurship of a risk variety would be limited to small enterprises.

## A Sure Sign of Take Off

That in fact has been historically the case. All major developments such as those associated with the names of Henry Ford, Thomas Edison, the great Tatas in this country; all of them started as small enterprises in which capital and skills were developed gradually over a period of time. In a dynamic economic situation small industries are constantly coming up, because a number of talented, informed and enterprising people are seeking to break through to new avenues of development; these small enterprises in the

course of history, flower out into large enterprises. Once again new small industries develop and become big industries in their own turn, followed by another wave of small enterprises and so on. This is in fact *a sure sign of take off*. If small enterprises in this sense remain small enterprises always, the situation would cease to be dynamic.

The productivity programme of the future will have to be shaped along the pattern of the economic organisation that is emerging. The corporate sector with big inflexible investments, with trade union pressures, rigid worker attitudes, settled techniques, bureaucratic procedures, detailed regulations regarding wages, layout and all the rest, will have little free play for *the essential attributes of productivity namely resilience, improvisation* and the like, for the cost structure of large corporations is more or less rigidly positioned; and further, what is a lot more important, the gains of productivity are often swamped by the larger gains arising out the monopolistic or semi-monopolistic conditions that large corporations enjoy in modern markets.

### Live by Productivity Alone

A third point of still greater importance: large corporations have of course their economies but they have necessarily to be guided also by very powerful social objectives. The big corporation even in the private sector which disregards basic social objectives would find its operations nearly impossible in a modern economy. It is not for nothing that the Planning Commission has been insisting that private enterprise has to work within the framework of the Plan. On the other hand, *small enterprises have to live by productivity alone*. Probably the position could not have been stated better than has been done by the Japanese Productivity Centre in one of its brochures on small industry: "The problems faced by small business enterprises can hardly be solved by mere benevolent guidance and aid along a line chosen for them by others. . . . The basic solution of the problems can be accomplished. . . only when small business people are awakened to the realization that the productivity gains have to be achieved by no one but by themselves and when they carry personal enthusiasm and interest towards the solution of the problems."

### His Own Foreman-Manager

In fact there is reason to suppose that given a chance and favourable overall economic conditions, over which no entrepreneur can have any possible control, *small industry has within it a productivity potential that large industry has not*. For unlike the top manager in large industry who is part of a bureaucratic set-up, the small proprietor is himself the foreman-manager of his own concern. He has *a direct and intimate interest in productivity*, in the development of human relations, in the motivation of his workers to the optimum levels of their performance: in regard to all these he has advantages which the large producer has not, for the latter has not *the small man's intimacy with men, materials and markets*.





# The Mill versus The Charkha

MK GANDHI

**T**AKING AN INDUSTRY LIKE THE TEXTILE THAT IS OPEN TO BOTH THE METHODS, WE SHALL be able to compare the figures satisfactorily. An average cotton spinning and weaving mill uses about Rs. 13 lakhs of capital and employs about 1400 men. This works out to about Rs. 900 per person employed. The production per rupee invested works out to 2.5 lbs of yarn and 1.5 lbs of cloth (The figures are for the year 1932-33). A cottage unit of one loom, 10 charkhas, and with Rs. 60 as working capital works out to an investment of about Rs. 9 per person employed and the production per rupee invested is about ten times as much as in a mill. Computed from this we would need Rs. 300 crores of capital employing 33 lakhs of people, if we supplied all our requirements by mill production, while we would require about Rs. 72 crores of investment employing 800 lakhs of people, if our supply were to come from cottage units. *The two methods have undoubted advantages which no one will deny. The question before us is to choose that method which will fit into the conditions that prevail in our country. We are poor but we have an ocean of labour wealth. Therefore an intelligent plan will find the cottage method fit into the scheme for our country.* An engineer who is planning the buildings in a country abounding in good clay and wood will plan on building with bricks and timber, but one who is planning for a country abounding in cement and iron will recommend reinforced concrete. It will be foolish, if the recommendations were the other way round. There is no single patented road to progress. Planning has to coordinate the available factors of production to produce the best possible results, not only material but social and cultural. *Any planning in our country that ignores the absorption of labour wealth will be misplanned.* Our analysis has shown that centralized method of production, whatever may be its capacity to produce, is incapable of finding employment for as large a number of persons as we have to provide for.

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**“... incentives come from the soul's self,  
The rest avail not.....”**

—Robert Browning: *Andrea del Sarto*

# Gandhiji on Machinery\*

**A** SOCIALIST HOLDING A BRIEF FOR MACHINERY asked Gandhiji if the village industries movement was not meant to oust all machinery. 'Is not this wheel a machine?' was the counter-question that Gandhiji, who was just then spinning, gave in reply. . . . 'I do not mean this machine, but I mean bigger machinery'.

'Do you mean Singer's sewing machine? That too is protected by the village industries movement, and for that matter *any machinery which does not deprive masses of men of the opportunity to labour but which helps the individual and adds to his efficiency*, and which a man can handle at will without being its slave' . . . . 'But what about the great inventions? *You would have nothing to do with electricity*' . . . . 'Who said so? If we could have electricity in every village home, I should not mind villagers plying their implements and tools with the help of electricity. But then *the village communities or the State would own power houses*, just as they have their grazing pastures. But where there is no electricity and no machinery, what are idle hands to do? Will you give them work, or would you have their owners cut them down for want of work? . . . . *I would prize every invention of science made for the benefit of all*. There is a difference between invention and invention. I should not care for the asphyxiating gases capable of killing masses of men at a time. *The heavy machinery for work of public utility which cannot be undertaken by human labour has its inevitable place, but all that would be owned by the State and used entirely for the benefit of the people*. I can have no consideration for machinery which is meant either to enrich the few at the expense of the many, or without cause to displace the useful labour of many. . . . But even you as a socialist would not be in favour of an indiscriminate use of machinery. *Take printing presses. They will go on. Take surgical instruments. How can one make them with one's hands?* Heavy machinery would be needed for them. But there is no machinery for the cure of idleness, but this,' said Gandhiji pointing to his spinning wheel. 'I can work it whilst I am carrying on this conversation with you and am adding a little to the wealth of the country. This machine no one can oust.'

\*Economics of Khadi, Navjivan Press, Ahmedabad, p. 441.

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## EMERSON'S MOUSE & THE MOUNTAIN

**If I am not as big as you are  
You are not so small as I am  
If I cannot scale the mountain  
You cannot crack a nut**

# Small Industry Development

NITYANAND KANUNGO\*

For several decades there has been a conflict of views as to the most desirable method of industrialisation in our country. According to one view, the only method of economic progress is to adopt entirely the pattern of Western industrial organisation of production in large and larger factory establishments with the maximum use of machines in replacement of manual labour. According to another view, the use of machines for replacement of manual labour is undesirable. The controversy is to my mind unreal, inasmuch as the adoption of either view, is, to say the least, impractical in the rapidly changing conditions of the world. Even in the countries of the West where technology has advanced very much, it is now realised that certain products are more economical to produce in smaller establishments than in large factories. Conversely it is now realised that the use of machines by itself does not lead to human misery, and human happiness and social well-being can be advanced by rational use of appropriate machines.

**T**HERE ARE ADEQUATE REASONS FOR fostering the development of small industries for the economic growth of the nation. The small scale section in industry has been assigned a key role in development of the economy on account of its vast employment potential and its capacity to effect a wider spread of industry. I am conscious of several unhealthy features like haphazard and unco-ordinated growth in some places and in some lines. I am equally aware of the difficulties of small industries in the matter of adequate supply of power, transport, raw materials; also of the institutional adjustments necessary to render the growth of small industries less onerous and difficult.

I had the privilege of being associated with the Government of India when the programme of development of small-scale industries was taking shape in 1954-55. At that time some of us realised that no one could lay down the law for setting up programmes which could only succeed if the largest number of people could be attracted and involved in the movement.

The pooled experience thus gained would indicate the direction in which progress should be encouraged and the weak patches where special efforts would be called for, mistakes to be corrected and wrong tracks to be given up. Therefore, the programmes have been flexible from the beginning, and if I may be pardoned in saying so, progress has been phenomenal by and large, though there are areas where progress has been slow compared to areas where progress has been spectacular. The success of the programme is very largely due to the efforts of the people themselves, though the work of the devoted workers in the Small-scale Industries Organisation, the Corporation and the Directorate of Industries have been of some use.

Small-scale Industries during the Second Plan have covered a very wide range of products. They are growing as important ancillaries to the large-scale units and gradually they are taking up more and more complicated items which require specialised techniques of manufacture. A large number of cases with technical collaboration with foreign firms are being

\* Minister for Industry, Government of India and President, NPC.

concluded in the small scale sector which are indicative of their adopting latest and complicated techniques of manufacture. The small scale sector has already moved from its infancy towards its adulthood but there are still many a hurdle before it can achieve full maturity. Not only *very large number of persons are now being drawn into the vortex of small entrepreneurship* but new product lines are being developed and new areas getting engulfed by this movement.

The Government of India have been making all efforts to increase the supplies of scarce and controlled raw materials to the small scale industries. In 1961-62, 139,380 tons of indigenous steel were allotted to this sector as against 52,700 tons in 1957-58 and 127,968 tons in 1960-61. Similarly the quantity of non-ferrous metal, allotted in 1961-62 was 48,400 tons as against 11,045 tons in 1958-59 and 34,650 tons in 1960-61. Every effort has also been made to make imported raw materials available to the small scale sector. Rs. 604.00 lakhs of foreign exchange were allotted to the small scale sector for import of raw materials during 1961-62. Import of several items, both raw materials and components, was also arranged through the State Trading Corporation and the National Small Industries Corporation. In spite of these allotments, complaints regarding raw materials have been increasing. Reason is not difficult to seek. The number of units in the small scale sector has been rapidly increasing. The increasing demand for the raw materials is therefore a sign of development. I am, therefore, not at all afraid of the situation but we must always be ready and prepared to solve this problem.

The quantum of indigenous raw materials in the overall requirements has also been increasing which is again a very happy sign. The biggest problem of the small scale units is, however, of coal and coke. We are getting complaints and in some cases the difficulties in the supplies of coke have perhaps led to the painful and inevitable situation of unutilised capital equipment. Nobody would perhaps be

more worried on this account than myself. The difficulties are not so much of availability as of inadequacy of transport. As a result, supplies do not become available either in specified quantities or at required time. The Ministries of Mines and Fuel and Railways are fully alive to this problem and it is our duty to approach them for finding a suitable solution. The problem, however, is a difficult one and affects every other sector equally or perhaps more.

Finance and credit requirements are another important problem of small scale units. Government have however been most alive to this problem and have been taking steps for making finance available to the small scale units right from the inception of the programme of small scale industries. During the Second Five-Year Plan period every State Government has further liberalised its outlook towards advancing loans under the State Aid to Industries Act. Till the end of March 1961 loans of the order of Rs 330 million had been advanced to small units by all the States under these Acts. Similarly, the State Financial Corporations in each State have been advancing loans for various purposes to the small scale units. These Corporations sanctioned nearly Rs 30 million to 2,329 applicants by the end of June 1961 out of the funds placed at their disposal by the State Governments, whereas out of their own funds they sanctioned about Rs 82 million to 937 units. Towards the end of 1955 or early in 1956 the State Bank also accepted a programme of liberal assistance to the small scale units. With a modest beginning of its scheme at a dozen centres in 1957, it now covers the entire country. Based on the successes achieved by the end of 1961 the State Bank had advanced a sum of Rs. 101 million to 2,811 small scale units. Even so, the Government would welcome increasing participation by the commercial banks in this adventure. In order to give them the necessary incentive, Government launched in 1960 a Credit Guarantee Scheme which is being administered through the Reserve Bank of India. All the premier commercial banks in the country are being drawn into

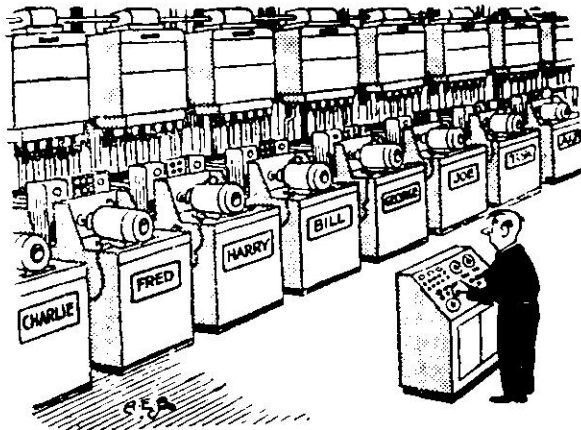
this scheme. Government has agreed to bear 50 percent of the losses that might accrue to the commercial banks in case such advances are covered by the scheme.

With all the limitations characteristic of the situation, Government is trying its utmost to mobilise credit for the small scale industries from all possible sources. The schemes of hire-purchase of machines for small scale units and provision of factory space in Industrial Estates are also really schemes of indirect financial assistance to small scale units. The National Small Industries Corporation, which is a Government of India undertaking, supplies machinery to the small scale units on hire-purchase basis and only 10 to 20 percent of the value of the machinery is payable in advance. The rest of the value is recovered in easy instalments extending over a period of about 7 years. Till the end of 1961, the NSIC had supplied 5,710 machines worth nearly Rs 56 million.

Government have an ambitious programme of constructing Industrial Estates all over the country. During the Second Five-Year Plan 126 industrial estates were sanctioned, while 384 industrial estates are proposed to be constructed during the

Third Plan. Supply of power and water for industrial purposes is also ensured in these estates. The units can therefore economise much of their capital expenditure which otherwise they would have invested in land and buildings. In view of the various types of facilities available from numerous sources, I am sure that any genuine small industrialist in need of finances for carrying out an effective production programme has today enough opportunities to meet his requirements.

There are many other problems and important ones like marketing, training, etc., which for reasons of space I am not able to touch here. I have however no illusions about the present and future, particularly about the supply position of raw materials specially the ones that are imported like non-ferrous metals, specialised steel and chemicals; difficulties about transport, electricity and the like. These shortages in fact are bound to grow in a rapidly developing economy. We have to face them together, with determination to achieve the highest practicable rates of growth, employment and mass welfare through the most productive utilisation of our manpower.



# The Potentiality of Small Industry

MANUBHAI SHAI\*

For achieving a rapid pace of industrialisation, on which we are all agreed, the most potent tool of industrialisation is the modern mechanised small industry. The other industries in the gamut of small industries have their legitimate place in handicrafts, handloom, hand-spun khadi, and in various other types of semi-mechanised and fully hand-operated tools of industrial development. But they grow more on the social and human aspect of the problem; the employment aspect—rather than on the powerful instrument of rapid industrialisation for raising living standards. Therefore, I would like to confine most of my observations to the small industry, the most potent tool of industrialisation and rapid industrialisation in the form of the mechanised modern small industries, as we understand them.

**I**N THE HIGHLY INDUSTRIALISED COUNTRIES like the United States or the Soviet Union or Germany, the urge to reduce the numerous economic overheads in the cost of production is imperative. Heavy industries and large scale industries cannot by their nature be too numerous. The problems of distance and transport are almost compelling the economies of those countries to go over to the spread and development of small scale manufacturing units as an ancillary or auxiliary force of economic development. In the United States, the place of small industry is as important if not more than all the rest of the industries, whether heavy or large scale. General Motors, taking one example, is buying more than sixty to sixty five percent of its parts from 19,000 and more of small industries employing less than ten persons. Small industry in those highly developed and industrialised countries has found its place on purely economic grounds. When I went to the Soviet Union a few years back, I saw the growth of a new tendency to establish smaller enterprises in distant places where massive and large scale industrialisation was

not feasible or economic. A German watch maker told me that the watch industry in Germany had got 18 semi-large scale units and about 300 small scale units employing 15 to 20 persons, and sometimes even five persons. A man and wife with a few of their workers manufactured a large percentage of the watches produced in that country.

In Japan the very home of small industries, the leader of the Japanese delegation told me that it was impossible to enumerate how many small industries there were. There are in Japan producing massive catalogues and documents about their small industries. There is a strong urge in the individual citizen to be self-employed and to have the opportunities of self-expression and not to be a cog in the wheel of a big machine or an industrial empire in which there are managers, operators and supervisors.

Then we come to the third category of developing countries to which India has perhaps the honour to belong. Some of the Asian and African countries could be classified in this group. Here the problems are more varied than the problems of the developed or the highly developed countries. The ultimate problem is the economic, political, social and human problem. We

\* Minister, International Trade, Government of India.

are a developing country from all these four angles. There are some other developing countries also in Africa and Asia and South America. In a vast country like India, we have to take into consideration the regional aspirations of the people. It is the basic instinct of man to develop his own habitation, personality, neighbourhood and locality, and there is no contradiction between national aspirations and regional aspirations, provided they are within recognised and accepted limits and harmonised into an integral national picture. These regional aspirations could be deployed best through the medium of small industries. After all what is happening in a big country like ours or in any other country of Africa and Asia which are like vast continents? Take Congo, Nigeria, Tanganyika or Uganda, Malaya or Indonesia. They look small in the picture. But *if you want to give satisfaction to the enormous population of these countries, you have got to accept the tool of small industry along with the basic and the heavy industries and other large scale industries.* Then the question arises, can we afford to have so much capital available in these scarce capital countries where human capital is the most enormous and fiscal capital is limited. It is here that the labour intensive methods are more fruitful than entirely capital intensive methods. When I say this, I am not saying it to the exclusion of the other. I am no believer in castes. We are only a community of industry. We are only a part of the great national gamut of economy with different sectors playing their own roles in the overall picture without any sense of hostility, because *the small of today may become the medium of tomorrow and the large the day after.*

The next point is, how do we take the message of modern science and technology on which we build industries in these vast areas. The only instrument you can think of is the small industry through which we can make science and technology visible to man. After all how many in the villages

can go to see the Atomic Energy Station in Trombay? How many from the North of India can come here in the South to see the Integral Coach Factory in Perambur? It is only when you bring the light to the very door of the hearths and homes in the villages that modern science gives its real benefit and utility to the masses of men. That is where, *as the principal messenger of the benefits of science and modern technology, the small industry has absolutely an unmatched and unrivalled place.*

The biggest of what you call the human problem is the employment and development of the human skill. Ultimately after all is said and done, the unit of industry is very much less important: one part of ten. The growth of human skill is the real one and the first. You want to make every man capable of producing more today than yesterday, more tomorrow than today and the day after. When this is to be done, he has to be highly skilled, energetic and competent, and his activities have to be given a proper opportunity and training to forge him forth into a real expert human being. Here you see something through the activities of the small unit. You build up the human personality and skill. The workers in the small industries identify themselves with the unit completely. You are as much away from the manager in a big factory as any man on the plains is away from the Himalayas. You do not have the sense of communication. In a great enterprise you are an automation subject to the various tiers of discipline and carrying out the given task not for the real pleasure of having done something of your own. The small industries provide all this. There are very few tiers. You are the supervisor, and your wife assists you. In some countries in a small unit a wife cooks food for about half an hour and then comes as an operator. There is a close family link in the small industry. That explains the inherently higher productivity of the small unit, if other factors are favourable.

# What Then Must We Do?

VAIKUNTH L MEHTA\*

Some of us townsmen who rarely see outside the narrow circles in which we move about have various notions of the standard of living of the people. In one leading economic and financial weekly, in a special contribution, a writer describes thermos flasks, electric torches and the like as consumer goods in common demand among the people. To such superficial students of our economy, statistics may, however, carry conviction: 20 million of our people have a *per capita* income of Rs. 38 *per year*. Much higher up, 200 million people, which is nearly half of our population, have a per capita income of Rs. 175 per year that is, less than half a rupee per day. The main task before the country is to so plan the economy that the level of incomes of these 200 million people is raised appreciably, a task which cannot wait for fifteen to twenty years. The course of modern economic development—industrial expansion, which constitutes the core of our planned programme—is such that even if the growth of population is controlled more rigorously than is the case at present, it is difficult to visualize a time, when these low-income groups will have an income sufficient for bare minimum needs.

**A** SITUATION CONFRONTS US IN WHICH large numbers of people have little work to do the year round and even larger numbers are practically unemployed almost all the time. Broadly, the pattern at the moment is

20 million persons have work for at most an hour per day

27 million persons have work for 1 to 2 hours per day

45 million persons have work for 2 to 4 hours per day.

The root cause of our degrading poverty thus lies in the fact that there is little or no work for vast numbers of our population. To the backlog of unemployment that will be higher at the end of the Third Five-Year Plan than it was at the beginning there is this factor of gross underemployment resulting in the perpetuation of a low level of incomes.

\*Chairman, Khadi & Village Industries Commission.

Not only is approximately half of our national income derived from agriculture, but even today the quantum of that income gets affected by adverse seasonal conditions despite, again, the increase in the area under irrigation and the use of improved techniques and devices. Moreover, the percentage of the population dependent upon agriculture for their livelihood shows little sign of decline notwithstanding the industrialisation achieved in the last few decades. Actually the numbers for whom agriculture has to find a livelihood have risen tremendously during the last thirty years with the increase that has taken place in our population.

While the process of urbanisation has gone on in the last two decades, especially, the fact remains that four-fifths of our people live in rural areas. Of the villages where they dwell, four-fifths again have a population of less than 1000. Hence, the objective of providing employment can be secured only by undertaking appropriate activities in or near the very large number of small village



communities which are spread all over the country.

This was also the view taken by Prof. DR Gadgil and Prof. PC Mahalanobis when they put forward their respective proposals for the framework of the Second Five-Year Plan. In the Third Five-Year Plan, the value of such a programme is indicated by the formulation of a works programme for the utilisation of rural manpower.

The limitations of such a works programme have, however, been recognised subsequently by the Planning Commission. In addition to the special machinery that has been set up in the shape of six all-India boards in charge of the handloom weaving industry, the handicrafts industries, the silk industry, the coir industry, khadi and other village industries and small scale industries, the Commission had considered it necessary to constitute a separate panel or body of consultants not only to secure co-ordination of the activities of these various all-India bodies but also to formulate and assist in the implementation of a vigorous drive for rural industrialisation. The Rural Industries Planning Committee of the Commission had decided to launch a drive forthwith for the intensive development of rural industries in 40 selected areas in the country.

This programme of rural industrialisation should not be confused with the setting up of a few large scale industries in rural areas. That process is but one aspect of the programme of industrial development—"the geographical dispersion of industries and industrial units." This process is desirable since it helps in preventing the growth of urban concentration and may lead to an increase in the incomes of some rural families. It does not necessarily result, however, in promoting the even flow of productive effort throughout the countryside nor in evoking the active participation of the rural community in pursuits other than agriculture. That end can be achieved principally, as the Poona Seminar\* observed,

"by promoting self-employment in industry by small family units of medium units which may be owned either co-operatively or through a system of workers' ownership and management."

It is chiefly in the production of consumers' goods industries that we can have an ever-expanding development of decentralised industry. While the development need not be confined to the traditional industries connected with the basic requirements of the countryside, it stands to reason that such a programme can have an impact on rural economy only if it succeeds in finding work for large numbers everywhere. This necessarily postulates that the sphere of production must be such as provides articles for which there is a stable constant mass demand. Hence the industries selected will essentially be those that meet the day-to-day needs of the rural community with its present level of earnings and purchasing capacity.

This takes us to the realm of a discussion on what the Poona Seminar termed "the purposive adaptation and development of technology for production in small units."

In the opinion of the Poona Seminar since industrialisation has to be achieved at the maximum possible level of employment the industrial techniques that we adopt in the immediate future must afford sufficient employment to labour per unit of capital invested. That technology has to be adopted which is appropriate to the particular combination of capital and labour presently available in the country. If in order to put through such a programme of rural industrialisation a minimum level of earnings cannot be ensured without resort to subsidisation, it should be part of the national policy to agree to the subsidisation, directly or indirectly, recognising the role of that programme in the diversification and revivification of the rural economy.

\*This refers to a Seminar on "Paths of a Planned Economy" held at Poona in April 1961 under the joint auspices of the *Akhil Bharat Seva Sangh* and *The Gokhale Institute of Politics and Economics*.

# Rural Industrialisation\*

PS LOKANATHAN

Writing on rural industrialisation, one's mind naturally goes back to Gandhiji. There is a feeling of poetic justice that 14 years after his death, the basic facts of the Indian economy have compelled a reversion to his economics in their fundamental essence. I myself had the good fortune of having a series of talks with the Mahatma on the Economics of Khadi sometime in 1945. The political and economic situation has since then undergone a sea-change but the basic fact remains that in a country with a population at present of 440 million people growing at the rate of 2 percent per annum, with 80 percent living in the countryside rural industrialisation is almost an imperative.

**I**NFACT IF WE LOOK BACKWARD, THIS imperative has been implicitly accepted as the basis of economic policy. The vast apparatus of organisation that has been set up for village and small industries has only to be described to make one feel what a volume of investment Government has been making in terms of money and organisation for this sector of the economy. We have now a statutory Khadi and Village Industries Commission with large executive and financial powers. Every State has got a counterpart Board. Besides, there are All-India Boards to advise and assist in the formulation of the programmes of development for handloom industry, handicrafts, sericulture, coir, etc. Then there is a whole organisation, dealing with small industries, in the Ministry of Commerce and Industry, apart from the Small Scale Industries Corporation, prototype production and training centres, a vast network of small industries service institutes and the like. The whole banking structure including the Reserve Bank of India, the State Bank of India, the State Finance Corporations, even the private banking system, through guarantees etc., has been brought into the picture for the development of the small industries sector. The Planning

Commission has now launched a regular programme of rural industrialisation with a network of industrial estates in rural areas.

The full results of all this effort have yet to be seen, but a fairly large increase in output and some increase in employment are even now visible. According to information available at present, production of handloom cloth increased from about 742 million yards in 1950-51 to about 1900 million yards in 1960-61. Fuller employment was provided for nearly 3 million weavers. Exports of handloom cloth on an annual average have been about 36 million yards during the last three years, valued at over Rs. 5 crores. The number of looms in the cooperative fold increased from less than 7 lakhs in 1953 to almost 13 lakhs by the middle of 1960. Production of traditional khadi (cotton, silk, and woollen) increased from 7 million yards in 1950-51 to about 48 million yards in 1960-61. Employment mostly part-time, was provided to nearly 11 lakh additional spinners, besides whole-time employment to about 1.4 lakh weavers, carpenters, etc. Production of Ambar khadi (produced from the admixture of Ambar yarn and ordinary charkha yarn) increased from 1.9 million yards in 1956-57 to about 26 million yards in 1960-61. Mostly part-time employment was provided by this programme to about 3 lakh spinners,

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\*By courtesy, Khadi Udyog.

besides full-time employment to about 51,000 weavers and others. In sericulture, production of raw silk has risen from 2.5 million lb. in 1951 to 3.6 million lb. in 1960. Emporia for handicrafts have been set up and sales through them have increased from Rs. one crore at the end of the First Plan to about Rs. 2.5 crores in 1959-60. In the field of what are called small scale industries, there has been an increase in output in practically every line of 25 to 50 percent. Sixty industrial estates have been set up all over the country and this programme is going to be expanded.

In this context, it is essential at this stage to make the programming of rural industrialisation so thorough-going that the investment should be really effective in terms of employment, output, and above all, the productivity of the rural sector. In the First Plan, Government outlay on village and small scale industries was Rs. 43 crores. It was increased to Rs. 180 crores in the Second Plan and now in the Third Plan, Government outlay on the development of this sector will be Rs. 264 crores. It is expected that a like amount will be invested by the private sector. Thus the total outlay, private and public, on the development of village and small industries will be of the order of Rs. 500 crores during the Third Plan period. In a country, so short of resources, as we are, it is of paramount public importance that every rupee of this amount must yield its maximum in terms of our objectives.

What are our objectives? These are: that idle manpower in the rural areas should be absorbed in some form of gainful employment. It is also part of our plan to create work for those who are at present partially or seasonally employed in the rural areas. Rural industrialisation will also enable us to establish a decentralised industrial sector and so fulfil our constitutional obligation of avoiding concentration of wealth. Further, as an aspect of the same problem, there are at present wide rural-urban disparities, based on many factors, including the low productivity of village communities.

From a wider point of view, to ensure fuller and more economic utilisation of resources, rural industrialisation will help in the processing of agricultural raw materials, thereby saving transport costs etc. The ultimate objective, of course, is to raise the standard of living in the rural areas in as short a period as possible.

It appears essential to emphasise again that in this programming, clear thinking is very necessary. We must realise that we cannot organise effectively for isolated, small rural communities. We have necessarily to plan on the basis of aggregates of villages, whether as community blocks or otherwise. For the necessary training facilities, the network of transport and marketing arrangements, the availability of sufficient blocks of electric power, above all an organisation of technical advisory services: these can only be done effectively for fairly large aggregates of villages.

It is of course understood that we have made up our mind to introduce, however gradually, a superior technology in the sector of rural industry, for with outmoded techniques these village industries will not be a viable proposition. At present their position is weak because their productivity per worker is far below the level of the factory worker. Of course, the capital output ratio is very low—below 1—but with that low availability of capital per head we have to so organise the application of resources that the maximum productivity is attained.

Secondly, while we should certainly develop handloom, coir, gur and the like, there is no reason why we should not explore all the other possibilities that are emerging in view of the general development of the economy. With purchasing power increasing in the rural areas, there would be a market on the one hand, for example, for small agricultural tools and on the other hand, again taking an example, for toys (dolls and the like). There is no reason why we should not exploit the whole range of demand that is being created in the rural areas themselves. Further, the development in the rural areas

—coming up of hospitals, schools, community centres and the like —will also mean demand for a large variety of products and services; and rural industry should be effectively organised to satisfy these demands.

It is, therefore, necessary to make a study of market conditions, both in rural as also in urban areas : the demand for different industrial and social items so that we could so orient rural industry as to satisfy the current demand to the extent and at prices at which the market will take the goods. We must ascertain how far villagers themselves would be ready to buy the products manufactured in the villages from local raw materials. Such a study is necessary because of strong preference existing even now in the rural population to go in for factory-made articles, such as mill cloth etc. We, of course, do not rule out the possibility of selling rural products in urban areas and even arranging for export lines. This in fact is being done but we have to accept the fact that the products of rural industry should by and large find a market within the rural communities themselves. Thus a study of rural markets should be undertaken from three points of view : (i) evaluation of the existing demand in villages for various products (ii) analysis of rural preferences for local as against imported varieties and (iii) study of changes in the scale of rural preferences with every addition to rural incomes.

Once this study of rural markets has been done, the lines of rural industrialisation will become clear. It would then be necessary to support this programme by adequate power and transport facilities. At present, the programme of rural electrification is being undertaken mainly because of social

and political pressures rather than on economic considerations. In that context the decision of the Planning Commission to link up rural electrification with rural industrialisation is a sound one. We should on pure economic criteria speed up the supply of electric power to rural areas.

This alone, however, is not enough, for transport can be a serious bottleneck, holding up rural industrialisation. No longer can we think in terms of mud roads for the products of rural industry being transported to areas of consumption. Investment in rural transport is an essential part of the programme of rural industrialisation; and this investment is called for on purely economic grounds.

In fact we have to shed the belief that the programmes of rural industrialisation are not economic and they have to be formulated as only social welfare measures. It is true that such measures bring in greater social welfare but the development need not be uneconomical. It cannot be uneconomical if it is to be long-lasting. If we develop industries with potential markets in view and these markets have been adequately surveyed from all points of view—trends in incomes, preferences etc.—there is no reason why rural industrialisation should not on a purely economic basis be a success, adding to the aggregate employment and output of the community in a measure commensurate with the investment involved. Probably there will still be an element of cost corresponding to what we call welfare, but it will be entirely worthwhile and we shall be doing it with open eyes, for the paramount obligation of the community is to create conditions of gainful employment for the entire working population.

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**"Apart from the universities, where its practice has the standing of a scholarly rite, the art of genteel and elaborately concealed idleness may well reach its highest development in the upper executive reaches of the modern corporation".**

—Prof. John Kenneth Galbraith

# Planning Commission's Programme of Rural Industrialization

Considering the network of organisation that has been set up at the Centre and in the States, it appears as though a fairly large scale beginning is being made in the field of rural industrialization. Early this year the Government of India set up a high level Rural Industries Planning Committee consisting of the concerned Cabinet Ministers and Members of the Planning Commission, besides Sri Vaikunth Mehta, Sri Jayaprakash Narain, Prof. DR Gadgil, Srimati Kamaladevi Chattopadhyay and others. This Committee worked out a scheme\* for the intensive development of small industries in the rural areas under which it was proposed to take up immediately about 40 selected areas, depending on the State Governments' readiness to initiate this programme and to ensure necessary conditions for effective implementation. Additional projects would be taken up in the subsequent years of the Third Plan. The Planning Commission expressed its readiness to provide additional funds over and above the Central assistance for State plans.

**T**O CONSIDER THE PLANNING COMMISSION'S Scheme of Rural Industrialisation a Conference on Rural Industries Projects was called in July 1962. At this Conference it is interesting to observe that the whole thinking was along productivity lines. In his inaugural address Sri GL Nanda, Deputy Chairman of the Planning Commission, remarked significantly: "... instead of unrelated development of agriculture and industry, it would be essential to diversify the rural economy by building up industries based on agriculture as well as

other resources in order to raise the levels of living and productivity in the rural areas... agricultural growth by itself would eventually prove to be a self-limiting process unless industry was taken to the rural areas, for this alone could lead to a self-sustaining and self-generating rural economy... there will have to be conscious efforts from the beginning to produce quality goods and keep down the cost of production so as to avoid marketing difficulties. Special steps would, therefore, be required for carrying out research in improved production techniques and communi-

\*In a communication addressed to the Chief Ministers of States, Sri GL Nanda, Deputy Chairman of the Planning Commission drew their attention to certain important features of the scheme: (1) The proposed projects are intended to enable States to evolve effective techniques, methods and programmes which can be extended progressively to other areas which have a large incidence of unemployment and under-employment. (2) The projects aim at the intensive and integrated development of *all kinds* of small industries as well as of processing industries based on agriculture. They are to be implemented as part of a wider and well coordinated plan of area or regional development providing for all-round development of agriculture, irrigation, communications, industries, social services etc. Along with other measures, they are intended to promote the development of a cooperative agro-industrial economy. (3) Each selected area in the first series may have a population of 3 to 5 lakhs consisting of complete development blocks, all of which should be situated within the same district. While this is conceived as the area for Planning, for implementing some of the schemes and preparing proposals, the Block can serve as the effective unit. For subsequent series, the possibility of covering the entire district is to be kept in view.... The projects for the intensive development of village and small industries in rural areas which are being taken up in the first series are essentially a beginning. They are intended to assist in the intensification of the various programmes in this field, help in coordinating the functions of various agencies, bring about the fullest possible participation of financial and cooperative institutions, and secure the integrated development of the rural and the industrial economy in terms of area or regional plans.

cating the results to the project areas and also for effecting improvement in skills through suitable training facilities....".

Practically every one of the high level participants appeared to be thinking in terms of productivity: "...it would be essential to avoid marketing problems by paying special attention to research and training so as to produce quality goods at competitive prices.... It would be necessary to conduct research and experiments continuously in order to improve techniques of production and also technical processes through improved tools and equipment.... For the manufacture of agricultural implements, research should be conducted to find out whether and to what extent they could be produced in the villages and yet at a price which was within the means of the cultivators to pay. Thus, the success of the programme for the development of rural industries would depend mainly on the emphasis laid on research for improving equipment and technology" (Thakur Phool Singh UP Minister) "... there should be absolutely no restrictions on the use of power and machinery, wherever available...." (Sri PN Singh, Rajasthan) "... need for adopting a flexible approach, depending upon local conditions...." (Sri PN Sahni, Punjab) "... The first and the foremost aim should be to introduce new skills in the rural areas...." (Sri K Ramakrishnaya, Orissa) "... some special arrangements should be made for research in small industries...." (Srimati Kamaladevi Chattopadhyay) "... the existing ban on conversion of handlooms into powerlooms on a cooperative basis should be relaxed...." (Sri GF Mankodi, Gujarat) "... there was a variety of waste materials which could be utilised for production of a large number of items. For instance, while rice husk can be used as fodder if mixed with certain chemicals, certain other waste materials could be utilised for producing gas...." (Sri PN Sahni, Punjab).

In this connection, the views of Sri Jayaprakash Narayan who is a Member of the Planning Commission's High-powered Committee on Rural Industrialisation deserve special notice because they are particularly significant in terms of productivity:

"... the Khadi & Village Industries Commission have no pre-conceived limitations or inhibitions in regard to such matters as the use of power and technology.... hitherto the approach of the various All-India Boards has been largely fragmented and haphazard. It should now be replaced by an integrated approach for development of industries in the rural areas. There should be a single authority in charge of promoting, guiding, helping and studying the problems of rural industrialisation. The new approach should be based on a synthesis of the practical as well as ethical aims. The society which had come into existence in the western world should not be our ideal. Instead of trying to multiply New Yorks, Tokyos or Bombays, the aim should be to transform the agricultural communities in the country into balanced agro-industrial communities, carrying on a variety of occupations based on agricultural as well as other resources including processing and all other kinds of small industries. But care should be taken that the ethical values were not lost sight of. Thus, for instance, the conditions of work should be such that a worker had the opportunity of self-expression and would not become merely part of a machine.... To achieve the objective of rural industrialisation, it would be essential to accord the highest priority to rural education. The existing educational system would require to be radically changed so as to provide the required number of trained and managerial personnel. Besides carrying out quick surveys of the selected areas, there is need for building up entrepreneurial and promotional abilities in the rural areas by the State, if necessary, by establishing industries in partnership with the 'social sector' comprising the cooperatives, registered institutions and other non-profit marketing societies, zila parishads,, panchayat samitis, etc. Regarding problems like shortage of power, certain basic raw materials, etc., instead of pressing the Centre to arrange for them, efforts should be concentrated on research on the types of industries which could be developed without power or the raw materials in short supply".

The Planning Commission's own strategy of rural industrialisation was explained by

Sri Tarlok Singh: "... the surveys should be oriented towards producing a kind of working programme to go forward... the people of the area and their representatives should be involved and their suggestions taken into account in drawing up the programme for the selected areas... while the development of khadi, traditional industries, handicrafts, handloom and sericulture might yield quantitatively better results in terms of employment, agricultural processing industries along with those using local raw materials and meeting local needs might deserve greater attention as they were likely to become more and more important, especially as they would provide a link to larger industries. Once, centres to serve as nuclei at which efforts were to be specially concentrated had been identified after careful study, it would be necessary to decide upon the strategy of area development—it could be establishment of common facility centre in some places, setting up of training centre or the need for greater attention to communications or availability of power in other places. If at a place the main problem was shortage of power, the matter should be discussed with the State Electricity Board with a view to making suitable changes to link up the centres to serve as nuclei for development... the Reserve Bank of India, the State Bank of India, cooperative and other banks would have an important role to perform in the strategy of area development. In this connection the suggestion made by Sri Jayaprakash Narayan regarding establishment of industries by the State in partnership with the cooperatives, *panchayat samitis*, *zila parishads*, etc., would be examined further. In addition to the existing industrial extension Service being fully drawn into the implementation of the programme for selected areas, the possibility of drawing up panels of technical experts in suitable lines whose services could be made available on the basis of retainer fee as and when required, should be explored by the State Government... the responsibility for making this programme a success should fall mainly on experienced non-official constructive workers who were already closely

involved with the programme of rural uplift and widely respected in the selected areas... It should not be difficult to entrust these non-official workers with Government funds for carrying out specific responsibilities within the selected areas... the proposed arrangements should be judged from a wider point of view for achieving certain national objectives. Project Committees would, of course, have appropriate organic link with the *zila parishads*, *panchayat samitis*, cooperatives, etc., so as to secure their close and continuous collaboration in the formulation and execution of the programme... The Panchayati Raj legislation envisaged not merely the elected bodies but also a wider circle of institutions including voluntary organisations, cooperatives, etc. All these formed an essential part of the Panchayati structure... there was no intention to keep out the Panchayati Raj organisations from this programme; in fact, they had a vital role to play as outlined in the scheme for rural industries projects... to start with, an assured minimum provision as a nucleus for each project, of Rs. 20 lakhs will be provided as additional funds to cover the period 1962-66, over and above the present allocations under the Third Plan. In addition, there will also be provision for a contingent fund of Rs. 7 crores. Break-up of these funds as between loans and grants, would depend mainly on the programmes to be drawn up. Funds to be given to third parties would have to be mainly in the form of loans. *These funds were not proposed to be tied to any schematic pattern.* The banking and cooperative institutions were expected to play an important role in meeting the credit requirements in the project areas."

To implement this programme a committee has been set up under the Chairmanship of Sri Annasaheb Sahasrabudde. The Planning Commission has drawn up an illustrative list of industries for area development. They have also drawn up notes on the patterns of development for different village and small industries, besides detailed notes on such industries as leather tanning, footwear industries, agricultural implements, and building materials industry. A scheme for

preservation of fruits and vegetables in undeveloped areas has also been circulated. The Central Small Scale Industries Organisation has prepared model schemes for certain industries, suitable for rural areas. On the basis of this material, State Governments are formulating concrete schemes for

project areas. At the time of writing, quick economic surveys are being undertaken of the project areas and a flexible and dynamic organisation is being built up to link them integrally with the High-powered organisation in the Planning Commission, incharge of rural industrialisation.



## The Panchagram Experiment

**A**S A PART OF ITS COTTAGE INDUSTRIES PROGRAMME, West Bengal Government has been operating a small but very significant scheme known as Panchagram. Essentially this scheme is a social experiment. There are everywhere in the rural areas a large number of persons, both men and women, who have no land to till nor any other sources to live upon, except casual labour. The Community Development Department, West Bengal, had been thinking if anything could be done to provide them with some means which could fetch them an income, however small. Rural industries and handicrafts were considered suitable for the purpose and a scheme, known as the Composite Cottage Industries Programme, was initiated

in the then Saktigar (Burdwan) Block. Three industries were selected namely, handloom, mat-making and hand-made paper. Instead of producing stereotyped goods, attention was applied to the manufacture of utility products with an artistic lining. A satisfactory market was soon developed, both in West Bengal and outside. The workers formed a cooperative designated the "Panchagram Samabaya Kutir Silpa Pratisthan Ltd." It was called Panchagram because its workers were collected from five contiguous villages. The results show that the experiment has been successful. It has therefore been taken over for regular operation as a scheme of the Directorate of Industries, West Bengal.





# Small Industry and Economic Growth\*

It is sometimes thought that the organisation of industry in small scale workshops or factories is a *transitional phase* in a country's industrial development—an intermediate stage between the predominance of cottage industry and that of large scale industry. If this is so, it must follow that once a certain level of industrial development has been reached the relative importance of small scale industrial undertakings tends to decline. One would expect to find evidence of this in the statistics of countries at different levels of development and of the same country at different times. There is some evidence that *the smallest industrial establishments are declining in relative importance*. Nevertheless it is clear that small scale industry continues to play a very important role even in the economies of the most highly industrialised countries. It seems likely to go on doing so, as far ahead as one can see.

THE VIEW THAT SMALL SCALE INDUSTRY represents a transitional phase has probably been suggested by two facts, namely that *a number of small firms grow into big firms and, secondly, that a number of other small firms are driven out of business by competition from the large ones*. There is no doubt that both these things happen on a considerable scale. Some, though by no means all, of the industrial giants of today had very small beginnings. Many of the healthiest and most vigorous of the small firms of today are in process of growing into medium or large-sized undertakings. On the other hand, several important types of small industry are losing ground, or have already perished, in the struggle with modern factory production. If, despite these facts, small industrial firms employing from 11 to 50 workers appear not to be losing ground, this can only mean that, as some small firms grow into large ones, or amalgamate with others to become large firms, and as other small firms are driven out of business by the pressure of competition from large scale industry, their places are, by and large, taken by a sufficient number of new small units to maintain the

relative importance of small industry in terms of both the number of firms and the number of employees. This suggests that, *while some of the forces making for economic growth place a premium on size and favour large scale industry, there are other forces simultaneously at work creating new opportunities for small scale industry*.

To understand these forces it is necessary to distinguish between different types of small scale industrial undertakings, for different types of undertakings are differently affected.†

Firstly, there are certain traditional types of small-scale undertakings. According to the markets or customers served by them, three such groups of small-scale undertakings may be distinguished.

First, even in a predominantly agricultural community with relatively low levels of income and wants, many of the necessities of daily life (clothing and certain household utensils, as well as agricultural implements and possibly certain processed foodstuffs) are provided by local craftsmen simply as an application of the principle of division of labour, though some of these activities,

\* ILO (Services for Small Scale Industry,) Geneva, 1961.

† "The Size of Industrial Establishments", International Labour Review (Geneva, ILO), Vol. LXXIII, No. 6, June 1956.

varying in number and scope, may be pursued within the family household. Within the village, the carpenter, the blacksmith, the potter, the basket-maker and the cobbler are widely found. Often the craftsman and his family are engaged in agricultural production themselves, and their industrial activities occupy only a part of their time. This is household or cottage industry rather than small scale factory industry. Particularly where communications are poor, some of these are more or less "place-bound" activities in the sense that the weight, bulk or fragility of the product makes costs of transport exceedingly high in proportion to the value of the article, gives great advantages to local production and virtually confines sales to customers in the immediate neighbourhood of the undertaking.

Secondly, with the development of an elementary system of communications and of regional trade, certain types of industrial activities carried on in small rural communities may give birth to centres of rural manufacturing serving a wider geographical area. This will be particularly so in the case of industries producing commodities that are needed by the individual household only occasionally, such as household utensils, agricultural implements and clothing. The products may then be sold on regional markets by itinerant merchants and in urban retail shops. When this happens, the craftsman tends to become more fully dependent on his trade; the managerial aspects of his work tend to increase in importance; he also has to rely to a certain extent on merchants for the supply of raw material and the sale of his product and also, in many cases, for credit.

Thirdly, one finds in many communities a certain amount of activity in the production of artistic goods designed for the use of richer people within the country itself or abroad. To this class belong carpet weaving, shell or ivory carving, fine embroidery, lacquerware, most gold and silver working and similar activities.

Taken as a whole, traditional small scale industry is thus seen to fit naturally into a

*pre-industrial pattern of economy* where it usefully performs such elementary industrial functions as are called for in such a system. The forces making for economic growth, and in particular the opening up of communications in the form of good roads or railways, affect the pattern of small scale industrial activity in a variety of ways. Some of these effects are unfavourable to small industry. In the first place, activities become less "place-bound". Many small producers are deprived of their assured village or regional markets and exposed to the competition of firms whose superior methods and equipment enable them to produce better articles at a lower price. Small-scale undertakings producing such articles as household utensils, agricultural implements and clothing are especially vulnerable, since these are things that in the first place lend themselves to factory production, and in the second place are bought by individual households only from time to time and for which even a small undertaking therefore needs at least a moderately extensive market. Many small scale producers of such articles have found themselves unable to prevent their trade from dwindling even if they cut their profits to a minimum and pay wages at or even below a bare subsistence level. This has been found to be the case in textiles in all countries where large scale textile industries have been set up. In general, the more a product embodies work of a type that lends itself to mechanisation, the greater will be the difference in cost between the hand-produced and machine-produced article and the less competitive will be the position of small local producers. Small scale manufacturers of products embodying a very high content of manual work of a kind that modern technology has not yet succeeded in transferring to machines are less vulnerable than small scale producers of common consumers' goods. This field, however, is daily growing less and is tending more and more to be confined to *specialised and luxury articles*.

But if improved communications throw open local markets, formerly the preserve of local small scale undertakings, to competition from outside, they at the same time *open up*

wider markets for at least certain kinds of small scale undertakings. One finds new kinds of small scale undertakings springing up to grasp new opportunities and meet new needs—undertakings for which there would be little scope in an economy of the pre-industrial type. One also finds some of the more traditional types of small undertakings adapting their operations to meet new market opportunities. The opening up of a region, especially if it is accompanied by greater prosperity and the introduction of new economic activities involving the use of such things as motor cars and tractors, may bring new opportunities to small scale service and repair establishments. Village blacksmiths may learn to install and repair irrigation pumps and other machines. As a country develops an engineering industry there is a growing scope for small firms in the manufacture of special tools, jigs, fixtures and even machines. A rising standard of life of urban populations also leads to demands for canned fruit and fish, while improved housing can give employment to small entrepreneurs in a number of different trades such as furniture, household joinery, plumbing fittings, and so on. Again, for small scale producers of specialised and luxury articles of a quality superior to that of machine-made substitutes, improved communications may well mean access to markets that were hitherto virtually closed. Very high-class goods such as the best Persian carpets have always found their way to the markets of the world even on camelback or pack mule, but the improvement of communications may expand markets for less distinguished but nevertheless high-quality goods in which some region may specialise. Yet again, one may find small scale undertakings catering for national or broad regional markets in single "modern" products, for example, thermos flasks, that can be produced even within quite a small undertaking on a scale large enough to take advantage of most, if not all, of the economies of large scale methods.

Finally, and most important of all perhaps, are the opportunities for small undertakings to carry out sub-contracting work.<sup>1</sup> In all countries with a modern large scale industrial

sector this type of work appears to account for a substantial proportion of all the work done in small scale industries. Certain parts are manufactured or certain operations are carried out by small firms for a larger "parent" firm which itself produces other parts and assembles and sells the product. This kind of sub-contracting is especially important in Japan: examples include the production of special types of paper, paper lanterns and paper umbrellas, doll manufacturing, specialised weaving, fountain pens, cutlery, rubber and rubber articles, and engineering products.<sup>2</sup> The Indian Five-Year Plan mentions as examples of processes in which there would be considerable scope for allocating certain stages to small scale production—the manufacture of cycle parts, electrical goods, cutlery, pottery and agricultural implements.

It may be stated, by way of summing up that three kinds of relationships prevail between large scale and small scale industry. Firstly, there is a competitive relationship between large scale and small scale undertakings producing the same kinds of goods for the same markets. If the goods are of a kind that can be produced more cheaply and efficiently by large-scale than by small-scale methods, small industry is likely to fare badly in this competition. Secondly, there is a relationship of "peaceful co-existence" between large and small firms producing different kinds of goods or services, or goods or services for different markets. Examples

<sup>1</sup>For fuller exposition please see article on Sub-contracting in *Productivity Journal* Volume 1 number 1 page 52 (Interrelations between Large & Small Industrial Enterprises in Japan by Toyoroku Ando).

<sup>2</sup>The following table shows the extent of sub-contracting between large and small firms in the Japanese engineering industries:

industries	dependence on smaller enterprises (percentage of the total cost of the finished product)
rolling stock	70
shipbuilding	70
motor cars	62
textile machinery	34
telephone switchboards	26

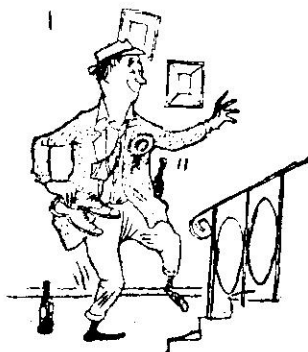
are (a) markets in which local small industries enjoy a natural protection deriving from their remoteness from big industrial centres, inadequate communications, perishability of the products or other factors; and (b) markets for high-grade hand-made luxury products produced by traditional skills. Economic growth tends to narrow the scope for the first, and sometimes also for the second, of these kinds of peaceful co-existence, for example by creating new opportunities for small-scale service and repair shops. Thirdly, there is a relationship of "mutual aid" when large and small firms co-operate in making the same products, large firms giving out work to small sub-contractors.

It may be further stated that, if small scale industry appears, broadly speaking, to maintain its relative importance in national economies as economic growth proceeds, it does so not through sheer inertia, but rather through a process of adaptation—of evolution and natural selection. There is no room for inertia. The scope for many of the more traditional types of small-scale activities is contracting. On the other hand, the flexibility of small firms gives them advantages in situations in which decisions need to be taken quickly. It is only by grasping new opportunities, expanding into new markets, using new methods and techniques, that small industry can continue to thrive. The survival of small-scale production depends upon *continuous enterprise*, bringing new commodities within the range of the system, for small scale industry must

contract if it depends only upon age-old products, since most of these will disappear into factories sooner or later.

To a large extent the process of adaptation that is required would seem to be a process of shifting the centre of gravity of small scale industry from activities that compete with large scale industry to activities that are complementary to it. It seems that *small industry is often in a relatively stronger position vis-a-vis large scale industry in the more highly industrialised than in the less highly industrialised countries*. If this is so, a large part of the explanation may be found in the fact that the process of adaptation referred to above is more nearly complete in the more highly industrialised countries—that a larger proportion of small firms are complementary to, and a smaller proportion are in direct competition with, large scale industry.

The coming of electricity and the development of a wide range of electrically driven small tools to replace hand operations provide great scope for modernising and increasing the efficiency of small scale operations. These, however, are not the only opportunities for achieving the adaptation and the increase in productivity that are needed for the development and, in some cases, for the very survival of small scale industry. No less important are *improvements in management and organisation* that have in themselves nothing to do with increased mechanization but that, by increasing the profitability of small scale undertakings, can help to provide the means to pay for modern tools and equipment.



"I must carry my shoes"

# Role of Small Industry in Economic Development\*

There is general agreement on the imperative need for many underdeveloped countries to devote vigorous efforts, as indeed they are doing, to the development of local manufacturing industries. Economic progress and rising living standards require *diversification in the supply of goods*. The very content of higher standards of living is an increase in the exchange and consumption of other goods than those meeting the barest necessities of life; these other goods normally have to be manufactured. True, certain countries might procure these other commodities by expanding agricultural output and exporting part of this in exchange for industrial goods. In several important countries, such as India, this is, however, hardly possible. Food production in these countries is not likely to be capable of expansion at a significantly faster rate than total population. In Japan agricultural production became inadequate for domestic needs long ago and this country has had to build up large exports of manufactured goods in order to pay for agricultural and mineral imports. It seems likely that certain other Asian countries will sooner or later find themselves in a similar situation. Moreover, in the many underdeveloped countries in which there is surplus population on the land, even a large increase in agricultural output may in itself do little or nothing to provide jobs for the unemployed and the underemployed. These countries look largely to the growth of industry to provide the jobs that are so urgently needed.

**E**VEN AMONG COUNTRIES WHICH HAVE RESOURCES that would permit a large increase in agricultural output, few if any wish to remain purely agricultural countries. Rather, they seek to promote a simultaneous and, in some sense, balanced growth of industry and agriculture, with *growth in each sector contributing to growth in the other*.

Given the need in all or most countries for at least some measure of industrialization, *what part can small scale industry play in the process?*

First, it may make possible *economies in the use of capital*. Capital is very scarce in underdeveloped countries, and it may be used to greater advantage in the early stages of development if it is used to expand

transport and other public utilities, irrigation and other agricultural requirements and those forms of manufacturing where the advantages of large scale production are greatest—especially metals, chemicals, heavy engineering and building materials—and is not used to any great extent in those branches of manufacturing, such as weaving, that can be carried out fairly well by “labour-intensive” methods in small firms or cottage industries. But, while small scale manufacturing nearly always uses less capital per worker employed, it is not certain that it typically uses less capital than large scale industry per unit of output.

Secondly, besides making possible economies in the use of the existing stock of capital, small scale industry may *call into being capital*

\*ILO analysis

that would not otherwise have come into existence. The enterprising small manufacturer has to scrape together capital wherever he can find it. But he and his relatives and friends often-times do find a *surprising amount*. Furthermore, this capital probably would never have come into existence as productive capital had it not been for the small enterprise. The equivalent would not have been invested in government bonds and would not have been put in banks or loaned for the use of others.

Thirdly, a given amount of capital invested in small scale industrial undertakings is likely to provide more employment, at least in the short run, than the same amount of capital invested in large scale undertakings. This is a very important matter for countries with surplus labour for which the shortage of capital makes it difficult to find jobs. Small scale industry uses labour and capital in proportions corresponding more closely to the proportions in which these two factors of production are available in many undeveloped countries than does large scale industry.

Fourthly, large scale industry calls for a great deal of managerial and supervisory skill—foremen, engineers, accountants and so on. Like capital, these skills are in very short supply in underdeveloped economies and it is important to economise as much as possible in their use. Small scale industry provides a way of doing this, and at the same time provides industrial experience and serves as a training ground for large numbers of small scale managers, some at least of whom may develop the capacity for managing large scale undertakings.

Another point is that the growth of an economy usually requires a large number of small changes, each taking advantage of local opportunities and availability of resources, and each in turn making further growth possible. Dispersal of savings and dispersal of entrepreneurship are important aspects of economic development even in countries in which the State has played an important part as provider of capital and manager of business enterprises.

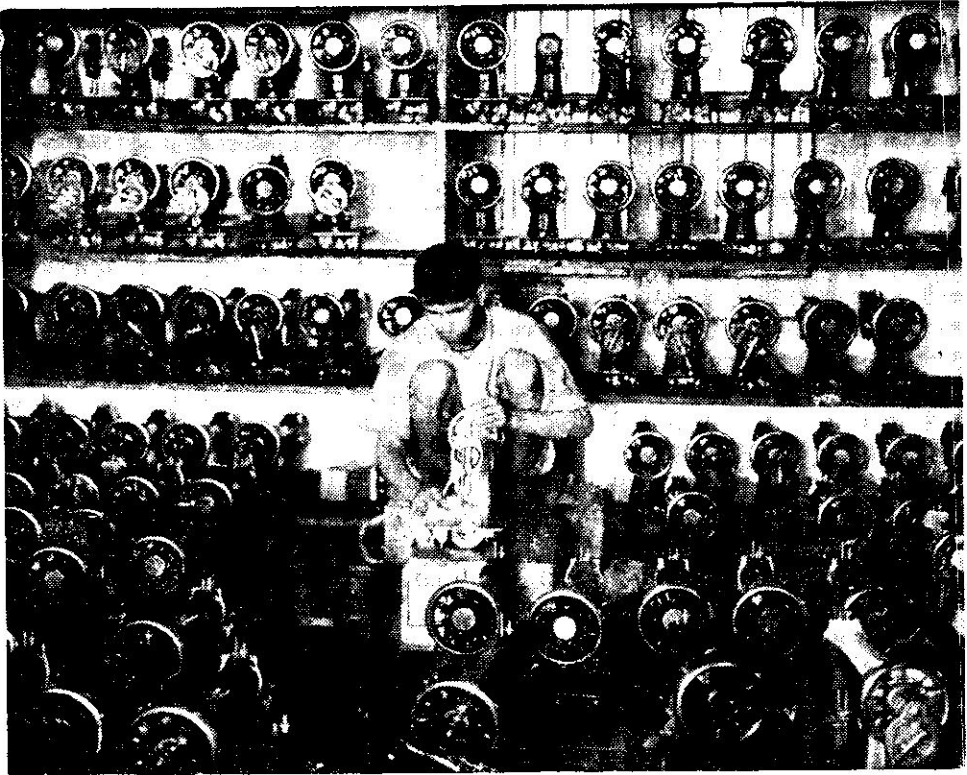
Fifthly, it is not only managerial and supervisory skills that are in short supply in underdeveloped countries, but many types of skilled labour as well. Small industry may be better able than large industry to take advantage of existing traditional skills (though even in the small scale sector new skills will be needed if undertakings are to adjust themselves to changing conditions and take advantage of new opportunities).

Finally, many people hope that encouragement of small scale industry may help to preserve a healthy balance between the rate of economic growth in urban and rural areas. The movement of population from rural to urban areas is proceeding in a number of countries at a rate that is causing uneasiness for several reasons. In the first place, beyond a certain point additions to urban populations involve heavy costs in the form of investments in social capital—expenditure on housing, schools, hospitals, places of worship and improvements and developments in roads, water-supplies and drainage. Such investments in "social overheads" (which, important as they are, are not directly productive) make very heavy demands on scarce capital, but failure to make these investments means that the cost takes the form of the creation of slum conditions and the attendant disease, misery and squalor. Again, it is believed by many authorities that a rapid flow of population to the towns not only creates unhealthy urban conditions but is bad for the vitality of village life, the argument being that those who go to the towns include a high proportion of the more able and enterprising of the villagers, who are dissatisfied with the lack of opportunities for progress and advancement in the villages. Large scale industry is almost inevitably attracted to the large urban centres. The same is likely to be true of many small scale undertakings too, but there may be considerable scope, if appropriate policies are adopted, for "decentralisation" of small scale industry and for preserving the predominantly rural character that many small scale industries have had in the past. It is also argued that

the encouragement of small scale industries in rural areas can serve to *counteract seasonal unemployment or underemployment* in agriculture, and thus to make use of labour which might otherwise be wasted.

These are some of the advantages that may be claimed for small scale industries and some of the ways in which they may contribute to economic growth and development. As has been pointed out by Dr Eugene Staley : it seems probable, for many

reasons, that the potential contribution of small industry, provided it can be helped to adopt modern techniques, is even greater in the newly industrialising countries than in the highly industrialised countries. The newly industrialising countries have more abundant labour and less abundant capital, greater difficulties of transport and communication, and less of the special skills and traditions required in large scale organisations. These are conditions which tend toward a lower optimum size of establishments.



# CHOICE: SMALL or LARGE ?

PN DHAR\*

The discussion on small-scale industries has been carried on either on very broad lines of centralisation versus decentralisation or within a very narrow range taking cognizance of only purely technical economic factors, like current costs and current returns, within the limits of the existing economic conditions. Neither of these two approaches is very helpful. The former is an ideological approach couched mostly in terms of social objectives. It seeks the expansion and development of small industries in order to relieve unemployment (for its own sake), distribute economic power more equally and thereby contribute to the growth of a balanced democratic society. Thus, the non-economic criteria are so important as to render an economic assessment of the role of the small industry well nigh impossible. The latter approach, favoured so much by the technocrat, the engineer and sometimes the economist, confuses technological efficiency with commercial success. It ignores the vital fact that current costs and current returns are determined not by technological factors alone but to a considerable extent by economic circumstances and institutional forces which are quite often heavily loaded against the small producer. Even in developed industrial countries, it has been seen that there is no direct and necessary correlation between efficiency of operation and the size of the plant. Empirical investigations carried out in the USA have shown a greater variation in efficiency among plants of similar scale than between large and small plants in general.

**I**N RECENT LITERATURE ON THE PROGRAMMING of development in the underdeveloped area, the choice between small and large scale production is discussed as part of the general problem of criteria required to maximise increment in output from a series of investments. The discussion, however, is not conclusive.

Under conditions of capital scarcity, it is asserted that several factors combine to favour the greatest possible use of decentralized small scale industry. In the first place, some capital may be available only for small local industries, its use thus increasing the total capital supply. Secondly, by using relatively labour-intensive technology, which requires less capital per unit of output, more total output can be achieved with a restricted amount of total investment capital. Thirdly, a larger part of total investment can be used for the productive processes in small plants

than in large industry, which requires additional capital-intensive overhead expenditure.

Against the background of existing distribution of resources in the under-developed areas, the transmission of modern technology to them gives rise to a dilemma. Thus, countries with abundant labour force and scarce capital are faced with a technology which saves as much labour as possible by means of increasing capital per worker.

The technology most appropriate to a particular investment decision in the under-developed countries need not therefore be the one that is current in industrially advanced countries. Emphasizing technological variability in economic development, Kuznets goes to the extent of saying that "the have-not societies are poor because they have not succeeded in overcoming scarcity of natural resources by appropriate changes in technology, not because the scarcity of resources is an inexorable factor for which there is no remedy."

\*Reader, Delhi School of Economics, University of Delhi



The historical development of technique and its effects on the economic process have taken place gradually in the more highly developed countries. Capital-intensive equipment has been incorporated in their economic systems gradually because savings were sufficient to introduce it to all branches of the economy where entrepreneurs found it advantageous. Their technology therefore corresponds to high income and high capacity to save. On the other hand, in the industrially backward countries this technology is out of line with their low income, and low margins of domestic savings. The fact that certain entrepreneurs, by virtue of abundant financial resources at their disposal, may be in a position to acquire such equipment does not, by any means, imply that there is enough capital available to generalise their use. The private entrepreneur is not primarily interested in choosing investments designed to obtain increases in the unit product proportionately greater than the increment in capital. His primary interest is to minimise costs and increase profits. If his action causes technological unemployment and the unemployed cannot be absorbed because of the scarcity of capital, the entrepreneur will have nevertheless increased his profits even when the capital invested in reducing labour per unit of output, instead of increasing production, involves a misuse of capital from the point of view of the economy as a whole.

The same phenomenon occurs in a concealed form when the reduction of labour

per unit of output, brought about by the introduction of capital intensive equipments instead of creating technological unemployment, prevents the absorption of labour displaced from occupations with lower productivity. This absorption might have taken place if part of the capital employed in reducing labour consumption had been utilised in increasing production.

The contention that the scarcity of capital in underdeveloped areas suggests that it be used in labour-intensive and capital-saving ways is not unanimously accepted. Firstly, it is doubted if small-scale production is really capital-saving. Secondly, it is pointed out that economic development consists not in the maximum utilisation of available resources, but in a rapid increase in these resources, particularly in capital resources. Capital-output ratios in small industries need not necessarily be lower than in larger establishments. Besides, labour-intensive small scale industries may involve a larger number of small incomes distributed more equally than would have been possible in a more capital intensive structure of production providing less employment opportunities and perhaps a higher proportion of profits. If it be assumed that wage earners do not save; that a large proportion of non-wage income is saved and invested; and that the total amount of non-wage income is lower in small industry than in larger industry, then protection to small industries conflicts with the objective of raising national incomes rapidly by raising rates of saving and capital formation as fast as possible.\*

\*For a fuller exposition of the subject, see the author's work on Small Scale Industries in Delhi, published by Asia Publishing House, Bombay.

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**"How is it that you are carrying only one plank when the others are carrying two?" . . . . . "I suppose they are too lazy to make a double journey like I do"**

# The Neotechnic Phase

LAKDAWALA AND SANDESARA†

**A**NALYSING THE HISTORY OF HUMAN CIVILISATION in terms of the technological complex of power and characteristic raw materials, Lewis Mumford points out that the paleotechnic phase of the coal-and-iron complex is losing gradually, if not fast, in favour of the neotechnic phase based on an electricity-and-alloy complex. These new technological forces are to be found in the increasing degree of substitution of electricity for steam, of light metals and alloys for steel, of newer and more flexible machines for single purpose and highly specialised machines, and of automobiles and tracks for railroads. The impact of these technological forces upon the size of plants and location of industries is just the reverse of that of the earlier technology, centripetal in character, favouring small plants and making it possible to locate these plants on a more rational basis of markets and population. As Lewis Mumford states: "With electricity the advantages of size from any point of view except in possible special operations like the production of iron become questionable...the efficiency of small units worked by electric motors utilising current either from local turbines or from central power plant has given small scale industry a new lease on life: on a purely technical basis, it can, for the first time since the introduction of the steam engine, compete on even terms with the larger unit. Even domestic production has become possible again through the use of electricity...Bigger no longer automatically means better: flexibility of power unit, closer adaptation of means to ends, nicer timing of operations, are the new marks of efficient industry. So far as concentration may remain, it is largely a phenomenon of

the market, rather than of technics: promoted by astute financiers who see in the large organization an easier mechanism for their manipulation of credit, for their inflation of capital values, for their monopolistic controls." This new turn of technological events leading to the outcome and growth of "decentralising techniques" may well question the economic grounds for the existence and toleration of multi-plant and multi-firm giant concerns. Further, it may also lead one to question, even on purely economic grounds, the economic superiority of a country with wide uneven distribution of industrial activities. The new techniques, in a word, are letting loose a series of forces which, it is expected, will sooner or later alter the present economically necessary evil of concentration into an unmixed and unnecessary evil.

## Case in underdeveloped countries

The case for small scale industries in industrially underdeveloped countries like India is advocated not so much on grounds of their competitive character, or even so much on their decentralisation logic as in advanced countries, as in part on extremely idealistic, in part on humanistic and/or political, and in part on pure economic grounds. None of these grounds, it needs hardly be added, are mutually exclusive.

## the idealistic school

The purely idealistic school pleads for the revival and promotion of cottage and

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† Published by courtesy of Bombay School of Economics, University of Bombay: "Small Industry in a big City—a survey of Bombay," published by Vora & Co., Bombay.

small scale industries as a part of its general programme of reorganising the entire socio-economic structure on a "decentralised basis" more or less on the old "village-community" ideals. Such a go-back to the primitive ideal with its minimum needs and levels of living may well be held to be obviously impossible in a fast narrowing and rapidly prospering world of which we are a part, and more so when we are out for becoming an important part—unless of course we proclaim ourselves to be an isolationist and hermit nation and thus are able to draw ourselves off from the world scene. This, it should be clear, is in no way an argument against decentralisation or dispersal of economic activities over different regions. On the contrary, much can be said in favour of a regionally balanced economy, particularly when economic efficiency is not being sacrificed. The case, here, for small scale industries stands on more or less the same footing as in advanced countries. In this, the latecomers in the race of industrial progress have an advantage in that they have to start afresh or construct anew what their predecessors have to rehabilitate. And this advantage is reinforced by the new turn of technological events described above.

### **humanistic or political grounds**

The second set of arguments, which centres mainly on humanistic and/or political considerations, emphasises the employment potentiality aspect of small scale industries. These considerations are particularly appealing in the context of a large volume of unemployment, open and disguised, and may be justified as a measure of compromise for growth of welfare. It has been recognised that a significant relief in the present situation of large unemployment can be secured only by a substantial expansion of employment opportunities in the industrial sector, and that the Government in a Welfare State has to look to the creation of such opportunities. Further, whereas on the one hand, the possibilities of industrial expansion of the type on modern lines are limited by the prevailing fact of capital scarcity, on the other

hand, where they are, in whatever magnitude, they would not offer, by their comparatively more capital-intensive character, a significant relief to the unemployment situation. Much has been said of the benefits the large scale industry has bestowed upon the economy; but the fact remains that, as far as countries like India are concerned, the benefits have failed to be cumulative to the extent which can relieve the pressure on land or redeem the dislocation wrought in the indigenous industries. An unlicensed expansion of the kind so typical of the past will render the situation still worse and more difficult to solve in the long run. It is therefore argued that the State should step in to correct the situation before it becomes too serious. It should accordingly adopt a policy of creating a substantial volume of employment opportunities through an all round drive of promoting and encouraging small scale industries, preferably labour intensive ones, wherever they are technologically possible and economically tolerable. And to this end, when and where required, undue competition from corresponding large scale industries should be checked by placing appropriate restrictions on the latter. In a society where State provision for a widespread unemployment insurance is ruled out for years to come, the useful function of small scale industries as potential providers of employment with their wide distributional effects cannot be underrated.

### **economic grounds**

On economic grounds, the case for small scale industries derives its justification from the dearth of capital and skill resources and plenty of unskilled labour resources on the one hand, and the prevalence of tiny and imperfect market islands on the other. The possibilities of adopting labour-based methods of production in some industries particularly in the capital goods sector are rather few and limited—in some cases by technological considerations and in some others by the accepted notions of economic efficiency, as in arms and ammunitions, processes in ferrous and non-ferrous metals,

generation of electricity and the like. The building up of this essential base would involve a heavy drag on our scarce capital and skill resources. Most has, therefore, to be made of our plentiful labour resources by utilising them in small scale and labour-intensive methods of production. Such a choice is particularly advantageous in the initial period "because it makes it possible to utilise more fully the available supply of labour and to husband the limited supply of capital." As contended by the Karve Committee, "If the existing investments and personnel can produce the required results fairly efficiently, it might be wiser for the next stages of development to utilise them more fully than to utilise scarce resources of capital in creating substitutes for them." It is argued, on grounds of capital formation, that the reinvestible surplus available per person from labour-intensive small scale industries will be smaller, or that in general, small industries with their comparative labour-intensive techniques are associated with "small-surplus generating capacity" and hence the decision to go for a lower rate of growth is implicit in the very choice of our preference for these industries. To this, it has been pointed out that though the surplus per employed person will be more in an ad-

vanced technique, the total surplus generated in the economy through a chain of labour-intensive techniques may well be higher. The state, as the promoter of economic progress, may well appropriate this fund through suitable machinery and direct the same into the desired fields. To the argument that the volume of this fund will somewhat dwindle down due to certain leakages involved in the very process of mopping up of its pieces lying so diffused, it may be answered that logically it comes more to an admission of the organisational deficiency or weakness than of the inability or failure of these industries to release the required flow of funds. Further, the widely scattered centres of small scale production will have an added advantage in appropriately meeting the tiny market islands obtaining in the economy. This will lead to considerable savings in investment in social and economic overheads, which can well be spared for the other more pressing and directly productive channels of investment. Moreover, to the extent that these industries embody home-made tools and equipments containing nil or negligible import content, it would exercise a relieving influence on the foreign exchange front, allowing its smoother flow towards the top priority projects where it is so badly required.



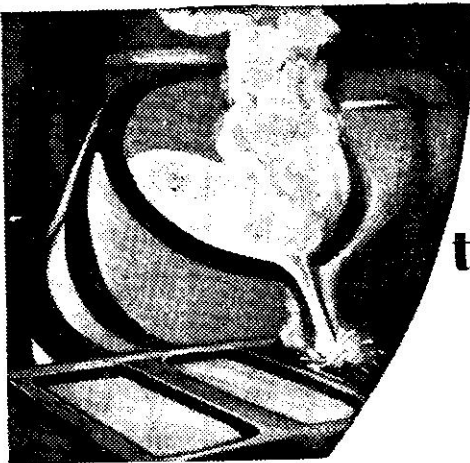
"Trouble is, everybody's going over my head!"

# "Have you heard the story . . .

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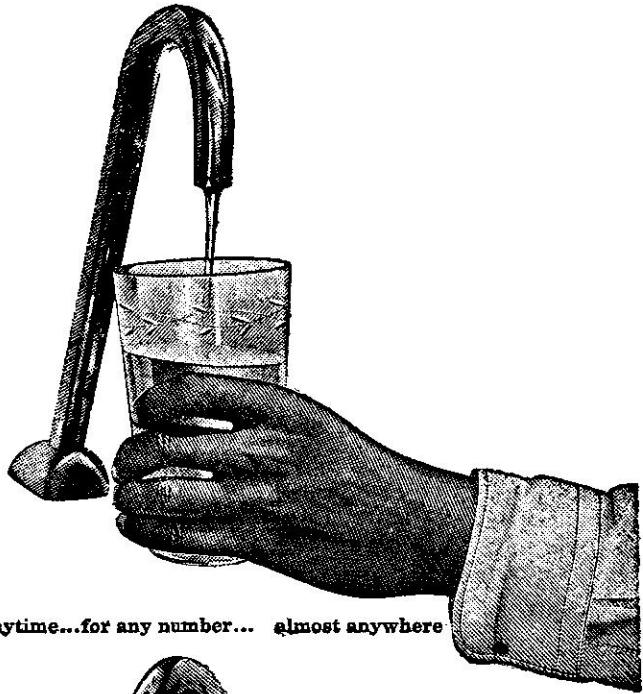
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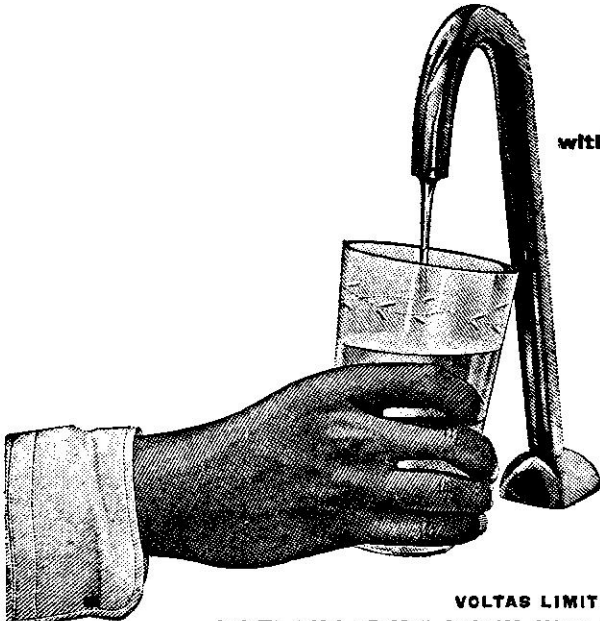


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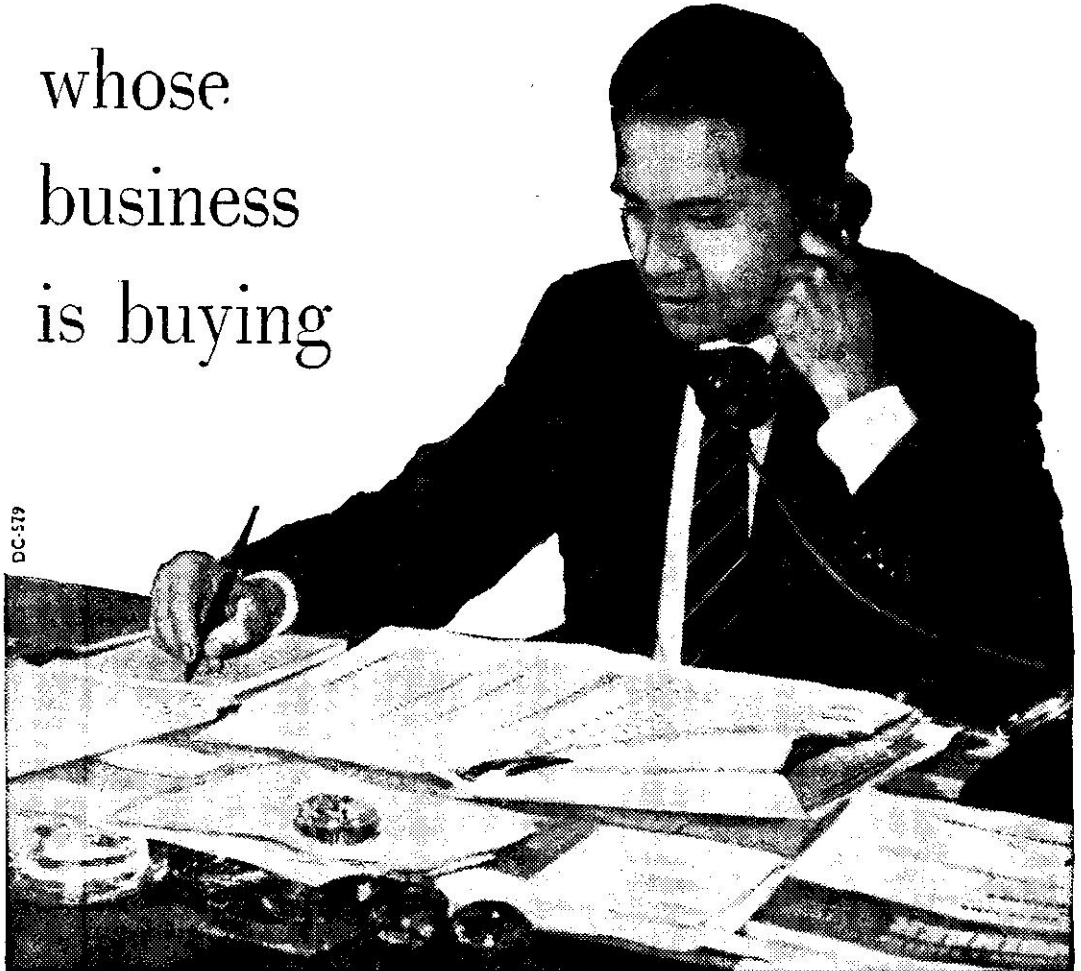
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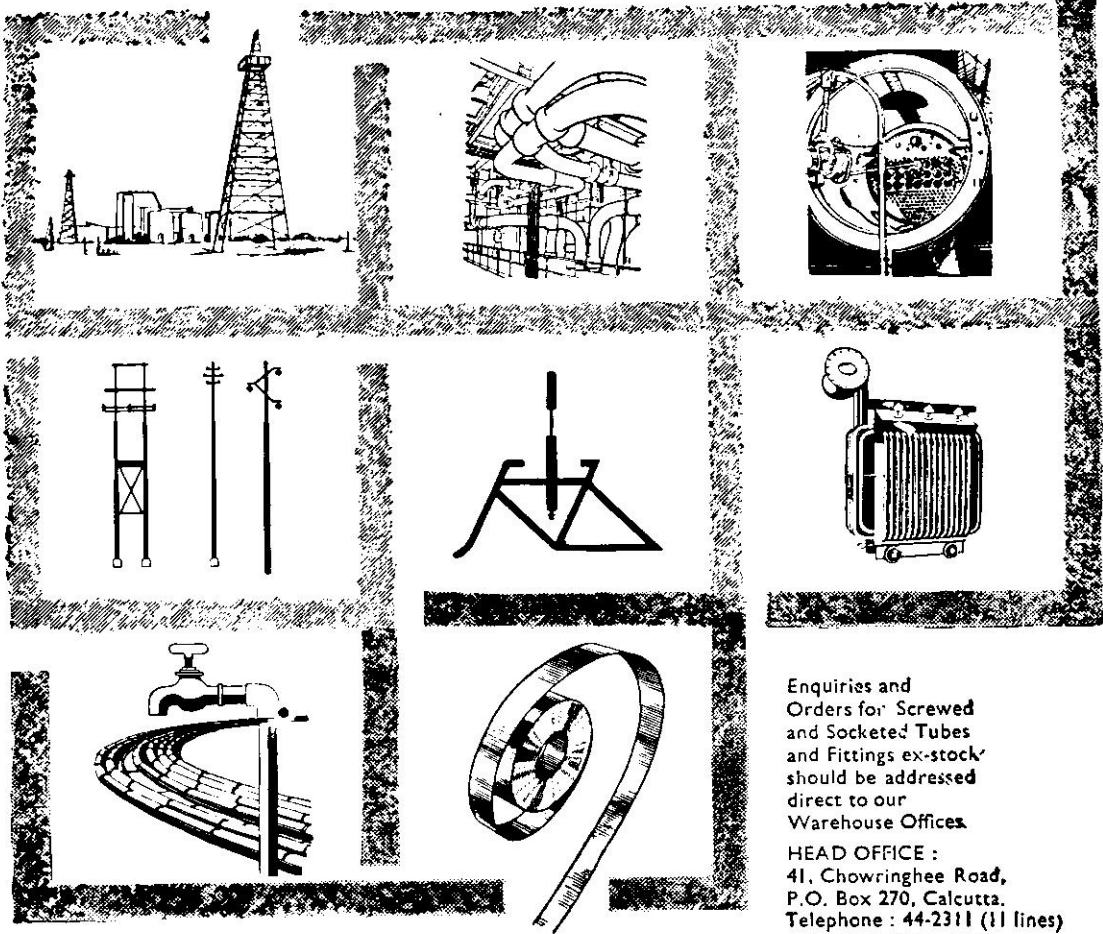
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# Productive Development of Small Industry

EUGENE STALEY\*

In most industrialisation programmes, too little attention has been paid to the benefits to be gained by helping existing small industry to modernise and by stimulating the growth of new, modern small industry. Often, in countries striving to industrialise, small scale manufacturing has been regarded as an inevitably backward and lagging part of the economy, perhaps to be aided for social reasons and in a rather defensive or protective spirit, but not as a promising opportunity for development. A latent resource has thus been overlooked and neglected.

Lately, however, many countries have shown interest in small industry development activities. A few have evolved well thought out and comprehensive programmes. More have adopted rather sporadic, isolated measures responding to some single aspect of small industry needs, like the need for capital and credit or the need for technical improvement.

**A**MONG THE COUNTRIES WHICH THE UNITED Nations classes as "underdeveloped", India has by all odds the largest, most comprehensive, and the best planned programme for small industry development. At a further stage of industrialisation, Japan has evolved a wide array of measures. Japan offers the prime example of an economy where small establishments continue to provide a high proportion of manufacturing output and employment, despite the rise of large modern enterprises; its experience with small industry is instructive to other countries in course of development, both in the negative sense of certain things to be avoided and positively as a source of good ideas. The United States has an active "Small Business Administration" which aids small manufacturers, supplementing many aids provided through other public institutions and through the private business system. The Scandinavian countries, the Netherlands, Germany,

the United Kingdom, France, and other European countries, have adopted a variety of measures with different emphasis, sometimes focussing on the financial needs of small manufacturing units, sometimes on technological and managerial training and productivity improvement, sometimes on product design and marketing. In Puerto Rico there is a very active industrial development programme which we have heard about at this conference; a large proportion of the enterprises started under this programme are small units. A number of Latin American countries—Mexico, Brazil, Columbia, and others—have special banking institutions designed to stimulate small industry, also industrial development centres, productivity centres, and the like. Indonesia, Burma, Pakistan, and the Philippines are experimenting with various techniques of small industry promotion, and the Federation of Malaya is acting on a recent recommendation for the strengthening of its rural

\* Stanford Research Institute, California, USA.

industrial development service. Nor is attention to small industry confined to countries which favour private enterprise. Reports from mainland China indicate that much emphasis has been given to a nation-wide, continuing campaign to establish and improve small, local manufacturing plants, and that this has been an effective way of mobilising otherwise unused resources, especially unemployed or underemployed labour.

Obviously, small industry is felt to have significance in countries at very different stages of industrialisation and in a wide range of ideological settings. We should take note of the more promising methods of small industry development that are being tried. It should be stressed, however, that no system worked out in one country can be recommended in its entirety for another country. Rather, the development officials of each country must analyse their particular country's small industry problems and opportunities, then borrow some ideas and invent some new ones in order to act creatively and practically in their specific situation.

Confusion in the use of terms has impeded clear thinking about the role of small industry in industrial development.

A United Nations report in 1958 on *The Development of Manufacturing Industry in Egypt, Israel and Turkey* refers to all manufacturing establishments employing 10 or more persons as "medium scale and large scale", limiting the term "small scale" to establishments with less than 10 persons. A working group of the Economic Commission for Asia and the Far East some years ago suggested that small industry be defined for statistical purposes as establishments with no more than 20 employees when using motive power or 50 when not using power. In India until 1960 the government's small industry programme assisted establishments having no more than 50 employees with power or 100 without power and no more than Rs. 500,000 (about US \$100,000) of fixed capital; now only the limitation on capital is used, the limitation on number of workers having been removed from the definition.

In Japan, various laws for assisting "smaller enterprises" recognise an upper limit in manufacturing of 300 employees, sometimes with a capital limitation of 10 million yen (about US \$28,000). In the USA, a manufacturing firm is officially a "small business" for government procurement purposes if it is not dominant in its field of operation and has fewer than 500 employees, or if it is certified as small by the Small Business Administration. For purposes of financial and other assistance it is classified as small if it has fewer than 250 employees, and large if it has more than 1,000 and within the 250-1000 range it may be either small or large, depending on size standards set for different industries. Obviously, discussion of small industry may proceed at cross purposes unless we take care to define what we mean by small.

Confusion is compounded by a tendency to identify smallness with certain other characteristics. Thus, "small industry" and "village industry" are sometimes lumped together, which is unfortunate because small scale manufacturing goes on not only in villages, that is, in rural areas, but in urban areas as well. More important, smallness and outmoded techniques are often treated as inseparable. Data, published in Indonesia some years ago classified industry into "small scale industry" and "machine industry". The *Economic Survey of Europe, 1959*, in its illuminating chapters on "Development Problems in Southern Europe and Ireland" refers several times to the "modern" as contrasted with the "small scale" industrial sector and suggests that a shift in the employment pattern is needed "from low-productivity agriculture and small scale industry to larger scale modern industry with its higher output per worker" At present, it is undoubtedly true that the great majority of small scale manufacturers in the countries referred to have backward technology, inefficient management, and low productivity. But these are not inevitable characteristics of small industry. There are modern, efficient, small manufacturing enterprises in many countries, and in some highly industrialised countries the average

labour productivity in small plants is not very far below that in large plants.

It is essential to distinguish a number of types of small industry, for these different types have very different prospects and very different roles to play as a country transforms itself from a traditional, pre-industrial economy into a modern industrial economy.

One important distinction is by level of technology, including both the physical technology of production and the social technology of management. We shall refer in this connection to traditional, partly modern, and modern establishments—the latter being defined as those in which reasonably good application is made of the best science and technology currently available. *It is modern small industry, or movement towards it, which holds promise for newly developing countries.*

Another distinction, obviously, is by type of product. Success or failure in developing the small industry sector will depend to a great extent on proper choice of product-lines.

In appraising the prospects for small industry in economies moving from the traditional towards the modern, it will be important to distinguish between household industry, artisan industry, and small factories. Household industry is manufacturing carried on in or near the home, mainly by family labour. It is sometimes called cottage industry, though more properly this term might be reserved for rural household industry. Artisan industry is manufacturing carried on in workshops by craftsmen working singly or with a few hired helpers or apprentices and without extensive division of labour. The craftsman (artisan) is central, and articles are produced for the most part one at a time, with individual variations and often to the requirements of a particular customer. Examples are afforded by the potters, weavers, carpenters, blacksmiths, bakers, and other ancient crafts. But there are also new, distinctly modern artisan activities—an important point to which we will return later. The factory, whether small or large, is distinguished from

artisan industry by its greater division of labour and the consequent need for planning and co-ordination; the manager, rather than the craftsman, becomes the central figure.

As a country moves from a traditional economy through a transitional phase of development and industrialisation to a modern economy, what will happen to its small industry sector? We can throw light on this problem by examining the role of small industry in some countries that already have an advanced degree of modernisation and industrialisation.

Though industrialisation does bring large manufacturing units, and though large industry grows relatively to small industry, small industry by no means disappears even in the most highly industrialised countries. But it takes more modern forms.

For example, in the United States, contrary to an impression that seems to be rather widely spread, there are many small factories. They employ an important share of all manufacturing workers and produce an important share of the total manufactured output. According to available statistical information, more than 90 percent of all manufacturing establishments in the United States had fewer than 100 employees. These establishments employed 26 percent of all manufacturing employees and produced 22 percent of the total value added by manufacture. The relative importance of small manufacturing in West Germany and the United Kingdom is still greater—27 percent and 33 percent of all manufacturing employees, respectively. In Puerto Rico, Australia, and Japan the percentages are even higher—41, 50 and 59 percent, respectively.

The *types* of small industry found in the highly industrialised economies are very different, however, from those found in traditional economies. Most small factories in the United States are “modern” in the sense that they use reasonable up-to-date tools, equipment, and processes. Perhaps, they are more deficient in management methods. The percentage of manufacturing output