AN ABSTRACT OF THE THESIS OF

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TITLE: A Model for Planning Manpower Development in The Republic of Kenya

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The purpose of this study was to develop a manpower development planning model for the Republic of Kenya. The model is intended for use by administrators and economic planners for planning and evaluating educational and training programs based on manpower needs of industry, individuals and society.

A review of the literature was conducted to delineate conceptualizations of economic development for new and emerging nations. The review was also conducted to determine the role of manpower development in the economic process.

The context for manpower development in Kenya was reviewed. Current strategies and policies for economic development and the existing educational training systems were analyzed. Criteria for judging manpower development
models that would contain elements fully or partially appropriate for the Republic of Kenya were identified.

Existing models from Great Britain, United States, Japan and the Soviet Union were reviewed to determine the extent to which they could be appropriate for Kenya. It was found that none of the models would be fully useable although most had elements that would be adaptable.

A manpower development model was developed. The criteria on which the model was developed were:

1. An educational and training structure that responds to individual needs while also meeting national developmental needs.

2. A manpower development coordination strategy that will help link manpower training to the national economic needs.

3. A labor market information strategy that will form a basis for future manpower development and assist in economic planning.

A feedback mechanism in the overall manpower development strategy exists to ensure that goals are realistic and that the programs offered and the methodologies used are effective and efficient.

The findings of the study indicated that for meaningful economic development there must be a reduction in the levels of poverty, inequality and unemployment. These reductions must occur in conjunction with increased
productivity. Manpower development plays a significant role in reducing these levels. In order to be successful, goals for manpower programs should be closely linked with those of national economic and social development. The programs must also address environmental, demographic, political, cultural and other conditions unique to the country that they are intended for.
A MODEL FOR PLANNING MANPOWER DEVELOPMENT
IN THE REPUBLIC OF KENYA

by

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Kenya experienced a rapid and steady economic growth during its first decade of independence since December 12, 1963. Over the last five years, serious problems associated with poverty, inequality and unemployment have emerged. These problems have been intensified by frustrations. The poverty-level incomes obtained by many producers and their families and the underutilization and low productivity of the labor force reflect inefficiency in the way labor is trained and developed.

This study is concerned with the development of a manpower development model that would be responsive to the national and social development of goals of Kenya.

Background of the Problem

Since the time of Adam Smith (1723-1790), three dominant theories of economic development have evolved; 1) the classical theory, 2) the neo-classical theory and 3) the Marxist theory (Hagen, 1980). All three describe the behavior of technically advanced societies. It is generally agreed (Todaro, 1977; Hagen, 1980) that the
neo-classical theory and the Marxist theory have survived to the present time. These theories are often extended to developing nations.

Over the past twenty-five years, the literature on economic development has been dominated by two major strands of thought: 1) the "stages" of economic growth theory and 2) the "structural-internationalistic" theory (Todaro, 1977).

The Stages of Growth Model

After the Second World War, economic development was conceptualized as a series of successive stages or steps of economic growth through which all nations must pass (Todaro, 1977; Gianaris, 1978; Hagen, 1980). Rostow (1960) postulated that it was possible to identify all societies in their economic dimensions as lying within one of five categories:

1. The traditional society which is characterized by hierarchical social structure.

2. The preconditions of take-off at which stage new commercial markets, higher rates of capital accumulation and changes in the sociological environment emerge.

3. The take-off stage which consists of a rapid growth in a limited number of sectors.
4. The drive to maturity stage in which modern technology has been effectively applied to the bulk of society's resources.

5. The stage of mass consumption as can be witnessed in the developed nations such as the United States.

The fifth and final stage complements the Keynesian model, which called for increased consumption to avoid unemployment (Keynes, 1936; Gianaris, 1978).

The dawning of the developing nations on the international economic scene was a major challenge to the economists of the western industrialized world. They possessed no readily available conceptual apparatus to analyze the process of economic growth in largely peasant, agarian societies characterized by virtual absence of modern economic structures (Horowitz, 1966; Myrdal, 1968; Todaro, 1977). Todaro (1977) pointed out that the development of the "Harrod-Doxnar Growth Model" was a response by western economists to new economic pressures of the developing nations based on the European "Marshall Plan" experience. The Marshall Plan was successfully carried out after the Second World War by providing massive amounts of U. S. financial and technical assistance to war-torn countries of Europe to rebuild and modernize their economies.
The Harrod-Domar Model

A simplified version of the Harrod-Domar equation is:

\[ \frac{\Delta Y}{Y} = \frac{S}{K} \]

where \( Y \) = national income
\( S \) = national saving ratio
\( K \) = national capital/output ratio

This theory states that the rate of growth of Gross National Product (GNP which is \( \Delta Y/Y \)) is determined jointly by the national savings ratio "S" and the national capital/output ratio "K." More specifically, it means that the growth rate of national income will be directly or "positively" related to the savings ratio.

John Kenneth Galbraith regarded the maximization of economic growth as a more respectable goal of economic development. He regarded the overall increase in national output the primary goal and the composition of the product as secondary. Pointing out that the Soviet Union and Japan have been criticized for imitating the developed countries, Galbraith advised that the developing countries should take advantage of the paths that were broken by those who went first. His emphasis on production could be summed up in the statement: "The business liturgy now accords an important place to resonant assertions of the vital role of production" (Galbraith, 1958, p. 356).
He concluded that the problem of production in America had been solved and should have been acknowledged (Galbraith, 1958).

Over the past two decades, variations of the stages models and Galbraith's advice of taking advantage of developed economies have been validated in many cases by the majority of the developing nations (Horowitz, 1966; Todaro, 1977; Gianaris, 1978). Despite their efforts in this endeavor, most developing countries have not achieved the coveted economic advance of the western industrialized nations.

**Failures of Two Decades of Development**

It has been generally observed that despite a creditable performance in increasing the Gross National Product (GNP) of many developing countries, large segments of the population of these nations have not shared by any significant degree in the benefits accruing from this growth (Seers, 1977). Massive unemployment and under-employment together with grossly unequal distribution of national income and the widespread existence of poverty still persist in the Third World (Agency for International Development, 1975; Seers, 1977).

The failures to order successful economic growth in the Third World are largely due to the inappropriateness and/or irrelevance of many of the implicit assumptions of economic theory for the actual conditions in the developing
nations (Todaro, 1977). At a more fundamental level, the stages theory fails to take into account the crucial fact that today developing nations are a part of a complex international system in which their best development strategies can sometimes be nullified by external forces beyond their control (Nyerere, 1977).

Horowitz (1966) criticized Rostow for falling into the nationalistic trap by projecting the American society as a model for developing nations. Rostow hardly addressed himself to economic relations. Yet it is these relationships that largely determine the allocation of wealth and investment procedures of the developing nations. Both Galbraith (1958) and Rostow (1960) defend corporate practices and argue (Galbraith, 1958) that the private and public sectors reduce themselves into a theory of autonomous economy.

An increasing level of production and consumption as advanced by Galbraith (1958, Rostow, 1960) and other neo-Keynesian theorists is continuously being refuted given present world economic conditions. E. F. Schumacher (1975), for example, rejected the claim that the production problem in western countries has been solved. He observed that many leading western economists see only a small part of capital, which is an elaborate physical infrastructure and innumerable types of sophisticated capital equipment. What is often overlooked is the far larger capital provided
by nature and not by humans. This natural part of capital, which includes fossil fuels, the tolerance margins of nature and the human substance, is now being consumed at an alarming rate. The illusion of attained production is mainly due to the inability to recognize that the modern industrial system consumes the very basis on which it has been erected. It survives on irreplaceable capital which it treats as income (Schumacher, 1975).

Nicholas Georgescu-Roegen (1971) further explained that the economic process, consisting of a continuous and irrevocable transformation from low (usable form) entropy to high (waste) entropy, should be considered when using natural resources for production. He argues that Japan thrives on royalties it heavily pays for from the nations that export the low entropy materials. He maintains that this trend cannot continue long under present increasing odds.

The criticisms of the traditional models generally given (Horowitz, 1966; Schumacher, 1975; Todaro, 1977; Hagen, 1980) towards adaptations to developing economies reflect a new kind of thought that evolved shortly after the Second World War and peaked in the late 1960s and the early 1970s. This is what Todaro (1977) called the 'structuralist-internationalist' strand of economic thought.
The Structuralist-Internationalist Model

Structuralists try to combine economic and institutional factors into a "social systems" model of international development and underdevelopment. This model essentially views Third World countries as being beset by institutional and structural economic rigidities and caught up in a "dependence" and "dominance" relationship to rich countries (Todaro, 1977). Horowitz (1966) argued that Third World countries contain structural defects which can only be corrected by forceful economic and political action. As an example, he pointed out that Latin Americans achieved their political independence almost at the same time as the Americans and continued to grow at comparable rates until the Civil War period. Their decline came when Northern European and North American capital investments were heavily increased in the region.

Simon Kuznets (1973) attempted to explain the increasing gap between the developed and the developing nations. He noted that the long-term rise in capacity to supply diverse economic goods in developed nations is based on advancing technology and the institutional and ideological adjustments these countries have had. While developed countries have high rates of growth of per capita product, high rates or rise of production, high
rates of structural transformations and the ability to reach out to the rest of the world markets, developing countries do experience serious limitations. First, stable but flexible political and social frameworks capable of accommodating rapid structural changes do not exist. Second, national policies suggested by developed countries are often irrelevant and inhibiting to developing countries. For example, colonization and denial of freedom forced oppressed people to concentrate on political freedom and the elimination of inferiority status rather than concentrate on economic advance (Todaro, 1977). Third, growth positions of developing nations differ from the positions the developed nations were in during their early stages of economic development. These include: much lower per capita product levels, population sizes and natural population increases, a combination of greater backwardness and seemingly a greater backlog of technology (Kuznets, 1973; Todaro, 1977).

Generalizations about developing countries, however, should not be made without scrutinizing individual cases. Differences in population size, timing of western impact in Africa and Latin America, social and cultural compositions such as those of African tribes and remarkable institutions that accounted for Asian masses, all may suggest different policy direction (Kuznets, 1973).
The perpetuation of underdevelopment by neo-colonialism as seen by some structuralists is somewhat an out-growth of Marxist theory. Colin Leys (1974), for example, stated that in Kenya the neo-colonial system was consolidated in the years after independence in 1963 by a combination of policies which had a common double thread through them. On one hand, adaptation of the "peasants" mode of production to the capitalist mode introduced new ways, and, on the other, there was the establishment of the new African "petty bourgeois" stratum within sectors of the economy formally reserved for foreign capital. The stability of Kenya in 1971 was an appearance which resulted directly from the assertion of state power and did not reflect the underlying reality of increasingly sharp social and economic contradictions (Leys, 1974).

Some structuralists attribute Third World underdevelopment to faulty and inappropriate advice provided by well-meaning, misinformed "expert" advisors. This group of people often comes from the developed countries assistance agencies and multinational donor corporations, such as the World Bank, United Nations agencies and other private organizations (Barnet and Muller, 1974; Todaro, 1977).

In summation, economic development should not be substituted for economic growth as traditional economic measures tend to suggest. Neither should it be ascribed merely to neo-colonial repressive factors.
Defining Economic Development

Economic development has two meanings. First, it is used to refer to economic growth plus improvement in the distribution of material welfare within the low income countries. Second, it is used technically to refer to all the complex effects of growth planned or unplanned, beneficial or detrimental (Hagen, 1980).

A better and more meaningful approach to defining economic development for any society or group of people was given by Seers (1969).

The questions to ask about a country's development are therefore: What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, then beyond doubt this has been a period of development for the country concerned. (p. 3)

The phenomenon of economic development goes beyond narrow economic criteria. It must, to a larger extent, be conceived as a multidimensional process involving major changes in social structures, popular attitudes and national institutions as well as the acceleration of economic growth, the reduction of inequalities and the eradication of absolute poverty (Seers, 1969; Todaro, 1977).

Harbison and Myers (1964) observed that progress is basically the result of human effort. It takes human
agents to mobilize capital, to exploit natural resources, to create markets and to carry on trade. In essence, it is the available manpower with various skills and training, that can bring about economic advancement. The development of a nation's human resources as an important developmental strategy has always been of top priority for both traditional theorists (Smith, 1937; Rostow, 1960) and contemporary theorists (Schultz, 1971; Becker, 1975; Hagen, 1980).

The Role of Manpower Development in Economic Development

It has been found that in the majority of the developing countries capital, entrepreneurship and, in some, land are the scarce factors of economic growth (Lewis, 1955; Myrdal, 1968; Schultz, 1971). On the other hand, there has been unlimited supply of labor with little or no training to engage productively in the developing economies. Economists also know that people are an important part of the wealth of nations as measured by what labor contributes to the production capacity of a nation. Lewis (1955) cautioned that failure to put training into the foreground of development programs accounts for much of the frustration occasioned by such programs. Though seldom large in relation to national income, these programs most always lag behind in performance. This is due to lack of people who possess the skills necessary to implement them.
Edding (1966) presented data for select industrial countries which showed that the percentage of national income or gross national product spent on education in institutions had been rising steadily during the Twentieth Century until they were interrupted by wars. Investment in human capital was a necessary step in accelerating the developed economies. Today, the developed nations still continue to invest large sums of money in training and research.

**Investment in Human Capital**

The developing countries are also spending a larger portion of their national income on education. Kenya, for example, spent about 29 percent of the total national budget on education in the 1978-1979 fiscal year. The increased expenditures on education reflect national tastes which differ between developed and developing countries. According to Hagen (1980) the demand in higher income countries has, to a considerable extent, been for education as a consumer good whereas, in lower income countries to a greater degree than in higher income countries, the demand has been for education to increase earning power.

While Hagen (1980) recognized the assumption that there are no differences among countries in the innate abilities of the labor force, he encourages careful consideration of the assumption that homogeneous labor interacts with homogeneous land and homogeneous capital.
An individual's qualities as a worker vary with his/her innate abilities. The motivations inculcated in early nurturance and the amount and the nature of the "investment in human capital" that the individual has obtained by observation, formal education, training in the plant and "learning by doing" account for productive capacities in the worker. Theories of growth have often overlooked these differences.

Critical Skills for Development

The ultimate success of a program for economic and social development will depend, in large measure, on the availability of manpower possessing specific skills. Since it takes many years to educate and train people, especially in the professional, technical and skilled occupations, it is important that the need be anticipated sufficiently far in advance to avoid stagnation or serious impediment in the economic growth process. It is now widely known that lack of trained manpower may be more of a limiting factor to future growth than shortages of capital or natural resources (Agency for International Development (AID), 1975).

According to Loken (1969), manpower development should be undertaken on a multitude of fronts. These include the entire educational system at all levels, training programs of all types and health and nutrition efforts which help improve individual productivity.
This view of manpower development does not distinguish between the development of desirable capabilities to perform specific duties in a given economic setting at a given time from that of improving the well-being of an individual which implies human resource development.

While manpower is an economic resource just as land, equipment and money, it is in an economic sense the managerial, scientific and technical personnel that create, design, develop, manage and operate productive services. Education and training, are therefore, major component parts of a manpower development strategy. Health and nutrition efforts are complementary (Galbraith, 1958; Schultz, 1971).

The reports of the International Labor Organization (ILO) (1972) and the International Bank for Reconstruction and Development (IBRD) (1963) revealed that mismanagement and lack of coordination in education and training account for the rampant employment and other socio-economic problems in the developing nations (AID, 1975).

Statement of the Problem
Kenya, as a developing nation, faces a multiplicity of problems as it modernizes. Such developmental problems include: high population growth, large migrations from rural to urban areas, and consequently major deficiencies in educational and training programs. The nation's popu-
lation of 15.322 million people, as of the 1979 population census, is growing at an alarming rate of 3.5 percent per year. This represents one of the highest growth rates in the world with an estimated annual increase of over 225,000 people to the current estimated formal labor force of 900,000 (Republic of Kenya, 1979).

The government, already spending the largest share of the nation's annual budget on education, is hard pressed to provide educational facilities and teachers. The magnitude of the education problem is reflected in the increased numbers of primary and secondary school children. Enrollments in government-aided, secondary schools have increased from 23,200 at the time of independence in 1963 to 106,300 in 1975. Enrollments in private, unaided secondary schools increased from 7,000 in 1963 to 111,100 in 1975. The number of teachers in aided secondary schools was 4,480 in 1975, while those in private schools were 3,570 in the same year. The number of untrained secondary school teachers in aided schools had grown from 50 to 410, while those in private schools had grown from 10 to 2,290 between 1963 and 1975 (National Committee on Educational Objectives and Policies (NCEOP) (Republic of Kenya, 1976).

Besides increasing numbers in educational institutions, numbers and capacities in training institutions have been increasing tremendously in the past ten years. According to the government's Development Plan 1979-1983 (Republic
of Kenya, 1979) it is estimated that there were 55,500 people in training institutions by 1979. Out of this number, 28,000 were engaged in the industrial, commercial and vocational modern public sectors, and an estimated 22,000 were engaged within voluntary organizations partially assisted by the government. Most of those engaged in the voluntary training organizations have only an equivalent of primary-level education, while those in commercial sectors have some secondary education.

It is apparent that education and training in Kenya have become major concerns for both private and public groups with the former becoming more involved. The uncontrolled involvement of private interest groups in the education and training process for very understandable reasons makes it difficult for the government to embark on definite economic plans. It may create some major discrepancies which inhibit economic development (Leys, 1974; Todaro, 1977). At the beginning of the 1974 to 1978 plan period for example, the Kenya Government started to slow down the rate of expansion of the government secondary schools. The public responded to this constraint by building more Harambee (self help) secondary schools. From the trend which was set during that period, enrollments in private schools exceeded those of government-aided schools by 1975. This tremendous and relentless pressure led to

Rempel and House (1973) found that the labor supply in Kenya was well in excess of the growth of modern sector employment opportunities. In the major urban centers, the proportion of the estimated labor force outside of the modern sector increased from 23 percent to 47 percent over an eight-year period.

It is evident that lack of coordinated planning for the manpower development in Kenya has contributed to the current major discrepancies in education and employment. Official realization of the lack of a planned approach to manpower development was explicitly cited by the National Committee on Educational Objectives and Policies in the 1976 report as follows:

The Committee considers lack of coordination to be one of the main factors underlying the puzzling paradox of the existence of increasing numbers of educated people who are unemployed while various key areas of national development continue to be held back by lack of people with the relevant attitudes, knowledges and skills. (p. 154)

The government responded to the issue by planning to establish a coordination unit during the 1979-1983 plan period. The unit will be responsible for development of the standards, criteria and evaluation processes that will be applied to training activities (Republic of Kenya, 1979).
Observations

The following observations were derived from the literature reviewed for this chapter:

1. Traditional economic development models advanced by economic theorists from industrialized western nations have failed to be applicable to many developing nations.

2. Contemporary economic development theorists tend to agree that in order to achieve meaningful economic development, there must be changes in levels of poverty, inequality and unemployment. Besides these economic factors, there must be changes in the social structures, popular attitudes and institutions.

3. Manpower development is an important component of economic development that must be given top priority by developing countries when considering the development of strategies and policies.

4. Lack of a manpower development strategy in Kenya is a contributing factor to disequilibrium and discrepancies in training and employment.

Various studies (Loken, 1969; ILO, 1972; AID, 1975) have shown that there is no universal manpower development strategy that is ideal. It is therefore necessary
for a national manpower development strategy to address national development goals and objectives relevant to the needs of the society involved.

Assumptions

For purpose of this study the following assumptions were made:

1. There will be no major natural disasters such as earthquakes, floods or long spells of draught.
2. There will be no major internal political upheaval.
3. There will be a continuation of the fundamental economic forces operating in the country, i.e., a continuation of economic activity which produces goods and services, and the demand for labor.
4. The population growth rate will not exceed the present rate of 3.5 percent.

Delimitations

This study was delimited to considering a manpower development strategy that was based on education and vocational training. This study did not consider detailed curricula offerings of the educational and training programs. Only four educational and training models in developed countries were reviewed.
Definition of Terms

Appropriate Technology: the right type of production technique, i.e., one that employs factors of production in the "least cost" or correct proportions. A technology that employs a higher proportion of labor relative to other factors in a labor abundant economy based on available resources and cultural conditions (Todaro, 1977).

Arid Land: unproductive land. Dry land that cannot be farmed without irrigation such as in the North Eastern Province of Kenya.

Gross Domestic Product: the total monetary value calculated at market prices for all final goods and services produced in any economy over a given period of time.

Capital Intensive Technique: more capital - using process of production relative to the factors of production, e.g., labor or land per unit.

Harambee: an African expression from the Swahili language of Kenya which means "pulling together." It is used to symbolize cooperative efforts such as Harambee institutes, which are built out of cooperative efforts in the community.

Human Capital: productive investments embodied in human persons. These include skills, abilities, ideals, health, etc. that result from expenditures on education, on-the-job training programs and medical care.
**Import Substitution:** a deliberate effort to promote the emergency and expansion of domestic industries by replacing major imports such as textiles, shoes, household appliances, etc. with locally produced substitutes.

**Informal Sector:** the part of the economy in Kenya that is characterized by small competitive individual or family firms, petty retail trade and services, labor intensive methods of doing things, low levels of living, poor working conditions, etc. It is often thought of, though, as providing a major source of urban employment and economic activity.

**KANU:** Kenya African National Union. The ruling political party in Kenya.

**Labor:** one of the factors of production; human effort that contributes toward production.

**Labor Force:** the noninstitutionalized population, fourteen years of age or older, that is either working or looking for work (includes both formal and informal sectors).

**Labor Market:** the environment in which wages are determined. The two main conditions required for the labor market being the supply and demand of labor.

**Labor Intensive Technique:** labor using method of production; i.e., that which uses proportionately more labor relative to other factors of production.
Manpower: the amount of labor, both male and female, available in a country at a given time.

Manpower Planning: the long-range planning of skilled and semi-skilled manpower requirements and the attempt to gear educational and training priority and investments in accordance with future human resource needs.

Pastoralists: those groups of people whose livelihood is spent on herding. It is their primary economic activity.

Self Help Projects: projects carried out by members of a community for their own welfare. Each member contributes according to his or her ability.

Voluntary Training Agencies: training agencies such as the National Christian Council, the YWCA and YMCA and the rest that voluntarily offer training to those youth that need help.

Methodology

In order to achieve the purpose of this study a comprehensive literature review was carried out based on the findings of several studies (ILO, 1972; Republic of Kenya, 1976; Rempel and House, 1978) which pointed out the need for a manpower development strategy in Kenya. It was first necessary to define "economic" development based on contemporary economic theories. The status of Kenya's economy and the strategies and policies recommended for
the 1979-1983 development were delineated. Based on findings of these reviews, a set of major and minor criteria necessary for an effective manpower development model was developed.

A review of manpower development models from four developed countries was carried out. Positive and negative aspects of these models were used in the development of a manpower model that would be suitable for Kenya. The model was developed based on three major criteria: manpower needs; individual needs; and societal needs. Two supportive criteria were also identified: manpower development coordination and labor market information.
CHAPTER II

CONTEXT FOR MANPOWER DEVELOPMENT IN KENYA

In reviewing the context for manpower development, it was necessary to consider two major factors. First, a brief historical review of economic development in Kenya and an analysis of current national strategies and policies affecting education and training were carried out. Secondly, for educational and training programs to be effective, it was necessary to analyze and synthesize the nature and means of supply and demand needs of labor in the Kenyan labor market.

**Historical Review of Economic Development in Kenya**

**Precapitalist Era**

During the Nineteenth Century, production and trade in Kenya were precapitalist because neither activity was undertaken for profit. People were predominantly concerned with producing only what was necessary for existence. The people of East Africa, in general, adapted themselves to environmental limitations by a wide range of methods. These included exploiting the resources of semi-arid region through stock keeping and seasonal
migrations. In the more fertile regions they developed agricultural technology, such as iron tools for clearing forests and tilling the land. They also practiced shifting agriculture and careful stock management (vanZwanenberg, 1975).

Traditional political and social systems of the indigenous peoples of Kenya had the common characteristic of being based on a loose affiliation of extended family units in tribal groups. Obligations and activities were tightly binding and were derived from traditional units, kinship groups or age groups, depending on the tribes. Authority was usually exercised through a council of elders rather than through individual chiefs (IBRD, 1963).

Colonial Capitalist Era

The colonial era in Kenya began when the British Government declared the country, a "British Protectorate" in 1895. This was later followed by the "Crown Land Ordinance" of 1902, which established conditions under which land in Kenya might be alienated and reserved an area of the "highlands" for European settlers and prescribed specific other areas as tribal reserves (Leys, 1974).

The colonial era, which brought colonial capitalism, had a major impact on Kenya's precapitalist economy. The introduction of western technology offered a possibility
of eliminating famine and producing a variety of goods and quality never realized before. While such advancement would be considered favorable as the precapitalist economy was at the mercy of nature, the colonial capitalism caused major adverse effects. New modes of production made many of the old craft and trade skills irrelevant as new imported goods supplanted those produced locally. Unlike European capitalism, which originated from within, colonial capitalism originated and was imposed on African systems. The forceful imposition of colonial capitalism forced Kenya to integrate into the world economy, where it has little say on pricing its export commodities which it entirely depends upon (Leys, 1974; vanZwanenberg, 1975).

In summary, colonial capitalism in Kenya was responsible for little or no development of the indigenous manpower, while, in pursuit of profit maximization, it led to the development of the following repressive discrepancies, which are yet to be eliminated (Leys, 1974; vanZwanenberg, 1975):

1. There is uneven growth and development between fertile arable regions and the semi-arid regions.
2. A growth gap exists between urban areas, formally administrative centers, and the rural areas, especially those that were reserved for Africans.
3. An economy that depends on crops meant for export markets was encouraged thus causing high competition between the peasantry and foreign agencies, including corporations, banks, industries and cooperative organizations, all aimed at serving the international market.

4. There were political explosions that emerged in the 1950s.

5. Peasant capitalists emerged in the late 1950s which perpetuated inequalities.

6. There are unrealistically high levels of expectation within the rural communities, which rural economies cannot satisfy.

The most destructive element of colonial capitalism and colonization in Kenya was the molding of the people's attitudes and aspirations. Lifestyles pertinent to western civilizations, which were in many respects inappropriate for the Kenyan environment and in conflict with African traditions, were imposed on the Kenyan people as ideal characteristics of development (Leys, 1974; vanZwanenberg, 1975; Rempel and House, 1978). Under the frustrations of colonial subjugation and the denial of individual freedom, the Africans aspired to replace the colonizers after independence. The young and the literate aspired to occupy white-collar jobs or work in supervisory capacities. Manual labor and subsistence lifestyles were to be no
longer the way of independent Africans. These attitudes have caused major social and economic concerns currently manifested in the educational system and the labor market (ILO, 1972; Republic of Kenya, 1976; 1979).

Since independence in 1963, Kenya has developed goals and objectives which are now firmly rooted in its constitution, several Kenya African National Union (KANU) manifestoes and sessional paper number 10 of 1965 (Republic of Kenya, 1979). These goals and objectives include political equality, religious freedom, social justice, freedom from want, ignorance and disease, human dignity, equality of opportunity for all citizens and a rising per capita income equitably distributed.

National Strategies and Policies Relevant to Manpower Development During the 1979-1983 Development Plan Period

The Kenyan government's realization of current discrepancies and shortcomings arising from economic growth and willingness to address these problems openly with the Kenyan people are a remarkable step towards finding better and appropriate solutions.

The President of the Republic of Kenya, in his introductory remarks in the current development plan, reminded the citizens that although the country had made some progress, a variety of problems still existed. He pointed out that income was still very low and the majority of Kenyans were still very poor. There is a need for a
diversified economy to provide services which are currently below desirable levels. The government's philosophy and objectives include: (a) ensuring of individual freedom, (b) a growing economy and (c) promoting equitable distribution of wealth. The dominant factor in the 1979-1983 Development Plan (Republic of Kenya, 1979) is the "alleviation of poverty."

The Minister for Economic Planning and Community Affairs noted that the target growth rate for the 1979-1983 development period was 6.3 percent. He acknowledged this rate as rather ambitious, given two major constraints: (1) the big gap between government revenue and expenditure and (2) the wide gap between available savings and investments required to meet the goals (Republic of Kenya, 1979).

Strategies

It is anticipated that during the development period the following strategies will be employed (Republic of Kenya, 1979):

1. Reduction of rate of growth of expenditures.
2. More efficient use of scarce physical and financial resources.
3. Improvement of tax structure to avoid evasions.
4. Concentration on agricultural development of arid lands.
5. Promotion of agricultural exports.
6. The increase of exports in highly competitive world markets.


8. Dispersement of industrial activity throughout the country.

In order to mobilize the nation's resources in pursuit of these objectives, the government has adopted four basic principles that define the economic development process in Kenya (Republic of Kenya, 1979). They are:

1. Widespread participation. All Kenyans are expected to participate in the development process.

2. Diversity of organizational forms and incentives. A variety of forms of ownership and modes of operation is considered essential to the promotion of participation and efficiency.

3. Government participation. The government will play a decisive and leading role in initiating and directing development.

4. Mutual social responsibility. Deriving from the African family tradition, a sense of mutual social responsibility will be actively promoted among all economic agencies.
Policies

Essential to the realization of the development strategy and the actual implementation of the Development Plan are policies developed by the government. Among those are five major policies that impact on the development of manpower in Kenya (Republic of Kenya, 1979).

1. **Target Groups.** In most cases, poverty in Kenya can be traced to a lack of access to employment opportunities, land, water, markets, credit, modern technological innovations, power, quality education and medical care. An important consideration in selecting projects and programs should be their contribution to the alleviation of poverty. Using the dual criteria of low incomes and lack of access to opportunities, five target groups were identified for this plan. They are:

a. **Pastoralists.** Those whose incomes derive mainly from the care of livestock in a nomadic setting.

b. **Small farmers.** Those with land who derive the majority, but usually not all, of their income from working the land.

c. **Landless rural workers.** Those who have little or no land and who derive the majority, perhaps all of their income from casual farm employment and nonfarm rural activities.
d. Urban poor. Those who live in poverty in the urban areas with limited incomes derived from casual self or wage employment.

e. The handicapped. Those who must be given skills commensurate with their abilities.

The government's ability to help these target groups will, to a large extent, depend on how well the people concerned are prepared through education and training to find meaningful employment and engage themselves productively.

2. Economic Organization and Efficiency. The government takes a leading role in promoting beneficial interaction of the public and private sectors. In the public sector, the government's main concern is to devote a larger share of its resources to the creation of income earning opportunities, promote joint ownership of strategic economic activities and encourage full utilization of capacity in all sectors of the economy. Within the private sector, there will be a shift from import substitution to export markets. This will require substantial increases in productive efficiency, appropriate export incentives and aggressive export oriented management. The creation of income earning opportunities and increases in production efficiency both require the cultivation of appropriate skills and management techniques in the labor force.
The impact on manpower development is considerable.

3. Employment and Income Policies. These focus on three main areas: (1) intensive and extensive use of land, (2) nonfarm rural development and (3) fuller utilization of the productive capacities. Employment policies are summarized in Table 1. A major policy for income is to reduce differentials between high and low income, to use a progressive tax system and to transfer payments through "Harambee" efforts. This policy is aimed at an equitable distribution of wealth.

4. Rural Development Policies. In effect, most policies will mainly focus on rural development, because 80 percent of the Kenyan population lives in the rural areas. Particular emphasis will be on: (1) increased rural production and income, (2) increased equity in the distribution of the income, (3) increased access to services and (4) increased participation and decision making at district levels. A large number of all projects, both public and private will be encouraged.

5. Science and Technology: The Kenya government is committed to applying modern science to the development of technologies that can be appropriate to the Kenyan environment. In order to be effective, these technologies must be: (1) more productive than the existing methods, (2) cheap enough for those who are intended to use them and (3) adaptable to Kenya's
<table>
<thead>
<tr>
<th>Employment Category</th>
<th>Objectives</th>
<th>Policy Instruments and Institutional Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern Sector</td>
<td>Alter relative cost of labour. Produce appropriate manpower in sufficient numbers</td>
<td>Wages Policy, Trade Policy, Fiscal Policy, Education and Training Policies, Kenyanization Policies, Pricing Policy, Employment Services</td>
</tr>
<tr>
<td>Small Scale Agriculture</td>
<td>Raise income levels. Increase labour productivity.</td>
<td>Agricultural Intensification, Agricultural Extension Services and Training, Rural Development Policy, Land Policy, Pricing and Marketing Policies, Provision of basic needs</td>
</tr>
<tr>
<td>Pastoralists</td>
<td>Raise income levels. Increase livestock numbers and quality.</td>
<td>Pricing and Marketing Policies, Development of arid and semi-arid areas, Provision of basic needs</td>
</tr>
<tr>
<td>Rural Non-Farm</td>
<td>Increase productivity. Increase labour absorption. Produce some of the privately consumed basic needs goods.</td>
<td>Rural Development Policy, Appropriate training, e.g. the Village Polytechnic, Review of the existing legislation on rural non-farm activities and remove or amend those sections that are necessarily inhibitive.</td>
</tr>
<tr>
<td>Urban Informal Sector</td>
<td>Generate more employment. Produce goods and services for low income groups, Produce skilled workers, Increase productivity.</td>
<td>Remove restriction on informal sector activities, Provide basic infrastructure including the necessary support services.</td>
</tr>
</tbody>
</table>

conditions, available resources and setting where applied. They must be appropriate technologies.

The manpower bottleneck is serious at many levels, and there is an effort to train Kenyans to minimize this problem. One percent of the Gross Domestic Production (GDP) will be set aside each year for research and development in this area.

Manpower Needs in Kenya

Demand

The assessment of manpower needs in Kenya is a complex problem. Government ministries find it difficult to spend the appropriations they are granted due to lack of technical skills for project implementation. Idle workers and idle capacities exist side by side. The problems differ from one region to another, and, in a dynamic economy like Kenya's, the problems also change from year to year (Table 2). Manufacturing patterns change with technology; cropping patterns shift in response to changes in prices and in consumer and export demand (Republic of Kenya, 1979).

The Formal Sector

The formal sector was, in 1976, estimated to have engaged 915,000 workers, while the informal urban sector engaged over 125,000 workers. The rural sector engaged the most workers, over 4 million, with an estimated
<table>
<thead>
<tr>
<th>Profession</th>
<th>Currently Employed 1978/79</th>
<th>Additional Requirements 1979/83</th>
<th>Additional Supply 1979/83</th>
<th>Surplus(+) or Deficit(-) 1979/83</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Doctors</td>
<td>542</td>
<td>724</td>
<td>428</td>
<td>(-) 296</td>
</tr>
<tr>
<td>Dentists</td>
<td>22</td>
<td>138</td>
<td>110</td>
<td>(-) 28</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>30</td>
<td>148</td>
<td>92</td>
<td>(-) 56</td>
</tr>
<tr>
<td>Clinical Offices</td>
<td>1,002</td>
<td>835</td>
<td>552</td>
<td>(-) 283</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>1,223</td>
<td>1,037</td>
<td>690</td>
<td>(-) 347</td>
</tr>
<tr>
<td>Enrolled Nurses</td>
<td>4,009</td>
<td>3,891</td>
<td>2,236</td>
<td>(-) 1,655</td>
</tr>
<tr>
<td>Public Health Officers</td>
<td>250</td>
<td>140</td>
<td>107</td>
<td>(-) 33</td>
</tr>
<tr>
<td>Public Health Technicians</td>
<td>642</td>
<td>2,099</td>
<td>497</td>
<td>(-) 1,602</td>
</tr>
<tr>
<td>Pharmaceutical Technologists</td>
<td>221</td>
<td>669</td>
<td>138</td>
<td>(-) 531</td>
</tr>
<tr>
<td>Laboratory Technologists</td>
<td>130</td>
<td>540</td>
<td>77</td>
<td>(-) 463</td>
</tr>
<tr>
<td>Laboratory Technicians</td>
<td>284</td>
<td>1,400</td>
<td>264</td>
<td>(-) 1,136</td>
</tr>
<tr>
<td>Radiographers</td>
<td>217</td>
<td>933</td>
<td>122</td>
<td>(-) 811</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>116</td>
<td>544</td>
<td>101</td>
<td>(-) 443</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>45</td>
<td>555</td>
<td>68</td>
<td>(-) 487</td>
</tr>
<tr>
<td>Dental Technologists</td>
<td>15</td>
<td>115</td>
<td>13</td>
<td>(-) 102</td>
</tr>
<tr>
<td>Orthopaedic Technologists</td>
<td>12</td>
<td>138</td>
<td>35</td>
<td>(-) 103</td>
</tr>
<tr>
<td>Family Health Field Educators</td>
<td>430</td>
<td>930</td>
<td>1,012</td>
<td>(+) 82</td>
</tr>
<tr>
<td>Nutrition Field Workers</td>
<td>210</td>
<td>280</td>
<td>248</td>
<td>(-) 32</td>
</tr>
<tr>
<td>Engineers</td>
<td>217</td>
<td>527</td>
<td>250</td>
<td>(-) 277</td>
</tr>
<tr>
<td>Jurists</td>
<td>421</td>
<td>999</td>
<td>325</td>
<td>(-) 674</td>
</tr>
<tr>
<td>Professional Agronomists/Veterinarians (Graduates)</td>
<td>841</td>
<td>1,478</td>
<td>900</td>
<td>(-) 578</td>
</tr>
<tr>
<td>Physical Scientists</td>
<td>107</td>
<td>297</td>
<td>300</td>
<td>(+) 3</td>
</tr>
<tr>
<td>Graduate Level Teachers</td>
<td>2,864</td>
<td>3,829</td>
<td>3,700</td>
<td>(-) 129</td>
</tr>
<tr>
<td>Semi-professional Agronomists/Veterinarians (Diplomates)</td>
<td>1,399</td>
<td>1,684</td>
<td>1,500</td>
<td>(-) 184</td>
</tr>
<tr>
<td>Other Qualified Workers in Agric/Veterinary (Certified)</td>
<td>4,399</td>
<td>8,404</td>
<td>2,250</td>
<td>(-) 16,154</td>
</tr>
<tr>
<td>Engineering Technicians</td>
<td>1,760</td>
<td>3,365</td>
<td>3,600</td>
<td>(+) 235</td>
</tr>
<tr>
<td>Printing Technicians</td>
<td>183</td>
<td>325</td>
<td>200</td>
<td>(-) 125</td>
</tr>
<tr>
<td>Scientific Technicians</td>
<td>429</td>
<td>677</td>
<td>540</td>
<td>(-) 137</td>
</tr>
<tr>
<td>Other Technicians/Artisans</td>
<td>523</td>
<td>1,225</td>
<td>900</td>
<td>(-) 325</td>
</tr>
</tbody>
</table>

growth of 5.7 annually between 1976 and 1983. The formal sector and the urban informal sectors were estimated to grow at 3.5 percent and 6.5 percent respectively between 1976 and 1983 (Rempel and House, 1973; Republic of Kenya, 1979). While it was possible to project public sector manpower as shown in Table 2, it was not possible to project the needs in the private sector due to lack of data (Republic of Kenya, 1979).

Modern sector employment is concentrated in agriculture and fishing, forestry, mining and quarrying, manufacturing, electricity/water, construction, trade/hotels, transport/communications, private and public services and self wage employment. The fastest growing sectors are agriculture with 17.4 percent, manufacturing 13.3 percent and wholesale-retail trade 11.4 percent (Republic of Kenya, 1979). The demand for manpower in Kenya's labor market is in response to government policies. In the developed economies, the demand would be reflected in the already established economic sectors. In a developing economy, government strategies and policies direct the trend of the economy (Todaro, 1977). It is government policy to provide an industry that is acutely aware of the use of labor intensive technology. This policy has been difficult to implement with increased foreign investment in Kenya.
Rempel and House (1978) observed that while the utilization of modern, large scale production techniques is justified for advancing economic growth, there are certain adverse effects that must not be overlooked. The incentives given by the Kenyan government to encourage foreign investment have often encouraged foreign firms to invest in urban areas where the largest portion of wage employment can be found. Due to lack of local competition, these firms are able to earn large profits and offer lucrative wages to their employees in comparison to local industries, which further accelerates the rural-urban migration trend. Thus the high profits earned are paid to the owners often residing outside of the country without sharing them with a large number of Kenyans. As a result, a formal sector has emerged which caters to the needs of the new Kenyans in high income brackets who in 1976 received 56.3 percent of the nation's income, while they only represented 10 percent of the population (Republic of Kenya, 1979).

The Informal Sector

An informal sector emerged to meet much of the local demand for such necessities as food, clothing and shelter for those who have the low wage, unskilled jobs in the formal sector and the vast numbers who lack access to any of the economic opportunities in the formal sector. The informal sector also provides valuable on-the-job
training for many people, enabling them to function as artisans or to venture into some business of their own. Rempel and House (1978) further pointed out that in order to meet the needs of the informal sector, it is not enough just to understand its makeup. It is necessary to distinguish in terms of attitudes and motivations, two very different groups of people: the "community of the poor" and the "intermediate sector."

**Community of the Poor**

People in this group often exhibit the following characteristics:

1. They are attached to major urban centers, since their desire is to gain entry into the formal sector employment.
2. They view their status as temporary but are often caught up in this status for extended periods, creating a culture of poverty.
3. They feel a sense of defeat and hopelessness and therefore lack motivation.

**Intermediate Sector**

Common characteristics are as follows:

1. People in this group are intent on making a livelihood on particular craft skills or businesses.
2. They are motivated to invest and build for the future because of their commitment to making a living.

3. Most often, the whole family is involved, given the conscious choice of place and activity, as opposed to migrants, who are merely subsisting and cannot afford to support a family.

There are similarities between the two groups, despite their distinct differences. Both groups live in the same area, with the intermediate sector group more spread out in the country. Both tend to be poor and, as a result, have a low margin for error and participation. Individuals in both groups tend to engage in two or more activities at the same time for protection against failure.

It is the intermediate sector, however, that plays a vital role in the economy and has the developmental potential (ILO, 1972). Government policies on manpower development should emphasize the development of their potential in the intermediate sector while reducing the size of the community of the poor.

**Supply**

During the plan period, it is estimated that more than 225,000 Kenyans will join the labor force in search of employment each year (Republic of Kenya, 1979). The
Kenyan Government plans to increase income earning opportunities for the new labor market entrants, as shown in Table 3.

TABLE 3

ESTIMATED ANNUAL EMPLOYMENT OPPORTUNITIES

<table>
<thead>
<tr>
<th>Employment Category</th>
<th>New Opportunities Expected Annually</th>
<th>Percentage of All Exp. New Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Farm</td>
<td>80,000</td>
<td>35</td>
</tr>
<tr>
<td>Rural Nonfarm</td>
<td>72,000</td>
<td>32</td>
</tr>
<tr>
<td>Modern Sector</td>
<td>50,000</td>
<td>22.2</td>
</tr>
<tr>
<td>Pastoral Sector</td>
<td>12,000</td>
<td>5.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>214,000</td>
<td>100</td>
</tr>
</tbody>
</table>


The creation of new income earning opportunities for the additional labor force, however, is only a partial treatment of the employment problem in Kenya. More serious is the status of the working poor who outnumber those that are openly unemployed (ILO, 1972). Disequilibrium is caused by excess labor supply over demand and unregulated informal sector activities. Increased and continued attention through government development strategies and policies is needed (ILO, 1972; Rempel and House, 1978).
Education and Training in Kenya

The structure of general education in Kenya was introduced by the British colonial government and is patterned after the British system of education. During that time, very few Kenyans had access to education. The main goals for education of the "African," at the time, were to provide a basic knowledge of the English language and few related service skills in the secretarial and artisan areas. The education and training provided was just enough to make the individual an "educated" servant (UNESCO, 1972; Leys, 1974).

Since the attainment of independence in 1963, the Kenyan government has placed a higher priority on the development of education. Although universal primary education has not been fully achieved, enrollment of primary school age children rose from 50 percent in 1967 to over 85 percent in 1978. Secondary education enrollments have increased tenfold (Republic of Kenya, 1979).

General Structure of Education and Training

Kenya has a '7-4-2' education system up to the university entrance level, i.e., seven years of primary education, four years of secondary education and two years of university preparatory education. Pre-primary education has been increasing all over the country, but
most noticeably in the urbanized areas. The official age for primary school admission is six years, although in many parts of the country it has varied up to ten and occasionally more years. Basic education is certified after completion of the seventh year of primary education and after passing a common national examination (Certificate of Primary Education). This exam is used as a selective device for secondary education.

After four years of secondary education, students are further examined on a national level (East Africa Certificate of Education (EACE)) and from the results of this examination are screened for further education and training. For the students who proceed with the two year preparatory program for university entrance, the East African Advanced Certificate of Education (EAACE) examination is administered, and further screening is done (Republic of Kenya, 1976).

Each examination level marks the point at which various training programs are given to those who do not proceed with further education. A brief outline of education and training in Kenya is shown in Figure 1.

**Vocational and Technical Education**

Vocational training in Kenya has existed for as long as formal education. During the first and second decades of this century, the missionaries pioneered in providing training in such building trades as brickmaking,
Figure 1. Education and training in Kenya.

masonry and carpentry. Major East African regional service industries and private firms and farms engaged in training personnel for their own consumption. Their organization included the East African Railways, East African Airways, East Africa Harbours, Ports and Telecommunications, all of which are now decentralized as a result of the dissolution of the East African Community.

The first industrial training school was opened at Kabete in 1924. It was known as the Native Industrial Training Depot. It was developed to offer various trade courses which, in addition to the building courses, trained artisans in sheetmetal work, blacksmithing, welding, electrical work, fitting and turning, motor vehicle mechanics, tailoring and leather work (shoemaking). Between 1950 and 1960 a technical institution, two technical high schools and four trade schools were opened. Students in these schools were admitted after completing eight years of primary education. Emphasis in the program was on manual skills, whereby four of five days in the week were spent either in the workshop or on the actual work site.

Reforms After Independence

After independence in 1963, two manpower surveys were made (ILO, 1972). The surveys pointed out the need for:
1. Replacing the positions held by noncitizens by Kenyans (Kenyanization).

2. Producing a sufficient number of persons with the skills necessary to sustain a high rate of economic growth.

3. Altering the training systems to avoid training people in excess of needs.

In effect, a pattern was established (January, 1966) to offer a pre-craft course and a pre-technician course aimed at preparing students for training as future craftsmen and technicians. In a three year pre-craft course, the third year covered pre-craft training up to "Part I City and Guild's London," a British-based curriculum, for respective trades. Math, science, English and other related subjects were included. In a four year pre-technician course, the last two years covered a broader general education with enough technical training acceptable to employers for further training as technicians.

The pre-craft and pre-technicians programs were not very successful (Republic of Kenya, 1976) as they were patterned after the British system and externally examined. Between 1971 and 1973, vocational education was reorganized. By 1974 this reorganization was completed and for the first time students were offered a full school certificate program which consisted of both academic and technical subjects.
Employment and Further Training Opportunities

The secondary technical program is designed to allow maximum possible flexibility in further training. By giving a general course in forms I and II and progressively specializing in forms III and IV, it is intended to allow students within a trade specialist area to be adaptable and trainable to meet the fluctuating specialty labor demand.

Although it is intended that the technical school output will cater mainly to the needs of industry, the program is devised to allow those students with higher attainment at the fourth year (East African Certificate of Education Examination) to join forms five and six and proceed to the university for engineering degree work. Those not proceeding with higher education but with adequate passes, have enough basic education for technician or diploma courses at the polytechnics (Figure 1).

Major Discrepancies

Since independence, Kenya has made considerable progress towards the stated objectives of educational policy. However, the ILO Report of 1972 and the NCEOP Report of 1976 pointed out the following major discrepancies in Kenya's educational and training systems:
1. A very high interest in education at the local level has led to an upsurge in Harambee secondary schools in quantity and capacity (Figure 2).

2. The increase in Harambee schools has led to an inferior secondary school curriculum due to strains on facilities and teachers.

3. The central weakness of the whole system of education is not the number of students to be served but rather the "exclusive orientation" for higher education. This ignores the majority of the students that discontinue their studies at the primary and secondary levels.

4. The majority of Kenyans spend their livelihood in the rural areas and work in agricultural and non-formal rural sectors. The school curriculum, on the other hand, does not emphasize the provision of knowledge and skills relevant to these employment sectors. This often leads to youth entering the labor market ill-prepared for the formal sector or the informal and rural sectors of employment.

5. As long as education refers only to the present formal method of academic instruction directed towards the uncertain mastery of a body of
Figure 2. Patterns and trends in secondary school enrolments.

abstract knowledge which is periodically measured by the existing examination system, Harambee schools, village polytechnics and vocational technical schools will all tend to imitate conventional secondary schools. This is unavoidable because it is the rational thing to do as long as the incentives remain as they are (ILO, 1972; Republic of Kenya, 1976).

The NCEOP Report of 1976 emerged with various recommendations for effective changes in education based on the country's needs. Some of the major recommendations include the following (Republic of Kenya, 1976):

<table>
<thead>
<tr>
<th>Recommendation No.</th>
<th>Action to be Taken</th>
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<tr>
<td>5</td>
<td>To make formal education institutions, including primary schools, give increasing emphasis on problem-solving teaching methods that have a bearing on the real life situation of the Kenyan environment.</td>
</tr>
<tr>
<td>30</td>
<td>To promote national economic development by providing manpower with the most appropriate knowledge, skills and attitudes in relation to social and economic needs of the country as a whole.</td>
</tr>
<tr>
<td>44</td>
<td>To ensure that the allocation of resources, priority is given to training programs which will ensure the full range of skills required by the economy and that the necessary physical facilities, for this purpose are established within the country.</td>
</tr>
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</table>
To make the educational system respond to the need to meet the educational expectations of the rural population in terms of general or basic education, community improvement education and occupational education.

To remove the demarcation between secondary academic and secondary technical education and make secondary education increasingly scientific, pre-vocational and craft oriented.

To give prominence to the teaching of agricultural science in secondary schools and to relate the teaching of other subjects to agriculture.

**Summary**

In this chapter, four major areas were investigated for the purpose of understanding manpower development in Kenya. First, a historical review revealed that Kenya's economic and social systems were forcefully changed and in many ways their changes influenced by the colonial capitalist system. These influences still linger today.

Secondly, after political independence, Kenya embarked on strategies aimed at bringing economic independence. The current Development Plan, which is the fourth since independence, still addresses the original goals and further seeks to reduce levels of poverty, inequality and unemployment.
Thirdly, there exists in Kenya a formal employment sector which serves mainly those people with high levels of income who represent only 10 percent of the total population. As a result, an informal sector has emerged to meet the needs of the rest of the population. It is this informal sector that the government must seek to help, most especially the intermediate sector which has growth potential through the application of proper incentives.

Finally, while quantities in education have reached desirable levels, quality of the programs is far from adequate. There is a need for the educational and training systems to provide knowledge and skills relevant to the needs of the rural population and to meet national economic goals in general.
CHAPTER III

CRITERIA FOR MANPOWER DEVELOPMENT MODELS

Introduction

In the first chapter of this study the meaning of economic development was explored and defined. Here the role of manpower development was delineated. The second chapter dealt with Kenya's social economic framework. The purpose of this chapter is to develop important criteria which would be useful in judging effective manpower development models.

Harbison and Myers (1964) argued that it was not enough to establish single targets for various human resource development programs. Requirements for such development must be comprehensible. They concluded that the assessment of human resource development "in pieces" is perhaps the greatest single deficiency on the manpower and educational surveys which have been conducted in the past. It has been responsible for much of the difficulty experienced in the integration of human resource planning for general planning for development (Harbison and Myers, 1964).

In order to be acceptable, a criterion shall satisfy two conditions. First, the criterion must be comprehensive
in nature; it must relate to the national economic and social development goals (Kuznets, 1973). Secondly, the criterion must be responsive to Kenya's specific socio-economic needs (Republic of Kenya, 1979).

**Major Considerations**

Six major considerations were used to derive criteria. These considerations were: (1) employment, (2) industrialization, (3) alleviation of poverty, (4) cultural and human conditions, (5) manpower development coordination and (6) manpower forecasting and the labor market.

**Employment**

In order to generate employment opportunities, the government (Republic of Kenya, 1979) intends to diversify economic activities in the country and encourage full utilization of capacity in all sectors of the economy through:

1. Wider participation. There is a call for wider participation by the people in both public and private sectors and the government intends to use various incentives to encourage a shift from import to export markets. In his analysis of "Investment in Human Capital," Becker (1975) found that unemployment rates usually tended to be related to the level of skill.
2. Limitations on traditional programs and policies. Ducray (1979) observed that with the spread of education to more people in industrialized economies, vocational training has come to be considered a major part of economic development. The reduced role of schools to general education has increased out of school training, apprenticeships for training. Jacob Mincer (1962) had long observed that investment in on-the-job training (OJT) was a very large component of total investment in education in the United States. Measured in costs to society, it was observed to be as important as formal education. Ducray (1979), however, pointed out that persistent shortages in surpluses of particular skills have raised doubts about the effectiveness of vocational education and training.

3. Improved relationships between training and employment. Traditionally, when skills were short in the economy, training was an instrument of policy (Venn, 1970; Ducray, 1979). Ducray (1979) pointed out that studies in various countries have shown that vocational training plans are customarily based on the following three factors;
a. Employment structure depends on the type of demand, internal or external, to which the production system is geared.

b. The training provided is put to direct use in the same fields.

c. The employment market ensures that workers find jobs requiring the skills they possess.

Today, all of these presuppositions are inaccurate. Moreover, the employment structure was found to be independent of the production system. In the developed countries, there is higher competition for jobs as more people cross borders to take up jobs that they were not trained for. The behavior of workers and employees is a factor of market equilibrium. Neither decisions taken by workers seeking employment nor those taken by employers are based on purely objective considerations concerning the use of skills taught during vocational training. Manpower trends (Ginzberg, 1975), which include a shift from a goods-producing to a service-producing economy, large numbers of highly-educated and well-trained personnel, the increasing role of women in the labor force and a steady decrease in hours worked per year, have important implications for the success of training programs and work restructuring efforts.
Industrialization

Out of Kenya's land area of 225,000 square miles, only one-fifth is arable. While over 80 percent of the Kenyan population lives off the land, there is an increasing number of Kenyans who are migrating to urban areas. The one-fifth of the land that is suitable for farming is increasingly coming under pressure from population increases. Kenya's industrial sector is growing rapidly. However, for the industrial sector to succeed, the following factors must be considered:

1. Kenya's environment. The transfer of technology to any region on the globe is possible. What makes the difference, though, is the environment and condition in which the technology is implemented (Schumacher, 1975).

2. Appropriate technologies. The government is committed to applying modern science to the development of technologies that should be appropriate to the Kenyan environment (Republic of Kenya, 1979).

3. Labor intensive activities. In view of the menace of unemployment and an abundant unemployed rural population, high labor-intensive firms set in the rural areas are encouraged. This calls
for training in appropriate areas to ensure productive involvement.

Studies carried out in Kenya (ILO, 1972; Rempel and House, 1978), strongly indicated that unemployment and underemployment in Kenya have reached alarming proportions. The studies called for a reassessment of the causes of failures to meet manpower needs, individual needs and societal needs before engaging in any meaningful development planning for the future. It was recommended (ILO, 1972) that structural changes be made in the educational and training systems to accommodate the needs of the rural population.

Kuznets (1973) pointed out that if technology is to be employed efficiently, there must be institutional and ideological adjustments. He also warned that technological innovations contain surprises, the unexpected result of which may be positive or negative.

Alleviation of Poverty

The major emphasis of the 1979-1983 Development Plan (Republic of Kenya, 1979) is the alleviation of poverty. It is noted that poverty in Kenya is a result of the following factors (ILO, 1972; Republic of Kenya, 1979):

1. Inadequate supplies of goods and services necessary to meet basic needs. This is often due to the underutilization of available
labor, full capacity and a rapidly growing population.

2. Low levels of income that cannot adequately support an extended family. Hagen (1980) argues that low per capita income is mainly due not to unemployment but rather to low productivity of land, labor and capital.

3. Disadvantaged and handicapped individuals. The differences in levels of development from one region to another, caused by the colonial regime, also affected people. Besides these differences, there are other differences caused by natural phenomena, such as semi-desert regions that do not get enough annual rainfall. Using the dual criteria of low incomes and lack of access to opportunities, five target groups were identified to be given more attention in the current Development Plan. These groups are: pastoralist, landless rural workers, the handicapped, urban poor and small farmers (Republic of Kenya, 1979).

Cultural and Human Conditions

Besides the struggle for economic independence, Kenyans highly regard and pursue their cultural and human
values, which had been disrupted with the coming of a colonial power. These values include:

1. Self-esteem. A sense of worth and self-respect of not being used as a tool by others for their own ends (Todaro, 1977). The Kenyan society is pluralistic with cultural and linguistic diversity.

2. Freedom from servitude. There is need to increase the ability to choose from an expanded range of choices. Lewis (1955) stressed the relationship between economic growth and freedom from servitude when he concluded that in reality the advantage of economic growth is not that wealth increases happiness but that it increases the range of human choice.

3. Education. Various studies have shown that the level of education and training has a major influence on one's income (Becker, 1975; Hagen, 1980). While there are more Kenyans getting access to education, there is a growing concern about the content of the educational curriculum and its relevance to Kenya's environment (ILO, 1972; Republic of Kenya, 1976).
Manpower Development Coordination

Besides high levels of unemployment among the Kenya youth, shortages in high skilled manpower exist alongside idle capacities in various sectors of the economy. While there is a genuine high interest in education and training on the part of the people, there is no organized strategy for dealing with the educational and training systems in a coordinated fashion on a national and local level (Republic of Kenya, 1976).

Manpower Forecasting and the Labor Market

To be effective, a manpower development model for Kenya will have to depend on some reliable data about the labor market and other useful statistics gathered for the purpose of helping provide direction to education and training programs. Such data are currently unavailable in Kenya. The National Committee on Educational Objectives and Policies of 1976 made the following recommendations in response to this shortage (Republic of Kenya, 1976):

Recommendation 77. To concentrate on acquiring an intimate knowledge of the extent and nature of existing training provision of all kinds including the non-formal, and of current and projected demand and supply position, both qualitative and quantitative, in the market for skilled labor including the demand for replacement of foreigners. (p. 41)
Recommendation 78. To publish on an annual basis manpower and vocational education statistics and to use job analysis and tracer studies more widely. (p. 41)

The successful development of economic and manpower development strategies, based on the above criteria, depends on the accuracy and the link between manpower forecasts and the labor market. The usual technological method for manpower forecasting has some deficiencies.

**Failure of the Technological Method**

Wery (1978) strongly criticized the usual method of manpower forecasting known as the "technological method." This method is often used in analyzing and projecting manpower supply and demand as well as in employment training, particularly in the developing countries. He pointed out that the method is based on a number of assumptions which bear little relation to the realities of the labor market.

Wery identified major shortcomings in his study (Wery, 1978). First, the treatment of unemployment is completely inadequate for developing countries, because it is based on the assumption that unemployment is simply a result of a gap between supply and demand (ILO, 1972).

Secondly, the technological method is inadequate because of the treatment given to a worker. The worker is regarded as merely a production factor, whereas his role as an income earner and a consumer is crucial where economic and social policy aims at a better distribution of income, the eradication of poverty and the satisfaction of basic needs.
Finally, the deficiencies of the technological method make medium-term and long-term projections based on it extremely unreliable. It should concentrate on short-term projecting. However, employment planning, aimed at the creation of productive jobs and reducing under-employment, must, of necessity, be medium-term to long-term in nature due to the very scale of the problem.

An Alternative Approach

Wery (1978) recommended the use of ILO's BACHUE Models as an alternative approach. Case studies have been carried out for the Philippines, Kenya, Yugoslavia, Brazil and Iran (Wery, 1978).

In this approach, the framework for manpower planning is the labor market, which is set within the context of the economic system as a whole. An explicit representation of the labor market in its supply and demand characteristics makes it possible to avoid or explain restrictive assumptions on which the technological method rests, thus providing a more realistic framework in which to develop employment policy. In addition, description of the interactions between the labor market and the rest of the socio-economic system makes it possible to envision a comprehensive development strategy.
Summary

A Manpower Development Model suitable for Kenya will essentially meet three major criteria: 1) manpower needs; 2) individual needs; and 3) societal needs. Besides these criteria, the model must also meet two major supportive criteria: 1) manpower development coordination and 2) labor market information.

Major Criteria

In order to be effective, the model shall positively respond to three major questions and six sub-questions.

Manpower Needs:

1. Does the model address the manpower needs of Kenya?
   1.1 Are the skills and knowledge imparted relevant to the present and planned economic activities?
   1.2 Does the model provide opportunities for further education and training of the labor force to meet the needs of industry?

Individual Needs:

2. Does the model meet the needs of the individual?
   2.1 Does the model provide for enough flexibility so that individuals can
vertically and horizontally move within the system to expand their career choices and raise their incomes.

2.2 Does the model provide for the handicapped and the disadvantaged so that they may also gainfully participate in their economy?

Societal Needs:

3. Does the model address the needs of the society as a whole?
   3.1 Does the model seek to reconcile manpower needs and individual needs with national economic and social goals?
   3.2 Does the model help the nation in the attainment of manpower with the high level technical and managerial skills needed to implement effectively development projects in a pluralistic society?

Supportive Criteria

The model shall also respond positively to two major supportive criteria:

1. Manpower development coordination. Does a coordination strategy exist to ensure the efficiency and effectiveness of training programs carried out by various agencies?
2. Labor market information. Does a labor market information strategy exist so that vital data on future supply and demand needs will be available to planners and training agencies whenever needed?

Interdependence

The problem arising from poverty, unemployment and inequality are complex and interdependent. The major and supportive criteria, which are identified in this study, respond to these problems and are subsequently, interdependent and interrelated. Meeting a specific need may lead to the removal or easier solution to the other need(s). The provision of further technical training, for instance, may lead to an increase in income, which in turn reduces inequality, while at the same time meets industrial needs for high technical skills.
CHAPTER IV

EDUCATION AND TRAINING: SELECTED MODELS OF MANPOWER DEVELOPMENT STRATEGIES

Introduction

The developed nations of the world command a leading role in economic advance and consequently assume enormous political power. They are characterized by advanced industrialization through advancing technology which has enabled them to exploit worldwide natural resources. The developing nations are constantly seeking to acquire the know-how to exploit their own resources but with great difficulty. They have tried to encourage foreign investment but have often failed because foreign investment has extracted huge profits from the host countries and not helped transfer the needed technological knowledge (Barnet and Muller, 1974).

In order to develop a comprehensive manpower development model to serve Kenya it was necessary to review education and training models in selected developed countries. The review was to benefit the Kenyan model in several ways: 1) the model could be patterned after good examples set by others, 2) it could be oriented along a divergent path from that in another country and/or 3) the
model would be developed based on specific strategies that lead to the avoidance of mistakes made by others.

**Education and Training in Britain**

The British system of education and training had the greatest influence and impact on the Kenyan system. This is mainly because the latter was a colony under the governance of the former.

Until as late as 1950 (Fidgeon, 1979) general education in Britain was something of a luxury. Today, people are seeking further education. Opportunities to learn for self-advancement are plentiful and full-time higher education is seen as something of a right; part-time education is available in some or other form to almost every household in the country (Fidgeon, 1979). It is estimated that at least six million people each year take some part-time studies in numerous and diverse institutions which include further education provided by employers, training boards and government agencies, universities, adult education centers and evening institutes.

**Overview of the British Educational System**

It was not until the 1944 Education Act that the British Government took some serious steps in structuring education service. Before this period, the Government's control of education was rather accidental, as Wardle (1970) explained:
The Government was drawn first into elementary and later into secondary education without any conscious policy, and often very much against its wishes. (p. 148)

The 1944 Act established two bodies in education and a partnership between them. These bodies are the Secretary of State for Education and Science and local education authorities (Fidgeon, 1979). Compulsory education in Britain begins at age five and ends at age sixteen (Figure 3). During this period the separation of students to grammar and secondary modern schools has occurred through highly selected examinations at ages eleven to fourteen. This effectively produced first and second class citizens as far as progress into higher education and job opportunities were concerned. The introduction of a comprehensive educational system was meant to eliminate the classification system. It is still debatable whether or not it has been successful (Ross, et al., 1974; Hampson, 1977).

At the age of sixteen, the students take externally prepared and nationally recognized examinations. Screening takes place at this level also, whereby the academically inclined take individual subject exams leading to the award of the General Certificate in Education (GCE 'O' levels). Thereafter, they advance for higher education by taking the advanced level (GCE 'A' levels), which prepares them for university. The less academically inclined take
Figure 3. Overview of the British educational system.

examinations leading to the award of the Certificate of Section Education (CSE). Some of the students with GCE '0' levels and the majority of those with the CSE qualifications leave school at age sixteen and enter employment in industry or commerce (See Figure 3).

British universities concentrate solely on first degrees and post-graduate courses and research, while the polytechnics and other institutions of higher education provide degree courses and programs that are more vocationally oriented (Lowndes, 1960; Fidgeon, 1979).

Vocational Preparation

In Britain, the preparation of young people for occupations occurs through two main sections: further education and industrial training. Further education is the responsibility of the Secretary of State for Education through the Department of Education and Science while industrial training is the responsibility of the Secretary of State for Employment through the Department of Education.

Further Education

The need for further education emerged in response to the challenge of the industrial revolution and continued to rise until sustained demand for places in advanced courses caused considerable pressure on available resources. Since the universities could not cope with this demand,
colleges of advanced technology (CAT) were launched to take up the pressure. These colleges were intended to offer advanced diplomas in technology, while area and local colleges were expected to concentrate on nonadvanced programs (West, 1975; Fidgeon, 1979).

In 1965, the colleges of advanced technology were granted full university status. A year later the government published a proposal creating major centers for vocational training and designated them "polytechnics," and by 1979 there were over 30 polytechnics in existence (Fidgeon, 1979). These colleges offer a wide range of programs from certificates and diplomas to degrees. They represent the apex of the college structure as shown in Figure 3.

There are currently over seven hundred colleges providing full-time and part-time studies within the area of further education. These include polytechnics, colleges of higher education, colleges of technology, technical colleges, colleges of further education and colleges of art, a majority of which are maintained by the local education authorities.

Industrial Training

Industrial training is the responsibility of the Industrial Training Boards (ITB), which were set up by the Secretary of State for Employment as provided for in the 1964 Industrial Training Act. These boards were set
up to: first, publish recommendations on the nature of content and the length of training appropriate for occupations in each specific industry; and secondly, to ensure that adequate facilities are available for training requirements. The ITBs employed a levy/grant system to ensure that all firms contributed towards the national training needs. The levy on a firm was based on the number of employees, but then the firms were eligible for grants depending upon their quality of other training. It was discovered later that the training system was not succeeding because it did not cover 37 percent of the working population. The firms found it easier to pay the levy and ignore the training responsibilities. In 1974, the Training Services Agency (TSA), now known as the Training Services Division of the Manpower Service Commission (MSC), was established. It was given responsibility for the ITBs and also for identifying and providing for any special training goods.

In its five year plan for the 1976-1981, the Training Services Division (TSD) described its work under four programs (Fidgeon, 1979). They were:

2. The Needs of Individuals.
3. The National Training System.
The literature reviewed strongly suggested that vocational education in Britain has grown rapidly in the last thirty years despite the strong British class system, which often regarded vocational education as something predominantly concerned with livelihood and having little cultural value and virtually no religious or moral content (Lowndes, 1960; Wardle, 1970; West, 1975). On the other hand, vocational education has changed directions on a number of occasions in response to national and industrial needs. It has merely reacted to these needs rather than anticipating future needs (Fidgeon, 1979).

Constraints

The British System of Education is far from being satisfactory in meeting today's needs. Curriculum studies are done within the bounds of subject specialisms usually integrated by groups of subject specialists. A piece meal approach to the several disciplines within the curriculum is no longer appropriate (Ross, et al., 1974). A number of studies (Ross, et al., 1974) have shown that comprehensive education in Britain has not been implemented to the desirable level.

It was reported in the Time Educational Supplement (May 9, 1980) that the "free schooling system" is in growing danger as textbooks, papers and equipment fees increase rapidly. The official claim that 83 percent of the British school children attend comprehensive schools
was dismissed as an overstatement by Caroline Benn (Time, May 1980), a leading researcher on the subject. She pointed out that less than 67 percent of the children attend comprehensive schools with an increasing number still attending the prestigious grammar schools.

The plight of the British higher education system was underscored by Keith Hampson (1977), a representative in the House of Commons, who addressed the House:

British higher education needs a shake up. It is confusing and complex. Parts of the system lack clear goals. There is (sic) duplication and waste. (p. 62)

Hampson proposed key areas of concentration that would cater to: 1) greater need for the vocationally oriented education at the post-school level, 2) the demand for appropriate provisions for adult "mature" students who want to return to educational and training programs, 3) the need for institutions that use resources more flexibly and imaginatively. He observed that there is an "academic drift" in which the polytechnics have lost their purpose and drifted to academic areas. This is illustrated by the fact that the science to arts ratio in 1977 was 1:2 for polytechnics, 1:1 for the universities as a whole and 2:1 for the nine technological universities. Because polytechnics did not specialize in scientific technological training, they became the least technologically oriented part of the higher education system. Hampson further
observed there is a need for a British community college patterned after the American community college.

**Summary**

The British model still has a strong class system that has made it more difficult to provide a wide range of better opportunities to disadvantaged groups. While it has succeeded in providing access to basic education and training, the British educational and training system lacks the coordination on a national level that would make the manpower development policy more effective.

**Education and Training in the United States**

**General Education**

The federal government has, through the years, acted as a catalyst by making public tax monies available for specific purposes through the enactment of public laws. It has, to a large scale, influenced the direction of education in the United States.

During the first half of the Nineteenth Century, industrialization called for expanded educational opportunities for workers. By 1862, the federal government had taken a major catalytic step with the passage of the Morrill Act of 1862. This landmark law provided each state with a grant of federal dollars for land, the interest from which was to be used to support and maintain at least one college devoted to agriculture and the
mechanical arts (Barlow, 1976; Evans and Herr, 1978). The law marked the recognition and realization that a growing economy must develop its agricultural sector, which may provide the basis for establishing industry.

Today, education in the United States remains highly decentralized. Education is the responsibility of each state, while it is the function of local governments and the concern of the federal government. The individual state is the final legislative authority for education, but day-to-day administrative control is the function of the local school boards (Warren, 1977; Dunham, 1979). Attendance at primary and secondary schools is compulsory from ages six to eighteen, varying according to the individual state. Most high schools offer a comprehensive program which often prepares youth for further general and higher education, technical studies and vocational training (Figure 4).

Vocational Education and Training

The skill acquisition process in America has traditionally rested upon four institutionalized programs (U. S. Department of Labor, 1968): training in vocational secondary schools, on-the-job training by employers, training in private trade schools, and labor-management apprenticeship programs. The enactment of the Smith-Hughes Act in 1917 (Barlow, 1976; Dunham, 1979) established a precedent for federal participation in secondary education, going well
Figure 4. The structure of education in the United States.

beyond that of higher education. The law extended federal aid to public secondary schools by providing funds for the support of training in a number of occupational fields and for the training of teachers. This act in particular formed a genesis of the federal-state involvement in vocational occupational training in the United States today.

The Vocational Education Act of 1963 represented a federal effort to modernize vocational education by increasing the number of vocational programs, enhancing the quality of instruction and attracting better qualified students while increasing the opportunities for access to training. In addition, it provided for expansion of vocational programs for adults, funds for research, additional teachers and buildings and five-year interval reviews by a commission of experts.

Manpower Development Policy

The emergence of a comprehensive policy for manpower development after the Manpower Development and Training Act of 1962 (MDTA) was a response to growing dissatisfaction with the training process, as well as fears about the operation of the economy in the early 1960s (Evans and Herr, 1978). The MDTA creates a new set of training programs for a new group of people in addition to the old vocational education and private apprenticeship and training systems. Perhaps more importantly (U. S. Department of Labor, 1968), the MDTA provided the institutional
basis for review, evaluation and innovation by: 1) staking out the field of manpower policy, 2) requiring an annual Manpower Report to the President on the manpower situation and 3) authorizing a vast research program and experimental and demonstration projects by the Secretary of Labor.

**Labor Market Information**

The use of labor market information has become an important component of manpower development planning in the United States in recent years. The federal Vocational Education Amendments of 1976 (PL 94-482) requires that annual and long range plans developed by each state:

> Shall include an assessment of current and future need for workers (job skills) within the state. . . the assessment shall reflect the latest available data of present and projected employment (PL 94-482, 1976).

The federal Comprehensive Employment and Training Act (CETA), PL 95-524, states that each prime sponsor's plan shall:

> Include a detailed analysis of the area to be served . . . a comprehensive labor market analysis and assessment of the economic conditions in the area identifying the availability of employment . . . potential for job growth (PL 95-524, 1978).

These laws and regulations were formulated in response to major concerns that included: 1) increased technological innovations requiring a trained labor force to meet new demands that a general education could no longer supply,
2) increased scrutiny of resources in the public sector and the questioning of the viability of training a large number of people for nonexistent jobs or occupations with limited capacities and 3) individuals and citizen groups involved in education and training demanding labor market information (LMI) before embarking on long-term training programs. These pressures helped precipitate the development of several new LMI programs.

Perhaps the two most significant national-state LMI initiatives ever made in the United States to ensure that adequate labor force (manpower) demand data were available, were the initiation and publication of "Tomorrow's Manpower Needs" methodology (v.s. Department of Labor, 1969) and the implementation of the "Occupational Employment Statistics" (OES) program (v.s. Department of Labor, 1977). "Tomorrow's Manpower Needs," completed under a Presidential Commission in 1969, clearly defined the Industrial/Occupational (I/O) Matrix approach to defining employment by occupation. It also outlined specific multivariate methodologies for forecasting future employment demand based on industrial expansion/decline and on replacement needs. The OES program constructs industry/occupational profiles from surveys that are completed directly by industry through structural surveys mailed to selected industries on a three-year cycle.
Labor-Education Coordination

When considering the pluralism of the American society and the essential free enterprise character of much of its economy with considerable legislative power resting with each one of the fifty states, the process of coordinating and developing manpower on a national level would seem to be a formidable task. However, technological innovations employing sophisticated information gathering mechanisms manned by highly skilled manpower have immensely simplified the task.

Dunham (1979) pointed out that the connection between labor and education was an issue that was receiving close scrutiny in the United States. He observed that unacceptable high levels of unemployment, together with a variety of employment-related factors including discrimination, attitudes, motivation, competence and readiness to enter the labor market called for a uniquely new working partnership between education and labor. It is this unique relationship that enables federal, state and local governments to provide direction to the important manpower delivery systems.

A variety of delivery systems (Dunham (1979) for occupational and vocational training systems are shown in Figure 5. At the secondary level are three primary delivery systems: 1) the comprehensive high school,
which offers a major academic program with a rich offering in vocational training, 2) the vocational skills center, which focuses essentially on skill training programs and 3) the vocational high school, which offers a rich mixture balanced more toward the vocational than the academic, but offers as well the option for academic study. At the post-
secondary level are the community colleges, which numbered 1,235 in 1979, that are uniquely American and provide occupational training as well as academic studies. Besides the community colleges are the universities and colleges that provide concentrated occupational training, which leads to jobs in addition to academic studies. A new delivery system, the Comprehensive Employment and Training Act (CETA), containing programs of the Department of Labor is currently finding roots at the local levels. The secondary and post-secondary delivery systems relate primarily to those individuals who still have a tie to formal public or private educational institutions.

There are three other systems that cater mainly to those individuals who have come from the formal system. These are: 1) private sector training provided by business and industrial firms on the job site, 2) training offered to the members of the armed forces and 3) private vocational and technical schools which offer nonschool continued or upgraded training.

The rapid pace of technology and the current energy crisis in the United States have placed further pressure on social institutions to find viable adaptations. The education systems in various states are most pressured.

A national comprehensive manpower policy has been difficult to achieve because it embraces education and
training, the two most important sections, that are mainly carried out on a disaggregated level. Venn (1970) observed that the manpower policy in the sixties was aimed at correcting failures rather than being concerned with the development of human resources. This feeling was expressed by John E. Radvany (1979) when he said:

Our history reflects the grave costs of the nation's continuing lack of a viable policy for human resource development. (p. 26)

Vocational education and training in the United States has come under increasing criticism. Grubb (1979) argues that vocational programs should be evaluated for their tendency to segregate lower-class and minority youth into tracks that are not only distinctly different from those attended by white and middle class youth, but have worse prospects for the future. Both Grubb (1979) and Thurow (1979) pointed out that it is necessary to know whether or not vocational programs have high or low economic returns relative to the alternatives immediately available before recommending them for students.

There is a continuing debate on whether or not vocational programs should offer "specific" or "general" skills. Vocational education has often stressed "integration of school and work" yet in practice, various studies have found low percentages of vocational education students working in the area they were trained (Grubb, 1979; Thurow,
1979). Scanlan and Flexman (1980) argue that even teaching entrepreneurship at school erects a paradox, whereby students tend to become dependent on their teachers when in practicality, entrepreneurs are highly independent.

Summary

General education in the United States is the responsibility of each state and the function of each local government. Vocational education, however, is supported by federal funds on a "6 to 1" to "10 to 1" state to federal contribution basis and backed by legislation to insure the development of technical skills that the American technological society needs.

The use of labor market information has become increasingly popular and necessary as more agencies and institutions seek to offer training programs to those youth who wish to enter the job market immediately and those adults who wish to return to update their skills. There has been criticism about vocational education programs and their success in providing useful skills. It is still debatable whether or not vocational education schools should offer specific or general skills in preparing youth for the future.
Education and Training in Japan

The economic advancement of Japan has been remarkable over the past one hundred years. The role of education and training in bringing about these changes is significant in understanding many developmental problems not only of Japan, but developing nations as well (Anderson, 1975).

During the fifty years before the Second World War, the Japanese people had realized the importance of education. Between 1897-1906 the relationship between the social structure and educational system was set. The prewar system of education and training in Japan succeeded in inculcating loyalty, obedience and patriotism (Aso and Amano, 1972). By 1931, 99.5 percent of all school age children in Japan, between six and fourteen years old, attended school (Japan Department of Education, Tokyo, 1937).

It was found, at this early stage of economic growth, that the Japanese government anticipated an accelerated demand for manpower and as such introduced vocational subjects in both intermediate and senior schools. The school curriculum involved practical work and technical studies as principal subject areas (Japan Department of Education, Tokyo, 1937; Anderson, 1975). After Japan surrendered unconditionally to Allied Powers on August 15, 1945, the
educational system had to go through major changes which were regarded as democratic in nature (Aso and Amano, 1972). The "6-3-3" system (six years of elementary education, three years of intermediate or junior high school and three years of senior high school) patterned after the United States as adopted.

In Japan, school education was utilized as a principal channel for upward movement in social standing from the outset of modernization. This trend is characteristic of many developing nations, especially Kenya (ILO, 1972). The high literacy among Japanese people was a result of high regard for education during the Meiji Era, which enabled the country to recover from the Second World War and grow rapidly. Above all, it was the strong support of the people of Japan seeking the equalization and opening of educational opportunities that rendered this possible.

Technological Innovation and Educational Policy

After 1955, Japan emerged from reconstruction and embarked on full scale growth as declared by the government's "Economic White Paper" (Aso and Amano, 1972). The progress of technological innovation sharply increased the demand for scientists and technicians. In 1956, the Japan Federation of Employers' Associations (Nikkeiren) published its "opinion on technical education to meet the needs of the New Era" and bitterly criticized the new
education system as being more concerned with law and liberal arts education in universities instead of concentrating on natural science and engineering. It called for efforts to provide scientific and vocational education in the course of compulsory education (Okabe, 1979).

Aso and Amano (1972) observed that it was the reservoir of human capital built up through such massive investment in education from the Meiji period and the fostering of highly education persons in large numbers under the post-war educational reform that supported the nation's technological innovation and rapid economic growth in the 1960s.

Educational Policy

The Ministry of Education carried out a survey of manpower needs between 1954 and 1957 and found that there was an over-supply of graduates from colleges and universities in the liberal arts and law, while there was a shortage in the natural sciences and engineering fields as had been claimed by the business community. Also around the same time in 1957, the Soviet Union sent "Sputnik" into space, shocking the western industrialized nations. American and European economists, having realized the lag in technological know-how by western nations, turned to new fields of "economics of education" and "manpower theories." They invariably cited Japan's prewar investment in education starting in the Meiji Era as a historical
example, showing the importance of education as a propellant of economic growth and development (Aso and Amano, 1972). All these events helped bring about a fresh realization of the importance of manpower development in Japan. The Ministry of Education published a unique document in 1962 entitled "Japan's Growth and Education." One of the principal goals addressed at the time was the enhancement of human abilities and the promotion of science and technology. Several five-year technical institutions were inaugurated and a large-scale program was undertaken to expand national science and engineering departments at universities (Aso and Amano, 1972).

**Policies Affecting Technological Development**

Besides a National Educational Policy tied to the economy, several other policies affecting technological development in Japan were implemented (UNESCO, 1971). They included the following:

1. Industrial policies which were meant to increase production and promote local industrial growth.

2. Policies for science and technology that facilitated an emergence of a science and technological structure, administration, reorganization and the introduction of foreign technologies, which emphasized the reduction of imports rather than promoting exports.
3. Policies for the promotion of research.

Almost every government department had a research council which looked into promoting economic development.

The government took a decisive role in coordinating the councils with economic activities and embarked on major projects, which were at a later time left in the hands of Japanese entrepreneurs.

Measure for the Development of Manpower

The government of Japan has undertaken the development of its manpower through the Ministries of Education and Labor. The Ministry of Education is in charge of the formal educational and training activities carried out from kindergarten through elementary and high schools, technical colleges, junior colleges and universities, as shown in Figure 6. Vocational education is introduced in junior high school and continues through senior high school. The Ministry of Labor is responsible for vocational training as shown in Figure 7.

The new thrust of vocational training in both public and private sectors focuses on the development of occupational capacities, so that people are engaged in productive jobs corresponding to their aptitudes and abilities. Public vocational training is treated the same as private
Figure 6. Structure of the educational system of Japan: 1972

Figure 7. Relation between vocational training and school education in Japan.

training, which deals mainly with the training of apprentices and supervisors.

The rapid development of technological innovation and the complexities of Japan's industrial society now demand a type of school education that will address these problems in the future (Aso and Amano, 1972). In the past two educational reforms, Japan sought a model for an educational system to be newly constructed in the advanced western nations. It can no longer do so, for the nation is confronted not merely with unique problems of its own brought about by industrialization, but also as a highly industrialized nation facing common problems of energy, social and cultural changes now facing the western nations.

Economic Success and the Future of Japan

One of the first heads of the Tokyo Institute of Technology, Shin Hamao, who later became the President of Tokyo Imperial University, said:

In our country . . . it was not that industries and factories developed first, followed by the establishment of technical schools, but that technical schools were first established to produce graduates, whose task it was to inaugurate and develop industries and factories (Aso and Amano, 1972 p. 90).

It is acknowledged internationally (Rosen, 1971, Anderson, 1975) that Japan has, over a comparatively short period of fifty years, modernized successfully. This has partly been due to educational advancement (Anderson, 1975).
Gregory Clark (1979), however, refuted the notion that Japan is advanced because it is a homogeneous society. The Japanese people are a mixture of Mala/Polynesian from the south, Mongol from the Asian mainland and the native Ainu population. The Ainu population originated from people who migrated from Northern Europe. Japan has a large Korean minority, a myriad of factions, the Okinawan discriminated people and a host of Buddhist, Shinto, Christian and other groups operating with success, Clark pointed out.

Yasuo Takeyama (1979), Managing Director/Editorials of the Nihon Keizai Shimbun, observed that the Japanese economy has flourished partly due to three major features of Japanese management strategy: 1) lifetime employment, 2) seniority wage system and 3) the single union (enterprise-based union). The biggest disadvantage with the system, Takeyama noted, was that the "emergence of opportunity" would be difficult with such incentives.

Eminent Problems

In presenting its first draft of "Vision of Trade and Industrial Policies of the 1980s" to the Japanese government in August, 1979, the Industrial Structure Council and advisory organ of the Ministry of International Trade and Industry, pointed out that "economic cooperation and technology development" form the "two wheels" of Japanese economic security (Okabe, 1979). The council urged that
these two aspects be given priority. Kunio Okabe (July, 1979) observed that, in an effort to promote their sales, business firms are increasingly resorting to: 1) foreign language instruction of their managerial staff, 2) international exchange of staff and 3) increased overseas public relations and private economic diplomacy for internationalizing the economy.

Since Japan relies heavily on foreign raw materials imports, it has to do business with those countries with the needed materials. This dependency has raised concerns for the firms involved. According to the Nihon Keizai Shimbun survey of 94 big Japanese corporations, 41 percent of the firms surveyed ran into some kind of managerial risk in the last 10 years. These problems included export payment delays suspensions, restrictions on profit remittance and nationalization (Okabe, 1979).

Inside Japan, a white paper on labor issued by the Labor Ministry in July 1979 estimated that Japan's working population is likely to increase by 4.9 million (including 2.8 million males) between 1975 and 1985. Of the increase, 2.7 million (including 1.5 million males) will comprise of people aged 55 and over. "Unemployment of particularly elderly male breadwinners will inevitably cause serious problems to society" (Okabe, 1979, p. 28).

Japanese educators and businesses (Aso and Amano, 1972; Anderson, 1975) started calling for a Third Educational Reform in the early 1970s.
Summary

The Japanese model for education and training focused upon: 1) high educational levels for the labor force, 2) close links between technological innovations and educational policy and 3) expansion of higher educational opportunities for all its people. These strategies have managed to put Japan on the forefront in economic superiority. With diminishing energy supplies and natural resources, none of which Japan has, the economy faces an uncertain future and consequently, new approaches to manpower development are necessary.

Education and Training in the Soviet Union

The roots of modernization of the USSR, or the beginnings of its development from a backward state to a rational, scientific, industrial power, lie not in the communist takeover of 1917, but in the reign of Tsar Peter I two centuries ago (Rosen, 1971). During his reign, the Tsar introduced a wide range of educational and industrial reforms in Russia. On his tour of Western Europe, he recruited shipbuilders, navy and army officers, architects, engineers, doctors, teachers and other specialists and craftsmen. His achievement also included the building of a central bureaucracy, the founding and construction of a new western-oriented capital of Russia, St. Petersburg (now Leningrad), and the development of
what was, for that time, large scale manufacturing and mining through the construction of more than 230 factories and foundries.

The "Great Reforms" in Russia of the 1860s, which took place under Tsar Alexander II and which included the abolition of serfdom, led to expanded opportunities for primary education, particularly in the neglected rural areas. Under the last of the Tsars, Nicolas II (who ruled from 1894 to 1917), education had reached a stage in which about one-fourth of the youth aged 7-14 were literate.

Communist concepts of the role of education emerged as a blend of traditional tsarist theories, Western European concepts and utopian socialist theories, together with the ideas of Marx, Engels and Lenin. Soviet educators credit the influence of the Seventeenth Century Czech Johann Amos Comenius for his advocacy of general education, a unified school system and native language schools. The Eighteenth Century Frenchman Jean Jacques Rousseau is credited for his concern with the psychology of the child, while the Swiss Johann Pestalozzi is credited for his theories of teaching methodologies. Nineteenth Century Englishman Robert Owen is credited for his advocacy of combining school and industrial training (Rosen, 1971).

Marx and Engles (Rosen, 1971) called for a classless well-rounded education by which they meant mental, moral
physical and politechnical education, all of these forms of education being provided to all children and being closely related to each other. Lenin followed the teachings of Marx and Engels, and on December 26, 1919 (UNESCO, 1968), he signed the historic decree "on the elimination of illiteracy among the population of Russia." An all-out campaign was launched to combat illiteracy throughout the Republics at all levels.

Despite the First World War and bitter civil wars that followed in the 1920s, literacy among Russians continued to grow steadily. The force behind this tremendous growth was the belief mainly advanced by leaders and theoreticians that cultural and educational development was a priority for economic growth (UNESCO, 1968).

In providing direction and administration to public education in the USSR economic, ethnic, linguistic and cultural characteristics of the Union Republics are given full consideration (Hugh, 1967; UNESCO, 1968; Rosen, 1971). The USSR Ministry of Education works closely and jointly with the Councils of Ministers of the Union Republics in long-term planning, improving educational and methodological guidance at schools, making recommendations concerning the training of teacher and other educational personnel. The USSR Academy of Pedagogical Sciences is placed under the USSR Ministry of Education.
General Polytechnical Education

The present system of primary and secondary general polytechnical education (Figure 8) is based on the law "on strengthening the ties between school and life and the further development of the public education system in the USSR," adopted by the Supreme Soviet of the USSR on December 24, 1958. The principal tasks of the Soviet school, as defined by the law, were the preparation of pupils for life and socially useful labor, the further raising of the general and technical education level, and the training of educated people with a sound knowledge of the scientific principles of Soviet society with communist ideals (UNESCO, 1968).

Primary education in the USSR begins at age seven and continues up to age fifteen or sixteen. It is universal and compulsory. The curriculum is general and serves as a base for future scientific/mathematical training and humanistic/academic studies. The curriculum also includes two lesson periods per week allotted to labor education for grades one through four and three lesson periods for grades five through eight. After grade three an additional two hours a week are devoted to socially useful work outside the school hours (Hugh, 1967; UNESCO, 1968).

Secondary education in the USSR is of three main types: 1) general education, which is given in the sciences
Figure 8. The Soviet system of education and training.

and humanities, followed by polytechnical education, 2) special secondary schools, which includes technicums and colleges, for the preparation of technicians and specialists of middle-level skills in industry (the completion of general secondary education is assured, and students completing these programs are eligible for further higher education), and 3) vocational-technical schools which provide preparation of skilled workers, especially in manual trades for industry, construction, agriculture and public service.

Correspondence, night classes and part-time studies are available to those who cannot go through any of the three ordinary routes.

Higher education is provided by universities, polytechnics and specialized institutes. Admission to these institutions is based on successful completion of full secondary education of specialized secondary education and passing an entrance examination. Even greater opportunities are offering through external or evening arrangements for the workers in productive industry to attain eligibility without losing their jobs.

Vocational-Technical Training

Vocational-technical training is highly regarded in the USSR educational system. It is designed to produce highly cultured and qualified technical workers for the branches of the national economy. It is therefore
regarded as an equally important part of educational curricula, rather than a separate entity (UNESCO, 1968; Rosen, 1971). An equally important facet of Soviet education is the system referred to in Soviet sources as "education without interruption of production" and can be called: part-time education, adult education, extension programs or work study programs. These programs are a formal part of the education system in the Soviet Union. The part-time education system serves the society in many ways:

1. It is a means by which the state can meet its broad and expanding commitment to upgrade education, training and skills of the Soviet population.

2. It is less expensive to the state to provide part-time education, rather than full-time education.

3. The economy benefits when it can keep youth and adults at work while they improve their skills.

4. Work study programs provide an opportunity for students who must go to work in order to further their education.

5. Part-time education serves the need of industry, agriculture and other fields for large numbers of specialists.
6. Work study programs are a means of updating the skills of the labor force in a continuously modernizing economy. They also enable workers to advance to higher salaries (Rosen, 1971).

One of the strongest points of Soviet education is its emphasis on practicality in educational programs. Vocational education is integrated with general education. This is evidenced by the fact that Soviet children take practical courses throughout ten years of elementary and high school (Time, June 23, 1980). Soviet schools avoid separating students by ability. It is believed by Soviet school authorities that every healthy child is capable of mastering the school program, even though a few gifted privileged students are selected for special schools.

On the other hand, Soviet education is based on strict regimentation, with drill and practice in a nationally-uniform curriculum. There is little freedom for students to reason about problems rather than depend on rote memorization. Malkova, the Director for General Pedagogy in Moscow, was reported by Time (June 23, 1980) to have revealed that the central task of contemporary Soviet pedagogy has been how to develop independent thinking. There is considerable pressure on students to make top grades on the national exams. After completion of grade eight, for example, those students who scored top grades go for further studies to become scientists,
engineers, teachers and economists, those with middle grades entered four-year institutions to become technicians, while those with bottom grades entered vocational training and took jobs on assembly lines (UNESCO, 1968; Time, June 23, 1980).

Summary

Soviet education is mainly polytechnical in nature, with greater emphasis on science and technology. Vocational training at secondary and higher education levels, together with deliberate training for respect of work at all levels of education and training, are designed to produce well-qualified workers for the branches of the national economy. Individual freedom, however, has little regard in the centrally-planned economy. Students in the school system are merely statistical abstractions, and even though political ideology does not encourage it, there are preferences for the gifted students.

Options and Limitations for Adapting the Models

In developing a manpower development plan for use in Kenya one should not rule out the possibility of adapting successful components of models from other countries, if their applicability to Kenya's environment looks promising. One must, on the other hand, watch out for certain limitations which, if overlooked, could perpetuate or worsen the
social and economic problems which the country seeks to eliminate.

The following conclusions were drawn from the review of selected models carried out in this chapter.

Possible Adaptations

1. Universal education for the primary level of education in Kenya is necessary if illiteracy is to be eliminated. While universal education is a necessity, more emphasis than is now given should be placed on providing quality secondary education, for which the high level and mid-level skilled manpower will come.

2. Kenya can benefit from research methodologies and findings that the developed countries have carried out in such areas as child development, agriculture, manpower policy development, etc.

3. Some countries, such as the United States, have developed labor market information gathering systems and manpower forecasting techniques which, if modified, could be very useful in Kenya.

4. There is, currently, research going on in the development of renewable energy services, such as solar energy, wind power, hydro power,
geo-thermal power, in the developed countries that have the manpower and capital. Adaptations and refinements in this area would serve Kenya's energy crisis.

5. Strategies in manpower development delineating links between education and training programs to the nation's economy would be adaptable.

Limitations to Certain Adaptations

1. Financial constraints are a major concern for Kenya's young economy. Projects that would easily be carried out in the developed countries could be difficult to implement in Kenya.

2. Viable manpower development models are responsive to national social and economic goals. Adapting a model that was meant for a different country could be problematic. Quite often, political, cultural, social, demographic and environmental consideration differ from one country to another.

3. Developed countries have surpassed meeting basic needs. Kenya still has to develop its agriculture, health services, housing industry, and such basic infrastructures as transportation.
and communication systems. More sophisticated technology and services beyond these basic needs cannot solve Kenya's problems.

4. In the developed industrialized countries, vocational education and training programs respond to the needs of industry. It is common to carry out a task analysis or an occupational analysis within a particular occupational area before offering programs imparting skills in that area. It is the reverse in Kenya. Training programs in Kenya must lead industry. While it is important to develop manpower needs assessment and labor market information methodologies at this stage, it is impractical to solely rely on the data gathered to develop educational and training programs due to a lack of a developed industrial base.

5. Current world-wide energy shortages and limited raw materials supplies leave uncertainty in any country's future. Kenya can no longer adapt production techniques which have entirely depended on nonrenewable resources as the industrialized western countries have done in the past.
CHAPTER V

A PROPOSED MODEL FOR MANPOWER DEVELOPMENT IN KENYA

Introduction

The literature reviewed for this study indicates that Kenya lacks a manpower development strategy that would be effective in helping its people realize their social and economic development goals (Republic of Kenya, 1976; 1979). The Government of the Republic of Kenya prepares long-range development plans that last from four to five years. The current Development Plan 1979-1983, which is the fourth since independence, addresses the problems of poverty, inequality and unemployment in Kenya. It sets out strategies and policies aimed at reducing these problems. The current education and training system has been strongly criticized for failing to respond to national needs as unemployment becomes menacing. It is generally agreed that the inability of the current educational and training programs to prepare youth for a productive role in the national economy and the lack of coordination in most vocational training programs have contributed to unemployment, poverty and inequalities.
Criteria for manpower development, based on an understanding of economic development and responsive to individual and national needs, were developed in chapter three of this study. The models surveyed in chapter four are primarily concerned with manpower preparation for industrially established economies where industry leads education and training programs. In Kenya the industrial base is not established yet. An effective model for Kenya will prepare manpower for a future labor market.

**Purpose**

The purpose of this study was to propose and develop a manpower development model that would be responsive to Kenya's needs.

**Methodology**

An extensive literature review was carried out based on several studies, including: ILO, 1972; Republic of Kenya, 1976; Rempel and House, 1978 and the current 1979-1983 Development Plan (Republic of Kenya, 1979). Review of contemporary theories on economic development and existing manpower development models from four industrialized countries were carried out also. A model based on criteria drawn from the findings of the study was developed.

The proposed model is comprised of three major components (Figure 9):
1. An educational and training structure that responds to individual needs while also meeting national developmental needs.
2. A manpower development coordination strategy that will help link manpower training to the national economic goals.
3. A labor market information strategy that will form a basis for future manpower development and aid in the general economic planning.

A feedback mechanism in the overall manpower development strategy must exist to ensure that goals set are realistic and that the programs offered and the methodologies used are effective and efficient.

Figure 9. Major components of the model.

**Educational and Training Structure**

The existing educational and training structure, as shown in Figure 1 in Chapter Two, is unsatisfactory. The
overall pattern of the education system has not changed from its original British colonial pattern. It is still oriented to the university and examination basis. Most of the students who drop out of school or terminate at the primary and secondary levels are ill-prepared to enter the labor force (Republic of Kenya, 1976). Those who join voluntary training organizations or Harambee institutions are often "boxed in" with little or no opportunities for further education or training. This process kills self-esteem and personal motivation. These factors are necessary for an individual to help himself or contribute to the development of the nation.

The success of the proposed manpower development model will, to a large extent, depend on changes in the existing structure so that a clear picture of manpower preparation can be perceived in a realistic environment (Figure 10). More emphasis should be placed on tracking and helping those students that drop out of the primary and secondary levels, and those who graduate from these levels but do not have a chance to pursue the traditional route or cannot get a chance to pursue higher education. Also, those adults already in the labor market that need to go back to school and get a basic education or go to training to learn a trade or some skill should be given these opportunities.
Figure 10. An integrated flow of education and training for the labor market.
Post-Primary Institutions. The majority of students who graduate from primary schools do not further their education. The post-primary institutions, which include village polytechnics (craft centers), National Youth Service and Christian Industrial Training Centers, should be used to serve these youth. The institutions should give a general education, besides specific skills, to ensure that the students attain a minimum functional literacy level. There should be opportunities for these youth to return into the mainstream of education or proceed with further advanced skill training if they satisfy the requirements. The institutions should also be used as training and/or basic educational centers for the adult population already in the labor market. On-the-job training should be emphasized whenever possible, as it is less expensive and more effective.

Post-Secondary Institutions. Kenya is short of high level skilled manpower. This manpower requires at least a secondary education level. Current post-secondary institutions, which include the polytechnics, Harambee institutes, private industry training schools and government training schemes, should be coordinated more closely with national goals to avoid duplicate programs and idle capacities. More opportunities should be open for students to further their studies. The current structure, which lacks flexibility has dead ends that often leave students boxed
in and frustrated. Those in polytechnics should be able to transfer into university programs in their areas of specialism, while those from other institutions should have access to part-time studies, evening studies or correspondence to meet requirements for further education. Limiting entries into further education may in the long run prove more repressive economically (Aso and Amano, 1972). Instead, incentives should be employed to attract people in areas with skilled manpower shortages.

**Post-Primary and Post-Secondary Institutional Programs.** The programs offered at these institutions should vary depending on the emphasis of particular curricula suitable for a specific region or community. They may be structured according to national goals aimed at specific targets.

At the post-primary level the programs offered must reflect the composition of the world of work in Kenya. The programs should also provide youth with preparation in basic skills. Since the majority of the students will be in rural areas, more emphasis should be put on learning skills in agriculture, construction, plumbing and other areas pertinent to rural regions.

The programs offered in the post-secondary institution should reflect both current practices in Kenya's labor market and the projected occupations and skills necessary for the economy in the near future.
The proposed institutional changes will meet the following individual and national needs:

1. Provide a basic education and help reduce illiteracy.

2. Provide skills that will enable individuals to participate more freely and productively in the economy, and by doing so, achieving a sense of personal worth.

3. Provide opportunities to individuals to raise their incomes and standards of living by gaining further education and/or skills.

4. Provide the technical, professional and managerial skills that Kenya's developing economy must have to flourish.

5. Help in the development of disadvantaged regions by providing the people with relevant and appropriate skills.

An overall educational system that will meet the needs of the nation and the individuals in Kenya will be one with open channels within its structure for adjustment in both academic and technical curricula (Figure 11).

**Manpower Development Coordination**

As already pointed out in chapter two of this study, there is no coordination in the training programs offered in Kenya. In the country's dynamic developing economy,
Figure 11. Proposed structure of education in Kenya.
Manpower shortages in skilled and semiskilled areas have led to sporadic training by various agencies and private interest groups. Manpower development coordination is necessary if future program offerings may meet the desired goals.

A Manpower Development Commission. One of the first requirements for an effective manpower development coordination strategy is the establishment of a commission. Currently, there is a coordinating unit established in the Ministry of Economic Planning and Community Affairs with little executive power.

For the purposes of effectiveness and efficiency, a Manpower Development Commission (MDC) should be set up by parliamentary action. It must be independent of any government ministry, with its membership drawn from all ministries and agencies involved with manpower development in the country. There should be an advisory board whose members would be drawn from government ministries, educational groups, labor and employee organizations.

Manpower Development Unit. In order to extend the services of the commission to all the eight provinces of Kenya, there should be a manpower development unit (MDU) established at each Provincial Headquarters to serve the surrounding employment agencies, with a unit or an office in each employment sector (Figure 12). The MDUs will work closely with the MDC and the local areas.
Figure 12. The Manpower Development Commission (MDC) and Manpower Development Unit (MDU) connection for maximum efficiency.

Major responsibilities for the commission will include the following:

1. Coordination of training programs and facilities based on national socio-economic goals.
2. Evaluation of training programs and facilities to ensure their suitability to Kenya's conditions.
3. Publication, on an annual basis, of manpower vocational education and other relevant data.
4. Coordination of research and development in human resources.
5. Provide advice and make recommendations regarding vocational training programs and facilities, to education and training agencies.
To ensure compliance with the commission's recommendations, the commission should be given the allocation of all government funds earmarked for supporting education and training programs in both public and private institutions. Compliance or noncompliance on the part of the training agency will determine whether or not such funds should be released.

In carrying out the responsibilities mentioned above, the manpower coordination strategy will derive information from two major sources (Figure 13):

1. The Labor Market. Manpower demand needs of existing or planned industry will be assessed and reported. This information can best be gathered by the Ministry of Commerce and Industry and then reported to the MDC.

2. The Labor Force. The supply and additions to the labor force must be assessed and reported. This task should be done by the Ministry of Labor and reported to the MDC.

The Manpower Development Commission will then synthesize the information gathered with national economic goals and other conditions specific to Kenya which include the available natural resources, demographic conditions and geographic conditions.
Figure 13. An overall manpower development coordination structure.
Labor Market Information

There is evidence in the literature that an information data base is vital to the success of manpower development (AID, 1975; Republic of Kenya, 1976; 1979). The proposed labor market information strategy will have two major parts.

Periodic Census of the Labor Force. The population census carried out at every ten years cannot furnish the necessary labor force statistics. Therefore, it is necessary to carry out a census of the labor force, specifically reporting the number of the employed, unemployed, and underemployed in all economic activities.

(a) The employed group mainly reflects those who are employed in the formal and informal sectors. Those in the formal sector will be reported through the employers, while those in the informal sector will be reported as self-employed through registered businesses and farms.

(b) The unemployed are of two groups. Those who are visibly unemployed can be found in the city, towns and urban areas. The invisibly unemployed are the majority of those in the rural areas who have no land or business in which they can engage themselves, and those in the urban areas who have given up trying to find a job and have no plan to return to the rural areas. The visibly unemployed can be reported through employment agencies.
and labor offices in towns and provincial and district headquarters. The invisibly unemployed can be reached through decentralized unemployment offices in sublocations in the rural areas and through the same offices as the visibly employed.

(c) The underemployed is the most difficult group to measure, given limited statistical collection tools and manpower. This group includes those in the informal sector who work at odd jobs while waiting for a better job. They are the vendors, street hawkers, peddlers, shoeshine boys, parking boys, members of families who derive their livelihood from marginal land, and a host of seasonal and migrant workers who might not be interested in long-term work away from their families and tribes.

The local employment offices must be used more effectively to attract those who seek employment. If jobs are advertised and people hired through these offices then those who seek jobs will be encouraged to come forward and register.

(d) Additions to the labor force can be reported through educational and training institutions. Graduates at every level of education can be reported from the schools and colleges, while those completing training programs can be easily reported from respective departments. Dropouts in both educational and training institutions can equally be assessed with ease (Figure 11).
Manpower Needs of Industry. Kenya's industry is still in its preliminary stages. It is growing rapidly to accommodate an increased demand for manufactured goods and services. Employment growth per annum per capita grew by 4.2 percent between 1972 and 1976. It is projected that the growth will increase to be about 4.6 by 1983 (Republic of Kenya, 1979).

Since education and training in Kenya is still ahead of industry, forecasts cannot be entirely relied upon to give direction to education and training. Targets must be set to influence the future course of human development (Harbison and Myer, 1964).

Major considerations must be given to nationally planned economic and social goals. The number and types of occupations present in the economy must be gathered. Estimates for future manpower needs of industry and other economic activities can be derived from two basic premises:

1. Industry Classification. There should be an analysis and official classification of economic activities. The International Standard Industrial Classification of All Economic Activities (ISIC) can be adapted for Kenya's purposes with a few changes to suit the conditions (United Nations, 1958).

2. Occupational Classification. An occupational breakdown of employment in each economic
activity should be carried out. This would provide the basis for a skills inventory in each occupation for future planning. (See Appendix C.)

Implications

For meaningful economic development to take place there must be a reduction in the levels of poverty, inequality and unemployment. These reductions must occur in conjunction with increase in productivity. Manpower development plays a significant role in helping reduce these levels. In order to be successful, program goals for manpower development should be closely linked with those of national economic and social development. The programs must also address environmental, demographic, political, cultural and other conditions unique to the country that they are intended for.

Recommendations for Further Research

The findings of this study indicate the need for further studies in the following areas:

1. Manpower Needs Assessment. There is a need for the development of a simple and effective methodology for assessing manpower needs of industry by analyzing and categorizing industry and occupations. This will ensure the development and availability of reliable data on which to base vocational training programs.
2. Technology Transfer. Many developing countries are searching for the development and/or adaptation of technologies that will bring economic development. There is a need for the development of a "technology transfer" strategy that will serve the needs of the country for which it is designed.

3. Evaluation. There is a need for the development and maintenance of an evaluation system that provides the feedback necessary for the justification of programs and program goals for manpower development.

Recommendations for Model Implementation

This model addressed economic and social developmental concerns affecting a majority of developing countries, and to some extent, developed countries too. Its adaptation and implementation, however, must be contingent upon the following considerations:

1. The model was designed to meet the needs of Kenya. If it is to be adapted elsewhere, national economic and social needs and characteristics unique to the host country must be addressed.
2. Consideration must be given to political administrative and local support by the citizens if the model is to have long lasting effect.


APPENDICES
APPENDIX A

GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN
ACTUAL 1976; PROJECTED 1983
**Gross Domestic Product by Industrial Origin**  
*Actual 1976; Projected 1983*

<table>
<thead>
<tr>
<th>Enterprises and Non-Profit Institutions</th>
<th>£ Million in 1976 Prices</th>
<th>Annual Growth Per Cent</th>
<th>Share of Total Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>219.64</td>
<td>341.30</td>
<td>1.5</td>
</tr>
<tr>
<td>Forestry</td>
<td>6.33</td>
<td>10.70</td>
<td>5.9</td>
</tr>
<tr>
<td>Fishing</td>
<td>2.36</td>
<td>3.20</td>
<td>0.2</td>
</tr>
<tr>
<td>Mining and Quarrying</td>
<td>4.15</td>
<td>7.10</td>
<td>11.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>167.41</td>
<td>306.20</td>
<td>9.4</td>
</tr>
<tr>
<td>Electricity and Water</td>
<td>14.20</td>
<td>24.30</td>
<td>10.1</td>
</tr>
<tr>
<td>Building and Construction</td>
<td>46.20</td>
<td>84.50</td>
<td>-4.7</td>
</tr>
<tr>
<td>Wholesale, Retail Trade, etc.</td>
<td>144.46</td>
<td>211.50</td>
<td>2.0</td>
</tr>
<tr>
<td>Transport, Storage and Communications</td>
<td>69.15</td>
<td>109.60</td>
<td>4.1</td>
</tr>
<tr>
<td>Finance, Insurance, Real Estate, etc.</td>
<td>68.03</td>
<td>114.30</td>
<td>9.9</td>
</tr>
<tr>
<td>Ownership of Dwellings</td>
<td>46.13</td>
<td>69.40</td>
<td>2.4</td>
</tr>
<tr>
<td>Other Services</td>
<td>24.84</td>
<td>38.10</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Total Enterprises</strong></td>
<td>812.90</td>
<td>1,320.20</td>
<td>4.2</td>
</tr>
<tr>
<td>Private Household (Domestic Services)</td>
<td>10.93</td>
<td>21.30</td>
<td>13.6</td>
</tr>
<tr>
<td>Producers of Government Services</td>
<td>178.91</td>
<td>281.20</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Total Monetary Sector</strong></td>
<td>1,002.74</td>
<td>1,622.70</td>
<td>4.8</td>
</tr>
<tr>
<td>Semi-monetary sector</td>
<td>260.11</td>
<td>311.30</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total GDP at Factor Cost</strong></td>
<td>1,262.85</td>
<td>1,934.00</td>
<td>4.0</td>
</tr>
<tr>
<td><em>Add (+) Indirect Business Taxes</em></td>
<td>167.00</td>
<td>268.20</td>
<td>-</td>
</tr>
<tr>
<td><em>Less (-) Subsidies</em></td>
<td>-0.77</td>
<td>-8.50</td>
<td>-</td>
</tr>
<tr>
<td><strong>GDP at Market Prices</strong></td>
<td>1,429.08</td>
<td>2,193.70</td>
<td>2.9</td>
</tr>
</tbody>
</table>
APPENDIX B

INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION OF ALL ECONOMIC ACTIVITIES - LIST OF DIVISION AND MAJOR GROUPS
International Standard Industrial Classification of All Economic Activities--
List of Divisions, and Major Groups 1/

Major
Group

Division 0. Agriculture, Forestry, Hunting and Fishing

01 Agriculture and livestock production
02 Forestry and logging
03 Hunting, trapping and game propagation
04 Fishing

Division 1. Mining and Quarrying

11 Coal mining
12 Metal mining
13 Crude petroleum and natural gas
14 Stone quarrying, clay and sand pits
19 Other non-metallic mining and quarrying

Divisions 2-3. Manufacturing

20 Food manufacturing industries, except beverage industries
21 Beverage industries
22 Tobacco manufactures
23 Manufacture of textiles
24 Manufacture of footwear, other wearing apparel and made-up textile goods
25 Manufactures of wood and cork, except manufacture of furniture
26 Manufacture of furniture and fixtures
27 Manufacture of paper and paper products
28 Printing, publishing and allied industries
29 Manufacture of leather and leather products, except footwear and other wearing apparel
30 Manufacture of rubber products
31 Manufacture of chemicals and chemical products
32 Manufacture of products of petroleum and coal
33 Manufacture of non-metallic mineral products except products of petroleum and coal
34 Basic metal industries
35 Manufacture of metal products except machinery and transport equipment
36 Manufacture of machinery except electrical machinery
37 Manufacture of electrical machinery, apparatus, appliances and supplies
38 Manufacture of transport equipment
39 Miscellaneous manufacturing industries

1/ For the complete classification, including a description of the industries, see United Nations, International Standard Industrial Classification of All Economic Activities, Statistical Papers, Series M, No. 4, Rev. 1, New York, 1959.
International Standard Industrial Classification of All Economic Activities--Continued

**Major Group**

<table>
<thead>
<tr>
<th>Division</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>Construction</td>
</tr>
<tr>
<td><strong>Division 4.</strong> Construction</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Construction</td>
</tr>
<tr>
<td><strong>Division 5.</strong> Electricity, Gas, Water and Sanitary Services</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Electricity, gas and steam</td>
</tr>
<tr>
<td>52</td>
<td>Water and sanitary services</td>
</tr>
<tr>
<td><strong>Division 6.</strong> Commerce</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Wholesale and retail trade</td>
</tr>
<tr>
<td>62</td>
<td>Banks and other financial institutions</td>
</tr>
<tr>
<td>63</td>
<td>Insurance</td>
</tr>
<tr>
<td>64</td>
<td>Real estate</td>
</tr>
<tr>
<td><strong>Division 7.</strong> Transport, Storage and Communication</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Transport</td>
</tr>
<tr>
<td>72</td>
<td>Storage and warehousing</td>
</tr>
<tr>
<td>73</td>
<td>Communication</td>
</tr>
<tr>
<td><strong>Division 8.</strong> Services</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Government services</td>
</tr>
<tr>
<td>82</td>
<td>Community and business services</td>
</tr>
<tr>
<td>83</td>
<td>Recreation services</td>
</tr>
<tr>
<td>84</td>
<td>Personal services</td>
</tr>
<tr>
<td><strong>Division 9.</strong> Activities Not adequately Described</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Activities not adequately described</td>
</tr>
</tbody>
</table>
APPENDIX C

INTERNATIONAL STANDARD CLASSIFICATION OF OCCUPATIONS: MAJOR, MINOR AND UNIT GROUPS
### Major Group 0: Professional, Technical, and Related Workers

<table>
<thead>
<tr>
<th>Code</th>
<th>Occupation Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0</td>
<td>Architects, Engineers, and Surveyors</td>
</tr>
<tr>
<td>0-1</td>
<td>Chemists, Physicists, Geologists, and Other Physical Scientists</td>
</tr>
<tr>
<td>0-2</td>
<td>Biologists, Veterinarians, Agronomists, and Related Scientists</td>
</tr>
<tr>
<td>0-3</td>
<td>Physicians, Surgeons, and Dentists</td>
</tr>
<tr>
<td>0-4</td>
<td>Nurses and Midwives</td>
</tr>
<tr>
<td>0-5</td>
<td>Professional Medical Workers, Not Elsewhere Classified, and Medical Technicians</td>
</tr>
<tr>
<td>0-6</td>
<td>Teachers</td>
</tr>
<tr>
<td>0-7</td>
<td>Clergy and Related Members of Religious Orders</td>
</tr>
<tr>
<td>0-8</td>
<td>Jurists</td>
</tr>
<tr>
<td>0-9</td>
<td>Artists, Writers, and Related Workers</td>
</tr>
<tr>
<td>0-X</td>
<td>Draughtsmen, and Science and Engineering Technicians Not Elsewhere Classified</td>
</tr>
<tr>
<td>0-Y</td>
<td>Other Professional, Technical, and Related Workers</td>
</tr>
</tbody>
</table>

### Major Group 1: Administrative, Executive, and Managerial Workers

<table>
<thead>
<tr>
<th>Code</th>
<th>Occupation Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-0</td>
<td>Administrators and Executive Officials, Government</td>
</tr>
<tr>
<td>1-1</td>
<td>Directors, Managers, and Working Proprietors</td>
</tr>
</tbody>
</table>

### Major Group 2: Clerical Workers

<table>
<thead>
<tr>
<th>Code</th>
<th>Occupation Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-0</td>
<td>Bookkeepers and Cashiers</td>
</tr>
<tr>
<td>2-1</td>
<td>Stenographers and Typists</td>
</tr>
</tbody>
</table>

### Major Group 3: Sales Workers

<table>
<thead>
<tr>
<th>Code</th>
<th>Occupation Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-0</td>
<td>Working Proprietors, Wholesale and Retail Trade</td>
</tr>
<tr>
<td>3-1</td>
<td>Insurance and Real-Estate Salesmen, Salesmen of Securities and Services, and Auctioneers</td>
</tr>
<tr>
<td>3-2</td>
<td>Commercial Travellers and Manufacturers' Agents</td>
</tr>
<tr>
<td>3-3</td>
<td>Salesmen, Shop Assistants, and Related Workers</td>
</tr>
</tbody>
</table>

### Major Group 4: Farmers, Fishermen, Hunters, Loggers, and Related Workers

<table>
<thead>
<tr>
<th>Code</th>
<th>Occupation Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-0</td>
<td>Farmers and Farm Managers</td>
</tr>
<tr>
<td>4-1</td>
<td>Farm Workers, Not Elsewhere Classified</td>
</tr>
<tr>
<td>4-2</td>
<td>Hunters and Related Workers</td>
</tr>
<tr>
<td>4-3</td>
<td>Fishermen and Related Workers</td>
</tr>
<tr>
<td>4-4</td>
<td>Loggers and Other Forestry Workers</td>
</tr>
</tbody>
</table>

---

International Standard Classification of Occupations:
Major, Minor and Unit Groups--Continued

Major Group 5: Miners, Quarrymen, and Related Workers

5-0 Miners and Quarrymen
5-1 Well Drillers and Related Workers
5-2 Mineral Treaters
5-9 Miners, Quarrymen, and Related Workers Not Elsewhere Classified

Major Group 6: Workers in Transport and Communication Occupations

6-0 Deck Officers, Engineer-Officers, and Pilots, Ship
6-1 Deck and Engine-Room Ratings (Ship), Barge crews, and Boatmen
6-2 Aircraft Pilots, Navigators, and Flight Engineers
6-3 Drivers and Firemen, Railway Engine
6-4 Drivers, Road Transport
6-5 Conductors and Brakemen, Railway
6-6 Inspectors, Supervisors, Traffic Controllers, and Despatchers, Transport
6-7 Telephone, Telegraph, and Related Telecommunication Operators
6-8 Postmen and Messengers
6-9 Workers in Transport and Communication Occupations Not Elsewhere Classified

Major Group 7/8: Craftsmen, Production-Process Workers, and Labourers Not Elsewhere Classified

7-0 Spinners, Weavers, Knitters, Dyers, and Related Workers
7-1 Tailors, Cutters, Furriers, and Related Workers
7-2 Leather Cutters, Lasters, and Sewers (except Gloves and Garments) and Related Workers
7-3 Furnacemen, Rollers, Drawers, Moulders, and Related Metal Making and Treating Workers
7-4 Precision-Instrument Makers, Watchmakers, Jewellers, and Related Workers
7-5 Toolmakers, Machinists, Plumbers, Welders, Platers, and Related Workers
7-6 Electricians and Related Electrical and Electronics Workers
7-7 Carpenters, Joiners, Cabinetmakers, Coopers, and Related Workers
7-8 Painters and Paperhangers
7-9 Bricklayers, Plasterers, and Construction Workers Not Elsewhere Classified

8-0 Compositors, Pressmen, Engravers, Bookbinders, and Related Workers
8-1 Potters, Kilnmen, Glass and Clay Formers, and Related Workers
8-2 Millers, Bakers, Brewmasters, and Related Food and Beverage Workers
8-3 Chemical and Related Process Workers
International Standard Classification of Occupations:
Major, Minor and Unit Groups—Continued

8-4 Tobacco Preparers and Tobacco-Product Makers
8-5 Craftsmen and Production-Process Workers Not Elsewhere Classified
8-6 Packers, Labellers, and Related Workers
8-7 Stationary-Engine and Excavating and Lifting Equipment Operators and Related Workers
8-8 Longshoremen and Related Freight Handlers
8-9 Labourers Not Elsewhere Classified

Major Group 0: Service, Sport, and Recreation Workers

9-0 Fire Fighters, Policemen, Guards, and Related Workers
9-1 Housekeepers, Cooks, Maids, and Related Workers
9-2 Waiters, Bartenders, and Related Workers
9-3 Building Caretakers, Cleaners, and Related Workers
9-4 Barbers, Hairdressers, Beauticians, and Related Workers
9-5 Launderers, Dry Cleaners, and Pressers
9-6 Athletes, Sportsmen, and Related Workers
9-7 Photographers and Related Camera Operators
9-8 Embalmers and Undertakers
9-9 Service, Sport, and Recreation Workers Not Elsewhere Classified

Major Group X: Workers Not Classifiable by Occupation

X-1 New Workers Seeking Employment
X-2 Workers Reporting Occupations Unidentifiable or Inadequately Described
X-3 Workers Not Reporting Any Occupation

Armed Forces: Members of the Armed Forces