

HUMAN CAPITAL DEVELOPMENT
IN A DEVELOPING ECONOMY:
WITH SPECIAL REFERENCE
TO TANZANIA

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CHAPTER I

INTRODUCTION

The purpose of this study is to examine the theoretical role of human capital in economic development and to discern how the Tanzanian experience relates to this theory. This study of the basic concept of human capital in the context of development will attempt to integrate economic theory with the realities of development in one African nation. The thesis will examine the basic mechanisms for converting human capital into economic development and vice versa. The objective of the research is to analyze what has been done in light of the existing theory and the lessons to be learned from the Tanzanian experience for future theorists and policy makers.

Possibly because of the relatively new attempts to develop a general theory, neither human capital nor economic development have universally accepted definitions nor precise and acceptable yardsticks for measurement. Moreover, discussions of both concepts are often plagued by the "narrowness" of "orthodox" economics.

For the purpose of this study, human capital (to be used interchangeably with human resources) will be defined as the abilities, skills, knowledge and motivations of the domestic population. Human capital development will be defined as the process by which human resources are mobilized to participate in the economic development of their country.

Economic development will refer to "a transformation of a society's attitude to itself and its environment and its ability to concretize this change into..."¹ an "...increased capacity to control the material environment and thereby to create more goods and services for the community."² It is clear that this definition of economic development does not involve an isolated model which assumes that socio-political institutions are not subject to change. Indeed, the dynamic nature of development requires that these institutions respond to economic development and that they, in turn, influence the development process. Tanzania is one of the few developing countries which is presently experimenting with alternative forms of organizing economic activity and creative supportive socio-political institutions.

No attempts were made to incorporate either human capital theory or development theory into the body of economic principles until the late fifties and early sixties. Today's abundance of literature on both reflect economists' preoccupation with economic growth following the second world war. Interest in investment in human capital largely grew out of an attempt by economists to explain the "residual" in modern economic growth. For a long time, western economists refrained from describing the factor of production embodied in man as human capital, supposedly because of the stigma attached to thinking of people as capital. Even today, referral to people as human capital

¹Frederick S. Arkhurst (ed), Africa in the Seventies and Eighties (New York: Praeger Publishers, 1970), p. 184.

²Walter Rodney, How Europe Underdeveloped Africa (Dar es Salaam: Tanzania Publishing House, 1972), p. 14.

has not been universally accepted by economists. Shaffer argues that economics "has little to gain and much to lose by the universal application of the capital concept to man."¹

Chapter two will provide a theoretical springboard for the research. The chapter will begin with a review of existing methods of analyzing human capital, investigating the general characteristics of present writings on human capital development. The mainstream of analytical works on human capital investment pertains to the relationship between formal education and skill development. This analysis generally falls into one or two categories - manpower planning or the rate of return on investment.

The rate of return approach is associated with the names of Schultz and Becker. Schultz argues that the key investment in human capital is education.² He concerns himself mostly with investment and returns to formal education and organized research, though he notes on-the-job-training, migration, health and economic information as other forms of human capital investment. Becker was among the first to estimate the amounts invested in development of marketable skills and the rate of return on education.³ He has developed a theory of the optimal level of investment based on marginal productivity analysis. The rate of return approach acknowledges the economic reality that the commitment

¹Harry G. Shaffer, "Investment in Human Capital: Comment," American Economic Review, 51 (December, 1961): 1026.

²Theodore Schultz, The Economic Value of Education (New York: Columbia University Press, 1963).

³Gary S. Becker, Human Capital (New York: National Bureau of Economic Research, 1964).

of resources to human capital represents, at least for the moment, the loss of potential resources to other activities. Schultz, himself, notes that the manpower planning approach, however, is more direct and easier to apply to "circumstances that characterize new nations launching programs to hasten their economic growth."¹

The manpower requirement approach attempts to foresee the future occupational structure of the economic system and to plan the educational system so as to provide the requisite number of personnel with the "qualifications" that the economy demands. The objective of linking manpower planning and educational planning is to assure employment opportunities to individuals and to assure that production requirements of the economy are fulfilled. Manpower planning, itself, is in a developing stage and one can find at least seven methods from which to choose. Chapter two will offer a discussion of several of these methods. The manpower approach is based on the assumption that the main link of education with economic development is through the skills it produces in the labor force. It ignores the many other functions of education in a society. This approach places emphasis on the development of high and middle level skill categories - those requiring some education beyond the primary level - because it is argued in orthodoxed development theories that shortages in these areas constitute the major obstacle to growth in many developing nations.

The choice between the two methods of analysis hinges on whether shifts in the demand curve are quantitatively more important than movements along it in contributing to the total increase in the optimum

¹Theodore Schultz, "Reflections on Investment in Man," Journal of Political Economy, 70 supplement (October, 1960): 5.

quantity of manpower demanded.¹ For Tanzania and most developing nations, a shift in the demand curve is more important and hence manpower planning is used. Tanzania was among the first of the lesser developed countries (LDCs) to integrate manpower planning and educational planning into its general five year plans.

Two main hypotheses can be abstracted from the present theory on human capital - (1) formal education is the major source of human capital development and (2) human capital accumulation contributes significantly to general development and welfare. Current writings ignore the fact that the development of human resources in a post-colonial situation entails a dual job of embodying in the populace the skills necessary for participating in the production process as well as mobilizing these skills to benefit that development effort. Generation of an adequate labor force is greatly facilitated if all aspects of the human capital development process operate in a complementary fashion. The final part of section one will conclude with a brief discussion of relevant studies of educational policy and economic planning as an integrated resource allocation problem in a developing nation.

The second section in chapter two will discuss several modern theories of economic development and underdevelopment. Underdevelopment is a relative term with many normative connotations which has made formulation of a general theory elusive. Underdevelopment has traditionally been attributable to everything from a lack of savings to the general backwardness of the people. Western economists usually

¹Richard Jolly, "The Skilled Manpower Constraint" in Constraints on the Economic Development of Zambia, ed. Charles Elliot (Nairobi: Oxford University Press, 1971), p. 33.

list four basic constraints upon economic development.¹

- (i) a country's basic natural resources of land, soil, climate, water, etc.
- (ii) a country's existing stock of capital and the possibility of its future accumulation through saving
- (iii) the present and future stock of skills and knowledge
- (iv) the present and prospective flow of foreign exchange earnings.

For a long time economists equated growth with development and development theory was confined to raising growth rates. This section will contain a brief review of traditional growth oriented development theories.

Finally chapter two will seek to bring together the concepts of human resource development and economic development. It will offer a review of the general theory of the ramifications for economic development of general human capital theory. This section will touch upon the theories of the functions and types of education and their linkages with the realities of the world of work and development needs, focusing on the role of education in the development process. Special attention will be given to Galtung, who argues that the present human capital development reflects the present international division of labor and until the dependency relationship is broken there will be no real change in the development of human capital.²

Tanzania provides one model of a nation experimenting with an alternative economic system based on something other than capitalist exploitation and aimed at fundamental changes in the structure of the

¹G. K. Helleiner, "Socialism and Economic Development in Tanzania," Journal of Development Studies 8 (January, 1972): 184.

²John Galtung, "On the Relationship Between Human Resources and Development: Theory, Methods, Data," Journal of Development Studies 8 (April, 1972): 140.

economy. Chapter three will provide an overview of the process of transformation of the Tanzanian economy. Sections one and two of chapter three will discuss the general economic setting in Tanzania. Section three will describe the dynamics of the present day Tanzanian economy by a discussion of development planning in Tanzania. A comparison of the first and second five year plans will be made in order to analyze the effect of the Arusha Declaration, which heralded an increased emphasis on rural development and regional planning.¹ Toward the end of the first development plan, Tanzania was faced with the problems of increases in the labor force outpacing the generation of employment opportunities. The Arusha Declaration symbolized Nyerere's growing awareness that industrial production would not advance rapidly enough to absorb the growing labor force, nor produce the requirements for economic development. This called for a reevaluation of present human capital development policy.

Chapter four, which discusses the development of human capital policy in Tanzania, will be divided into two sections. Section one will offer a review of manpower planning in Tanzania. This section will look at initial manpower planning in Tanzania, based on a demand oriented view of economic development. Few significant changes have been made in the system of human capital development in the area of manpower planning despite the issuance of Education for Self-Reliance.²

¹ Julius Nyerere, "Arusha Declaration" in his Freedom and Socialism (Dar es Salaam: Oxford University Press, 1968), pp. 231-50.

² Nyerere, "Education for Self-Reliance" in Nyerere.

Section two will focus on human capital development by way of educational planning. The essence of Tanzanian human capital development since 1967 has been to restructure the educational syllabus to emphasize agriculture science and socialist consciousness and requiring compulsory national service. Emphasis is on adult education which includes training in politics and economics, cultural activities and literacy classes. Tanzania, at first, gave priority to meeting manpower needs for economic growth. The student crisis of 1966 made it necessary to reevaluate this narrow manpower development policy in light of broader development goals.

Finally, chapter five will offer a summary and draw some conclusions on Tanzania's attempts at self-reliance and the role of human capital in breaking the yokes of dependency. Conclusions will be drawn as to the relevance of present economic theory on human capital and human capital development in a developing nation. Judgements will be given on Tanzania's use of co-ordinated manpower and educational planning for accelerated economic development. The Tanzanian experience is particularly interesting because there is a natural conflict between the expansion of the forces of production and the pursuit of a "classless" society. The Tanzanian experience will show, shortly, that

It is not possible to alter the foundations of education and the purpose for which it is provided simply by introducing manpower planning. It is necessary to restructure the entire educational system so that it becomes a machine for economic and social development in the eyes of those being educated, rather than exclusively a means to individual aggrandisement.¹

¹Idrain Resnick, "Manpower Development in Tanzania," Journal of Modern African Studies 5 (1967): 123.

If it is true that adequate strategy springs from adequate theory, one will be able to see that the theory of human capital and economic development is inadequate, especially when a Socialist path is chosen, following a period of colonialization. A theory of human capital is needed which moves from the present narrow concept of human capital in terms of skill development to a more comprehensive analysis.

CHAPTER II

HUMAN CAPITAL AND ECONOMIC DEVELOPMENT

The purpose of chapter two is to offer a brief review of the work done by others in the area of human capital and economic development. Section one will look at how economists have historically dealt with the problems and importance of human resource development as it relates to the body of general economic theory. Two main schools of thought on the issue of labor as human capital will be identified and discussed. It will be shown that implicit in each is the belief in the ability of schooling to turn unproductive human beings into productive elements in capitalist development. The inadequacies of existing concepts and theory of human capital investment as a framework of analysis will be discussed and section one will include a discussion of the functions of formal education.

Section two will offer a brief investigation of the abundance of literature on economic development and underdevelopment. This cursory review will reveal the preoccupation of development theorists with growth. Thoughts of such prominent names in economics as Schumpeter, Rostow and Domar will be discussed along with other "growth" economists.

Section three will look at the attempts to merge the two into a general theory. This section will disclose how those who have attempted to evolve a general theory have practically confined themselves to formal education and skill development and the ramifications

of education on the policy and planning in developing nations. Section three will conclude with a review of some of the literature on education as a nation-building tool. The concepts and theories introduced in chapter two will serve as a basis for analysis in subsequent chapters.

Human Capital: Theory and Concepts

Economists have always realized the indispensable role of human beings in economics. In the history of economic thought, economists retained the notion of labor as the capacity to do manual work requiring little knowledge or skills. Smith argued that an economic society could be most efficiently organized upon the basis of the specialization of labor.¹ Strewn through the writings of Smith and his classical colleagues are discussions of the importance of the acquired skills and abilities of humans in economic progress.² These classical economists even went so far as to agree that the acquired skills and abilities could be classified as capital, though not the humans themselves. Kiker argues that the concept of human capital was somewhat pertinent in most economic thought until Alfred Marshall discarded the notion as unrealistic.³ Following Marshall, the overwhelming majority of economists returned to using the concept of capital only to discuss that portion " of the non-human material manmade stock of wealth

¹Eli Ginzberg, The Development of Human Resources (New York: McGraw-Hill Book Co., 1966), p. 10.

²B. F. Kiker, "The Historical Roots of the Concept of Human Capital," *Journal of Political Economy* 74 (October, 1966): 481.

³Ibid, p. 484.

which is utilized in further production."¹ Human beings entered into the production process as labor - a homogeneous mass of innate abilities.

The Rate of Return Approach

Following the economic crisis of the thirties, interest developed once again in the concept of human capital and the way workers increased productivity by learning new skills and perfecting old ones. Economists such as Theodore Schultz, seeking to explain increases in productivity and national income, found that the existing tripartite concept of factors of production along with technological change could not explain all gains in output. The growth of physical capital as conventionally measured explained a relatively small part of the growth in income in the United States. Schultz argued that differences in earnings were a result of differences in the amount of human investments and that increases in real earnings of workers represented a return to the investment that had been made in human beings. Thus, began to grow the school of economic thought that sought to clarify the investment process and opportunities that provide the incentives to invest in human capital. This school of thought became known as the rate of return approach to human capital development. The rate of return approach put emphasis on human capital accumulation through formal education, though they recognized that investment in human capital also included on-the-job-training, health and economic information.

Schultz defined capital as "entities that have the economic property of rendering future services of some value"² and sought to formulate

¹Ibid.

²Theodore Schultz, Investment in Human Capital (New York: Free Press, 1971), p. 48.

a theory of investment that included people. He argued that the key investment in human capital was education and that by investing in themselves, people enhanced their capabilities as producers and thus this investment becomes a source of measured growth. "Thus, a concept of capital that is restricted to structures, producer equipment and inventories...may unwillingly direct attention to issues that are not central or critical in understanding economic growth over long periods."¹

While Schultz sought to determine the relationship between expenditures on education and growth in income over a period of time Becker looked at the returns - both psychic and monetary - to the individual. Using a cost-benefit analysis, Becker sought to estimate the returns to education and to discern the activities that influenced a person's decision to invest. By applying the general micro-theory of investment in physical capital to human capital, Becker compared the rate of return to education and business capital and found no significant discrepancies between returns.² Becker's analysis was based on the neo-classical assumption that wages equal marginal productivity of labor, and by equating schooling costs (including foregone earnings) with earnings, he arrived at an internal rate of return. The rule of thumb, using the rate of return approach, is that investment should be carried to a point where the internal rate of return (the rate of discount which equates the present value of returns and costs)

¹Schultz, "Reflections on Investment in Man", p. 5.

²Gary Becker, "Underinvestment in College Education?," in Education and the Economics of Human Capital ed. Ronald Wykstra (New York; Free Press, 1971), pp. 105-115.

of investment in education equals that of alternate investment opportunities.

The Manpower Planning Approach

Meanwhile, other economists, agreeing with the hypothesis that formal education was the major source of human capital accumulation, sought to evolve alternative models for planning investment in human capital. This approach to human capital theory became known as the manpower planning approach. Manpower specialists attempt to foresee the future occupational structure of the economy and to plan the educational system so as to provide the appropriate personnel. The manpower approach to human capital development considers problems of translating crude labor requirements into qualified labor requirements and then deriving appropriate educational requirements, while maintaining a dynamic balance between the educational system and qualified manpower. This means that the educational system is geared to producing a qualified indigenous labor force that can be absorbed into an economy so that there will be no problems of increases in the labor force outpacing the generation of employment opportunities in any area. Several analytical tools which relate the educational sector to the labor and production sectors of the economy in terms of input/output relations have been developed for use with the manpower approach to human capital formation, though there is no universally accepted methodology for manpower forecasting.¹

¹Ozay Mehmet, Methods of Forecasting Manpower Requirements (Toronto, Canada: University of Toronto, 1965).

Manpower planning usually starts with manpower inventories which survey a sample of establishments as to present and future manpower requirements. By comparing existing and projected stocks of human capital, planners determine needed educational output and structure.

J. Tinbergen and H. Correa have developed an econometric model for making rough estimates of required aggregate expansion in secondary and higher education given a desire for the economy to grow at a certain rate. This coordination of educational planning and manpower planning culminates in the construction of a sector by occupation matrix showing the distribution of manpower requirements into specific occupations.¹

Herbert Parnes argues for the superiority of the manpower approach to human capital theory because it solves two problems simultaneously - (1) assuring employment opportunities to individuals and (2) assuring that production requirements of the economy are not constrained due to manpower considerations.² Placing emphasis on the development of high and middle level human capital skills, Parnes and an Organization for Economic Cooperation and Development (OECD) group, working on the Mediterrean Regional Project (MRP), determined the level of target year employment by sector and occupation on the basis of hypothesis regarding labor productivity and output of growth. The fundamental purpose of the MRP was to establish an educational structure consistent with the perceived manpower needs of each of the member countries involved (Greece, Italy, Spain, Portugal, Turkey, and Yugoslavia) in the project. Given an exogenously determined growth in Gross Domestic

¹Hecor Correa and Jan Tinbergen, "Quantitative Adaption of Education to Accelerated Growth," Kyklos 15 (1962): 776-786.

²Herbert S. Parnes, Forecasting Educational Needs for Economic and Social Development (Paris: OECD), 1962.

Product (GDP), an inventory of manpower for a base and target year classified by branch of industry and occupation was prepared and the group then prepared an assessment of national educational needs and arrived at detailed plans, including financial estimates for meeting these needs. They estimated for a fifteen year period the required number of graduates by broad subjects, the required number of teachers, facility needs, geographical distribution and cost of implementation for the group of mediterranean countries.¹

Both the rate of return approach and the manpower approach leave much to be desired in the way of a comprehensive theory of human capital development. Both approaches relate to human capital as skill development, viewing human capital formation as a result of formal and non-formal education. Both views virtually ignore agents of human capital development other than formal education. This is readily seen in the use of the economics of education synonymously with the economics of human capital. If human capital created outside the formal education system is of any significance, then any policies based on existing theory may lead to a misallocation of economic resources.

Education and Human Capital Development

Existing literature accepts the notion that the primary function of education is to prepare people for the labor market, while making no acknowledgement of the fact that preparation of people for the labor market includes socialization and indoctrination to ideas and philosophies that are consistent with the continuing propagation

¹Ibid.

of the existing economic order. Even given the importance of education in human capital development, the notion of education as skill generation is much too narrow a view. Hector Correa quotes Commens and Fagins

...we sometimes tend to think of learning as the acquisition of something. This may cause us to jump immediately to the conclusion that learning is a process of acquiring facts or skills and that the mind is either a kind of storehouse or an entity to which our sense impressions adhere... These notions are inadequate for understanding the process which leads to changes in the learner. This change or modification consists not merely of acquiring so many facts or increasing the number of things the learner can do, but in the alteration of his motives, needs, goals, tendencies. In short, learning alters his readiness to think, to behave and to feel in certain ways.¹

Traditionally, educational policy purported to have two objectives: to meet the needs of the individual in his own development and to meet the needs of society for its general development. Education, in any society serves the function of proliferation of that society, its values and future development. In a developing nation, the education system acquires an even more important role as a tool for the promotion of a national ideology and development of the requirements for national citizenship. In fact, any society, seeking to bring about large scale and rapid changes in social, economic and political values, will find the educational system the most effective means for implementing uniform alterations.

Vaizey notes that the main purpose of schools is to "socialize

¹Hector Corea, The Economics of Human Resources (Amsterdam: North Holland Publishing Co., 1963), p. 91.

children ... to introduce children into the human community - to teach them to live with other people and to adopt acceptable modes of behavior."¹ Some theorists argue that the educational system aids in the selection of workers, teaching them to accept jobs suitable to their class background. Carnoy states that schools function primarily as selectors and socializers in lesser developed countries, seeking to fit children into predetermined roles in the pyramidal structure of society, thus allowing them to function as more efficient producers in a productive hierarchy.²

Rowley has also argued that education serves, and should serve, to socialize individuals to accept the production relations on which the society is based. He pointed out that a human capital development policy which does not function in this capacity may lead to greater urban-rural gaps, unemployment, frustration and political instability.

The planner may think of the child with four years of literacy as in some ways a mere fortunate villager; he may work for a village oriented syllabus in certain more remote schools. But a great number of the children who fail to follow the new way out of the subsistence into the nation's cash economy will react as other drop-outs do... The village oriented syllabus will be taken as second best, yet many who have taken it will try to proceed into clerical employment. The village oriented technical training centres are often less successful in keeping young villagers at home than in attracting them into the towns in search of employment.³

¹John Vaizey, The Economics of Education (London: McMillan, 1973), p.16.

²Martin Carnoy, Education As Cultural Imperialism (New York: David McKay Co., 1974), p. 33.

³C. D. Rowley, The Politics of Educational Planning in Developing Countries (Paris: UNESCO, 1971), p. 24.

The confusion that has been engendered by the debate on manpower forecasting vs. rate of return seems unwarranted as is the discussion of the use of the term human capital to refer to humans. The concern with whether investment in education should be considered a consumption or investment good also seems untenable. As Bowman notes, "In a broad view, there is relatively little human consumption that is not in some degree also investment in either human capital formation or its maintenance."¹ The use of the term human capital enables one to use the principles of economic analysis while taking note of a need for a wider frame of reference. Eckaus says of human capital and economic analysis

Human capital is not like physical capital in a number of ways and cannot be expected to behave as if it were. Economic analysis, if it is to help to form optimal social policy must fully appreciate the uniqueness of the human resource."²

Economic Growth and Development: Concepts and Theories

A review of the literature on economic development will find that economic development is often equated with economic growth. It is usually defined as the process by which an economy's real national income increases overtime. Again, in the history of economic thought, such figures as Adam Smith, David Ricardo, John Stuart Mill and Karl Marx are predominantly associated with early theories of economic growth. In the twentieth century, growth theory assayed new heights

¹M. J. Bowman, "Human Capital: Concepts and Measures," in The Economics of Higher Education, ed. Selma Muskin (Washington, DC: Government Printing Office, 1962), p. 80.

²Richard Eckaus, "Education and Economic Growth" in Muskin, p.

Socialization - the process by which a person receives knowledge and values which enable him to exist as an effective and efficient member of that society - is indispensable in a comprehensive view of education and human capital development. Moreover, the learning process takes place at every stage of the life cycle and though the most crucial agents may include the school, human capital theory must also give due weight to the family, peer group and the media. Correspondingly, why should one confine the analysis to formal education, when it usually covers only the five to twenty-five year age group and yet the value of human capital continues to change after the age of twenty-five. By the same token, the formal education component of different occupations change with technological progress. This would seem to indicate a need for more emphasis on on-the-job-training and other forms of human capital investment. Mincer argues that in many cases the same degree of occupational skill can be achieved by shortening formal school and lengthening on-the-job training.¹

Present literature practically ignores the possibility of the elasticity of substitution between educated and uneducated manpower being anything but zero, while basing their analysis on rather tenuous assumptions. For instance, the Becker model assumes that both the labor and product models are perfectly competitive, while the Tinbergen-Correa model is based on questionable assumptions about manpower coefficients.

¹Jacob Mincer, "On the Job Training: Costs, Returns, and Some Implications," Journal of Political Economy 70 (October, 1962): 50-79.

in the writings of Joseph Schumpeter, Ray Harrod and Walter Rostow. Later economists argued the desirability of balance vs. unbalanced growth. Names such as Rosenstein-rodan and Nurske come up on the side of balance growth, while those of Hirschman and Fleming argue for unbalanced growth.

Historical Views of Economic Growth

Smith and his contemporaries, developed a theory of capitalist development based on growth and stagnation.¹ Capitalist development was seen as a race between technological progress and population increases. Technological progress depended on capital accumulation and the division of labor. According to the classical theory of growth, when the population was relatively small, returns on land were high and technological progress took place at a steady rate, provided enough physical capital was forthcoming. Eventually, however, diminishing returns to land and rising labor cost would outrun technological progress and stagnation would occur.

Schumpeter argued that the static analysis of general equilibrium theory was "not only unable to predict the consequences of discontinuous changes in the traditional way of doing things, it can neither explain the occurrence of such productive revolutions nor the phenomenon which accompany them."³ Schumpeter asserted the introduction of new techniques raised the productivity of all available resources and gave innovation

¹ Benjamin Higgins, Economic Development (New York: W.W. Norton and Co., 1968), pp. 57-80.

² Ibid., p. 87.

³ Joseph Schumpeter, "On the Theory of Economic Development" in Studies in Economic Development ed. Bernard Okun and Richard Richardson (New York: Holt, Rinehart and Winston, 1961), p. 90.

and innovators (entrepreneurs) the prime role in growth economics.

Harrod and Domar deduced the requirements for steady growth.¹ Using integral calculus, Domar formulated a model that showed what investment in material capital had to be if growth was to be steady. Harrod and Domar were less concerned with explaining the forces that account for investment than with explaining why the path of growth in developed capitalist societies is likely to be strewn with pitfalls.

Neo-Classical Theories of Growth

Rostow divided the history of economic growth in terms of five stages - (1) traditional society; (2) preconditions for take-off; (3) take-off; (4) the drive to maturity; and (5) the age of high mass consumption.² Rostow argued that at any time the rate of growth in the sectors of the economy would vary greatly and it would be possible to isolate certain leading sectors whose rapid rate of expansion played the essential direct and indirect role in the maintenance of the overall momentum of the economy. Before an economy could start to develop it must reach the take-off stage, whereas a precondition for take-off was the accumulation of social overhead capital, especially in transportation, and a technological revolution in agriculture. While economists assert that Rostow's model provides no explicit analysis of the nature of growth and development, his stage 'jargon' has caught on.

¹Wallace C. Person, Income, Employment and Economic Growth (New York: W.W. Norton and Co., 1967), pp. 414-40.

²Walter Rostow, The Process of Economic Growth (New York: W. W. Norton and Co., 1962), pp. 307-331.

Rosenstein-Rodan, writing in regards to building up countries devastated by war, called for a scheme of planned industrialization comprising a simultaneous planning of several complementary industries.¹ Rosenstein-Rodan argues that the whole of industry to be created should be planned like one huge firm. He felt that the creation of complementary industries would reduce the problem of not being able to sell what was produced. Nurkse argued that the inelasticity of demand in real income levels in lesser developed countries which causes the failure of new industries could be overcome only by a more or less "synchronized application of capital to a wide range of different industries."² Nurkse felt that the case for balanced growth ultimately rested on the need and desire for a balance in consumption goods. Nurkse thus argues

The conventional theory of factor proportions and capital movements is that in countries where there is little capital in relation to land and labor, the marginal productivity and hence the yield of capital will be high and that if it were not for extraneous impediments, capital would move to these countries from the areas where it is relatively abundant. This view is subject to qualification that the high potential yield of capital in capital poor areas may be capable of realization only through investment undertaken simultaneously in a number of complementary industries (or in public overhead facilities that serve to raise productivity in a number of different lines).³

Fleming and Hirschman are among those that question the desirability of development through balanced growth. Fleming argues that

¹P. N. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," in The Economics of Underdevelopment ed. A. Agarwala and S. Singh (New York: Oxford University Press, 1963), pp. 245-55.

²Ragnar Nurkse, "Some International Aspects of the Problem of Economic Development" in Agarwala and Singh, p. 257.

³Ibid, pp. 259-60.

... inelasticity of the supply of capital from abroad tends to render the doctrine of balance growth not so much invalid as inapplicable... development in industries at different stages in the same line of production are more likely to afford each other mutual support than those in different lines of production.¹

Hirschman, in reality, does not necessarily offer an alternative to balanced growth, but relates an explanation of the essential road leading to growth which consists of pressures and inducement mechanisms.²

Hirschman explains his basic thesis as follows

We have argued that economic development typically follows a path of uneven growth; that balance is restored as a result of pressures, incentives and compulsions; that the efficient path toward economic development and therefore the one that will be instinctively taken... is apt to be somewhat disorderly and that it will be strewn with the bottlenecks and shortages of skills, facilities, services and products; that industrial development will proceed largely through backward linkages, i.e. will work its way from the last touch to intermediate and basic industry.³

In general, few of the growth theories deal with the variety of institutional changes that distinguish growth from development. Most of the theories ignore the eversible evolution of social institutions and their relationships with improvements in the quality of human capital. Yet, Ann Kruger concluded that "the difference in human resources between the United States and the lesser developed countries

¹Marcus Fleming, "External Economies and the Doctrine of Balance Growth," in Okun and Richardson, p. 156.

²Albert O. Hirschman, The Strategy of Economic Development (New Haven; Yale University Press, 1958), pp. 1-20.

³Ibid, p. 158.

account for more of the difference in per capita income than all the other factors combined."¹ Section three will review the literature of various economist who define development in terms of the proportion of people engaged in useful occupations and skills as it relates to the development of a nation.

Human Resources in Economic Development

Common to all growth theories is the importance placed on the accumulation of capital - the growth of the physical means of production being termed the mainspring of economic growth. Until the last few years, human capital development, even in its narrowest sense of skill generation, was not considered as a core problem in economic development. Although improvements in skills, knowledge and the health of workers generally, appeared not to have been a prerequisite for the impressive economic growth during the European and American Industrial Revolutions, the nature of activities and technological change are completely different today. Growth theorists were slow to realize that the technological changes that had occurred lent support to the thesis that today's lesser developed countries could not imitate the historical development of the Western world and that modern theory should take explicit account of the role of human capital development.

The human resource approach to development makes three assumptions: (1) in lesser developed countries human resources are the most plentiful of all resources and that they are grossly underutilized; (2) skills, knowledge and the capacities of the labor force are capable of almost

¹Schultz, Investment in Human Capital, p. 191.

limitedless growth because of underdeveloped potential; and (3) even lacking liberal endowments of natural resources and material capital, the lesser developed countries can properly maximize the productive utilization and effective development of their labor force. This approach stresses employment-oriented planning with importance being placed on the improvement of skill content through a wide variety of broadly based formal education, on the job training and other forms of skill development.

Integrating Manpower Planning and Educational Planning

Frederick Harbison is among those who have sought to move emphasis in development theory from both physical capital and growth in GDP.¹ According to Harbison, from a perspective of human resources as the wealth of nations, the goals of development become the maximum possible utilization of human beings in productive activity and the fullest possible development of their skills, knowledge and capacities. Harbison acknowledges that skill development is but one facet of human development, but ignores the potential of a comprehensive theory in his analysis. He divides human resource problems into two general categories - those that relate to the underdevelopment of skills, knowledge and talents embodied in the labor force and those stemming from the underutilization of these energies and capabilities - attributing the underutilization of human resources to poor coordination between a country's employment and educational system. Harbison advocates the use of

¹Frederick Harbison, Human Resources as the Wealth of Nations (New York: Oxford University Press, 1973).

manpower planning and preoccupies his works with planning for high and middle level manpower. He argues that while high level manpower is only a tiny fraction of the labor force, its role in national development is crucial.

Harbison further argues that the capacity of an economy to generate sufficient employment opportunities and to resist the brain drain rests on its coordination of manpower and educational planning. Harbison's analysis is based on the assumption that the main link of education with economic development is through the knowledge and skills it produces in the labor force.

Other economists, attempting to mesh human development with economic development have also seen a lack of skills as a major bottleneck to accelerated expansion of the economy, though they place less value on investment in skill generation as a means to deal with the problems.

Human Capital and Economic Backwardness

Myint distinguishes between underdeveloped resources and backward people. Adducing that economic development is a mutual adaptation between wants, activities and environment, Myint asserts

On the contrary the problem of economic backwardness in many countries has been made more acute, not because the natural resources have remained 'underdeveloped', but because they have been as fully and rapidly developed as market conditions permitted while the inhabitants have been left out, being either unable or unwilling or both to participate in the process... Nor can the loss of educational opportunities be adequately remedied by investment in human capital as is frequently assumed. Mere increases of expenditures on technical training and education which may offer a partial relief is really too weak and unselective to be an active countervailing force to the deepseated disequalizing factor. Too great an emphasis on the investment in human capital,

therefore tends to confuse the issue and distract attention from the more potent disequalization factors.¹

To Myint, human capital investment implied investment in skill generation and he argued that the absence of certain 'qualities' in the people of lesser developed countries, which he termed backwardness, was a more potent yoke on the dynamic expansion of the economy.

Human Capital and the International Division of Labor

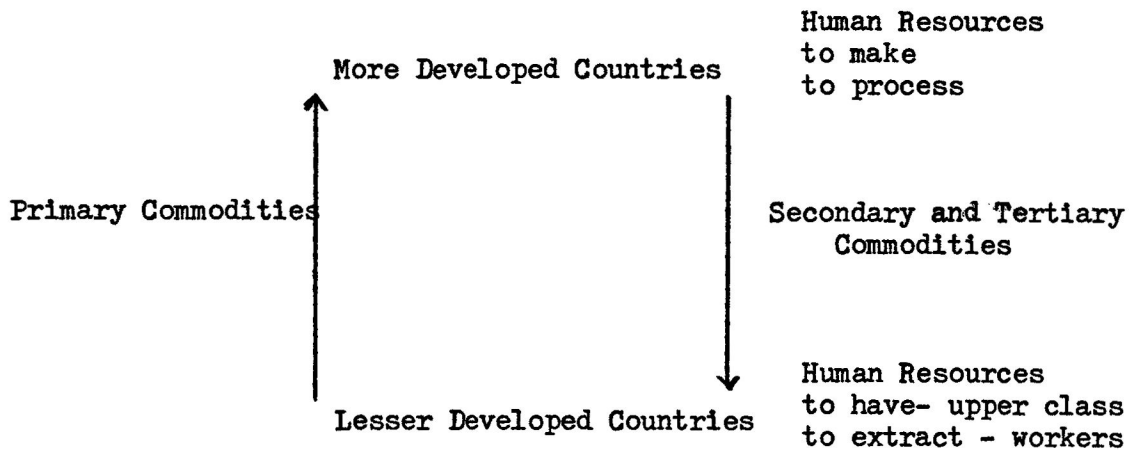
Galtung developed two models on the relationship between human resources and economic development.² Galtung views society as a market where human resources and economic development are both inputs and outputs and where production of one acts to reinforce production of the other. Galtung's fundamental perspective is that when analyzing human capital development, the unit of analysis cannot be one country, but a set of countries with a vertical division of labor. Galtung states that with the present international division of labor, all developing nations need in the way of human resources is a sufficient access to unskilled labor and a host of specialists to define property rights and resolve conflicts in that connection. He diagrams this relation and in explaining this diagram, Galtung asserts

The nature of this division of labor is well known: LDCs produce primary commodities and receive in return secondary and tertiary commodities... The raw materials in the LDCs have a domestic basis expressed by the verbs 'to have' and 'to extract' where the upper class (land owners, owners of mines,

¹H. Myint, "An Interpretation of Economic Backwardness," in Agarwala and Singh.

²John Galtung, "On the Relationship Between Human Resources and Development: Theory, Methods, Data".

etc.) take care of the having and the working classes (unskilled labor, often non-white) take care of the extraction. In the MDCs the raw materials are then processed in a complex system of organization based on division of labor and some of it is exported, mainly to be consumed by the upper classes in the LDCs... The point is simply that where LDCs tend to have low rates of education at all three levels, it is to a large extent because they do not need more... MDCs need much more, in principle without any limit. The more the economy is geared to ... processing, the more scientists and engineers are needed and the more skilled blue collar and white collar will be needed in order to process and administer."¹



Galtung concludes that in order for a dramatic new departure in the field of human capital and economic development to take place, developing nations must first detach themselves from a position of providers of raw materials in an international labor block.

All theories of human capital and economic development accord education a primary role, yet the weakest section of nearly all economic development plans are those that relate to the development of the people - education, training and other aspects of the development of human capital. Fanon suggests

¹Ibid, pp. 139-40.

... in an underdeveloped country ... in the end everything depends on the education of the masses, on the raising of the level of thought and on what we are too quick to call 'political teaching'... To educate the masses ... means ... to try relentlessly and passionately to teach the masses that everything depends on them.¹

Many authors have done studies on schooling as a nation building tool in Africa. Roach found that not only is education a key factor for changing behavior, but that schooling has become a value in itself.² She also found that in this period of rapid social change in Africa, the family was beginning to rely more heavily on the educational system as the main agent of socialization. Koff and associates found students in East Africa, themselves, ranked citizenship training as the most important purpose that schools serve with skill development for good jobs ranked second.³ Libenstein argues that

Education in its broadest sense creates not only specific skills but also attitudes about the desirability of certain activities and about the value of education itself. It is quite likely that those attitudes are more important in fostering economic development than are the specific skills created by the education process.⁴

It is with this broad view of human capital development that subsequent chapters discuss human capital development in Tanzania,

¹Frantz Fanon, Wretched of the Earth, trans C. Farrington (New York: Grove Press, 1965), p. 157.

²Penelope Roach, Political Socialization in the New Nations of Africa (New York: Teachers College Press, 1967)

³David Koff et. al. "Political Socialization in Three East African Countries: A Comparative Analysis," in Socialization to Politics: A Reader ed. Jack Dennis (New York: John Wiley and Sons, 1973), pp. 231-53.

⁴Harvey Leibenstein, "Shortages and Surpluses in Education in Underdeveloped Countries: A Theoretical Foray," in Education and Economic Development ed. C. A. Anderson and M.J. Bowman (Chicago: Aldine Publishing Co., 1965), p. 61.

seeking to determine whether the methods of human capital development are geared to the chosen socialist path of development of that nation.

Summary

Chapter two has presented a brief investigation of the present stock of writings on human capital development as well as a brief look at some of the characteristics of thoughts on economic development. The purpose of presenting a review of existing concepts and theories was to provide a basis for analysis of the Tanzanian experience in the area of human capital development. Even before embarking on the study of Tanzania, chapter two makes one aware of the literature limitations and the pitfalls that may arise in policy based on such theory.

The rate of return analysis appears to have limited value in any stage of socialist development. Even elevating that approach to a national cost/benefit analysis, one finds that the present and future marginal social benefits are both hard to measure and does not include 'non-economic' objectives and structural changes of development. Empirical analysis based on the rate of return to education (both private and social returns), education as an income generator and education in the growth process, however, does indicate that investment in education is positively correlated with growth in income - a goal of all developing nations. In any event, many of the assumptions (perfectly competitive product and labor market which are in equilibrium, fixed productivity coefficients and no structural change in the economy during appropriate period) were seen to be inappropriate to developing countries, making conclusions based on the rate of return analysis

often unusable for formulation of practical policies.

, The basic questions of what are the mechanisms and strategies for converting human resources into development and vice versa find more germane answers in the concepts of manpower planning, also discussed in chapter two. There is an a priori bias in favor of the manpower planning approach when the goal is economic development. One can question, however, the desirability of extensive concentration on high and middle level positions as is currently being done, as well as the fact that the theory is based on some of the same assumptions as the rate of return approach.

The central focus of this paper is that though the manpower analysis is to be preferred over the rate of return approach in a developing situation, it needs to be expanded to include human capital aspects other than skill development as well as to include the total labor force. The chapter concludes on the note that the present state of affairs vis-a-vis the economics of developing human capital in a developing nation has moved forth with the use of manpower planning but that much work remains to be done.

Since one cannot develop human capital in a vacuum, chapter three will offer an overview of the development process in Tanzania since 1961. Tanzania is considered, by most African scholars, as one of the few African nations where innovative structural change is being experimented with. The chapter will show Tanzania's process of mutual adaptation between wants and activities, as it has moved away from economic theorists who place physical capital at the very core of economic development. Tanzania realized, as Fleming contended, that inadequate

factors of production makes balanced growth and simultaneous industrial investment impossible. Instead Tanzania has chosen to develop by way of its agricultural sector with emphasis put on the role of humans.

Chapter four will focus on what has been done and the lessons to be learned from the Tanzanian experience of human capital development. Tanzania, using the manpower approach, has set as its goal self-sufficiency in high level manpower by 1980. The Tanzanian government has given first priority in its human capital development strategy to meeting the manpower needs of economic development through educational planning.

Finally, chapter five will conclude with a summary that rests on the assumption that the crucial ingredient in economic development is the human resource as defined in the introduction and that the strategy for optimal development of a country is concurrent with optimal development of its human capital. Hopefully, some insight will be gained from Tanzania's achievements as well as their mistakes which will help future policy makers in the search for an appropriate strategy of human resource development.

CHAPTER III

TANZANIA: AN OVERVIEW

Tanzania is one of the few developing countries which is presently experimenting with alternative forms of organizing economic activity. Chapter three will provide an overview of the process of transformation of the Tanzanian economy since Independence (1961). The first section of chapter three provides a compendium of the country, citing statistics on natural and climatic conditions as well as population. The second section of this chapter offers a brief synopsis of the structure of the economy. A knowledge of the particular institutions and structure of the economy, as they exist, is a prerequisite to the analysis of any human capital development program. In Tanzania, agricultural development is the central issue and the core of Tanzania's development program. Thus, the first section will look extensively at the role of agriculture in the economy.

Under the nomenclature, African Socialism, Julius Nyerere, president of Tanzania, has seized hold of the concepts of self-reliance and social ownership as keys to effective development. The third section of chapter three looks at development planning in Tanzania, which can be seen to reflect Nyerere's evolution from a concept of socialism as espoused in "Ujamaa - The Basis of African Socialism" (1962) to the "Arusha Declaration" (1967) and later "Socialism and Rural Development" (1967).¹

¹See Nyerere, Freedom and Socialism.

Nyerere's development can be seen as the key to the creation of the institutions and policy measures that have laid the ground work for socialist development in Tanzania.

A General Overview

Tanzania, located on the eastern side of the African continent, is the largest (363,708 squares miles) and the most populous (12.3 million according to the 1967 census) country in East Africa. ¹ Officially known as the United Republic of Tanzania, the country was formed in 1964 with the merging of the newly independent nation of Tanganyika (1961) and the islands of Zanzibar (1964) and Pemba, both lying about twenty miles off the coast of the mainland.

Tanzania is a land of attractive and varied landscapes. Most of the country is made up of plains and plateaus and the many rivers and surrounding lakes offer high potential for hydro-electric power and irrigation. The extreme variations in natural and climatic conditions has led to variations in development potential and thus to uneven regional development. Almost 20 percent of GDP is earned in the city of Dar es Salaam (transportation center for several African nations) which when coupled with seven main districts (Tanzania is divided into seventy four districts plus Zanzibar and Pemba) produce almost half of the country's GDP. ²

The population in Tanzania is largely rural with a population density of about thirty three people per square mile. In Tanzania,

¹See Appendix 1

²See Appendix 2

however, there are areas of dense population standing as islands in much wider zones where population is very sparse and scattered. According to Berry, over 70 percent of the population live on less than 30 percent of the land.¹ Only 7.6 percent of the total population is urban with over 25 percent of this being accounted for by Dar es Salaam. The urban population growth rate, however, has been about 6 percent per annum over the last two decades.²

The dependency ratio (ratio of the number of people in dependent ages 0-14 years or 65 years and over to the population in working ages 15-64 years) is approximately eighty eight per one hundred people. Table 1 shows the age and sex composition of the population as reported in the 1967 census.

TABLE 1

Age and Sex Composition of the Population
of Tanzania, 1967

Age Groups	Males (000)	Females (000)	Total (000)	% of Total	Male: Female Ratio
0 - 4	1,090	1,097	2,188	18	99.3
5 - 14	1,607	1,628	3,234	26	98.7
15 - 44	2,566	2,714	5,279	43	94.6
45 - 64	599	663	1,263	10	90.4
65+	144	205	349	3	70.2
Total	6,006	6,307	12,313	100	94.2

SOURCE: Leonard Berry, Tanzania in Maps (London: University of London Press, 1971), p. 169.

¹ Leonard Berry, "Tanzania's Population," in Nation-Building in Tanzania ed. A. Rweyamamu (Nairobi: East African Publishing House, 1970), p.17.

² Leonard Berry, Tanzania in Maps (London: University of London Press, 1971), p. 106.

The low figures in the forty five and older age group reflects the short life expectancy of the country due to the stage of development of its health care system.

Structure of the Economy

Table 2 shows gross domestic product and population growth in Tanzania for the ten years following independence. The drop in GDP in 1965 was the result of a disastrous drought which destroyed many cash crops. The low figures also reflect the drop in world prices of cotton, coffee and sisal that same year. The abrupt increase in GDP and population in 1968 was a consequence of the 1967 census which showed that the government had been underestimating population and the value of subsistence agriculture.

TABLE 2

National Income in Tanzania Since Independence

Year	Gross Domestic Product		Population		GDP/Capital	
	Million US \$	% Change	Million	% Change	US \$	% Change
1961	541.80		9.4		57.63	
1962	586.32	8.2	9.6	4.3	61.07	5.9
1963	639.52	9.1	9.8	2.0	65.25	6.8
1964	672.56	5.2	10.0	2.0	67.25	3.0
1965	669.20	-0.5	10.2	2.0	65.60	-2.5
1966	762.16	13.4	10.4	2.0	73.28	11.7
1967	796.88	4.6	10.6	2.0	75.17	2.5
1968	1,035.72	30.0	12.3	16.0	84.20	12.0
1969	1,068.20	3.1	12.6	2.4	84.77	0.6
1970	1,152.48	7.9	12.9	2.3	89.33	5.3
1971	1,218.56	5.7	13.2	2.3	92.31	3.3

SOURCE: Wilbert J. Lemelle, "The Changing Role of the Planning Advisor in East Africa," The African Review 3(June, 1973): 309-26.

Table 3 presents a brief survey of the Tanzanian economy through other selected development indicators. The inclusion of its rank as compared with 112 other countries indicates its placement on the bottom tier of international stratification.

TABLE 3
Selected Development Indicators - 1967

Indicators	Value	Rank*
GNP/Capita (1964 US\$)	71	14
Energy Consumption /Capita	72**	
Doctors & Dentists/10 K pop	0.6	21
Pharmacists/10K pop	0.0	
Nurses/10K pop	3.87	39
Hospitals' Beds/10K	19.32	41
Daily grs. Protein Consumed/Capita	58	38
Daily Animal Protein as % Total/Capita	16	25
Daily Calories Consumed /Capita	2080	18
Daily Cereals & Starches % Total/Cap	79	87
# Births / 1000 pop	47	81
# Deaths/ 1000 pop	22	89
Life Expectancy at Birth	41	20
Avg. of 1963-67 Pop Growth Rates	2.9	81
% Pop Living in Cities of 20K +	2.5	2
Newspapers Circulated/1000 pop	3.0	11
Radios /1000 pop	11.7	7
Telephones in Use/1000 pop	2.5	24
Yearly Cinema Attendance / Capita	0.5	17
Passenger Cars, etc./1000 pop	4.1	20

* Rank is the position of Tanzania out of 112 countries with one being the lowest rank one can have.

** measured in kilograms of coal ton equivalents

SOURCE: Frederick Harbison, Joan Maruknic and Jane Resnick, Quantitative Analyses of Modernization and Development (Princeton, NJ: Industrial Relations Section, Department of Economics, Princeton University, 1970), pp. 203-5.

Tanzania's economy is based on agriculture with almost half of its GDP originating in the agriculture sector and roughly one half of this originating in the subsistence sector. Table 4 shows GDP, by sector at factor cost for selected years prior to the Arusha Declaration.

TABLE 4

GDP at Factor Cost (Millions of Shillings)

	1962	1965	1967	Relative Contribution 1967 %	Annual Rate Growth 62-7 %	Annual Rate Growth/Cap 62-7 %
Monetary						
Agriculture	993	1,298	1,368	24.0	7	4
Mining	103	121	154	2.7	8	5
Manufacturing	154	234	314	5.5	15	12
Construction	122	151	214	3.8	12	9
Public Utilities	30	37	51	0.9	11	8
Commerce	484	658	781	13.7	10	7
Transportation	188	216	280	4.9	8	5
Other Services	448	580	649	11.4	8	5
Rent	175	246	304	5.3	12	9
Total Monetary	2,697	3,541	4,116	72.2	9	6
Subsistence						
Agriculture	1,492	1,953	1,576	27.8	1	-2
Total	4,189	5,494	5,692	100.0	6	3

SOURCE: Leonard Berry, Tanzania in Maps (London: University of London Press, 1971), p. 160.

Using Rostow's sectorial description, agriculture would be considered the primary growth sector, manufacturing and mining the supplemental growth sector with the rest of the economy being the derived growth sector. The high growth rate in construction and public utilities reflect the fact that Tanzania is in what Rostow defined as "preconditions for take-off - i.e., the process of building up its social overhead

capital (SOC).

Agricultural Development

In Tanzania, four products, three of them agricultural, account for the bulk of the country's export trade. Table 5 shows domestic exports for sisal, coffee, cotton and diamonds for the years 1961-67 and 1970-73.

TABLE 5

Tanzania's Domestic Exports, Selected Commodities

	COTTON		COFFEE		SISAL		DIAMONDS	
	Value*	% Total Value	Value	% Total Value	Value	% Total Value	Value	% Total Value
1961	6.8	14.0	6.8	14.0	14.0	28.7	5.8	11.9
1962	7.4	14.4	6.6	12.9	15.7	30.7	5.4	10.9
1963	10.7	16.8	6.8	10.7	22.7	35.7	5.0	7.9
1964	9.9	14.1	11.1	15.8	21.9	31.2	6.8	9.7
1965	12.2	19.4	8.6	13.7	14.3	22.8	7.1	11.3
1966	17.5	22.1	15.1	19.1	11.7	14.8	9.0	11.4
1967	12.5	20.0	11.9	19.0	10.0	15.9	11.1	17.9
1970	35.0	13.5	44.0	17.0	25.0	9.7	23.0	8.9
1971	34.0	8.2	32.0	11.5	20.0	6.8	29.0	10.4
1972	47.0	14.7	54.0	16.9	20.0	6.3	17.0	5.3
1973	47.0	12.8	70.0	19.0	32.0	8.7	23.0	6.3

* Millions US\$

SOURCES: International Monetary Fund, Surveys of African Economies Volume II: Kenya, Tanzania, Uganda and Somalia (Washington, DC: International Monetary Fund, 1969), p. 276.

Agency for International Development, AID Economic Data Book (Washington, DC: Agency for International Development, 1974).

Tanzania, while turning its back on much of today's theory of capitalist development through industrialization seems to have returned to the classical Malthusean picture of economic development. According to

Malthus, investment should initially take place in agriculture and only after an increase in the effective supply of agricultural production should investment be undertaken in the industrial sector.¹

Production

Since 1930, Tanzania has been the world's leading producer of sisal. Until recently the cultivation of sisal was based on the plantation system, with one foreign plantation producing nearly two-thirds of Tanzania's sisal. (According to Beckford, plantations in Tanzania account for only about 5 percent of cultivated area, but contribute extensively to GDP).² Cutting of the sisal leaves requires impressive quantities of unskilled human labor. Attempts have been made since independence to increase African participation in sisal growing as other than unskilled labor, through smallholders production. In 1967, through nationalization of several plantations, the government finally attained majority control in the industry. Between 1962 and 1967, however, the price of sisal in the world market halved due largely to invention and use of synthetic fibres. This price trend is expected to continue.

Coffee is also among the leading exports, although due to the International Coffee Association agreement only about 50 percent of present production can be exported. The agreement has not proved effective in maintaining coffee prices and in many cases, Tanzania is forced to sell ever greater quantities of her growing production at cut-rate prices

¹Benjamin Higgins, Economic Development, p. 70.

²George Beckford, Persistent Poverty (New York: Oxford University Press, 1972), p. 239

to non-members of the agreement. Originally, coffee, too, was exclusively a plantation crop, though now something like 50 percent of production is from smallholdings based on a modified traditional African system of farming. Coffee requires little labor except in picking season and this is usually done by the extended family.

During recent years, cotton has become Tanzania's most important cash crop and its leading export commodity with 90 percent of it being grown in one area of the country. In Tanzania, cotton is exclusively a smallholder crop using family labor. The outlook for future growth is not good for cotton, however, for like sisal it is faced with growing competition from synthetic fibres.¹

Tea, cashew nuts, and sugar are thought to have high potential as development crops. Tea, still largely a plantation crop, is not bound by international agreements which limit its marketability. Cashew nuts are wholly produced by smallholders, though the value of the crop to Tanzania could be greatly increased if the whole crop could be processed in Tanzania. The shelled nuts bring a higher price and find a larger market than the unshelled nuts. Sugar is the most recently established of the major crops in Tanzania, and the only non-export crop. In recent years, production has just about met domestic demand. Eighty percent of Tanzania's commercial production of sugar cane is from five plantations with the limiting factor of expansion being the availability of processing facilities. Tobacco and wheat are also believed to be important development crops because of good local, internal and external markets.

¹The oil crisis could serve to stabilize prices of sisal and cotton due to the rise in prices of synthetics.

Maize is the most important of grain crops and the staple food crop over much of the country. It is clear that the development of production of the major grain crops is an important key to Tanzania's overall development. The wider use of high yielding rice and other grain varieties would make it much easier for farmers to secure their own food supplies and thus release land and labor for the production of market crops.

Tanzania has continued to increase its importation of foodstuffs with corn, rice, flour and pasta being the most important. Home dairy products are also imported in abundance. This is wasteful because most of these commodities could be produced in Tanzania under generally favorable conditions.¹ The cattle of Tanzania's herdsman are subject to disease which periodically kills off 40-75 percent of the herds. Moreover, in many parts, cattle are kept merely as symbols of wealth and prestige rather than as economic enterprises.

Distribution

The Tanzanian government places heavy emphasis on cooperative marketing as a means of achieving its socialist development potential... The government is actively engaged in development of cooperatives and all cooperative societies are registered with and controlled by the government. Marketing through the cooperative is compulsory for most agricultural products - all export crops produced by smallholders and a substantial part of domestically consumed food crops are marketed through the cooperatives. Diagrams 1 and 2 show the process.

¹René Dumont, Socialism and Development, trans. R. Cunningham (New York: Praeger Publishers, 1973), p. 152.

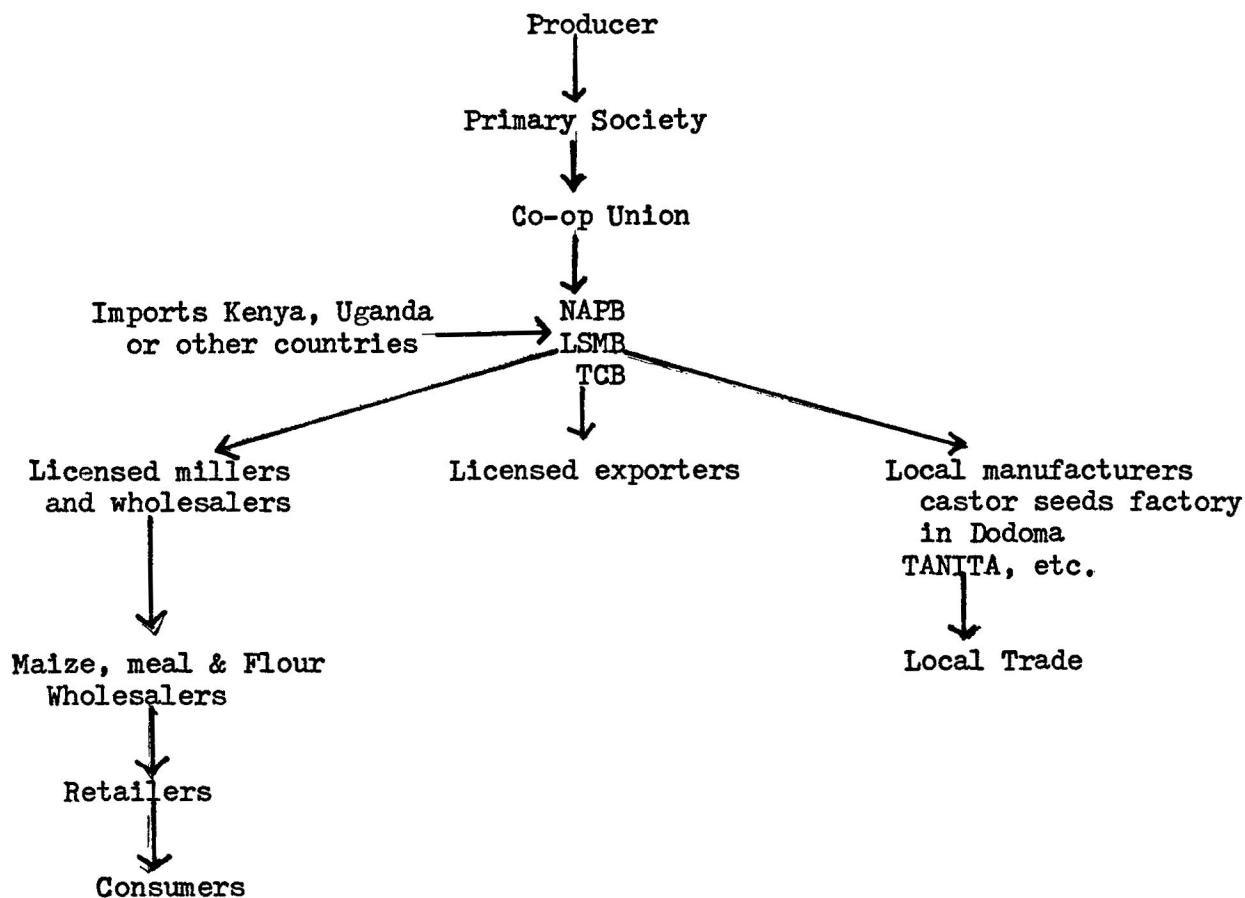


Diagram 1. Type 2 Cooperative marketing - Oilseed, Cashews, Coffee, Cotton and Maize

SOURCE: Leonard Berry, Tanzania in Maps (London: University of London Press, 1971), p. 73.

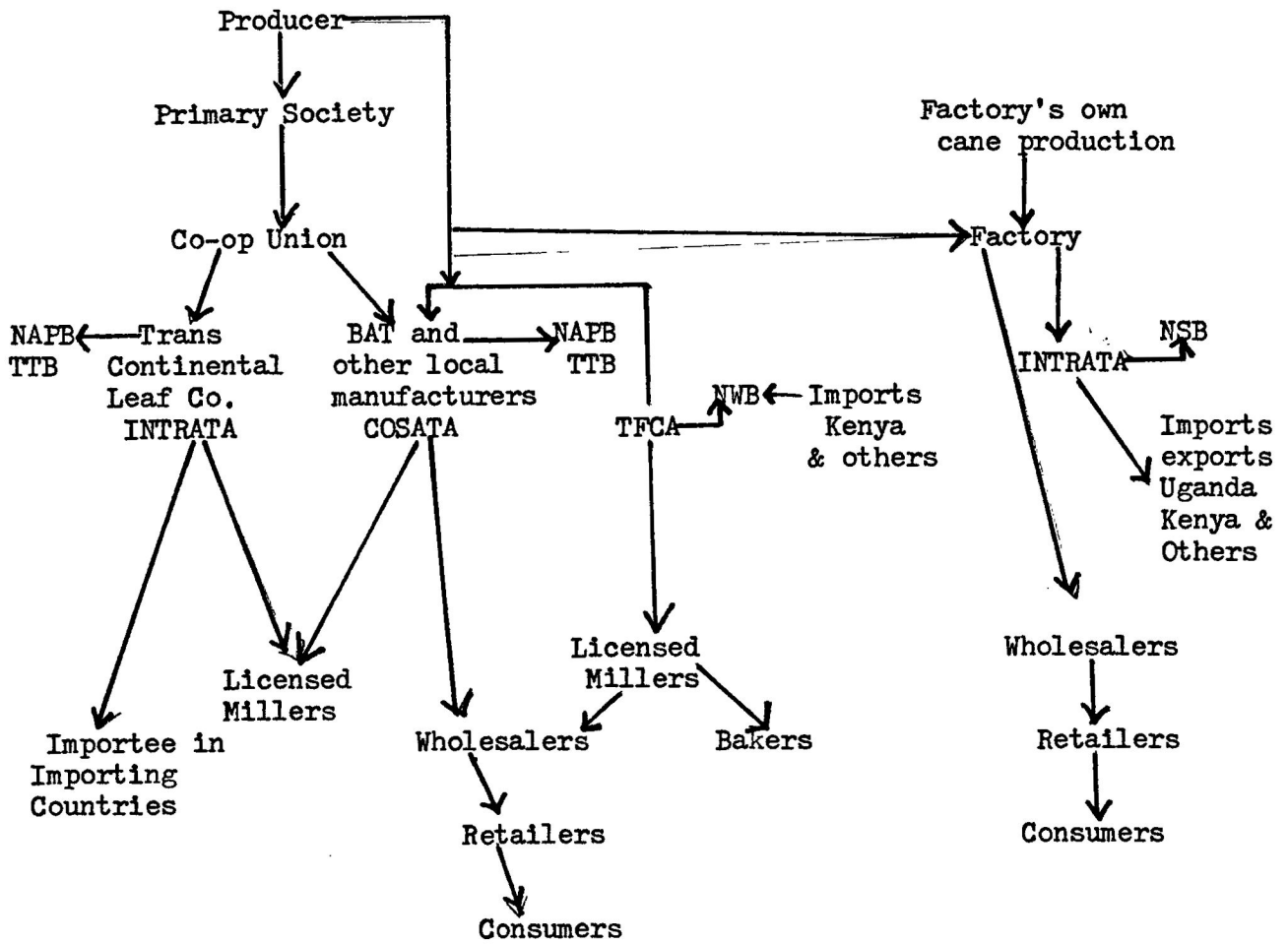


Diagram 2. Type 1 Cooperative marketing - Tobacco, Sugar, and Flour

SOURCE: Leonard Berry, Tanzania in Maps (London: University of London Press, 1971), p. 73.

The first link in the cooperative chain is the primary society which is formed by a number of producers who join together in order to sell in bulk. The function of the primary society is to receive the produce, weigh it, grade it, bag it and pay for it. Certain societies also offer credit facilities and get involved in the distribution of agricultural inputs. The costs involved in operation of primary societies are financed by a levy on the product.

A cooperative union - a secondary society - is formed by a number of primary societies. They function much in the same way as the primary society, but on a larger scale. The union coordinates the sales of the primary societies and arranges distribution of farming inputs. Costs connected with union activity are also financed by a levy on produced handled. Some of the unions have accumulated considerable supplies of capital which are invested in processing facilities or other activities related to local development. All unions are united under the Cooperative Union of Tanzania (CUT) whose function is mainly administrative and political rather than marketing.

The Produce Marketing Board is the next step in agricultural marketing. While a large part of the produced that is controlled and regulated by the Marketing Board passes through the cooperatives, the Marketing Boards are government bodies which also control non-cooperative marketing. The functions of the Boards vary considerably: some make compulsory marketing agreements, others become directly involved in pricing and research.

Some agriculture plays a dominant role in all phases of the economy. Because of this, the primary function of improvements in transportation has been those that facilitate marketing. Since most farming is based on family labor, transportation costs are the highest costs incurred by

Tanzanian farmers. The inability of district authorities to maintain the roads within their areas - due to lack of funds and inadequate manpower - resulted in a plan for the central government to take over and maintain what are now known as regional roads. Roads are also seen as a powerful means of opening up areas which are at present underutilized.

Industrial Development

Activity in the mining industry has been concentrated in diamond production, the supply of which is expected to be exhausted soon and its contribution to the Tanzanian economy is expected to be progressively reduced. Current industrial activity concentrates on self-sufficiency in processing of major agricultural crops and the vital construction industry, and manufacturing of consumer goods. Table 6 shows plan and realized growth rates in manufacturing and processing prior to the Arusha Declaration, when import substitution was seen as the heart of the required industrial revolution.

Table 6

Planned Targets and Realized Net Output in Manufacturing and Processing Industries
1962-67 in 1000 £

	1962	1963	1964	1965	1966	1967
Realized	7.8	7.8	9.7	11.1	13.5	16.4
Planned	8.5	9.7	11.1	12.7	14.5	16.6

SOURCE: Karl Schadler, Manufacturing and Processing Industries in Tanzania (Munich: Africa Studienstelle, 1969), p. 5.

A start has been made in industries based on local raw materials in such various fields as textiles, cement, soap, and cooking oils. Most of the modern industries (manufacturing), however, are concentrated in Dar

es Salaam and its suburbs close to the towns of Tanga, Mwanza, Moshi, Arusha and Morogoro.¹ One can gauge the importance of various industries in the development of Tanzania by the figures given in Table 7 which show employment distribution by industry.

TABLE 7

Establishments in Manufacturing and Processing Industries in 1965 by Individual Activity

Activity	Total	Number of Establishment Employing				
		10-19	20-49	50-99	100-499	500+
Food Manufacturing	125	38	47	24	17	2
Beverage Industry	11	5	3	1	2	-
Tobacco Manufacturing	3	-	-	-	2	1
Textile Manufacturing	158	3	23	53	76	3
Wearing Apparel	10	2	4	1	2	1
Wood Manuf. (exc. Furn)	73	23	26	19	5	-
Furniture & Fixtures	17	11	4	2	-	-
Paper Prod. & Printing	22	10	8	2	2	-
Leather Products	8	2	5	1	-	-
Rubber Products	5	3	2	-	-	-
Chemical Products	18	9	5	2	2	-
Non-Metallic Products	9	3	3	3	-	-
Basic Metal Industry	19	10	1	1	7	-
Machine Manuf. & Repair	12	5	5	2	-	-
Assembly & Repair of Motor Vehicles	73	24	37	9	3	-
Misc. Manufacturing	6	2	2	1	1	-
Total	569	147	175	121	117	7
%	100	26	31	21	21	1

SOURCE: Karl Schadler, Manufacturing and Processing Industries in Tanzania (Munich: Africa Studienstelle, 1969), p. 11.

¹See Appendix 3.

During the first five year development plan, only about 3.5 percent of mainland Tanzania's population were employed in the sense that they were paid wages and salaries. The other 96.5 percent lived on the land, largely in family groups engaged in subsistence agriculture.¹ According to statistics in the second five year development plan 95 percent of the peasant population continued to be primarily self-employed subsistent farmers with only 5 percent of the population earning wages and salaries.² Table 8 shows wage and salaried employment in Tanzania for the years 1963 - 72.

TABLE 8

Wage and Salaried Employment in Tanzania, 1963-72

Year	Total W/S	Growth Rate %	Non-Agri W/S	Agricultural W/S
1963	340,344		174,812	165,532
1964	351,257	3.2	187,668	163,589
1965	333,755	-5.0	194,593	139,162
1966	336,497	0.8	210,274	126,223
1967	346,741	3.0	222,854	123,887
1968	351,771	1.5	242,498	109,213
1969	367,926	4.6	255,038	112,888
1970	375,635	2.1	268,267	107,368
1971	392,770	4.6	283,799	108,971
1972	405,713	3.3	291,870	113,873

SOURCE: United Republic of Tanzania, Ministry of Economics Affairs and Development Planning, Annual Manpower Report to the President, 1972, (Dar es Salaam: Government Printers, 1972), p. 1.

¹United Republic of Tanzania, Tanganyika: Five Year Plan for Economic and Social Development 1st July, 1964 - 30th June, 1969, (Dar es Salaam: Government Printers, 1964), p. 72.

²United Republic of Tanzania, Tanzania: Second Five Year Plan for Economic and Social Development, 1st July, 1969 - 30th June, 1974, (Dar es Salaam: Government Printers, 1969), p. 6.

The sporadic changes in wage and salaried employment was largely due to changes in agricultural wage and salaried employment and not to non-agricultural employment which grew continuously over the years.

Development Planning

In Tanzania, using a peculiar blend of pragmatism and idealism, there has been an attempt to move from defining development in terms of growth in GDP to continual betterment of the life of the population. Tanzania has committed itself to forming detailed plans which include a statement of socio-political aims and the economic strategy for their attainment. Tanzania's first try at planning was a three year plan (1961-64) which was a program for public capital expenditure rather than a comprehensive economic development plan. Today, using five year development plans with a long run fifteen year perspective, the government has began the mobilization of resources, the coordination of the elements of production and the setting of priorities for the regulation of economic life consistent with attainment of its national goal - the establishment of a self-reliant and secure society in which income and property rights are equitably spread and collective and cooperative forms of activity are the model..

First Five Year Plan

The first five year plan (1964-69) did not provide a body of detailed proposals, nor develop a prior set of firm socio-political ideological commitment.¹ This reflected Nyerere's nebulous concept of African Socialism,

¹United Republic of Tanzania, Tanganyika: Five Year Plan for Economic and Social Development 1st July, 1964 - 30th June, 1969. Also see Reginald Green, "Four African Development Plans: Ghana, Kenya, Nigeria and Tanzania," Journal of Modern African Studies 3 (1965): 249-79.

as well as the fact that it was drawn up by a team of international planners. Initially, Nyerere looked at socialism as an attempt to recapture and modernize traditional African Communalism. In "Ujamaa - the Basis of Socialism" (1962), Nyerere defined socialism as an attitude of mind and felt the primary task of socialist development in Tanzania would be the reactivation of traditional African values.¹

The primary objective of the first plan was to double existing per capita income by 1980. The second objective of the plan was to Africanize skilled, professional and managerial jobs in Tanzania. Its third objective was to raise the Tanzanian life expectancy to fifty years.

The first plan, which covered only mainland Tanzania, was realistic in its mathematical calculations, but the level of national effort demanded and the external financing required were highly optimistic. The plan placed emphasis on the importance of rapid rural progress through concentrated investment in a few areas. It attempted to deal with the problems of the scattered population which prevented the spread of technology, the commercialization of crops and easy access to schools, and other services. The plan called for taking farming families and resettling them from high density areas to low density areas in potentially good and fertile sites. Each settlement would grow one major cash crop, using a high degree of mechanization. These settlements ran into severe criticisms and were ultimately abandoned. The plan assumed that the dynamic force in the economy would be the increase in sale of its primary products in the world market. It relied primarily on the inflow of foreign

¹ Julius Nyerere, "Ujamaa - the Basis of African Socialism, " in his Essays on Socialism (London: Oxford University Press, 1971), pp. 1-12.

capital and encouraged private investment. Official progress reports emphasized investment that took place in the public sector and reach the broad conclusion that 60 percent of planned targets of the first development plan were reached.¹

The first development plan was designed to be flexible and was to be examined periodically in light of new circumstances. In 1967, the Arusha Declaration, subtitled "Socialism and Self-Reliance" set future development patterns in Tanzania.² The Arusha Declaration laid the foundation for Tanzania's effort to restructure the country's inherited economy.³ The ideology of the country was made explicit and the measures for public ownership espoused. It began a new series of socialist policy initiatives.

To build and maintain socialism, it is essential that all the major means of production and exchange in the nation are controlled and owned by the peasants through the machinery of their own government and their cooperatives.⁴

The Declaration lists the following as major means of production and/or exchange - all of which are now wholly or partially controlled by the state.

... land, forest, minerals; water; oil and electricity; news media; communications, banks, insurance, import and export trade, wholesale trade; iron and steel, machine-tool, arms

¹Knud E. Svendsen, "The Present Stage of Economic Planning in Tanzania," in Rweyemamu, pp. 79-89.

²Julius Nyerere, "Arusha Declaration," in his Freedom and Socialism, pp. 231-50

³See Appendix 4.

⁴Nyerere, "Arusha Declaration", p. 233.

motor cars, cement fertilizer and textile industries; and any big factory on which a large sector of the people depend for their living; or which provides essential components to other industries, large plantations and especially those which provide raw materials essential to important industries.¹

The Second Five Year Plan

The second five year development plan (1969-74) was based on the Tanzanian choice to control its economy through some state or other collective institutions as opposed to private enterprise. It called for an investment plan characterized by primary reliance on domestic resource mobilization augmented by foreign borrowing. The second plan put increased emphasis on rural and regional development. It called for the stepping up of the creation of Ujamaa Villages as described in "Rural Agriculture and Socialist Development."²

Under the Ujamaa Village Program, farmers would voluntarily come together as a group and gradually shift their production activities to a collective basis. The intention is that in all parts of Tanzania, collective units will become the logical basis for improved production, technical innovation, agricultural diversification and improvement in the quality of rural life. Data is not yet available on the success of the second plan, but Table 9 shows the target growth rates, by sector, as set by the plan.

Despite the large projected rate of growth of manufacturing, the second plan put little emphasis on industrialization.

¹Ibid, p. 234.

²Nyerere, "Socialism and Rural Development" in his Essays on Socialism, pp. 106-44.

To be realistic, therefore, we must stop dreaming of developing Tanzania through the establishment of large modern industries. For such things we have neither the money nor the skilled manpower required to make them efficient and economical... This is not to say that there will be no new modern industries and no mechanized farms. But they will be the exception, not the rule... They are not the answer to the basic development needs of Tanzania... Such capital as we do have will make the widest possible impact by being invested in fertilizers, in credit for better breeding stock, improved instruments of production and other similar things.¹

TABLE 9

Tanzania's Second Five Year Development Plan
Target Growth Rates of GDP

Sector	Relative Importance 1968/69 (%)	Target Growth Rate %/Yr	Relative Importance 1973/74 (%)
Monetary			
Agriculture	24.0	7.2	24.8
Subsistence			
Agriculture	26.4	3.0	22.4
Mining	2.0	-2.5	1.3
Manufacturing	6.2	13.0	8.4
Construction	4.5	10.0	5.3
Public Utilities	1.0	12.0	1.3
Commerce	13.5	8.0	15.4
Rent	5.6	6.0	5.5
Transportation	15.1	9.0	5.8
Services	11.6	5.0	10.8
Total	100.0	6.5	100.0
Monetary	73.6	7.6	77.6
Subsistence	26.4	3.0	22.4

SOURCE: United Republic of Tanzania, Tanzania: Second Five Year Plan for Economic and Social Development, 1st July, 1969 - 30th June, 1974 (Dar es Salaam: Government Printers, 1969), p. 203.

Many economists and other social science theorists are very

¹Nyerere, "The Purpose is Man," in his Essays on Socialism, pp. 96 and 98.

skeptical of the Tanzanian development scheme and site the difficulties of translating socialist aspirations into effective economic policy. Planning targets to the contrary, Helleiner has stated that even under optimistic assumptions, real per capita income in Tanzania is unlikely to grow to more than about \$180 (U.S.) by the year 2000.¹ Saul is very critical of Tanzania's emphasis on agricultural planning at the expense of industrialization.² He feels that Tanzania needs to give more attention to industrialization, especially industries that forge close linkages with agriculture.

Tanzania, however, has moved away from development based on traditional concepts of economic change and the concepts of economic growth by the widening and deepening of physical capital and has, instead, placed emphasis on human capital as the basis for its development. Chapter three has focused on the structures that in one way or another influence or are influenced by the dynamics of this development scheme.

There is a direct relation between improvement in the quality of human capital and the evolution of political-socio-economic institutions. The Arusha Declaration called for an end to reliance on monetary capital as the major instrument of development, and stated that the development of Tanzania would depend on the people, human capital, with agriculture being the basis of this development. One of the key ideas of the fruition of this rural socialist development is found in Onuoha's book on

¹Helleiner, "Socialism and Economic Development in Tanzania," p. 185.

²John Saul, "African Socialism in One Country: Tanzania," in Essays on the Political Economy of Africa ed. Giovanni Arrighi and John Saul (New York: Monthly Review Press, 1973), pp. 237-335.

African Socialism.

..... communitarism - that idea that all men form a community with their fellow men and that their actions must always be conditioned by this fact; that they should contribute to the wellbeing of the community and in turn are entitled to share in all the benefits accruing to it.¹

The second five year plan acknowledged the fact that an intense process of decolonization for socialist development involved defining not only appropriate production institutions, but redefining people's social relationships and "restructuring" their minds. Nyerere said:

In 1962, I said that socialism is an attitude of mind. I still believe this to be true. It does not mean that institutions and organizations are irrelevant. It means that without the correct attitudes,² institutions can be subverted from their true purpose.

Chapter four will take a close look at Tanzanian human capital development in light of the theory presented in chapter two and the organizational structure of economic activity, as presented in chapter three.

¹Bede Onuoha, The Elements of African Socialism, (London: Andre Deutsch, 1965), p. 19.

²Nyerere, "The Varied Paths to Socialism," in his Essays on Socialism, pp. 88-89.

CHAPTER IV

HUMAN CAPITAL DEVELOPMENT IN TANZANIA

Tanzania was among the first of the developing African nations to realize a country's potential could be measured by the degree of participation of its people and that her economic development could not progress without a vigorous human capital development policy. While some propose that LDCs must improve their stock of human resources before development takes place, others argue that development must precede human capital accumulation. Tanzania operates under the assumption that they can and must occur simultaneously. According to Harbison, Tanzania is one of the few LDCs that has achieved a considerable measure of success in integrating educational planning, manpower planning and general economic planning.¹

Tanzania has taken explicit account of the role of human capital in its development process. Initially, it had accepted the foundations of present analysis on human capital development, placing emphasis on formal education and skill generation as the means of reaching its goal of doubling per capita income by 1980. Schultz once stated, "Economists who are analyzing the investment attributes of education are laying the foundations for an economic growth policy which assigns a major role to schooling."²

¹Harbison, Human Resources as the Wealth of Nations, p. 135.

²Theodore Schultz, The Economic Value of Education (New York: Columbia University Press, 1963), p. 19.

Emphasis in Tanzania has been placed on the creation of high-level skills and following Schultz's line of reasoning, the majority of its investment in human capital has been made in formal education. Prior to 1961, formal education in Mainland Tanzania was predominantly of missionary origin, with emphasis on inclusion and inculcation of western mores and values, and not creation of a skilled labor force. In fact, in 1961, Tanzania had less than 150 university graduates and only 175 students in the sixth form of secondary school.¹ Since independence, the educational system in Tanzania has been geared to production of a qualified indigenous labor force. Africanization of all skilled, professional and managerial jobs in Tanzania was one of the goals laid down in the first five year plan. As Rowley noted, emphasis on high level skill generation led to urban-rural gaps, unemployment and had Nyerere been less sensitive to the pulse of the nation, would have led to political instability. While primary school leavers were being met with insufficient employment opportunities, in 1966, university students rebelled against the existing system of education and national service.

Education for Self-Reliance, issued right after the Arusha Declaration, called for a shift of emphasis from the building up of a general secondary system to vocational and technical training, laying stress on mass generation of skills consistent with agricultural modernization and citizenship training.

Adopting the narrow view of education as skill generator, Tanzania follows many of the procedures used in the MRP. Tanzania uses a variation of what Mehmet refers to as the 'Productivity Method of Manpower Planning'.²

¹Saul, "African Socialism in One Country: Tanzania," pp270-71.

²Mehmet, Methods of Forecasting Manpower Requirements, p. 17.

The general procedure is based on the assumption of a homogenous production function and involves six steps.

1. Determination of output targets for the whole economy and for each principal sector for target years.
2. Derivation of total employment in target years and the estimation of sectoral manpower requirements on the basis of the estimates of productivity in each principal sector.
3. Derivation of occupational requirements from sectoral totals.
4. Conversion of these labor requirements to derive educational needs.
5. Comparisons of requirements with supply.
6. Reassessment of step five in light of anticipated market imbalances.

Section one of this chapter will look at manpower planning in Tanzania. This section will discuss Tanzania's use of the manpower requirements approach where the requirements are determined by: (1) manpower needed for expanded production activities; (2) manpower needed to replace expatriates (initially termed Africanization, now referred to as localization); and (3) manpower to replace normal loss due to attrition (deaths, retirements). The manpower requirements approach is a demand oriented view which projects high level manpower needs implied by output targets. These projections are used by policy makers in planning educational investments. State ownership of the major means of production has enhanced the governments' ability to control the demand for manpower as well as the supply.

Section two of chapter four will discuss education in Tanzania. Education is increasingly being viewed as an essential nation-building tool. Developing nations today have a common faith that educational

investment will contribute to their goals of growth and development. Leading human capital theorist, Frederick Harbison advocated that "absolute priority be given to second level education over all the other 'highly urgent' educational needs" and at independence, Tanzania gave top priority to building up a secondary school system.¹ In placing emphasis on building up the formal secondary education system, for the creation of high and middle level occupations, Tanzania lost sight of Harbison's call for the maximum possible utilization of all human resources in productive activity. Its educational policy was reflected in the following statement "... with the available financial resources for economic development as scarce as they are, the government has henceforth decided to pursue a policy of educational development matched to economic requirements."²

Though the policy itself has not changed, "Education for Self-Reliance" issued in 1967 did add new dimensions to the meanings of those words.³

Manpower Planning in Tanzania

There have been three major manpower surveys in Tanzania since 1961; one in 1962, one in 1964 and one in 1969, each making fairly detailed forecasts for a period of five years with more rudimentary projections

¹Frederick Harbison and Charles Myers, Education, Manpower and Economic Growth: Strategies of Human Resource Development (New York: McGraw-Hill Book Co., 1964), p. 67.

²A.J.M. Van de Laar, Toward a Manpower Development Strategy in Tanzania (Netherlands: Institute of Social Studies, 1973), p. 11.

³Julius Nyerere, "Education for Self-Reliance," in his Freedom and Socialism, pp. 238-64.

of requirements for the coming ten years. The first systematic inventory of manpower was made in 1962 by George Tobias under the auspices of the Ford Foundation. The Tobias Reports was limited in impact due to the absence of a comprehensive development program. The report obtained information by surveying existing establishments and from this data projected the demand for manpower by occupation. It estimated that allowing for modest economic expansion and anticipated mortality, retirement and Africanization, no less than eight thousand or 86 percent of existing highly trained professionals, technicians, executives and craft workers would be required in the next five years¹. Table 10 shows the estimated stocks of high and middle level manpower in mainland Tanzania in 1961.

TABLE 10

Estimates of Existing Stock of High Level
and Middle Level Manpower, 1961

	African	Asian	European	Total
Category I	598	1,947	1,932	4,477
Category II	3,870	6,418	2,377	12,665
Total	4,468	8,365	4,309	17,142

SOURCE: Guy Hunter, Education for a Developing Region (London: George Allen and Unwin, 1963), p. 58.

Table 10 reveals that only one fourth of the skilled manpower, upon independence, was African and only a little over 10 percent of high level manpower (Category I) was African. It is no wonder that many scholars

¹John Cameron and W. Dodd, Society, Schools and Progress in Tanzania (Oxford: Pergamon Press, 1970), p. 199.

felt the crux of Tanzania's problems was its lack of skilled and knowledgeable personnel among the indigenous population. Table 10 also shows the enormous role played in the Tanzanian economy by Asians. Asians accounted for almost 50 percent of all skilled manpower and well over half of its middle level manpower (Category II). Upon independence Asians were given the option of becoming Tanzanian citizens, but most refused.

Manpower Planning During the First Five Year Development Plan

The basic purpose of the manpower surveys of 1964 and 1969 was to provide a guide to government investment in human capital development during the appropriate planning period.

The second manpower survey was again done under the direction of the Ford Foundation by Robert L. Thomas. The Thomas Report was used in the first five year plan. The first five year plan had outlined four broad lines of action in the area of the creation of highly skilled manpower which also included better utilization of the existing stock of such manpower and the upgrading of currently employed lesser skilled manpower. The report, however, concentrated on highly skilled manpower, especially that needed in government offices. Table 11 reveals the accuracy of projections laid out in the first five year plan based on the Thomas Report. Category A occupations are jobs requiring individuals to obtain university degrees such as doctors, engineers and graduate secondary teachers and scientists. Category B occupations require individuals to have two years post-secondary education/training. These occupations include engineering technicians, laboratory technicians and some school teachers. Category C jobs are those normally requiring a secondary school

education. Examples of Category C occupations are skilled office workers, middle management personnel and skilled craftsmen:

TABLE 11

Accuracy of 1964 Manpower Survey of Net Increase
in High and Middle Level Manpower Categories

Category A

Employment in 1964	2,801	
Net Increase Estimated in 1964	1,323	
Total Forecast for 1968/69	4,124	
Actual Employment in 1968/69	4,076	
Difference		-48

Category B

Employment in 1964	5,778	
Net Increase Estimated in 1964	3,285	
Total Forecast for 1968/69	9,063	
Actual Employment in 1968/69	10,943	
Difference		+1880

Category C

Employment in 1964	20,910	
Net Increase Estimated in 1964	10,020	
Total Forecast for 1968/69	30,930	
Actual Employment in 1968/69	29,083	
Difference		-1847
Total Forecast 1964	44,117	
Actual Employment 1968/69	44,102	
Difference		+15

SOURCE: United Republic of Tanzania, Tanzania: Second Five Year Plan for Economic and Social Development, 1st July, 1969 - 30th June, 1974 (Dar es Salaam: Government Printers, 1969), p. 16.

Table 11 suggests that the shortages in Categories A and C were more than offset by employment in Category B, reflecting the hazards of manpower forecasting in a changing economy. As an economy develops, the need for technicians and technical assistants often outweigh the need for professionals. The figures in Table 11 also evidence the results of a study cited by Dolan of occupational preferences of about 20 percent of Tanzania's secondary school population.¹ The study indicated that secondary school pupils were aspiring toward professional occupations, regardless of manpower needs, and that they gave little consideration to most subprofessional, clerical and skilled manual occupations. This throws some doubt on the Thomas Report's conclusion that a coordinated effort by the Manpower Planning Unit and the Ministry of Education would mean that the goal of self-sufficiency in high-level manpower could be achieved by 1980.

Manpower Planning During the Second Five Year Plan

The manpower survey for the second five year plan was conducted by the Ministry of Economic Affairs and Development Planning. The survey included 235 private and parastatal enterprises plus central and local governments.² Table 12 shows the estimated demand and supply of skilled manpower by broad category and by discipline for Category A during the second development plan.

¹Louis Dolan, Transition From Colonialism to Self-Reliance in Tanzanian Education (Ann Arbor, Michigan: University of Michigan School of Education, 1970), p. 145.

²Only firms that employed one hundred or more workers were included unless the firm offered specialized services - architects, lawyers, etc.

TABLE 12

Manpower Demand and Supply: 1969/70 -1973/74

	Demand	Supply	Shortfalls
Category A Occupations	3,849	2,751	-1,066
Science/Math Based	2,233	1,459	-774
Arts Based	1,560	1,268	-292
Category B Occupations	12,333	10,227	-2,106
Category C Occupations	13,109	-	-
Total	37,341		
Form IV Output		37,341	
Government Financed Schools		33,844	
Private Secondary Schools		3,497	

SOURCE: United Republic of Tanzania; Tanzania: Second Five Year Plan for Economic and Social Development, 1st July, 1969 - 30th June, 1974, (Dar es Salaam: Government Printers, 1969), pp. 11-12.

The existence of shortfalls indicate a need for readjustment of the educational system. Table 12 indicates that the supply of workers with degrees in scientific disciplines are expected to be two thirds of what is needed. Figures in table 12 also indicate that the supply of technical personnel would be only five-sixths of the estimated demand. It was expected that these shortfalls would be accompanied by an over-supply of Category C personnel so that once again the total projections would not experience drastic discrepancies. The fact that Category C personnel cannot usually be substituted for Categories A and B personnel, in the short run, demonstrates one of the few pitfalls of manpower planning especially from the long run perspective.

Requirements and estimates of supply of manpower for selected occupations and categories can be seen in table 13. Estimates were made for replacements due to localization, deaths and retirements, and net increases

in posts. Localization estimates were made from positions held by expatriates with allowances for overlapping.¹ Deaths and retirements were estimated from mortality and retirement rates. Government Ministers were queried as to the creation of new posts, while those for private and parastatal firms were estimated based on target increases in GDP multiplied by productivity indices. Supply estimates were based on present and projected enrolment rates.

Table 13 shows that most occupations would experience shortfalls despite planning. It was estimated that the greatest shortfalls would be in the engineering and medical professions, reflecting the poor math and science programs in the schools. The great shortage of engineering technicians also reflects emphasis on the development of professional engineers at the expense of subprofessionals in that area.

Table 14 offers a comparison, by specific occupation, of manpower requirements for 1980 as estimated in the first and second five year planning programs. Discrepancies in the figures signify the changing targets of development. The decrease in demand for agronomists is accompanied by an increase in the demand for other science personnel such as biologists and chemists. Emphasis on rural development has generated a need for a variety of specialists in the selected sciences, who are capable of adapting new technology to a wide variety of conditions. The sharp decrease in

¹The Tanzanian government had issued a policy on employment of non-citizens in mid-1966 which required, as a condition of work and/or entry permits for non-citizens, that the government be satisfied that a firm was either training a Tanzanian or actively seeking a qualified Tanzanian trainee to replace the non-citizen within a specified period, depending on the occupation. Despite this official policy, Tanzania continues to have many jobs filled by aliens. The departing "resident expatriate" has to some extent been replaced by the "contract expatriate". See Peter McLoughlin Associates, High Level Manpower for East Africa's Manufacturing Sector: The Next 10-15 Years (New Brunswick, Canada: Peter McLoughlin Ass, n.d.).

TABLE 13

Supply and Demand of Manpower: 1969/70-73/74 By Occupation

Occupation	(1) Total Employment	(2) Employed Citizens	(3) Employed Non-Citizens	(4) Existing Vacancies	(5) Net Increase in Employment to 1973
Category A					
Engineers	456	70	386	76	235
Physicians	441	65	376	58	272
Veterinarians	65	26	39	11	63
Architects	30	11	19	6	6
Geologists	14	2	12	1	5
Agronomists	122	53	69	43	189
Economists	86	37	49	12	65
Lawyers	121	72	145	32	90
Accountants	169	36	133	14	95
Statisticians	16	6	10	15	19
Category B					
Aircraft Personnel	22	1	21	5	3
Draughtsmen	172	94	78	39	44
Engineering Technicians	1,095	659	436	174	435
Agri. & Vet. Ext. Work (Certificate Level)	2,411	2,323	88	48	2,738
Agri. & Vet. Ext. Work (Diploma Level)	436	303	133	17	666
Category C					
Skilled Office Workers	20,330	18,074	2,256	2,415	5,262
Skilled Manual Workers	8,753	7,412	1,341	192	3,341

TABLE 13 Continued

Occupation	(6) Localization Targets	(7) Basic Requirements (4)+(5)	(8) Total Requirements (6)+(7)	(9) Estimated Supply	(10) Shortfall or Surplus
Category A					
Engineers	155	311	490	299	-191
Physicians	93	330	444	201	-243
Veterinarians	16	74	94	77	-17
Architects	8	12	21	25	+4
Geologists	5	6	12	12	0
Agronomists	30	232	275	231	-44
Economists	20	77	97	59	-18
Lawyers	12	122	140	140	0
Accountants	53	109	170	45	-125
Statisticians	4	34	40	25	-15
Category B					
Aircraft Personnel	8	8	16	-	-
Draughtsmen	31	83	114	60	-54
Engineering Technicians	175	609	784	528	-256
Agri. & Vet. Ext. Work (Certificate Level)	35	2,786	2,821	1,550	-1,127
Agri. & Vet. Ext. Work (Diploma Level)	53	683	736	524	-
Category C					
Skilled Office Workers	901	7,677	8,578	870	-
Skilled Manual Workers	535	3,533	4,068	-	-

SOURCE: United Republic of Tanzania, Tanzania: Second Five Year Plan for Economic and Social Development, 1st July, 1969 - 30th June, 1974 (Dar es Salaam: Government Printers, 1969), pp. 12A-12C

TABLE 14

Comparison of 1964 and 1968 Manpower Survey
Estimates of Requirements Targets by 1980

Occupation	1980 Requirements Extrapolated from 1964 Survey	1980 Requirements Revised on the Basis 1969 Survey
Science Based		
Engineering	821	879
Medicine	700	800
Education	750	714
Science, General (B.Sc.)	205	184
Veterinarian	148	180
Architecture	64	40
Geologist	27	24
Pharmacist	97	90
Agronomist	690	509
Town Planner	18	28
Forester	86	80
Dentist	68	20
Surveyor	90	170
All Other Science Based	24	110
Total Science	3,788	3,828
Arts		
Administration/Manager	1,058	1,058
Secondary Teachers	740	800
Lawyers/Accountants	309	300
Economists (MA/PhD)	-	192
All Other Arts Based	268	421
Total Arts	2,375	2,771

SOURCE: United Republic of Tanzania, Tanzania: Second Five Year Plan for Economic and Social Development, 1st July, 1969 - 30th June, 1974, (Dar es Salaam: Government Printers, 1969), p. 17.

demand for architects can be explained by a moderation of building projects in the country with more emphasis placed on self-reliant community type projects. Though scientific personnel did not change substantially, various categories within scientific personnel did change greatly. For non-scientific personnel, it is interesting to note that the demand for economists was projected as null in 1964, but had jumped drastically according to 1968 demand projections. This accounts for a large proportion of the rise in 1968 demand projections for non-scientific occupations. It reflects the realization that trained economists would be needed to derive and analyze feasible development projects.

Developing a Supply of Trained Teachers

The supply of teachers is a major bottleneck in Tanzania, especially those who teach scientific and technical subjects. Teachers in Tanzania are categorized according to the level of education they, themselves, have received. Grade A teachers have completed four years of secondary education plus two years of teacher training college. Grade B teachers have completed two years of secondary schooling and two years of teacher training. Grade C teachers have completed primary school plus two years of teacher training college. Table 15 shows the supply of secondary teachers by qualifications and citizenship. Table 15 graphically displays Tanzania's plan for full localization of the school system. Localization has proceeded more rapidly in the public school system, where, while in 1964 only 26 percent of Tanzanian public secondary teachers were citizens, 47 percent were citizens in 1969 and 75 percent were citizens in 1972. Full localization of secondary teachers is expected to be achieved by mid-1974, according to the 1972 Manpower Report to the President.

TABLE 15

Secondary School Teachers By
Qualification and Citizenship

	1964		1969		1972	
	Public	Private*	Public	Private	Public	Private
A. Tanzanian Citizens	226	9	703	148	1,311	243
1. Graduates	33	-	256	42	600	93
2. Diplomas (Makerere College)	39	-	203	8	542	27
3. Grade A Teachers	108	-	188	57	88	71
4. Other Teachers	46	9	56	41	81	52
B. Non-Citizens	632	63	794	332	436	265
1. Graduates	552	58	694	267	395	223
2. Diplomas (Makerere College)	42	4	45	13	27	16
3. Grade A Teachers	9	-	7	17	1	7
4. Other Teachers	29	1	19	35	13	19
Total Secondary Teachers	858	72	1,497	480	1,747	508
Citizens as % Total	26.3	12.5	47.0	30.8	75.0	47.8
Citizen Graduates as % Total	5.6	-	26.9	13.6	60.3	29.4

* 1965 data

SOURCE: United Republic of Tanzania, Ministry of Economic Affairs and Development Planning, Annual Manpower Report to the President, 1972 (Dar es Salaam: Government Printers, 1972), pp. 34-35.

Tanzania has also had to wrestle with the problem of whether to turn back a large proportion of its teacher output into the educational system, or to release a large share to directly productive occupations. Thus far, little attention has been given to a quite efficient solution to the problem of future versus present returns. If more classes were held at night, these classes could be taught by skilled persons who contribute directly to the production process during the day.

Manpower estimates as presented in section one were used as guidelines

to expansion policies for the educational system in Tanzania. These projections were constantly re-evaluated in light of a changing economy and should have been reflected in a flexible education system. Section two discusses the educational system in Tanzania, with an eye to determining if it truly has been geared toward inward transformation of the country.

Educational Planning

The student rebellion of 1966 set the stage for the necessary re-evaluation of education on all levels. Prior to this, the educational system functioned in a manner summed up in a statement by Nyerere and quoted by Dolan:

First, the most central thing about the education we are at present providing is that it is basically an elitist education, designed to meet the interest and need of a very small proportion of those who enter the school system. ... Equally important, is the ... fact that Tanzania's education is such as to divorce its participants from the society it is supposed to be preparing them for.¹

Efforts have since been geared to the improvement of the standard of primary education so that it suits the environment and becomes more realistic with the employment situation for those who only complete primary education. The content of the history, geography and citizenship syllabus was localized and schools were encouraged to show more interest in African heritage and culture. Math and science, though not easily localized, experienced reforms in teaching methods. Education for self-reliance called for the introduction of large doses of agriculture science and other practical content within the curriculum at all levels of education. This was based on the realization that it would

¹Dolan, Transition, p. 145.

be the agricultural sector in which most of the students would have to work. During the second five year plan, chosen secondary schools were equipped with farms, farm equipment, commerce rooms, workshops and domestic science rooms.

An Overview

Traditionally, human capital has been measured in terms of the stock and flow of various educational variables. Table 16 displays the value of various human capital indices and Tanzania's rank among 112 other nations, with one being the lowest rank.

Teachers as a proportion of the population show the generating capacity of the educational system. The figures in Table 16 highlight the problems of present versus future returns discussed previously. Table 16 also shows clearly the pyramidal structure of education. As one moves up the educational ladder, the enrollment ratios, adjusted for corresponding age groups and length of the school year, decline. Whereas almost 30 percent of the population in the 5-14 age group is enrolled in institutions of learning, only 2 percent of the 15-19 age group is enrolled in secondary education and less than one half of 1 percent of the 20-24 age group is enrolled in higher education. Usually, there are more school leavers wanting to enter secondary education than there are available positions. According to the Ministry of National Education, prior to 1969 only 13 percent of those receiving primary education went on to secondary school, indicating a wastage rate of 87 percent.¹ In 1969, 47 percent of Tanzania's

¹United Republic of Tanzania, Ministry of National Education, Outline of the Second Five Year Development Plan for the Ministry of National Education (Dar es Salaam: Government Printers, 1969), pp. 7-8.

children went to primary school and 63 percent of these "dropped out" after Standard IV (largely due to an exam which eliminated them), which means that only 16 percent of the children in Tanzania were in any grade beyond Standard IV. The last Standard IV exam was to be held in 1972, after which children would no longer be eliminated from going to school due to results on an examination.

The percent of females in schools decreases as one moves up the educational ladder, despite the fact that their proportion in the population does not decrease. Table 17 shows enrollment in primary schools in 1969/70 by sex.

TABLE 17

Enrollment in Primary School in 1969/70

Standards	Boys	Girls	Total	Ratio Boys:Girls
I	100,384	71,101	171,485	1.41:1
I-VII	517,994	332,926	850,920	1.55:1

SOURCE: Marjorie J. Mbilinyi, "The 'New Woman' and Traditional Norms in Tanzania," Journal of Modern African Studies 10 (May, 1972): 63.

These figures also indicate the status of women in the Tanzanian society and the fact that it has not changed much. Traditionally, African women have been responsible for much of the subsistence agricultural production in Tanzania. If only because of the role African women have traditionally played in agricultural production, it is clear that a policy of development by way of agricultural modernization must call for an end to this discrimination.

Table 16 also notes the distribution of university graduates among various disciplines. While 21.1 percent of university students are

TABLE 16

Human Capital Development Indicators, Tanzania
1967

Indicator	Value	Rank
Primary Teachers/10K Population	10,8	11
Post-Primary Teachers/10K Population	1.3	5
Primary Enrollment Ratios	29.75	7
Secondary Enrollment Ratios	1.86	5
Higher Ed. Enrollment Ratios	0.12	8
% Females Enrolled in Primary Grades	37.0	30
% Females Enrolled in Secondary Grades	25.0	26
% Females Enrolled in Higher Education	13.0	20
% Higher Ed. Students in Agriculture	6.0	80
% Higher Ed. Students in Medicine	9.3	48
% Higher Ed. Students in Science/Engineering	21.9	50
Per Capita Public Recurrent Exp. on Ed. (US\$)	2.07	18
Recurrent Cost of Ed. per unit at Primary	20.00	21
Recurrent Cost of Ed. per unit at Second.	284.00	79
Recurrent Cost of Ed. per unit at Higher	3,125.00	109
Capital Exp./Total Exp. on Ed. (%)	27.0	103
Recurrent Exp. on Ed./ GNP per capita	3.1	43

SOURCE: Frederick Harbison, Joan Maruknic and Jane Resnick, Quantitative Analyses of Modernization and Development (Princeton, NJ: Industrial Relations Section, Department of Economics, Princeton University, 1970), pp. 192-204.

engaged in science and engineering, only 6 percent are enrolled in agricultural courses. This somewhat startling for a country whose professed goal is development via agricultural modernization, especially when Tanzania, in 1964, instituted a tied bursary scheme. The awarding of scholarships is strictly in accordance with the country's need for specific skills. Almost all Tanzanian students depend upon bursary support. Table 18 shows bursary allocations to the University of East Africa during the first five year plan.

Table 18 notes the growth in allocation to the Bachelor of Arts, reflecting renewed interests in such liberal arts disciplines as economics. Figures in Table 18 also indicate the emphasis placed on teacher education, especially in scientific fields.

Table 16 also shows the cost allocation aspects of education in Tanzania. While it costs only twenty dollars per person to educate a student in elementary school, it costs more than ten times that amount to educate a person on the secondary level, and more than one hundred times as much to educate a university student. These costs influence greatly the human capital development possibilities.

Educational Planning During the First Five Year Plan

Many of the educational policies for the first plan grew out of the recommendations of the UNESCO Conference on African Education at Ababa held in 1961. The general recommendations of the Conference were close integration of education plans with general development plans and establishment of a national planning machinery for education. The enrollment goals as set by the Conference are shown in Table 19.

TABLE 18

Tanzanian Bursary (Scholarship) Allocation to the
University of East Africa, 1964/5 - 1969/70

Subject	64/65	65/66	66/67	67/68	68/69
Agriculture	7	12	19	20	20
Land Survey	3	6	4	5	5
Commerce	6	20	25	25	25
Engineering	19	36	31	31	45
Law	15	32	32	30	30
Medicine	19	23	30	30	30
Veterinarian Science	4	8	9	15	15
Architecture	2	1	4	3	3
Bachelor of Arts	37	47	36	117	117
Bachelor of Science	11	21	17	21	22
Bachelor of Education	8	2	1	-	-
Bachelor of Arts with Education	42	95	114	110	114
Bachelor of Science with Education	-	27	47	90	120
TOTAL	173	330	369	498	546

SOURCE: Idrian Resnick, "Manpower Development in Tanzania," Journal of Modern African Studies 5(1967): 114.

Enrollment Goals 1961 -1980

School Level	% of Age Group Enrolled			
	1961	1965	1970	1980
Primary	40.0	51.0	71.0	100.0
Secondary	3.0	9.0	15.0	23.0
Higher Education	0.2	0.3	0.4	2.0

SOURCE: Louis Dolan, Transition from Colonialism to Self-Reliance in Tanzanian Education (Ann Arbor, Michigan: University of Michigan School of Education, 1970), p. 187.

Table 19 shows that the Conference set a target for universal primary education by 1980. Tanzania has set this goal but has not reached these targets. According to revised statistics, Tanzania will not be able to provide every child with primary education until 1989.

In Tanzania, the terms standards and forms are used instead of grades. Generally, standards are used to denote primary groupings and forms secondary groupings. Table 20 shows enrollment by standards for the 1965/66 school year. In Tanzania, there is a great narrowing after Standard IV. This great narrowing is not due to drop out by the pupils, but to their being squeezed out by the system. Originally, the primary course had two selection exams; one in the middle, after Standard IV (now eliminated) and one at the end, after Standard VII. The first exam was called the Standard V Entrance Exam and reduced the number of pupils in half. The exam was in Swahili (made the medium of instruction for the full primary course in 1966) and tested general knowledge, arithmetic and language. The second exam, at the end of Standard VII is called the Primary Learning Examination and tests mathematics, general knowledge of English, Science

TABLE 20

Tanzania's Assisted School Enrollments - 1965/66*

Higher Education	700 + 600 overseas
Form VI	760
Form V	830
Form IV	4,680
Form III	5,070
Form II	5,870
Form I	6,310
Standard VIII (eliminated in 1969)	29,000
Standard VII	34,000
Standard VI	47,000
Standard V	53,000
Standard IV	127,000
Standard III	133,000
Standard II	138,000
Standard I	149,000

* Assisted schools are public schools and private schools that receive financial assistance from the government. In Tanzania, private schools form from one fourth to one third of total enrollment.

SOURCE: John Cameron, The Development of Education in East Africa (New York: Teachers College Press, 1970), p. 144.

and Swahili. This exam usually cuts out about four fifths of the students.

Table 21 shows targets for the development of education according to Tanzania's first development plan.

TABLE 21

Targets for the Development of Education, 1964-69

Category	1964	1969	% Change
#Students Entering University of East Africa	175	528	202
# Students Entering Form V	680	1,280	88
# Students Entering Form I	5,250	7,070	35
# Students Entering Craft Courses	188	350	86
# Students Entering Teacher Training- Grade A	320	1,500	369
# Students Entering Teacher Training- Grade C	920	TO BE DISCONTINUED	
# Students Completing Standard VIII	18,500	INCREASE WILL BE DETERMINED	
# Students Completing Standard V	144,000	By THE CAPACITY OF LOCAL	
# Students Completing Standard I	142,000	FINANCES	

SOURCE: United Republic of Tanzania, Tanganyika: Five Year Plan for Economic and Social Development 1st July, 1964- 30th June, 1969, (Dar es Salaam: Government Printers, 1964), p. 67.

The central feature of the first plan was re-organization of teacher training to produce eleven teachers' colleges. The costs of the new schools (teacher training and secondary) were to be borne largely by foreign aid and domestic non-government donors. It was noted in chapter three that optimistic projections of foreign aid were unfounded. In the first five year plan, education's share in capital development was 18.1 million pounds or 7.2 percent of the total 246 million pounds. The total recurrent

cost in education for the planning period was around 35.5 million pounds.¹ Table 22 shows expenditures by the Tanzanian government for the years 1964 through 1969.

TABLE 22

Spending for Education, By Categories (Pounds, Thousands)
1964-69

Category	64/65	65/66	66/67	67/68	68/69
Primary	340	500	540	640	677
Secondary	667	544	544	496	400
Technical	35	116	399	534	416
Teacher Training	400	350	400	400	450
Higher Education	523	750	767	1,300	1,562

SOURCE: United Republic of Tanzania, Tanganyika: Five Year Plan for Economic and Social Development, 1st July, 1964 - 30th June, 1969 (Dar es Salaam: Government Printers, 1964).

The vocational and technical education has always been the weakest type of education in Tanzania. Table 22 shows shifting emphasis from general secondary education to technical education. Expenditures on university education tripled, while those on primary education doubled. The increase in primary education expenditures reflect the growth in population and the corresponding growth in demand for primary education. Unless the level of fertility falls rapidly, Tanzania will continue to have a large proportion of its population in the primary schools and will have to run twice as fast just to keep up. Despite the emphasis placed on teacher training,

¹John Cameron and W. Dodd, Society, Schools and Progress in Tanzania, p. 202.

expenditure grew modestly at about 12.5 percent.

The policy followed by the first plan allocated responsibility for primary education to local authorities. This meant that richer districts could spend more on education than poorer districts, and planned growth in enrollment is loosely correlated with relative contributions to GDP. This resulted in great variations in quantity and quality of primary education. Mbilinyi asserts that this has led to the creation of a dual system of education - one for urban and one for rural children. Even among rural areas, the system of education is not uniform. Mbilinyi found that educational opportunity in many rural areas depended on a child's sex, strata level to which its household belonged, as well as the community of residence.¹ The second plan called for more extensive use of government grants-in-aid, where the distribution of funds by region and districts would depend on the number of children in them with district priority given to communities in which the "spirit of Ujamaa was alive".

Education for Self-Reliance

Education for self-reliance called for communities served by certain schools to contribute all labour requirements (except skilled) in the building of new schools, with government funds to be used only for the costs of building materials and skilled labor. These schools were to become community education centers at which provision of rounded formal education would be only one function. The schools were to become the focal point for the total educational needs of the community, especially the

¹Marjorie Mbilinyi, "Education, Stratification and Sexism in Tanzania: Policy Implications," The African Review 3(June, 1973): 327-340.

adult education program. An Institute of Adult Education was set up and it has organized classes and courses up and down the countryside. These classes stress agricultural sciences and socialist consciousness. Adult education includes training in politics, economics, introduction to cultural activities and literacy classes, as well as the supply of skills and knowledge of direct benefit to increased agricultural production.

Educational attainments of the rural population, in the form of years of schooling completed, gives an indication of the success, so far, of programs started upon independence. Table 23 shows schooling completed for rural citizens in Tanzania during the second five year plan. Table 23 shows that the percentage of men and women who have no education increases with age. However, the proportion is far greater for women. If Harbison is correct in stating that functional literacy is seldom achieved in less than three or four grades, then much of the education that has been provided in rural areas is virtually worthless.¹

Summary

This chapter has looked at human capital development policy and practice in Tanzania. Tanzania, using the manpower requirements approach has given priority to meeting manpower needs of economic development through educational planning. One of the problems with Tanzania's approach to manpower planning and educational policy is that its human capital development has confined itself to high-level manpower and failed to deal with the much larger problems of the underutilization of the masses.

¹ Harbison, Human Resources as the Wealth of Nations, p. 62.

TABLE 23

Rural Tanzanian Citizens by Sex, Age
and Years of Schooling

Pop Group	Number	% Who Have Had Standards of Schoolings			
		None	I-IV	V-VII	IX
Total	11,157,103	79	16	4	1
Males					
5 - 9	901,423	85	15	-	-
10 -14	609,170	42	45	11	-
15 -19	458,454	38	33	20	3
20- 24	323,698	46	34	9	5
25 -29	391,372	52	34	8	2
30 -34	305,758	58	29	8	1
50 -54	158,227	78	17	4	1
Females					
5 - 9	891,082	88	11	-	-
10 -14	549,476	57	35	7	-
15- 19	520,650	65	23	8	1
20 -24	458,329	79	17	2	-
25 -29	514,434	86	12	2	-
30 -34	361,053	90	8	1	-
50 -54	167,631	97	3	-	-

SOURCE: Marjorie Mbilinyi, "The 'New Woman' and Traditional Norms in Tanzania," Journal of Modern African Studies 10 (May, 1972): 64.

There is a need to clarify the relationship between school enrollments, degrees, job requirements and critical occupational mobility. As Resnick argued, if human capital created outside the formal education system is of significant magnitude-based on the point of view that the elasticity of substitution between formal and non-formal education is not always zero - Tanzania's emphasis on formal education has kept unnecessary degree requirements, thus leading to false scarcities and misallocations of resources.¹

Indeed, as previously pointed out, Mincer argues that in many cases the same degree of occupational skill can be achieved by shortening formal schooling and lengthening on-the-job-training.² In many cases, it could prove more important to concentrate on effective programs of in-service training rather than on construction of vocational and technical schools. Upgrading of skills by means of various forms of non-formal training is being used more extensively since 1967 and should contribute to skill development.

This chapter has also looked at education planning in Tanzania based on the goals of self-sufficiency in high-level manpower. At independence, when industrialization was seen as the key to development, educational policy placed emphasis on providing formal secondary education for the creation of needed skilled manpower. Since the Arusha Declaration, agricultural development has become the core of Tanzania's modernization effort and emphasis has been moved to creating skills among the masses for increased

¹Idrian Resnick, "The Economics of Manpower Development: The Tanzanian Case," (Ph.D. dissertation, Boston University Graduate School, 1967).

²Mincer, "On the Job Training: Costs, Returns, and Some Implications."

agricultural production.

Today, in many areas, the radio is the most important and accessible means of adult education programs and should receive wider attention in planning. Earnings foregone by students are well over one half the real costs of human capital formation by formal education and Schultz argues that this begins to apply in LDCs around the fourth or fifth grade.¹ School years should be adjusted to the requirements of the planting and harvesting seasons to insure that the loss of income involved in having children attend school is minimized.

Continued existence of primary school fees mean that often those who are intended to benefit from primary education are unable to pay for it. One can also question the effectiveness of the elimination of school fees at the secondary level if an exam continues to bar the majority of students from full participation in higher education.

Finally, Tanzania needs to make some provisions for the great number of young people who complete primary education and find no place in the existing secondary school program nor employment. A changing economy, whose level of technological capacity is constantly changing, calls for the training of students in a common core of skills which will enable them to perform in a variety of different jobs upon completion of schooling. As one author notes:

...But unless education and planning of society go hand in hand, we are unlikely to achieve this aim to educate for development for if, on the completion of their formal education, individuals find that society has no place for them,

¹ Schultz, The Economic Value of Education, p. 30.

cannot provide them with the sort of life they had expected and cannot adapt itself to changing conditions, they become disgruntled ... the society becomes sick.¹

Tanzania, though initially a victim of the pitfalls of policy based on a limited human capital theory has seen that such orthodox approaches, based on capitalist growth phenomenon, cannot act as a basis for socialist development by way of agricultural modernization. Since the Arusha Declaration, the government of Tanzania has laid out policies of human capital more consistent with its chosen path of economic and social development. Statistics are not available to evaluate the effectiveness of these new policies.

The final chapter of this study will summarize the previous four chapters and draw some conclusions on human capital development, with special reference to Tanzania.

¹Reginald Honeybon, "The Nature, Scope and Function of Education for Development," in Rweyamamu, p. 22.

CHAPTER V

CONCLUSION

The purpose of the preceding lucubration was to take a look at one crucial ingredient in economic development - the human resource - and its role in a particular developing nation's development process. The purpose of the case study was to look at what had been done in light of existing theory and determine what lessons might be learned from the Tanzanian experience.

Though it is generally agreed that capital formation is one of the principle requisites for economic progress, the nature of human capital has caused economists to neglect formulation of a comprehensive theory of human capital. Chapter two reviewed the standard theories of human capital (showing them to be very demand oriented), economic development (which concentrate on growth as opposed to development) and attempts to mesh the two. Because it is the nature of economic theory to extract the bare essentials for analysis - assuming away all that might cause 'snags' in the theory - attempts to develop a human capital development policy based on either the rate of return approach or manpower planning through formal education should be done with caution as planners lay out blueprints for developing nations.

First, policy makers should take note of the inappropriateness of several of the assumptions underlying both the rate of return and

manpower planning analyses. While evidence does indicate that investment in education has been positively correlated with growth in GDP in Tanzania, the nature of the relationship (linear vs. curvilinear) differs depending on the level of schooling. As noted in chapter two, one must question the relevance of a theory based on maximization of individual returns to investment, when socialist development is the goal. At the same time, most manpower planning models contain the basic assumption that the fundamental social and economic structure of the unit of analysis will remain more or less the same during the forecast period. The effects of such an assumption for Tanzania - where the purpose of planning is economic development which entails institutional change - was shown by the necessary revision of figures for manpower self-sufficiency by 1980 following the issuance of the Arusha Declaration.

Chapter three set the stage for discussion of human capital development in Tanzania, by offering descriptive commentary on the country, its economy and its planning process. Tanzania, a relatively large and populous country in East Africa, achieved political independence in 1961. At this time economists were espousing a theory of economic growth - used synonymously with economic development - via industrialization and physical capital accumulation. Using a team of foreign advisors, Tanzania drew up development plans which while voicing socialist aspirations were actually seeking to imitate a path of capitalist development.

By 1967, however, it became clear to the nation, that Tanzania could not reach its goals on the road it was traveling. Nyerere issued the Arusha Declaration, which ended emphasis on development of import substitution industries and instead of placing continued emphasis on the

decline of agriculture, called for development by way of self-reliant agricultural modernization. Only then, did the major means of production become the property of the state and cooperative economic ventures become actively encouraged. New institutional arrangements were promoted which were consistent with Tanzania's brand of socialism. Thus the stage was set for evolution of Tanzania's human capital development policy.

Chapter four examined Tanzania's program of coordination of educational planning and manpower planning - gearing the educational system to producing high level manpower needs. Using a manpower requirements approach, Tanzania puts emphasis on investment in post-primary education and training institutions, but only in accordance with the kinds and numbers of such skills needed for the economic development of the nation. Between 1961 and 1966, few significant changes took place in the use of education or human capital development policy as a means of eliminating the mass poverty that engulfed the Tanzanian people.

Orthodox human capital theory had said nothing of the affects of student expectation regarding the costs and benefits of education. In 1966, it became clear that student attitudes toward development and their role in development was just as important, if not more so, as skill development. Following issuance of Education for Self-Reliance, the importance of education as an attitude creator, as well as skill generator, was recognized. More attention was paid to the inculcation of a feeling of national unity, and tying education more closely with the general community. It was hoped that education would be one loom for the reweaving of the fabric of society in Tanzania. Manpower planning, however, continued to have the dominant role in human capital development in Tanzania.

The "successes" and "failures" of orthodox manpower planning in Tanzania can be viewed from a quantitative and qualitative perspective. On the whole, the measure of success that has been achieved using manpower planning has been the balancing of supply and demand for high level manpower. This has eliminated the problem of unemployment among an educated elite that plagues many of today's LDCs. Planners in Tanzania have had measurable success in foreseeing high level manpower needs and planning the educational system so that it provides the appropriate personnel. Quantitative shortfalls in specific occupations were as much a result of a changing economy adjusting to new needs as well as the hazards of any long term planning.

The most notable failures in matching supply and demand - numerically - were in those occupations which required an extensive math or science background - a phenomenon which reflects Tanzania's poor school curriculum in these areas. Tanzania, while achieving quite a measure of success in generating sufficient numbers of trained personnel, rarely has the same degree of qualitative success.

Most of Tanzania's failure with regards to manpower planning were qualitative. Misplaced emphasis on formal education as a skill generator alone, has limited the vertical and horizontal mobility for much of the population. In many cases, if a person does not meet a specific degree requirement, which may be totally irrelevant to his ability to perform on the job, he is bypassed for that job, while one with the degree, but with less knowledge/experience is given the post.

Focusing on formal education as a skill generator has also tied Tanzania to continued use of expatriate personnel, despite the goals of self-sufficiency and self-reliance by 1980. This extensive use of expatriate personnel

in decision-making positions has kept the indigenous population from learning by doing, not giving them the access to the experience that is necessary to become proficient in their chosen profession. This has resulted in less than optimal utilization of all personnel.

Use of manpower planning by specific occupation has also caused the output of the education system to be specialized, when what is needed in a developing country is a cadre of personnel capable of performing a variety of developmental tasks. Moreover, while concentrating on high level manpower, Tanzania has overlooked many creative possibilities for human capital development. For example, while existing manpower planning techniques may project a need for eight hundred medical doctors by 1980, more enlightened planning might show it would be more beneficial to generate three hundred doctors and five hundred paraprofessionals, cutting down on necessary resource allocation to the development of trained health care personnel.

Basing policy measures on a narrow concept of human capital development as high level manpower has led Tanzania into other pitfalls, evidenced by the rising unemployment among secondary and primary school leavers and the formation of an unwelcomed elite. Gearing the educational system to the needs for high level manpower had meant maintenance of a curriculum inconsequent to the needs of the majority of the pupils in the system and to the productive conditions of the society. Focusing on high level manpower also kept human capital development from becoming an integral part of the lifestyle of the masses.

Manpower planning, through educational planning, has resulted in a very big expansion in educational facilities. Emphasis placed on secondary and higher education, however, has meant a postponement of universal

primary education. Emphasis placed on formal education has also retarded formulation of specific on the job training and in-service programs. Though such programs have been given lip service, no explicit directives have been issued concerning methodology for such programs.

Concentrating on the demand oriented view of manpower planning has prohibited Tanzania from developing a suitable system of incentives for economic efficiency on the supply side. Moreover, the demand oriented view of human capital assumes that there will be sufficient wage employment to absorb all who wish to join the wage labor force. This has clearly not been the case in Tanzania. In general, Tanzania's emphasis on formal education and development of high level skills through manpower planning has effectively retarded development of an optimal human capital development policy.

As countries such as Tanzania continue their search for an appropriate strategy of human resource development, they must move away from many of the concepts embodied in the present literature. Human capital development is not identical to, but must incorporate, manpower training and planning. A broader view must be demanded by LDCs, which recognizes the fact that the development of human capital involves not only skill generation, but attitude generation - a view which deals with what Beckford terms the "decolonialization of the mind".¹

Straying from orthodox economic analysis, human capital policy makers should examine human capital development from a multi-disciplinary perspective. For example, policy must be based on the process by which people are defined their roles in their community, by their community, as well as

¹Beckford, Persistent Poverty, pp. 233-37.

taught attitudes and values which act to maintain the stability of the total society. It must recognize that all education, training and other human capital policies involve formation of one's conception of one's self, one's community and one's role in the development of that community. Based upon the assumption that the mechanisms by which people are taught to function as more efficient producers involves not only an increase in skill content, but also an internalization by people of the norms that are supportive of such efficiency, policy makers must view this process as a productive component of human capital and demand that economic theorists include it in their analysis. Failure to link this process of attitude creation with skill development in a developing nation could stifle the total development potential of a nation.

One final point needs to be stressed in regards to human capital development in Tanzania - the emphasis placed on the development of high level manpower creation at the expense of the development of the masses of the people and non-formal education. As noted, Tanzania is already experiencing difficulties with primary school leavers because of its present manpower policies. A more comprehensive manpower planning program - including more than highly skilled and professional manpower - which encourages the people to engage in agricultural production is needed. Since pressures for education arise from a desire to escape from the miseries and hardships now associated with rural life, attitude creation will play a major role in promoting development by way of agricultural modernization. As long as the government relegates non-agricultural manpower planning to a central role, so will the people.

An adequate assessment of the Tanzanian experience necessitates spending at least a few years in the society so that its human capital policy

can be evaluated in terms of that society. Progress measured by statistics on enrollment ratios and available supply misses out on a great deal of that which is important for assessing changes in the quality and standard of living as well as necessary structural and institutional change.

Few LDCs will be able to achieve a substained period of development without investing in a comprehensive program of human capital development. The case for a multi-disciplinary human capital policy rests firmly on the statement:

If a country is unable to develop its human resources, it cannot build anything else.¹

¹Edward B. Jakubauskas and C. Phillip Baumel (ed) Human Resources Development (Ames, Iowa: Iowa State University Press, 1967), p. ix.

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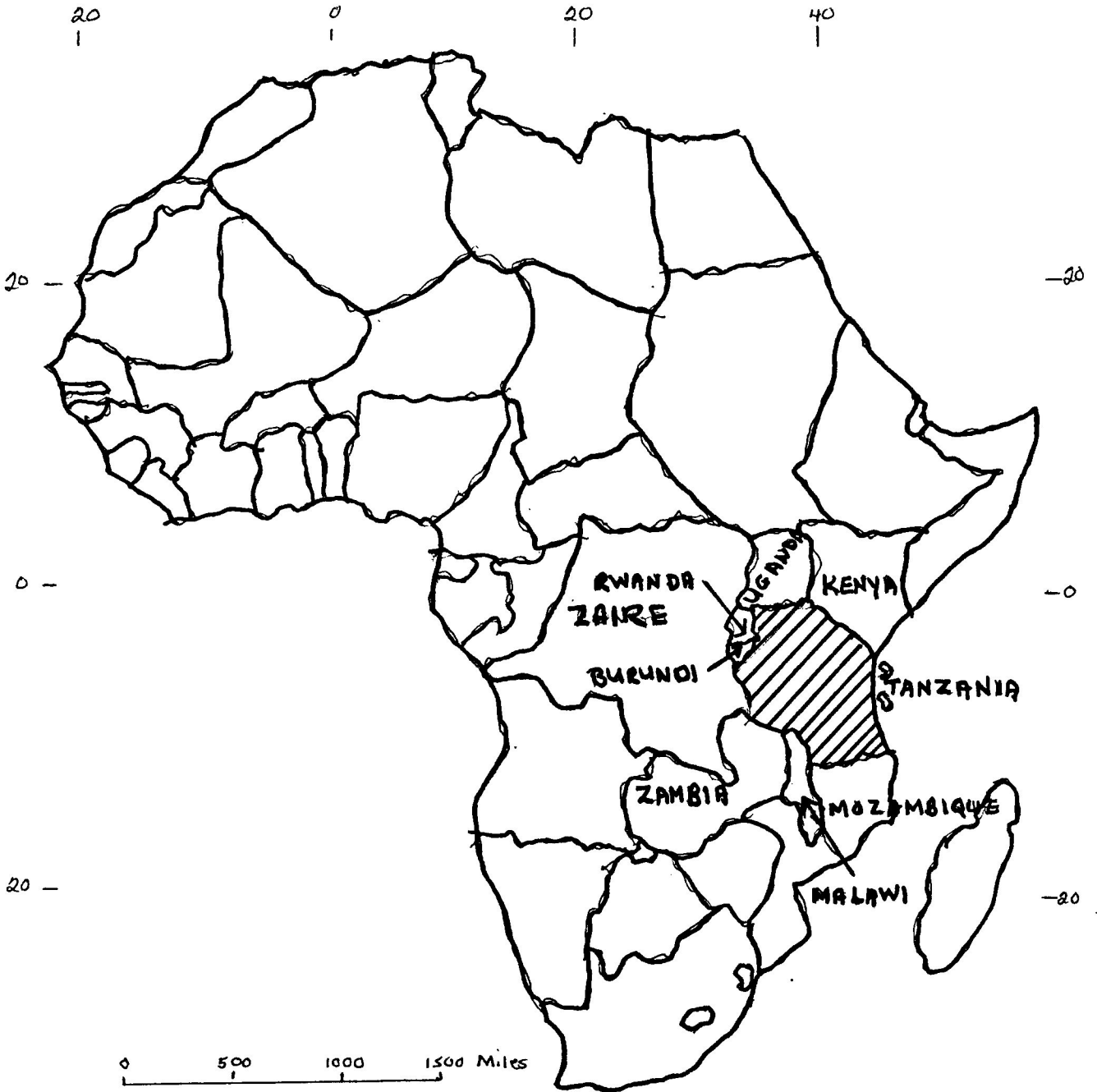
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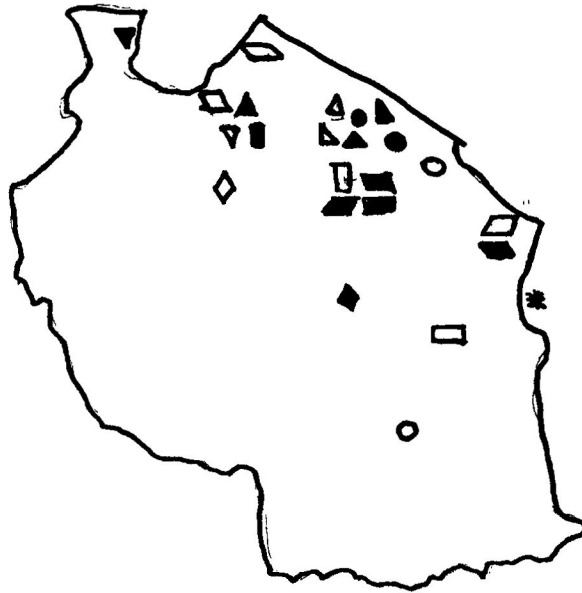
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APPENDIX 1



Tanzania in Africa

APPENDIX 2

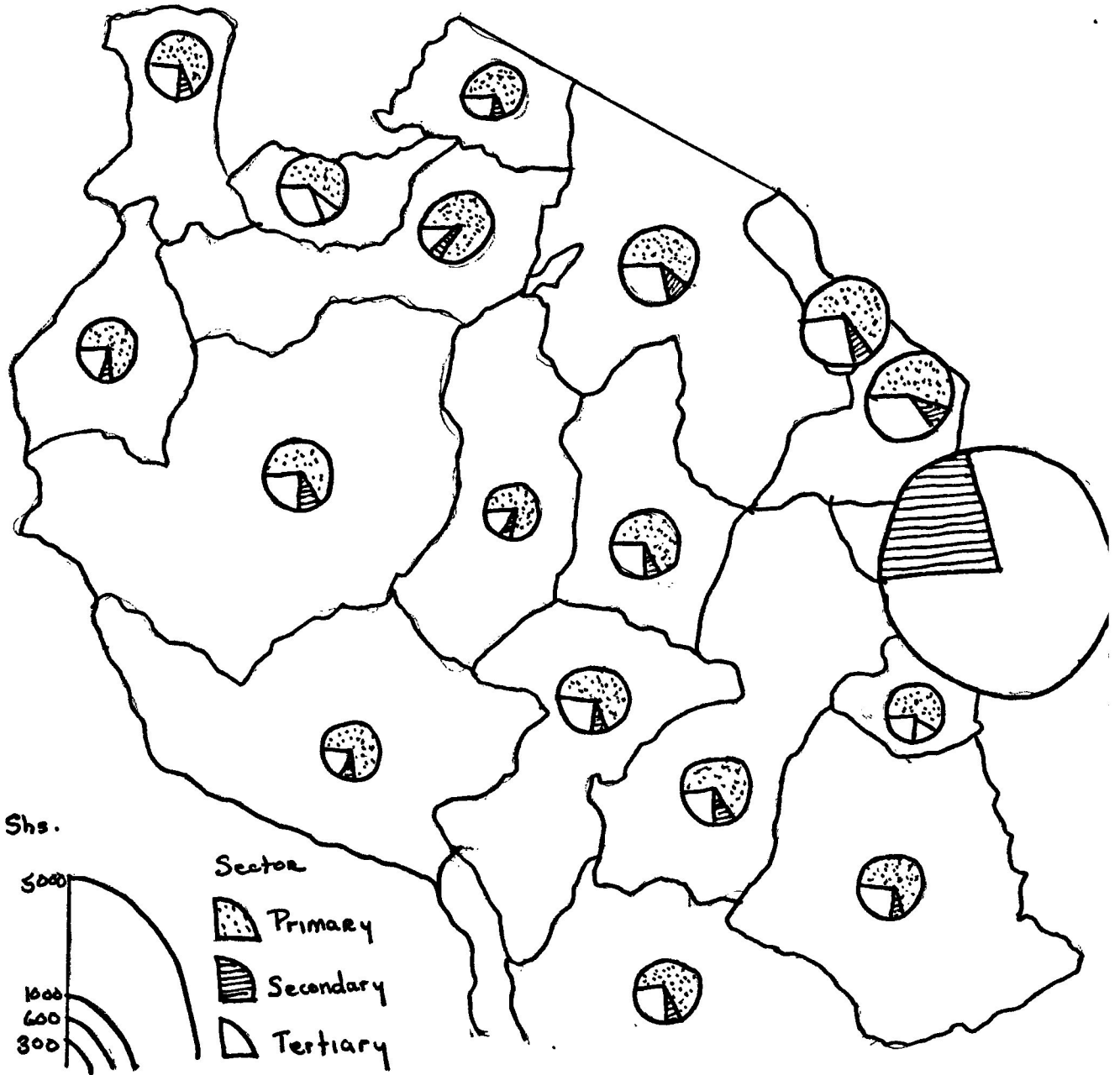


Location of Major Industries *

- | | | |
|------------------|------------------|------------------|
| ▽ Vegetable oil | ◻ Sisal Twine | ▲ Textile Mill |
| ▲ Brewery | ◻ Ghee | ● Meershaum Pipe |
| ○ Sugar Refining | ◇ Diamond Mining | ▮ Nylon Fish Net |
| ▮ Matches | ▴ Farm Rubber | ▮ Mosquito Coil |
| ▮ Tobacco | ▽ Instant Coffee | ▮ Sisal Bag |
| ▮ Plywood | ◆ Wine Making | ▮ Radio Assembly |

* Industries located in Dar es Salaam include canning, plastics, razor blades, dry batteries, chemicals, motor assembly, metal box, cigarettes, shoes, oxygen, textile mills, breweries, farm implements, meat canning, cement and oil refinery

APPENDIX 3



Gross Regional Product, 1967

APPENDIX 4

According to the Arusha Declaration, the policy of the government will reflect the following beliefs:

- ... (f) That every individual has the right to receive just return for his labor;
- (g) That all citizens together possess all the natural resources of the country in trust for their descendants;
- (h) That in order to ensure economic justice, the state must have effective control over the principal means of production; and
- (i) That it is the responsibility of the state to intervene actively in the economic life of the nation so as to ensure the well-being of all citizens and so as to prevent the exploitation of one person by another or one group by another, and so as to prevent the accumulation of wealth to an extent which is inconsistent with the existence of a classless society.¹

The Declaration goes on to state that the principles and objectives of the state will be:

- ... (e) To see that the Government mobilizes all the resources of this country toward the elimination of poverty, ignorance, and disease;
- (f) To see that the government actively assists in the formation and maintenance of cooperative organizations;
- (g) To see that wherever possible, the government itself directly participates in the economic development of this country ... ;
- (j) To see that the government exercises effective control over the principal means of production and pursues policies which facilitate the way to collective ownership of the resources of this country.²

¹Julius Nyerere, "Arusha Declaration," in his Freedom and Socialism (Dar es Salaam: Oxford University Press, 1968), p. 232.

²Ibid, pp. 232-33.