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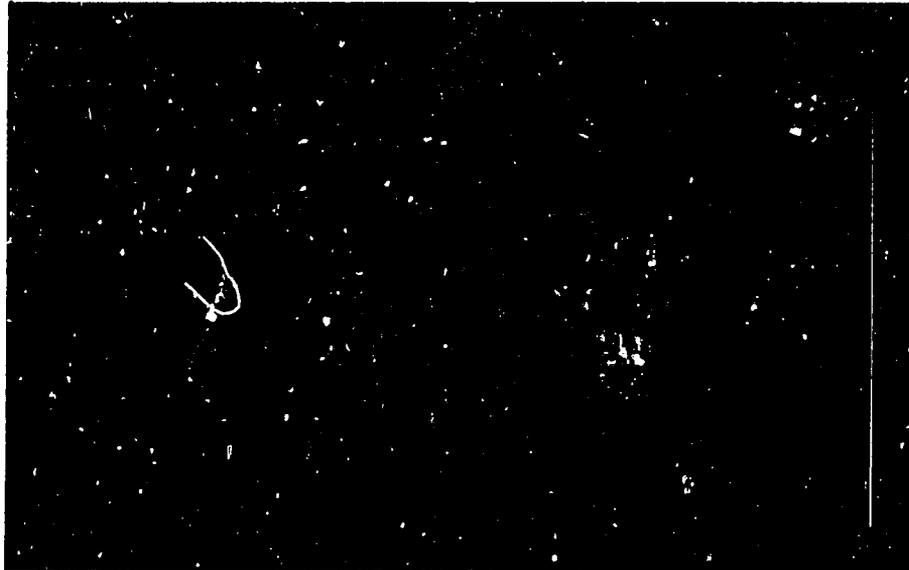
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MSU RURAL DEVELOPMENT SERIES

WORKING PAPER



Department of Agricultural Economics
Michigan State University
East Lansing, Michigan 48824

SMALL SCALE INDUSTRY IN KENYA

By

Peter Kilby

Working Paper No. 20

1982

SMALL SCALE INDUSTRY IN KENYA[†]

by

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Foreword

This paper is one of a series of reports produced by Michigan State University's Off-Farm Employment Project. The project, which is funded by the Office of Rural Development and Development Administration, Development Support Bureau, U. S. Agency for International Development, has the basic purpose of enhancing the ability of AID missions and host country institutions to identify and implement programs and policies that generate off-farm employment and income opportunities benefiting the rural poor. One of the major components of the project is the generation of new knowledge relating to off-farm activities. In collaboration with host country institutions and AID missions, detailed field surveys of small-scale enterprises are currently being conducted in Egypt, Jamaica, Honduras, and Thailand; the results of these studies will be published in this series. A second component of the project involves the marshalling and dissemination of existing knowledge of off-farm activities. A state-of-knowledge paper has already been produced, while special studies relating to off-farm activities will continue to appear in this series. Previously completed studies in this area currently available through the Off-Farm Employment Project include:

1. Carl Liedholm, "Research on Employment in the Rural Non-Farm Sector in Africa," African Rural Economy Paper No. 5, 1973.
2. Carl Liedholm and Enyinna Chuta, "The Economics of Rural and Urban Small-Scale Industries in Sierra Leone," African Rural Economy Paper No. 14, 1974.
3. Enyinna Chuta, "The Economics of the Gara (Tie-Dye) Cloth Industry in Sierra Leone," African Rural Economy Working Paper No. 25, 1978.
4. Adwale Mabowonku, "An Economic Evaluation of Apprenticeship Training in Western Nigerian Small-Scale Industry," African Rural Economy Paper No. 17, 1979.

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5. Steve Haggblade, J. Defay and Bob Pitman, "Small Manufacturing and Repair Enterprises in Haiti: Survey Results," Michigan State University Rural Development Series, Working Paper No. 4, 1979.
6. Enyinna Chuta and Carl Liedholm, "Rural Non-Farm Employment: A Review of the State-of-the-Art," Michigan State University Rural Development Paper, Paper No. 4, 1979.
7. Omar Davies, Yacob Fisseha and Claremont Kirton, "Small-Scale Enterprises in Jamaica: Initial Survey Results," Michigan State University Rural Development Series, Working Paper No. 8, 1979.
8. Enyinna Chuta, "Techniques of Production, Efficiency and Profitability in the Sierra Leone Clothing Industry," African Rural Economy Working Paper No. 30, 1980.
9. Middleton Wilson, "Some Problems in Operating a Loan Program for Craft and Emerging Small-Scale Non-Farm Enterprises in Jamaica," Michigan State University Rural Development Series, Working Paper No. 15, 1981.
10. Yacob Fisseha and Omar Davies, "The Small-Scale Manufacturing Enterprises in Jamaica: Socioeconomic Characteristics and Constraints," Michigan State University Rural Development Series, Working Paper No. 16, 1981.
11. Enyinna Chuta, Carl Liedholm, Ola Roberts and Joseph Tommy, "Employment Growth and Change in Sierra Leone Small Scale Industry: 1974 - 1980," African Rural Economy Working Paper No. 37, 1981.

Copies of these papers as well as additional information on the Off-Farm Employment Project can be obtained by writing:

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Small Scale Industry in Kenya*

This study treats small scale industry in Kenya. It is common wisdom that small production units possess a number of virtues and that special effort is warranted to promote the growth of this subsector. Such a view is acceptable, but in need of some refinement. It is the argument of this paper that for each country there exists an optimum size distribution of firms. This optimum is determined at any point in time by technological factors and by the pattern of demand. Owing to market imperfections and government policies that are biased with respect to scale, observed shares of output and employment in many underdeveloped countries are heavily skewed toward large scale enterprise. This malproportionality is strikingly evident in the case of Kenya.

Restating the case for small industry promotion, until the optimum size distribution of firms for a particular country is reached, expansion of small scale units will result in five "contributions" to the development process. Each of these contributions -- greater industrial output for a given investment, an increase in employment per unit of output, enhanced mobilization of savings, more equal distribution of income, development of entrepreneurship for the indigenization of large-scale manufacturing -- is a direct or indirect consequence of the ease-of-entry attribute peculiar to small scale enterprise.

*This project would not have been possible without generous help from the Central Bureau of Statistics and Kenya Industrial Estates Ltd. The author is particularly indebted to his research assistant Paola Heinonen and to K. O. Agunda, Dennis Anderson, Michael Burisch, Steven Haggblade, F. Abure Kene, Mark Leiserson, Carl Liedholm, Ian Little, and J. D. von Pischke. The initial phase of research was sponsored by the World Bank; the project was completed while the author was Visiting Professor of Economics at Michigan State University.

Paralleling the experience of many other developing economies, the story of Kenya reveals that attaining a more balanced industrial structure is an extremely difficult business. The sources of difficulty would seem to be three. First, at any point in time the entrepreneurial endowment (a legacy of history) and the articulation of product markets, factor markets and financial markets sharply constrain what can be achieved. Second, Government allocational policies -- the pricing of and access to foreign exchange, loan funds and industrial land; the creation of monopolistic markets through various licensing arrangements -- have almost everywhere had the effect of diverting a disproportionate share of resources to modern large scale production units. Such misdirection of policy appears to be rooted in a simple conception of the industrialization process and in asymmetric pecuniary benefits for those elected officials and civil servants involved in the decision-making. However, such bias is not immutable: OPEC-induced rationalization of foreign trade regimes and pressures from international donors have recently been correcting some of these policy distortions. A third factor militating against the development of the small scale subsector, less discussed but perhaps more intractable, is the high "transactions cost" of channeling assistance to recipient enterprises. In this study particular attention will be paid to the nature of these transactions costs and to the ways in which they may be reduced.

In Section I of this paper, which draws upon census of manufacturing data, various aspects of Kenya's industrial structure are reviewed, particularly those related to employment and the effect thereon of the size distribution of firms. In Section II we move in for a closer look at the small scale subsector addressing such questions as: What is the scope and nature of rural enterprise? How extensive is urban artisan industry, is it

geographically concentrated, is it growing? Is the concept of an "informal sector" a useful construct? What is the extent of modern small industry? Section III is devoted to a critical review of assistance programs the Government has put in place to promote small scale enterprise. A concluding section draws together suggestions for changes in policies and programs.

I. THE MANUFACTURING SECTOR

By most official statistics Kenya's manufacturing sector has performed extremely well over the past fifteen years. Real product grew at an annual rate of 8.9% over the period 1966-72. In the subsequent six year period, despite a severe OPEC-induced recession in 1974-75 and its aftermath of continuing inflation, output advanced at an average annual rate of 11.3% or about twice that of GDP. Recorded wage employment has grown from 60 thousand in 1966 to 148 thousand in 1978.¹ What are the ingredients that have produced such success? Beyond the all-important element of political stability and a commitment to private initiative, significant factors have been the creation of a hospitable environment for foreign investment, the successful redeployment into manufacturing of Kenya's entrepreneurially advanced Asian citizens and generous protection for large scale investors.

The way in which Kenya has achieved her success in the past makes somewhat more difficult the attainment of the objectives set for this sector during the 1980s. These objectives include accelerated employment creation, a larger share of factor payments going to lower income groups, provision of inexpensive manufactured consumer goods for the mass of the population and the development of a significant African entrepreneurial sector. While important initiatives, such as several lending schemes and an industrial estate program, have been taken to stimulate African enterprise, the heavy artillery of Government policy -- massive loan and equity capital, quantitative restrictions, access to foreign exchange at the subsidized official

¹The 1966 figure, lower than that reported in Table 1, has been adjusted to conform with the the modified 4-digit classification which has prevailed since 1972.

Table 1

Manufacturing Output and Employment 1966-1977

	<u>Value Added</u> (1964 K s m)	<u>Wage Employment</u> (000's)	<u>Non-Wage Employment</u>		
			<u>Formal</u>	<u>Informal</u> (000's)	<u>Total</u>
1966	38.2	65.9			
1967	40.9	59.3			
1968	44.6	70.0			
1969	48.6	67.2			
1970	52.5	78.3			
1971	59.3	92.0			
1972	63.6	92.6			
	<u>Value Added</u> (1972 K s m)	<u>Wage Employment</u> (000's)	<u>Formal</u>	<u>Informal</u> (000's)	<u>Total</u>
1972	77.9	84.8	4.4	2.6	6.6
1973	87.2	94.5	4.5	3.2	7.7
1974	94.5	101.3	7.9	10.9	18.8
1975	94.3	100.7	5.2	9.6	14.8
1976	111.8	108.8	4.9	13.9	18.8
1977	128.6	117.9	1.7	15.3	17.0
1978	148.4	130.1	1.6	17.0	18.6

NOTES: Value added at constant prices and wage employment from Tables 45b and 243 of the Statistical Abstract 1979, and predecessor tables in earlier volumes. Formal self-employment (Ibid., 78a) is derived by multiplying the number of enumerated establishments with no wage-employees by 2.5. Informal self-employment from the Central Bureau of Statistics, "Informal Sector Study 1972-1978."

rate, political intervention to break bureaucratic bottlenecks -- has been reserved for the most part for large scale joint ventures with foreign investors.

Rising levels of effective protection have tended to create high-cost products, not only reducing the welfare of low-income consumers but making further industrial expansion -- the target is 9% per annum -- all the more arduous. Generous protection has the further effects of removing the discipline of comparative advantage in determining product mix and of relieving investors of the necessity to seek out cost-minimizing factor proportions. The share of income going to capital is enlarged and labor absorption is diminished.¹

1.1. Trends in Output and Employment

Before analyzing the output and employment trends reported in Table 1, a word is in order about the statistics themselves. The Central Bureau of Statistics provides an unusually rich coverage of the Kenyan economy in terms of statistical time series. This advantage is counterbalanced in part by not infrequent shifts in definition, partial coverage and nonconformability of complementary series. The output figures in Table 1 are those which appear in the National Accounts. They are built up from three sources: (1) an annual Survey of Industrial Production which covers all establishments employing 50 or more, (2) a 25% sample survey of firms employing 20-49, and (3) an estimate of the 1-19 employee sector which applies indices of current economic activity to a 1967 benchmark figure. What is omitted from this measure is the very significant production of all those establishments which (a) have no postal box, or (b) engage no wage-paid labor.

¹Between 1966 and 1977 for those establishments employing 50 or more, the share of manufacturing value added going to profit, interest and rent rose from 49% to 63%.

Wage employment, as recorded in Table 1, is based upon the Annual Enumeration of Employees and self-employed persons which covers all sectors of the economy and is published with a very short time lag. Comparison with figures in the quinquennial Census of Industrial Production (published with a four year lag) reveals this series to understate manufacturing wage-paid employment by 10-15%. Paralleling the output side, employment in the establishments which do not pay wages or lack a postal box goes unrecorded in official employment statistics; these figures are, however, available and are reported in Table 1 under "Non-Wage Employment."¹

The conventional practice, involving the implicit assumption that discrepancies remain constant, is to compare the growth trends in manufacturing GDP and wage employment. Following in this tradition, average growth of value added in the 1966-72 period was a healthy 8.9 percent. In the more recent period the average rate of output expansion has risen still further to 11.3 percent, although the year to year volatility has increased, ranging from a low of -0.2 percent to a high of 18.6 percent. Wage employment grew at an annual rate of 5.8 percent in 1966-72 and at 7.4 percent in 1972-78. In both periods employment growth, as in developed countries, was less volatile than the growth in output. With respect to non-wage employment (for which no output figures exist), given the infancy of the informal sector survey, it would be dangerous to interpret any trend; however, it might be observed that since 1974 when its present coverage was reached, aggregate non-wage employment appears to have remained more or less static.

¹The Annual Enumeration records number of firms, although not numbers engaged, for establishments with "0" wage employment; the informal sector survey, available in mimeograph form, reports number engaged but not the number of establishments.

Given Kenya's objectives of accelerating employment creation and an enlarged share of factor payments going to lower income groups, an understanding of the precise linkage between output and employment is of more than passing interest. The descriptive measure is the employment elasticity, call it β , which relates the percentage growth in employment to the percentage growth in production. On average during the period 1966-72 β was approximately .61, i.e., for every one percent advance in output employment grew by six-tenths of one percent. For the 1972-78 period β was approximately .59. If β had been 1.0 for the last period, instead of 45,300 new jobs the figure would have been 76,700.

What then determines this all-important β ? The answer is labor productivity: for any level of manufacturing output, the amount of employment generated will vary inversely with output per man. Assume a situation where labor productivity remains unchanged in existing production facilities, but new industries are set up. If output per man in the new lines of production is lower than the sector average, say as a result of expansion of small scale producers, than an increase in manufacturing output will bring about a more than proportionate increase in the work force, $\beta > 1$. If output expansion derives from highly capital-intensive industries which displace a smaller volume of substitute goods produced by low productivity artisan workshops (e.g., footwear, clothing), an advance in output will be associated with a fall in total employment, $\beta < 0$. In the third case, incremental output displaces imports and is associated with higher than average output per man, which means that employment grows but at a slower rate than value added, $0 < \beta < 1$.

The assumption that productivity for existing firms remains unchanged must be relaxed to allow for advances in technology, for shifts in relative

factor prices, for changes in the level of effective protection and for "learning" productivity gains in recently established factories. Changes in technology are usually of a labor-saving nature and raise output per man as old equipment is replaced. A change in relative factor prices (real wages rose from 1966 to 1970 and have been eroding ever since) will lead businessmen to move more quickly to labor-saving production methods, or conversely, to delay the introduction of more mechanized processes. An increase (or decrease) in the effective protection subsidy raises (or lowers) domestic value added for a given level of production but leaves employment unaffected.¹ Lastly, there is the advance in productivity that occurs during the first three years or so after a new industry is established.²

1.2. Employment and Growth: An Industrial Organization Approach

In an idealized economy meeting all the textbook assumptions of perfect competition (perfect knowledge, mobility and divisibility), one would expect to observe over the long run a β of less than unity. In response to comparative advantage, manufacturing production would initially tend to center on technically simple, labor-intensive lines of production: output per worker

¹It is of interest to note that such changes in the valuation of a commodity are not corrected by the use of a deflator at the point of initial import substitution, since NNP is estimated from the product side rather than from the consumption side. Time series measures of real industrial output are thus subject to upward bias.

²During a factory's start-up period, say two to four years, there is a sharp advance from initially very low levels of output per man hour and per machine hour as workers develop basic familiarity with the production process and as management overcomes the technical, marketing, and organizational problems that all new enterprises face. Subsequent productivity gains from this type of disembodied learning are very modest. Hence an increase in the rate of industrial expansion will lessen the impact of this type of productivity growth while a slowing of expansion will enhance it. This tends to produce a "feast or famine" effect for employment creation.

would be low. Extending the product mix normally entails moving into less labor-intensive products, requiring more material capital, as well as more human capital. Thus capital-labor and output-labor ratios tend to be higher in these new industries. With rising per capita income, the trend to higher labor productivity is reinforced by capital-labor substitution across all industries in response to a greater demand from consumers for uniform standards of quality provided by automated processes and, from the supply side, in response to upward-moving wage rates and the greater availability of loanable funds. Accompanying the rise in both capital-intensity and labor productivity is an increase in the scale of the productive unit, since it is the finer division of labor permitted by higher levels of output that is a precondition to most forms of mechanization.¹ In terms of industrial structure, the average size of establishment rises, the share of value added and employment contributed by small-scale units (employing 50 or less) diminishes while the share of large-scale units is augmented. Finally, around this long-term trend of $\beta < 1$ there would be many deviations in response to short-run movements in factor prices and in the various efficiency parameters mentioned earlier.

Of course in neither Kenya nor any other developing economy have the textbook assumptions obtained. Local entrepreneurs were few and technical knowledge about many lines of production was incomplete or nonexistent; blocked access to loan capital and a restrictive system of licensure

¹A portion of the increased division of labor will be accomplished by greater specialization among firms, competition stimulating an enlargement in the number of firms and submarkets with a narrowing of the range of products and processes per firm. For a useful survey of the theoretical and empirical work on economies of scale as they pertain to economic development see David Felix, "The Technological Factor in Socioeconomic Dualism: Toward an Economy-of-Scale Paradigm for Development Theory," Economic Development and Cultural Change, Vol. 25, Supplement 1977.

further inhibited the development of labor-intensive, smaller scale production units. On the other hand, large-scale multinational firms, which were able to surmount the barriers holding back smaller enterprise, came into a cost-permissive environment which allowed them to remain happily married to "inappropriate products" and inappropriate production techniques. The outcome is not unexpected: value added per worker in manufacturing is inefficiently high for a labor-rich economy such as Kenya's.

The high average product means that achievable output and employment in the past has been lost. It also means that in the future, if the correct actions are taken, the growth of labor productivity can be held below its natural rate during a "catch up" period which, among its other beneficial effects, will raise the value of β .

What are the technical changes that underly a reduction or at least a slowed advance of output per man in manufacturing? The first is a change in the product mix, involving principally a shift toward low-income consumer and producer goods and toward labor-intensive exports. The second change required is a movement toward capital-saving production methods. The latter include such measures as the introduction of multiple shifts; use of earlier vintage machinery in the primary manufacturing process; the substitution of manual operation for conveyor belts, forklift trucks, and automatic packaging machines; machine speed-up with enlarged crews; and process simplification with its attendant loss in product uniformity. Such reorganization in the means of production, induced by a higher cost of capital and severe pressure to minimize cost, would be achieved in part by altered production lines in existing plants, in part by the development of subcontracting relationships with smaller producers, in part by the emergence of more small and medium-sized firms fabricating inexpensive producer and consumer goods.

At this point it is apposite to return to several of the "virtues" of small scale enterprise adumbrated in the second paragraph of the paper. The argument that small units will almost always exhibit greater labor-intensity flows from (a) limited capital and superior access to low-wage labor, (b) a scale of output which constrains the choice set to earlier vintage technologies, (c) information costs which enforce a bias toward simpler production methods, and (d) greater customer tolerance for non-uniform products. Simple technology and limited capital requirements mean low barriers to entry. This will usually produce a high degree of competition, resulting in low prices to the consumer. Ease of entry is also a key to what is probably small industry's greatest long-run contribution: a unique source of learning for thousands of individuals, a very small fraction of whose enterprises will evolve, perhaps in the second or third generation, to represent a sizeable share of the country's medium and large manufacturing firms.

Least we be indicted for "enthusiasm," the disabilities and deformities of small scale enterprise must be laid bare with equal candor. There are many products where technological considerations preclude small industry entirely. Moreover, not all low-cost consumer goods are produced by small scale enterprise (e.g., plastic sandals, enamelware utensils, cotton cloth) and not all luxuries are produced by large scale establishments. Precisely because of its "democratic" indulgence with respect to past material accomplishment, average managerial capability in small firms is low, a fact which explains why so few of them continue to grow and why, in the absence of screening procedures, assistance efforts to this sector have to date borne so little fruit.

1.3. Some Evidence

It is possible to provide empirical confirmation for a number of the propositions set forth in the preceding section, both about the normal pattern of development and about Kenya's situation in particular. The data are from Kenya's industrial census of 1972 and a compilation of Ranadev Banerji of similar statistics for 23 countries.

The first set of hypotheses to be tested is that as economic development proceeds (a) there is a changing industrial product mix, (b) those commodity groups based on smaller labor-intensive units represent a diminishing proportion of manufacturing output, and (c) within any given commodity group there is a shift toward larger more capital-intensive plants in response to changing relative factor prices and enlarged markets. With respect to Kenya the hypothesis is that the size distribution of manufacturing establishments is strongly skewed, relative to the normal pattern, toward large-scale units.

The evidence is presented in Table 2. The changing composition of industrial output can be seen in the first column by comparing the sample of low and middle-income countries with a sample of high-income countries. The fact that low-income economies are combined with middle-income economies (e.g., Israel, Spain, Singapore) and that average values are given rather than the range means that the full extent of alteration in product mix is not observed.¹ As per capita income rises, the relative significance of the more labor-intensive commodities comprising Groups I and II -- food, processing, beverages, tobacco, wood products, printing, textiles, clothing, footwear -- diminish. As we would expect, most of these are areas in which small industry

¹For more evidence on this point see Simon Kuznets, Economic Growth of Nations (Cambridge: Harvard University Press, 1971) Chapters 4 and 5.

Table 2

Industrial Structure Measures for Twenty-Four Countries

Industry Group	<u>Value Added Share</u>			<u>Employment Share</u>		
	<u>Industrial Composition</u>	Share of Units Employing:		<u>Industrial Composition</u>	Share of Units Employing:	
		<u>1-4</u>	<u>1-49</u>		<u>1-4</u>	<u>1-49</u>
Kenya						
Group I	47.5	2.8	17.5	42.9	3.3	22.7
Group II	11.2	6.3	19.0	16.9	6.0	19.4
Group III	<u>41.3</u>	<u>0.8</u>	<u>10.6</u>	<u>40.2</u>	<u>1.4</u>	<u>11.7</u>
Total	100.0	2.3	14.8	100.0	3.0	17.8
Low and Middle Income Countries (N=15)						
Group I	43.0	10.9	37.2	43.0	22.4	53.1
Group II	19.0	14.8	38.0	27.0	24.0	45.7
Group III	<u>38.0</u>	<u>6.0</u>	<u>22.0</u>	<u>30.0</u>	<u>13.6</u>	<u>36.6</u>
Total	100.0	9.8	31.6	100.0	20.2	46.1
High Income Countries (N=8)						
Group I	32.0	4.3	35.0	30.0	5.1	39.1
Group II	9.0	2.8	26.0	14.0	2.9	28.7
Group III	<u>59.0</u>	<u>1.3</u>	<u>12.8</u>	<u>56.0</u>	<u>1.3</u>	<u>15.4</u>
Total	100.0	2.4	21.1	100.0	2.6	24.3

Notes: The commodity groups are as follows: I -- food, beverage, wood, furniture, printing and publishing, non-metallic mineral products and diverse; II -- textiles, clothing and leather; and III -- paper, rubber, chemicals, petroleum, basic metals, fabricated metals, non-electrical machinery, electrical machinery and transport equipment.

The low and middle-income countries are Brazil (1960), Colombia (1968), Iraq (1964), Israel (1965), Jordan (1965), South Korea (1967), Lebanon (1964), Malaysia (1968), Mexico (1965), Peru (1963), Puerto Rico (1963), Spain (1970), Taiwan (1966), Thailand (1963), Turkey (1964).

The high income countries are Austria (1964), Australia (1968), Canada (1970), West Germany (1970), Japan (1971), Norway (1963), United Kingdom (1968), USA (1967).

Source: Ranadev Banerji, "Small Scale Production Units in Manufacturing: An International Cross-Section Overview," Weltwirtschaftliches Archiv, Band 114, Heft, 1978, Table 2.

Kenya, Central Bureau of Statistics, Census of Industrial Production 1972 (Nairobi, 1978).

is relatively prominent. Conversely the proportionate share of Group III commodities, where there are fewer small producers, expands. That smaller establishments utilize relatively labor-intensive production techniques in all industry groups is attested to by below-industry-average labor productivity, i.e., the value added share is less than the employment share.

Looking at the totals for the low and middle-income countries, we see that units engaging less than 50 employees contribute 31.6% of output and 46.1% of manufacturing employment. The very small firms (1-4) workers are particularly labor-intensive, generating 20% of total employment on the basis of 10% of the output.

As we move to the high income countries, it is the 1-4 employee firms that are squeezed out, with output falling from 9.8% to 2.4% and the employment share from 20.2% to 2.6%. Overall, advancing to the high-income category diminishes the labor-absorptive capacity of industry, β , as a result of three effects: a shift toward product Group III, a decrease in the share of 1-49 employee establishments in every product group, and a rise in the productivity relative of the remaining small producers, i.e., output and employment share converge. The most likely reason for the third effect is a narrowing in product quality variance and the disappearance of a dual labor market.

Turning to Kenya, we notice first that the share of the most labor-intensive group -- textiles, clothing and leather products -- is unexpectedly low (11.2%) while that of Group III commodities which include paper, rubber, chemicals, petroleum, basic metals, machinery and transport equipment is unexpectedly high. Kenya's industrial structure is even more like that of high-wage, capital-rich economies with respect to the extremely low share of both employment and output of units employing 1-49 workers (only half the average share of low and middle-income countries, lower than the average for

the nine high-income countries). Kenya's very high productivity relative (value added shares are virtually equal to employment shares) is, at least in part, a result of errors in the data as discussed below.

Up to this point we have been comparing Kenya with the average of the fifteen country sample. Dr. Banerji's study provides individual country data for certain items. Thus it can be determined that establishments employing 1-49 workers in every one of the fifteen countries surpassed Kenya's small industry's shares of 14.8% for value added and 17.8% for employment.¹

As noted earlier, Kenya's manufacturing census excludes all firms which are based solely upon non-wage labor. This means that the 1-4 employee units are severely underestimated. If exclusion of the self-employed is less complete in the sample countries, our comparison would be biased owing to the fact that these very small producers are the most labor-intensive and fabricate goods that fall into commodity Groups I and II. Does this invalidate our conclusion? A look at the 5-49 classification, where no problem of differential coverage arises, indicates not. Kenya's performance here is a 12.5% output share as against a 21.8% for the middle and low income countries.²

And note that the latter have attained, on average a higher level of economic development (with its diminished small industry potential) than Kenya has currently achieved. Thus our conclusion holds that in comparison to our fifteen country sample Kenya suffers from an industrial structure characterized by a deficiency of small and medium-sized plants and by excessively high labor productivity

¹For South Korea, Colombia, Mexico and Puerto Rico the value added share ranged from 16% to 23%; for Brazil, Malaysia, Spain, Israel, Turkey, Thailand, and Taiwan the figure was 26-33%; and finally for Iraq, Jordan, and Lebanon 40-63%.

²If the sample countries do cover a portion of the non-wage paying firms, the figure of 21.8% is an underestimate relative to Kenya's 12.5%.

We now take a more disaggregated look at Kenya's manufacturing sector as revealed by 1972 census of industrial production. Tables 3, 4, and 5 show respectively the distribution of number of firms,¹ of employment and of net output by size of establishment and by three-digit level industry. Although firms engaging 100 or more workers account for all but 12% of establishments, they contribute 74% of all value added and 71% of employment. In what areas is small scale production significant? Industries in which firms of less than 100 contribute at least two-fifths of net output comprise grain milling, baking, miscellaneous foods, clothing, wood and cork, furniture, printing and publishing, non-electrical machinery and miscellaneous. Taking a more restrictive view of "small" industries in which firms employing less than 20 supply at least one-sixth of industry output include clothing, furniture, printing and publishing, non-electrical machinery and miscellaneous. At the other extreme, in seven of the twenty-five industry groups firms of 100 or more provide at least seven-eighths of production: meat and dairy products, canned foods, beverages and tobacco, textiles, glass products, electrical machinery and transport equipment.

Table 6 presents data which allow us to analyze factor intensity by industry. Before turning to the data, however, let us briefly consider the conceptual framework that will be used. The most common yardstick of factor intensity is the capital-labor ratio. Beyond the question of simple availability, this statistic suffers from (i) lower-than-average reliability of capital stock data, and their revaluation at replacement prices, (ii) the lack of ordinary conformity between the capital stock measure and the desired measure of capital services owing to differences in the degree of capacity

¹As there are comparatively few multi-establishment firms in Kenya (under 0.3%), the terms will be used interchangeably.

Table 3

Distribution of Establishments by Number Employed

MANUFACTURING	Total	(1-4)	(5-19)	(20-49)	(50-99)	(100+)	Total
Meat and dairy products	31	3.2	29.0	19.3	13.0	33.5	100
Canned vegetable, fish and oils and fats	27	7.4	33.3	14.9	22.2	22.2	100
Grain mill products	71	36.6	40.8	10.0	5.6	7.0	100
Bakery products	50	10.0	36.0	36.0	12.0	6.0	100
Sugar and confectioneries	26	7.7	27.0	30.7	19.2	15.4	100
Miscellaneous foods	84	6.0	20.2	25.0	21.5	27.3	100
Beverages and tobacco	34	29.4	17.6	14.7	11.8	26.5	100
Textiles	58	13.8	31.0	6.9	10.3	38.0	100
Clothing industry	262	41.2	38.2	10.3	8.0	2.3	100
Leather products and footwear	35	11.4	54.3	20.0	5.7	8.6	100
Wood and cork products	123	14.6	23.6	23.6	22.8	15.4	100
Furniture and fixtures	176	25.0	53.4	12.5	5.7	3.4	100
Paper and paper products	29	3.5	41.4	17.2	6.9	31.0	100
Printing and publishing	109	12.0	42.2	32.1	8.2	5.5	100
Industrial chemicals	22	13.7	18.1	18.1	22.8	27.3	100
Petroleum and other chemicals	67	19.6	31.3	23.9	15.0	10.6	100
Rubber products	21	16.3	33.3	23.9	14.2	14.3	100
Plastic products	20	15.0	40.0	10.0	5.0	30.0	100
Pottery and glass products	8	50.0	----	----	25.0	25.0	100
Non-metallic mineral products	42	9.5	28.6	28.6	19.0	14.3	100
Metal products	133	24.0	44.4	13.6	2.2	15.8	100
Non-electrical machinery	82	12.2	56.0	23.2	7.4	1.2	100
Electrical machinery	17	5.9	17.6	35.3	5.9	35.3	100
Transport equipment	47	8.5	38.3	14.9	14.9	23.4	100
Miscellaneous manufacture	111	39.6	46.9	7.2	4.5	1.8	100
TOTAL	1,685	21.8	38.2	17.5	10.5	12.0	100

Table 4

Distribution of Employment by Size of Establishment

MANUFACTURING	Total	(1-4)	(5-19)	(20-49)	(50-99)	(100+)	Total
Meat and dairy products	4,364	0.2	2.0	4.6	6.4	87.0	100
Canned vegetable, fish and oils and fats	2,889	0.3	2.4	3.9	13.0	80.4	100
Grain mill products	2,537	8.7	8.7	8.0	12.2	62.4	100
Bakery products	1,982	2.0	7.7	27.1	17.5	45.7	100
Sugar and confectioneries	3,445	0.4	1.6	8.0	8.2	81.8	100
Miscellaneous foods	6,260	0.6	2.4	10.2	20.3	66.5	100
Beverages and tobacco	4,448	1.8	1.6	4.4	6.2	86.0	100
Textiles	10,562	0.5	1.4	1.2	4.2	92.7	100
Clothing industry	5,171	19.3	16.7	17.5	26.3	20.2	100
Leather products and footwear	2,256	1.1	6.9	9.6	6.5	76.1	100
Wood and cork products	7,069	2.0	4.9	12.9	28.8	51.6	100
Furniture and fixtures	3,722	10.6	25.7	19.3	18.3	26.1	100
Paper and paper products	2,176	0.4	5.7	8.5	6.5	78.9	100
Printing and publishing	4,048	3.2	15.0	26.9	15.0	39.9	100
Industrial chemicals	1,973	0.5	1.4	7.8	17.2	73.1	100
Petroleum and other chemicals	3,071	3.3	5.5	15.7	24.2	51.3	100
Rubber products	1,052	2.9	8.0	11.0	17.1	61.0	100
Plastic products	1,003	2.0	8.6	5.0	5.0	79.4	100
Pottery and glass products	750	2.7	-----	-----	23.0	74.3	100
Non-metallic mineral products	3,116	1.3	5.3	11.5	18.7	63.2	100
Metal products	6,944	4.0	8.0	9.0	2.9	76.1	100
Non-electrical machinery	1,885	5.0	25.0	32.2	23.9	13.9	100
Electrical machinery	4,108	0.2	0.9	4.2	2.2	92.5	100
Transport equipment	19,773	0.2	0.7	1.6	2.5	95.0	100
Miscellaneous manufacture	1,760	23.0	27.1	13.5	19.6	16.8	100

Table 5

Distribution of Net Output by Size of Establishment

MANUFACTURING	Total	(1-4)	(5-19)	(20-49)	(50-99)	(100+)	Total
Meat and dairy products	3,025,576	0.1	2.4	3.0	6.0	88.5	100
Canned vegetable, fish and oils and fats	2,626,515	0.1	1.4	2.3	7.8	88.4	100
Grain mill products	2,560,338	2.4	5.2	16.1	18.2	58.1	100
Bakery products	1,465,598	1.1	3.6	20.4	16.2	58.7	100
Sugar and confectioneries	1,319,140	0.8	1.0	5.7	17.5	75.0	100
Miscellaneous foods	5,113,401	0.9	2.8	10.8	26.2	59.3	100
Beverages and tobacco	9,076,375	0.2	0.3	0.4	4.6	94.5	100
Textiles	4,920,659	0.6	2.0	0.6	4.1	92.7	100
Clothing industry	2,464,792	21.5	18.4	15.8	21.3	23.0	100
Leather products and footwear	1,605,058	0.9	5.1	5.2	6.0	82.8	100
Wood and cork products	1,952,075	2.6	6.5	16.6	25.3	49.0	100
Furniture and fixtures	1,750,343	6.8	27.0	19.1	25.0	22.1	100
Paper and paper products	1,985,040	0.3	3.2	7.2	4.7	84.6	100
Printing and publishing	3,788,517	2.7	15.0	23.2	12.3	46.8	100
Industrial chemicals	2,860,288	0.3	1.5	1.0	24.3	72.9	100
Petroleum and other chemicals	7,759,116	0.9	1.3	7.3	16.1	74.4	100
Rubber products	1,586,280	0.4	2.4	4.6	13.2	79.4	100
Plastic products	665,370	1.8	11.2	2.4	7.1	77.5	100
Pottery and glass products	867,183	1.2	----	----	7.9	90.9	100
Non-metallic mineral products	4,041,296	0.3	2.2	7.4	7.6	82.5	100
Metal products	5,719,115	1.6	4.9	7.0	6.8	79.7	100
Non-electrical machinery	1,334,532	3.0	26.2	38.1	30.5	2.2	100
Electrical machinery	3,696,934	0.1	0.6	6.7	3.9	88.7	100
Transport equipment	6,466,610	0.2	1.1	2.9	3.7	92.1	100
Miscellaneous manufacture	1,530,451	40.5	19.1	16.0	10.4	14.0	100
TOTAL	80,180,702	2.3	4.7	7.8	11.6	73.6	100

Table 6

Factor Intensity in Kenyan Manufacturing, 1972

Manufacturing	Total Value Added Per Employee		Wage Value Added Per Employee		Non-Wage Value Added Per Employee	
	£s	Rank	£s	Rank	£s	Rank
Wood and cork products	276	1	186	1	91	3
Transport equipment	327	2	240	4	87	2
Sugar and confectioneries	383	3	327	7	56	1
Textiles	466	4	228	3	238	7
Furniture and fixtures	470	5	306	6	165	4
Clothing industry	476	6	259	5	217	5
Plastic products	663	7	398	13	266	8
Meat and dairy products	693	8	491	19	221	6
Non-electrical machinery	708	9	421	15	287	10
Leather products and footwear	711	10	329	8	382	13
Bakery products	739	11	375	12	365	12
Weighted Average	(753)		(362)		(392)	
Miscellaneous foods	817	12	221	2	596	18
Metal products	824	13	431	16	393	15
Miscellaneous manufactures	870	14	351	11	518	16
Electrical machinery	900	15	546	22	354	11
Canned vegetable, fish, oils and fats	909	16	335	9	574	17
Paper and paper products	912	17	530	21	383	14
Printing and publishing	936	18	653	24	283	9
Grain mill products	1,009	19	402	14	607	19
Pottery and glass products	1,156	20	350	10	807	21
Non-metallic mineral products	1,275	21	483	17	793	20
Industrial chemicals	1,450	22	486	18	964	22
Rubber products	1,651	23	523	20	985	23
Beverages and tobacco	2,041	24	595	23	1,446	24
Petroleum and other chemicals	2,527	25	867	25	1,659	25

utilization, (iii) the omission of working capital and (iv) the omission of scarce technical and managerial skills, i.e., human capital.

These defects of the capital-labor ratio are to a considerable degree overcome by a payment-for-factor services approach. Within this latter framework production inputs are segregated into three groups: fixed and circulating physical capital, human capital and raw unskilled labor. We measure these inputs in terms of their contribution to value added per worker. Thus nonwage value added per employee is the payment for services of material capital (rent, interest, depreciation, profit); if this figure is high -- in Table 6 petroleum and other chemicals, beverages and tobacco, pottery and glass -- substantial capital inputs are being utilized. If the wage and salary component is absolutely large, heavy use is being made of human capital in the form of technical skills and managerial inputs. Thus in the case of printing and publishing, meat and dairy products, and electrical machinery, production is in fact capital-intensive although it would appear to be labor-intensive when measured by the conventional capital-labor ratio. If neither the wage nor the non-wage component is large -- that is total value added per employee is low -- then productive inputs are primarily those of unskilled labor. As expected from the earlier analysis, most of the industries with less than average value added per employee are from Groups I and II of Table 2 and are industries in which establishments of less than fifty employees contribute a relatively large share of output.

What is the policy significance of Table 6 with respect to employment and distributional goals? Insofar as demand constraints permit, expansion of manufacturing capacity should be concentrated in product lines where both the wage value added and the nonwage value added per employee are below the sectoral average. Stated negatively, proposals to establish

industries where output per worker is likely to exceed 30 to 40 percent of the all-manufacturing average should be treated with extreme caution. Factor intensity is not, of course, the sole determinant of economic efficiency; economies of scale, foreign exchange content and transport costs also bear heavily on comparative advantage and must be carefully evaluated. However, it may be noted that relative to the other product groups, the lower productivity industries exhibit a higher incidence of domestic-based raw materials, e.g., timber, sugar, cotton, wheat, hides. Clearly when levying sales and excise taxes, and when responding to requests for import restrictions or for import tax rebates or for government loans and equity participation, policy-makers should have recourse to probable value added per employee as a major input for their decisions.

1.4. Errors in the Data: Some Amended Conclusions

A close examination of the components of value added by size of establishment, and subsequent inquiry into data collection procedures, uncovered several sources of non-random errors in Kenya's census figures.¹ Owing to the use of a short form for establishments employing 1 to 4, various cost expenditures were omitted, giving rise to an inflated nonwage value added. On the other hand for firms engaging more than 100 depreciation and profit were understated, resulting in a diminished nonwage value added.

Several conclusions may be drawn, given the nature of these statistical inaccuracies. First, because value added per employee is inflated for firms which contribute less than one-fiftieth of output and deflated for the size category which accounts for three-quarters of final product, it follows that

¹IBRD mission, "Kenya Basic Economic Survey of 1979" (mimeo 1980).

official statistics significantly understate manufacturing output. Second, and more pertinent to our analysis of Kenya's industrial structure, if output per worker for the 1-4 group is erroneously high and that of the 100-plus group erroneously low, then the earlier reported high productivity relative of establishments employing 1-49 is reduced or perhaps eliminated. Third, given that underestimation of value added occurs mainly in the 100-plus group, Kenya's industrial structure is even more distorted than indicated by the latter's reported output share of 74 percent or as depicted in Table 2. Finally, implicit in the third conclusion is a fourth: the economic payoff from a successful small industry promotion effort is potentially very great.

II. SMALL SCALE INDUSTRY DESCRIBED

The classification of small scale manufacturing activity has long been an awkward corner. Ranging from the housewife carving gourds in the farm household to the collective of journeymen making furniture in the rural market town to the manufacture of precision surgical instruments in the urban industrial estate, it is a heterogenous assemblage of activities. Students of the subject have employed various classificatory schemes based on technology, arrangements for engaging labor, institutional status or simply size. Thus we have traditional/modern, family/wage labor, formal/informal and cottage-dwarf-small industry.

From an analytic point of view none of the above has been wholly satisfactory. The scheme to be employed here is slightly different; it is related to the industrial organization, barriers-to-entry framework utilized in Section I. We divide the small scale universe into two groups, traditional and non-traditional. In Kenya the former, which may be a rural household or an urban wage-paying enterprise, typically involve units engaging fewer than ten workers and employing production techniques which entail little division of labor or management organization. Non-traditional small industry on the other hand is normally characterized by a minimum scale of production that exceeds ten workers and that requires considerable specialization and superintendence. The critical distinction, however, is not size but the availability of a completed set of inputs. Traditional industry is based on widely existing technical knowledge, existing labor skills and existing raw material supplies. Production risks are few, barriers to entry are low and competition is often intense. For modern small industry the knowledge,

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skills and physical inputs do not already exist in the needed form -- innovation is required and the outcome is subject to considerable uncertainty.¹ Because there are barriers to entry both with respect to capital and to knowledge, the number of producers are fewer and intra-industry competition is moderate.

The economic roles played by these two subsectors are quite distinct. For a long time to come the traditional subsector will provide more employment and income than the non-traditional subsector. Moreover a larger share of the former's output will be fulfilling "basic needs," that is, providing low-income consumer and producer goods for which there are no substitutes save at far higher prices. Non-traditional enterprise, for its part, will manufacture a much wider range of goods and will from its small base enjoy a faster rate of growth. It will also be this subsector that furnishes the largest single source of African entrepreneurs for large scale industry, albeit the number of firms that grow up and out of the small industry subsector will constitute a small percentage of the total population of such firms.

There is as yet no satisfactory statistical method for distinguishing between traditional and non-traditional small enterprises. As a very imperfect proxy we have recourse to a size dichotomy, in the current Kenyan context treating all establishments employing less than ten as traditional and all larger units as non-traditional. The vast bulk of Kenya's small manufacturing

¹ Insofar as small industry ceases to be novel, if it spreads across the land and by its long standing operation creates ample supplies of technical know-how and labor skills, it takes on all the characteristics of traditional production. Printing and bread baking typically go through this transformation. Similarly the same commodity may be produced in both subsectors simultaneously, e.g., tailoring and assembly line clothing factories. Over time the average size of establishments in each subsector -- artisan, non-traditional, small, medium, large -- rises with the general level of sophistication in the economy.

firms falling within the former category, the next 24 pages are devoted to an analysis of traditional producers, followed by a much shorter section on non-traditional producers.

2.1. Rural Industry

Rural industry is comprised of part-time household or cottage industry and fully specialized artisan enterprises in rural market centers. The only reliable evidence on household manufacturing is provided by a carefully drawn sample of 2,232 households surveyed in 1977.¹ Non-farm activities of all kinds generated 9 percent of farm income; manufacturing and processing activities by themselves constituted about 5 percent. The average ratio of non-farm to farm income was 15.3 percent, ranging from a low of 8.6 percent in Rift Valley to a high of 66.6 percent in Coast Province. Other elements of farm household income were: own agriculture -- 59 percent, regular wage employment -- 15 percent, casual wage employment -- 7 percent, remittances from relatives -- 8 percent and other gifts -- 2 percent. In comparison with other underdeveloped countries, manufacturing is very low while wage earning is relatively high.

In the survey, households were asked to report all activities other than crop production and livestock rearing which had been carried out for at least one month in the preceding year. Fully half of the households were not engaged in any non-farm activity. In the other half, 26 percent reported one such activity, with the balance ranging from two to five. The

¹Some 20 households from each of the 118 sample areas of the National Integrated Rural Survey were interviewed during the period December 1976-January 1977, covering six of the country's eight provinces. All the information in this and the next paragraph is drawn from, Central Bureau of Statistics, Social Perspectives, Vol. 2, No. 2, June 1977.

spectrum of goods and services are given in Table 7. Note that 40 percent of manufacturing is accounted for by beer-brewing and charcoal making. The repair category in the service sector involved, by order of importance, the repair of clothing, furniture, footwear, bicycle, motor vehicles, other vehicles, household utensils and farm equipment.

With respect to full-time manufacturing enterprises in rural market centers, the evidence is more fragmentary. The Central Bureau of Statistics in its annual survey of the informal sector records manufacturing employment in "selected rural trading centers." In 1979 they reported employment of 4,733 (say 2,367 firms) of whom 80 percent were engaged in tailoring and furniture making. Norcliffe and Freeman interviewed 254 market center enterprises in 1977 in Central Province; clothing (22%), furniture (13%), animal skins (9%), Pombe (7%) and metal utensils (6%) were the principal items of manufacture. One quarter of the 254 firms were in the service sector.

Studies in two other, poorer, provinces were also undertaken in 1977 by the staff of KIE and Michael Burisch of GOPA, the German advisory group. As in the case of Central Province, the absolute number of establishments engaged in manufacturing was quite low. These two studies provide a great deal of information about the nature of rural industry: technology, product quality, management problems and competition with and dependence upon urban producers. Because their findings are judged to be widely representative, they are worth quoting in detail.

Licensed manufacturing units in the sparsely populated Taita-Taveta District (16,959 sq. km., population 110,000) consist of two bakeries, fourteen carpentry shops, four metalworking/blacksmith units, five shoe-making and repairing firms, five tailoring establishments, thirteen maize

Table 7

Non-Farm Activities in Rural Households
(Percent of Households with Non-farm Activities)*

<u>Resource Extraction (12.1%)</u>		<u>Manufacturing (51.6%)</u>	
Hunting	2.6	Sisal Products	2.3
Fishing	2.2	Reed Products	3.4
Wood Cutting	3.7	Weaving & Knitting	3.1
Gathering	2.5	Charcoal	6.1
		Gourds and Calabashes	2.7
		Pottery	1.7
		Posho Mills	1.0
		Pombe Brewing	13.4
		Other Drinks	2.1
		Tobacco Products	1.7
		Tailoring	1.2
		Tanning	1.4
		Furniture	1.5
		Building Poles	1.3
		Other Wood Products	1.8
		Metal Products	1.2
<u>Services (32.5%)</u>			
Dukas	3.7		
Butchers	1.9		
Other Trade	3.7		
Repairs	5.4		
Transport	3.3		
Catering	4.5		
Traditional Dealers	2.1		
Other Services	7.5		
<u>Construction (4.7%)</u>			
Bricks and Block Building	2.0		
	1.9		

* Individual activities carried on by less than 1% of the households are not shown. The figures do not indicate value of production, but rather the percent of sampled households engaging in particular activities. Half of the households took part in none of these activities; the other half averaged two activities per household.

Source: Central Bureau of Statistics, Social Perspectives, June, 1977, Vol. 2, No. 2.

mills, sixty butcheries, and eight garages. Compared to these modest numbers, trade, catering and service establishments comprised a total of some nine hundred. The Taita-Taveta report contains the following comments on the artisan manufacturing economy:¹

. . . All of the District's carpenters use only hand tools. Output is low but the standard of work ranges from satisfactory to good. The local manufacturing of doors, windows, and furniture can presently be considered the most advanced manufacturing sector in the District. One unit in Voi does upholstery. Even if carpentry wages are low, the simple furniture is not always cheap. This appears to indicate a rather substantial effective demand.

. . . Tailoring is often combined with retailing so that many units no doubt have been licensed as retailers. The situation is similar with shoemakers who sometimes make or repair shoes in a rented part of a retail shop. While tailors generally have satisfactory equipment, the shoemakers do not. Shoemaking seems to be declining, in part in response to competition from external producers.

. . . In addition to the two bakeries, bread is also made at some Village Polytechnics. The demand is high apparently increasing. A major part of the District's population is supplied by bakeries delivering from Nairobi and Mombasa.

. . . Most of the raw material that is processed in the rural workshops is imported into the region. Mombasa and sometimes even Nairobi are the main supplying areas . . . In the typical workshop all workers perform more or less the same work. Specialization starts with management, accounting and marketing. But from the interviews one received the impression that managerial skills are less developed than technical skills, if at all. Very few kept regular accounts . . . Field observation in the District indicates, despite competition from outside, that local manufacturing is remunerative. The profit margin on a number of products is in the range of 50 to 100 percent. This is indicative of the growing demand in the District . . . The 44 enterprises interviewed for the survey employed 130 permanent workers. Partly because of the very low salary, the majority wish to establish their own businesses as a way to better income. A modest business can be established on a very small capital investment.

¹ KIE/GOPA, Project Study for the Voi RIDC (Nairobi, 1978) pp. 55, 56, 66, 61, 62, 73.

. . . As noted before most businessmen in the District felt that they could expand their enterprises if only they could get more money. But when the chance shows itself, relatively few actually apply for loans. Of those who apply only a minority obtain a loan. The most common explanation for this seems to be that most applicants were not capable of filling the necessary forms in such a way as to convince the loan officers of their ability to put the money to effective use. For the great majority of enterprises financial and business management know-how stand out as the major handicaps, and not lack of cash as such.

Kakamega district, 700 km. to the northeast, is geographically far smaller but boasts a population seven times larger than Taita-Taveta (3,520 squ. km., population 783,000). The number of traditional manufacturing units in Kakamega is about five times that of the Coast Province district. The composition of its enterprises is similar with the exception of (a) the presence of pottery and brick-making and (b) a proportionately larger number of metalworking establishments and maize mills.¹ The reports comments on specific industries is as follows:²

. . . Carpenters of various production standards are manufacturing simple wooden household articles and furniture. Good quality furniture is made only in the urban area centres. Most carpenters use traditional tools and modern machinery is very seldom employed. Mentioned by nearly all the carpenters interviewed is lack of money to buy timber.

. . . Another widespread craft is dress-making and tailoring. Generally they supply the local markets and are often combined with retailing; a similar arrangement obtains with shoe repair. But while the tailors often have satisfactory equipment, the shoemakers are very poorly equipped. Raw material is obtained in both cases from the big industrial centres.

. . . Only a few metal workshops are equipped with stationary machines such as lathes, drilling-and-cutting machines. Some of these technical workshops produce steel windows, doors and

¹The exact figures on number of establishments are: butcheries 232, bakeries 5, carpentry 61, tailoring 70, metalworking 92, maize milling 257, jageries 13, cement blockmaking 2, garages 10.

²KIE/GOPA, The Kakamega Basis Industrial Estate (Nairobi 1978), pp. 35, 36, 38, 39, 45, 46.

tubular steel furniture for the local market. Sheetmetal workers make buckets, oil burners, charcoal stoves and other simple household goods. The main problem, in this craft are, once again, lack of working capital and availability of steel.

. . . Radio, watch repair and garages are concentrated in the bigger settlements whereas bicycle repair is found all over the Province. Since tools and equipment are uniformly poor the majority of shops do only simple repair work. A problem faced by all enterprises is lack of spare parts which are nearly supplied from Nairobi.

. . . Jaggery mills crush sugar cane and boil the resulting juice into what is called jaggery; the latter is converted into an illegal alcoholic drink. The bagasse is used as fuel and since the recovery rate is low, most of the sugar is burned in the process. A number of the Kakamega mills are inoperative due to extensive machinery defects or inefficient management.

. . . The educational backgrounds of the entrepreneurs interviewed varied considerably. More than half had completed primary school, while 5 percent had completed form 4. Over 60 percent of the businessmen had no formal training. The more talented entrepreneurs and skilled workers still tend to emigrate from the Province.

. . . The competitive situation of small-scale rural industries is rather difficult to assess. On the one hand good profit margins seem to have induced a growth in the number of firms. For Kakamega municipality, for instance, the number of establishments has grown from 39 in 1972 to 102 in 1976. But still imports from outside the Province have a large share of the market. Why are not prices lowered and competition driven out? Limited capacity of all enterprises due to lack of raw material, equipment or space are possible reasons. Furthermore, it is a common view among entrepreneurs questioned that diversification of design, improvement of product quality and sales promotion would at the moment attract only a few customers. Hence one of the characteristic features of artisan industries is the monotony of a standard design and quality within each of the craft industries.

2.2. Urban Industry

In contrast to rural industry, statistics on urban industry are relatively plentiful. The data for enterprises engaging less than 10 are presented in Table 8. While the units of the unregistered (informal) sector are subject to more than the usual uncertainty,¹ the level and trend in the aggregate number of establishments is probably reasonably trustworthy. The most notable aspect of these numbers is that, while the number of larger scale firms and the industrial sector as a whole has been expanding rapidly, the 0-to9 employee sector has been static or perhaps even shrinking. A related aspect is the absolutely small size of the subsector. In 1978 this subsector provided employment for 20.8 thousand persons or about 14 percent of the combined manufacturing labor force. By contrast the employment share was 27 percent for the Philippines and 25 percent for India. On the other hand, Malaysia, with a Malay-Chinese pattern that in some ways parallels the African-Asian pattern of Kenya, sports an almost identical 12 percent share. In both cases the problem would seem to be one of entrepreneurship.

Let us look first at unregistered firms. Kenya is exceptional among developing nations in having instituted an annual street-by-street count of persons working in very small enterprises which are located in markets, in make-shift quarters in back alleys or in open fields. Both because of the number of establishments and the nature of their operation, this type of survey is extremely demanding. Initiated in 1972 in response to recommendations

¹There are three known biases in these figures. First, 27 to 28 percent of these units are in rural trading centers. Second, there has been double counting of firms already recorded in the registered sector, as discussed below. Offsetting these upward biases is the fact that average firm size is probably a good deal smaller than the 2.5 persons applied to the employment data; it might be as low as 1.5.

Table 8

Small-Scale Manufacturing Establishments

<u>UNREGISTERED^a</u>		<u>REGISTERED^b</u>			<u>TOTAL</u>
		<u>0</u>	<u>1-4</u>	<u>5-9</u>	
1957	...	...	884	381	
1963	...	...	348	316	
1969	...		713	312	
1970	...		706	334	
1971	...	1,380	826	352	
1972	...	2,292	688	317	
1972 ^c	1,030	1,760	532	249	...
1973	1,283	1,813	406	224	...
1974	4,347	3,149	435	287	8,214
1975	3,832	2,063	417	247	6,559
1976	5,551	1,952	433	263	8,199
1977	6,119	672	354	233	7,378
1978	6,804	628	322	204	7,958
1979	6,880	...	...	...	...

NOTES:

a/ Informal sector employment divided by 2.5 as the estimated number of persons per establishments. Central Bureau of Statistics, Informal Sector Surveys.

b/ By employment size. The "0" category refers to units consisting of the proprietor(s) and unpaid apprentices. From the "Annual Enumeration of Employees and Self-Employed Persons" as reported in the Statistical Abstract.

c/ Shift from 3 digit to 4 digit ISIC classification.

of the ILO Mission, the survey was limited in its first two years to Kenya's four major towns: Nairobi, Mombasa, Kisumu and Nakuru. In 1974 it was expanded to cover all towns of 2,000 or more plus selected market areas in rural districts.

Table 9 reports informal sector employment for 1974-78 in all branches of activity. At first glance it appears that the sector has grown at an annual rate of 9.8 percent between 1974 and 1979, in the case of manufacturing 9.5 percent. However, there is persuasive evidence (see Tables 1, 8, 10) that a substantial portion, or indeed all of this dynamism, derives from a classification change, wherein there was a shift of several thousand establishments with "0" wage-earners from the enumerated to the unenumerated manufacturing sector.¹ This same pattern of a continuous fall in registered units with 0 wage-earners (from 24,604 in 1974 to 5,697 in 1978 -- implying a drop in employment of some 47,000) is also true for the non-manufacturing sector. Hence, contrary to the commonly held opinion, the evidence appears to be insufficient to support a claim that the informal sector is growing.²

What is less open to doubt is the composition of the informal sector. It is frequently implied that craft manufacturing constitutes a large portion of small scale sector activities. As shown in Table 9, retail trade accounts for well over half of all employment as compared to only 15 percent for manufacturing. Tailoring, furniture, sawmilling, and furniture and metalworking

¹As can be seen from Table 1, there was an apparent reduction in employment in enumerated manufacturing establishments with "0" wage-earners of 6,300 between 1974 and 1978 in comparison with a gain of 4,500 in the informal sector during the same period.

²The fact that the "0"-employee units are not taken into account in any statistical series on employment may explain why this reclassification windfall to the informal sector has gone unnoticed. It should also be recalled that the production of these units, as well as that of the informal sector, is not recorded in the National Accounts.

Table 9

Employment in Unregistered Firms by Sector

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
	(thousands)					
Manufacturing	10.9	9.6	13.9	15.3	17.0	17.2
Repair Services	8.6	7.1	8.2	9.8	10.8	13.1
Other Services	3.6	2.8	4.1	4.8	4.9	5.4
Retail Trade	50.6	45.4	56.4	57.8	64.7	68.4
Catering	1.3	8.4	11.8	15.7	15.3	16.3
Construction and Transportation	1.2	0.7	0.5	1.2	1.2	1.2
Total	<u>76.2</u>	<u>74.0</u>	<u>94.9</u>	<u>104.6</u>	<u>113.9</u>	<u>121.6</u>
Manufacturing	14.3%	13.0%	14.6%	14.7%	14.9%	14.1%
Repair Services	11.3	9.6	8.6	9.4	9.5	10.8
Other Services	4.7	3.8	4.3	4.6	4.3	4.4
Retail Trade	66.4	61.3	59.4	55.6	56.8	56.3
Catering	1.7	11.3	12.4	15.1	13.4	13.4
Construction and Transportation	1.6	1.0	0.5	1.2	1.1	1.0
Total	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

NOTE: These figures represent numbers engaged in unenumerated enterprises in all towns having a population of 2,000 or more in 1969 plus "a number of trading centers in the rural areas." Central Bureau of Statistics, Informal Sector Survey 1979 (mimeograph, Nairobi, 1980).

Table 10

Employment in Selected Small-Scale Manufacturing and Repair Activities

	Grain Milling		Wearing Apparel		Leather Footwear		Sawmilling	
	E	U	E	U	E	U	E	U
1972	373	...	2,040	...	35	...	175	250
1973	318	...	1,155	88	33	...	260	318
1974	533	...	2,673	6,226	23	...	338	555
1975	460	...	1,795	5,729	43	192	260	409
1976	638	286	1,930	6,736	43	304	305	1,713
1977	335	456	623	6,475	98	975	53	2,125
1978	263	496	586	7,470	103	970	40	2,188

	Furniture and Fixtures		Metal Products		Motor Vehicle Repair	
	E	U	E	U	E	U
1972	745	1,416	363	874	633	782
1973	708	1,791	415	711	783	1,082
1974	1,370	2,395	768	1,376	1,483	3,238
1975	943	2,079	488	1,061	930	2,743
1976	980	3,127	543	1,507	998	2,993
1977	348	3,382	268	1,684	385	3,394
1978	327	3,711	239	1,997	560	3,944

	Shoe Repair		Electrical Repair		Watch and Jewelry Repair		Other Repair	
	E	U	E	U	E	U	E	U
1972	630	997	303	73	170	358	285	888
1973	263	1,618	373	228	255	671	315	4,646
1974	840	2,363	708	204	435	1,059	635	1,716
1975	820	1,454	503	482	358	768	585	1,612
1976	1,018	2,045	560	806	400	943	658	1,491
1977	228	2,551	308	760	248	1,128	343	1,928
1978	131	2,781	297	748	232	1,205	296	2,153

E: Employment in enumerated establishments engaging 0 and 1-4 wage employees.

U: Employment in unenumerated establishments.

Source: Annual Abstracts and Informal Sector Surveys

account for nine-tenths of all manufacturing employment. If repair activities are added in, the total rises to 23 or 24 percent. The two major items in this subsector are motor vehicle repair (second only to tailoring in the combined classification) and repair of shoes and leather products.

The specific activities in the Manufacturing and Repair subsectors are reported in Table 10. The employment under "E" refers to the "0" and "1-4" categories in the enumerated sector; the sharp fall-off occurs between 1976 and 1977. There is a fall-off in all categories between 1974 and 1975 when an outbreak of cholera forced the Government to temporarily close many establishments. The big three -- clothing, furniture, vehicle repair -- account for 54 percent of total employment. Entrepreneurial earnings are very high in furniture, fabricated metal products and, most spectacularly, vehicle repair; they are generally less than the minimum wage of 350 shillings per month for the entrepreneurs in shoe repair and for all wage employees (about one-quarter of the total).¹

It is an oft-stated but seldom verified dictum of the conventional wisdom that a major advantage of small scale industry is geographical dispersion. Because minimum cost can be achieved at low production volume, it is reasoned that, unlike large factories, small enterprises are capable of being supported by local markets in small towns and rural areas, with beneficial consequences for geographic dispersion of employment and income and reduced urban concentration. This belief is stated forcefully at a number of points in Kenya's current Development Plan. Certainly the logic of the decentralization thesis is correct, but stated as it is it entails the assumption that all inputs are identical at all locations. If as the

¹Based on "gross takings per person engaged" in the CBS survey, on net earnings reported by William House for Nairobi and on our own interviews.

earlier evidence suggests, the availability of entrepreneurship, skilled labor, raw materials and infrastructure of various kinds is markedly different in small towns, there can be no presumption that small scale industry will fulfill its potential. Hence, it is important to test the empirical correctness of the dispersion hypothesis in the Kenyan setting lest false hopes are raised. The data in Table 11 provide one such test.

There are forty-two towns in Kenya with population of over 2,000. Only twelve of these towns, as shown in Table 11, had 150 persons or more engaged in informal manufacturing activities in 1978. Two of the forty-two towns accounted for 41 percent of employment while twenty-four towns accounted for only 12 percent. This reflects a degree of urban concentration that is only slightly less than that of the enumerated sector where 51 percent of manufacturing employment in 1978 was concentrated in Nairobi and Mombasa. This comparison may be biased because no data exist to estimate the number of full-time equivalent persons engaged in rural craft production, whereas some 30,000 enumerated wage-earners in manufacturing are employed in agricultural processing. There is, however an available sample where the problem of differential coverage does not arise. This sample is the country's twenty-two towns that boast enumerated wage employment of at least 1,000. In this restricted universe Nairobi and Mombasa account for 69 percent of manufacturing employment in the formal sector and 64 percent in the unenumerated sector.¹ In this instance the advantage of the informal sector is reduced, with the degree of concentration rising from 80 to 93 percent of that of the formal sector in which employers of 50 or more dominate. Of the fourteen towns

¹Annual Abstract 1979, Table 247(d) and "Informal Sector Survey 1978."

Table 11

Unregistered Employment by Town, 1978

	<u>Manufacturing</u>	<u>Trade and Catering</u>	<u>Services</u>	<u>Total</u>
Nairobi	4,271	22,398	4,997	31,908
Mombasa	2,725	6,373	747	9,872
Kisumu	670	4,352	758	5,920
Thika	419	1,645	442	2,584
Embu	282	1,333	253	1,876
Karatina	270	995	240	1,533
Nakuru	270	1,636	595	2,592
Nyeri	247	838	313	1,405
Eldoret	202	1,076	322	1,630
Meru	194	1,254	320	1,783
Machakos	190	742	268	1,207
Kisii	182	818	186	1,215
Kericho	156	911	137	1,220
Webuye	152	557	123	832
28 Other Towns	<u>1,979</u>	<u>11,153</u>	<u>1,823</u>	<u>15,150</u>
Total Urban	12,210	56,081	11,524	80,727
Rural Trading Centres	<u>4,806</u>	<u>23,956</u>	<u>4,178</u>	<u>33,210</u>
Grand Total	17,016	80,037	15,702	113,937

SOURCE: CBS, Informal Sector Survey 1978.

reported in Table 11, all but one were also among the twenty-two towns of significant wage employment, suggesting that the informal sector is dependent in both its size and location upon the formal sector.¹

It can be seen from Table 11 that informal manufacturing activities are more geographically concentrated in the two metropolitan areas than the informal sector as a whole, 41 percent versus 37 percent. This also holds for the enumerated sector where the figures are 51 percent for manufacturing and 46 percent for all wage employment. The explanation is, of course, that commodities can be exported out of the locality in which they are produced whereas services cannot. All the surveys of rural small scale enterprise report that one of the difficulties faced by producers is that they must compete in their local markets against higher quality "imports" from Nairobi and Mombasa. In this competition local producers enjoy an advantage in transport costs, cheaper accomodation and cheaper labor; this is counterbalanced by less diverse, more expensive raw material supplies, lower-skill workers and less innovative, hard-driving entrepreneurs. Thus the limited capacity of artisan small industry to geographically disperse

¹The one town with an informal manufacturing sector exceeding 105 that did not also have significant employment was Karatina. Owing to its reputation for informal sector dynamism, it was decided to undertake a thorough street-by-street count and to conduct interviews. This was done on August 12, 1978 with the help of Paola Heinonen and Stephen O'Brien. The major areas of production in this entrepot rural town were furniture, lumber, bread, automotive repair and water tanks. All manufacturing and repair establishments were counted, which included many that qualified as formal sector establishments. Seventy-two establishments engaging 354 persons were recorded. This figure should have been considerably higher than the CBS Informal Sector count, carried out in June, which theoretically excluded producers in permanent quarters and/or with a postal address. In fact, the CBS figure was 410 persons, (270 in manufacturing, 140 in repair activities). While there are a number of possible explanations for the discrepancy, there are other reasons, discussed below, to believe that the CBS survey is subject to over-counting.

is rooted not only on the demand side in concentrated urban purchasing power but also on the supply side where the economies of agglomeration and entrepreneurial talent bias location toward a few geographic areas.¹

2.3. Traditional Small Industry: Characteristics of the Firm

What are some of the characteristics of traditional small industry firms? In a survey of the "informal sector" William House interviewed the business heads of 578 enterprises operating without benefit of a permanent structure in Nairobi in August 1977.² He found that 49 percent were one-man operations, with an average of 3.6 persons engaged in the other 51 percent. Of the 768 non-entrepreneurs, one-third were fee-paying apprentices while the others were wage-earners; most of these individuals, in the opinion of their employers, would leave to set up on their own. Forty-five percent of the manufacturing business heads had completed a primary school education or better; the great bulk of these individuals were not young, were not recent migrants and were not frustrated job-seekers from the formal sector. Net earnings for about half of these entrepreneurs exceeded the minimum wage of 350 shillings per month, with average returns in vehicle repair reaching

¹In a similar vein, Sir Arthur Lewis has recently observed "Industry is itself gregarious; most industrialists prefer to establish themselves in existing industrial centers, which already have not only the requisite physical infrastructure but also the network of institutions that binds industrial establishments together. One can work hard at establishing rural industries, but except in police states, success is bound to be limited." The Evolution of the International Economic Order, Princeton 1978, p. 43.

²W. J. House, "The 1977 Informal Sector Survey: Some Preliminary Results," University of Nairobi, July 1978.

2,400 shillings. By contrast, employee income was well below the minimum wage.¹ Lack of loan capital and a location secure against harassment from local authority policy were the principal bottlenecks to expansion in the eyes of the entrepreneurs.

Perhaps the most insightful research on the "informal sector" is that of the historian Kenneth King. In his book, The African Artisan, he focuses on the metal trades -- bicycle parts, hand-operated machinery, parafin lamps, vehicle repair -- by looking at the occupational histories of scores of individuals. His investigation reveals high but extremely irregular profits for all these crafts except parafin lamps. He attributes the volatility in earnings to the frequency of "the accidents of informality:" scrap metal supplies are unexpectedly diverted to a large formal sector producer, the workshop is erased without warning by the municipal bulldozer, workers quit, the entrepreneur is imprisoned for failure to pay a token income tax or for his participation in the "night division" and so on.² Risk is the order of the day.

¹As Kenneth King observes for the metal trades, "Since wages as an employee can be anywhere between 40 and 150 shillings depending upon experience and productivity, it is perhaps not surprising that the employees of 1971 are the self-employed of 1973. Indeed their mobility within wage labor, and their striving for self-employment is the most telling comment on those who admire the "appropriate" wage levels in the informal sector." The African Artisan: Education and the Informal Sector in Kenya (Heinemann: London 1977) p. 126.

²The 48 shilling tax to be paid by all employed workers were abolished in 1973. "In fact, one reason that they can compete with and undercut formal factory production is precisely that they can buy stolen metals at much lower prices. Depending on police vigilance, the "night division" of the informal sector is occasionally strong enough to receive orders for particular amounts required in various industries; but after a severe crackdown, such a source of metal can dry up completely." Ibid. p. 123.

The principal subject of King's investigation, however, is the informal apprentice system: How it currently operates and how it has functioned to Africanize what was still a predominantly Asian artisan small industry sector as late as the mid-1950s. Given the Asian predominance, it is not surprising that at the end of the colonial period in 1963 there were less than a half-dozen known African industrial enterprises employing more than ten workers.¹ A recognition of this very short entrepreneurial tradition is important both in establishing realistic time horizons and in judging the success of past small industry assistance programs.

In terms of traditional small industry itself, the apprentice system plays a central role in expanding the sector at a rate consonant with the growth in consumer demand. Apprentice training occurs through learning-by-doing and on-the-job instruction; the capacity of existing producers to take on apprentices is quite considerable. Moreover, because learning fees range from 300 shillings to 700 shillings, the training of apprentices adds significantly to a firm's net earnings. Thus all the ingredients are present for a highly competitive system and one that responds quickly to changes in consumer demand. The expansion sequence is as follows: an increase in demand leads to a price rise which in turn widens entrepreneurial earnings that act to attract a larger supply of apprentices and soon-to-be independent producers. The period of apprenticeship, ranging from a minimum

¹For a discussion of African entrepreneurship in trade and commerce, which had been developing since the late 19th century but was largely suppressed by the imposition of statutory racial monopolies during the 1925-35 period, see R. Van Zwanberg, An Economic History of Kenya and Uganda 1800-1970 (London 1975), Chapter 11; and Peter Marris and Anthony Somerset, African Businessmen (London 1971), Chapter 2.

of three months for parafin lamp-making to a maximum of twelve months for vehicle repair, defines the length of the gestation period for new capacity, with its attendant downward pressure on prices and profit.¹ The apprentice system contributes to minimizing prices to consumers of traditional sector commodities directly through its effect on competition and indirectly by adding a profitable joint-product to the firm's output, namely training services.

2.4. The Informal Sector: A Useful Conceptualization?

Before turning to a modern small industry, it might be appropriate to say something about the usefulness of the "informal sector" concept, both as a descriptive statistical category and as a theoretical framework for orienting policy. Although not invented by the ILO Mission of 1971, it was their articulation of the concept in the Kenyan setting that helped attract world-wide attention to their report and that has since resulted in a vigorous new (or resurrected) field of research.² Attempts are also under

¹Differences in entrepreneurial earnings between industries, reported above, should be related to differing skill and capital (including the full cost of apprenticeship) entry requirements. Preliminary field inquiry suggests that the extremely high differential enjoyed by vehicle repair is not founded on any permanent barrier to entry but rather is a transitory phenomenon reflecting a continuously high growth in demand which has brought with it large numbers of fee-paying apprentices (as many as ten to twelve per independent journeymen) and sharp rises in the price of substitute products, i.e., the cost of repair services provided by the large franchised auto dealers. In a very careful Nigerian study (Mabawonku, 1979), net earnings in auto repair were found to be only half those of furniture makers.

²International Labour Office, Employment, Incomes and Equality, especially Chapter 13 and Appendix 22. Perceptive discussions of "informality" in Kenya can be found in J. K. Mukui, "Anatomy of the Urban Informal Sector: A Study of Food Kiosks and Shoeblocks in Nairobi," The Informal Sector in Kenya, op. cit., and K. King, The African Artisan. It is worth noting that these authors collected their own interview data rather than relying upon student enumerators as have most of the other investigators in this area. For a more general discussion see S. V. Sethuraman, "The Urban Informal Sector: Concept, Measurement and Policy," International Labour Review, November-December 1977.

way, as we have seen, by the Government of Kenya to incorporate the concept as a statistical category and as a criterion for development assistance, e.g., the proposed £ 2.25 million Informal Sector Fund to be administered by the District Development Committees. We are inclined to the opinion that such attempts will entail painful contortions unless "informal" is simply taken as a code word for "small." The question then to be answered is whether "informal" has any dimensions other than the natural consequences of smallness.

There is less to the formal-informal dichotomy than meets the eye. Occular evidence does seem to support the notion in certain areas of Nairobi where teeming concentrations of craftsmen, hawkers, repairmen and the like pursue their trades in crowded make-shift structures. In stark contrast are the adjacent former-European residential and industrial areas, models of orderly spacious layout, handsome sturdy structures and well-cared for landscaping. But is this a general phenomenon? As Kenneth King has noted, the racially-segregated European towns in Kenya grew up around the assumption that Africans had no craft skills and that save for the Asian community, such activities needed no particular physical provisions.¹ The dictates of tourism and the deep resolve to refute long-standing white settler assertions about an independent Kenya's inability to uphold standards has resulted in the maintenance of the old order with extensive reliance in Nairobi and Mombasa upon the municipal bulldozer.² In other countries where there is no white

¹ Ibid., p. 211.

² We owe this point to Anthony Somerset. Another observer, Michael Burisch, notes that lack of financial wherewithal on the part of small producers to compete in the offering of bribes to municipal zoning authorities has provided material support to the continuance of high zoning standards.

settler tradition, the equivalent of Kenya's informal sector does not meet the eye.

What practical criteria might be applied to decide whether an establishment should or should not be classified as informal? Some have defined the central characteristic of informality as that of self-employment. Clearly from our earlier description this does not hold. The ILO Mission proposed a more complicated set of characteristics: ease of entry, reliance on indigenous materials, family ownership, small scale, labor-intensive and adapted technology, skills acquired outside the formal school system and unregulated competitive markets.¹ However, as an ILO sponsored researcher in Sierra Leone observed, these characteristics do not yield meaningful results when applied to actual field conditions.² Similarly the criteria recommended by Dr. Sethuraman of the ILO seem difficult to implement as well as of questionable theoretical validity: all enterprises employing less than eleven workers plus those firms that do not depend on formal financial institutions or in which more than one member of the family is engaged.³

Kenya's Central Bureau of Statistics chose a single criterion, all activities carried on in open areas or in temporary structures. In practice this has meant all enterprises that do not have a postal box. In 1974 it was decided to drop all units in municipal market stalls, many of which have postal boxes, from the Annual Enumeration mail survey and to cover them instead under the informal sector survey street count. With this

¹ILO, Employment, Incomes and Equality, p. 6.

²D. A. Fowler, "The Informal Sector of Freetown," ILO World Employment Program: Geneva, April 1978, pp. 1-3.

³S. V. Sethuraman, "The Urban Informal Sector: Concept Measurement and Policy," International Labour Review, November-December 1977.

exception, the formal and informal sectors are more exactly described as the postal and non-postal sectors.

How accurately does the informal sector survey measure what it is supposed to? Occupying a permanent premise and having a postal address are not synonymous. In our interviews we encountered the former without the latter and vice versa.¹ The decision to rent a postal box, currently 80/- a year, is more dependent on the location of one's customers and suppliers than on the nature of one's premise. However, this imperfection is swamped by a much larger bias to count the great majority of small enterprises whether in the open or in a shop, whether with a postal address or without. This bias stems from ambiguous official instructions to enumerators and from the fact that to tally all activities as informal minimized inconvenience for both enumerators and respondents.² Our count of small enterprises in Karatina lends support to this contention.

The best solution, in our opinion, to the problems of categorical division and overlapping coverage is to discard the distinction based on premises and simply record by street count all establishments by product

¹This is also reported by KIE in the Taita-Taveta District report where in Voi 96 percent of their respondents had post boxes but only 75 percent were in permanent quarters; in Taveta 100 percent had post boxes and 83 percent had permanent sheds. Op. cit., p. 65.

²This can be seen from the instructions for the 1978 survey:
 "The purpose of the survey is to enumerate the number of persons engaged in small activities . . . The method of counting is by means of a tally. When covering an area always go through all spots where the informal activities may be found. For example, a shop may be rented by three or four different persons, e.g., tailors, shoemakers. There may be no clear cut between informal and formal activities during the time of your coverage. But if you suspect an establishment to be formal, please ask the owner whether he/she had received Form LE/78/A . If the form has been received, please do not cover the establishment under informal. Alternatively, if the form was not received, cover it but take the full address to be cross-checked at Herufi House with the Master File section."

and numbers engaged up to the size of nine persons. The more detailed postal survey should be limited to units engaging ten or more. Aggregate employment statistics would no longer be confined to the postal survey, but rather reflect both surveys. While there might be some loss of information for the small firms with post boxes, with a non-response rate of more than 60 percent for "0" and 1-4" sized units the loss could prove to be more apparent than real.

In terms of policy, what is lost by abandonment of the formal-informal conceptual framework? The ILO Mission's diagnosis of the consequences of Kenya's licensing system (we would add municipal planning and zoning) for the unlicensed producer is certainly correct -- the discomfort and uncertainty of earning a livelihood are magnified and hence the output of this sector, which serves low-income consumers for the most part, is lower than it would be in the absence of licensing. But when it comes to formally recognized firms, to claim that "Economic activities formally and officially recognized by the Government enjoy..direct access to credit, foreign exchange concessions, work permits for foreign technicians..restriction of competition through tariffs, quotas and trade licensing"¹ is certainly incorrect. Small firms in the formal sector do not enjoy these advantages; these advantages are not attributes of formality.

The critical facts are that individual large-scale producers who can guarantee to supply a large part of the national market and provide high-wage employment for hundreds of workers can by virtue of this normally negotiate some degree of privileged access to certain resources. Owing to economies of scale, the number of potential competitors is slight, so that failure

¹Employment, Income and Equality, p. 504.

to hold effective protection to a low level results in excessive profit earnings. For small scale industry the size factor operates in the reverse direction. Entry is relatively easy, so that long-run profits are likely to be competed to modest levels irrespective of the extent of effective protection; hence the means to innovate and the cushion to survive mistakes is frequently absent. This is one reason why the small industry sector tends to expand by replication rather than by growth of existing firms.

It is also size rather than the absence of formal connections to the regulatory system which makes it costly for the Government to channel resources to this sector. Not only are the administrative costs multiplied many fold by the minaturization (the sheer number of firms to be dealt with), but it is a corollary of the limited managerial specialization characteristic of the small producer that reliable records pertaining to the entrepreneur's assets or his past business performance are very few. The results are (a) more mistaken judgments about whether an individual has the ability to service a loan or to benefit from technical assistance, and (b) the consequent higher resource cost for achieving a given degree of success. However, these "transaction costs" cut in both directions. While small enterprises are discriminated against in terms of advantages not given by the Government, so too are they a privileged sector that enjoy a very substantial subsidy in the form of non-enforcement of income tax, of social security, of training levies, of factory safety standards and of the minimum wage. And in all these matters it is size and not status as formal or informal that is the controlling factor.

2.5. Non-Traditional Small Industry

We now turn to our second category of non-traditional small industry, which for the most part falls in urban areas. Here the defining attribute is a significant degree of technical or organizational innovation with respect to the prevailing level of experience. Because the normal course of development in most areas of human endeavor is from the less complex to the more complex, non-traditional small industry will usually be associated with enterprises engaging more than nine workers and utilizing manufacturing techniques that entail considerable division of labor, managerial coordination and extensive use of written records.

Where the boundaries are drawn defining non-traditional small industry is an arbitrary matter. Clearly they shift upwards as a country develops. If an employment index is used, at Kenya's present juncture a reasonable demarcation would seem to be 10 to 100 employees. It is in this range that most of the country's one man or one family-directed manufacturing enterprises fall. This size category catches all the 150-odd African firms that occupy the five industrial estates or are receiving KIE assistance. It also includes a large number of non-African family-run concerns. The one exception to the individual or family-managed enterprise is a fairly small group of establishments owned by multinational corporations that are engaged in tariff-protected "finishing touch" activities that are subsidiary to the marketing of internationally trade-marked products, e.g., mixing paint, packaging pharmaceuticals.

The range of products manufactured in the non-traditional small scale sector, as noted earlier, is far greater than that of the artisan sector. Metal goods, for instance, comprise a spectrum running from paper clips, rivets, zippers and glass frames to castings and electrical fixtures to

milk churns, tubular furniture, bicycles and farm implements. A partial list of food products includes noodles, biscuits, sweets, dehydrated soups, fruit and vegetable canning, mineral waters, fruit drinks, spices, baking powder and processed dairy products. An equally lengthy itemization could be carried out for agricultural processing, clothing-related goods, rubber products, chemicals and toiletries, and wood and paper products.

What is the numerical extent of manufacturing enterprises employing 10 to 100? For the year 1978 the Central Bureau of Statistics reports 605 firms engaging 10 to 49 workers; there were probably another 180 establishments in the 50-100 range.¹ As can be seen from Table 12, in contrast to enumerated units engaging 5 to 9 workers where there has been a decline, firms employing 10 to 49 have been increasing slowly, at least until 1976. Surprisingly, the number of establishments to 50-plus has grown at a much faster rate; i.e., 9.6 percent versus 3.6 percent. Although the absolute number of employees in the 10-49 group has climbed, its share in the enumerated manufacturing labor force has fallen from 20 percent in 1969 to 11 percent in 1978. In short, the distorted industrial structure revealed in the 1972 data has continued to worsen. Just to halt this diminishing trend means a tripling in the pace of new business formation for the 10-49 sector (with an even greater spurt in performance in the 0-9 sector). And of course to increase the share of output and employment contributed by the firms engaging 1-49, which we have argued should be a major aim of industrial policy, calls for an even higher rate of new enterprise formation relative to the large-scale sector.

¹Arrived at by applying the share of this size group in the 1972 Census to the total number of establishments in 1977. In terms of value added and employment the 50-99 employee units accounted for 11.6 percent and 15.0 percent respectively. For the 1-49 group the comparable figures are 14.8 percent and 17.8 percent.

Table 12

Manufacturing Establishments Employing 10 or More

Year	Firms by Number Employed			Percent of Enumerated Manufacturing Labor Force	
	<u>10-19</u>	<u>20-49</u>	<u>50+</u>	<u>10-49</u>	<u>50+</u>
1966	245	232	190	16.0%	77.5%
1969	256	265	262	20.5	72.0
1972*	280 // 216	318 // 283	379 // 312	14.4	82.0
1974	289	317	420	13.9	83.2
1976	286	344	444	13.8	83.5
1978	266	339	477	11.3	86.9

*Change in industrial classification, principally deletion of repair activities.

Source: CBS Statistical Abstract, various years.

III. GOVERNMENT PROGRAMS

Before examining Government programs to advance small scale industry, it will be helpful to sketch in key Government initiatives in the area of commercial policy in the mid-1960s. These actions restructured large portions of Kenya's urban economy much as slightly earlier initiatives -- The Agricultural Finance Corporation, the Land Bank, the Kenya Dairy Board, the Settlement Fund Trustees -- had restructured the rural economy.¹

First, a series of far ranging assistance programs were launched, mostly under the umbrella of the Industrial and Commercial Development Corporation. Known as the Industrial Development Corporation from its inception in 1954 to 1964, the principal focus of activity during the Corporation's first decade had been large scale joint enterprises with foreign investors. During 1965 and 1966 major lending schemes were put in hand for African traders, for African contractors and for the acquiring by Africans of commercial property. The ICDC Investment and ICDC Property companies were formed to acquire downtown properties in major towns to be made available at low rents so that the non-African monopoly of these choice commercial locations could be broken. The Kenya National Trading Corporation, established in 1965, was designed to furnish African traders through its 27 depots with the same economies of scale in purchasing and credit as enjoyed by the dominant Asian and European commercial establishments.² Private banks

¹For a comprehensive review, see Donald Rothchild, Racial Bargaining in Independent Kenya, (Oxford University Press: London 1973), chapter 8.

²In addition KNTC has acquired statutory control over the distribution of some 40 commodities -- e.g., sugar, rice imported cotton fabrics -- although where bottlenecks occur, as in the case of cement in 1979, these exclusive distribution rights are withdrawn. KNTC was a source of short-term credit on a massive scale until about 1970 when accumulated bad debts in excess of K£ 1 million compelled a shift to a cash-only policy.

were persuaded to increase their lending to small Kenyan business. Preferences were given to African builders for all contracts under £ 2,500. In the manufacturing area, major programs included an expanded revolving loan fund, an ambitious nursery industrial estate program and the rural industrial development centers.

These assistance measures were complemented in 1967 by three legislative enactments that operated on the structure of commerce in a more direct, coercive fashion. The Land Control Act prohibits sale of land to non-citizens or to private companies which include non-citizens. The Immigration Act requires all resident non-citizens to obtain one or two-year working permits as a condition for continued residence; where qualified Africans are available to fill a given job, the working permits are not renewed. The Trade Licensing Act excludes non-citizens from trading in the non-metropolitan areas of the country and from handling certain commodities. In its implementation quit notices have been served to citizens as well as non-citizens and in metropolitan business areas as well as the prescribed areas.

The cumulative impact of these measures was an emigration of some 40,000 Asians and 15,000 Europeans in the period 1964-1970 and a matching advance of African as wage-earners and proprietors. In the entrepreneurial field, buy-outs were not limited to commerce and real estate. In manufacturing the Trade Licensing Act resulted in the transfer into African hands of all but the largest establishments in maize milling, sawmilling, baking, tailoring, printing and auto repair. Of course, it is the effect of a permanently altered opportunity structure for African entrepreneurs in commerce, services and industry that is the significant long-term consequence of these developments of the mid-1960s. Since that time the rate of African advance into

the higher reaches of the economy has not been held up for want of access to markets or to capital, but rather by the speed at which entrepreneurial capacity can be formed.

3.1. Kenya's Small Industry Development Program

The major components of Kenya's assistance effort to small scale industry are currently administered by a single agency. Following the visit of an Indian Advisory team in 1966, Kenya Industrial Estates Ltd. was established as a wholly-owned subsidiary of ICDC. Its original objective, which fifteen years later remains as one of its principal activities, has been the development of African entrepreneurship through the establishment of nursery-type industrial estates. The program is modelled after similar programs in India. In 1971 the newly formulated Rural Industrial Development Programme was placed under the administration of KIE and in 1973 KIE commenced its lending activities with loans to RIDC clients; in 1975 it began to take over the equipment loan financing from ICDC with respect to the enterprises established in the industrial estates. By the end of 1980 KIE was lending £ 5.6 million to 288 entrepreneurs.

The nature and extent of KIE's current operations can be seen in Table 13. In the pages that follow we will review each of the three major programs -- the RIDCs, the urban industrial estates, and the capital loan program.

The Rural Industrial Development Program, like the Special Rural Development Program, had its origins in the 1966 Kericho Conference.¹

¹While the main emphasis of the Special Rural Development Programme was on raising agricultural output, it was recognized that rural industries would play a significant role in producing farm inputs, in processing primary produce and in manufacturing rural consumer goods. The principal vehicle for rural industrialization was to be the RIDCs.

Table 13

A Summary of KIE Operations

KIE Sources and Uses of Funds 1980
(thousands of Kenya pounds^a)

Paid-in Capital and Reserves	2,587	Fixed Assets	3,247
Government Loans	6,541	Loans Outstanding	4,887
Swedish Loans	1,325	Undisbursed loans	3,091
IDA Credit	3,800	Uncommitted Funds	11,952
German Loans	7,056		
Foreign Aid Grants	1,868		
	<u>23,177</u>		<u>23,177</u>

Income and Expenditure 1979-1980

(thousands of Kenya pounds)

Income		Expenditures	
Rents	185	Salaries	537
Service charges	52	Depreciation	103
Interest	603	Provision for bad debt	726
Other	33	Other	268
	<u>873(b)</u>		<u>1,634</u>

Profit (Loss) (761)

Industrial Estates:	5	RIDCs:	11
Estate Units Completed:	140	IPA Units Completed:	90
Estate Units Occupied	110	IPA Units Occupied:	82

Total KIE Employees: 379

Kenyan Professionals: 82
 Non-Professionals: 276
 AID Advisors (c): 21

-
- NOTES: (a) Kenya £ = U.S. \$2.67
 (b) These figures include uncollected accounts
 (c) Provided by the Governments of Germany (10), Sweden (3), Japan (2), UNIDO (4) and the World Bank (2)

As it happened the RIDP was not included in the integrated program, but assigned to KIE for separate administration. The program was launched in late 1971 with assistance from the Government of Denmark. The first four centers were being completed in Nyeri, Machakos, Kakamega and Embu (with Norwegian financing and staff) in late 1972. A second generation of RIDCs was opened with the help of German and Swedish technical assistance at Kisi in 1976, Malindi and Voi in 1977, Homa Bay in 1979 and at Miru and Muranga in 1980. The 1979-83 Development Plan calls for the establishment of an additional 22 Centres.

An RIDC consists of administrative offices, classrooms and a Common Facility Workshop made up of three units (woodworking, sheetmetal, mechanical). Each of the original Centres, along with two staff houses, cost approximately £ 75,000. The full staffing complement for an RIDC includes the Manager (BA Economics), a Mechanical Engineer with some training in small business management (so far filled by expatriate advisers), five shop technicians, a store keeper, two drivers, two watchmen, and a clerical staff of five. All in all the RIDCs have absorbed about one-third of KIEs manpower.

While the Centres have evolved in certain common directions since their inception the program of each has also developed distinctive features reflecting local opportunities and staff interests.¹ The Embu RIDC focused on the introduction of agricultural implements, working in cooperation with the Special Rural Development Programme in its area. The Kakamega RIDC has aimed at giving birth to new small and medium scale enterprises processing local agricultural and mineral materials (e.g., sugar, brick, pottery). The Machakos RIDC has been distinctive both in its efforts to introduce a

¹Much of the history of RIDC policy and performance in the following paragraphs is drawn from Ian Livingstone's excellent study (Livingstone, 1975) and the research of Michael Burisch as reported in the previously cited KIE/GOPA reports.

wide range of new products and its technology extension work. In Nyeri's case it has been the use of short courses as a tool for starting new enterprises.

The broad development pattern common to the entire program has been a progression through three stages. In the first period the central thrust of the program was to develop entrepreneurial skills in technical fields through extension work. Efforts were concentrated on woodworking and sheetmetal. Clients were makers of furniture, charcoal braziers, metal household utensils and those engaged in automotive and body work repair. Demonstration of processes and equipment, on-the-job training, assistance with price calculation and bookkeeping were all brought to the client's place of business. Free back-up support in terms of management consultation, project preparation and short courses were provided at the Centres themselves.

By 1974 extension activities had been sharply curtailed at all Centres, falling from about 40 percent of staff time to about 10 percent. One problem was the availability and cost of transportation: figuring in fuel and the technician's time, the cost per client contact hour was 150 shillings to 200 shillings. Combined with this high cost was a very meager net benefit. In February 1974, 131 of 205 clients (64 percent) were considered to have made no progress at all as a result of extension. The Machakos team, whose outreach effort covered a hundred firms and was the most carefully planned, concluded:

. . . it must be considered a reality that RIDP extension activities are not able to raise the general level of the entrepreneur's performance or that of his employees.
 . . . The less progressive producers are satisfied with

their present situation or are too old to be receptive. As for advanced clients, they consider the presence of the technician as a disturbance."¹

In other words, it would appear that the RIDCs did not have any truly significant innovations to offer artisan industry as it is currently organized.

In the second phase of the RIDP, from providing technical know-how through extension services to a large number of widely disbursed producers, the focus shifted to providing physical premises and support services to comparatively few enterprises. This has taken the form of Industrial Promotion Areas which, up until the present, have been located adjacent to the RIDCs which are themselves located in either provincial or district towns. IPAs are mini-industrial estates comprised of an unpaved access road and one or more blocks of workshops; construction is of wood and cement floor and corrugated iron roofing. Water and electricity are available. The largest IPA houses about thirteen enterprises, the smallest about six. While very modest compared to the concrete structures in the KIE estates, the IPA workshops represent a great advance over their tenants' previous quarters. In addition to the premises, the tenants benefit from low rents, easy access to equipment and expertise in the Common Facility Workshops, participation in raw material bulk purchasing schemes and marketing assistance.

¹D. A. Edebe and K. Geels, "On Extension Service at RIDC," (Machakos, April 1974) as cited in Livingstone, op. cit., p. 20. The "standard working plan" called for a sequence of field visits and work at the Centre with each "intensive" client being introduced to at least two new products: the latter would initially make these at the Centre workshop under technician supervision. At least one jig or new tool would be added to his workshop procedures and on the management side cash and ledger books would be introduced.

The third phase was in part a natural outgrowth of the second. Because of the attractiveness of the IPAs, especially the low rent, it was necessary to screen. From selecting these candidates who would most benefit from the RIDC facilities, it was a short step to picking candidates who were interested in trying a new industry or at least a new, more demanding product. This "project approach" also fitted well with the activities of the Product Development Unit at Machakos and it was very close to what KIE was already doing with respect to its large estates in Nairobi and Nakuru.

What assessments can be made of recent RIDCs performance? Looking at the IPAs, producers of traditional small industry products -- principally wooden furniture, sheetmetal and hand-forged steel products, a variety of sewn goods -- constitute 60 to 70 percent of IPA tenants. While there have been some problems on rental and loan repayment arrears, most of these enterprises have benefitted from RIDC facilities and have been commercially successful. It is also true that only one or two of these tenants have developed to the point of leaving the estate and that the principal attraction was not the technical assistance but a subsidized rent that is still about half the cost of a comparable free market alternative. With respect to the 30 to 40 percent of IPA tenants producing non-traditional commodities, the failure rate has been high.

Given the staffing of an RIDC, the total number of entrepreneurs served has been disappointly small. In 1978 at Machakos there were 12 tenant clients and 17 outsiders. In Kakamega, with three Danish advisers and fifteen Kenyans, there were 8 inside and 16 outside clients. At Embu the number was 6 and 12. At Nyeri, having no IPA, there were about 35 outside clients being actively served. And in many cases the amount of

attention outside clients have received has been slight.¹ Outside clients come to the Centres: extension services have for several years been terminated as have been training courses given in the Centre's classrooms. Finally, the utilization of workshop facilities, discussed subsequently, has been far below capacity. On a very rough count, two clients are served for every one RIDC employee.

Much of the explanation for this modest performance has been the amount of time absorbed by the project preparation, entrepreneur recruitment and subsequent operational problems. Four or five man-years have been absorbed by two projects alone, Sagana Tanneries and Kabras Investment Ltd. (a small scale, open-pari sugar refinery). These pioneering ventures, at an investment cost of about £ 225,000 apiece, are considered technical successes by their RIDC advisors although both have never operated at economic levels of capacity utilization owing to severe managerial shortcomings. The RIDC approach to projects and the entrepreneurial problems encountered are made clear by the following quotes:

"Projects are generally prepared by the Centre staff without much participation of the clients. This approach must be changed if the clients are expected to be really committed to their projects.²

"Entrepreneurs for these projects generally have a good education and basic technical skills. They are able to raise some working capital through borrowing from lending institutions and can draw on their own savings. Though more often than not they lack in practical experience, with most positive factors on their side and given the right assistance, they should be able to produce high quality products. The biggest single problem with this category of entrepreneurs, however, is that they are normally

¹KIE/GOPA, Kakamega Basis Industrial Estate, p. 124.

²KIE/GOPA, The Voi RIDC, p. 112.

salaried employees in public or private concerns or self-employed in some successful undertakings. They are most unwilling to leave the security of salaried employment and opt for an industrial venture whose risk they are not able to measure. They may take up such a venture at second thought (with 90 percent of the capital provided by KIE), but in most cases they are not willing to take it as a full-time job. The venture is left in the hands of employees who may not be competent to run it effectively. Eventually the fate of such a venture is anybody's guess.¹ This is a serious problem facing all RIDCs and the Estates.¹

A brief recounting of the Sagana Tanning venture provides some insights into the workings of the project approach and the tortuous path of entrepreneurial development. The project was conceived by the NORAD advisor at Embu when he encountered on his home leave a forty-year old tannery in Norway that was being closed down because of uneconomic labor-intensity and rising standards with respect to noxious odors. After assembling four interested Kenyans -- including two Bata employees -- all the equipment was acquired and shipped to Kenya for £ 74,000. KIE lent the entrepreneurs the £ 74,000 with the stipulation that they raise £ 30,000 in equity. An appropriate 13 acre site was found in Sagana and rented from the county council. For one year the NORAD advisor worked virtually full-time supervising the erection of a 600-by-200 foot building and construction of the requisite waterworks.

With the help of a technician from Norway all the equipment was installed and production successfully initiated by late 1976. However production remained at a very low level and the planned exports of high-value finished leather to Scandinavia never materialized. Two problems had surfaced. When the original four investors found that they were unable (or unwilling) to raise the required £ 30,000, it was necessary to bring

¹ KIE/GOPA, Kakamega Basis Industrial Estate, p. 125.

in eight more partners. No longer holding a controlling interest, the key technical person was reluctant to exchange his remunerative position at Bata for a high risk venture whose direction would be under other, less competent individuals. Thus with "second string" day-to-day technical management, quality problems arose at the start.

On another front, it developed that the county council did not have a secure title to the land which had been leased at a concessional rent. Putative private owners appeared in court demanding title and a far higher rent: a consequent lien on its fixed assets extinguished the tannery's collateral for a £ 40,000 working capital overdraft from Barclay's Bank. Problems of quality were now compounded by a severe credit squeeze. In the meantime the manager and the accountant were embezzling a sizeable portion of what cash flow there was.

In 1980, after four years of losses, the acquisition of a Scottish manager and an additional equity contribution from the shareholders gave promise of turning the situation around. Production reached 50 percent of capacity on the basis of sales to three domestic shoe factories. Although not as profitable as exports, the Kenyan market can absorb all the leather Sagana can produce and its quality standards are ones that Sagana can attain. Although there had been no repayment to either Barclay's or KIE, on the basis of its improved prospects the company approached KIE for a second loan to finance spare parts and working capital.

3.2. The Industrial Estate Program

There are currently five industrial estates that are fully or partially operational. As of mid-1980 approximately 140 factory units were in place

and of these about 110 were rented out. The 30 vacant units were attributable to difficulties in locating suitable entrepreneurs in Mombasa and Kisumu (occupancy less than 60%) and to normal turnover as defunct enterprises are replaced. Only 4 firms have left the estates to move to larger premises.

Approximately 40 percent of estate tenants employ less than 10 workers.¹ Some of the products in this size category include wafer biscuits, noodles, egg cartons, surgical bandages, screen printing, gameskin articles, furniture, fishing flies, electric armature winding and a wide variety of metal products. Firms employing 10 to 25 workers account for about 30 percent of the tenants and are engaged in the manufacture of such items as woven fabric labels, elastic tapes, glue, zippers, buttons, shoe eyelets, shoes, polythene bags, flashlights, milk churns, iron castings and the assembly of weighing devices, water meters, gas cylinders and electric fixtures. The largest size group, employing over 25 persons, account for another 30 percent of the tenants and produce such items as uniforms, fashion garments, shoe laces, toiletries, carbon paper, retreaded tires, metal furniture, steel window frames, bicycles and farm implements. The largest firm, about to move off the estate, engages 97 workers in the production of metal hinges. It should be noted that there is substantial product overlap between the estates and IPAs; some common products are uniforms, leather goods, wheelbarrows, farm implements and furniture.

Table 14 presents data on the number and size of client firms in mid-1979 for both the estate program and the RIDCs.

A large majority of the industries in the five estates are not the result of private entrepreneurial initiative, but rather they are the outcome

¹The proportions given here are based on data for 66 firms at the start of 1978 as reported in KIE Newsletter, Number 14.

Table 14

KIE Client Firms by Employment Size 1979

	<u>0-9</u>	<u>10-19</u>	<u>20-49</u>	<u>50+</u>	<u>Total</u>
Industrial Estates					
Nairobi	20	16	17	4	57
Other	12	19	13	3	47
RIDCs	<u>87</u>	<u>23</u>	<u>11</u>	<u>2</u>	<u>123</u>
TOTAL	119	58	41	9	227

SOURCE: KIE, Annual Reports and Accounts 1978-79.

of a process of project identification and project development by KIE staff. The initial idea for a new industry is followed up by a project paper which consists of a feasibility investigation covering the market, technology and equipment, requisite labor skills, probable unit production cost, profit margins and a financial analysis. Where the result is favorable, the project is added to the recommended list for prospective entrepreneurs. Once a suitable entrepreneur has agreed to put up 15 percent of the capital cost, KIE staff assist him or her in every detail of project implementation -- securing a factory premise, getting competitive quotations on imported equipment, carrying out a revised feasibility study and financial analysis, obtaining an ICDC or KIE loan, ordering and installing the equipment and providing follow-up assistance once production has begun. This same project procedure was extended to the RIDCs in 1975 as mentioned earlier.

The procedures just described -- along with all the bureaucratic negotiations for municipal licenses, import permits, loan agreements, etc. -- are immensely time-consuming and absorb the bulk of the energies of KIE technical and professional staff. A single local project, such as Sagana Tanneries, might require the equivalent of two years of a senior advisor's time for implementation and the solution of initial operational problems. Given the demands of the project approach, it is not surprising that it has proved impossible to render any significant technical assistance to non-project enterprises.

Paralleling the Common Facility Workshops in the RIDCs, each industrial estate has a Technical Service Centre. It was intended that, following Indian practice, the TSC would focus mainly on producers within the estate. Equipped with a variety of relatively sophisticated machine tools, these units were to (a) assist tenants with equipment installation, (b) render

repair services and provide spare parts, and (c) make available common facilities for short-term rental by tenants to meet specialized needs. With the help of a German Engineer the Nairobi TSC (opened 1968) has gradually built up a group of about 25 skilled technicians and machinists who are capable of providing the services described. Nakuru is at an intermediate position while TSC staff skills at Kisumu and Mombasa are still in an early stage of development.

A realistic assessment of demand for TSC services was never undertaken and from the outset only a small fraction of capacity was absorbed by internal demand. Given the nature of the industries that have been established, most tenants have a fairly limited need for engineering services. This modest potential is further diminished by the fact that tenants go outside the estate for a substantial portion of their jobbing. Questioning in the Nairobi estate indicated that while the TSC is usually competitive in terms of price and quality with outside Asian workshops, the latter complete jobs far more quickly and this time factor is often critical. (It would seem that the patronage of the Nairobi TSC would be even less if cash payment for work was required: as of March 1979 unpaid accounts amounted to over a quarter million shillings). In an effort to take up the slack TSCs have turned to developing outside business, particularly in the case of Nairobi.

Recent investigations by consultants provide a closer insight into the operational problems of both the TSCs and the CFWs of the RIDCs.¹ Although both the TSCs and the CFWs are supposed to be self-supporting, none come close to achieving that goal. The Nairobi TSC has been the most

¹Reports by Jacob Levitsky and A. Kuenle, 1978.

successful, reported income covering 35 to 40 percent of its annual costs of £ 35,000; Kisumu is the worst, covering only 11 percent of its annual costs of £ 12,850. The cost of operating the CFWs in 1977 ranged between £ 7,400 and £ 9,000 with income covering from 4 to 16 percent. While the charge per hour of work in the TSC is extremely low, average time per job exceed the estimated time by a factor of three. Fixed salaries rather than piece rates, no mechanism for disciplining staff, a shortage of experienced foremen and rigid bureaucratic procedures governing arrangements with customers have all played a role. Instances of missing inventory and unreported income are encountered in both TSCs and CFWs. In terms of common facility rental by clients, only the woodworking equipment is well utilized.

As a result of the 1978 reports just summarized, hourly charges for workshop facilities were raised and greater effort was made to secure outside business. By 1980 the annual deficits on this operation had been significantly reduced, although they were still far from being eliminated.

The case history of an agricultural implements enterprise located in one of the industrial estates illustrates the full range of services that KIE provides its most promising clients. "Mr. Onyango," an Agricultural Promotion Specialist with Imperial Chemical Industries, responded to a KIE ad in 1974. Of the project feasibility studies that KIE had prepared, the choice of agricultural tools was a natural one: Onyango possessed a B.Sc. in agronomy and a diploma in agricultural engineering and previous to his ICI position had served as Provincial Statistical Officer and as Planning Officer with the Maize Board.

The venture was launched in 1975, with fixed assets of £ 4,050 being financed by a KIE loan and the entrepreneur's equity of £ 4,500 providing

working capital. Initially, the firm was run by a hired manager, but problems of inefficiency, speculation and no profits compelled Mr. Onyango to resign from ICI in 1977 so as to undertake full-time management. The firm produces jembes (the traditional hoe), fork jembes, plows, maize shellers and pulleys, utilizing essentially artisan techniques. By 1980 paid-up equity had grown to £ 7,000 and the firm had an overdraft from Barclay's of £ 2,500; no loan repayments had been made. The principal addition to fixed assets appeared to be two vehicles.¹ Competition from larger, more efficient Asian firms seem to be the principal threat to the growth and survival of the firm.

The firm initially employed seven workers. When visited in 1978 employment had reached forty-seven in two shifts; by the mid-1980 recession it was down to twenty-five. After several years of losses, net profits were earned in 1978 (£ 1,350 on sales of £ 50,000) and 1979 (£ 1,639 on sales of £ 35,000); a loss was sustained in 1980.

What kind of help has the entrepreneur received from KIE? In addition to his loan and rented factory unit, the firm has received frequent assistance from the estate engineer in machining of parts and interpretations of drawings. The TSC agreed to manufacture the most difficult parts of the ox plow at reasonable prices. The estate economist has assisted in writing letters to overseas companies and in discussions with potential foreign partners. KIE has served as intermediary in securing large orders from public agencies and international programs, e.g., Freedom from Hunger. Mr. Onyango is one of sixteen KIE entrepreneurs to partake in a four-week management training

¹ Inspection of a number of KIE client balance sheets indicates that it is common for vehicles to constitute as much as 50 percent of fixed assets for smaller firms. In this case an election campaign for Parliament in 1979 (unsuccessful) probably was germane to the purchase of at least one of the cars.

program in Dusseldorf in November 1978, and a two week follow-up course in Kenya on cost accounting and short-term finance. Mr. Onyango also received extensive individual counselling from KIEs German extension accountant on reorganizing the finances of his company and in the preparation of financial statements for the purpose of obtaining additional overdrafts.

3.3. Lending Programs

We now turn to the loan program, which is also administered by KIE. The earliest lending scheme for African businessmen was the District Joint Loan Board, established in 1956, shortly after the Emergency. Since that time the thirty-three DJLB's have made more than 18,000 two-to-three year loans, normally for amounts less than £ 500, to small African traders and, to a much lesser extent, to traditional artisan producers. Development lending for manufacturing proper began in 1961 with the Small Industry Revolving Loan Fund, financed by an initial grant of £ 50,000 from USAID and administered by ICDC. Hampered by a lack of viable projects, only 51 loans had been issued by June 1967 for a total of £ 86,500. With the opening up of the industrial estates and the RIDCs, with their more ambitious undertakings, the volume of lending rose sharply: when the administration of the Revolving Loan Fund was handed over to KIE in 1978 some £ 2.2 million had been lent out to 70 borrowers. This implies a rise in average loan size from £ 1,700 in 1967 to £ 15,890 in 1978, as measured in constant 1968 prices. As of March 1979 an additional £ 2 million had been lent out directly by KIE and the RIDCs to some 165 enterprises.

The experience of the Revolving Loan Fund prior to 1968 had been well documented by Peter Marris and Anthony Somerset. Initially security was

not always demanded, but it was soon discovered that the failure rate was six to eight times greater in those cases where no collateral was at risk. Of 35 firms from whom repayment was due, 13 were in arrears, in some cases because of outright failure but in others owing to the nature of the lending process itself.

It takes a long time to approve loans. ICDC's concern with security and recoverable assets distorts the allocation of resources between equipment and working capital. Its precautions against misuse of funds tie the borrower inflexibly to purchases he cannot freely choose. Its desire to spread its help as widely as it can pares down each loan to a minimum which leaves no margin for difficulties, and even creates them by encouraging investment in secondhand or cheap equipment hard to use efficiently. Caught between the obligation to pioneer new enterprises, and to pay its way, replenishing its fund of loan capital, it can push an able firm with a good market into sustained growth, or ruin a man by giving just enough to make the attempt but not enough to hold him up while he learns from his mistake.¹

While the authors are critical of the lender's parsimony, particularly with respect to working capital, they forcefully drive home a point -- the relationship between risk-bearing and success -- that has since been ignored by KIE in its project approach:

None had more than five years primary education, but all three knew their trade from years of practical experience -- and they seemed all three alert, enthusiastic and ambitious, unassuming but resourceful. None began with any substantial capital of his own, and they came from families, like most families in Kenya, with little land, and barely the income even to pay for a few years' schooling for their children. Yet none of these businesses depended, in the last resort, on government help for its creation. They came into being because, at a crucial point of decision their founders risked all they had . . .²

By contrast Marris and Somerset note that all four of the projects where ICDC had suggested the activity and promoted its organization had failed,

¹P. Marris and A. Somerset, African Businessmen (Routledge and Kegan Paul: London, 1971), p. 188.

²Ibid., p. 202.

and they conclude that the ICDC should "act as facilitator rather than as promoter."

The need for some type of lending facility for working capital has been a long-standing complaint of KIE/RIDC clients. KIE has responded to this concern in three ways. Until 1976 it was KIE practice to limit long-term lending to fixed assets; permanent working capital was to be the entrepreneur's equity contribution. When investors were unable or unwilling to come up with the requisite amounts (equal to 50-to-90 percent of fixed assets) projects were immediately consigned to operate at a fraction of capacity. To overcome this obstacle KIE increased its loans to cover 90 percent (later cut back to 85 percent) of the combined fixed plus working capital requirements. Second, in 1972 KIE established a Raw Materials Purchase scheme at the Nairobi and Nakuru estates wherein KIE undertook to import and hold raw material inventories for cash resale to their clients. When the program was extended to the RIDCs in 1974 it was altered to include bulk purchase of domestic raw materials as well. The program was not a success. Entrepreneurs were over-optimistic in their estimated needs and when they did purchase they frequently delayed payment. With the exception of Machakos (where repayment enforcement has been vigorous), the program was terminated in 1979 with uncollected debts of about £ 200,000. Finally, KIE operates a modified bonded warehouse scheme: where an enterprise receives an order from a government body, KIE will guarantee a bank overdraft to finance raw materials which are then held in KIE godowns; the proceeds of the final sale are channeled through KIE which pays back the bank and remits the balance to the entrepreneur.

With respect to its long-term lending, it will be evident by now that KIE pursues a generous policy. Prior to 1978 the interest charge

was 8 percent, since then 10 percent on loans under £ 50,000 and 11 percent for larger loans. A complete listing of loans in excess of £ 50,000 is given in Table 15. Loan maturity is eight years with a one year initial grace period. The only security required for a loan on fixed assets is a mortgage on the building and equipment being financed. Collateral is required for that portion of the loan pertaining to working capital.

Getting entrepreneurs to make their agreed-upon equity contribution (15%) has been a serious problem for KIE. Of the nearly half of approved projects which are delayed in implementation, in over three-quarters of the cases the "investor" has failed to come forth with his own investment. In this situation KIE has permitted the equity contribution to take the form of an overdraft authorization from a private bank (for which the entrepreneur must pledge collateral) to be drawn down as the need arises. Needless to say, in these circumstances the entrepreneur has a fairly small stake at risk in the project.

What has been the performance of KIE's loan portfolio? Of the 288 loans outstanding, 269 are in arrears of 3 months or more. It has been estimated that as many as 133 loans could prove uncollectable, representing 55 percent of the loan portfolio of £ 3.1 million. To date provisions for bad debt amounts to only £ 0.8 million. Despite several attempted reforms in 1975 and 1977, no systematic supervision of loan repayments has yet been achieved: while a majority of the projects in Nakuru and Eldoret are not generating any earnings out of which loans might be serviced, this is not true for Nairobi. Prior to 1975 notifications of non-payment were not sent out. Since then quarterly notices have been sent, but these are seldom followed up by personal visits or legal action.

Table 15

Project Loans of Over £ 50,000

<u>Location</u>	<u>Product</u>	<u>Number Employed</u>	<u>Loan</u>
Nairobi*	Tufted carpets	11	£ 625,850
Kakamega*	Sugar	150	264,900**
Nairobi*	Canvas cloth	50	172,425
Nairobi	Cas Cylinders	25	167,000
Mombasa	Handkerchiefs	80	165,385
Eldoret	Craft Paper	12	130,130
Nairobi	Plastic Buttons	10	126,315
Eldoret	Retread Tires	15	124,310
Mombasa	Medicinal Bottles	4	121,035
Nairobi	Sandpaper	7	119,925
Nairobi	Window Figures	8	119,620
Nairobi*	Spark plugs	12	109,430
Nairobi	Noodles and Bread	30	89,650
Nakuru	Bicycles	26	86,900
Nairobi*	Computer Stationery	10	86,725
Nairobi	Carbon paper and Ribbon	38	86,095
Nakuru	Polyethylene bags	22	85,545
Nakuru	Cutlery	15	84,560
Nakuru*	Pencils	80	76,760
Sagana*	Leather	50	73,500
Nakuru	Milk Churns	15	73,250
Eldoret	Rooding Tiles	15	72,845
Nairobi	Elastic webbing	28	70,465
Nairobi	Paper Eating Ware	22	69,255
Nairobi	Staples and Pins	13	59,950
Mombasa	Flashlights	4	57,853
Nairobi	Egg Trays	5	56,300
Nakuru	Surgical Bandage	8	53,215
Nairobi	Plastic plugs and Caps	18	51,765
Mombasa	Leather footwear	15	50,550

* Off Estate

** A portion of this loan has been converted into a controlling equity interest.

SOURCE: KIE, Annual Report and Account, 1978/1979

A similarly lax enforcement of payments had obtained with respect to factory unit rentals. In 1978 on the Nairobi estate 84 percent of the tenants were three months or more behind in their rent (26 percent were more than nine months in arrears); for Nakuru the figure was 100 percent. In this case a serious campaign was undertaken, including the use of a padlock on the door, with the result that by 1980 arrears had been more than halved.

A background factor which conditions the attitude toward financial enforcement is a wide-spread public belief, of which both KIE's clients and staff partake, that development agencies should take a long view, exhibiting sympathetic understanding for the problems of its clients and tempering the parsimonious exactions of a moneylender or a private bank. It is further felt that the pitfalls facing the fledgling African industrialist, with no tradition to draw upon and in the face of intense Asian competition, are particularly acute. When the disposition is buttressed by the example of non-repayment on the part of several members of KIE's governing board (who have received loans), the absence of determined enforcement efforts by the field staff, even though it could prove fatal to KIE's survival, is at least in part understandable.

3.4. An Assessment

Any assessment of the overall KIE program must be mixed. On the one hand it has put in place as comprehensive a small industry program as any to be found in the developing world. KIE has shown a willingness to experiment, and to engage in critical self-evaluation and in reform; this is perhaps most notable in the case of RIDP. In developing and implementing projects, KIE staff have exhibited a degree of energy and attention to practical detail unique among public agencies. As an advocate for its clients with other

bureaucracies on such matters as import duty relief, government procurement contracts and municipal licenses, it has an excellent record.

Before proceeding to the debit side of the ledger, we must take note of those things which this study has omitted. Because our interest is the firm, we have focused on those aspects of the landscape which most affect entrepreneurial performance. While the most difficult intellectual issues are those of economic policy and the content of technical assistance, it is also true that the executive capacity of the implementing agency is critical to the success of a development program. We have not discussed the constraints under which KIE operates -- difficulty in holding its technical personnel, difficulty in holding its able young people, an absence of actual business experience among the Kenyans and a majority of its aid advisers, an absence of internal financial controls, diversion of a significant share of its high level manpower to responding to evaluation missions from six aid donors, indecision on policy issues owing to political factors in the higher reaches of government. These constraints underlie many of the shortcomings of the program to which we now turn.

KIE has failed to escape a number of pitfalls that are the common lot of small industry development programs. It has ended up concentrating a large volume of resources on a relatively small clientele. Administrative overstaffing is conjoined with a dearth of Kenyans in the critical technical areas which are the heart of the program; the great bulk of the engineering services of project implementation, of assistance to clients on and off the estates is given by soon-to-depart expatriate advisers who have no Kenyan counterparts. All of the major inputs -- loans, factory units, engineering services, raw material inventory -- have been underpriced and payment for these services have been allowed to fall into massive arrears. It is unlikely

that such an environment instills habits and attitudes in its beneficiaries which are helpful for business survival. Underpricing and underenforcement along with a failure (until 1979) to hold its uncommitted funds in the form of income-yielding money market instruments, have also produced accumulated operating losses for KIE Ltd. of some £ 3 million since 1970. When the loan portfolio is written down for bad debts, this loss will widen.

IV. POLICY ISSUES

The number of government policies which impinge upon the performance of the small-scale industry sector is large. We can group them into two broad categories, those that effect the supply of factors of production and those that effect marketing efficiency. The latter pertains to the inflow of intermediate goods and the outflow of final production to the consumer. We shall not ignore marketing issues, but our prime focus will be on the means on increasing factor supplies. Of the four factors of production -- land, labor, capital, knowledge -- one may be set aside. Small-scale industry at every level is abundantly supplied with willing labor, responsive to supervision and to financial incentive. In the case of the other three, potential factor supplies are not fully mobilized and existing supplies are subject to misallocation: improved policies can make an important contribution.

In terms of public programs to provide land, capital and technical knowledge, the problem has been "too much for too few." In reforming programs currently in operation three principles should be applied. In order to reach a broad clientele the existing package of services must be pruned and new delivery channels characterized by lower transactions cost must be found. Fiscal soundness and survival training for client enterprises require that assistance activities be more closely aligned with market realities. This entails pricing services at or near their full cost and pursuing in the courts of law all those who fail to meet their contractual obligations. Finally, the government's response time, especially in the area of finance and project implementation, must be compressed. Specific market opportunities are not eternal, but rather

they are a fleeting phenomenon in which the timing of investment is critical. Delays in decision-making and implementation, ranging from 6 to 24 months, often contribute to entrepreneur failure.

4.1. The Location and Supply of Accommodation

The same range of developmental and regulatory considerations which underlay government involvement in the provision of land for large-scale industry applies to the small-scale sector. For large-scale industry public authorities typically develop industrial estates, leasing out plots at cost-covering rents. For small-scale industry the government can augment the supply of suitable land directly through acquisition, with subsequent rental or sale to individual entrepreneurs, or indirectly through altering the parameters within which private transactions take place. These parameters include zoning ordinances, trade licensing, premises tax, the factories ordinance and labor legislation.

To date in Kenya government action has been limited to the first alternative. The direct provision of accommodation is appropriate where there are high-risk projects and where there are locational barriers to entrepreneurs acting individually. Consider the first case. By renting an already-constructed factory unit in a nursery-type industrial estate the risk of loss inherent in a pioneering venture can be substantially reduced by lowering the entrepreneur's investment and by providing easy access to the full range of available technical assistance. The presence of these facilities -- reducing capital requirements and raising the probability of success -- has resulted in far more pioneering ventures than would have otherwise occurred. The second case is one of indivisibility:

because of the present use of land (e.g., a soccer field, a motor park) in a location advantageous to small scale industry, individual plots available for sale do not exist. Government acquisition of land to achieve purely locational advantage has not been consciously pursued in Kenya.

KIEs five industrial estates have played a central role in promoting African entrepreneurs and non-traditional small-scale industry. But many millions of shilling have been spent accommodating perhaps 60 or 70 firms that qualify; for the other 100-odd firms in traditional industries it is unlikely that these facilities were critical in the decision to invest or in the efficiency of their performance. Even for those firms that qualify the accommodation has frequently been more lavish than necessary. Construction of a sixth industrial estate to house 24 tenants in Nyeri was completed in 1981 at a cost of 26 million shillings (£ 2.3 million). This represents an inflation-adjusted cost per square foot approximately 50% greater than the original Nairobi estate which in turn was 133% greater than the wood-constructed units in the Machakos IPA. Not only are the latter satisfactory for most of the industries currently housed in the cement units on the estates, their construction time is only one quarter that of the huskier units. The shift to less expensive accommodation should be accompanied by raising rents by some 40% which will cover full cost but still be below alternative commercial rents.

Finally, in both the estates and the RIDC-assisted IPAs the nursery concept should be faithfully applied: the estate enterprises are as seedlings and young plants receiving the care and controlled feeding of a nursery, first in the greenhouse and then in a sheltered place, before transplanting to the natural environment where they will compete on their own. Because the tenants are on the estate for temporary nurture and not

as recipients of permanent subsidies all tenancy agreements should provide for automatic ejection; after a period of four to seven years of shelter (depending upon the type of industry) an entrepreneur is either able to make it on his own or is unlikely ever to do so. An estate program that is truly providing development services will also be assisting a larger number of tenants.¹

It is, however, through the indirect approach to the provision of land that government can make the greatest contribution. Public funds are simply not available to acquire land and/or construct facilities for any meaningful fraction of small-scale industry. Rather the government's role is to treat with municipal authorities in the matter of zoning regulations and town planning. Arrangements need to be negotiated whereby undeveloped town land is leased to small industrialists who are then free to erect their own structure subject to certain minimum health, safety and esthetic standards. If KIE experience in locating IPAs is any guide, to have such industrial zones set aside on the periphery of provincial towns will be a relatively easy matter. On the other hand, to make provision in central areas of the town for those service and repair activities whose survival depends upon dealing directly with the pedestrian consumer will almost certainly meet determined resistance from municipal planning authorities. A frontal assault on this resistance, making clear in public debate the basis for many existing zoning ordinances -- the inherited esthetic standards of an inegalitarian colonial society -- and demonstrating how their continuance impedes broad-based economic growth,

¹A second approach would be to offer to sell the factory unit as an alternative to ejection to the tenant at current replacement cost, the funds being used to create a new unit. This may be preferable where marketing arrangements or raw material sources are closely tied to the present location.

is an appropriate task for KIE as the country's lead agency in this field.

With respect to traditional artisan producers, where there are a relatively large number of firms in each industry, special consideration should be given to congregating all the establishments of a particular trade in one or two industry "clusters" or "layouts." In addition to certain advantages from the town planning point of view, such clusters create important external economies of scale. With concentrated demand, raw material bulk purchasing schemes and the provision of services of specialized machinery become feasible, not as problematic government-sponsored undertakings, but as commercial ventures for private entrepreneurs. There are also gains in efficiency in recruiting skilled labor and in marketing arrangements. However, it is in the technology area that the most interesting possibilities lie. Given the immediate proximity of large numbers of like producers, there is a tendency for individual firms to find it more profitable to specialize in one of several components, and others to limit themselves to assembly of the final product. Such division of labor lower cost, promotes uniform quality standards and opens the way to more technically demanding products. And it is obvious that many of the problems of delivering technical assistance disappear when clients are grouped in a single location. The gains from grouping include: (a) the now prohibitive time and transport cost per contact hour is cut to a small fraction of its current level, (b) technical advisers can demonstrate new procedures and equipment to groups of entrepreneurs, (c) greater accuracy in problem diagnosis results from the vastly expanded information immediately accessible to the adviser (on material supply conditions, actions of competitors, marketing problems), and finally, (d) procedures and equipment that are

truly successful will be diffused to all producers in the industry within a few months rather than a few years, which is the current norm.

4.2. Upgrading Technology

A critical element in strengthening the entrepreneurial capacity of Kenyan businessmen is to raise the level of technical and organizational knowledge that they apply in their enterprises. Formal training institutions such as the Kenya Industrial Training Institute, the Management Training Advisory Centre and the Village Polytechnics clearly have a significant role to play, particularly when the knowledge pertains to an industry that is comparatively new to Kenya. In the area of traditional small industry -- metalworking, furniture, clothing, printing -- relative to the learning-by-doing that takes place within the firm the useful increment of knowledge from formal training is typically small. Other attributes of the formally-educated worker is an expectation of a higher wage and a certain rigidity about adopting procedures different from those learned in class. For these reasons formal education has a limited contribution to make, save in the case of non-traditional industries. On the other hand, industry-specific short courses (e.g., cost accounting for bakeries) given in the evenings to functioning entrepreneurs is a high-payoff activity.

An important potential source of new technical knowledge for traditional industry is new product development, one of the major goals of an "appropriate technology" strategy. A Product Development Unit was operated by Danish engineers at the Machakos RIDC from 1973 to 1977. The aim of the PDU was to introduce new low-cost products, utilizing local materials and local skills,

for the rural areas. The products were based on successful prototypes from other countries, with adaptations for materials and user requirements specific to Kenya. Of 75 prototypes that were developed and promoted to RIDC clients, only a brick press and an ox cart are still regularly made. Responsibility for future efforts in the appropriate technology field have been assigned jointly to the University of Nairobi Engineering Department, the recently reorganized Kenya Industrial Research and Development Institute and the Machakos PDU.

It is our opinion that the rather scrawny past attainments in these and other areas of technology infusion are due to an inverted development sequence. Instead of beginning with a promising program and attempting to tailor its output to market conditions, the proper starting point is an extensive analysis of the market and the constraints it imposes upon product upgrading and changes in production methods, with these results then providing the parameters around which a program is designed. Specifically, it is our recommendation that industry by industry state-of-the-arts field surveys should constitute the basis for curriculum reform, for initiatives in the appropriate technology area and for technical assistance extension work.

We envisage each state-of-the-arts survey to be undertaken by a team of about four senior specialists covering the major producing areas in the country for that industry. The professional skills of these individuals should include engineering, a materials specialist, marketing, technical education and management analyst; their institutional affiliations would appropriately be KIRDI, RIDC/KIE, ISPC and KITI. Requiring a full-time commitment for several months and resulting in a detailed report of several hundred pages, these surveys will constitute a major undertaking for all the agencies concerned.

Another vehicle for technology infusion is subcontracting. Where it operates effectively subcontracting can provide three life-engendering inputs to the small producer: an assured market, technical assistance to carry out manufacturing processes not otherwise obtainable and strict quality control. In Kenya both the ILO Mission of 1971 and the World Bank Mission of 1973 recommended that the Government take action in this area. The specific steps that might be taken were not stated and, in fact, no concrete measures have been put into effect.

To begin with it is important to establish realistic expectations.¹ The emergence of really extensive subcontracting calls for a comparatively large supply of middle-level technical and organizational skills.² Second, large firms are not normally enthusiastic to enter into subcontracting relationships with small, potentially unreliable producers who possess limited technical capabilities. Because of the risks and extensive supervisory attention that ancillary suppliers entail, major manufacturers will usually turn to subcontracting of this type only when capital shortages makes it difficult to set up their own production facilities. The multinational firms in Kenya do not have any such capital shortage and, as KIE inquiries have disclosed, they exhibit little interest in investigating subcontracting possibilities. Third, subcontracting does not lend itself

¹The authoritative works in this field are Susumu Watanabe's "Subcontracting, Industrialization and Employment Creation," International Labour Review, August, 1971 and "Reflections on Current Policies for Promoting Small Enterprises and Subcontracting," International Labour Review, November, 1974.

²It is to this factor, for instance, that Jack Baranson attributes India's failure "to develop a subcontracting sector in any way comparable to Japan's," Manufacturing Problems in India (Syracuse University Press: New York, 1967), p. 69.

to geographic dispersion. India's policy of developing ancillaries around a single parent has for the most part failed¹ It is only when small firms are nurtured in the vicinity of a number of parent companies that they are able to operate near full capacity and draw upon sufficiently diverse sources of technical skills and knowledge.

With these limitations clearly in mind, a start on a modest but meaningful industrial subcontracting program can be made. The key ingredient is an inventory of potential subcontractors which comprises the basis for negotiation between the designated Government agencies (KIE and KIRDI) and the large-scale firms. This inventory, which logically should be carried out in conjunction with the state-of-the-arts surveys just described, would enumerate for each qualifying small enterprise the following information: training and previous experience of the entrepreneur, number of employees, capital invested, itemization of the three most sophisticated pieces of equipment, description of product capability with quality specifications. Once the inventory is drawn up, in order to be released from some quota of purchases from one or more of the approved subcontractors it would be incumbent on the large scale firm to prove to the satisfaction of KIRDI that none of the latter were able to meet, even with supervisory assistance from the purchaser, a minimum quality threshold.

4.3. The Supply of Finance

The discussion of possible government action to increase the effective supply of capital to small scale industry will focus on four topics, namely debt-equity ratios and their relation to entrepreneur selection, the interest

¹M. A. Oommen, "The Industrial Estate Programme and Employment: A Case Study of an Indian State," Small Industry Bulletin for Asia and the Far East.

rate, the vexacious question of working capital and low-cost loan delivery systems.

As we have seen from our earlier review of KIE loans, a significant proportion of the larger projects have failed or are in danger of failing. Part of this is attributable to greater risks inherent in non-traditional small industry. However, the more fundamental cause appears to be limited entrepreneurial commitment. An absentee entrepreneur is one sign of this. Its cause is the extremely liberal position KIE and ICDC have taken toward the debt-equity ratio. Currently the entrepreneur is required to contribute only 15% of the total investment, a debt-equity ratio of 6.7 to 1.¹ Even this understates the leverage inasmuch as the entrepreneur's 15% may be in the form of a bank overdraft facility. And, owing to imperfect supervision, the full 15% is not always drawn down. Under these circumstances the entrepreneur has little to lose if the venture fails.² The importance of risk bearing for successful entrepreneurship can not be overestimated. While it is the desire for profit which leads to the launching of a venture and occasional spurts of intensive effort, in the critical early phase of the project it is the galvanizing threat of financial ruin which keeps the entrepreneur scrambling to keep his venture afloat. If the entrepreneur is required to contribute 35 to 50 percent, he will not be content to employ a hired manager but will devote himself full-time, six days a week to the business.

The explanation for such leverage is said to be an initial perception that less generous terms would not have called forth sufficient "investors"

¹For earlier debt-equity ratios, see p. 71.

²Until 1980 no collateral was required for fixed asset loans, other than a lien on the equipment itself. In 1980 a policy of full collateral was announced; enforcement has been uneven.

to man KIE's open projects during the early 1970s. A number of observations are pertinent. First, in light of the modest success of many of these projects, can it be said that these generous terms did call forth effective entrepreneurial services? Borrowers now do have the resources, although, the tradition having been established, wealthy entrepreneurs still strive to minimize the commitment of their own funds. Second, because of the system of quantitative import restrictions and other forms of restrictive licensing, profits have been more certain in importing, in urban real estate and in other forms of nonproductive investment. Removal of inflated returns elsewhere will enhance the relative profitability of manufacturing and with it the supply of industrial entrepreneurs. Lastly, the number of successful large projects would have been much greater had not KIE taken such a restrictive position with respect to African/Non-African partnerships. The latter have in fact proved to be one of the most successful vehicles for transmitting entrepreneurial skills. In sum, we recommend that the equity requirement never be less than 35 percent, that African/Non-African partnerships be encouraged, and that KIE should lend its full weight to the movement for economic liberalization.

Interest charges on KIE Loans are currently set at 10 percent (before 1979, 8 percent). By contrast, loans from commercial banks carry a 14 percent interest cost; development banks, such as IDB and DFCK, levy similar rates. Some aid donors, particularly the World Bank, have pressed KIE to raise the price of its loan funds to more realistic levels. They have argued that a free market rate of interest is still well below the potential return on most small industry investments and that the higher rate will create a less artificial, more disciplined financial environment for the entrepreneur who will be better prepared to move into normal

commercial channels thereafter. Moreover, a non-subsidized interest rate discourages investment in less productive areas and results in the accumulation of a larger volume of funds for development lending over the long-run. In sharp opposition, professionals in KIE and other agencies who work directly with individual borrowers feel strongly that in the context of the difficult problems African entrepreneurs are struggling with -- most of which have the effect of reducing cash flow -- an increased debt repayment burden would add substantially to the likelihood of bankruptcy.

We have seen considerable evidence to verify both of these contending propositions, namely handsome profit margins coexisting with high rates of business failure. The reconciliation is to be found by focusing on the individual firm as it progresses over time. When a producer first establishes or greatly expands his scale of production or introduces a major technological innovation it is in the nature of things that he encounters unknown terrain and as a result the incidence of mistaken decisions rises, with a consequent fall in the productive efficiency of the enterprise below its long-run norm. Thus it is not surprising that the onset of repayment difficulties does not occur with equal probability at every stage of the loan repayment cycle but rather is concentrated at the beginning of the cycle when the pitfalls of learning are at a maximum.

Once the burden of loan repayment is seen to be limited to the early stages of the repayment cycle, a solution to the interest rate problem suggests itself. On the one hand, the current grace period of one year should be extended to two years, thus lifting the burden entirely in the most critical stage. On the other hand, the loan maturity should be extended so that the longer run advantages of a non-subsidized interest rate can be realized. The cost of extending the grace period from one to

two years and raising the interest rate from 10 to 12 percent, without increasing the annual debt service charge, is a lengthening of the repayment period from eight to eleven years. Alternatively, at the request of the borrower the repayment period may be maintained at eight years with amortization charges rising in the later years. More generally, the lender should be prepared to tailor maturity and repayment scheduling to the needs of the particular industry and the firm.

What is the appropriate policy with respect to the highly sensitive issue of lending for working capital? Circulating capital, which finances all outlays (materials, labor, purchased services) from the initiation of production until receipt of sales revenues, is no less essential an input than fixed capital. No new business should be started without an ample supply of permanent working capital; typically both KIE and the entrepreneur underestimate the amount required. But what of lending to established producers who claim to be suffering from a shortage of current finance? Since sales proceeds automatically replenish the working capital embodied in "yesterday's production" plus provide an additional "cash flow" (equal to depreciation and profit) that is available for enlarging a firm's liquid reserves, a shortage of working capital may well be a symptom of a malfunctioning within the firm. To accede to the entrepreneur's request in this case only deepens the ultimate loss.

A shortage of working capital can occur in one of four ways: (a) the firm is initially undercapitalized and is unable to build up sales to the breakeven point, or (b) the firm attempts to expand output at a faster rate than can be financed out of cash flow, or (c) sales proceeds fall and cash flow turns negative, or (d) liquid funds are diverted to other uses. The

difficult and most frequent cases are (a), (c) and (d). Table 16 presents a sample of the type of events that most frequently beset the small producer in Kenya, each of which produces a working capital deficit.

The first class of risks shown in Table 16 are in their origin external to the firm and may be considered as inherent features of a developing economy. As these events normally entail only a transitory impairment of the firm, short to medium-term loans to replenish working capital will normally be justified.

The second class of risks are also external to the firm but they are not inherent in the structure of a low-income economy. Rather these damaging events occur solely as a result of Government policy. The foreign trade regime of quotas and "letters of no objection" gives rise to the unavailability of imported parts and materials at unpredictable intervals and for substantial periods. To insure against this event producers need to carry two to three times the normal stock of these items, thereby raising the amount of working capital required to finance a given level of production. Likewise, the illegal issuing of licenses to influential people to import products competitive with those of local industry causes periodic collapses in sales, bringing with it the need for working capital infusions to bridge the time required for the contraband to clear the market. In the absence of the quota system such corrupt practices would not be profitable. With respect to Government procurement through the Tender Boards, the all-too-frequent practice by public bodies of delaying payment to the entrepreneur until long after the goods have been received has gutted this program of much of its worth: the interest cost on the working capital tied up, or as more frequently the case partial cessation of business operations until payment is made, more than offsets the income earned by the sale. Finally, delays

Table 16

Risk, Efficiency and Working Capital Deficits

I. External Risks	Power failure Defective equipment Theft Breakdown in supplier firms
II. Policy-Created Risks	Imported input shortage Illegal import dumping Delayed public agency payments Delayed KIE assistance Harassment by municipality
III. Entrepreneurial Shortcomings	Product quality Rate of throughput Machine breakage Materials wastage Pilferage of materials & product Clerical theft Defaulted customer credit Non-business cash withdrawals Failure of transport Loss of distributors Product pricing
IV. Diversion	Consumption Other business Non-business assets

in KIE assistance and harassment by various municipal licensing authorities interrupts production but not cost outlays, thereby creating a need for additional working capital.

These Government policies increase the number of African firms which fail and make the development of the surviving firms more difficult. Abolition of import quotas with a shift to free importation under a system of tariffs, a policy which Kenya is now moving towards, will reduce working capital requirements of non-traditional small industry and promote marketing stability. We have already mentioned the probable effect on import liberalization on augmenting the supply of entrepreneurship available for the more ambitious manufacturing projects. The problem of delayed payment can be resolved by the creation of a short-term lending facility for public bodies designed for this purpose conjoined with a schedule of penalties payable to the entrepreneur. The needed actions in the area of licensing and the more timely delivery of KIE services have been discussed earlier. However, until these Government-imposed risks are removed, their occurrence will often provide justifiable grounds for making working capital loans.

The third class of events which result in working capital deficits are internal to the firm and are attributable to entrepreneurial shortcomings.¹

¹The first four items in group III of table 16 reflect inadequacies of technical knowledge and industrial engineering. Poor product quality, slow rates of throughput and materials wastage affect working capital via a reduced profit component in cash flow; machine breakdown, owing to lack of maintenance or operator malfunction, lengthens the production period. The second group of entrepreneurial failures, involving financial control, represents a simple leakage of working capital. The third group are marketing shortcomings; their impact is to reduce sales revenue.

Insofar as a significant part of an established firm's need for additional working capital derives from any of these internal causes, receipt of loans or raw material on credit will undermine the natural pressure for corrective action and add to the scarce capital resources that are lost.

With respect to group IV, lending to make good a working capital deficit caused by a diversion of cash flow to uses outside the business is subject to an unusually high degree of risk and will not normally be justified.

The practical difficulty, of course, is how to determine whether the deficit in circulating capital is attributable primarily to type I and II occurrences or to type III and IV. In the case of KIE projects and other firms closely connected with KIE a reasonably accurate judgment may be available from the professional staff. A determination of the facts for other producers who maintain a full set of written records may in some circumstances be possible. By contrast for small units that do not keep written accounts, unless the lender has, for one reason or another, direct knowledge, locating the source of a working capital deficit is not possible.

This brings us to our final subject, changes in the loan delivery system. For the ambitious, high-risk KIE projects we recommend that loan funds continue for the time being to be administered through KIE. But for all other small industry financing, loans should be channeled through commercial banks under a guarantee program. The scheme to be suggested is adapted not only to the working capital difficulties of KIE's current clients, it also holds considerable potential for dealing with the credit needs of the traditional sector. It is a proposal which aims to improve upon existing KIE lending practices with respect to the number of borrowers served, shortening the interval between loan request and loan disbursement, reducing

the administrative cost per shilling lent and enforcing a greater sense of commercial discipline on the borrower.

Commercial banks currently make working capital loans of three months to three years to borrowers who have profitable business opportunities and who possess unencumbered property that can be given as loan security. This lending process is very simple and very efficient. In an interview of some 45 minutes a prospective borrower and the Assistant Bank manager compile an informal balance sheet of the applicant's assets and liabilities and a likely cash flow of the project to be financed. The applicant then signs this "statement of affairs." If after a brief visit to the site and a "banker's opinion" check with the other credit institutions in the area, the Assistant Manager decides to extend the loan, a mortgage will be registered on the borrower's property and the loan will be disbursed. For amounts under 250,000 shillings the entire process will be completed within two weeks.

Commercial banks will normally require that the borrower have a checking account six months prior to the loan (two years if a Savings Account); a deposit account not only gives the lender useful financial information about the enterprise, it entails obtaining two character references with respect to the individual's financial trustworthiness. Most banks limit themselves to those areas in which they have accumulated some experience: lending too little because of a failure to understand the nature of the business is one of the most frequent causes of troubled loans. Although something on the order of 10-12 percent of the loans are diverted to other uses (not necessarily less profitable but usually with a lower cash flow), because the collateral held is 150 percent the value of the loan, there are few serious repayment problems. Foreclosure proceedings

are initiated for about 2 percent of all loans with less than 1 percent actually reaching the auction block.

What prevents the commercial banks from extending their activities to KIE clients and informal sector producers? The answer, of course, is lack of unencumbered collateral. A guarantee scheme is one solution. However in most less developed countries private banks have shown little enthusiasm to lend under such arrangements. This is a result of extremely parsimonious guarantee terms (usually 60 percent) and no reimbursement for additional lending costs. The proper guide to guarantee terms is not to prevent banks from making too much money (they won't) but rather to achieve a lower cost per shilling lent than that being attained by KIE. Figuring in KIE staff time, (including time devoted to unsuccessful applicants), cost of funds, and bad debt indicates that this alternative cost may be as high as 30 to 40 percent of the loans granted.

Before setting out the details of a perfected guarantee scheme, it behooves us to examine carefully the role that collateral plays in the finance-investment process. By virtue of short-circuiting many of the information needs of the lender it permits the screening process to be carried out at high speed and low cost. Second, collateral insures that loan funds will be preserved over time and available to large numbers of investors, rather than being subject to cannibalization in the form of de facto grants to a single generation of applicants. Third, the security requirement often provides significant information about a first-time borrower: if the applicant has been working ten or fifteen years and alleges that he owns no tangible assets, the potential for default is high. Why? There can only be four reasons for an absence of pawn: a low level of competence, spendthrift behavior, unwillingness to pledge assets actually

owned, or special circumstances. It is only within the last category that a lender might hope to uncover the basis for a "good loan." And fourth, where the entrepreneur's own equity in his project is small, it is the loan security which represents the investor's real stake in the venture. Indeed, in most cases it will be the protection of collateral -- the avoidance of financial ruin rather than the anticipation of profit -- that provides the driving motive during the early years for concentrating entrepreneurial energy and ingenuity in the struggle to survive and grow.

Clearly, collateral is more than a mere banker's technicality. Hence any guarantee scheme which would bypass, in whole or in part, the security requirement must be very carefully constructed so as to provide substitutes for as many as possible of the functions that collateral fulfills. To this end it is proposed that borrowers meet the following conditions.

1. Be established in the business for which the loan is sought for at least two years.
2. The loan be limited to a maximum of 100 percent of the enterprises pre-loan assets.
3. Possession of a checking account with the lender for the prior six months.
4. Licensed vehicles and other moveable assets be taken as partial security.
5. Residence in the town for at least two years, with one or more relatives of the immediate family being long-term residents of the town.
6. An understanding that delinquencies will be publicly advertised.

With respect to the guarantee provisions, it is proposed that KIE reimburse up to 80 percent of individual loan losses -- including principal, interest arrears (up to three months) and legal costs. KIE will also cover 50 percent of extraordinary screening costs (a lower percentage for large loans, a higher percentage for small loans). The funds lent would be commercial bank funds, not Government funds, and the criteria would be the criteria that the banks are currently applying, with the exception of the collateral requirement. The interest charges to the borrower would be the bank's normal rate, with a 2 percent add-on payable to the KIE in its role as guarantor. For their part, the banks may only lend under the scheme to new borrowers who do not possess land or buildings.

The end-goal of this scheme is not to provide a large number of small firms with loans that would not otherwise be available. Rather it is to finance a brief learning period in which otherwise ineligible producers are given the opportunity to create a track record with a commercial bank, to establish by their actions credit-worthiness or the lack thereof. To help insure that the guarantee subsidy is confined to a true learning period, the banks should be given an incentive to move their new borrowers into a normal commercial relationship as soon as prudent. Such incentives might consist of a declining guarantee (e.g., 80% in year one, 50% in year two, 20% in year three) or a temporally increasing premium to guarantee any given level of loss for each borrower. The shorter the guarantee period the larger the population of borrowers that can be sorted for "lemons" and "plums." The cost of the guarantee program in excess of the insurance premium that can be added on to the normal interest charge will only be revealed by several pilot ventures. In assessing the cost per shilling

lent, however, it is important to include in the denominator not only the loans guaranteed but also all the subsequent loans without guarantee that are made to those firms which pass the test.

To summarize this discussion of policy, a vigorous small-scale enterprise sector contributes importantly to employment, a flexible cost-efficient manufacturing sector and future domestic entrepreneurial control of large-scale industry. Government intervention to remove distortions or to insure equal treatment is justified with respect to (a) tariffs on raw materials and equipment, (b) foreign exchange licenses, (c) public planning of physical sites and zoning regulations, and (d) access to public decision-makers. Government intervention involving subsidization is justified with respect to capital market imperfections in the absence of collateral and with respect to inter-temporal external economies of entrepreneurship development.

In the past small industry assistance programs have tended to have very high transactions costs, to offer services at concessionary rates and to benefit only a small fraction of the target population. The resultant high costs and poor results undermine long-term political support for providing development aid to the sector. The appropriate focus is to sharply reduce transactions costs by simplifying and seeking economies of scale, by using loan guarantee schemes, by promoting industry clusters, and in general by gearing assistance delivery as close to commercial conditions as possible. Indeed, the hallmark of a successful small industry program is its gradual atrophy as the services it supplies are progressively taken over by private entrepreneurs in the market place.

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