Chapter 2

Profile of the Study Area

2 Profile of the Study Area

2.1 The Study Area

The Study Area covers thirty nine wards of the fifty two wards under the jurisdiction of the Dar es Salaam City Commission as shown in Table 2-1 and Figure 2-1, representing an area of 439.9 km^2 out of the total area, 1,350 km^2 in the Dar es Salaam (DSM) region. The population covered by the Study is approximately 2 million of the total population of 2.3 million in 1996.

Table 2-1: List of Wards within the Study Area

Ilala		Kinondoni		Temeke	
Ward Name	Area(km^2)	Ward Name	Area(km^2)	Ward Name	Area(km^2)
Kariakoo	0.7	Mzimuni	1.5	Mbagala	26.0
Mchafukoge	0.6	Magomeni	1.4	Yombo Vituka	17.1
Gerezani	0.9	Ndugumbi	1.1	Kigamboni	28.0
Kisutu	0.6	Makurumula	3.3	Miburani	4.2
Kivukoni	1.7	Manzese	3.5	Mtoni	2.3
Jangwani	0.4	Kigogo	1.6	Temeke 14	4.8
Upanga East	1.3	Mabibo	11.1	Kurasini	8.3
Upanga West	1.0	Ubungo	63.2	Keko	3.2
Ilala	3.6	Kinondoni	3.1	Vijibweni	15.7
Buguruni	2.4	Mwananyamala	6.0	-	-
Vingunguti	8.5	Msasani	17.5	-	-
Kipawa	10.1	Tandale	3.0	-	-
Mchikichini	0.6	Kawe	22.4	-	-
Tabata	19.1	Kunduchi	53.6	-	-
Ukonga	42 2	Goba	44.3	-	-
Sub-total area	93.7	Sub-total area	236.6	Sub-total area	109.6
Total area	439.9 km^2				

2.2 Natural Conditions

2.2.1 Tanzania - Physical Features, Climate and Vegetation

The United Republic of Tanzania lies just south of the equator between lakes Victoria, Tanganyika and Nyasa on one hand and the Indian Ocean on the other. It shares its borders with Kenya and Uganda to the north, Rwanda, Burundi and Congo-Zaire to the west and Zambia, Malawi and Mozambique to the south. Its area is 945,000 km^2 including the two major islands of Pemba and Zanzibar and approximately 62,000 km^2 of inland water. Except for a narrow belt along the 900 km coastline, most of the land lies above 200 m altitude and much of the country is higher than 1,000 m above sea level. In the north, lies the highest point in Africa: Mt. Kilimanjaro, with a permanent ice cap, reaches 5,895 m.

A distinctive feature of the topography are the rift valleys, whose form is marked in many places by long, narrow and deep depressions often filled with lakes. The Great Rift Valley runs from near the mouth of the Zambezi River northwards through Tanzania, Ethiopia and across the Red Sea to Israel. Lake Tanganyika, where the lowest point in Africa is found, lies in the Western Rift which continues northwards through Lake Kivu.

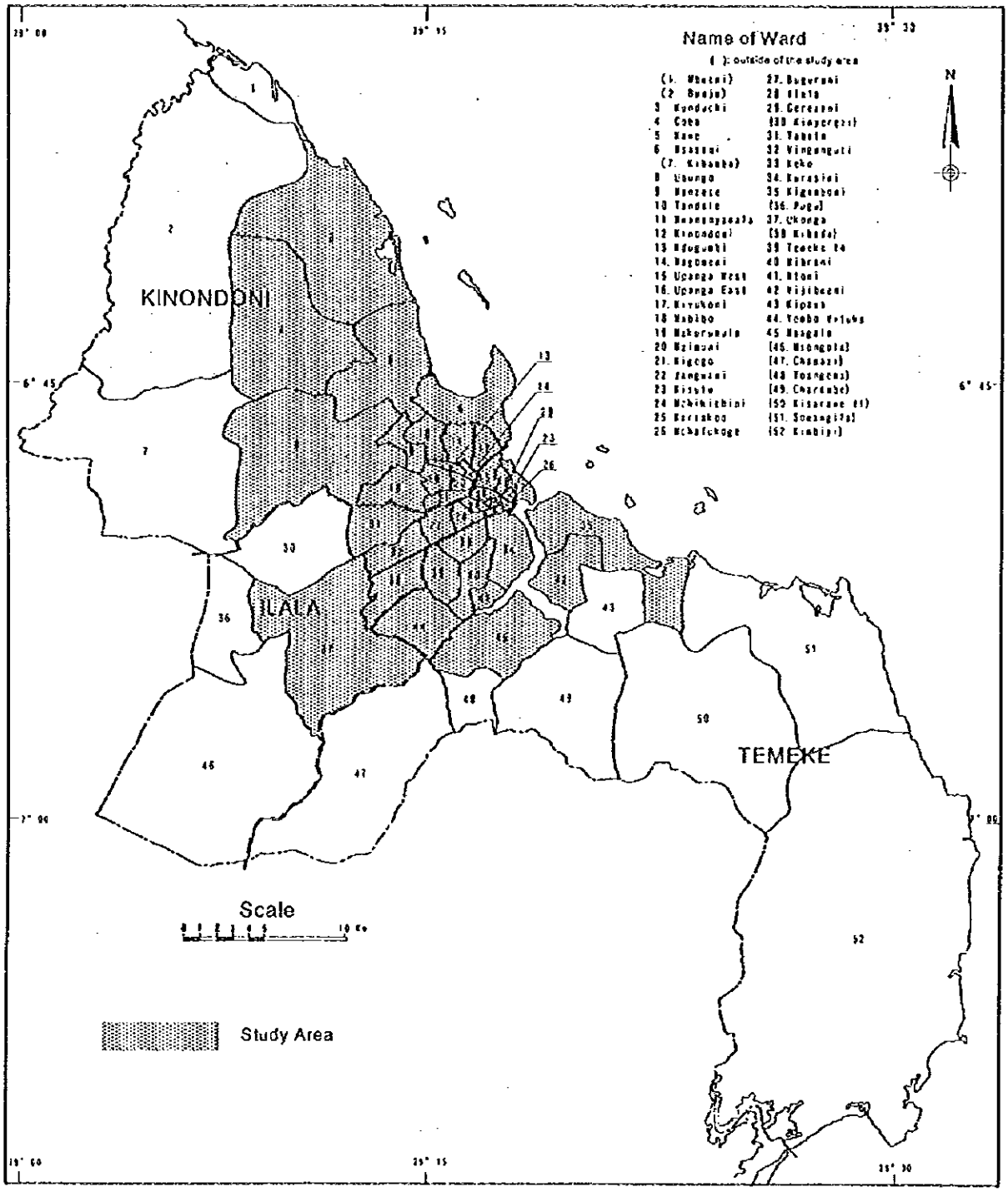

Figure 2-1: Map of the Study Area

For the country as a whole, the main climatic feature is the long dry season from May to October, followed by a period from November to April of low rainfall with heavy showers confined to relatively few days/weeks. The onset of the rainy season varies with location. For example, along the coast the main rainy season is from March to May but there is a second season from October to December. Total rainfall is higher further north, around Lake Victoria. The predominant types of vegetation are woodlands, bushlands and savanna.

2.2.2 Dar es Salaam

a. Location and Area

The city and region of DSM lies between 6°34' and 7°10' south, west of the Indian Ocean coastline, stretching about 100 km along the coast from the mouth of the Mpiji River in the north to beyond the mouth of the Mzinga River in the south. It encloses about 1,350 km^2 of land covering a coastal zone some 10-20 km wide and including eight islands situated just off the coast, as shown in Figure 2-2.

It's immediate sphere of influence extends from Bagamoyo in the north, beyond the Ruvu River in the west, to as far south as Kisiju. Surrounding towns and villages focus on Dar es Salaam as the market for their produce and the source of supplies and consumer goods. However, Tanzanians from all over the country have been drawn to the city, giving it a truly heterogeneous character.

The major reason for this attraction is that DSM is the commercial, industrial and trade centre of Tanzania as well as being the major outlet to the outside world. This national position of importance is primarily due to the city's natural harbour which also forms the basis for its importance regionally and continentally. The harbour has been developed into a modern port which serves the needs of large parts of Tanzania and those of several countries in East and Central Africa, primarily via the TAZARA railway which links DSM to Malawi and Zambia.

b. Climate

The climate is tropical along the coast, being influenced by the south to south-east monsoon from April to October, and by the north-east monsoon between November and March. The vicinity of the sea also has an important climatic influence.

The annual rainfall averages just over 1000 mm in two seasons, the "short rains" with storms of limited duration during November and December providing an average rainfall of 75-100 mm per month and the "long rains" between March and May where a monthly average rainfall of 150-300 mm can be expected. The period between June and October is dry. Potential evaporation is generally greater than precipitation with only three months of the "long rains" having excess rainfall (approximately 100 mm per month).

The air temperature is closely related to sea water temperature; the weather being cooler from July to September than during the rest of the year. The mean annual temperature is 26 °C with a mean daily range of ±4 °C. Seasonal variations are slight with the mean seasonal range being ±4 °C. The humidity of the air is related to the rainfall pattern and is highest during the long rains. Daily maximum humidity occurs at

dawn, averaging 96% while minimum humidity is experienced in the afternoons, averaging 67%.

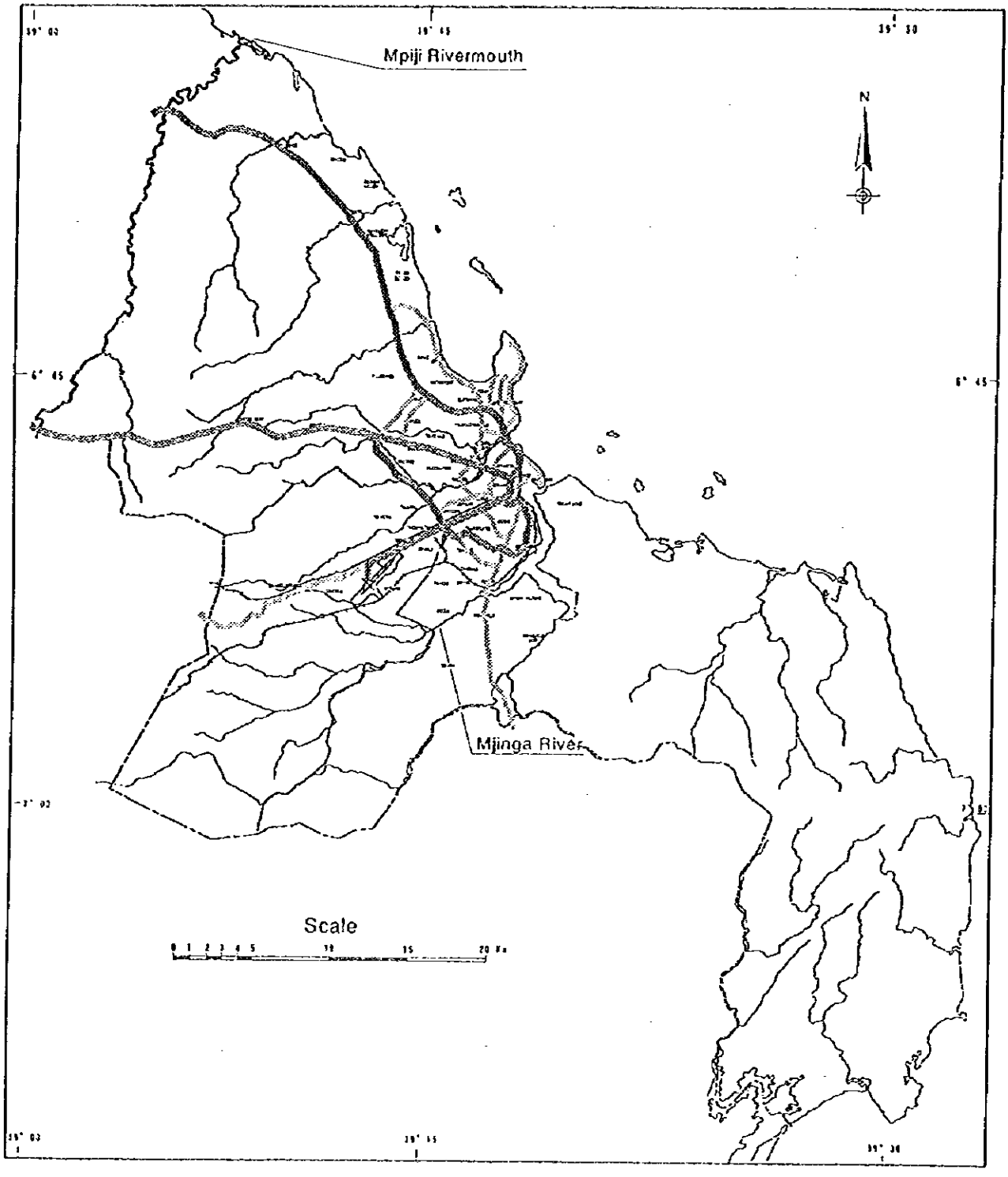

Figure 2-2: Location Map

c. Geographical and Geological Conditions

The city region is characterised by four distinct landforms as shown in Figure 2-3.

- The littoral zone, comprises sand dunes and tidal swamps.
- A limestone Coastal Plain to the west of the littoral zone extending to the Pugu Hills, which is overlain with clay bound Pleistocene or more recent era sands with fairly uniform relief, lying between 15-35 m above mean sea level and slopes of less than 3%. Whilst extending 10 km to the west of the city, the plain narrows to 2 km at Kawe in the north before widening to 8 km at the Mpiji River. To the southeast of the city it is almost 5-8 km wide, while in the southwest the coastal plain merges gradually inland into more elevated zones associated with the headwaters of the Mzinga River. Lakes and ponds are scattered throughout this land form where rich clay soils and zero gradient impede natural drainage. Generally speaking, a 3m layer of poorly graded white buff sand overlies sandy clays, silty clays, clay and sand layers of variable permeability and in highly variable sequences. The seaward fringe of the plain is generally formed by raised coralline.
- Rivers originating from the Pugu Hills to the east dissect the coastal plain in a series of steep sided U-shaped valleys, culminating in creeks and mangrove swamps before entering the Indian Ocean. Indeed DSM's harbour, penetrating almost 10 km inland along the Kizinga and Mzinga creeks forms the principal topographical feature of the region. These valley soils are generally poorly drained silty clay enriched with organic matter.
- The deeply dissected Pugu Hills, which bound the city region to the west average 100-200 m above mean sea level rising to some 330 m, at some points. They are characterised by steep weathered slopes and well drained, if unconsolidated, gravelly clay-bound soils. Occasional outcrops of raised coralline also occur along Wazo-Kunduchi.

Figure 2-4 shows the principal topographical areas whilst Figure 2-5 shows the distribution of significant soil types.

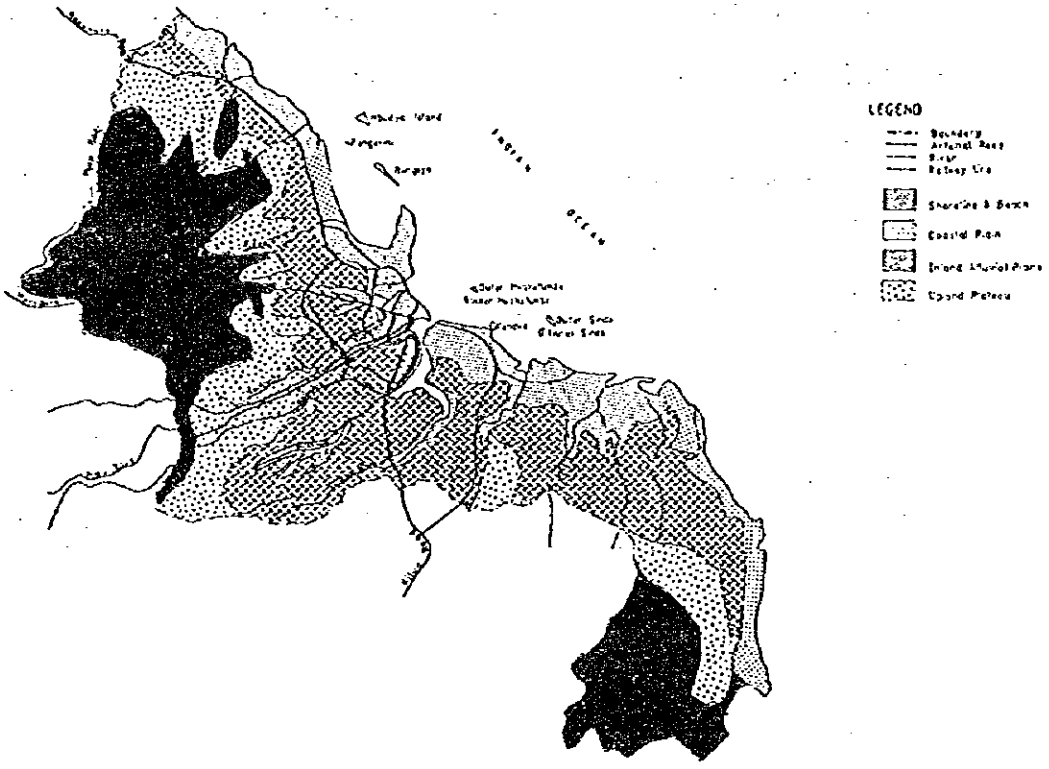

Figure 2-3: Landforms

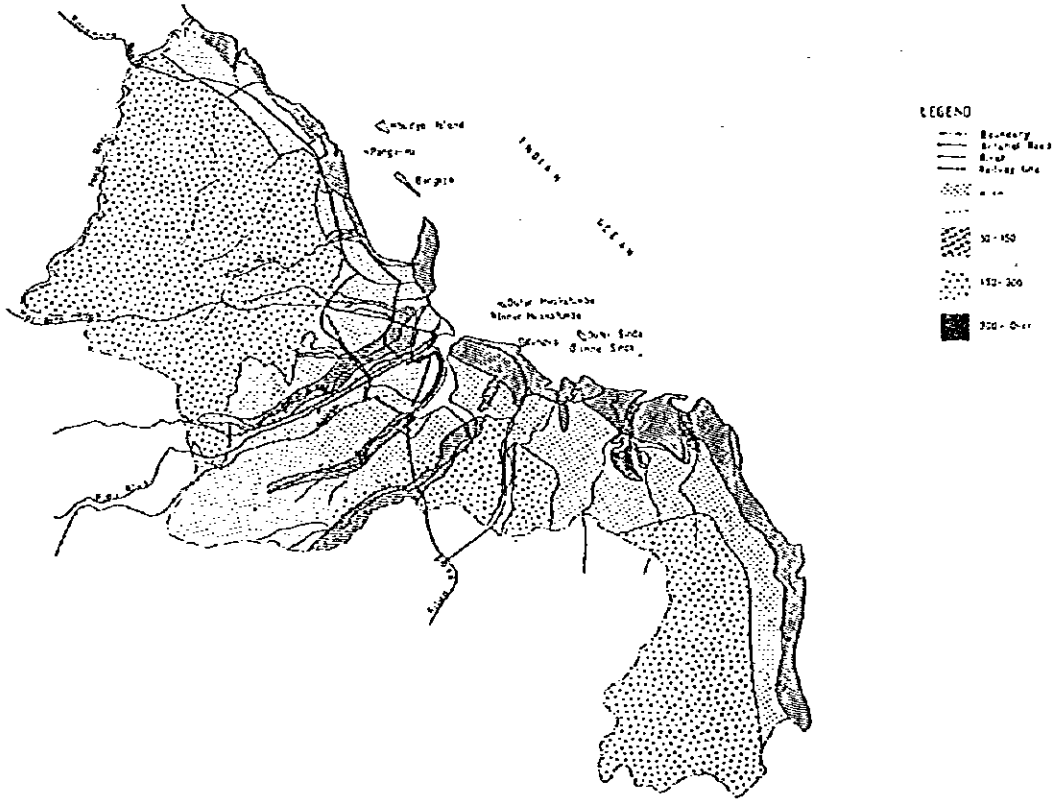

Figure 2-4: Principal Topographical Areas

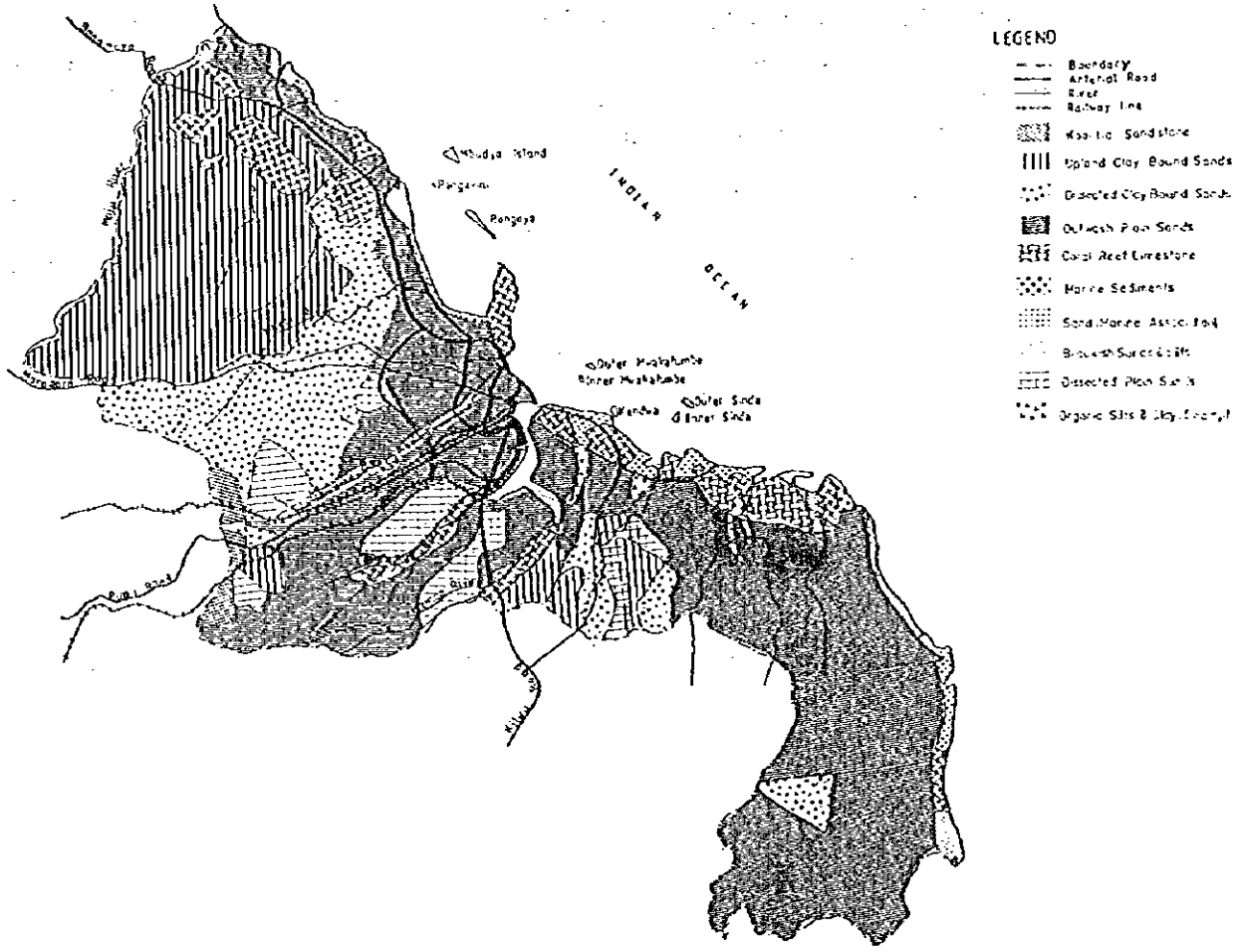

Figure 2-5: Distribution of Significant Soil Types

2.3 Social Conditions

2.3.1 City Administration

The main parties involved in city management are:

1. The central and regional government authorities.
2. Local government authorities.
3. Parastatal organisations, especially the utility agencies.
4. The private sector.
5. Community based branches of political parties, non-governmental and other community based organisations.

This section considers the role of each of these parties in city management.

a. Central and Regional Government

a) **The President's Office** has constitutional powers to intervene in all development sectors at both settlement and country levels. This office includes the **National Planning Commission** which is responsible for macro-level resource allocation. The **Investment Promotion Centre** is also under the President's Office.

b) **The Vice President's Office** is now separate from the Prime Minister's Office, this being a new development since the election of the Third Phase Government at the end of 1995. It is involved in the management of state activities at all levels and has two major departments under it which are concerned with environmental protection and poverty alleviation, respectively. The Division of Environment and is responsible for the development of policy and legal matters concerning environmental protection. The National Environmental Management Council (NEMC) comes under the Division of Environment and its functions are set out in Section 2.6.

c) **The Prime Minister's Office** has governmental powers to manage state activities at all levels related to settlement development through the Departments of Local Government and Regional Administration. As such, this office also administers the **Regional and District Commissioners' offices** as well as **Urban and District Councils**. The administrative structure linking this office with that of the City/Municipal Council is shown in Figure 2-6.

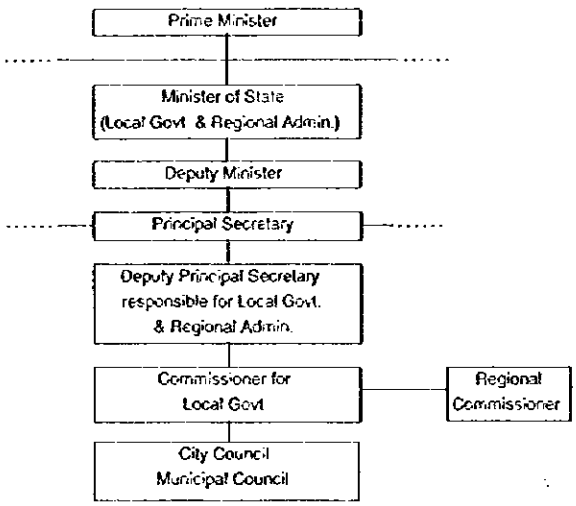

Figure 2-6: Administrative Structure linking with the Prime Minister's Office with DCC

d) **Ministry of Finance** disburses government development funds and administers the recurrent budget following endorsement by the National Planning Commission and the Parliament.

e) **Ministry of Lands, Housing and Urban Development** administers land development, the housing sector and urban development through a number of government laws - the principal ones being the Land Ordinance, Town and Country Planning Ordinance, Land Survey Ordinance, Building Regulations and Housing

Policies. Under the auspices of this ministry, the **National Housing Corporation** (NHC) is responsible for the supply, letting and maintenance of most of the public housing. The ministry is also supported by the **National Land Use Planning Commission**, which is responsible for advising the government and other developers on matters related to sustainable land uses.

f) **Ministry of Tourism and Natural Resources** is responsible for coordinating the sustainable development of natural resources and the promotion of the tourist industry.

g) **Ministry of Water** and **Ministry of Energy and Minerals** are responsible for harnessing, distribution and maintenance of water and energy respectively, with the latter also responsible for the development of mineral resources. Under the auspices of the Ministry of Water, the **National Urban Water Authority** (NUWA) is responsible for trunk mains development and water supply distribution in the city while **Tanzania Electric Supply Company** (TANESCO), which comes under the Ministry of Energy and Minerals, is responsible for electric power generation and distribution.

h) **Ministry of Works** is responsible for the planning, development and maintenance of major infrastructural investments in the country and major urban centres.

i) **Ministry of Communications and Transport** is responsible for the planning and development of the communications and transport sectors with the **Tanzania Harbours Authority, Tanzania Railways Corporation, Tanzania Posts Corporation, Tanzania Telecommunications Company Limited** and **Tanzania Zambia Railways Authority** being the major public sector corporations involved in communications and transport.

Parastatal corporations play an important role in many government ministries. Many of the organisations referred to above are parastatal organisations including NHA, NUWA and TANESCO.

b. Local Government

Dissolution of the City Council

The Dar es Salaam City Council was the local government authority for DSM city until June 1996. It consisted of two types of staff: councillors, elected by city residents; and professional/technical/administrative staff, appointed by the government (civil servants).

Councillors (one per ward) formed the council and elected a mayor to be head of the council and the city. The main function of the Councillors was to monitor the performance of the council in its provision of public services. This was achieved through a number of committees, one for each council department with a councillor as head of each committee. Councillors had the final power of decision in these committees and effectively were the main policy makers of the Council with the government appointed officials coming under them - first, the city director, followed by the head of departments and zonal directors for Ilala, Kinondoni and Temeke districts proceeded by other professionals and technical personnel from the different departments.

On 28 June 1996, the prime minister dissolved the DCC. In his speech in the National Assembly, the failure of DCC to comply with the provisions of the Local Government (Urban Authorities) Act 1982 was mentioned and had conducted its affairs in a manner conflicting with the realisation of the purposes of this Act. With this order, the prime minister exercised the powers conferred on him under section 76 of this Act to dissolve the council and transferred its powers and functions to the Dar es Salaam City Commission, which was appointed by the prime minister to replace the Council. This order was published as Government Notice No. 110 of 28th June 1996 and was effective from that date.

Appointment of the Dar es Salaam City Commission

The DSM City Commission established to replace the city council consists of a commission chairman (Mr. C. Keenja), appointed by the President; a Secretary, two Deputy Secretaries and six other Commissioners, all appointed by the Prime Minister. The Commission has been given all powers, rights, privileges and immunities of the Council including the powers of affixing the council's official seal in order to carry out its duties.

One of its major tasks is to decide on the best means and details of restructuring the city council into three municipalities (i.e. Ilala, Kinondoni and Temeke Municipalities) and a Greater City Council for DSM itself, including the distribution and reallocation of council resources.

The DSM City Commission is a temporary body that was given 12 months from the 28th of June, 1996 to complete its assignment. The new appropriate authorities (i.e. municipalities and the Greater City Council) are expected to be constituted after the 1997 councillors elections.

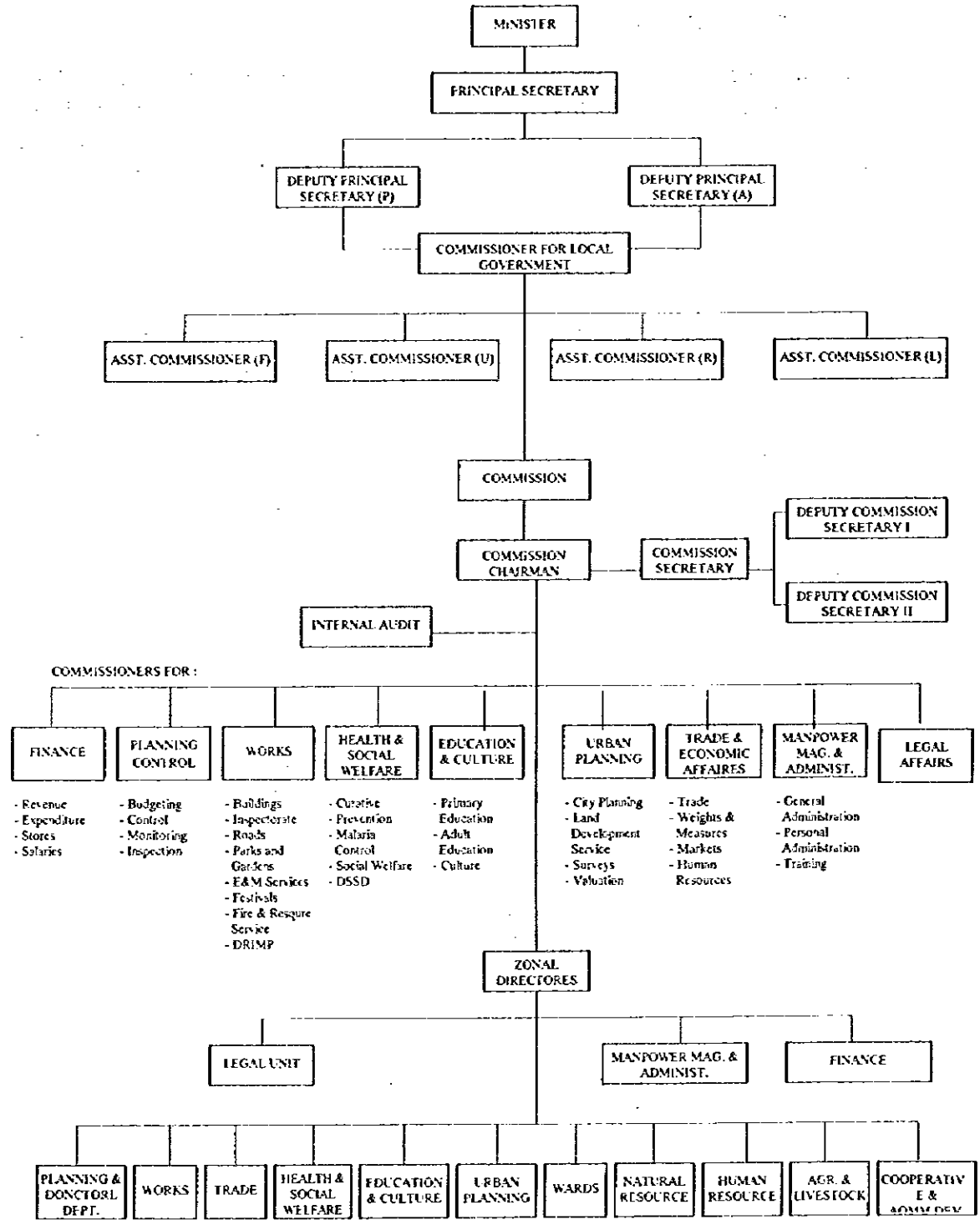

Figure 2-7: Organisational Chart of the DSM City Commission

c. The Private Sector

Formal Private Sector

The Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA), Dar es Salaam Merchants Chamber of Commerce, and the **Confederation of Tanzania Industries** represent the numerous private sector operators at the individual, commercial and industrial levels and are responsible for the promotion of the formal private sector. Concerning environmental issues, TCCIA recently set up an **Oversight Committee on the Environment.**

c.1 Popular Sector

This sector includes a variety of informal private operators, NGOs etc., such as the Organisation of Tanzania Trade Unions, Tanzania Women Association, Cooperatives Union of Tanzania, Tanzania Youth League, Tanzania Parents Association, Tanzania Teachers Association, Friends in Development, Plan International, Tanzania Tenants Association, and Journalists Environment Association of Tanzania.

In Tanzania, an NGO is defined as a non-profit voluntary organisation of individuals or groups of associations operating outside direct state control for the promotion of the welfare and development of its members and the community. A survey conducted in 1992 showed that there were over 200 NGOs operating in Tanzania. By the end of 1994 their number had increased to 813 of which 64 and 44 were environmental and health services NGOs respectively[1].

c.2 Self-Help (Community Based) Groups

The self-help community based sector, popularly known as the informal sector, incorporates interest groups earning a living outside of the formal economy such as second hand clothes traders, fishermen, miners, craftsmen ("fundis" in Swahili), small hawker stalls ("mamantilie" in Swahili), potters, etc. as well as groups based on broad environmental concerns such as the Tabata and Kunduchi Development Trusts.

c.3 Registration and Regulation in the Private Sector

These organisations are set up by registration with different ministries as follows:

- Societies' Registration - Ministry of Home Affairs.
- Trustees' Incorporation - Administrator Generals Office.
- Companies - Ministry of Trade and Industries.
- Sports Clubs/Organisations - under the Ministry of Education and Culture.

Council approval is not needed to set up these organisations. However, if a person or persons are setting up a business then a licence is required from the licensing authority. The laws under which these organisations are registered and the Ministries under which they fall provide regulatory mechanisms for their activities. Umbrella organisations (TANGO, TACOSODE, ANGOZA (Zanzibar) have their own codes of conduct which provide collective regulation of all members conduct.

[1] Secretary General, TANGO

2.3.2 Community Structure

The community structure which is common throughout Tanzania may be considered as a 4 level pyramid, starting with individual premises at the bottom, then moving up to the fundamental community structure based at street level and from here to the official government ward and district levels.

There are two kinds of community structures based at the street level (popularly known as 'mitaa' in Swahili) in DSM. Both are based on the concept of a street as a basic element in town planning, consisting of a road or pathway between two series of plots/buildings opposite each other. For streets in planned areas, legally a sanitary lane (Township Building rules cap 101) between two adjacent buildings should be provided but in practice, there are very few such lanes for security reasons. In the case of unplanned streets, there are often only narrow pathways between dwellings, commonly known as 'vichochoro'.

a. Ten Cell Unit

The first structure is based on the concept of the "10 cell unit". In this system, streets were formally organised into groups consisting of 10 households (10 cells), each with its own elected leader ('balozi wa shina') and with between 60-120 people in each group. This system was initiated by CCM, the political party which ruled Tanzania under a single party system from independence until last year, and the 10 cell leader was specifically from the ruling party. The main role of the leader was a political one but they also had some administrative responsibilities. Now, with the advent of multi-party democracy, there have been some calls for a new system to replace what many see as a CCM party structure. Some 10 cell leaders have resigned their posts and different political parties have appointed their own 10 cell leaders in some cases. These factors have weakened the authority of the 10 cell unit and some areas of the city are not functioning under this system now.

b. The Street Chairman ("Mwenyekiti wa mtaa")

The second structure is based on the concept of a "street chairman" and is basically a local government organised leadership system. In this case, there is a street chairman who is the leader of a group of households accommodating a certain number of streets which cover part of a ward. This community structure now undertakes the tasks which formerly were 10 cell unit commitments. Only political issues are excluded, these being left to be dealt with by the appropriate political party.

Street chairmen are elected by the residents in each area and holds office for 5 years on an unsalaried basis. They usually have a personal secretary to help them in their work. The functions of this position include:

- to record people coming into and going out of the community;
- to receive wedding, funeral and birth notices;
- to keep security in the community;
- to handle complaints and solve problems in the community;
- to inform and consult on some issues with the ward office;

- to inform the residents of government notices.

Their administrative tasks are made more difficult by some basic problems such as the lack of a registry system and a formal address system.

2.3.3 Education

a. The Education System in Tanzania

The formal education system in Tanzania is divided into 3 stages: primary (standard I-VII); lower secondary (form I-IV) and upper secondary (form V-VI). The official entry age for primary school is 7 years. At the end of each stage, pupils sit national examinations, the results of which determine their progress to the next stage. Pupils from form IV may also be selected for various post-secondary professional courses while form VI pupils may be selected for university or other institutes of Higher Education. Fees are paid to attend secondary school which have risen sharply in recent years.

Primary and secondary education in the public and private sectors come under the jurisdiction of the Ministry of Education and Culture, including the running of training colleges and various non-formal adult education programmes. Higher education is the responsibility of the Ministry of Science, Technology and Higher Education.

The quantitative achievements of the education system have been impressive, but the system is now experiencing many problems, including overcrowded classes, especially in primary schools with pupils sitting on the floor, poorly motivated teachers, lack of sufficient school buildings, staff quarters, teachers housing, latrines, desks, textbooks, other learning materials, etc.

In 1992, education and training activities were allocated 13% of the total national budget. However, the percentage of the government budget for education has been reduced since then. The third phase government, elected at the end of 1995, intends to increase the resource allocation to the education sector. It is also pushing for pre-school education, a fairly recent development in Tanzania, to be provided throughout the country.

b. The Education System in Dar es Salaam

All sectors of the education system in the city are physically expanding but without a corresponding increase in funding in real terms and with little corresponding impact on the quality of education provided, particularly in the public sector.

The public and private sectors are the principal providers of primary and pre-school/secondary education respectively. The contribution of the parastatal sector is almost entirely at the post-secondary level.

Primary school is attended by 95% of primary age children in DSM with a pupil to teacher ratio of 40:1 in 1995 although in reality some primary school classes have over 100 pupils per class[2]. The percentage of primary school pupils who are selected for secondary school ranged from 12.3 - 12.7% in 1990-92[3] and continues to be around this level. Pupils from urban areas of DSM do better in exams than their rural counterparts

[2] City Education Officer, DCC
[3] Primary School Statistics, Ministry of Education, 1992

at both the primary and secondary level. Pupils are taught about basic hygiene and sanitation issues at school. Environmental issues are covered to a limited extent at primary and secondary level.

Post-secondary institutes in DSM include the University of Dar es Salaam (UDSM), Muhimbili University College, Ardhi Institute, DSM School of Accountancy, Institute of Financial Management and various technical and teachers colleges.

c. Adult Education

Adult education in Tanzania has long been seen as an agent for progress, self-improvement, development of values and social transformation. It seeks to combat disease, ignorance and poverty and is a tool for increasing the nation's productivity. Every person who reaches the age of 14 without going through the normal school system is required to join an adult education class.

The Institute of Adult Education (IAE) was established under the Ministry of Education in 1960 and has been a parastatal organisation since 1975. IAE administers Adult Education programmes, cooperating with other organisations within the country as well as abroad such as UNESCO, USAID, NORAD, SIDA, DANIDA etc.

The main objectives of adult education are stated below:

- to mobilise the masses into a better understanding of national policies and self-reliance;
- to provide leadership training in various aspects of life and at all levels;
- to eradicate illiteracy;
- to give knowledge and skills in agriculture, health and home economics;
- to provide follow-up education for primary and secondary school leavers;
- to provide continuing education progressively at various stages, e.g. seminars, evening classes, correspondence courses and vocational training.

Based on these aims, national adult mass education campaigns have been conducted throughout the country since 1970, with the assistance of UNESCO and UNDP, and have achieved reasonable success with adult illiteracy rates decreasing from 39% in 1975 to 9% in 1986.

IAE has also conducted many other literacy programmes (e.g. the Curriculum, Programs and Materials Development Project (1973-76); The Literacy Programme (1970-present). Programmes in other areas aim to improve agricultural productivity; raise standards in primary health care; improve workers' education; enhance social amenities etc.

The Ministry of Community Development, Women Affairs and Children, established in 1990 also plays a part in adult education. The function of this ministry is to mobilise and train women and to improve womens' lives through various projects; the major ones being: women in development training; appropriate food technology; safe motherhood and family life education; credit plan for productive activities e.g. mill operator training, vegetable cultivation, food processing, poultry and batik making etc.

2.3.4 Public Health

a. The Health Sector in Tanzania - Structure and Status

In Tanzania, health services are provided by the government through a number of complementary institutions, namely, rural dispensaries, health centres, district hospitals, regional hospitals and referral specialised consultant hospitals. NGOs and voluntary agencies, parastatal hospitals and private hospitals also provide health services which operate alongside the government health system. The health sector is organised under supervision and coordination of the Ministry of Health.

In 1995, there were 183 hospitals, 3,286 dispensaries and 291 Health centres throughout Tanzania. As well as this physical infrastructure there is also a trained health cadre, ranging from village health workers to specialist doctors in various fields. In 1994, the number of medical doctors was 1,205, nurses 24,895 and allied health professionals 13,890[4].

Although the health infrastructure and the trained health cadre have expanded significantly over the years the doctor : population ratio in 1995 was 1:23,188[5] compared with 1:25,000 at independence (1961)[6]. Furthermore, the delivery of health services has continued to decline both qualitatively and quantitatively, especially in rural areas. Budgetary and resource constraints, poor economic performance and a rapidly increasing population are the main factors responsible for and contributing to shortages of medicine, poor working facilities and poorly motivated staff.

Health provision has emphasised curative care rather than preventative services. Between 1989-93, about 89% of the government's budget was spent on curative services, 7% on training and administration and only 4% on preventative health services[7]. The government's budget allocation for health expenditure decreased from 9.4% in the early 1970's[8] to 6.4% in 1991/92[9]. Spending on health is currently 0.70 USD per capita per year while it is estimated that 12 USD per capita per year is required to provide basic health care in developing countries[10].

A series of reforms have been ongoing in the health sector in an attempt to address some of these problems. These include:

- adoption of a Primary Health Care Strategy;
- adoption of a decentralisation policy (re-introduction of local government);
- introduction of tax waivers on imported raw materials for production of drugs, aimed at encouraging local pharmaceutical drug production;
- implementation of a cost sharing scheme in the form of user charges from July 1993.

[4] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995
[5] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995
[6] "Development Co-operation Tanzania 1992 Report, UNDP
[7] Proposals for Health Sector Reform, DRAFT document, Ministry of Health, Tanzania, Aug 1994
[8] Proposals for Health Sector Reform, DRAFT document, Ministry of Health, Tanzania, Aug 1994
[9] "Development Co-operation Tanzania 1992 Report, UNDP
[10] "Poor in Health", Save the Children Fund, UK, Apr 1996

The public health status of the country as a whole reflects that of a less developed country as the following health status indicators[11] show.

Table 2-2: Health Status Indicators for Tanzania

Indicators		Source
Population	27.9 million	1995 estimates, Ministry of Health
Crude Death Rate[12]	15 per 1,000	1988 Census[13]
Infant Mortality Rate[14]	100 per 1,000	1992 Tanzania Demographic Health Survey results
Child Mortality Rate[15]	61 per 1,000	1992 Tanzania Demographic Health Survey results
Maternal Mortality Rate	200-400 per 100,000	Maternal & Child Health/Family Planning report
Average Life Expectancy	50 yrs	1988 Census
Medical Doctor Availability	1:23,188	1995 Ministry of Health
Average Daily Calories	1,600	1995 Urban and Housing Indicators Study[16]

b. The Health Sector in Dar es Salaam

b.1 Health Infrastructure

The number of hospitals, dispensaries and health centres for government, voluntary, parastatal and private sectors in DSM are shown in Table 2-3[17]. The total number of beds is 2,141 which using an estimated figure for the 1995 population of DSM of 1,856,661[18] this gives a ratio of patients to beds of 867:1.

The government health sector in DSM has deteriorated over recent years primarily due to an estimated population increase of over 7%[19], well above the national average.

Table 2-3: Number of Institutions and Beds in different health sectors

Institution	Number of Institutions				
	Government	Voluntary	Parastatal	Private	Total
Hospital	4	0	2	7	13
Dispensaries	57	36	46	22	161
Health Centres	5	0	1	0	6
	Number of Beds in Institutions				
Hospitals	436	30	1462	38	1966
Health Centres	157	0	18	0	175
				TOTAL	2141

The city health system is, with the exception of Muhimbili Medical Centre (University Hospital and one of the national consulting hospitals), under the control of DCC and

[11] The Health status indicators are taken from Health Statistics Abstract, Ministry of Health, Tanzania, 1995 except where indicated otherwise
[12] Crude Death Rate is the number of deaths in a year divided by the population at mid-year x 1,000
[13] Statistical Abstract: 1993, Bureau of Statistics, President's Office, Planning Commission, DSM, Tanzania
[14] Infant Mortality Rate is the probability of dying before the first birthday
[15] Child Mortality Rate is the probability of dying between the first and fifth birthday
[16] Urban and Housing Indicators Study for DSM City, Centre for Human Settlement Studies, Ardhi Institute, DSM, Tanzania, Sept 1995
[17] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995
[18] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995
[19] Environmental Profile of the Metropolitan Area, SDP, DSM, Aug 1992

comprises three levels of service: 4 hospitals (one for each district and Muhimbili), 5 health centres and 57 dispensaries[20]. In 1993, personnel in the City Health Department totalled 32 medical officers, 339 nursing staff and midwives, 175 medical assistants and 1175 auxiliary workers with a 1993 budget of 750,804,952 Tsh (1,853,839 USD[21]) which for an estimated population in DSM of 1,720,350[22] in 1993 corresponded to just over 436 Tsh (1.08 USD) per capita.

Other sectors of the health service are generally in a better condition. The informal sector, particularly traditional medicine also remains strong with estimates of one traditional healer per 700 population[23]. A good proportion of patients use both the informal and formal sectors.

b.2 Occurrence of Diseases

HIV/AIDS data is handled by a separate section of the DCC Health Department and hence it has been dealt with separately here. Monitoring of HIV/AIDS has improved considerably in recent years as the existence and seriousness of this pandemic has been realised. The number of cumulative Aids cases has risen dramatically in recent years throughout Tanzania. Data for DSM is presented in Table 2-4[24]. DSM has by far the highest rate of Aids in Tanzania: 531 per 100,000 population[25] based on cumulative cases and the HIV infection rate is estimated to be 5% for male and 7% for female[26].

Table 2-4: Number of Cumulative AIDS Cases in DSM Region (1985-1993)

Year	Cumulative Number of AIDS Cases	Year	Cumulative Number of AIDS Cases
1985	51	1990	7196
1986	471	1991	8651
1987	1470	1992	8868
1988	3093	1993	9186
1989	5203		

Concerning the occurrence of other diseases in DSM/Tanzania, two sets of data have been included in this report and are shown in Table 2-5 The first set of data is in percentage form and comes from a summary of diseases from monitoring stations for regions throughout Tanzania[27]. Data for DSM region only has been shown in Table 2-5 together with corresponding figures for mainland Tanzania. The second set of data was obtained from the Health Department of DCC and gives the number of cases and number of deaths from water-borne diseases, infectious diseases, accidents and all other diseases for 1994 and 1995[28].

---

[20] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995

[21] Average Exchange rate for 1993: 1 USD = 405 Tsh; Tanzania Comoros Country Report, 2nd Quarter 1995; The Economist Intelligence Unit, UK, 1995

[22] Health Department Report, City Medical Officer, City Director's Office, DCC, 1993

[23] Environmental Profile of the Metropolitan Area, SDP, DSM, Aug 1992

[24] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995

[25] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995

[26] Health Department Report, City Medical Officer, City Director's Office, DCC, 1993

[27] Health Statistics Abstract, Ministry of Health, DSM, Tanzania, 1995

[28] This data is for government health facilities only, excluding Muhimbili. For some diseases, data was not received from one or more of the three districts in DSM as explained further in Appendix ??? where the complete numerical data is shown.

Table 2-5: Percentage of Different Disease for Tanzania Mainland and DSM

Diseases	Percentage of Total Diseases			
	Mainland Tanzania	Dar es Salaam		
	1991	1991	1994	1995
Faecal-oral (water-borne or water-washed):				
Diarrhoea	8.1	9.3	11.89	12.06
Dysentery	NI	NI	0.35	0.02
Cholera	NI	NI	0.00[a]	0.00[b]
Typhoid	NI	NI	0.00[c]	0.01
Sub-total	**8.1**	**9.3**	**12.24**	**12.09**
Water-washed:				
Infectious Skin	3.7	3.7	6.76	7.50
Infectious Eye	4.6	6.3	4.22	4.68
Sub-total	**8.3**	**10.0**	**10.98**	**12.18**
Water-based:				
Schistosomiasis	NI	NI	1.28	2.09
Sub-total	**NI**	**NI**	**1.28**	**2.09**
Water-related Vector:				
Malaria	31.0	24.8	37.22	35.45
Sub-total	**31.0**	**24.8**	**37.22**	**35.45**
Excreta-related (soil transmitted helminths[d] & beef/pork tapeworms):	2.7	2.2	NI	NI
Sub-total	**2.7**	**2.2**	**NI**	**NI**
Air-borne:				
URTI[e]	11.0	8.7	16.16	16.98
Pneumonia	4.4	5.1	NI	NI
Meningitis	NI	NI	0.00[f]	0.00[g]
Measles	NI	NI	0.04	0.06
Tuberculosis	NI	NI	0.01	0.01
Sub-total	**15.4**	**13.8**	**16.21**	**17.05**
Other:				
Gonorrhoea	1.5	1.2	NI	NI
Anaemia	1.5	2.2	NI	NI
Accidents	2.9	0.8	3.68	4.31
All other	28.2	35.7	18.36	16.83
Sub-total	**34.1**	**39.9**	**22.04**	**21.14**
TOTAL	99.6	100.0	99.97	100.00

[a] 1 case only; [b] 6 cases; [c] 9 cases; [d] Soil transmitted helminths includes roundworms, whipworms and hookworms; [e] URTI = Upper respiratory tract infections; [f] 20 cases; [g] 52 cases

Both sets of data have been presented according to classifications for water-related and excreta-related infections as used by Cairncross and Feachem[29] and respiratory-related infections as used by Salvato[30]. Other diseases not fitting into these categories are grouped together.

It should be noted that all of the water-borne and water-washed diseases in the faecal-oral category as well as most of the water-based diseases and several others not related to water are caused by pathogens transmitted in human excreta, normally in the faeces and hence can be classified as excreta-related diseases also. However, the convention adopted here is to classify such diseases that fit into both the water-related and excreta-related categories as water-related infections.

These two sets of data complement each other and give a reasonable picture of the health situation in DSM. Some trends and conclusions drawn from this data are stated below.

[29] "Environmental Health Engineering in the Tropics"; S. Cairncross & R. Feachem; 2nd edition; John Wiley & Sons, New York, 1993

[30] "Environmental Engineering and Sanitation"; J.A. Salvato; 4th edition; John Wiley & Sons, New York, 1992

- There has been a 76% increase in the total number of cases recorded in government health institutions from infectious diseases, accidents and all other diseases between 1994 and 1995.
- Malaria is the most common infectious disease in Tanzania, accounting for 35-37% of the total number of cases recorded in government health institutions in 1994 and 1995. In numerical terms the number of cases of malaria reported in government health institutions for 1994 and 1995 was 365,700 and 613,400 respectively.
- Water-related infections which include water-borne, water-washed, water-based and water-related vector diseases constitute 42% and 46% of total diseases for mainland Tanzania and DSM in 1991 respectively and 62% of the total number of cases in 1994 and 1995 for government health institutions in DSM.
- Air-borne diseases (Tuberculosis, URTI, pneumonia, measles and meningitis) constitute the other major group of infectious diseases, constituting 14 -17% of the total diseases.
- There is limited data on the occurrence of intestinal worm infections. However, such infections are widespread with a high proportion of cases never being treated in health institutions and hence are not included in official statistics.

Refuse-related infections are not mentioned directly in the above statistics. However, poor refuse disposal and/or uncollected refuse can lead to an increase in infectious diseases by, for example:

- encouraging fly-breeding which may promote the transmission of faecal-oral infections.
- promoting diseases associated with rats, such as plague, leptospirosis, etc.
- obstructing streets and blocking drainage channels, resulting in greater collection and contamination of surface water and an increase in breeding sites for mosquitoes.

b.3 Development Projects

There are two major development projects concerning health, currently being conducted in cooperation with the Health department of the City Council.

The first is the Urban Health Project[31]. This project began in 1990 on the basis of an intergovernmental agreement between Switzerland and Tanzania and had the aims of structural and functional rehabilitation of the DSM Government Health facilities based on Primary Health Care principles. Projects have been carried out or are ongoing in a large number of areas including:

- Strengthening the health service management capacities of the City Medical Office of Health.
- Development of district health plans by district health teams.

[31] DSM Urban Health Project, Project Document Final Version; DCC City Health Department, Feb. 1993

- Completion of an inventory of all health facilities together with estimation of the respective catchment population for these facilities.
- Design of drug kits.
- Renovation of 21 dispensaries and 3 hospitals.
- Establishment of a human resources development plan.
- Participation in ministerial committees/task forces and attendance at local, regional and international meetings.

Phase 2, which began in July 1993 was extended for 1 year until the end of June 1997 and was followed by phase III in July 1997.

The second is the Malaria Control project. This started in 1987 for the Tanga and DSM regions. Objectives up to 1992 were: (i) to reduce the malaria mortality rate by 20%; ii) to carry out public education concerning malaria control methods and environmental management techniques to eliminate breeding sites.

Several intervention approaches aimed to reduce the number of mosquitoes (vector control) including applying insecticides and reducing breeding sites by environmental management. A lot of health education has also been carried out as part of this project using television, radio and videos.

There was no baseline data available in 1987 and hence the data gathered during the first two years of the project has been used as baseline figures. Statistics for the first two years gave a parasite infection rate of 50-70% amongst school children. In 1995 the rate was 20-30%. Despite these encouraging results, malaria remains by far the most common disease in DSM.

c. Health Education

The City Council Health Officer's responsibilities include health education. A number of avenues are pursued for health education:

- Committees and meetings. Every ward has a Health Standing committee under chairmanship of the Ward Councillor. This committee has traditionally been made up of 10 cell leaders, street chairmen, religious leaders and other influential people in the ward. Health education matters can be channelled through this committee.
- House to house visits.
- Publicity via radio, television, posters, leaflets, etc.
- Visits to schools.

A lot of basic health problems are also covered in education material taught in schools. Each school should have a teacher whose responsibilities include public health. This subject is taught from Std 1 and includes lessons on personal hygiene. A significant proportion of health education is directed towards raising awareness of AIDS and its prevention.

2.3.5 Customs, Language and Religion

There are over 120 tribes in Tanzania, each with their own customs, traditions and language. Some of the customs are common to most of the tribes in Tanzania and can almost can be considered as national customs, two of these being respect for elders and hospitality. People from most of the tribes and ethnic groups now live in DSM creating some pressure on individuals and families to retain their tribal customs and practices.

About a dozen tribes form half the country's population but no one ethnic group is predominant. This has resulted in a balance of power throughout the country and a much lower level of ethnic conflict than elsewhere in Africa. Approximately one percent of the population is non-African, with Europeans, Asians (Indians, Pakistanis) and Arabs making up the bulk of this group.

The adoption of Swahili as the national language in 1963 has also worked as a unifying factor and Swahili is now spoken by over 95% of the population. Until 1967 English retained joint status as an official language. Today, English is the language of instruction in some private schools, secondary schools and for higher education and is also widely used in business and international circles.

Freedom of worship exists in Tanzania. 32% of the population follow their traditional beliefs, 33% are Christians, 35% are Muslims and a very small minority follow Hinduism. In terms of the religious mix of DSM, Christians form the majority closely followed by Muslims.

2.3.6 Employment[32]

The labour force in mainland Tanzania was 11,294,927 out of a total of 15,600,240 in 1990/91[33] of which 83% lived in rural areas and 17% in urban areas. 84% of the total employed population worked in the agricultural sector, mostly as subsistence farmers. A recorded 933,358 Tanzanians were paid employees while the corresponding numbers in self-employment and unpaid employment were 807,338 and 62,387.

For DSM, male and female unemployment rates in 1990/91 were 5.5% and 10.7% respectively while corresponding percentages for the number of male and female persons in fulltime employment were 51% and 31% respectively. 50% of all employed men were paid employees while 52% of all employed women worked in the agricultural sector 33% of the total employed population in the DSM region were engaged in agriculture.

Table 2-6 shows a breakdown of the total employed population in DSM into employment categories by main sector. The following concepts were used:

1) Government includes persons working for Central, Regional or Local government.

2) Parastatal covers the wide range of profit and non-profit making enterprises, which are at least 50% owned by the government.

[32] Most of this information comes from The Labour Force Survey 1990/91, Tanzania (Mainland); Bureau of Statistics, President's Office, Planning Commission & Labour Department, Ministry of Labour and Youth Development, DSM, June 1993

[33] Statistical Abstract: 1993, Bureau of Statistics, President's Office, Planning Commission, DSM, Feb. 1995

3) Private agriculture includes all persons working on their own or family farm or 'shamba' either in agriculture, livestock or fishing or as paid employees of similar establishments.

4) Private Informal sector covers a number of points. It includes (i) those not employed in 1-3 above; (ii) where the enterprise of employment has 5 or less paid employees; and (iii) where the location and characteristics of the enterprises were in accord with a set of guidelines used by interviewers.

5) Private Other includes persons working for enterprises not included above. This group is often called the private formal sector. This includes people working for the government party (CCM) and affiliates or working for formal cooperatives.

According to these definitions, the public sector includes persons employed in the government and parastatal sectors (rows 1 and 2 in Table 2-6) while the "private sector" includes those employed in the private agriculture, private informal and private other sectors (rows 3, 4 and 5). Totals for the public and private sectors were obtained by adding figures from the appropriate rows in the table as stated above and are shown in part (b) of Table 2-6.

Persons employed in the public sector constitute 22% of the total employed population with 75% of public sector workers being male. The private sector makes up 78% of the total employed population and includes a much higher proportion of women than in the public sector.

Similarly, the formal sector includes persons employed in the government, parastatal and private other sectors (rows 1, 2 and 3 in Table 2-6)while the informal sector includes,those employed in private agriculture and private informal sectors (rows 4 and 5). Totals for the formal and informal sectors were obtained by adding the figures from the appropriate rows in the table as stated above and are shown in part (c) of Table 2-6

36% of the labour force work in the formal sector. This means the city has a larger than average urban workforce employed in the city's formal sector and the lure of formal employment is one of the major attractions for migrants. Furthermore, 60% of formal employment was in the public sector. The number of people engaged in the informal sector is large. In particular, there is a much higher proportion of women in this sector compared to the formal sector.

Table 2-6: Breakdown of Employment by Main Sector

	Male	Female	Total
a) Category			
Government	30,476	14,140	44,616
Parastatal	71,819	20,503	92,322
Private Other	77,654	12,116	89,770
Private Agriculture	85,944	121,304	207,248
Private Informal	124,217	65,737	189,954
Total	390,110	233,800	623,910
b) Category			
Public	102,295	34,643	136,938
Private	287,815	199,157	486,972
Total	**390,110**	**233,800**	**623,910**
c) Category			
Formal	179,949	46,759	226,708
Informal	210,161	187,041	397,202
Total	**390,110**	**233,800**	**623,910**

Table 2-7 shows a breakdown of the total employed population in DSM into categories according to industry.

Table 2-7: Breakdown of Employment by Industries

Category	Male	Female	Total
Agriculture/Forestry/Fishing	90,859	123,270	214,129
Mining & Quarrying	370	431	801
Manufacturing	49,352	13,289	62,641
Energy & Gas	2,556	805	3,361
Construction	24,071	1,735	25,806
Trade	104,959	54,905	159,864
Transport	41,881	4,594	46,475
Finance & Business Services	8,839	3,164	12,003
Public Administration	67,223	31,607	98,830
Total	390,110	233,800	623,910

2.4 Population

2.4.1 The Population Trend in Dar es Salaam Region

The national census has been conducted at 10 year intervals since 1978. The most recent census data is for 1988 and the next census is due to be conducted in 1998. Table 1-12 shows the population changes of DSM and Tanzania since 1913.

Table 2-8: Population Change of DSM and Tanzania

Year	Dar es Salaam		Tanzania	
	Population	Average annual growth rate (%)	Population	Average annual growth rate (%)
1913	34,000	3.2		
1943	45,000	0.9		
1952	99,140	9.2		
1967	272,515	7.0	12,313,000	
1978 (census)	843,090	10.8	17,512,000	3.2
1988 (census)	1,360,850	4.8*	23,174,000	2.8

Note: * In this period City boundaries were adjusted.
Source: Population Census, Bureau of Statistics

In 1967, the population of DSM was 271,000 inhabitants, growing to 843,000 in 1978 and to 1,360,000 in 1988, indicating an average growth rate of 10.8 % and 4.8 % respectively. Compared to the population growth rate of the nation, DSM's population growth rate is much higher due to migration from the rural area.

The migration from rural to urban areas can be attributed to push and pull factors. Push factors in rural areas are few job opportunities and low levels of public services such as education, health, etc. Pull factors are the imagined job opportunities, the expectations of social and infrastructural services and the lure of adventure in the city.

The decline of the average annual population growth rate from 10.8 % in the period between 1967 and 1978 to 4.8 % in the decade between 1978 and 1988 is attributed to various efforts taken such as the promotion of family planning programmes, the formulation of the Dar es Salaam Master Plan, the introduction of industrial decentralisation, etc. However, the average annual population growth rate of 4.8 % is still one of the highest for cities in Africa.

Basic data from the 1988 census for DSM region is as follows.

• Total population:	1,360,850	(5.9 % for the Nation)
• Male population:	715.925	(6.3 % for the Nation)
• Female population:	644,925	(5.4 % for the Nation)
• Average household size:	4.3	(5.2 % for the Nation)
• Annual average population growth rate 1978-1988:	4.8%	(2.8 % for the Nation)

2.4.2 Population Projection Method for the Study Area

Various institutions have proposed population projections for DSM. Two methods were assessed for use in this Study. Both assume that the average annual population growth rate of DSM remains constant but give very different results.

The first method is based on the average annual population growth rate of DSM, measured as 4.8 % for the period 1978-88, remaining at 4.8 %. The second method is based on the average annual population growth rate of each ward of DSM remaining at the same level as for the period 1978-88 as shown in Table 1-14 and using these ward growth rates to do a population projection for each ward and adding these figures to get the projected population for DSM. Although both methods give the same overall rate of 4.8 % between 1978-1988, the former method will give the same rate in the next decade, while the latter gives a rate of 7.2 %. Hence, the projected population in 1996 based on DSM region and on ward level growth rates are 1,980,000 and 2,261,000 respectively.

Use of the latter method is advocated in two studies: Environmental Profile of the Metropolitan Area, 1992 (SDP) and Urban and Housing Indicators Study for DSM City, 1995 (Centre for Human Settlements Studies, Ardhi Institute) and recommended by several knowledgeable people, consulted in the course of this Study. For these reasons this Study has adopted the population projection method based on ward growth rates. It has also been assumed that the population density of each ward will not exceed 40,000 persons/km^2, this being a physically unlikely situation. The results of the next census which should be available in 2000, after the census in 1998, will show which method is more accurate.

2.4.3 Estimated Population in 1996

Table 2-9 tabulates the estimated population and population density in 1996 for each ward in the Study Area and shows that the total population in the Study Area in 1996 is approximately 2 million corresponding to an average population density of 4,615. This figure is low for a city and is attributed to the Study Area including sparcely populated rural areas such as Goba, Kunduchi, Ubungo, Kigamboni and Vijibweni. The estimated number of households in each ward in the Study Area is also shown in Table 2-9.

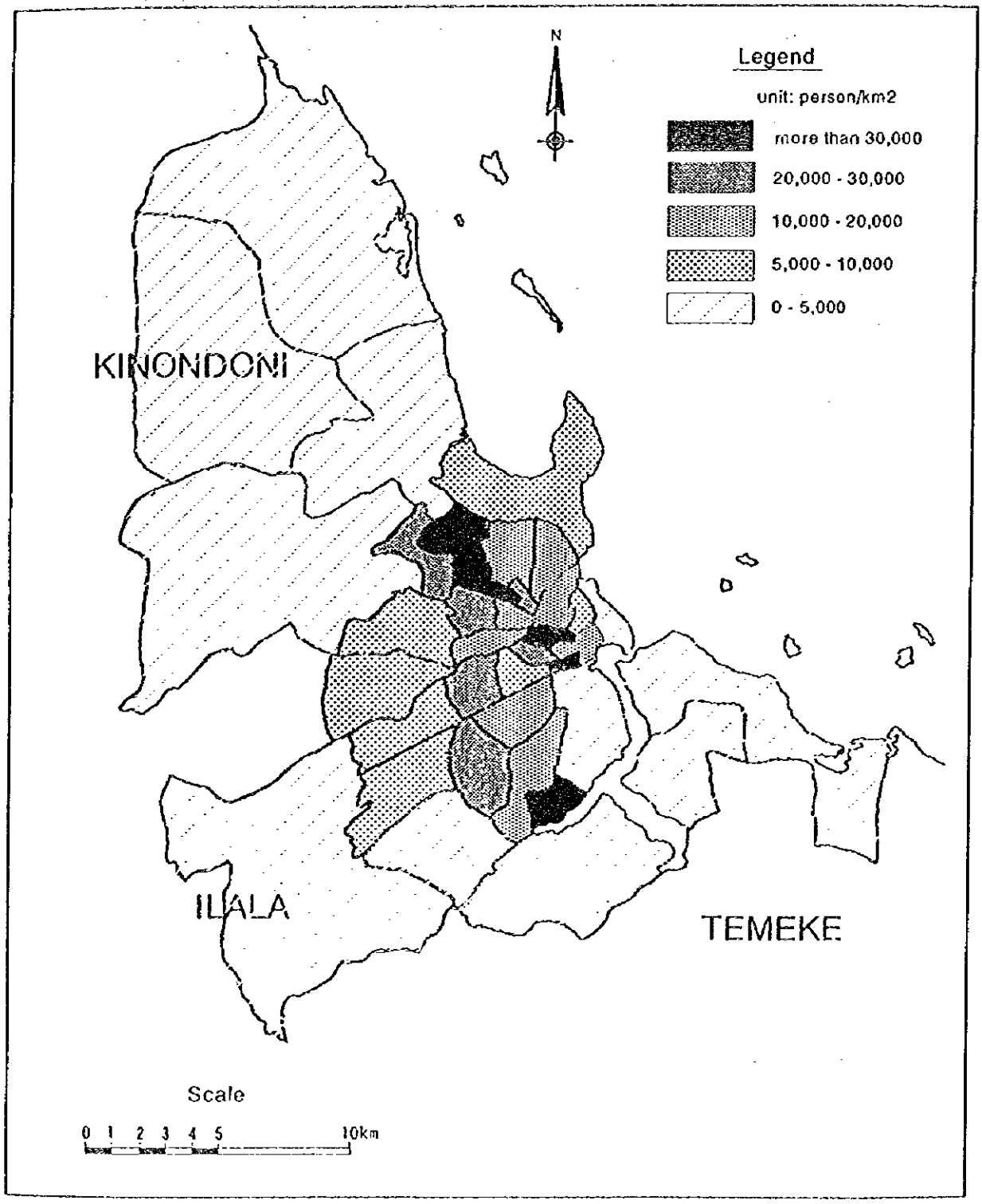

Figure 2-8: Population Density Map

Table 2-9: Estimated Population and Number of Households in the Study Area in 1996

Ward	District	Area (km^2)	Population in 1988	Pop.growth 78-88 (%)	Population in 1996	Population density (persons/km^2)	Number of Households in 1996
Buguruni	Ilala	2.4	48,247	4.0	66,029	27,512	18,062
Gerezani	Ilala	0.9	7,487	-0.3	7,309	8,121	1,520
Ilala	Ilala	3.6	35,048	1.3	38,863	10,795	9,138
Jangwani	Ilala	0.4	12,320	1.2	13,554	33,884	3,199
Kariakoo	Ilala	0.7	12,569	0.8	13,396	19,138	2,663
Kipawa	Ilala	10.1	36,910	8.5	70,890	7,019	17,827
Kisutu	Ilala	0.6	8,358	0.5	8,698	14,497	1,768
Kivukoni	Ilala	1.7	5,372	0.3	5,502	3,237	800
Mchafukoge	Ilala	0.6	8,547	-2.4	7,037	11,729	1,321
Mchikichini	Ilala	0.6	15,040	1.8	17,347	28,912	3,889
Tabata	Ilala	19.1	18,465	24.5	106,587	5,580	21,820
Ukonga	Ilala	42.2	45,203	6.2	73,141	1,733	16,386
Upanga East	Ilala	1.3	9,807	1.5	11,048	8,498	847
Upanga West	Ilala	1.0	11,021	0.2	11,199	11,199	1,659
Vingunguti	Ilala	8.5	33,690	6.0	53,697	6,317	13,916
Goba	Kinondoni	44.3	4,753	-9.3	2,177	49	543
Kawe	Kinondoni	22.4	44,085	9.7	92,458	4,128	22,078
Kigogo	Kinondoni	1.6	21,222	2.6	26,059	16,287	5,763
Kinondoni	Kinondoni	3.1	42,387	4.3	59,362	19,149	13,341
Kunduchi	Kinondoni	53.6	22,743	6.9	38,785	724	9,298
Mabibo	Kinondoni	11.1	45,963	5.0	67,908	6,118	15,899
Magomeni	Kinondoni	1.4	16,996	1.8	19,603	14,002	5,030
Makurumula	Kinondoni	3.3	53,991	6.3	88,021	26,673	21,173
Manzese	Kinondoni	3.5	54,499	6.7	91,560	26,160	21,561
Msasani	Kinondoni	17.5	51,293	7.1	88,792	5,074	18,763
Mwananyamala	Kinondoni	6.0	72,508	5.0	107,127	17,855	25,033
Mzimuni	Kinondoni	1.5	23,985	1.8	27,664	18,443	6,698
Ndugumbi	Kinondoni	1.1	32,736	3.1	41,792	37,993	10,128
Tandale	Kinondoni	3.0	58,413	9.0	116,392	38,797	26,660
Ubungo	Kinondoni	63.2	46,980	7.0	80,720	1,277	16,359
Keko	Temeke	3.2	42,868	2.1	50,622	15,819	12,391
Kigamboni	Temeke	28.0	26,078	4.1	35,965	1,284	8,546
Kurasini	Temeke	8.3	26,776	5.0	39560	4,766	8,541
Mbagala	Temeke	26.0	40,866	13.9	115,758	4,452	27,020
Miburani	Temeke	4.2	72,892	0.6	76,465	18,206	17,616
Mtoni	Temeke	2.3	39,417	11.6	94,841	40,000	23,447
Temeke 14	Temeke	4.8	91,144	2.3	109,328	22,777	26,714
Vijibweni	Temeke	15.7	2,557	2.8	3,189	203	649
Yombo Vituka	Temeke	17.1	13,408	18.4	51,782	3,028	11,107
Total		439.9	1,256,644		2,030,231	4,615	469,175

2.5 Urban Structure

2.5.1 General Situation

The area which was developed during the colonial period is now the city centre of DSM. Many other parts of DSM are expanding in an uncontrolled and disorderly manner, more quickly than the implementation of planned development. Hence, DSM may be divided into urban, planned developed, unplanned developed and rural areas.

The city has expanded along the main trunk roads such as Bagamoyo Road, Morogoro Road, Nyerere Road and Kilwa Road. Residential development has primarily focused on suitable land areas in between these trunk roads. The low marsh area along the Msimbazi River and Creek has created a wedge in urbanisation between trunk roads.

Expansion towards the West and South is still characterised as ribbon development. The Kigamboni urban area, adjacent to the oil refinery located on the eastern side of Mzinga Creek, is linked to the central area by ferry.

2.5.2 Land Use Pattern

Land use in DSM can be categorised into planned developed, unplanned developed, industrial, recreational, horticulture, urban farming areas and others (i.e. bush land, scrub land, farming and some scattered houses) as was done in the DSM land use map of 1992. Figure 1-9 shows the land use pattern within the Study Area in 1992.

a. Planned developed area

The planned developed areas, where districts have been developed according to plans consist of residential, commercial and institutional areas. Some areas are mixed and some are dominated by residential areas.

a.1 Mixed Use Area

Major mixed use areas cover the areas developed in the early colonial era, which mainly lie in and around the city centre of DSM. This is still the commercial and administrative centre and is located north of Mzinga Creek. Mixed areas consist of Kivukoni, Mchafukoge and Kariakoo wards. Kivukoni ward forms an institutional district containing most central government offices. Mchafukoge ward forms a central business district of offices, shops and providers of general services. Kariakoo ward contains a mixture of business offices, housing, shops and small scale industries. The Kariakoo market is a focal point for commercial activities.

The other smaller mixed use areas are scattered within residential areas in highly populated areas and function as local centres. These include Magomeni, Manzese and Sinza along Morogoro Road, Msasani along Bagamoyo Road, and Temeke along Nelson Mandela Road.

a.2 Planned Residential Area

Most of the city's planned areas are highly populated and feature small to medium scale businesses and manufacturing industries. Large, medium density, residential areas are found in Upanga close to the central business area, in Mbezi along Bagamoyo Road in the north, in Tabata area, west of the city centre, and in Kurasini, south of the city centre.

b. Unplanned residential area

They are many unplanned residential (squatter) areas in DSM. Government sources[34] have stated that in 1996, there is a housing shortage of 600,000 units, 75% of DSM residents live in squatter areas and 65% of new housing units are being constructed in squatter areas.

Most of the unplanned areas where people have settled randomly are highly populated. These include Manzese along Morogoro Road, large settlements in southern Temeke, the industrial area along Nyerere Road and Mbagala along Kilwa Road. Unplanned urban development is also spreading westwards along Morogoro Road.

[34] Mr. Gideon Cheyo; Land, Housing and Urban Development Minister; "Daily News" 17 Jul. 1996

The conditions in squatter areas are variable. Roads are rough, narrow and potholed. and many areas are not provided with basic public services such as water, drainage, electricity and SWM. Often, vacant land is used as a dumping ground for waste. Houses may be built with soil walls or concrete blocks. Areas further from the city centre have more space and residents may share land where they grow vegetables.

c. Institutional area

National Government administrative offices and City Commission Head Office are located in the City Centre in Kivukoni and Mchafukoge wards respectively. There are also small administrative office areas in Kinondoni, Ilala and Temeke. The area around the University of Dar es Salaam forms an institutional area, consisting of educational facilities. The main military facilities are located in Kawe, Msasani and Kigamboni wards. Two large prisons are located in Keko and Ubungo wards.

d. Industrial area

Industrial areas have primarily been developed towards the west along Nyerere Road and towards the south of the port along Mzinga Creek. Large industrial estates are found along Nelson Mandela Road, Morogoro Road and Bagamoyo Road.

e. Recreational area

Most recreational areas are located along the Oyster Bay seashore and some small recreational areas are found inland, scattered around the city.

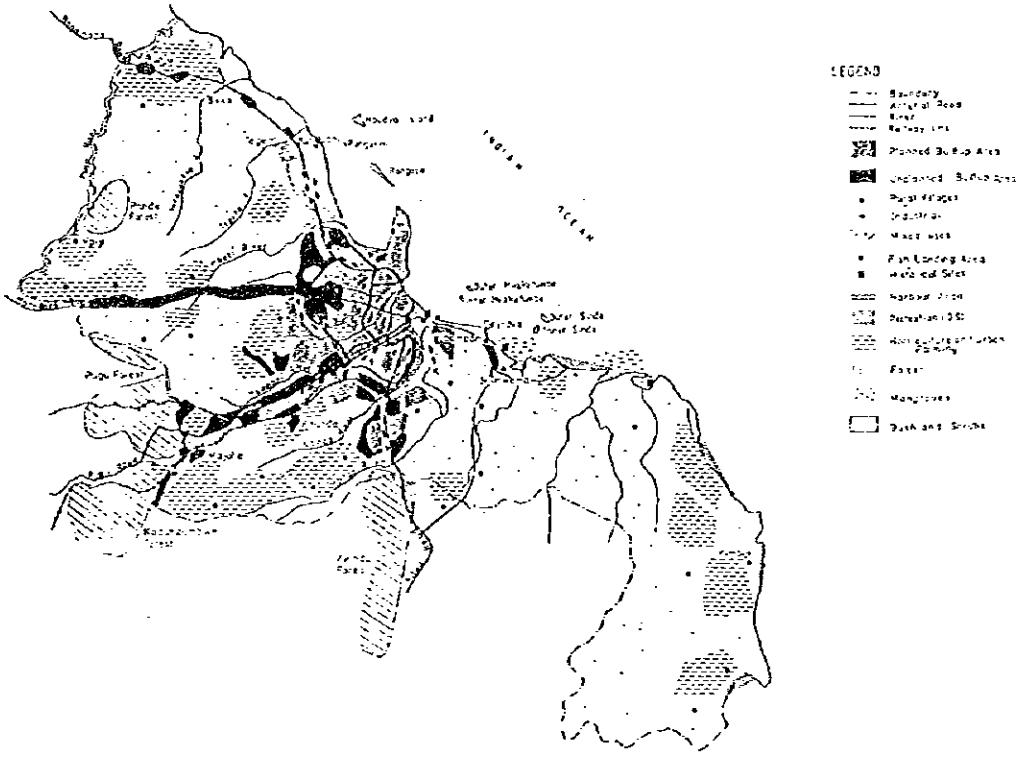

Figure 2-9: Land Use in 1992

2.5.3 Transportation

a. Road

DSM has a total road length of 1,150 km, with 148 km of trunk roads, 64 km of regional roads and 933 km of local roads. Of the 1,150 km road network in DSM, 450 km is paved while the remaining 700 km are gravel or earth roads, as shown in Table 1-16. Figure 1-10 shows the main roads in DSM.

Table 2-10: Summary of Roads in DSM

Category	Number of lanes	Surface condition	Length (km)	Percentage of total length
Trunk road	4	Paved	35	
	2	Unpaved	113	
	Total		148	13 %
Regional road	2	Paved	52	
	2	Unpaved	13	
	Total		65	6 %
Local road	2	Paved	251	
	1-2	Unpaved	682	
	Total		933	81 %
Paved road total			338	39 %
Unpaved road total			808	61 %
Grand total			1,146	100 %

The road network in DSM has been developed on a radial pattern with major arteries focusing on the central area and the port. Roads radiating out of the city centre are Bagamoyo road, Morogoro road, Nyerere road and Kilwa road.

Bagamoyo road connects DSM with the northern coastal region and functions partially as a commuter service road for the residents of newly developed suburban areas along this axis. Morogoro road is an inter-regional/inter-national road which connects DSM and the central region of Tanzania and nearby countries. The road is extremely important for the regional economy in that most cargo shipped into and out of DSM port is transported along this route. Morogoro Road is also a part of the Tanzania-Zambia Highway, an international trunk road in the central part of East Africa. However, the nature of the road changes to that of an urban arterial road after the town of Kimara which is located about 16 km from the city centre of DSM.

Nyerere Road, on the other hand, functions as a vital industrial road in the city with several manufacturers and distributing industries located along it. The road also provides access to the Dar es Salaam International Airport. It is a high standard 4-lane road with pedestrian paths on both sides of the thoroughfare.

Kilwa Road connects DSM to the coastal regions in southern Tanzanian and is the only land route which links Kigamboni peninsula with the main land. The function of this road is becoming increasingly important due to residential development along the road.

b. Railway

DSM is the terminus point of two different railway lines, the Central Line and Tanzania - Zambia Line. The Central Line is operated by the Tanzania Railways Corporation (TRC) while the Tanzania - Zambia Line is operated by the Tanzania - Zambia Railway Authority (TAZARA). The passenger terminal for the Central Line is located near the

junction of Sokoine and Gerezani streets near the city centre, while its freight terminal is located in the seaport area.

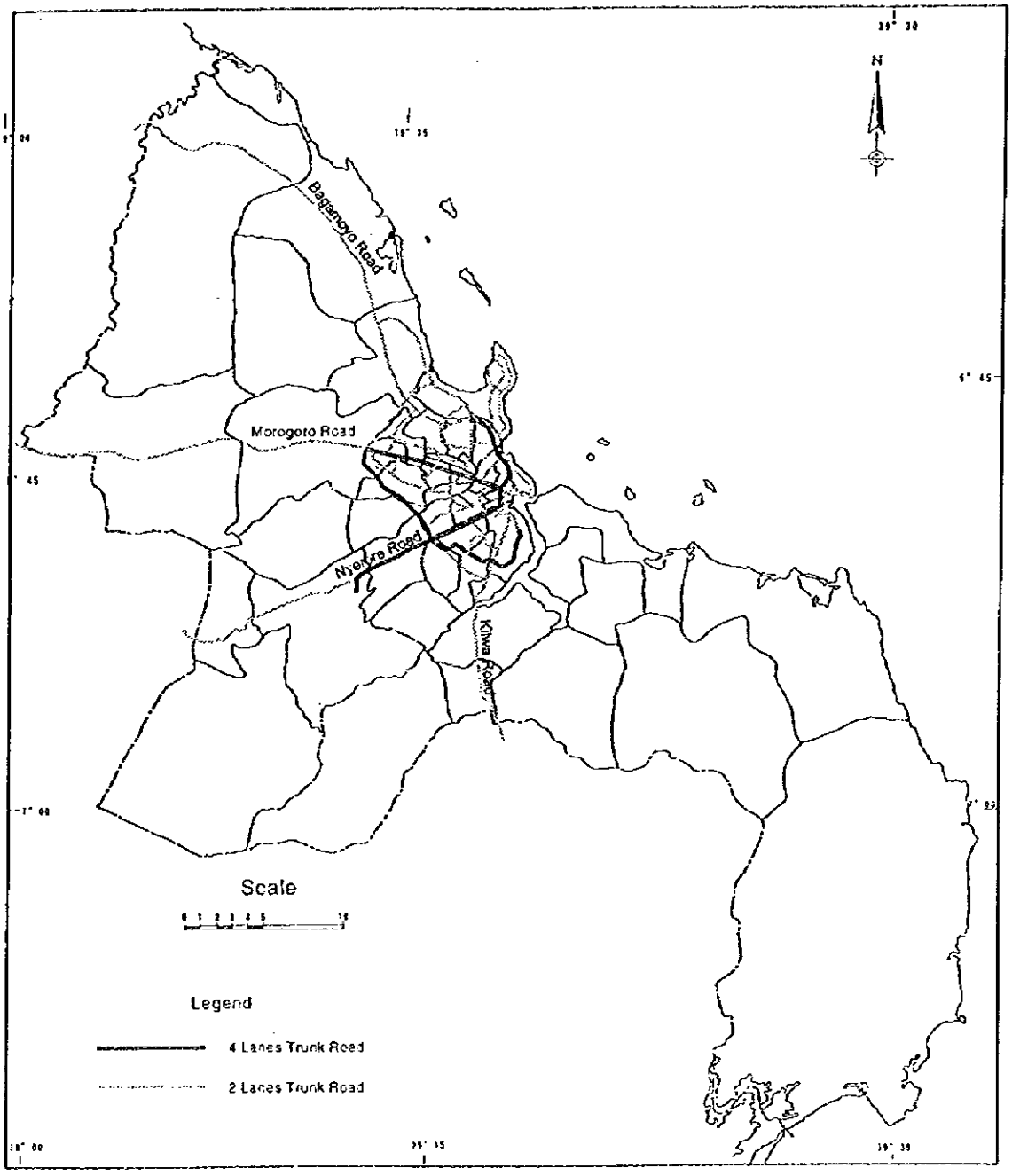

Figure 2-10: Transportation System in DSM

Annual cargo and freight transported by railway in Tanzania has been decreasing since 1985. Inefficiency of railway transportation due to poor maintenance of freight cars and related facilities are major reasons for the decline in railway transportation. The other reasons are the recession of the national economy since the middle of the 1980s and an increase in the road transportation of agricultural products.

The Tanzania - Zambia railway is mainly used for international transportation of cargo between the port of DSM and Tanzania's neighbouring inland countries such as Zambia and Malawi. Mining products and other agro-related raw materials are transported via this railway. The railway also handles substantial quantities of domestic cargo within Tanzania, mainly between the regions of Rukwa, Mbeya, Ruvuma, Iringa, and DSM. Passenger service is made infrequently between DSM and the inland regions of Tanzania and neighbouring countries with a scheduled service running on average three times a week. All railway/road crossings are at grade level which is one cause of road traffic congestion and extended waiting periods.

c. Airport

Dar es Salaam International Airport is located 11 km south-west of the city centre along Nyerere Road. The airport has both international and domestic terminals with a 3,000 m long, 60 m wide main runway and 1,000 m long and 30 m wide runway intersecting with the main runway.

Volumes of both passengers and freight handled at the airport are steadily increasing, especially for freight in the past 12 years. The number of passengers and freight in 1990 were 504,000 passengers and 7,700 tons respectively. Most of the passengers and freight passing through the airport are usually transported to the city centre via Nyerere Road, which has a high standard 4 lane carriageway. There are no direct airport limousine or direct city bus services to the airport on this road.

In terms of the long term foreseeable future, air transport in Tanzania will remain the dominant means of international transportation and the role of the Dar es Salaam International Airport will become more important as the air transportation hub for the nation.

d. Port

DSM Port has been developed along the Mzinga Creek which separates the mainland and the Kigamboni peninsula. The port is equipped with relatively modern container berths, a deep sea oil products berth and other facilities. A passenger terminal is located along the Sokoine Drive in the city centre where a passenger service to Zanzibar is provided.

A port development plan has been prepared by the Tanzania Harbours Authority to cope with growing demand. This plan proposed expansion of container and general cargo terminal facilities, dredging of the entrance channel, improvement of cargo handling equipment, etc. Regarding the mode of distribution of cargo to and from the port, about 70 % are transported via road while the remaining 30 % are transported via rail, as shown in Table 2-11.

Table 2-11: Mode of Distribution of Cargo

Model of transport		Imported cargo			Exported cargo			Total cargo		
		Break bulk	Contai-ner	Total	Break bulk	Contai-ner	Total	Break bulk	Contai -ner	Grand total
Road		766	389	1,155	194	358	552	960	747	1,707
Rail	TRC	245	25	270	228	7	235	473	32	505
	TAZARA	89	26	115	47	2	19	136	28	164
	Total	334	51	385	275	9	284	609	60	669
Grand total		1,100	440	1,540	469	367	836	1,569	807	2,376

e. Ferry Services

A ferry service to and from Kigamboni is provided at a ferry boat dock which is located at the mouth of the harbour. The ferry service is offered between 5 am and 11 pm with an average frequency of three times per hour in both directions. The number of passengers and vehicles transported by ferry in 1992 were around 14 million and 200,000 respectively.

2.6 Environmental Policy

Tanzania's environmental control policy abides by concepts and principles of sustainable development, to which it subscribed at the UN conference on Environmental Development (Earth Summit), Rio de Janeiro, 1992.

However, the first comprehensive initiative to address environmental problems in Tanzania dates back to 1983 when the National Environmental Management Council - NEMC- was established whose scope of work included:

- formulating a policy on environmental management and recommending its implementation to the government;
- specifying standards norms and criteria for the protection and maintenance of the quality of the environment;
- formulating proposals for legislation in the area of environmental issues and recommending their implementation to the Government;
- fostering co-operation between government, local authorities and other bodies;
- stimulating public and private participation in programmes and activities;
- undertaking and promoting general environmental education.

Since 1996, the NEMC has come under the Division of the Environment which is part of the Vice-President's Office. Formerly, it was under The Ministry of Tourism, Natural Resources and Environment[35]. This change was made in order to have environmental management at a higher level in the government so that it can influence the rest of the Ministries and/or other sectors more easily.

NEMC is headed by a board of 19 members; one being the Chairman, appointed by the President; fifteen officials from governmental bodies involved in matters related to the protection/management of the environment and three other qualified persons, all of whom are appointed by the Vice-President. Civil society is not represented on the board through academia, NGOs or community based organisations.

NEMC only has an advisory function and lacks regulatory powers. This means that presently pollution produced by industry or by human settlements is virtually not controlled.

[35] This Ministry is now called Ministry of Tourism and Natural Resources

2.6.1 National Development Plan

The present national development plans, which are the second Rolling Plan and Forward Budget (RPFB II) 1994/95-1996-1997, are described in section 1.7.

2.6.2 National Environmental Action Plan

The Tanzania National Environmental Action Plan (NEAP) produced by the Ministry of Tourism and Natural Resources in June 1994 embodies the country's environmental policy, being regarded as "the first step towards a comprehensive incorporation of environmental concerns into the fabric of national planning". It represents the integration of several environmental projects and numerous consultations into one comprehensive document.

NEAP states the following principles of environmental conservation and control:

- Natural resources should be utilised on a sustainable basis;
- All segments of the country should be involved in responding to environmental problems;
- Environmental education and awareness should be promoted at all levels of society;
- Information centres on environmental issues shall be created and such information shall be communicated and made available to the public;

Based on these principles, the following objectives shall be pursued:

- to ensure sustainable and equitable use of resources without degrading the environment or risking health or safety;
- to prevent and control degradation of land, water vegetation and air;
- to conserve and enhance natural and man made heritage;
- to improve the condition and productivity of degraded areas, including rural and urban settlements;
- to raise public awareness of the linkages between environment and development and promote individual and community participation in environmental action;
- to promote international cooperation on the environmental agenda.

The overall goal of these objectives is therefore "to achieve sustainable development that maximises the long term welfare of both present and future generations of Tanzanians".

The key instruments to achieve these objectives and ultimate goals are:

- the use of environmental impact assessments for major development projects;
- the development of proper environmental legislation in order to implement the regulatory elements;

- making use of economic instruments such as pricing, taxation, subsidies and the use of the "polluter pays" principle;
- the issuance of environmental indicators and standards;
- seeking public participation.

Based on these principles, objectives and relying on the key instruments, the Action Plan identified six major environmental problems of high priority to be addressed in Tanzania:

1. Land degradation;
2. Lack of accessible water supply and poor water quality;
3. Urban environmental pollution;
4. Deterioration of aquatic resources and biodiversity;
5. Loss of natural habitats;
6. Deforestation.

Under the heading "Urban Environmental Pollution", solid waste problems are addressed and specific actions proposed to solve them:

- establish disposal, production, transportation standards and permitting requirements for solid wastes, enforceable by law;
- establish emergency sites for solid waste disposal, until permanent sites can be found;
- develop environmentally sound waste collection, transportation and disposal systems for urban and protected areas;
- establish facilities for the final disposal of hazardous wastes, including pesticides past their expiry dates;
- conduct pilot projects on resources recovery, including recycling from waste and the development and use of refuse based fuels.

Solid waste was also addressed in the section on urban and industrial pollution in the chapter, "Sector Oriented Strategies", where it was stated that environmental related strategies should include "development of private sector provision of land service and of refuse and waste collection".

However, implementation of environmental policies and procedures suffer from operational and financial constraints which are difficult to overcome in a country like Tanzania and hence, to date, very few or none of these actions concerning SWM have been accomplished. Hence, the problem of urban SWM is becoming more serious, especially in DSM.

Very recently, the central government expressed its commitment to increasing its efforts in developing environmental awareness building, appealing to the business community, academic institutions, and the donor community for support, stating that there is a need for large investments in the environment field and that the government

can not shoulder this responsibility alone. Furthermore, it has been reported that a new National Environmental Policy document, being prepared in the Vice-President's Office, is now in its final stages.

2.6.3 Organisations Concerned

The main institutions dealing directly with environmental issues and their responsibilities in mainland Tanzania are :

- Division of the Environment, Vice-President's Office - development of policy and legal matters concerning environmental protection and management;
- Ministry of Tourism and Natural Resources - forestry, wildlife and marine resources conservation;
- National Land Use Planning Commission - land husbandry;
- National Environmental Management Council - coordination of Environmental Programmes on a daily basis.

Concerning SWM, no permanent responsibility for SWM is assigned to any of these institutions although NEMC does have control over the improper disposal of wastes in general.

Nevertheless, in the case of DSM, the central government, through the Ministry of Local Government which is in the Prime Minister's Office (PMO), has expressed its concern on the situation regarding delivery of public services. Furthermore, the PMO does have some influence on local government policies as it approves local government budgets, by-laws and levies proposed to finance local government activities, funds from the Central Government treasury and any external assistance.

The Ministry of Health also plays a role (at least theoretically) in SWM, as they are responsible for public health, which is linked to SWM.

2.6.4 Legislation

Although there are several pieces of legislation dealing with environmental issues, many are outdated, most are not enforced and some are not even known. NEAP verified this when it stated (in 1994): "there are over 80 pieces of legislation which relate to environmental issues, yet many are outmoded and most are not understood or currently enforced"

Consequently, NEAP proposed a comprehensive review of environmental related legislation and the establishment of sectoral legislation in order to "address the Environmental Impact Assessment requirements of major projects, the requirements that all relevant permits/licenses contain environmental protection conditions and requirements that management plans be prepared by the relevant authorities for all land areas in Tanzania".

The leading institution to propose this legislation, according to NEAP, is the Ministry of Justice and Constitutional Affairs with the collaboration of the Ministry of Tourism, Natural Resources and Environment.

2.7 Economic Conditions

2.7.1 National Economy

a. Historical Perspective on the Tanzanian Economy

a.1 Socialistic Economic Programme in the Early Years After Independence

Soon after independence, the Tanzanian government officially adopted "socialism and self-reliance" as a policy in the Arusha Declaration of 1967, introducing a socialistic economic programme as the basis for the economic policies of the country. Under this socialistic economic programme, the role of the government in the economy was extended, beginning with the nationalisation of the banking, trading, insurance and industrial sectors. These sectors were dominated by parastatals in which the government was a major shareholder, while some other private companies were completely controlled through the National Development Corporation under the Ministry of Industry and Trade.

Likewise in the agricultural sector, large foreign-owned estates growing sisal, tea and coffee were nationalised, being controlled by co-operative unions which were later dissolved in 1976. Nationalisation resulted in the development of communal farming and the displacement of private farming.

a.2 Economic Decline in the late 1970s and the early 1980s

The second oil shock at the end of the 1970s and the subsequent world recession coupled with a consequent deterioration of prices of the country's major export commodities exacerbated the effects of state-controlled economic policies and produced macro-economic imbalances in the country's economy. As a result, the macro economic balance of the country in the early 1980s severely deteriorated in every aspect. The investment rate sharply declined from an annual average of 28.0 % during 1976-1980 to that of 18.0% during 1981-1985, and, as a result, the real GDP growth rate declined steeply to an average of 0.7 % during 1981-1985, which is a negative real GDP growth rate per capita[36]. This economic decline produced a severe fiscal imbalance leading to a rise in the overall fiscal deficit to an annual average during 1981-1985.

a.3 Structural Adjustment Programme in the late 1980s and the early 1990s

In response to the serious economic setbacks experienced by Tanzania since the end of the 1970s, IMF offered a stand-by credit facility in September 1980 to the country on general condition that Tanzania would transform its state-controlled economy into a market oriented economy. Specific demands were:

- adjustment of the overvalued exchange rate;
- severe curtailment in the growth of both public expenditure and money supply;
- further increases in prices of agricultural products to international market levels.

[36] Doriye, J. (1995); "Structural Adjustment in Tanzania: Progress and Prospects" in Msambichaka L. A. et al (eds), *Beyond Structural Adjustment Programmes in Tanzania*, University of Dar es Salaam, Economic Research Bureau, page 9.

However, the IMF requirements were not met until August 1986 following the approval of significant policy changes in the government's budget of June 1986. Accordingly, IMF approved an 18 month stand-by credit facility and the World Bank contributed support to the three year Economic Recovery Programme (ERP I). The major objectives of ERP I were:

- to increase incentives to agricultural producers;
- the rationalisation of parastatals;
- general reduction in state intervention in the economy.

In October 1987, the stand-by credit facility was replaced by a three year Structural Adjustment Facility (SAF) credit under which the Tanzanian government drew SDR (Special Drawing Right) 74.9 million, which is equivalent to USD 100.0 million at a conversion rate of SDR 1.336 to USD 1.

In January 1990, the government unveiled the successor to ERP I - the Economic and Social Action Programme (ESAP or ERP II), which was to cover the three fiscal years of 1989/90-1991/92. The major objectives of the programme were similar to those of ERP I, but greater emphasis was placed on alleviating the social costs of adjustment.

Table 2-12 shows the variation in gross domestic product in Tanzania during the adjustment period and indicates that the economy has sustained a recovery since 1987. In an effort to enhance this economic recovery, in July 1991 ERP II was continuously funded by the approval of the Enhancement Structural Adjustment Facility (ESAF) credit of SDR 181.9 million over three years, which is equivalent to USD 243.0 million at a conversion rate of SDR 1.336 to USD 1.

In response to the introduction of ESAF, the first Rolling Plan and Forward Budget (RPFB I) for the three fiscal years 1993/94-1995/96 was formulated as a continuation of the economic and institutional reform programmes carried out since the early 1980s.

Table 2-12: Variation in the Gross Domestic Product (at factor cost)

Unit: Tsh. billion for GDP and Tsh. for GDP per capita

Indicator / Year	1987	1988	1989	1990	1991	1992
GDP at 1976 Prices	26.3	27.5	28.6	29.9	31.1	32.2
Real Growth Rate (%)	5.1	4.2	4.0	4.5	3.9	3.6
GDP/capita at 1976 Prices	1,202	1,219	1,232	1,256	1,268	1,278
Real Growth Rate (%)	2.2	1.4	1.1	1.9	1.0	0.7

Source: The Economist Intelligence Unit, Country Profile, Tanzania 1994-95

However, the overall economic performance during 1993/94 fell short of RPFB targets, resulting in all of the macro-economic indicators being adversely affected by early 1994. The balance of payments figures for 1993 showed export earnings of USD 437 million, representing a shortfall of USD 41 million on the target for the year of USD 478 million[37]. The government debt rose from Tsh. 93.8 billion at the end of June 1993 to around Tsh. 125.7 billion by the end of June 1994, an increase of almost one third[38].

[37] Economic Bulletin for the Quarter Ended 31st December, 1993, Vol. XXII No.4, Bank of Tanzania, 1994

[38] Economic Bulletin for the Quarter Ended 31st December, 1994, Vol. XXIII No.4, Bank of Tanzania, 1995

As a result, by the middle of 1994 when the credit facility was due to expire, more than half of it remained undrawn as the IMF and the World Bank had suspended ESAF credit due to the budgetary targets which fell short.

b. The Present National Plan and the National Economy

b.1 The Introduction of the Second Rolling Plan and Forward Budget

In an effort to rebuild the macro-economic balances, the government launched the second Rolling Plan and Forward Budget (RPFB II) for the three fiscal years 1994/95-1996/97 in June 1994. RPFB II stressed major strategies such as:

- redefinition of the role of the government in the economy;
- shifting from centralised controls to more liberalised market led development;
- restructuring and downsizing of the public sector.

At the fiscal year 1996/1997, the last year of RPFB II, a comparison between the targets and the latest performance data for the major macro-economic indicators were made below.

b.1.1 Fiscal Deficit

Since the amount of Tsh. 196.4 billion collected during the period July-December 1995 was only 8.2% of GDP, compared with the 25.5% target for this year, the overall deficit amounted to Tsh. 59.8 billion in spite of the targeted overall budget surplus of at least 1.5% of GDP for the year[39].

b.1.2 Balance of Payments

The target for the trade account deficit in FRPB II was to maintain the level of 1993, and as Table 2-13 shows, the trade account deficit has slightly increased. However, according to the latest forecast by the Board of External Trade (BET), the export values for 1996 were expected to improve relative to the 1995 performance by 25.5%[40]. BET added that the export earnings for this year would basically come from agricultural products like coffee, tea, cashew nuts, sisal and pyrethrum.

Table 2-13: Balance of Payments during 1991 - 1995

Unit: Tsh. Million

Item / Year	1991	1992	1993	1994	1995
Trade Account	-264,282	-325,514	-434,842	-500,580	-578,532
Exports	74,708	123,966	181,147	265,177	390,378
Imports	338,990	449,480	615,989	765,757	968,910
Current Account	-118,682	-121,019	-181,385	-196,915	-440,926
Overall Account	-58,637	-66,806	-141,610	-76,615	-115,317

Source: Economic Bulletin for the Quarter Ended 31st December, 1995, Vol. XXIV No.4, Bank of Tanzania, 1996

[39] Economic Bulletin for the Quarter Ended 31st December, 1995, Vol. XXIV No.4, Bank of Tanzania, 1996

[40] The Monthly Economic Review, June 1996, Board of External Trade, 1996

b.1.3 External Debt

The target for the external debt was to maintain the level of 1993, and the total debt committed and outstanding as at the end of 1995 was USD 7,074.4 million[41]. As Table 2-14 shows, the total debt service and the debt service ratio in 1995 were USD 125.5 million and 13.4%, respectively, both of which were well below the targeted level of 1993.

Table 2-14: Total Debt Service and Debt Service Ratio in Tanzania

Unit: Millions of USD

Item / Year	1991	1992	1993	1994	1995
Total Debt Service	145.3	262.3	160.2	129.8	125.5
Principal	94.2	149.8	83.7	71.1	71.5
Interest	51.1	112.5	76.5	55.4	53.6
Others	0.0	0.0	0.0	3.3	0.4
Export of Goods & Services	460.0	555.0	730.0	960.8	937.6
Debt Service Ratio (%)	31.6	47.3	21.9	13.5	13.4

Source: Economic Bulletin for the Quarter Ended 31st December, 1995, Vol. XXIV No.4, Bank of Tanzania, 1996

b.1.4 Inflation Rate

Although the target for the inflation rate was a reduction to 15% by the end of 1996, according to the monthly report of the Bank of Tanzania in June 1996, the rate of inflation had eased to 22.7% in annualised terms, slightly lower than that for the previous month[42].

Thus, the latest performance of the Tanzanian economy has not always been successful in achieving the targets set under FRPB.

b.2 Resuming ESAF

Nevertheless, after the advisory group talks in Paris in July 1996, the World Bank officials as well as IMF officials paved the way for the resumption of the ESAF which had been suspended since late 1994, adding the following conditions:

- further acceleration of privatisation of the public sector;
- further restructuring of the Civil Service;
- tax reform to increase revenue;
- trade liberalisation.

In January 1997, the Paris Club released 67% of the total debt. The remaining 33% has been rescheduled.

b.3 The Relations between RPFB II / ESAF and Public Utilities

Under the present direction of the national plan of RPFB II in support of ESAF, there is a relationship between RPFB II coupled with ESAF and the basic strategies for public services including solid waste management in urban areas. The first is the acceleration

[41] Economic Bulletin for the Quarter Ended 31st December, 1995, Vol. XXIV No.4, Bank of Tanzania, 1996
[42] The Bank of Tanzania, a Senior Economist, July 1996

of the privatisation of public utilities under the framework for parastatal reform, and the second is the proper collection of charges for the public utilities.

According to Chapter 2 of RPFB II, the Parastatal Sector Reform Commission (PSRC) adopted its master plan for parastatal sector restructuring in August 1993 in which 128 parastatals were earmarked for privatisation in order to provide more efficient services[43]. TANESCO and NUWA, two major public utilities, are also supposed to be on track for privatisation.

According to Chapter 8 of RPFB II, greater emphasis should be placed on community involvement in the provision and management of social services and the government should recognise that it cannot meet all the costs of providing the necessary services[44].

Solid waste management, as one of the public and social services, should be improved in line with the above two policy frameworks under RPFB II. This can be interpreted as:

- privatisation of solid waste management services should be carefully considered as a way of improving the efficient provision of services;
- proper charging of the costs for solid waste management to the refuse generators.

These policy frameworks are also in line with the conditionalities set in the ESAF, demanding acceleration of privatisation for the provision of efficient services and cost sharing of the public services between the government and the beneficiaries. In conclusion, solid waste management in Dar es Salaam, as one of the public services, must be planned in accordance with the general policy directions of FRPB II and ESAF.

2.7.2 Regional Economy

a. Socio-Economic Setting

Of the major cities of Tanzania, DSM remains the largest city, being an administrative, commercial, industrial and transportation centre in the country, with an estimated total population of 2.5 million or 29% of the total population of Tanzania in 1995[45].

The Gross Regional Products (GRP) of DSM city is estimated at 316.5 billion Tsh. in 1994, which is equivalent to USD 592.7 million at 1994 price levels, while the GRP per capita of DSM city is estimated at 197,107 Tsh. in 1994, which is equivalent to USD 397.1[46]. These figures imply that DSM city contributes 19.1% of the national GDP of the which is estimated at 1,660.0 billion Tsh. in 1994.[47] Table 2-15 indicates the variation in GRP for DSM City.

---

[43] The Rolling Plan and Forward Budget for Tanzania for the Period 1994/95 - 1996/97, Volume I, The President's Office, Planning Commission, June 1994
[44] ibid.
[45] Urban and Housing Indicators Study for Dar es Salaam City, Volume I, Centre for Human Settlements Studies and Ardhi Institute, 1995, page 6.
[46] National Accounts of Tanzania 1976 - 1994, Bureau of Statistics, 1995
[47] Economic Bulletin for the Quarter Ended 31st December, 1995, Vol. XXIV No.4, Bank of Tanzania, 1996

Table 2-15: Variation in Gross Regional Products for DSM during 1992 - 1994

Year	GRP of DSM (Billion Tsh.)	GRP of DSM (Million USD)	GDP (Billion Tsh.)	GDP (Million USD)	(%) of GRP in GDP
1992	200.9	485.3	1,031.0	2,492.7	19.5
1993	243.8	504.8	1,289.0	2,668.7	18.9
1994	316.5	592.7	1,660.0	3,108.6	19.1

Source: National Accounts of Tanzania 1976-1994, Bureau of Statistics, 1995

The proportion of Gross Regional Product (GRP) for DSM city relative to the whole GDP of Tanzania has been declining over the years from 25.2% of GDP in 1980 to around 19.0% during 1992 - 1994. This decline is due chiefly to the large contribution of the agricultural sector to the GDP which has remained stable, while the contribution of light industries has steadily declined.

Apart from trading, the major industries in DSM city are light industries such as food processing, machinery, basic metal and textiles, the breakdown of which is shown in Table 2-16. Although the trade and light industries are the main sources of GRP in DSM city, it should be noted that the informal sector, which is not counted in GRP statistics, plays an important role in the economy of urbanised DSM city. According to the informal sector survey in 1993, the percentage of the employed population whose activity is part of this informal sector is approximately 56%[48].

Table 2-16: Composition Rate of Industrial Output Value in DSM in 1989 and 1990

unit: %

Year	Food	Machinery	Basic Metal	Textile/ Leather	Electricity	Chemicals	Others	Total
1989	26.1	19.4	14.0	10.3	6.5	11.3	12.4	100.0
1990	32.7	21.2	14.4	8.4	7.2	6.6	9.5	100.0

Source: Dar es Salaam Regional Statistical Abstract 1993, Bureau of Statistics, 1996

b. Infrastructure

b.1 Public Utilities

Concerning water supply, the percentage of households with mains connections is approximately 22.0 % in DSM city[49]. Similarly, the percentages of households with electricity, sewerage system connections and telephone lines are estimated at 37.0 %, 6.0 % and 25.0 %, respectively[50].

b.2 Transportation

The Tanzanian Railways Corporation (TRC) runs the 2,600 km railway system linking Dar es Salaam with the central and northern regions.

The Tanzania-Zambia Railway Authority (TAZARA) operates 1,860 km of railway, of which 970 km are in Tanzania, linking Dar es Salaam with Kapiri Mposhi in Zambia.

[48] Urban and Housing Indicators Study for Dar es Salaam City, Volume I, Centre for Human Settlements Studies and Ardhi Institute, 1995, page 29
[49] ibid., page 31
[50] ibid., page 31

The Dar es Salaam international airport caters for 80% of Tanzania's air traffic[51] and the DSM port, which is the principal coastal port and has 11 deep-water berths, and handles 85 % of cargo[52] together with TAZARA in Tanzania.

2.7.3 Tax System and Utilities Charging System

a. Tax System

The reform of the tax system has been a controversial issue in Tanzania, since the government has frequently suffered from a shortage in revenue. Especially during the adjustment period in the late 1980s and the early 1990s, the improvement of revenue collection was one of the critical conditionalities for the disbursement of SAF and ESAF credit facilities set by the World Bank as well as by IMF.

The taxation system in Tanzania can be roughly divided into the national and local taxation systems for revenue generation for central and local government respectively. The structures of these tax systems are summarised below.

a.1 National Taxation System

The national taxation system is mainly composed of :

- direct taxation, such as taxes on income, profits and capital gains, and real estate;
- indirect taxation, such as domestic taxes on goods and services including excise duty, sales tax, hotel levy and motor vehicle tax and licenses;
- taxes on international trade including customs tariff and export tax;
- stamp duty.

Table 2-17 and Figure 2-11 shows the breakdown of tax revenue for the central government by source for the fiscal year 1993/1994. Some important observations on the national taxation system are made below.

[51] The Country Profile, Tanzania 1994 - 95, The Economist Intelligence Unit, 1995, page 24
[52] ibid. page 25

Table 2-17: Composition in the Tax Revenue for the Central Government of Tanzania in the Fiscal Year 1993/1994

Revenue	% of Revenue	% of GNP
Taxes on Income, Profits and Capital Gains	28.2	7.6
PAYE	4.1	1.1
Individuals	1.4	0.4
Companies	20.4	5.5
Payroll	0.9	0.2
Others	1.4	0.4
Property Taxes	0.1	0.0
Estate Duty	0.0	0.0
Land Rent and Service Charges	0.1	0.0
Domestic Taxes on Goods and Services	54.2	14.5
Excise Duties	19.2	5.2
Sales Tax	29.0	7.8
Hotel Levy	0.7	0.2
Motor Vehicle Tax and Licenses	4.0	1.1
Miscellaneous Taxes and Licenses	0.4	0.1
Taxes on International Trade	13.3	3.6
Stamp Duty	3.8	1.0
Others	3.8	1.0
Total Tax Revenue	100.0	29.9

Source: Ministry of Finance, 1993/1994

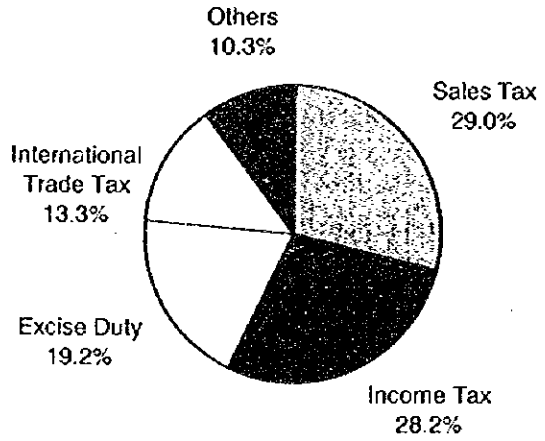

Figure 2-11: Composition of the Revenue of the Central Government of Tanzania in the Fiscal Year 1993/1994

a.1.1 Insufficient Revenue

It is estimated that the central government collected only 14.63% of GDP as taxes in the 1995/1996 financial year[53]. This figure is much lower than those in neighbouring

[53] The Estimates of Public Revenue and Expenditure for the Financial Year 1996 / 97, Ministry of Finance, 1996

countries such as Kenya and Zimbabwe where tax collection is 23% and 32% of GDP respectively[54].

a.1.2 Heavy Dependence on Indirect Tax and Company Tax

The present taxation system is heavily dependent upon indirect taxes and company taxes for most of its revenue. Table 2-17 illustrates this, showing that while the indirect tax accounted for 54.2% of the total tax revenue, the direct tax provided only 28.2% of revenue with the main contributor from this source being companies (20.4%) while income tax on PAYE (Pay As You Earn) and individual bases generated only 4.1% and 1.4% of the total revenue respectively.

a.1.3 Narrow Tax Base

The tax base on which the various national taxes are levied is too narrow to generate sufficient revenue due to many tax reliefs, as well as a tax exempt informal sector, which approximately occupies 50% of the total economically active population.

These structural defects in the present national taxation system put the central government in a financially vulnerable position, and during the past three decades numerous attempts have been made at tax reform in Tanzania. The successive income tax reforms in 1986, 1989, 1990 and 1992[55] however undermined the already weak base of the national tax structure, as the government reduced the threshold income and taxation rates without any other compensatory measures.

In an attempt to generate sufficient revenue, the government comprehensively reformed the national taxation structure in June 1996. The Tanzania Revenue Authority (TRA) was established by an Act of Parliament, No. 11 of 1995 as a central body to strengthen assessment and collection of revenue for the central government. In response to the establishment of TRA, the Financial Bill (No. 2) Act was passed on June 20, 1996 to comprehensively change the national taxation structure. The tax reform measures include:

- introduction of a severe penalty system such as longer imprisonment and higher fine for tax fraud and evasion;
- minimisation of tax exemptions with exceptions being granted only in key specific areas such as education, health and public savings institutions;
- introduction of steeper progressive tax rates on income tax with an increase in the basic taxable rate from Tsh. 17,500 to Tsh. 20,000 per month (See Table 2-18 and
- Figure 2-12);
- introduction of the rent income tax with a flat rate of 15%;
- re-introduction of the export tax with a flat rate of 2%;
- adjustment of the rates of excise duty, stamp duty, vehicle registration fees and other fees;

[54] Osoro, E. (1994); "Taxation in Tanzania: Motivations, Directions and Future prospects" in Msambichaka, L. A. et al (eds.), *Development Challenges and Strategies for Tanzania Agenda for the 21st Century*, Dar es Salaam University Press, page 264.

- introduction of education for tax payers.

All these measures are designed to maximise tax revenue for the central government. Through these tax reforms, the government is expecting a tax revenue increase to Tsh. 13,563.6 million per annum[56].

Table 2-18: Income Tax Table as of July, 1996

Monthly Income	Rate Payable
less than Tsh. 20,000	Nil
Tsh. 20,000 - 50,000	Nil + 7.50% for excess of Tsh. 20,000
Tsh. 50,000 - 80,000	Tsh. 2,250 +10.00% for excess of Tsh. 50,000
Tsh. 80,000 - 110,000	Tsh. 5,250 + 12.50% for excess of Tsh. 80,000
Tsh. 110,000 - 140,000	Tsh. 9,000 + 12.50% for excess of Tsh. 110,000
Tsh. 140,000 - 200,000	Tsh. 13,500 + 12.50% for excess of Tsh. 140,000
Tsh. 200,000 - 300,000	Tsh. 24,000 + 12.50% for excess of Tsh. 200,000
Tsh. 300,000 - 400,000	Tsh. 44,000 + 12.50% for excess of Tsh. 300,000
Tsh. 400,000 - 500,000	Tsh. 66,500 + 12.50% for excess of Tsh. 400,000
Tsh. 500,000 - 600,000	Tsh. 91,500 + 12.50% for excess of Tsh. 500,000
Tsh. 600,000 - 700,000	Tsh. 119,000 + 12.50% for excess of Tsh. 600,000
more than Tsh. 700,000	Tsh. 149,000 + 12.50% for excess of Tsh. 700,000

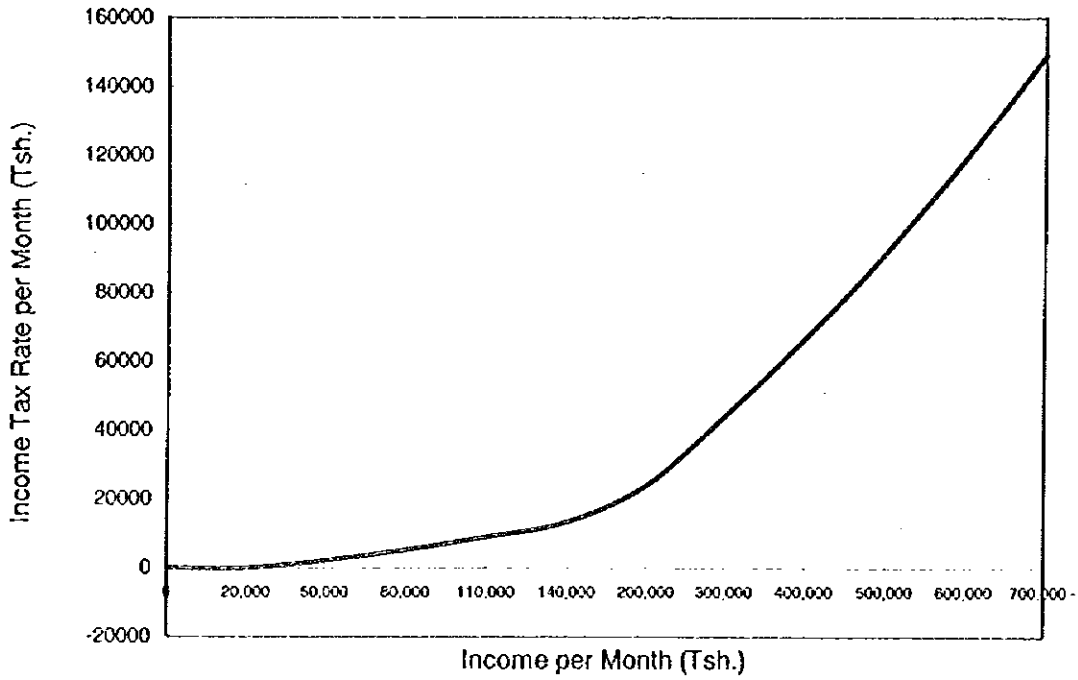

Figure 2-12: Income Tax Rate Payable per Month

[55] ibid., Osoro, E. (1994, page 257.

[56] The Estimates of Public Revenue and Expenditure for the Financial Year 1996 / 97, Ministry of Finance, 1996, page 88.

a.2 Local Tax System

The Local Government Finances Act (1982) allows the local government to collect tax, levies, various charges and licensing fees for the provision of a wide range of public services, thereby enhancing the living standards of citizens. The local tax system has a complicated structure, having more than 50 types of taxes, levies, charges and licensing fees. Table 2-19 shows the revenue sources for local governments which are presently admissible under the Local Government Finances Act. Taking DSM as an example, the top five revenue sources in the fiscal year of 1995/1996 are industrial tax (19.6% of total revenue), development levies (14.4%), business licenses (14.1%), hotel levies (8.2 %) and property tax (6.2%)[57].

Table 2-19: Revenue Sources for Local Government (In Case of DCC in the Fiscal Year 1995/1996))

Revenue Source;	Revenue Share in Each Committee	Revenue Share in All Revenue Sources
Development Levy	58.6%	14.4%
Hotel Levy	33.6%	8.2%
Others	7.8%	1.9%
Finance and Administration	**100.0%**	**24.5%**
Refuse Collection Charges	44.7%	0.8%
Cesspit Emtying Fees	27.0%	0.5%
Others	28.3%	0.5%
Health and Social Welfare	**100.0%**	**1.9%**
School Fees	57.9%	1.6%
Parents Contribution	41.0%	1.2%
Others	1.1%	0.0%
Education and Culture	**100.0%**	**2.8%**
Industrial Tax	48.7%	19.6%
Business Licences	35.0%	14.1%
Market Licences	6.7%	2.7%
Liquor Licences	3.9%	1.6%
Others	5.7%	2.3%
Trade and Economic Planning	**100.0%**	**40.2%**
Petrol Levy	46.2%	10.2%
Advertizing Fees	12.8%	2.8%
Taxi Fees	12.8%	2.8%
Others	28.3%	6.3%
Works	**100.0%**	**22.2%**
Property Tax	72.9%	6.2%
Others	27.1%	2.3%
Urban Planning	100.0%	8.4%
Total Own Revenue in 1995	**16.6%**	**16.6%**
Government Grant in 1995	**83.4%**	**83.4%**
Total Revenue in 1995	**100.0%**	**100.0%**

Source: Abstract of Accounts and Statements for the Year Ended 31st December 1995, DCC

Out of these sources, the major direct taxes paid by individuals are the development levy and property tax. The Local Government Finance Management (development levy) Act states that any persons over 18 years is required to pay the development levy, ranging from Tsh. 1,000 to Tsh. 4,600, in accordance with a monthly income scale. For the Property Tax, any person who is an owner of real estate is liable to the payment of a sum equivalent to 0.1 % of the value indicated in the valuation roll.

The present local taxation system has the following inherent barriers which hinder a local government from collecting adequate revenue.

[57] Abstract Accounts and Statements for the Year Ended 31st December 1995, DCC, 1996

i) The tax structure is too complicated with the total number of taxes, levies, charges and fees being 58[58], making tax administration for local government authorities complicated and inefficient.

ii) The tax bases on which the various local taxes are levied are too narrow to generate sufficient tax revenue due to the many tax reliefs and due to tax fraud and evasion by the informal sector.

iii) Local government is forced by central government to collect some taxes with inherent collection difficulties. For example, the central government collects the rent income tax which is easily collectable while the local government is responsible for collection of the property tax which has associated difficulties in the correct assessment of property values.

Tax reform of the local taxation system is rather slow,implying that local government has a weak taxation structure so that it can not collect sufficient revenue to provide the required public services.

b. Public Utilities Charging System

b.1 Public Utilities in DSM

The public utilities for electricity supply, water supply and telecommunications are operated by TANESCO (Tanzania Electricity Supply Company), NUWA (National Urban Water Supply Authority), and TTCL (Tanzania Telecommunications Company Limited) respectively, all of which are state-owned parastatals. Conversely, sewage treatment services are operated by DSSD (Dar es Salaam Sewerage and Sanitation Department) which is a financially independent semi-autonomous department of DCC.

As discussed in the previous section, the conditionalities under ESAF set by the World Bank include strong demands for the reform of parastatals and public services. Furthermore, efficient collection of public utilities charges is one of the critical issues which must be addressed in the restructuring of public services.

b.2 Present Public Utilities Charging System

b.2.1 Electricity

TANESCO is a state-owned parastatal engaged in electric power supply provision and servicing nation-wide. The present tariff system of TANESCO is a dual tariff system. The first tariff is a monthly service charge which is levied at a fixed rate while the second tariff is a consumption charge which is levied at a variable rate in accordance with the units consumed. These two tariffs are added together to give the total electricity tariff for the month.

The consumption charge uses a step tariff system, in which the unit rate progressively increases in accordance with the average monthly consumption of electricity. Hence, domestic consumers with a low electricity consumption are cross-subsidised by institutional and industrial consumers which have a greater electricity consumption. The tariff ranges from a minimum of Tsh. 17.2 per kWh to a maximum of Tsh. 130 per kWh .

[58] ibid. DCC, (1996)

The tariff collection system is by direct billing on a monthly basis, delivering bills by mail or hand with payments being collected at the offices and several collection centres of TANESCO. In the case of defaulting on the payment, electricity supply is supposed to be cut off 23 days after the payment due date.

TANESCO recently introduced a prepaid card system called LUKU, in which TANESCO can collect charges in advance of its services, thereby improving the charge collection efficiency. The prepaid card facilities have been introduced for new consumers and old facilities will be gradually replaced by LUKU.

b.2.2 Water Supply and Sewage Treatment

NUWA, also a parastatal, is supposed to be engaged in water supply provision in major cities nationwide but presently only operates in DSM and neighbouring cities. NUWA also has a dual tariff scheme. The first tariff is a minimum basic charge at a fixed rate, and the second type is a consumption charge in accordance with the amount of water consumed . Unlike TANESCO, NUWA uses a cross-subsidy tariff system according to the category of consumers. For example, while the tariff for domestic users is only Tsh. 700 per 1,000 gallons, that for industrial users is Tsh. 1,156 per 1,000 gallons.

The collection system for water charges is by direct billing by mail on a monthly basis with payments being collected at the headquarters and four collection points for NUWA in DSM. Defaulters, except for army, hospitals and schools, are supposed to have their water supplies cut off two months after the payment due date.

As for the services rendered by DSSD, there are several sewerage tariff schemes: initial connection charge, sewerage charge, cesspit emptying charge, and cesspit dumping charge. While the sewerage charge is levied at a fixed rate of Tsh. 304 per 1,000 gallons of clean water based on the water-in/water-out policy, the cesspit emptying and dumping charges are levied per trip, with fixed rates of Tsh. 5,000 and Tsh. 2,000 per trip.

DSSD also has an internal cross-subsidy system, whereby cesspit emptying and dumping charges are set at a lower rate than their costs with subsidisation by the profit from the sewerage charge which is set at a higher rate than its costs.

An advance payment collection system is used for cesspit emptying and dumping charges with charges being collected when people apply for this service. The sewerage charge is jointly billed with the water charge of NUWA based on the recommendation of the World Bank under the Urban Engineering project. Although DSSD is supposed to pay a commission of 5% of total revenue as a handling charge for the joint billing system which is operated by NUWA, the commission is not paid since NUWA is using computers provided by DSSD.

However, NUWA and DSSD were united in February 1997. On 25th February 1997, the Minister for Water announced the formal dissolution of NUWA (National Urban Water Authority), and that the new established DAWASA (Dar es Salaam Water and Sewerage Authority), would take over all of its activities in DSM city and in the Coastal region.

DAWASA would also incorporate DSSD (Dar es Salaam Sewerage and Sanitation Department) which was under the DCC, and it would operate as a parastatal organisation under the Ministry of Water.

b.2.3 Telephone

TTCL is a parastatal organisation providing telecommunication services nation-wide. The customers are supposed to receive monthly bills by mail with payments being made at the headquarters or regional collection centres of TTCL. Defaulters are supposed to have their lines cut off one month after the payment due date. The tariff system includes a basic charge plus an on-line charge in proportion to the length of time.

b.2.4 Solid Waste Management

The charging system for SWM will be discussed in Chapter 3.

b.3 Observations on the Present Public Utilities Charging Systems

In summary, the major findings on the present public utilities charging systems in Tanzania are:

- All the public utilities are financially autonomous or semi-autonomous as parastatals or as independent departments of DCC. Revenue collected from charges is used to cover their costs and for development, etc. so that the tariff is precisely decided and revised in accordance with costs, inflation, etc.;
- All of the public services except for sewerage treatment is suspended in the case of payment defaults;
- A cross-subsidy system is frequently used in the tariff structures by the majority of public services.

2.7.4 Financial Conditions of DCC

Since the financial soundness of the DCC is a pre-requisite for the sufficient provision of public services such as SWM, the financial conditions of DCC are discussed in this section in terms of its general budget and in relation to revenue and expenditure.

a. Revenue

Revenue in the general budget of DCC is mainly composed of the DCC's own local tax revenues and a grant from the central government. Table 2-20 shows revenue in the DCC's general budget for 1995. It can be seen that in fiscal 1995, while the grant from the central government accounts for 83.4% of the total revenue, DCC's own tax revenues account for only 16.6%. Observing the DCC's revenue breakdown by committee (presently commission), the trade and economic planning committee accounts for 40.2% of DCC tax revenues while the health and social welfare committee, which includes SWM services, accounts for only 1.9% of tax revenue.

Two observations on the revenue structure of the general budget of DCC follow.

Table 2-20: Revenue in the General Budget of DCC in 1995

Revenue Source	Revenue 1995 (Tsh.)	Share in Committee (%)	Share in All Revenue (%)
Development Levy	140,499,102	58.6%	14.4%
Hotel Levy	80,488,103	33.6%	8.2%
Others	18,673,292	7.8%	1.9%
Finance and Administration	**239,660,497**	**100.0%**	**24.5%**
Refuse Collection Charges	8,213,928	44.7%	0.8%
Cesspit Emtying Fees	4,965,600	27.0%	0.5%
Others	5,208,600	28.3%	0.5%
Health and Social Welfare	**18,388,128**	**100.0%**	**1.9%**
School Fees	15,908,355	57.9%	1.6%
Parents Contribution	11,266,176	41.0%	1.2%
Others	304,600	1.1%	0.0%
Education and Culture	**27,479,131**	**100.0%**	**2.8%**
Industrial Tax	191,407,718	48.7%	19.6%
Business Licences	137,493,974	35.0%	14.1%
Market Licences	26,247,615	6.7%	2.7%
Liquor Licences	15,166,350	3.9%	1.6%
Others	22,591,094	5.7%	2.3%
Trade and Economic Planning	**392,906,751**	**100.0%**	**40.2%**
Petrol Levy	100,000,000	46.2%	10.2%
Advertizing Fees	27,649,121	12.8%	2.8%
Taxi Fees	27,720,860	12.8%	2.8%
Others	61,192,489	28.3%	6.3%
Works	**21,562,470**	**100.0%**	**22.2%**
Property Tax	60,122,294	72.9%	6.2%
Others	22,322,471	27.1%	2.3%
Urban Planning	**82,444,765**	**100.0%**	**8.4%**
Total Own Revenue in 1995	977,441,742	16.6%	16.6%
Government Grant in 1995	4,906,714,450	83.4%	83.4%
Total Revenue in 1995	**5,884,156,192**	**100.0%**	**100.0%**

Source: Abstract of Accounts and Statements for the Year Ended 31st December 1995, DCC

a.1 Heavy Reliance on the Grant from the Central Government

The first observation is that the DCC revenue heavily depends on grant from the central government. The fact that 83.4% of DCC's revenue derives from this grant is not a one-off result but consistent with a long term trend. Table 2-21 and Figure 2-13 show the long-term revenue and expenditure trends of DCC's general budget from 1986 to 1995. The grant from the central government has accounted for more than 50 % of DCC's revenue for the last 10 fiscal years, implying that there is no local financial autonomy in DCC.

Furthermore, the central government itself has frequently been suffering from a severe revenue shortage. Table 2-22 and Figure 2-14 indicate the variation in revenue and expenditure of the central government for the fiscal years 1989/90 to 1996/97, illustrating that the central government, except for the fiscal year 1995/96, experienced a large amount of revenue losses which have been replenished by treasury bills and foreign assistance. Accordingly, the revenue basis of the central government is highly vulnerable, thus making the general budget of DCC unstable due to its heavy reliance on the central government grant.

Table 2-21: Variation of Revenue and Expenditure of DCC's General Budget from 1986 to 1995

unit: Tsh.million

Fiscal Year	Own Revenue	Gov't Grant	Total Revenue	Expenditure	Balance	Grant Rate
1986	171.3	208.1	379.4	316.7	62.7	54.8%
1987	224.4	360.2	584.6	430.1	154.5	61.6%
1988	279.5	510.3	789.8	541.1	248.7	64.6%
1989	314.6	529.6	844.2	991.0	-146.8	62.7%
1990	394.0	906.7	1,300.7	1,217.1	83.6	69.7%
1991	750.1	1,356.2	2,106.3	2,003.4	102.9	64.4%
1992	733.5	1,636.3	2,369.8	2,421.6	-51.8	69.0%
1993	1,028.2	2,095.4	3,123.6	3,109.4	14.2	67.1%
1994	903.4	3,482.3	4,385.7	4,451.4	-65.7	79.4%
1995	977.4	4,906.7	5,884.1	5,928.0	-43.9	83.4%

Source: Abstract of Accounts and Statements for the Year of 1986 - 1995, DCC, 1996

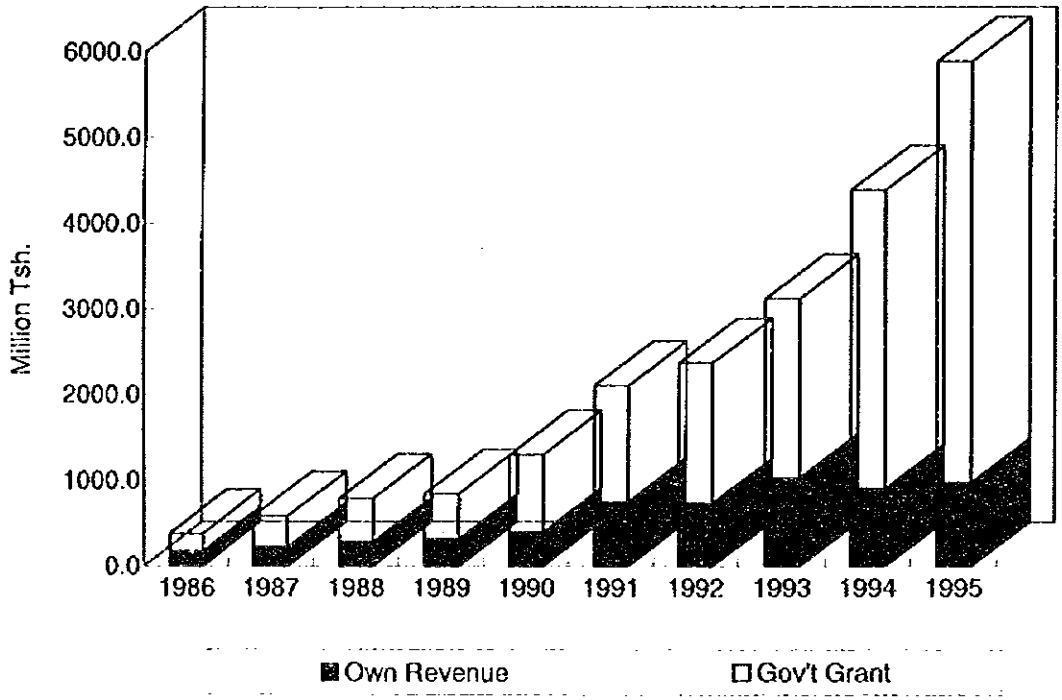

Figure 2-13: Variation of Revenue and Expenditure of DCC's General Budget from 1986 to 1995

Table 2-22: Variation of Revenue and Expenditure of the Central Government of Tanzania from 1989 to 1996

Fiscal Year	Recurrent Revenue	Recurrent Expenditure	Gap as % of Expenditure	Recurrent Gap
1989/90	94,654.0	115,893.0	-18.3	-21239.0
1990/91	135,920.0	160,304.5	-15.2	-24384.5
1991/92	173,535.0	195,705.0	-11.3	-22170.0
1992/93	164,110.0	275,509.0	-40.4	-111399.0
1993/94	242,444.0	340,140.0	-28.7	-97696.0
1994/95	329,660.0	459,564.0	-28.3	-129904.0
1995/96	438,755.0	434,051.5	1.1	4703.5
1996/97	563,756.4	631,906.4	-10.8	-68150.0

Source: The Estimates of Public revenue and Expenditure for the Financial Year 1996/1997, Ministry of Finance, 1996.
Note: The figures of 1996/97 are estimated

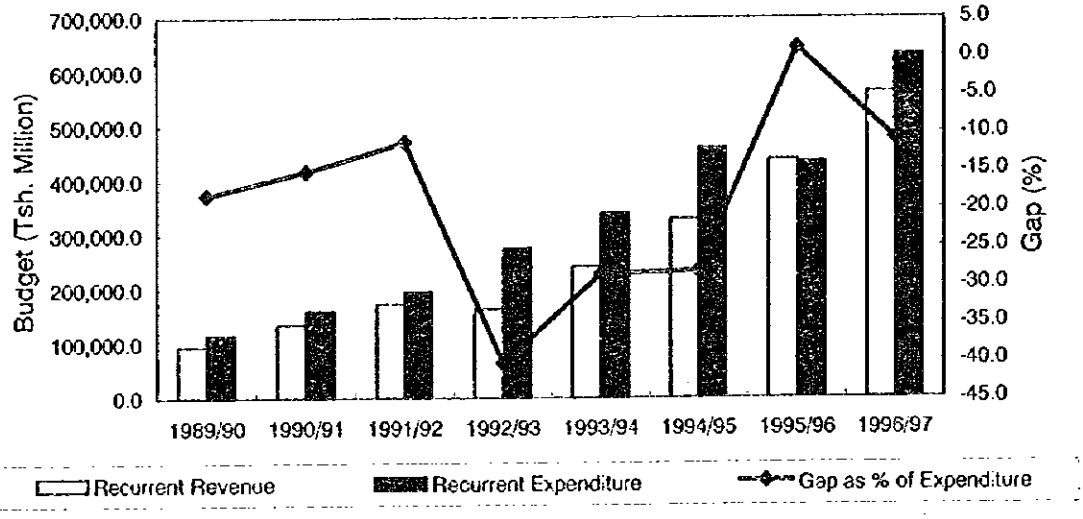

Figure 2-14: Variation of Revenue and Expenditure of the Central Government of Tanzania from 1989 to 1996

a.2 Narrow Tax Coverage

The second observation is that the tax coverage is too narrow to generate sufficient revenue for the general budget of DCC. In particular, the development levy and the property tax, both of which are major sources of tax revenue and which must take into account the income and assets of individuals currently account for only 14.4% and 6.2% of DCC tax revenue respectively. They have been failing to capture a considerable portion of their potential revenues. For example, although potential revenue from the development levy is estimated to be at least Tsh. 325.0 million[59], the

[59] Kironde, J. M. et al; (1995), "The Governance of Waste Management in African Cities: The Case of Dar es Salaam, Tanzania", Ardhi Institute, page 10.

actual amount collected in 1995 was only Tsh. 140.5 million[60] or 43.2% of potential revenue.

As the total revenue from the health and social welfare committee in 1995 is only Tsh. 18.4 million (1.9% of DCC tax revenue), indicating that there is no financial sustainability for the provision of services for social and health services by taxes and charges levied by this committee alone.

These two defects in the revenue structure cause a regular shortage in revenue for the provision of public services, meaning DCC is dependent on external revenue sources for funding, thereby losing local financial autonomy.

b. Expenditure

Table 2-23 shows the details of the expenditure for the general budget of DCC in 1995 including the total expenditure for the health and social welfare committee and the expenditure for refuse collection. Several observations follow concerning the expenditure shown in the general budget of DCC.

Table 2-23: The Details of the Expenditure Details for the General Budget of DCC in 1995

Expenditure Item	1995 Expenditure (Tsh. Thousands)	Share in Category (%)	Share in Total (%)
Total expenditure of DCC			
1. Finance and Administration Committee	775,306.5	13.0	n.r.
2. Health and social Welfare Committee	1,420,346.4	23.9	n.r.
3. Education and Culture Committee	2,910,896.3	48.9	n.r.
4. economic and Trade Committee	280,579.2	4.7	n.r.
5. Works and Water Committee	396,965.0	6.7	n.r.
6. Land and Urban Committee	163,915.0	2.8	n.r.
Total Recurrent Expenditure	5,947,998.4	100.0	100.0
Health and social Welfare Committee			
1. Administration and General	208,229.2	14.7	n.r.
2. Hospitals	563,672.0	39.7	n.r.
3. Health Centres	137,728.7	9.7	n.r.
4. Dispensaries and Clinics	190,312.8	13.4	n.r.
5. Malaria Control	32,475.8	2.3	n.r.
6. Refuse Collection and Disposal	268,872.6	18.9	n.r.
7. Cesspit Emptying	19,055.3	1.3	n.r.
Total Recurrent Expenditure	1,420,346.4	100.0	23.9
Total Refuse Collection and Disposal			
1. Salaries	214,053.5	79.9	n.r.
2. Allowances, Travelling	2,880.0	1.1	n.r.
3. Allowances, Leave	62.0	0.0	n.r.
4. Training Long Term	200.0	0.1	n.r.
5. Electricity	33.5	0.0	n.r.
6. Vehicles Repair and Maintenance	6,370.7	2.4	n.r.
7. Fuel and Oil	44,082.8	16.4	n.r.
8. Uniforms	190.0	0.1	n.r.
Total Recurrent expenditure	268,872.6	100.0	4.5

Source: Abstract of Accounts and Statements for the Year Ended 31st December 1995, DCC, 1996

[60] Abstract Accounts and Statements for the Year Ended 31st December 1995, DCC, 1996

b.1 No Financial Autonomy by Each Committee

The first observation is that each committee has no financial autonomy. Looking at the breakdown of expenditure by committee, while the economic and trade committee captures the largest share of the revenue at 40.2 %, only 4.7 % of the total expenditure was disbursed by this committee, implying that the majority of the revenue collected through tax and charges in the economic and trade category was allocated to other committees, such as the health and social committee for example which collects only 1.9 % of the DCC tax revenue but spends 23.9% of its general budget funds. In this way, all the revenues are absorbed into the general budget of DCC without setting up any special account for public services, thereby giving no financial autonomy to each committee.

b.2 High Administrative Costs

The second observation is that administrative costs such as for salaries and allowances constitutes the main item of expenditure. For example, considering refuse collection expenditure in 1995, salaries and allowances accounted for 81.1% of total expenditure while training, fuel and oil, and vehicle maintenance accounted for only 0.1%, 16.4% and 2.4%, respectively. This expenditure breakdown clearly illustrates that DCC cannot afford to allocate an appropriate share of its income to cover recurrent costs such as for maintenance of facilities and equipment in order to provide sufficient public services.

b.3 Inefficient Procedures for the Disbursement of Funds

The third observation is that apart from the expenditure amounts, the application procedure for disbursement of funds is very complex and slow. For example, in order to obtain spare vehicle parts, there are around 13 steps to follow before the DCC treasurer releases the necessary funds. As a result, it takes at least three weeks to purchase the necessary spare parts for vehicles, leading to serious delays in the repair and maintenance of vehicles[61].

In summary, the financial conditions of DCC are far from satisfactory in terms of both revenue and expenditure. It is a stern reality that unless these structural budgetary constraints are removed, the provision of adequate public services, especially for SWM which has fewer revenue sources, will not be sustainable.

2.8 Classification of the Study Area

The study area has various characteristics which vary according to area. The important characteristics which are closely related to the formulation of the SWM master plan were considered to be the following four items:

- Level of public services such as water supply, sewerage, drainage, road, etc.
- Town structure such as planned area, unplanned area, etc.
- Population density.
- Average income level of the area.

[61] Managing the Sustainable Development of Dar es Salaam, Volume One: Solid Waste Collection, UNCHS / SDP, Report on Solid Waste Management by Manus Coffey Associated, pp. 48 - 49.

Based on the above characteristics, the wards within the study area were classified into the following four categories; each has different characteristics concerning solid waste management in order to facilitate further study.

- Urban Area
- Semi-Urban Planned Developed Area
- Semi-Urban Unplanned Developed Area
- Rural Area

The definition of each category is as follows.

Urban Area

This is an area which has been urbanised, where people are not able to dispose of wastes in a sanitary manner within their premises, and where virtually, all the main infrastructural services such as waterworks, power supply, sewerage system, roads, etc. have been provided. Therefore, a refuse collection service must be provided and is most likely to be feasible in such an area.

Semi-Urban Planned Developed Area

This is an area which has been highly populated but has a lower level of infrastructural services. However, this area at least has accessible roads for refuse collection trucks because inhabitants settled down according to a development plan. In this area income level of inhabitants vary considerably and the necessity for refuse collection services depends upon inhabitants' income level, way of life, type of houses, etc.

Semi-Urban Unplanned Developed Area

This is an area which has been highly populated but has a lower level of infrastructural services. In addition, this area has few accessible roads for refuse collection trucks, because inhabitants settled here without following any development plan. In this area, the income levels of inhabitants are generally below average and the necessity for refuse collection services depends upon inhabitants' income level, way of life, type of houses, etc.

Rural Area

This is an area where the population density is less than 3,000 people/km^2. This area has not been urbanised yet and most inhabitants in this area can manage to dispose of wastes in a sanitary manner within their premises. Therefore, a refuse collection service will not be feasible and also is not essential.

Classification of all the wards in the Study Area is shown in Table 2-24 and illustrated in the ward classification map in Figure 2-15.

Table 2-24: Classification of the Wards in the Study Area

Category	Name	District	Area (km^2)	Population	Population Density (person/km^2)
Urban Area	Kariakoo	Ilala	0.7	13,396	19,138
	Kisutu	Ilala	0.6	8,698	14,497
	Kivukoni	Ilala	1.7	5,502	3,237
	Mchafukoge	Ilala	0.6	7,037	11,729
	Upanga East	Ilala	1.3	11,048	8,498
	Upanga West	Ilala	1.0	11,199	11,199
Sub-total			5.9	56,880	9,641
Semi-Urban	Gerezani	Ilala	0.9	7,309	8,121
Planned	Ilala	Ilala	3.6	38,863	10,795
Developed	Jangwani	Ilala	0.4	13,554	33,884
Area	Mchikichini	Ilala	0.6	17,347	28,912
	Tabata	Ilala	19.1	106,587	5,580
	Kawe	Kinondoni	22.4	92458	4,128
	Kinondoni	Kinondoni	3.1	59,362	19,149
	Magomeni	Kinondoni	1.4	19,603	14,002
	Msasani	Kinondoni	17.5	88,792	5,074
	Mwananyamala	Kinondoni	6.0	107,127	17,855
	Kurasini	Temeke	8.3	39,560	4,766
	Miburani	Temeke	4.2	76,465	18,206
	Temeke 14	Temeke	4.8	109,328	22,777
Sub-total			92.3	776,356	8,411
Semi-Urban	Buguruni	Ilala	2.4	66,029	27,512
Unplanned	Kipawa	Ilala	10.1	70,890	7,019
Developed	Vingunguti	Ilala	8.5	53,697	6,317
Area	Kigogo	Kinondoni	1.6	26,059	16,287
	Mabibo	Kinondoni	11.1	67,908	6,118
	Makurumula	Kinondoni	3.3	88,021	26,673
	Manzese	Kinondoni	3.5	91,560	26,160
	Mzimuni	Kinondoni	1.5	27,664	18,443
	Ndugumbi	Kinondoni	1.1	41,792	37,993
	Tandale	Kinondoni	3.0	116,392	38,797
	Keko	Temeke	3.2	50,622	15,819
	Mbagala	Temeke	26.0	115,758	4,452
	Mtoni	Temeke	2.3	94,841	40,000
	Yombo Vituka	Temeke	17.1	51,782	3,028
Sub-total			94.7	963,016	10,169
Rural Area	Ukonga	Ilala	42.2	73,141	1,733
	Goba	Kinondoni	44.3	2,177	49
	Kunduchi	Kinondoni	53.6	38,785	724
	Ubungo	Kinondoni	63.2	80,720	1,277
	Kigamboni	Temeke	28.0	35,965	1,284
	Vijibweni	Temeke	15.7	3,189	203
Sub-total			247.0	233,978	947
Total			439.9	2,030,231	4,615

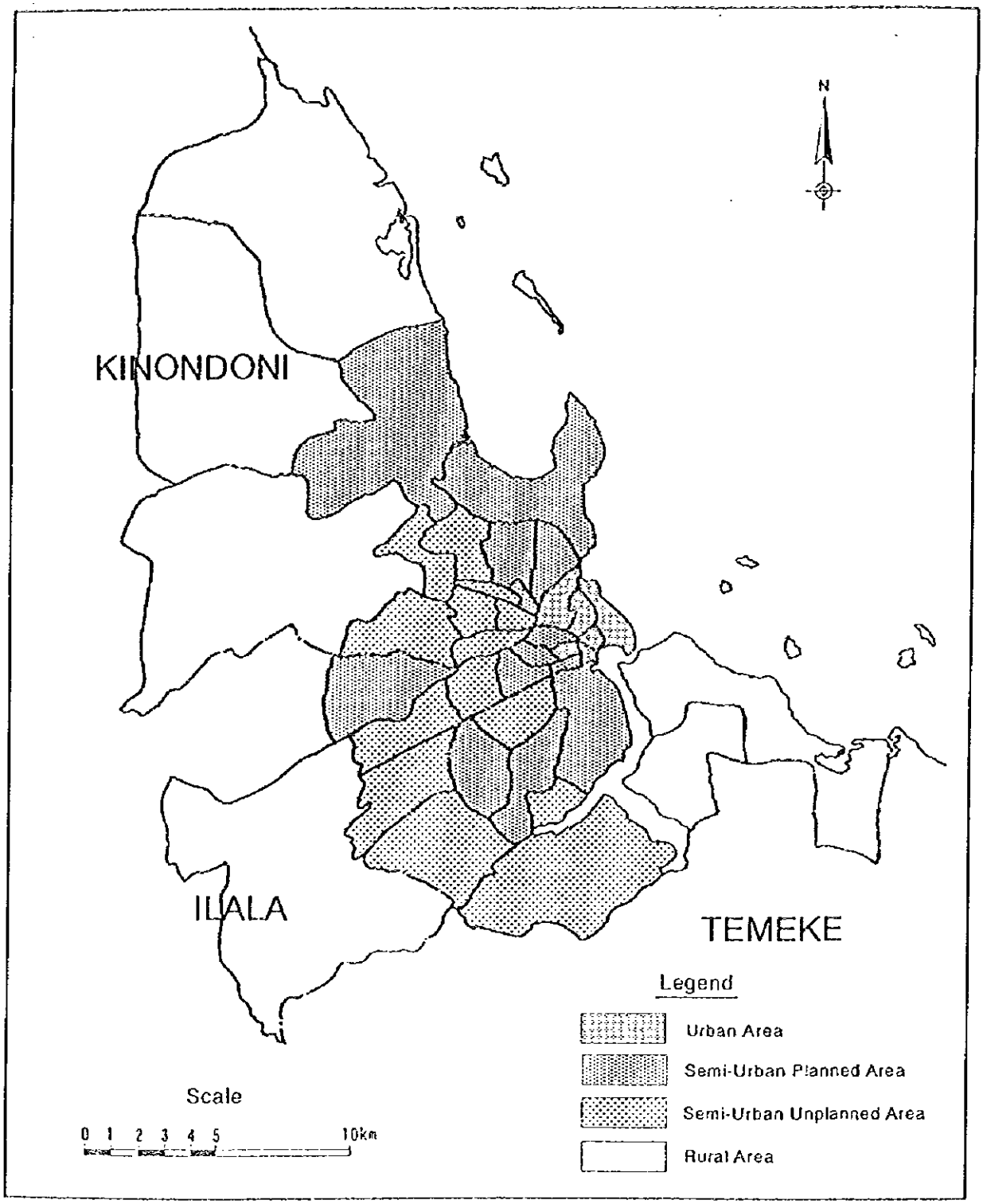

Figure 2-15: Ward Classification Map