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UNDERFINANCING OF SOCIAL SERVICES IN TANZANIA:
THE CASE OF PRIMARY HEALTH CARE

by

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Background Context

Ever since the Arusha declaration in 1967, Tanzania has committed its resources to a set of development policies which emphasized growth with equity for the largely rural based population.¹ Rural development via the mechanism of Ujamaa villages became the focal point of many welfare oriented programs, including the provision of health care using paraprofessional cadres of medical assistants and nurse/midw. operating from dispensaries located in the Ujamaa villages.

In 1972, the TANU party conducted a mid-plan evaluation of the 1969-1974 development plan. A primary focus of the evaluation was a review of the health sector in order that it might achieve the targets enunciated in the plan. With the assistance of Oscar Gish, Tanzania developed a coordinated set of activities to expand the rural based primary health care system including paraprofessional manpower cadres.² The AID funded Maternal and Child Health/Family Planning Program (MCH/FP) was developed as one of several donor agency funded activities designed to implement the country's objectives in the health sector which was to reallocate resources to non-hospital and rural based facilities and services.³ Special studies were conducted by Gottlieb (1973) and Thomas and Mascarenhas (1973) to provide an empirical basis for financing and the location reallocation decisions which would be required to implement the rural thrust.

The AID MCH/FP project was designed to develop a cadre of about 2500 trained MCH aides by 1982 which would work in tandem

with a cadre of Rural Medical Aides (RMAs) and Medical Assistants (MAs) in government rural health centers and dispensaries to provide basic medical care and maternal and child health care services. The MCH aide was to operate at least a weekly MCH ante-natal and post-natal clinic, chart the growth of young children, operate an immunization program which would provide BCG, smallpox, measles, DPT, polio and tetanus toxoid vaccines and develop a school preventive health program at the village primary school. AID provided the necessary resources to (a) build and equip eighteen MCH training centers, (b) train MCH tutors for the eighteen training centers, (c) develop the curriculum and provide the pedagogical material for the training schools, (d) test and revise the curriculum and materials, and (e) provide other assistance (technical), equipment, and supplies to fully institutionalize the delivery of MCH services as outlined above.

The purpose of this paper is three fold. First, a review of the macroeconomic situation in Tanzania is conducted to identify how it affects the financing and delivery of health care including MCH services particularly provided by government in rural areas. Second, an analysis is conducted of the expansion of the health care sector, particularly since 1971. The demand for health care services and the financing of those services in conjunction with the recurrent costs of the publically provided health services are also analyzed. These analyses provide a background for the third component of the analysis which specifically addresses the cost of utilization of provided MCH

services utilizing the MCHA's trained via the AID financed project. This cost-analysis is disaggregated according to type of service facility, e.g. hospital, health center and dispensary, and the implications of alternative utilization patterns are reviewed. At this point, alternative financing options are reviewed to ascertain the extent to which the costs of MCH and other PHC services can be covered.

The analysis conducted in this paper is based largely on primary sources of information about the health care sector in Tanzania. These are cited in the bibliography and the respective tables throughout the paper. The author made a one week trip to Tanzania in June 1983 to update the macro and micro data available to him and to confirm with health and other officials of the Tanzanian Government and relevant academic institutions. Tanzania is relatively fortunate in having substantive facility specific cost and utilization data available. Unfortunately, the most recent period, i.e., since 1980, has seen a decline in the systematic collection and analysis of such information. Nevertheless, with some effort, and appropriate assumptions, it has been found to be very relevant and useful in conducting this review.

The Changing Macro-Economic Context of Tanzania,
1967-1983

In Table 1, data are provided which are indicative of the changing macro-economic situation in Tanzania. These data show that the country has experienced a serious decline in its economic performance. The per capita rate of economic growth (row 3) has systematically declined over the 1967-1980 period, and since 1980 per capita growth has been negative. For example, it is estimated that between 1981 and 1982 per capita income fell by 6.5%.

The country faces a significant balance of payments problem which began about the time of the first oil price rise in 1973. In 1970 the country experienced its first negative balance of trade of \$37.6 million, which jumped to over \$250 million in 1974 after the first oil price increase. The combination of the (a) second oil price increase in 1979, (b) the war in Uganda during that year, (c) the breakup of the East African community in 1977, and (d) poor agricultural and industrial development policies, particularly since 1974, have contributed to the further deterioration in the balance of trade.⁴ As Table 1 points out, the annual trade deficit has reached nearly \$600 million which is nearly twice the level of merchandise exports recorded in 1982. The country has been unable to meet most of its external debt obligations, and import payments arrears have expanded greatly in the last year to approach \$500 million.

At the same time, merchandise exports as a proportion of GNP have declined markedly (row 5). Between 1967 and 1982, it fell

TABLE 1 Trends in Selected Macro-Economic Indicators, Tanzania 1967-1983

	<u>1967</u>	<u>1973</u>	<u>1979</u>	<u>1982</u>	(1) Low Income African Countries ³	<u>Year of Data</u>
1) Population (millions)	12.26	14.37	17.98	19.88	59.1	1979
2) GNP/Cap. (current \$)	1970 130		271	280 ¹	247	1979
3) Rate of Growth in GNP/Cap.	1965-1967 6.2	1967-1973 2.3	1973-1979 1.5	1982 - .80	1.0	1960-1979
4) Balance of Trade (\$ million)	31.9	-74.2	-510	-574	1400	1979
5) Mdse. Exports as % of GDP	24.5	19.7	11.9	7.9	15	1979
6) Public Debt Service as of % of GNP	1.7 ²	1.0	0.9	2.1	2.8	1979
7) Central Government Taxes as a % of GDP	12.3	14.7	15.5	(22.5-25.0)	13.3	1977
8) Central Government Taxes as a % of Central Government Revenues	75.0	63.4	43.6	46.2	63.5	1977
9) % Total Central Government Revenue Collected in:						
(a) Import and Expore duties	NA	25.0	24.0	NA	NA	
(b) Sales and Excise taxes	NA	37.9	46.7	> 75.0	NA	
(c) Income taxes	NA	31.2	26.7		NA	
10) Central Government Surplus or Deficit (-) as % of Total Government Expenditure	-16.7	-24.5	-40.4	-41.1		

Notes and Sources to TABLE 1

Notes

- 1) 1981
- 2) 1970
- 3) According to the World Bank Report, Accelerated Development in Sub-Saharan Africa, 1981, seventeen countries in Africa are so listed. Tanzania is one of these countries. These countries have about 45% of the sub-saharan countries' population. The range of per capital income in 1979 these countries varied from \$130 to \$370.

Sources

- 1) World Bank, World Development Report, 1982 and 1983
- 2) World Bank, Accelerated Development in Sub-Saharan Africa, An Agenda for Action, 1981
- 3) IMF, Government Finance Statistical Yearbook, 1982
- 4) IMF, International Financial Statistics Yearbook, 1982
- 5) World Bank, Economic Memorandum of Tanzania, January 23, 1981
- 6) IMF, Taxation in Sub-Saharan Africa, October 1981
- 7) Tanzania Daily News, June 2, 1983, and June 3, 1983

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from 24.5% to 7.9% of GNP. It has even declined since 1979 when GNP was also falling and during the first half of 1983 the rate of export was even below the historically unprecedented low levels recorded in 1982. Thus, the country is virtually incapable of being able to finance its necessary imports from exports let alone refurbish its agricultural and industrial base to expand production. The health sector is adversely affected since it cannot import sufficient quantities of the items necessary to maintain the provision of health care at present levels.

Most of Tanzania's exports and, thus, foreign exchange earnings are agriculturally based. However, the government has neglected agriculture, even though it has provided the main sources of foreign earnings necessary to finance both the initial expansion of the manufacturing sector and critical inputs for the development of most of its human resource programs, including health. This neglect of agriculture occurred despite the rhetorical emphasis given to rural and agricultural development in the Arusha Declaration of 1967 which marked the beginning of the present course of development.

In recent years, agriculture has been increasingly taxed, defacto, due to domestic inflation and the overvalued Tanzanian shilling relative to internationally recognized currencies. The government has not been able to pay export crop producers enough to provide an incentive to them to sell their product to the government. In addition, the government made a series of agricultural policy decisions during the mid-1970s as a

consequence of the 1973/74 drought which tended to favor traditional food crop production over the production of food crops increasingly preferred in urban areas and cash (foreign exchange earning) crops. Finally, the large parastatal, National Milling Corporation, which handled and distributed all domestic and international food grains in Tanzania, was operated inefficiently. This situation has led to poor food grain storage and distribution strategies being perpetuated. (See Appendix A for more details on the above items particularly with respect to production effects.)

Since mid-1982 considerable debate has occurred in Tanzania about how to redress this relative neglect and inappropriate policy context, and improve the performance of the sector which underlies the entire economic future of the country. Progress is underway but only after bringing the entire economy to a near collapse. Foreign exchange constrains the future development of all sectors and reordering of priorities and institutional structures are being considered to ensure appropriate complementary incentives throughout the country.

In addition, since the early 1970s Tanzania has increasingly relied on external donor support to cover the difference between its export earnings and its imports. However, bilateral and multilateral aid flows which have contributed to the financing of the balance of payments deficit in the past ten years have been falling off due to the economic recession in the industrialized nations since 1980. According to a senior Tanzanian official, since early 1983 the only imports to Tanzania (with few

exceptions) have been petroleum products purchased on a hard currency cash basis.

While the country has received considerable aid assistance and, as of 1979 had about \$1.25 billion in disbursed external public debt, most of it was held on highly concessionary terms by multilateral banking institutions and other bilateral organizations.⁵ In more recent years, most of its foreign assistance has been on a grant basis. Nevertheless, by mid 1983 external debt obligations and import payment arrears were about \$500 million and the principal and interest external debt requirements for 1983 were \$214 million, up from about \$50 million in 1979.⁶ In addition, the AID program is contracting since the government of Tanzania has defaulted on its debt repayments to the US Government which subjects it to the provisions of the Brook Amendment to the Foreign Assistance Appropriations Act (Section 517) which disallows additional funding to a country program until it has reinitiated payments on its rescheduled debt. Thus, even though the country's public debt service, as a percentage of GDP, was a relatively modest 2.1% in 1981, (Table 1, row 6) the country is in a very difficult financial position. This financial position will seriously constrain economic recovery for at least the remainder of the 1980s and mean that imports will be in very short supply.

Finally, the data in Table 1 (rows 7-10) provide some indicators pertaining to public finance and the problem of recurrent cost financing. Row 7 shows that the government has significantly increased taxes as a proportion of GDP from 1967 to

1982. Despite that significant increase in taxes as a proportion of GDP, tax revenue has been increasingly unable to finance central government expenditures (row 8) largely due to the rapid increase in publically supported and operated development programs in all sectors, including health. In 1967, the government financed about 75% of all expenditures via tax-revenue, where as by 1982, that figure had dropped to around 45%. After about 1973, tax revenues did not cover recurrent budget expenditures and by FY1979 tax revenues only covered 65.7% of recurrent budget expenditures.

Improved tax collection procedures have been implemented in February 1983 and, as a consequence, the government expects that revenues will improve.⁷ With some government cuts in recurrent expenditures and improved revenue collection, tax revenues are expected to cover about 78% of recurrent budget expenditures. While these efforts are encouraging, it is expected that the total government deficit, as a percentage of total expenditures, will remain in the neighborhood of 30 to 35%. Such a figure represents an improvement from the 40% plus figures which have existed during the 1978-1982 period, but do not significantly reduce the problems engendered by the high rate of inflation (about 30% per year) which has, in large part, occurred over the same period due to domestic financing of the government expenditure deficit via the rapid expansion of the money supply.

Unlike many other sub-Saharan African countries, Tanzania does not have a tax system which is highly dependent on import and export duties. (Only 25% of Tanzania's central government

revenue is from such sources (rows 9 a, b, c & c, Table 1). A more typical figure in Africa is about 40-50%). Since 1978 export duties in Tanzania have amounted to less than 10% of total taxation receipts. Import duties, while generally comprising a larger share, typically do not exceed 15% of total tax receipts. Thus, while the slump in exports and, with a lag, imports have adversely affected the general economic situation, and particularly the availability of foreign exchange, the tax structure is primarily based on sales, excise and income taxes, the receipts from which are based on the growth of domestic economic activity. Such a tax structure when analyzed by the IMF, showed that rate of growth in tax revenue for Tanzania in the 1970s exceeded the rate of growth in GDP measured in current market prices and was, therefore, relatively "buoyant".⁸

However, even though the tax structure is relatively "buoyant" and tax collection efforts have increased, Tanzania's recurrent cost problem remains substantial with a recurrent budget expenditure deficit of around 25% in FY1983. Such persistently high deficits have created increased pressure to reduce government expenditures in all areas including the health sector which rapidly expanded in the 1970s (see below for the specifics). These pressures have created both a local currency as well as a foreign exchange financing problem facing the long term sustainability of the health sector financed by government.

Trends in Health Sector Expansion

Supply Expansion

Facilities

As has been stated above, subsequent to 1971, there was both a rapid expansion and reorientation of the health care system toward the provision of rural based primary health care services. The data presented in Table 2 confirm this expansion and reorientation.

First, the total number of health facilities increased from nearly 1100 facilities in 1961 to over 1580 facilities in 1970 and then to 3100 by 1980. This expansion comprised a nearly three fold increase since independence and almost a doubling during the 1970s. Second, most of this expansion occurred at the periphery in the form of health centers (HCs) and dispensaries operated by the government. For example, in 1961 there was one government hospital for about 15 health centers and dispensaries. By 1970 this ratio had increased to 20 and by 1980 it had risen still further to 24.2.

Besides the rapid growth in government health centers and dispensaries, there was an even more rapid growth during the 1970s in such non-governmental facilities. For example, in 1970 non-governmental facilities comprised about 19.3% of the total (n=269). However, by 1980 such facilities comprised 21.2% of the total (n=575) and the absolute number had expanded by about 114% during the interim. Most of this increase occurred as a consequence of parastatal firms and other large organizations opening dispensaries for their workers. Thus, a large proportion

TABLE 2 Trends in the Composition of Health Facilities in Tanzania
1961-1980

Year	Number of Hospitals			Number of Health Centers			Number of Dispensaries		
	Govt	Total	Index	Govt	Total	Index	Govt	Total	Index
1961	52	98	100.0	22	22	100.0	736	975	100.0
1970	60	119	121.4	69	69	313.6	1126	1395	143.1
1972	NA	NA	NA	105	105	477.3	NA	1491	152.9
1974	80	139	141.8	129	129	586.4	NA	1670	171.3
1976	82	141	143.9	161	161	731.8	NA	2078	213.1
1978	92	151	154.1	194	194	881.8	1972	2547	261.2
1980 ¹	98	157	160.2	235	235	1068.2	2134	2709	277.8

Notes and Sources to TABLE 2

Notes

- 1) Estimated from Table 02B, MOH, Inventory of Health Facilities, 1978, which in 1978 included facilities under construction, and assumed completed in 1980.

Sources

- 1) Table 4, pg. 32, Oscar Gish Planning the Health Sector (London: Holmes and Meier, 1975)
- 2) Tables X, XI, XII, pgs. 23-30 in Albert Henn, Tanzania Health Sector Strategy (Dar es Salaam: USAID/Tanzania, February 1980)
- 3) Tables 01, 02A, 02B, pg. 572-574, Ministry of Health, Inventory of Health Facilities 1978, Main Report (Dar es Salaam: Ministry of Health, August 1979)

of this expansion took place in urban or periurban areas of the country.

It is also important to point out that while the greatest expansion occurred among the peripheral units, there was a significant increase in the number of hospitals as well. During the decade of the 1960s, 21 hospitals were added to the total with 13 being non-governmental. During the 1970s the number of hospitals expanded by 38, with all of them being governmental. This increase during the 1970s among government hospitals amounted to a 63% increase (from 60 to 98).

Manpower

The number of skilled health personnel also expanded during the 1970s. This expansion is portrayed in the data presented in Table 3. While the percentage increase for physicians only shows a 68% increase, the proportion who are Tanzanian nationals expanded greatly (from 39 to 84%). This fact implies that the physician cadre of Tanzanian nationals expanded by over 250% from 1972 to 1980. The other cadres which have rapidly expanded, e.g., by more than 250%, include medical assistants, rural medical aides, and MCH aides. It was vital to expand these cadres rapidly in order to staff and supervise the rapidly expanding number of rural health facilities (depicted in Table 2) with the type of personnel which could perform the critical diagnostic, treatment, and educational services. The primary reason for only a relatively modest increase in the supply of nurses was that the major expansion in the health system was in outpatient care in peripherally based dispensaries. Nurses are

TABLE 3 Trends in Selected Skilled Health Personnel in Tanzania, 1972-1980

Personnel Category	Year 1972	1974	1976	1978	1980(est)	% Increase 1972-1980
Medical Officers (% Tanzanians)	494 39.5	603 53.7	683 ¹ 52.1	772 55.0	830 84.0	68%
Assistant Medical Officers	140	160	193	250	300	114%
Medical Assistants	335	485	770	1176	1200	258%
Rural Medical Aides	578	506	1049	1736	2800	384%
Nurse/Midwives "A"	877	1000	1100	1300	1540	75%
Nurse/Midwives "B"	2382	3000	3720	4900	5025	111%
Health Auxiliaries	290	370	455	545	800	176%
MCH Aides/Village Midwives	700	850	960	1900	2700	286%

Notes and Sources to TABLE 3

Note

1) 25 Cuban and 60 Chinese doctors are excluded from each year's figures.

Source

1) Table XV, pg. 34 in Albert Henn, Tanzania Health Sector Strategy, (Dar es Salaam: USAID/Tanzania, February 1980)

primarily located in hospitals and in health centers where most of the inpatient care is performed.

Trends in Imported Inputs

Drugs

In the macro-economic section of the paper, the discussion focussed on the problem of declining foreign exchange earnings and the long term implications of its increasingly short supply. The health sector is not immune to the impact of the short supplies of foreign exchange.

As is typical of many developing countries in Africa, Tanzania relies on imported drugs. Approximately 95% of all drugs consumed in Tanzania are imported. The domestically manufactured drugs (5%) also rely on imported chemicals for the necessary raw materials. There are three local manufacturers and the Danish Aide Program is working with the Ministry of Health to improve the quality and quantity of local production.

Table 4 presents data on trends in drug imports from 1960 through 1982. The data in column 2 indicate that the current value of imported medicinal and pharmaceutical products peaked in 1980 at over 259 million Tanzanian Shs.,⁹ the same year in which total imports also peaked. During most of the 1960-1982 period medicinal and pharmaceutical products comprised between two and two and a half percent of total imports. There was a general decline in that proportion in the late 1960s but it was reversed after the rural based priorities of the Arusha Declaration were implemented, especially in the health sector after 1971.

TABLE 4 Drug and Medicinal Product Imports, Tanzania
1960-1982

<u>Fiscal Year</u>	<u>Total Imports Mill. T. Shs. Current</u>	<u>Total Medicinal & Pharmaceutical Products (Mill.T.Shs)</u>	<u>Percentage Medicinal & Pharmaceutical is of Total Imports</u>	<u>Per Capita Medicinal & Pharmaceutical Products in Constant (1975 TShs¹)</u>
1960	518.0	13.4	2.60	3.55
1962	945.5	14.6	1.55	3.48
1964	879.5	18.3	2.08	4.13
1966	1285.0	22.4	1.74	4.37
1968	1531.7	28.4	1.85	4.89
1970	1939.2	45.1	2.33	6.85
1972	2597.6	55.5	2.14	7.05
1974	5429.6	107.2	1.97	9.05
1976	5354.7	122.0	2.28	7.12
1978	8815.6	201.0	2.28	8.86
1980	9238.4	259.2	2.81	7.23
1981	9120.0	228.0	2.50	4.87
1982	8392.0	193.0	2.30	3.18

Note and Sources to TABLE 4

Note

The deflator used is the Tanzanian National Consumer Price Index based on prices in 18 towns as reported in IMF, International Financial Statistics Yearbook, 1981 and updated per information obtained at USAID/Dar es Salaam. A preferred deflator would be a medical and pharmaceutical specific import price index, however, data for such an index is unavailable. Data on world consumer prices indicate a similar upward trend in prices and would show a similar pattern to the one indicated. Population data was obtained from the IMF, International Financial Statistics Yearbook, 1981 and updated based on the annual population growth rate obtained from the 1978 census.

Sources

- 1) East African Community, East African Customs and Excise Department, Annual Trade Report of Tanzania, Kenya, and Uganda, for various years ending in December 31, 1974.
- 2) Ministry of Finance, Tanzanian Customs Department, Annual Trade Report of Tanzania for Year Ended December 31, 1980, Dar es Salaam
- 3) Ministry of Finance, Tanzanian Customs Department, Transmittal Letter, May 11, 1982 to USAID/Dar es Salaam

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Perhaps of most relevance to this analysis, are the data contained in column 4. In that column 4, the raw import data of column 2 is adjusted for population growth and inflation. While the preferred price index data are unavailable to most accurately reflect the implications of inflation on the actual physical quantities of imports, the Tanzanian consumer price index which was used elucidates the basic point.¹⁰

The data in column 4 clearly show the impact of (a) government policies and priorities and (b) the increasingly adverse economic conditions manifested by rapid inflation and reduced availability of foreign exchange. During the 1960s there was a gradual increase in the real per capita value of imported pharmaceuticals. After the Arusha Declaration and the package of rural development policies were initiated in the late 1960s and early 1970s (including the rural strategy for health) real per capita drug imports rose to new levels by 1972 which were double the figures of a decade earlier. During the 1973-1978 period, real per capita pharmaceutical imports averaged 9.05 T.Shs. Relatively high levels of drug imports continued through 1980. However, in 1981 and even more in 1982, the imports of pharmaceutical items declined to levels below that recorded at independence. The figures for 1983 have yet to be recorded. However, if the recent evidence on foreign exchange, ship movements through the Dar es Salaam harbor, and informal evidence of drug availability in government facilities and private pharmacies are precursors of what those figures may eventually be, they will be very low.

Petroleum and Related Fuels

Logistics and supervision in the provision of health care have traditionally relied on vehicles and petrol. In Table 5 physical quantity data are provided on the amount of crude petroleum and distillate fuels which were imported during the 1976-1980 period. These data show a fluctuating trend, perhaps with a slight decline in crude imports. The significant spikes in distillate fuel imports in 1978-1980 are undoubtedly related to the Ugandan war, when, in 1978, there was a buildup for the war and then again in 1980 when strategic reserves were replenished.¹¹

The country has increasingly imposed purchasing quotas and driving bans. These measures began shortly after the first oil price rise in 1973-1974. In 1983, petrol could not be purchased from Thursday to Sunday and private cars could not be on the road on Sunday afternoon. These measures are in force despite the fact that the single most important imported item is petrol. Thus, the movement of supervisory personnel, pharmaceutical supplies and other items to the periphery has become difficult. The provision of health services is obviously impeded.

Equity Implications of the Expansion

One of the important tenets of the development strategy followed by Tanzania since 1967 has been that of equity. In the case of the health sector this has meant that new health facilities would be built, staffed, supplied, and maintained in areas of the country where there were no other facilities. In order to ascertain where to locate new facilities Thomas and

TABLE 5 The Importation of Petroleum and Other Fuels,
Tanzania, 1976-1980

<u>Year</u>	<u>Crude Petroleum ooos Metric Tons</u>	<u>Metric Tons Per Capita</u>	<u>Distillate Fuels, Million Liters</u>	<u>Liters Per Capita</u>
1976	957	0.058	119	7.26
1977	624	0.037	154	9.09
1978	1106	0.063	202	11.54
1979	568	0.031	149	8.24
1980	622	0.033	317	16.98

Source for TABLE 5

Source

Pg. 11, Table 6, Alberto Ruiz de Gamboa, "Tanzania's Import System, Value, Volume Composition, Sources and Future Import Needs", USAID/Dar es Salaam Paper, April 1983

Mascarenhas conducted an analysis for the Ministry of Health in 1971 of the relationship between existing facility location and population.¹² Subsequently, each year the Ministry of Health has updated parts of that analysis to monitor progress toward an equitable distribution of facilities, manpower, and government expenditures used in the provision of health care services.

In Table 6 data are presented which updates to 1980 an earlier analysis conducted by Caldwell and Dunlop¹³ which monitored progress toward achieving the goal of equity in the distribution of health sector resources. The data in Table 6 show that there has been continuous progress toward the equity objectives enunciated for the health sector in 1971. Most progress has been made in improving the availability of health facilities and governmental financial resources to rural areas. Thus, it can be said that based on the allocation decisions pursuant to the location of new facilities and the distribution of financial resources, Tanzania has systematically worked to improve the equitable distribution of resources.

However, there remain significant differences among regions in the actual provision of services, despite the above evidence suggesting progress. These regional differences manifested themselves in 1978 when the Ministry of Health conducted an inventory of its health facilities.

These differences are summarized in Table 7. For example, the average number of attendances per capita per year at rural government dispensaries based on 1978 regional data, varied from a low of 1.6 visits to 4.4 visits. Similarly, the average daily

TABLE 6 Indicators of Health Resource Distribution in Tanzania, 1972, 1976 and 1980

Percentage of Selected Resources Accessible to the Most Disadvantaged 40% of the Population¹

<u>Year</u>	<u>Hospitals</u>	<u>Hospital Beds</u>	<u>All Health Facilities</u> (includes hospitals, health centers, dispensaries)	<u>Government Regional Recurrent Health Expenditures</u>
1972	26.1	NA	29.9	28.9
1976	26.9	28.9	32.9	31.9
1980	27.0	29.1	33.2	38.2 ²

Notes and Sources to TABLE 6

Notes

- 1) The unit of observation is the region.
- 2) Data are for fiscal year 1978.

Sources

- 1) Table 8, Holly Caldwell and David Dunlop, "An Empirical Study of Health Planning in Latin America and Africa", Social Science and Medicine, 13 (1979)
- 2) Table 2B, pg. 74, Ministry of Health, Inventory of Health Facilities 1978, Main Report (Dar es Salaam: Ministry of Health, August 1979)
- 3) Table XI, pg. 27 in Albert Henn, Tanzania: Health Sector Strategy (Dar es Salaam: USAID/Tanzania, February 1980)

TABLE 7 Indicators of the Distribution of Rural Health Services, Service Use, Staffing and Drug Availability at Government Rural Dispensaries, Tanzania 1978¹

<u>Indicator</u>	<u>Median</u>	<u>Range</u>	
		<u>Low</u>	<u>High</u>
1) Average number of attendances per capita per year	2.7	1.6	4.4
2) Average number of attendances per day	71	47	100
3) Percentage of all live births in region	10.1	3.7	22.7
4) Average number of staff per facility	3.2	2.6	4.7
5) Percentage of dispensaries reporting "adequate" drug availability	25.9	0.0	52.1
6) Percentage of dispensaries with less than 5 drugs available	25.9	7.0	64.1

Notes and Source to TABLE 7

Notes

The unit of observation is the region

See Appendix Tables B.1 and B.2

Source

Appendix Tables B.1 and B.2 are derived from Ministry of Health, Inventory of Health Facilities, 1978 (Dar es Salaam: Ministry of Health, August 1980)

attendance varied from 47 to 100 and the percentage of all live regional births occurring at rural dispensaries varied from a low of 3.7% to 22.7%. The average number of staff and drug availability also varied across the regions.¹⁴

Thus, despite progress toward a more equitable location of facilities and other resources there are significant differences in services, service use, staffing, and drug availability throughout the country in 1978. Given the shrinkage in total economic activity in recent years and a reduction in the real value of government expenditures due to rapid inflation, further progress on these other indicators has likely been slow.¹⁵

Demand, Financing and Recurrent Costs of Health Sector Expansion

The previous section reviewed the expansion of the health care system, particularly within the public sector. The purpose of this section is to (a) show how demand (utilization) patterns have changed over the period of the sector's expansion, particularly in government operated rural facilities, (b) review evidence on total health care financing, including non-governmental expenditures, and (c) analyze the patterns of government financial support to the health care sector, with a particular focus on rural health facilities through which the bulk of MCH services were (and still are) provided.

Demand/Utilization

While Table 7 summarized the utilization figures of rural government dispensaries for 1978 and the previous section

reviewed the expansion of the health care system, it is useful to review the trends in total utilization related to the system's expansion over the period 1961-1978. Table 8 provides these trend data. At independence in 1961 average outpatient attendances per capita were 0.6 visits per year. By 1969 that figure had doubled to 1.2 visits per year, and by 1978 annual per attendance figures had more than doubled again to 2.7 attendances per capita. This growth in utilization was more rapid than the rate of growth in the number of facilities and personnel (see Tables 2 and 3). It is also useful to point out that the second doubling occurred within a seven year period, after the change in health sector policy, enunciated in 1971.

Since the strategy underlying the expansion of publically provided health services was a more equitable distribution of health sector resources (refer to Table 6), a large share of the increased utilization which occurred during this period took place in rural areas which previously did not have any readily available health care services. Utilization data available from a small sample (n=5) of rural dispensaries from diverse parts of the country for the period 1978-1982 and reviewed by the author supports the above view. Trends in facility specific utilization rates appear to fluctuate primarily due to location specific (a) epidemics, (b) weather fluctuations, and (c) availability of personnel and drugs.

The pattern of rapid growth in total ambulatory care as indicated in Table 8 is also reflected in the utilization patterns of antenatal and young child clinic attendances. In

TABLE 8 Total Outpatient Attendances at Government Rural Health Centers and Dispensaries, Tanzania 1961-1978

<u>Year</u>	<u>Total Number Outpatient Attendances (000's)</u>	<u>Average Number Attendances Per Capita</u>
1961	6,500	0.6
1969	15,129	1.2
1971	18,221	1.3
1978	46,500	2.7

Sources to TABLE 8

Sources

- 1) Table 4, pg. 32 Oscar Gish, Planning the Health Sector (London: Holmes and Meier, 1975)
- 2) Ministry of Health, Evaluation of the Health Sector, 1979 (Dar es Salaam: Ministry of Health, October 1980)

Table 9 the data show that between 1961 and 1978 average per capita attendances at antenatal and young child clinics increased by three, and over four fold respectively. Further, the data also show the utilization impact of the AID assisted MCH/FP program which began graduating and posting MCH aides in large numbers around 1976. Substantial increases in utilization were recorded in 1977 and 1978 subsequent to the significant increase in service providers who were primarily posted in rural areas.

As additional providers were trained through 1981, total utilization at MCH clinics also undoubtedly increased, although data similar to that presented in Table 9 are presently unavailable. However, according to the evaluation report (August 1982) by the MCH-Nutrition Unit of Tanzania's Ministry of Health, other indicators would suggest further utilization increases between 1978 and 1981.¹⁶ First, according to the evaluation (pg. 23, Table 1) the proportion of rural based health facilities in evaluated districts with MCH services increased from 49% in 1978 to 58% in 1981 with most of the increase occurring at the dispensary (43% in 1978 and 54% in 1981). Second, by 1981 the evaluation team found that in studied districts, "... 71% of the children had attended MCH clinics, 60% of these had their MCH cards and 85% of the mothers had attended antenatal clinics." (pg. 29).

Financing Health Care Sector's

Recurrent Expenditures

In the immediately above sections of this paper data were presented to show how the publically supported health care sector

TABLE 9 Attendances at MCH Clinics, Tanzania, 1961-1978

<u>Year</u>	<u>Ante-natal Attendances and Reattendances</u> (oods)	<u>Child Attendances and Reattendances</u> (oods)	<u>Average Number Attendances Per Pregnant Woman</u>	<u>Average Number Attendances Per Child Under 5</u>
1961	671.9	737.1	1.37	0.40
1970	1,785.5	1,853.4	2.88	0.79
1975	1,996.7	NA	2.69	NA
1976	2,088.9	2,630.0	2.72	0.91
1977	2,388.2	5,036.8	3.02	1.69
1978	3,193.2	6,800.3	3.90	2.20

Sources to TABLE 9

- 1) Table 11, pg. 151, Oscar Gish, Planning the Health Sector, (London: Holmes and Meier, 1975)
- 2) Pg. 38, in Albert Henn, Tanzania Health Sector Strategy, (Dar es Salaam: USAID/Tanzania, February 1980)

expanded, both in terms of the number of providers and facilities as well as their utilization. Before reviewing how the government's financial support has also increased, it is instructive to ascertain the extent to which there are other non-governmental health care providers operating in Tanzania as measured by estimates of total expenditures on health within the country. In Table 10 these estimates have been summarized for the 1976 calendar year.

Total Health Sector Expenditures

In terms of relative expenditure shares, the revised estimates presented in Table 10 suggest that in 1976 the non-governmental sector comprised between 37 and 43% of total expenditures. This expenditure share size is significant since, as has been indicated above, the size of the government sector was rapidly expanding during this period and the level of government financial support to the sector was at its peak during this period as well (see Table 11 below). It is also important to point out that there may be some double counting in Table 10 since, in 1976, the Ministry of Health increased its subvention and grant program to mission operated hospitals which were designated to serve as government district hospitals. In 1980-1981, for example, such grants and subventions to Mission facilities from the central government's Ministry of Health budget comprised 17.1% of total Ministry expenditures (52.2 million T.Shs. of 304.2 million T.Shs.). This double counting may thus reduce the share of non-governmental spending by perhaps 5%.

TABLE 10 Estimates of Total Recurrent Expenditures for Health Care Services, Tanzania 1976

Sector	1976 Expenditures		
	Per Golladay ¹ Mill. T.Schs.	Revised Estimates by Dunlop Mill. T.Shs.	
		Low	High
Official Government ²	405	404	404
Voluntary (Churches) ³	50	77	102
Industrial Health Services ⁴	15	15	15
Private Modern (Practices) ³	19	49	64
Traditional Waganga ³	34	64	84
Drugs and Other Medicine Payments ³	--	32	43
TOTAL	523	641	712

Notes to TABLE 10

Notes

- 1) Table 21, pg. 55, Fred Golladay, Tanzania - Health Sector Report, Washington, DC: World Bank, November 23, 1977)
- 2) Table 3, pg. 93, Ministry of Health, Evaluation of the Health Sector, 1979, Appendices (Dar es Salaam: Ministry of Health, September 1980)
- 3) Estimated expenditures on voluntary (churches), private modern practitioners, pharmaceuticals, and traditional practitioners are based on the 1969 Household Expenditure Survey estimated share of household expenditures for medical care and its components, adjusted for changes in that share, given (a) changes in income, (b) government discouragement of the private practice of medicine and the changing relationship between the government and voluntary (church) run health facilities, and (c) inflation. The estimates of each subset were corroborated by separately estimating expenditures based on the number of suppliers, e.g. private providers, their likely utilization and fee structure.
- 4) Dunlop assumed same figure as used by Golladay.

TABLE 11 Total (National and Regional) Government Expenditures on Health, Tanzania 1970-1971 to 1980-1981

	1970- 1971	1971- 1972	1972- 1973	1973- 1974	1974- 1975	1975- 1976	1976- 1977	1977- 1978	1978- 1979	1979- 1980	1980- 1981
A) Development Budget (percentages of total)											
Hospitals	34	33 ¹	35 ¹	27	19	20	27	31	32	36	35
Health Centers	5	39	26	40	17	24	21	22	23	16	19
Dispensaries	22	-	2	18	7	10	7	6	10	10	7
First Aid Boxes	-	-	-	-	-	2	-	1	1	1	-
Preventive Services	2	1	7	2	6	9	16	1	10	18	17
Training and Manpower	32	16	14	14	46	29	21	21	15	11	10
Drugs and Vaccines	3	-	15	-	4	1	1	1	-	1	3
Laboratory ²	-	-	-	-	-	-	2	-	-	-	-
Tanzania Food and Nutrition Center	-	-	-	-	1	5	5	8	7	6	6
Other	1	11	1	-	-	-	1	-	2	1	3 ³
TOTAL EXPENDITURE											
Mill. Current Shs.	15.97	3.85	12.0	27.92	59.17	66.65	79.98	77.57	83.61	142.95	155.06
Mill. Constant (1975) Shs. (CPI)	28.62	6.42	18.24	35.30	59.17	61.44	67.10	58.41	55.33	72.64	62.27
B) Recurrent Budget (percentages of total)											
Hospitals	32 ⁴	32 ⁴	75	67	66	65	66	65	64	64	63
Health Centers	4	6	5	6	6	6	6	7	7	9	10
Dispensaries	-	-	8	11	11	11	11	9	10	11	12
Preventive Services	5	4	4	9	10	10	9	11	11	7	6
Training and Manpower ⁵	2	3	4	4	5	6	6	5	5	6	7
Medical Products and Supplies	-	-	-	1	1	1	1	2	2	2	2
Planning and Research	2	3	2	-	-	-	-	-	-	-	-
Administration and Genl.	4	2	3	1	1	1	1	1	1	1	1
TOTAL EXPENDITURE											
Mill. Current Shs.	136	155	191	334	357	365	443	571	641	626	709
Mill. Constant (1975) Shs. (CPI)	244	258	288	422	357	341	372	430	424	318	285

30

Notes and Source to TABLE 11

Notes

- 1) Part of hospital expenditures refers to dispensaries.
- 2) Regional laboratories are included under hospitals.
- 3) Includes dental services.
- 4) Includes dispensaries.
- 5) Excludes Muhumbili Medical Center.

Source

Tables 5 and 6, pgs. 96-99, Ministry of Health, Evaluation of the Health Sector, 1979, Appendices (Dar es Salaam: Ministry of Health, September 1980)

The size of the traditional sector is unknown but a well documented study of traditional practitioners in Dar es Salaam, indicated that there were over 700 operating in that city alone in the early 1970s and that many of these individuals were among the most wealthy in the country.¹⁷ That study also provided estimates of utilization which suggested that these traditional practitioners in total were seeing as many patients as were attending government facilities in the city. In addition, a recently completed study of rural development in the southern highlands area of the country based on household interviews provides further information on the importance of non-governmental sources of health care.¹⁸ Many interviewed households sought care from traditional practitioners or just went to local shops and purchased medicines.¹⁹

Government Health Sector Expenditures

While the above analysis has indicated that there is a substantial non-governmental health care sector, the data also highlighted the importance of government financial support to the provision of health care services in the country. In Table 11 data are presented which show the annual proportions of both the development and recurrent expenditures allocated to various subsets of the health care system from both central and regional government sources. In addition, total expenditure figures in current and constant Tanzanian shillings are presented to show the trends in total government spending on health care.

First, the data in Table 11 show that at the outset of the rural health policy in 1971 there was a steady reallocation in

both the central and regional government expenditure patterns away from hospitals and toward health centers and dispensaries. In addition, complementary training and manpower development expenditures were made to staff the expanding number of rural facilities. Resources allocated to complementary preventive services such as MCH and immunization campaigns were also markedly increased during the mid 1970s.

Second, it is useful to review the actual expenditure figures of the development and recurrent accounts at the bottom of each respective allocation in Table 11. The development account expenditures show that since FY1975 there has been no significant increase in real development expenditures, only modest fluctuations. The recurrent expenditures reflect the impact of adverse economic times. After peaking in FY1974 at 422 million T.Shs. (constant 1975 Shs) before the drought years of the mid 1970s, it was the late 1970s before recurrent expenditures hit that level again. Between FY1979 and 1981, real recurrent expenditures on health declined by nearly one-third, and, these levels have declined since, due to the continuing adverse economic situation.

Third, while non-hospital based rural health services share of recurrent expenditures tended to increase ever since 1972-1973 (includes recurrent expenditures on (a) health centers, (b) dispensaries, and (c) preventive services) from 17% in 1972-1973 to 27% in 1975-1976 and 28% in 1980-1981, the relative emphasis has shifted e.g., since 1978-1979. Prior to that time (1978-1979), the emphasis was clearly on expanding rural

dispensaries and preventive services e.g., MCH and immunizations. Since that time, however, the share of recurrent expenditures going to health centers has increased with a corresponding decline in the share going to preventive services.

Given the significant real drop in total government recurrent expenditures (last row in Table 11) from 424 million T.Shs. for 1978-1979 to about 8 million T.Shs. in 1980-1981, this decline in the share for preventive services represents a clear drop in real financial support to such services. However, since the share of the development budget going to preventive services increased from 10% to about 18% in the same period, it is possible that some of the decline in the recurrent expenditure share was shifted from one expenditure category to another, i.e., from recurrent to development expenditures, particularly since donor support for health care is generally considered as development rather than recurrent expenditure support.

The data presented in Table 12 reconfirm the changes expenditure priorities for health relative to other sectors over the period 1965-1984. The data in column 1 show an initial buildup of commitment by the central government for health, especially after FY1971. Column 2 (a and b), 3 and 4 show the impact of the changing macroeconomic climate of recurrent health expenditures by the central and regional governments. These columns also show the differential commitments to recurrent health expenditures by the central vis a vis the regional governments, with the central government increasingly having many other responsibilities including financing the Ugandan war in

TABLE 12 Recurrent Expenditures for Health by the Central and Regional Governments, Tanzania, 1965-1966 to 1983-1984

	% Health Recurrent Expenditures is of Total Recurrent Expenditures Central Government ¹	% Ministry of Health Recurrent Expenditures is of Total Central Government Recurrent Expenditure		% Health Recurrent Expenditures is of Total Regional Govt. Recurrent Expenditures ⁴	% National & Regional Health Recurrent Expenditures is of Total National & Regional Recurrent Expenditures ⁵
		Source 2	Source 3		
1965-1966	7.1				
1966-1967	6.6				
1967-1968	6.8				
1968-1969	7.3				
1969-1970	7.7				
1970-1971	8.7				9.1
1971-1972	9.4				9.7
1972-1973	9.5	7.4			9.6
1973-1974	9.8	6.4			14.1
1974-1975		4.2		17.4	9.5
1975-1976		5.8		19.3	10.9
1976-1977		5.1		21.0	10.0
1977-1978		7.1		19.7	11.8
1978-1979		6.1		19.4	10.6
1979-1980		6.7		18.1	9.5
1980-1981		5.2	4.4	17.2	7.6
1981-1982		4.6	3.7 ²	17.6	
1982-1983			3.2 ³		
1983-1984			3.6 ⁴		

Notes and Sources to TABLE 12

Notes

- 1) Since the various data sources were differentially defined, and methods for consolidating each series were unclear, it was decided to separately present each series.
- 2) Approved estimates
- 3) Estimates
- 4) Tentative projections

Sources

- 1) Table XIV, Statistical Appendix, World Bank, Tanzania Basic Economic Report: Annex 1 Domestic Finance and Resource Use, Report #1616-TA (Washington, DC: World Bank, December 1977)
- 2) Stat. Appendix Table 2.3, World Bank Tanzania Agricultural Sector Report, Report #4052-TA (Washington, DC: World Bank, September 27, 1982)
- 3) Pg xii, United Republic of Tanzania, Estimates of Public Expenditures for the Year from First of July, 1982 to Thirtieth of June, 1983, Vol. 2 (Dar es Salaam: Government Printer, 1983)
- 4) Stat. Appendix Table 2.4, World Bank, Tanzania Agricultural Sector Report, *ibid*, 1982
- 5) Tables 1 and 3, pg. 92 and 93 Ministry of Health, Evaluation of the Health Section 1979, Appendices (Dar es Salaam: Ministry of Health, September 1980)

35'

1978 and 1979 and then many other economic problems in the more recent period. Certainly the decline of the share allocated to health by the central government from FY1978 of 7.1% to a projected 3.6% in FY1984 (50% decline) is considerable.

Returning to expenditure trends on preventive health services, in Table 13, data are presented on recurrent and capital expenditure trends by the central and regional governments on preventive health services over the FY1971-1984 period. These data show several important trends. First, total expenditures on preventive services peaked in 1978 at about 54 million T.Shs. (in constant 1975 Shs.). By FY1981 total expenditures in constant shillings had declined by nearly 50% from the 1978 peak. Lower figures were only recorded prior to the implementation of the MCH program funded by USAID which began in 1973.

Second, upon closer review of the data presented in Table 13, the most significant drop in funding support for preventive services is in recurrent expenditures by the regional governments. There was over a 60% decline in current terms between FY1979 and 1980 and the decline in real terms was in the order of 3.5 fold between FY1979 and 1981. Central government recurrent expenditures have also declined by nearly 50% in real terms between FY1978 and 1981 and have not and are not expected to increase through FY1984, even though nominal doubling is expected between FY1981 and 1984. However, since many of the preventive services provided are through rural based facilities, which are primarily supported by regional government

TABLE 13 Total (National and Regional) Government Expenditures (in million of T.Shs) on Preventive Health Services 1970-1971 to 1983-1984

Year	Recurrent Expenditures				Development Expenditures				Total Expenditures	
	Natl. Govt. Recurrent Expend. (current shs)	Reg. Govt. Recurrent Expend. (current shs)	Total Recurrent Expend. (current shs)	Total Recurrent Expend. (constant 1975 shs)	Natl. Dev. Expend. (current shs)	Reg. Dev. Expend. (current shs)	Total Develop. Expend. (current shs)	Total Dev. Expend. (constant 1975 shs)	Total Rec. & Dev. (current shs)	Total Expend. (constant 1975 shs)
1970/71 Actual	6.76	--	6.76	12.11	0.29	--	0.29	0.52	7.05	12.63
1971/72 Actual	5.77	--	5.77	9.62	0.03	--	0.03	0.05	5.80	9.67
1972/73 Actual	2.70	4.29	6.99	10.54	0.71	0.14	0.85	1.28	7.84	11.82
1973/74 Actual	3.50	26.82	30.42	38.46	0.48	0.13	0.61	0.77	31.03	39.23
1974/75 Actual	7.53	27.16	34.69	34.69	1.23	2.35	3.58	3.58	38.27	38.27
1975/76 Actual	5.88	29.84	35.72	33.41	2.65	3.10	5.75	5.38	41.47	38.79
1976/77 Actual	7.88	29.77	37.65	31.59	9.90	2.50	12.40	10.40	50.05	41.99
1977/78 Actual	20.22	42.73	62.95	47.40	5.87	2.81	8.68	6.54	71.63	53.94
1978/79 Actual	19.94	52.72	72.66	48.09	2.69	5.97	8.66	5.73	81.32	53.82
1979/80 Actual	20.75	20.98	41.73	21.20	13.84	11.38	25.22	12.82	66.95	34.02
1980/81 Actual Exp	19.58	24.11(est)	43.69	17.55	15.30	11.97	27.27	10.95	70.96	28.50
1981/82 Approved Ests	29.32	NA								
1982/83 Ests	30.45	NA								
1983/84 Tent Projections	40.04	NA								

Sources to TABLE 13

Sources

- 1) Ministry of Health, Evaluation of the Health Sector, 1979, Appendices (Dar es Salaam: Ministry of Health, September 1980)
- 2) Pg. 294-301, United Republic of Tanzania, Estimates of Public Expenditures for the Year 1st July 1982 to 30th June 1983 Vol. II (Dar es Salaam: Government Printer 1983)

expenditures, the outlook appears bleak, given the sizeable cuts in regional government recurrent expenditures recorded at the beginning of the 1980s.

Third, while there was a sizeable nominal increase in development expenditures recorded for preventive services in FY1980 and 1981 from both central and regional government sources of over three fold between FY1979 and 1981, the real increase was less than a two fold increase due to the high rates of inflation prevailing then, and continuing to the present. Given that recurrent expenditures have traditionally been greater than capital expenditures by anywhere between three and eight fold before 1980, the sudden doubling of capital expenditures has just served to dampen the large absolute reduction recorded in recurrent expenditure support which was earlier provided by the regions.

f. Table 14 provides further evidence on recurrent expenditure patterns envisioned by the central government on preventive health services and selected components such as the MCH Aide program, vaccine supplies and the control of cholera. (There have been several major outbreaks of cholera in Tanzania in the last 5 years (Source: Arusha Regional Medical Office, Dr. Edward Moshi.)) These data suggest that while the preventive services share of the recurrent budget appears to be increasing from about 6.4% in FY1981 to nearly 10% in 1984, the recurrent support to MCH and related nutritional services will likely decline from the already low support provided in FY1981 of 1.7% of the total preventive service expenditures to less than 1% in subsequent

TABLE 14 Total National Government Recurrent Expenditures on Selected Preventive Health Services 1980-1981 (actual) - 1983-1984 (tent. projections)

mill. T.Shs.

Item	Year			
	<u>1980-1981 Actual</u>	<u>1981-1982 Approved Ests</u>	<u>1982-1983 Ests</u>	<u>1983-1984 Tent. Projections</u>
Total MOH Exp	304.19	364.89	355.54	403.35
Total Preventive Services-MOH	19.58	29.32	30.45	40.04
% of Total MOH Exp	6.4	8.0	8.6	9.9
MCHA & Nutrition Services	0.34	0.25	0.22	0.40
% of Total Preventive Services	1.7	0.9	0.7	1.0
Vaccine Supplies	0.98	2.00	1.75	2.50
% of Total Preventive Services	5.0	6.8	5.7	6.2
Cholera Control	2.02	1.45	1.46	1.50
% of Total Preventive Services	10.3	4.9	4.8	3.7

Source for TABLE 14

Source

- 1) Pg. 294-301, United Republic of Tanzania, Estimates of Public Expenditure for the Year 1st July 1982 to 30th June 1983, Vol. II (Dar es Salaam: Tanzania, Government Printer, 1983)

periods through FY1984. In real terms, which account for inflation, MCH and related service program support will likely decline by 43% from 340 thousand T.Shs. in FY1981 to around 194 thousand T.Shs. (1975 T.Shs.) in FY1984.

Vaccines appear to have slightly increased support from 5% in FY1981 to 6.2% in 1984. However, if price increases and population growth are considered, real per capita vaccine expenditures have increased by only 12.3% or from 0.28 T.Shs. per under 5 child in FY1981 to 0.32 T.Shs. envisioned in FY1984 (in constant 1975 T.Shs.). In sum, the MCH program and related services will not be retaining its very minimal support at least from the central government's recurrent budget through 1984. Since the USAID MCH project ended in FY1981, reduced support from the Tanzanian government resources appears to be occurring.

Given the evidence presented in this and earlier sections of the paper on the increasing economic difficulties facing the country and the ability of the government to maintain its financial commitment to sustain the rapidly expanded health care system, it is important to learn more about alternative mechanisms for financing the health care system. In addition, it is important to understand the ability of the non-governmental systems to provide an increased set of services, in response to the reduced capability of the government system to provide care during these adverse economic times.

The central government has increasingly recognized its limited capability to fully finance the recurrent cost of the health care system and other social and human resource programs

which operate at the local level. In 1982 the government enacted legislation which provided local entities with the legal power to reestablish their own self agreed upon taxes or user charges in order to continue to sustain their own local services. This experiment represents one step in a continuing process of decentralization which began over a decade ago and it warrants careful monitoring.²⁰

While these efforts to expand the financial base for the governmentally provided health services represent an encouraging sign, the adverse economic situation, and particularly the decline in official exports which comprises the predominant source of foreign exchange for the country, undermines continued sustainability of the vast system of rural based health facilities. Until the country can enact the appropriate set of economic policies, and regain the confidence of its rural based population to produce and sell via official channels in order to increase foreign exchange earnings, the health care system including preventive services such as MCH will be adversely affected. Increasingly health care services are only provided by non-government providers. Thus, it is important to monitor these other systems to ascertain the utilization and service quality impact of the breakdown in the government system which is indicated by the above changes in financial support which can be provided from central government revenue sources.

Other Economic Aspects of
MCH Program Sustainability

Service Provision

In the above section on demand/utilization (pgs. 22-26) data were reviewed which suggested increased utilization of MCH services at least through 1981 when Tanzania's Ministry of Health conducted its evaluation. It is also of interest to review indicators which may provide an indication about future utilization patterns. In part, such an indication may be obtained by analyzing trends in the availability of key inputs which reflect service quality. These data are summarized in Tables 15 and 16.

In Table 15, a number of indicators are presented which reflect MCH service provision in 1978 and 1981. According to the objectives of the government of Tanzania and USAID/Tanzania,²¹ MCH aides were required in all health facilities to provide a number of MCH/FP related services including: (a) antenatal and post partum care; and (b) child care including weighing, measuring, charting growth, and immunizations. Counseling on child spacing was also provided.

The data in Table 15 suggest the extent to which it was feasible to provide these services in 1978 and 1981. The first three rows of Table 15 show that while nearly 50% of all rural government health facilities reported holding an MCH clinic at least once per week, only one-third held such a clinic with a number of the above mentioned services available on a daily basis. Further only 15% of the dispensaries were providing such

TABLE 15 Indicators of MCH Service Provision, Tanzania
1978 and 1981

Indicator	Median	Range	
		Low	High
A) 1978			
1) Percentage of Rural Government Dispensaries with MCHAs	14.3	4.5	40.6
2) Percentage of Rural Government Dispensaries with at least one MCH clinic per week	49.3	19.5	64.1
3) Percentage of Rural Government Dispensaries with Daily "Integrated" MCH Clinic	33.6	7.1	51.3
4) Percentage of Rural Government Dispensaries with all 6 Vaccines Available	26.2	4.2	48.1
5) Percentage of Rural Government Dispensaries with Vaccine Kit	20.5	4.7	40.0
6) Percentage of Rural Government Dispensaries with under 5 Cards	38.1	6.1	50.6
7) Percentage of Rural Government Dispensaries with Working Frigerators	38.3	25.2	63.6
8) Percentage of Rural Government Dispensaries with Working Child Scales	46.1	19.5	63.6
B) 1981 ²			
1) Percentage of Rural Government Dispensaries with at least one MCH Clinic per week (DMO Response)	53.5 ³	NA	NA
2) Percentage of Rural Government Dispensaries with at least one MCH Clinic per week Dist. (Health Officer Response)	68.8 ³	NA	NA
3) Percentage of Rural Districts with all 6 Vaccines Available	33.3 ⁴	NA	NA
4) Percentage of Rural Government Dispensaries with Vaccine Kits ⁵	37.9 ³	NA	NA
5) Percentage of Rural Districts with "Adequate" supply of under 5 cards ⁶	0.0 ⁴	NA	NA
6) Percentage of Government Rural Dispensaries with Refrigerators ^{5,7}	80.5 ³	NA	NA

Notes and Sources to TABLE 15

Notes

- 1) The unit of observation is the region. See detailed distribution in Appendix Table 1.
- 2) The data presented are from a survey conducted by the MOH in 10 districts throughout the country. There are approximately 100 districts.
- 3) These figures are means, not median figures as is the case for the 1978 data.
- 4) These figures are not based on facilities, rather they are based on district availabilities.
- 5) These figures are estimated based on a reported total proportion for all facilities, including hospitals and health centers as well as rural dispensaries. In developing this estimate, it was assumed that all hospitals and health centers had both vaccine kits and refrigerators. Given the total number of each type of facility, it was then assumed that the remaining items were housed in rural dispensaries.
- 6) An "adequate" supply of cards was based on a determination by the evaluation staff of the number of infants and children in each district in comparison with their count of available cards for each.
- 7) Note that the refrigerator may not be working for a number of reasons, including a lack of fuel as well as non-maintenance and lack of replacement parts.

Sources: For 1978

For 1978:
Ministry of Health, Inventory of Health Facilities, 1978
(Dar es Salaam: Ministry of Health, August 1979)

For 1981:
Ministry of Health, Evaluation of Maternal and Child Health Care Programme in Tanzania, (Dar es Salaam: MCH-Nutrition Unit, Division of Preventive Medicine, August 1982)

TABLE 16 Selected Statistics on Drug Availability and Staffing
Government Rural Health Facilities
Tanzania, 1978-1979

<u>Item</u>	<u>Rural Health Centers</u>	<u>Rural Dispensaries</u>
<u>1) Staffing</u>		
Total Number of Facilities	183	1706
Total Staff	3803	5625
Average Number Staff per Facility	20.8	3.3
Probability of Medical Assistants at Facility	92.9	0.9%
Probability of MCH Aides at Facility	73.2	18.2
<u>2) Availability of Drugs</u>		
Adequate Drugs: % facilities responding Yes	45	41
% RHC with less than 8 drugs	22	--
% Dispensaries with less than 5 drugs	--	22
% Facilities with Valium	63	23
% Facilities with Mexaform	8	15

Sources to TABLE 16

Sources

For item (1) pgs. 25, 26, Ministry of Health, Evaluation of the Health Sector, 1979 (Dar es Salaam: Ministry of Health, October 1980)

Item (2): Ministry of Health, Inventory of Health Facilities, 1978 (Dar es Salaam: Ministry of Health, August 1979)

services with trained MCH aide personnel. The remaining five rows of 1978 data (rows 4-198) further indicate the extent to which it was possible to provide any integrated set of MCH services based on the availability of required complementary service inputs such as a working refrigerator or child scale, growth charts, vaccine kits, or vaccines (irrespective of whether they were efficacious).

From the available data, it is impossible to obtain an accurate estimate of the number of dispensaries which had all complementary resources available and working, including trained personnel, in either 1978 or 1981. Given the vast effort launched in 1976 to vaccinate all children against measles and other diseases without an adequate cold chain and the possibility of an efficacious vaccine at the outset, it may be said that few rural government dispensaries in 1978 were capable of providing a full complement of efficacious MCH services.²²

The data available for 1981 is not fully consistent with that available for 1978. However, several salient points can be made. First, it was encouraging to note that the proportion of rural government clinics with at least a weekly MCH clinic rose in the four year period from about 50% to between 54 and 69%, depending on the source of information. However, the proportion of clinics, or districts with a full complement of other resources necessary to provide an "integrated" set of MCH services appeared to be very small. Further, it was acknowledged that the location of trained MCH aides tended to remain urban oriented, with many aides working in hospitals or other urban

based government or non-government health facilities.²³ Thus, many rural based MCH clinics operating in 1981 were staffed by lesser trained personnel.

Exactly how these resource constraints including those requiring foreign exchange (e.g., vaccine, kerosene to operate refrigerators, scales, paper for growth charts, and vaccine kits) have affected the health status of Tanzanians is unclear. However, many preventable illnesses remain serious health problems in the country, e.g., measles, diarrhea, malaria. During the course of conducting the MCH program evaluation in 1981, a number of MCH aide supervisors, district medical officers, and Ministry of Health officials (n=53) were asked about the principal constraints to the delivery of MCH services.²⁴ The two most frequently mentioned items were (a) lack of transport (n=26) and (b) lack of equipment (n=25). The fourth and fifth most frequent responses were (a) lack of kerosene (n=10) and (b) lack of vaccines and drugs (n=9). The health officials of Tanzania are aware of what happens when foreign exchange is in short supply.

Table 16 summarizes additional information on the availability of key service providing resources at rural based government health facilities in Tanzania in FY1979. First, when per capita drug imports approached the highest levels achieved in Tanzania in 1978 (see Table 4), drug availability in rural health centers and dispensaries was inadequate. Twenty-two percent of all health centers and dispensaries had less than eight and five drugs available respectively. In addition, over 50% of all rural

facilities responded that they did not have an "adequate" supply of drugs. Foreign exchange availability in 1978 and 1979 was certainly greater than it is in 1983.

Second, while the number of trained MCH Aides had rapidly increased to about 1900 in 1978 (Table 3) due to the USAID financed training program, they were not commonly posted in rural dispensaries. Table 16 data shows that while nearly 75% of the rural health centers had MCH Aides, less than 20% of the over 1700 rural dispensaries were so endowed. It can be expected that the quality of those MCH services which were provided at non MCH Aide staffed facilities was lower than at facilities so staffed.

Costs and Program Sustainability

Tanzania's MCH program was designed to operate within the overall program of a rural health facility. It utilized a room in the physical structure of the facility and it required some skilled labor time (the target was and remains an MCH Aide), and some drugs, vaccine, and several pieces of equipment, e.g., a refrigerator, scale, and growth card charts.

The purpose of this section is to provide an estimate of the recurrent cost of various components of the rural based health care system, including the MCH component. Further, projections are made on the basis of these cost estimates of what the recurrent cost of a "fully funded" service (based on FY1979 norms), exclusive of depreciation and additional administrative and system wide logistics costs, might be like through FY1983.

The data presented in Table 17 provides a FY1977 estimate of the marginal or additional recurrent cost per dispensary or

TABLE 17 Average Recurrent Cost of Government Rural Health Centers, Dispensaries and MCH Programs Which Operate at Health Centers and Dispensaries in Tanzania, 1978-79 in Current T.Shs.

Item	Health Center			Dispensary			MCH Program			Percentage MCH Program Costs is of:					
	Local Currency	Foreign Exchange ¹	Total/%Total	Local Currency	Foreign Exchange	Total/%Total	Local Currency	Foreign Exchange	Total/%Total	HC LC	DISP LC	HC FX	DISP FX	TOTAL HC	TOTAL DISP
Personal Envolvements	93,170	--	93,170 37.4	22,807	--	22,807 60.6	7,200	--	7,200 72.7	7.7	31.6	-	-	7.7	31.6
Maintenance & Other Running Costs ³	9,818	9,817	19,635 7.9	--	--	--	--	--	--	0.0	-	0.0	-	0.0	0
Medical Drugs & Supplies	--	104,264	104,264 41.8	--	13,694	13,694 36.4	--	2,700	2,700 27.3	-	-	2.6	19.7	2.6	19.7
Other Expenses ^{2,3}	28,428	3,667	32,095 12.9	562	562	1,124 3.0	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0
Total Cost % Total	131,416 52.7	117,748 47.3	249,164 100.0	23,369 62.1	14,256 37.9	37,625 100.0	7,200 72.7	2,700 27.3	9,900 100.0	5.5	30.8	2.3	18.9	4.0	26.3

Notes and Sources to TABLE 17

Notes

- 1) Foreign exchange has been expressed in Tanzanian Shillings, based on the official rate of exchange prevailing in 1978/79 of about 8.0 T.Shs./US \$
- 2) Includes local transport costs and, in the case of Health Centers, food for inpatients. Does not include supervision and logistic costs necessary to maintain drug supplies.
- 3) It is assumed that 50% of the maintenance and other running costs and the transport cost component of other expenses require foreign exchange using components.

Sources

- 1) For Health Centers and Dispensaries, Ministry of Health, Evaluation of the Health Sector, 1979 Appendices (Dar es Salaam: Ministry of Health, September 1980) Actual expenditure data from six of the twenty regions.
- 2) The costs of an MCH program in Fiscal Year 1979 were estimated from Appendix Table B.3.

health center of operating an MCH program, exclusive of (a) the depreciation costs on a kerosene refrigerator and a scale, and (b) the maintenance costs of an additional room in the facility. Further, no supervision costs or logistics costs of moving medical supplies are included in these estimates. Finally, the average recurrent cost per health center and dispensary is based on data gathered from six of the twenty regions in the country. Thus, the figures presented in Table 17 represent the average cost of operating a health center or a dispensary, exclusive of a MCH program in those regions during FY1979. In order to determine the average recurrent cost of a rural health facility which includes a MCH program, the additional cost of that program would be added to the facility specific cost shown in the Table.

The data contained in Table 17 stresses the importance of several points. First, the primary cost items of rural health centers, dispensaries, and related MCH programs are personnel, drugs and supplies. The proportions vary from facility and program type, but these cost items together comprise between 80 and 100% of total recurrent costs.

Second, when the costs are disaggregated according to financial resource requirements, the foreign exchange component in FY1979 varied from about 25 to 50% of total recurrent costs with most of the foreign exchange being required for the drugs and medical supplies which are imported. (Recall that nearly all of the drugs used in Tanzania are imported.) If the system wide costs of supervision and logistics and equipment depreciation

were included in these estimates, the foreign exchange cost component would rise above the figures shown.

While it is conceivable that some import substitution can and will occur in the drug and medical supplies area, and that Tanzania may find a local source of oil to reduce the foreign exchange composition of health care service provision, these changes will not likely occur in any substantial way in the next five to ten years. Even if domestic drug and medical supply production expands rapidly in the future, many foreign exchange using raw materials will be used. Thus, the high dependence on foreign exchange will not disappear in the near term.

A final point with respect to the foreign exchange issue in the delivery of health services in Tanzania is that since the late 1970s (perhaps 1978 or 1979), the official rate of exchange between the Tanzanian shilling and other "hard currencies", e.g., the U.S. dollar has been overvalued. While there have been at least three devaluations between 1979 and mid 1983 the currency must be devalued even more. As of the end of June 1983, the official rate of exchange was 12.2 T.Shs. per \$1. However, the black market rate was at least five to eight times higher.

The importance of the above discussion with respect to the health sector is that the proportions of total recurrent cost comprised by foreign exchange using inputs under conditions presently prevailing in Tanzania are understated in Table 17. The real resource cost, expressed in local currency terms as of FY1984 which included the unofficial discount on local currency with respect to foreign exchange, would substantially increase

the proportion of total recurrent cost going to foreign exchange using inputs.

Finally, the data presented in Table 17 shows that the marginal cost of a MCH program at a dispensary without such a program would increase the cost of operating that facility by about 26% in FY1979 T.Shs. In contrast, a MCH program would increase the cost of a health center by only 4%. In both instances, local currency, labor costs would increase the most.

The recurrent expenditure estimates embodied in Table 17 provide facility and program specific estimates as of FY1979, disaggregated between local currency and foreign exchange component costs. In Table 18, the data embodied in Table 17 as well as other tables in the text (see Table 18 sources for specifics) are utilized to obtain an estimate of what government expenditures might be required to fully fund the rural health care system with MCH services in Tanzania through 2400 publically operated rural based facilities which existed as of 1980 in FY1983 in the manner which they were funded in FY1979.

Various scenarios are depicted in Table 18, for FY1979, 1981 and 1983. These scenarios are based on assumptions about economies of scale, domestic inflation and the shadow price of foreign exchange. These assumptions are explicitly defined and detailed in the notes to the Table. Briefly, these assumptions are: (a) there are no significant economies or diseconomies of scale with respect to facility specific operations as well as system wide activities; (b) health service input costs have increased at the rate at which Tanzania's consumer price index

TABLE 18 Recurrent Cost Estimates of a Fully Funded Government Rural Health Care Service, Including MCH Aide Services in Tanzania, 1978-79 T.Sns. and 1982-83 T.Shs^{1,2}

	<u>Local Currency Expenditure</u>	<u>Foreign Exchange Expenditure³</u>	<u>Total Recurrent Expenditure</u>
I. Health Centers n=235 x 249,164 T.Shs/HC	30,882,760	27,670,780	58,553,540
II. Dispensaries n=2,134 x 37,625 T.Shs/Disp	49,869,446	30,422,304	80,291,750
Sub Total	80,752,206	58,093,084	138,845,290
III. MCH Aide Program ⁴ n=2,369 x 9,900 T.Shs/MCHA program	17,056,800	6,396,300	23,453,100
Totals in 1978/79 T.Shs.	97,809,006	64,489,384	162,298,390
A) Estimated Total Recurrent Expenditures in 1982/83 T.Shs. Inflation rates based on Tanzanian CPI, in mil. T.Shs. ⁵	272.496	179.666	452.162
B) Estimate A 1982/83, but relaxing the official rate of exchange, and calculating FX at its estimated economic value which is between 5 and 8 fold higher. This estimate uses the lower figure and is expressed in mil. of T.Shs.	272.496	898.330	1,170.826
C) Estimated total recurrent expenditures in 1980/81 T.Shs. Inflation based on Tanzanian CPI, in mil. T.Shs. ⁵	161.189	106.278	267.467
D) Actual total recurrent expenditures (Natl. & Regl.) on health centers, dispensaries, and <u>all</u> preventive services, including MCH, 1980/81, mil. T.Shs.			198.52
1. % rural health service program recurrent expenditures were actually funded in 1980/81 (D):(C)			70.8
2. % estimated total recurrent expenditures of rural health service program embodied in estimates A, B, and C is of total Government Health Sector expenditures.			
Estimate C 1980/81			37.7
Estimate A 1982/83 ⁷			51.4
Estimate B 1982/83, FX			130.2
3. % estimates A, B and C medical supplies and pharmaceutical foreign exchange cost component is of total imports of medicinal and pharmaceutical products ⁶			
Estimate C 1980/81		37.2	
Estimate A 1982/83		79.1	
Estimate B 1982/83, FX shadow priced at 5 times official rate		395.6	

Notes and Sources to TABLE 18

Notes

- 1) The number of health centers and dispensaries used for this projection is the number the government was operating in 1980. These numbers undoubtedly represent a conservative estimate of the numbers of such facilities which have been built, and, at least initially staffed.
- 2) These estimates do not consider any possible economies or diseconomies of system expansion, nor is any account taken of economies or diseconomies of service provision at the facility level as utilization at each facility and within each MCH program may vary over time.
- 3) Foreign exchange expenditure is expressed in T.Shs. according to the official rate of exchange in effect at that time. In 1978/79 the rate was about 8.0 T.Shs./US.
- 4) For purposes of this exercise it is assumed that all health centers and dispensaries were staffed with MCH aides. This was actually not the case. Many aides were not working in dispensaries or any rural based facility. More detailed information on the location of trained MCH aides is found in Donald Minkler, et al, End of Project Evaluation, Maternal and Child Health Aide Training Project, #621-0121, Draft Report for USAID, May 1983.
- 5) Tanzania's CPI in 1980/81 was 1.65 times and in 1982/83 is estimated to be about 2.79 times as high as it was in 1978/79 given the 30 plus percent rate of inflation over the intervening four year period. While the rate of increase in government salaries did not increase at that rate, the prices of other items used in health care service provision probably exceeded this rate. Thus, these figures are meant to provide an order of magnitude.
- 6) For purposes of this exercise, it is assumed that 85% of total foreign exchange related expenditures were for drugs and medical supplies. This estimate is conservative based on the data presented in Table 17.
- 7) In Table 12, data are presented which show that regional health recurrent expenditures varied between 17 and 21 percent of total regional government recurrent expenditures over the 1973/74 - 1981/82 period. It is assumed that 17% of regional recurrent expenditures were spent on health in 1982/83 as well.

Sources

Tables: 2, 4, 11, 12, and 17 of text

has increased; and (c) foreign exchange is under valued by at least five fold as of mid 1983. Finally the estimates presented in Table 18 do not include logistics and supervision costs required to make such a widely dispersed rural system operational. Thus the expenditure figures presented in Table 18 are likely on the conservative side.

The data and scenarios presented in Table 18 lead to the following conclusions. First, by FY1981, the rural based health care system of health centers and dispensaries and their related MCH programs were being under-funded by at least 30%, based on the FY1979 norm. The actual extent of under-funding is probably greater since the service system size, in terms of the number of facilities, in this analysis was based on 1980 figures and the actual expenditure level for FY1981 is based on a figure which includes all recurrent expenditures on all preventive services, not just MCH services. According to national expenditure figures presented in Table 14, MCH service expenditures represented a small share of total preventive service expenditures.

Second, by FY1983 the estimated recurrent expenditures of the rural health care system, including MCH services to maintain FY1979 norms, would comprise an even larger share of actual budgeted recurrent expenditures for that year than was the case in FY1981. In FY1981 the total recurrent expenditure for the rural based system would take about 38% of total government health expenditures and this figure would rise to about 51% in FY1983. If foreign exchange costs were "shadow priced" according

to the mid 1983 rates prevailing in the "black market" the figure would soar to 130%.

Third, to maintain drugs and medical supplies at levels prevailing in the rural health care system in FY1979, sufficient foreign exchange would be required to import those items. Thus, the foreign exchange component of the recurrent expenditures of the government rural based system must be separately reviewed. The analysis presented in Table 18 suggests that an ever increasing share of total imports of drug and related medicinal items would be required to maintain the rural health care system's use of such resources at the level which was in existence in FY1979. However, this share has not increased. Thus, significant reductions in foreign exchange using inputs have occurred throughout all rural government facilities. As a consequence, the adverse health service provision impact due to under financing has clearly occurred.

Concluding Statement

Tanzania has been committed to the pursuit of a better way of life for all of its citizens. It has made significant resource commitments to the provision of health care throughout all parts of the country. The MCH program, in part financed by AID, represents only one of a number of complementary investments made by the country to achieve its honorable goals. However, by pursuing certain inappropriate economic policies, particularly with respect to agriculture, it has uncoupled the rural and urban sectors of its economy and has lost, at least for the present its capacity to import necessary resources to sustain its entire

economy, including its health sector, and its MCH program. The country's past achievements made toward its goal of equitable economic development has been seriously undermined by virtue of the economic situation which presently prevails. The government is working hard on changing its agricultural pricing and other related policies. However, it will take some time before the situation can be restored.

FOOTNOTES

1. See Julius Nyerere, Ujamaa: Essays on Socialism (Dar es Salaam: Oxford University Press, 1968).
2. Oscar Gish, Planning the Health Sector (New York: Holmes and Meier, 1975).
3. USAID Project Paper for the Maternal and Child Health/Family Planning Program in Tanzania (Dar es Salaam: USAID/Dar es Salaam, 1973).
4. See Appendix A for a more detailed analysis of the performance of the agricultural and industrial sectors of the Tanzanian economy and how they have contributed to the economic crisis facing the country.
5. Table 4.1, pg. 98, World Bank, Economic Memorandum on Tanzania, Report #3086-TA (Washington, DC: World Bank, January 23, 1981).
6. USAID/Dar es Salaam, Internal Economic Memorandum, 1983.
7. Tanzania Daily News, June 2, 1983.
8. Table 6, pg. 57, IMF, Taxation in Sub-Saharan Africa, Occasional Paper #8 (Washington, DC: IMF, October 1981).
9. The actual peak was in 1975 but is not shown on Table 8, for summary reasons. The constant per capita imported amount was over 13 T.Shs. in 1975 Shs.
10. See the note on Table 4 which more completely treats the issue of preferred price indices.
11. See Appendix A, Table A.3 for further information on imports of petroleum relative to all imports.
12. I.D. Thomas and A.C. Mascarenhas, Health Facilities and Population in Tanzania, Part I - Hospitals in Tanzania and Population with Given Distances of Their Sites, Research Paper No. 21, 1, (Dar es Salaam: BRALUP, University of Dar es Salaam: January 1973).
13. Holly Caldwell and David W. Dunlop, "An Empirical Study of Health Planning in Latin America and Africa" Social Science and Medicine, 13(1979).
14. If this analysis were disaggregated to the district level, even larger variations would emerge.

15. For a further elaboration of the concept of equity and the empirical differences between various definitions, see David W. Dunlop and Holly Caldwell, "Priority Determination for the Provision of Health Services: An Economic and Social Analysis", Social Science and Medicine, 11, 6 (June 1977) 471-475.
16. Ministry of Health, Evaluation of Maternal and Child Health Care Programme in Tanzania (Dar es Salaam: MCH-Nutrition Unit, Division of Preventive Medicine, August 1982).
17. See study by Lloyd Swantz, The Role of the Medicine Man Among the Zaramo of Dar es Salaam, Ph.D. Dissertation, University of Dar es Salaam, 1974.
18. See Tables II.Box 2, 13, and 14 in Michael Schultheis and Lalita Seshamani, "Rural Development and Incentives: A Comparative Study of Village Development in the Southern Highland Regions of Tanzania" (Dar es Salaam: Economic Research Bureaus, University of Dar es Salaam, August 1982).
19. Similar findings have been reported by Germano Mwabu which he conducted in rural Kenya (Meru district). See Germano Mwabu, "Health Care Decisions at the Household Level: Results of a Rural Health Survey in Kenya" Paper presented at the NCIH Conference on Financing Primary Health Care, Washington, DC, June 1982.
20. Julius Nyerere first expoused the principles underlying Tanzania's decentralization in a speech in 1972, see Julius Nyerere, "Decentralization", speech given to the Tanu National Executive Committee in Iringa, 1972, Department of Development Studies, University of Dar es Salaam. Some of the input to enact the 1982 legislation is based in part on encouraging preliminary results which occurred in the Hanang District Health Project which AID assisted where experimental efforts of local revenues generation were encouraging. See USAID/Tanzania, "PES Hanang District Health Project" (Dar es Salaam: USAID/ Tanzania, October 3, 1981).
21. See USAID/Tanzania, Project Paper for the Maternal and Child Health/Family Planning Programme, Tanzania (Dar es Salaam: USAID/Tanzania, 1973).
22. Personal discussions with MOH officials and University of Dar es Salaam Medical School faculty, January 1977.

23. See pgs. 26 and 27, MOH Evaluation of Maternal and Child Health Care Programme in Tanzania (Dar es Salaam: MCH-Nutrition Unit, Division of Preventive Medicine, August 1982) and pgs. 50-54, Donald Minkler, et al, End of Project Evaluation, Maternal and Child Health Aide Training Project #621-0121, Draft Report for USAID/Tanzania May 1983.
24. Table XI, pg. 51, MOH Evaluation of Maternal and Child Health Care Programme in Tanzania op cit, 1982.

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3. David W. Dunlop, "Health Care Financing: Recent Experience in Africa", Social Science and Medicine, 17(1983).
4. David W. Dunlop and Holly R. Caldwell, "Priority Determination for the Provision of Health Services: An Economic and Social Analysis", Social Science and Medicine, 11, 6(June 1977), 471-75.
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13. Andrew Keeler, et al, The Consumption Effects of Agricultural Policies in Tanzania, Final Report AID Contract #DSAN-C-0271, (Raleigh, North Carolina: Sigma One Corp., January 1982).
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18. Germano Mwabu, "Health Care Precisions at the Household Level: Results of a Rural Survey in Kenya", Paper presented at the NCIH Conference on Financing Primary Health Care, Washington, DC: June 1982.
19. Julius Nyerere, "Decentralization", Speech given to the Tanu National Executive Committee in Iringa, 1972, Department of Development Studies, University of Dar es Salaam.
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21. Alberto Ruiz de Gamboa, "Tanzania's Import System, Value, Volume, Composition, Sources and Future Import Needs", USAID/Dar es Salaam, paper, April 1983.
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APPENDIX A

The Economic Performance of
Tanzania's Agricultural and Industrial
Sectors

Agriculture

While the government has emphasized agriculture and rural development as essential to the continued socio-economic development of Tanzania since the Arusha Declaration in 1967, resources have not been committed in ways to reflect that emphasis, nor have agricultural policies reflected this concern, although recently there has been an increased recognition of the importance of agricultural incentives and reducing direct government involvement in the procurement and sale of agricultural commodities.¹ In October, 1982, President Nyerere conceded that agriculture had been neglected by saying " ... We are neglecting agriculture ... We must now stop this neglect of agriculture. We must now give it the central place in all our development planning. For agriculture is indeed the foundation of all our progress."²

On June 5, 1983, the government devalued the currency from 9.5 T.Shs. to 12.2 T.Shs. per dollar. One of the reasons mentioned for the devaluation was to be able to pay farmers producing export commodities more (in Tanzania Shs) than they had been paid previously without incurring additional foreign exchange related costs. This move, along with the publication of the government's agricultural policy paper marked the beginning of implementation of a new set of policies designed to facilitate an improvement in the economic situation.

One other event - the drought of the mid 1970s, particularly 1974 - has significantly affected the agricultural policies of Tanzania. Food imports, particularly via PL480, Title I,

provided much needed assistance during the height of the drought period in 1974 and 1975. However, to counteract the implied dependency of food aid, and maintain the country's self-reliance, the government implemented a set of price and procurement policies in order to provide a buffer stock of traditional food supplies against future droughts in rural areas. It established a set of government procurement prices for sorghum, millet and cassava which provided farmers a greater return than if they continued to produce the preferred food staples of maize, rice or wheat or produce export crops such as cotton. As a consequence, farmers responded accordingly and by 1979 large surpluses of such drought resistant staples piled up at the procurement sites operated by the National Milling Corporation and caused a major storage problem. The price incentives employed by the government to expand drought resistant crop production were finally altered in 1979, and the government stopped procurement during the 1981-82 year.

To obtain a better awareness of the importance of agriculture to the Tanzanian economy, particularly with respect to the availability of foreign exchange and its contribution to the performance of other sectors, particularly manufacturing, and including health, it is instructive to review the data presented in Tables A.1 through A.4.³ In Tables A.1 and A.2 data are presented on trends in the production and real prices paid to producers of selected primary export and food crops. Table A.1 provides information on such export crops as coffee, tea, sisal,

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APPENDIX
TABLE A.1

Trends in Volume of Principal Agricultural Exports and
Real Producer Prices, Tanzania
1967-80

Year	Crop Volume (1968 - 1970 = 100)				
	Coffee	Tea	Sisal	Cotton	Cashew
1967	94	86	106	101	76
1970	94	97	112	101	100
1973	126	130	60	100	146
1976	120	164	47	96	97
1979	92	152	40	48	70
1980	104	152	42	58	60
	Real Prices (1969/70 = 100)				
1969/70	100	NA	NA	100	100
1973/74	66	NA	NA	64	62
1979/80	53	NA	NA	65	47

Sources to APPENDIX TABLE A.1

Sources

- 1) Table 2, pg. 11, Andrew Keeler, et al. The Consumption Effects of Agricultural Policies in Tanzania Final Report by Sigma One Corp., Prepared for AID (Raleigh, NC: Sigma One Corp., January 1982)
- 2) Tables 4, 6, pg. 106, World Bank Tanzania Agricultural Sector Report, #4052-TA (Washington, DC: World Bank, September 27, 1982)

APPENDIX
TABLE A.2

Trends in Official Food Crop Procurement and Real Producer
Prices, Tanzania
1969-1982

<u>Year</u>	Official Purchases in (oo Tns)		
	<u>Maize</u>	<u>Rice</u>	<u>Wheat</u>
1970/71	186.4	62.7	42.0
1972/73	106.4	49.0	46.8
1974/75	23.9	15.2	14.4
1976/77	127.5	14.9	23.0
1978/79	220.4	34.5	27.5
1980/81	103.8	13.4	26.9
1981/82	90.0 (E)	14.0	25.0
	Real Producer Prices (1969/70 = 100)		
1969/70	100	100	100
1973/74	72	67	61
1979/80	87	70	57

Sources to APPENDIX TABLE A.2

Sources

Table 4.6, pg. 106 and Statistical Appendix Table 1.4, pg. 200
World Bank, Tanzania Agricultural Sector Report, #4052-TA
(Washington, DC: World Bank, September 27, 1982)

APPENDIX
TABLE A.3 Trends in Tanzanian Import Composition
1967-1981

Year	Consumer Goods		Intermediate Goods steel	Production Inputs		Capital Goods	Other	Total Imports Million \$US	
	clothes cars	food		petrol raw materials chemicals	petroleum			transport equipment machinery	(current \$)
1967	27.9	10.9	16.6	17.3	8.7	27.5	10.7	227.2	424.7
1969	25.3	8.7	12.9	22.4	10.2	25.9	13.5	239.5	407.3
1971	15.5	6.7	17.7	22.1	9.4	35.6	9.1	331.3	578.6
1973	19.5	7.9	16.8	29.9	17.1	28.7	5.1	494.1	645.9
1975	24.6	17.8	12.6	25.7	11.9	30.5	6.6	679.3	679.3
1977	17.7	8.9	11.5	26.6	13.9	37.5	6.7	732.3	591.0
1979	10.1	3.5	11.3	25.5	13.8	46.9	6.2	1066.3	699.2
1981	13.6	9.2	8.5	32.8	22.3	39.9	5.2	1214.7	623.6

Sources to APPENDIX TABLE A.3

Sources

Tables 5 and 7, Alberto Ruiz de Gamboa, "Tanzania's Import System, Value, Volume Composition, Sources and Future Import Needs", USAID/Dar es Salaam Paper, April 1983

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APPENDIX
TABLE A.4

Trends in Sectoral Shares of GDP by Industrial Origin
Tanzania, 1966-1979 (in constant 1966 prices)

Percentage Share

<u>Year</u>	<u>Ag</u>	<u>Manufacturing</u>	<u>Total Monetary GDP</u>	<u>Subsistence Pdtn.</u>
1966	21.6	8.1	68.5	31.5
1970	20.7	9.3	71.6	28.4
1973	18.5	10.1	72.2	27.8
1975	16.4	9.5	72.0	28.0
1977	16.8	9.4	70.7	29.3
1978	16.1	9.2	69.5	30.5
1979	16.2	8.3	68.6	31.4

Source to APPENDIX TABLE A.4

Source

Table 2.2, pg. 84, World Bank Economic Memorandum on Tanzania, Report #3086-TA
(Washington, DC: World Bank, January 23, 1981)

cotton and cashew nuts, and Table A.2 reviews these same data for maize, rice and wheat.

The data in Table A.1 show that, with the exception of coffee and tea, the total quantity produced, harvested, and sold to government procurement authorities declined significantly from 1967 to 1980. Coffee production remained constant, only because the initial investment in coffee trees had been made earlier, when real prices were higher. Tea production increased because the investments made by small producers and larger holdings only began to produce at the beginning of the 1970s. The prices paid to producers were also high at the outset in order to encourage initial investments. The decline in real producer prices for cotton and cashew nuts contributed to the secular decline in output of these two commodities. Sisal production also fell, largely because the international market for natural fibers declined as a result of the introduction of synthetic fibers in the manufacture of rope and twine. The large sisal plantations which operated in Tanzania did not continue to re-plant and maintain their existing plants, since international prices had not kept pace with other costs of production including wages.

To summarize, these data show that while there were fluctuations in output volume from year to year due to weather and other factors, the fact that real producer prices, declined over the decade of the 1970s indicated that there was a reduced incentive to produce for export via official channels. Where land could be reallocated on an annual basis, as in cotton production, other commodities such as the drought resistant food

staples of sorghum, millet and cassava were often substituted during the latter half of the 1970s.

The data in Table A.2 support two important points. First, the real price trends for the three preferred staples have been down, with a slight rebound in real maize prices since 1973-74. Secondly, this downward trend in real producer prices, in conjunction with the drought of the mid-1970s and the changes in the institutional characteristics of Tanzanian agriculture resulting from the development of Ujamaa villages has meant that, with the exception of 1978 and 1979 maize purchases, official government procurement of surplus production of these preferred staples was never as large as it had previously been before the drought. In the last two most recent years, 1981 and 1982, procurement had fallen to levels approaching the mid-1970s drought period.

These data dramatically point out the significance of prices as a principle mechanism for linking a rural and urban economy, and how, by not paying attention to relative prices, an economy can be pulled apart and can result in additional costs being paid by the entire economy in using a country's scarce foreign exchange to procure sufficient food imports to maintain urban populations. While there is little systematic quantitative information available, enough is known about the ready availability of Tanzanian commodities, including food staples in all neighboring countries. Prices paid to Tanzanian producers in neighboring countries and in foreign exchange have been very attractive, relative to the prices paid by official procurement

institutions, such as the National Milling Corporation. Without sufficient food procurement occurring from domestic rural suppliers, the country, via the National Milling Corporation, had had to use its scarce foreign exchange to increase its importation to maize, wheat and rice at such a time when the availability of foreign exchange via exports has been falling. (Refer to Tables A.1, A.2 and Text Table 1.)

Given the above discussion with respect to agricultural policy and related trends in the production of key agricultural commodities and their impact on the sources and uses of foreign exchange, it is useful to review the trends in the Composition of Tanzanian Imports from 1961 to 1981 as depicted in Table A.3. First, and perhaps most important, is the fact that petroleum and related products increased its share from 8.7% to over 22% between 1967 and 1981. It also increased its share of production inputs imported from about 50% in 1967 to over 67% in 1981. According to unofficial data for the first 6 months of 1983, petroleum imports comprised perhaps as much as 80% of all imports, given the serious shortage of foreign exchange.

Second, consumer and intermediate goods imports have declined over the period, with local production or "doing without", being the policy choices made. The primary reason for the variation in consumer goods imports has been due to the variation in domestic food grain supplies being available in the urban areas of the country and primarily in Dar es Salaam. It is important to note that the importation of food has increased its share of consumer goods imported from less than 40% in 1967 to

over 67% in 1981, thus reflecting an ever greater foreign exchange constraint, with the necessity of food receiving an increasingly larger share of the available foreign exchange, despite the aforementioned government food stock piles of traditional food supplies. This trend occurred due to transport difficulties between food surplus and shortage areas, food deterioration in storage areas, and food preference pattern changes (especially in urban areas).

Third, while Table A.3 shows that total imports valued in current US dollars has increased by over five fold since 1967, if one deflates the imports into constant value terms, the real physical quantity of imports has probably only increased by about 50% during the 1967-1981 period which is about the same percentage increase as has occurred in the size of the population over the same period.⁴ In addition, most of the increase, perhaps 90%, in the real value of imports occurred prior to 1975. Thus, the per capita value of imports has eroded since that time.

Industrialization

Table A.3 also clearly indicates that the availability of key imports for the manufacturing sector in the form of intermediate goods, production inputs, net of petroleum, and capital items such as machinery has not significantly increased its share of imports over the 1967-1981 period, growing from about 50% of imports in 1967 to perhaps 58% in 1981. This lack of growth in the share, in conjunction with the static real value

of imports over the 1975-81 period and a significant decline since, has meant that the foreign exchange constraint has been increasingly binding on the manufacturing sector. This constraint, thus, represents one very important reason for the poor performance of Tanzania's industrial sector.

While some of the problems can be attributed to an "inefficient parastatal organizational structure" of many of Tanzania's industrial firms, it is clear that the foreign exchange constraint as manifested in the lack of growth in real imports for the manufacturing sector must be recognized as a fundamental factor contributing to the problem as well. The foreign exchange constraint is even more binding on efforts to expand manufacturing output as (a) the number of firms expand, thus creating more competition for the limited number of imported items or licenses to import, and (b) the number of years increase before normal maintenance and spare part replacement occurs.

Thus, the lack of growth in agriculture, either directly to expand exports, or indirectly via food production increases which, if handled in an efficient manner, could reduce the use of available foreign exchange to import food for the urban centers, has contributed to a realteration of the structure of the Tanzanian economy away from a manufacturing base which had been expanding more rapidly than other sectors of the economy until 1974. Since that time, its growth has been slower, and since 1980, its contraction more rapid than other sectors. These trends are depicted in the data shown in Table A.4. According to data available to USAID/Dar es Salaam, in mid 1983, the capacity

utilization in most manufacturing firms was 50% or less. a misguided set of organizationally imposed incentives, in conjunction with the lack of foreign exchange has contributed to a virtual collapse of manufacturing output, some of which is important to maintaining the existing production in the agricultural sector.⁵

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APPENDIX A FOOTNOTES

1. In 1982 the World Bank sent an agricultural mission to Tanzania which resulted in a serious discussion on agricultural policy within the Tanzanian Government. This discussion led to at least one government white paper on agriculture and a government agricultural policy paper. Significant changes have been set into motion. See Ministry of Agriculture, The Agricultural Policy of Tanzania (Dar es Salaam: Government Printer, March 31, 1983) and World Bank, Tanzania Agriculture Sector, Report #4052-TA (Washington, DC: World Bank, September 27, 1982)
2. Pg. V, Quoting J. Nyerere, October 20, 1982, in Ministry of Agriculture The Agricultural Policy of Tanzania, op cit, 1983
3. Unfortunately the data presented in Tables A.1, A.2, A.3 and A.4 are not completely up to date, i.e. through 1982. However, they do illustrate the trends which were in place in the late 1970s and which generally have continued until mid 1983.
4. The preferred deflator, a Tanzanian specific import price index is unavailable. To obtain some rough order to magnitude of the inflation factor embodied in the current dollar import figure, the world consumer price index was used to reflect, perhaps somewhat incorrectly, the trends in prices which Tanzania would be paying for the items

APPENDIX B

Selected Statistics on MCH Services,
Use and Recurrent Cost at
Tanzania's Rural Government Dispensaries

APPENDIX
TABLE B.1

Selected Statistics on Utilization, MCH Services at Rural Government Dispensaries,
Tanzania, 1978

Region	1978 Average Daily Attendance	Average # Visits Per Capita Per Year	Percentage Dispensaries with ...							
			MCHA	at Least One MCH Clinic/Week	Daily Integrated MCH Clinic	All 6 Vaccines	Under 5 Cards	Working Refrigerators	Working Child Scale	Vaccine Kits
Arusha	67	2.3	39.5	51.3	40.8	38.2	50.0	60.5	46.1	32.9
Coast	65	3.3	22.0	54.1	48.2	35.3	43.5	62.3	47.1	40.0
Dar es Salaam	55	NA	NA	64.3	42.9	21.4	57.1	64.3	64.3	28.6
Dodoma	76	2.5	11.2	49.6	43.2	25.6	15.2	45.6	47.2	30.4
Iringa	58	2.8	29.1	44.0	26.0	27.0	41.0	46.0	41.0	21.0
Kigoma	62	1.9	22.9	31.4	7.1	22.9	17.1	31.4	20.0	7.1
Kilimanjaro	87	2.8	31.2	59.7	37.7	48.1	50.6	63.6	63.6	31.2
Lindi	82	4.4	14.1	30.6	17.6	24.7	30.6	32.9	36.5	12.9
Mara	76	2.5	14.3	19.5	14.3	15.6	11.7	36.4	19.5	10.4
Mbeya	56	1.7	19.0	55.2	34.3	27.6	38.1	45.7	44.8	30.5
Morogoro	100	4.4	10.3	29.9	19.6	26.2	26.2	38.3	32.7	10.3
Mtwara	89	3.1	25.6	57.0	51.2	38.4	29.1	48.8	48.8	14.0
Mwanza	71	2.3	8.8	22.4	13.6	13.6	6.1	25.2	27.2	14.3
Rukwa	74	2.5	20.0	38.0	8.0	20.0	24.0	26.0	32.0	16.0
Ryvuma	79	3.6	9.8	42.6	11.5	9.8	32.8	34.4	47.5	11.5
Shinyanga	74	2.4	11.2	38.8	33.6	17.2	14.7	32.8	38.8	24.1
Singida	68	1.8	4.5	39.4	27.3	28.8	42.4	37.9	40.9	30.3
Tabora	77	3.1	6.8	63.0	37.0	8.2	31.5	60.3	53.4	27.4
Tanga	57	2.7	35.9	64.1	51.3	47.0	47.9	59.8	54.7	20.5
West Lake ¹	59	1.6	12.7	49.3	36.6	4.2	42.3	29.6	63.4	11.3
Zanzibar	47	2.2	40.6	53.1	14.1	25.0	45.3	29.7	64.1	4.7

Note and Source to APPENDIX TABLE B.1

Note

1) Excluding Bukoba District

Source

Ministry of Health, Inventory of Health Facilities, 1978
(Dar es Salaam: Ministry of Health, August 1979)

APPENDIX
TABLE B.2

Selected Statistics on Births, Staffing and Drug Availability at Rural Government Dispensaries,
Tanzania, 1978

Region	Number Deliveries/ Month at Government Rural Disp.	Percentage of All Births in Region	Average Number Staff Per Facility	Percentage Dispensaries Reporting Adequate Drugs	Percentage Dispensaries With Less Than 5 Drugs
Arusha	193	5.4	3.6	30.3	57.9
Coast	362	8.3	2.9	25.9	25.9
Dar es Salaam	15	0.5	3.6	14.3	0.0
Dodoma	352	9.2	3.6	15.9	23.8
Iringa	168	4.3	3.1	40.0	7.0
Kigoma	165	6.6	2.6	25.7	37.1
Kilimanjaro	522	14.4	4.7	35.1	39.0
Lindi	318	18.3	2.6	35.3	23.5
Mara	108	3.7	2.6	41.6	45.5
Mbeya	442	10.4	2.9	22.9	20.9
Morogoro	452	12.6	3.2	23.4	16.8
Mtwara	413	14.5	3.2	30.2	24.4
Mwanza	362	6.9	2.7	37.4	36.1
Rukwa	233	14.2	3.4	34.0	10.0
Ruvuma	216	9.6	2.7	26.2	13.1
Shinyanga	996	22.5	3.9	24.1	36.2
Singida	223	10.1	3.2	13.6	33.3
Tabora	626	22.7	3.2	24.7	39.7
Tanga	820	19.1	3.0	21.4	62.4
West Lake ¹	216	8.2	3.5	52.1	18.3
Zanzibar	132	6.9	4.0	0.0	64.1

note and source to APPENDIX TABLE B.2

Note

Excluding Bukoba District

Source

Ministry of Health, Inventory of Health Facilities, 1978
(Dar es Salaam: Ministry of Health, August 1979)

APPENDIX
TABLE B.3

Estimated Annual Recurrent Cost of MCH Services at
Rural Government Dispensaries, Tanzania, 1983

I. Cost of MCH Program

Staffing at Dispensaries

MCH Aide	750 TShs/Month x 12 Months	9,000 TShs
Other Costs ¹		
Under 5 Cards		
Vaccines		
Misc. Supplies, e.g. cotton, etc.	Est. 100 Shs/Month x 12 Months	1,200
Kerosene for refrigerators	Est. 150 Shs/Month x 12 Months	1,800
Estimated Total Recurrent Cost of MCH Program Perdispensary		12,000 TShs per Year

II. Average Recurrent Cost Per MCH Ante-natal Clinic Attendance, 1982

Bahi Dispensary, Dodoma Region (include first and reattendances)	2.13 TShs ^{2,3}
Kifura Dispensary, Kigoma Region (include first and reattendances)	0.80 TShs
Mikalanga Dispensary, Ruvuma Region (include first and reattendances)	2.18 TShs
Shishomi Dispensary, Mwanza Region (include first and reattendances)	1.53 TShs
Miono Dispensary, Coast Region (include first and reattendances)	1.86 TShs

Notes and Source to APPENDIX TABLE B.3

Notes

- 1) These "other costs" are expressed in official exchange rate terms, not in "black market" terms. These costs would have to be increased by a factor of between five and eight to reflect the real value of foreign exchange.
- 2) These figures are high since the utilization figures of immunization clinics and young child clinics are not reported. Thus the total cost of the MCH program was only allocated to the ante-natal clinic activity. The actual average cost of the ante-natal clinic program was probably one third this level given the country utilization data available from previous years. See Table 15. Thus, the average recurrent cost probably varied between 0.27-0.72 T.Shs.
- 3) The average cost figures vary across dispensaries due to service utilization variations.

Source

Ministry of Health, June 1983, Interviews and selected statistics on attendances at MCH ante-natal clinics