

Dar es Salaam
Transport Policy and System Development
Master Plan

Technical Report 11

Database

June 2008

JAPAN INTERNATIONAL COOPERATION AGENCY

PACIFIC CONSULTANTS INTERNATIONAL
CONSTRUCTION PROJECT CONSULTANTS

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Dar es Salaam City Council
The United Republic of Tanzania

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Chapter 1 Introduction

1.1 General

A reliable database is an essential input to urban transportation planning, especially for large urban areas such as Dar es Salaam city where traffic movements are complex and interacted among different modes and land use. Without database and analytical tools that can manipulate massive numerical data, proper transport planning cannot be carried out in an effective manner. Lack of database, which can be commonly used by planners, is likely to be fallen into difficulties in decision-making.

Dar es Salaam Transport Policy and System Development Master Plan has collected a variety of data/information through various surveys in the field. The collected data were coded and compiled into a database system in a conventional database format and in the format of geographical data (GIS) as per necessity. In developing the database, some special technical considerations were made, aiming at easy use for various transport planners and government officials as follows.

- a) Items and coverage of data should meet practical planning needs by relevant organizations.
- b) The database should be easily accessed and used, with a simple and clear structure, and easy data search and retrieval.

1.2 Data Coverage and Classification

The Database consists of following data sets:

- 1) Traffic data collected from the field,
- 2) Interviews in the field,
- 3) Data from secondary sources, and
- 4) Future planning parameters developed by the Study Team.

Each data set can be grouped into three categories in terms of stage of data processing. Data in the first category is “raw” data, being composed of unprocessed or less-processed data such as original traffic count data and HIS (Household Interview Survey) master file. These raw data must be useful for persons having some special and particular intention of analysis. Data in the second category is

“processed data” such as OD matrices and computerized transport networks for simulation purpose. Data in the third category is “forecast data” which includes future demographic data, land use plan, and future OD matrices, future networks and projects planned, etc., that are at the same time the outputs of the Master Plan Study.

The classification of data is summarized in the following table. Although the HIS master file includes processed data such as expansion and adjustment factors, it is regarded as a primary data because each record of the HIS master file corresponds to a respondent’s trip information obtained by the HIS survey.

Table 1.2.1 Database Classification

Category of information	Method of Collection	Category 1	Category 2	Category 3
		Original Data	Processed Data	Forecast or Planned Data
Socio-economic and Land Use	NBS Surveys, etc.	<ul style="list-style-type: none"> Population Number of households Number of workers Land use Public service facilities 	<ul style="list-style-type: none"> Employment data by area Car ownership ratio VOC data Time value data 	<ul style="list-style-type: none"> Future demographic framework Future car ownership Future land use plan
HIS	HIS Survey	<ul style="list-style-type: none"> Household information Individual information Trip information 	<ul style="list-style-type: none"> Socio-economic indicators by zone Present person trip OD matrix Vehicle OD matrix 	<ul style="list-style-type: none"> Future person trip OD matrix Future vehicle OD matrix
Road and Traffic	DART Study, etc.	<ul style="list-style-type: none"> Road inventory data 	<ul style="list-style-type: none"> Present road network 	<ul style="list-style-type: none"> Future road network Project inventory
	Screen Line Survey	<ul style="list-style-type: none"> Screen line traffic count Vehicle occupancy 	<ul style="list-style-type: none"> Hourly traffic volume Average occupancy by type of vehicle 	<ul style="list-style-type: none"> Future traffic volume
	Cordon Line Survey	<ul style="list-style-type: none"> Cordon line traffic count Vehicle occupancy Driver and passenger Interview data 	<ul style="list-style-type: none"> Hourly traffic volume Average occupancy by type of vehicle Present person trip OD matrix by non-residents 	<ul style="list-style-type: none"> Future traffic volume Future person trip OD matrix by non-residents
	Intersection Traffic Count Survey	<ul style="list-style-type: none"> Traffic count in direction Signal phase pattern 	<ul style="list-style-type: none"> Traffic rate by direction 	<ul style="list-style-type: none"> Future traffic volume on network
	Travel Speed Survey	<ul style="list-style-type: none"> Passing time at location GPS track data 	<ul style="list-style-type: none"> Travel speed on network Surveyed route map Average travel time 	<ul style="list-style-type: none"> Future travel speed on network Average travel time
Cargo Transport	Cargo Transport Survey	<ul style="list-style-type: none"> Company and driver profile Driver Interview data Typical cargo movement data 	<ul style="list-style-type: none"> Trip generation rate by industrial sector Present vehicle OD matrix by type of vehicle and cargo 	<ul style="list-style-type: none"> Future vehicle OD matrix by type of vehicle
Public Transport	DART Study	<ul style="list-style-type: none"> Bus route information Bus operational service 	<ul style="list-style-type: none"> Transit line 	<ul style="list-style-type: none"> Future transit line
	Public Transport Passenger Interview Survey	<ul style="list-style-type: none"> Passenger interview data Opinion and preferences 	<ul style="list-style-type: none"> Time value data Preference model 	<ul style="list-style-type: none"> Future modal choice in terms of public transport
Building Profile Data in CBD Area	CBD Trip Generation Survey	<ul style="list-style-type: none"> Building and tenants profile Trip attraction and production count Visitor interview data 	<ul style="list-style-type: none"> Trip generation rate by type of building Present person trip OD matrix 	<ul style="list-style-type: none"> Future trip generation in CBD area
	CBD Intersection Traffic Count Survey	<ul style="list-style-type: none"> Intersection traffic count 	<ul style="list-style-type: none"> Hourly traffic volume 	<ul style="list-style-type: none"> Future trip generation in CBD area

1.3 Type of Database File

The database is available on CD-ROM. The CD-ROM has three folders:

- **01_Traffic Survey Database**
This folder includes the transport surveys, processed data, and some analysis results.
- **02_STRADA Database**
This folder includes a dataset for traffic assignment simulation by case in STRADA format, including highway and transit network, OD matrices, parameters for the assignment, and assignment results.
- **03_Planning Parameters and Network**
This folder includes zonal parameters such as population and job opportunities and network data in MapInfo format.

Files in 01_Traffic Survey Database are available in the form of Microsoft Excel file and CSV, and JPEG for pictures.

Files in 02_STRADA Database includes datasets for JICA STRADA software, of which file types are presented in Table 1.3.1.

Files in 03_Planning Parameters and Network folder are available in MapInfo format, which are used geographical analysis of the planning parameters. The name of files and contents are summarized in Tables 1.3.2 to 1.3.4.

Table 1.3.1 File Type Used in STRADA

Suffixes	Remarks
CAN	Control data for consecutive assignment runs
AOD	Standard OD matrix data
DOD	OD details obtained by assignment
DRE	Results of directional analysis
INT	Network data for assignment
IOD	Interzonal impedances
IRE	Link results obtained by incremental assignment
PAR	Parameters for incremental and equilibrium assignment
TNT	Line data for transit assignment
TPA	Parameters for transit assignment
TRE	Results of transit assignment
ZXY	Zone border coordinates

Table 1.3.2 List of Database Files (01_Traffic Survey Database)

Name of Folder / File	Contents	File Type
01_Home Interview Survey <ul style="list-style-type: none"> 01a_Survey Data <ul style="list-style-type: none"> 2007 Vehicular OD for STRADA.csv HIS Data Form1.xls HIS Data Form2.xls HIS Data Form3.xls 01b_Survey Sheets <ul style="list-style-type: none"> HIS CodeTable.jpg HIS Form 1 and 2.jpg HIS Form 3.jpg 01c_Zone System <ul style="list-style-type: none"> LandmarkTable.xls Traffic Analysis Zone System.jpg Zone Code Table.xls 	Present vehicle OD matrix Household information Individual information Trip information Code tables Survey forms 1 and 2 Survey forms 3 Landmark table TAZ map Zone code table	csv xls xls xls jpg jpg jpg xls jpg xls
02_Cordon Line Survey <ul style="list-style-type: none"> 02a_Survey Data <ul style="list-style-type: none"> Count Survey <ul style="list-style-type: none"> Cordon Line Count.xls Result of Cordon Line Count(Hourly Data).xls Interview Survey <ul style="list-style-type: none"> 01_Roadside (Bus Driver).xls 02_Roadside (Bus Passenger).xls 03_Roadside (Cars).xls 04_DES International Airport.xls 05_ZNZ Ferry Terminal.xls 06_NonresOD.xls Vehicle Occupancy Survey <ul style="list-style-type: none"> Cordon Line Occupancy.xls 02b_Survey Sheets <ul style="list-style-type: none"> Interview Survey Sheets <ul style="list-style-type: none"> Airport and Ferry Terminal.jpg Code Table.jpg Roadside Interview (Bus Driver).jpg Roadside Interview (Bus Passenger).jpg Roadside Interview.jpg Traffic Count and Occupancy <ul style="list-style-type: none"> Roadside Count (Clicker).jpg Roadside Count (Manual 1).jpg Roadside Count (Manual 2).jpg Roadside Count (Manual 3).jpg Roadside Occupancy.jpg 02c_Cordon Line Survey Location.jpg 	Cordon line traffic count Hourly traffic volume Driver interview data Passenger interview data Driver interview data Passenger interview data Passenger interview data OD matrix by non-resident Vehicle occupancy Interview survey form Code table Interview survey form Interview survey form Interview survey form Traffic count survey form Traffic count survey form Traffic count survey form Traffic count survey form Occupancy survey form Survey location map	xls xls xls xls xls xls xls xls jpg jpg jpg jpg jpg jpg jpg jpg jpg jpg jpg
03_Screen Line Survey <ul style="list-style-type: none"> 03a_Survey Data <ul style="list-style-type: none"> Results of Screen Line Count(Hourly Data).xls Screen Line Count.xls 	Hourly traffic volume Screen line traffic count	xls xls

Name of Folder / File	Contents	File Type
<ul style="list-style-type: none"> Route2.xls Route3.jpg Route3.xls Route4.jpg Route4.xls Route5.jpg Route5.xls Route6.jpg Route6.xls Route7.jpg Route7.xls Route8.jpg Route8.xls Route9.jpg Route9.xls 	<ul style="list-style-type: none"> GPS track data Route map GPS track data Route map GPS track data Route map GPS track data Route map GPS track data Route map GPS track data Route map GPS track data Route map GPS track data 	<ul style="list-style-type: none"> xls jpg xls jpg xls xls jpg xls xls jpg xls jpg xls jpg xls
<ul style="list-style-type: none"> 06d_SurveyRoutes.jpg 	Survey route map	jpg
<ul style="list-style-type: none"> 07_Cargo Transport Survey <ul style="list-style-type: none"> 07a_Survey Data <ul style="list-style-type: none"> Commodity In-Coming and Origin.xls Commodity Out-going and Destination.xls Company General Information.xls Driver General Information.xls Driver Trip Information.xls 07b_Survey Sheets <ul style="list-style-type: none"> Cargo Company Interview (General).jpg Cargo Company Interview (In-Coming Cargo).jpg Cargo Company Interview (Out-going Cargo).jpg Truck Driver Interview (General).jpg Truck Driver Interview (Trip).jpg 	<ul style="list-style-type: none"> Typical cargo movement Typical cargo movement Company profile Driver profile Driver interview data Company interview form Cargo survey form Cargo survey form Driver interview form Driver interview form 	<ul style="list-style-type: none"> xls xls xls xls xls jpg jpg jpg jpg jpg
<ul style="list-style-type: none"> 08_CBD Trip Generation Survey <ul style="list-style-type: none"> 08a_Survey Data <ul style="list-style-type: none"> Building Attributes.xls Person Count.xls Tenants Information.xls Visitor Interview.xls 08b_Survey Sheets <ul style="list-style-type: none"> Building Attribute.jpg Tenants Information.jpg Visitor Count.jpg Visitor Interview.jpg 08c_Building for Trip Generation Survey.jpg 	<ul style="list-style-type: none"> Building profile Trip count Tenant profile Visitor interview data Building survey form Tenant survey form Trip count survey form Visitor interview form Surveyed building map 	<ul style="list-style-type: none"> xls xls xls xls jpg jpg jpg jpg jpg
<ul style="list-style-type: none"> 09_CBD Intersection Traffic Count Survey <ul style="list-style-type: none"> 09a_Survey Data <ul style="list-style-type: none"> CBD Intersection Traffic Count.xls 09b_Survey Sheets <ul style="list-style-type: none"> Survey Form 1.xls Survey Form 2.xls 09c_CBD Intersection Survey Location.jpg 	<ul style="list-style-type: none"> Intersection traffic count Traffic count survey form Traffic count survey form Survey location map 	<ul style="list-style-type: none"> xls xls xls jpg

Table 1.3.3 List of Database Files (02_STRADA Database)

Folder / File	Contents	File Type
00_STRADA Assignment File List.xls	File description of assignment case	xls
01_2007 Existing		
— 07BUSPOD.aod	Present public transport OD matrix	aod
— 07HWY.acn	Control data for highway assignment	acn
— 07HWY.DOD	OD details	dod
— 07HWY.DRE	Traffic flow by direction	dre
— 07HWY.IOD	Impedance on highway network	iod
— 07HWY.IRE	Assigned highway traffic volume by link	ire
— 07HWY.log	Log file for calculation	log
— 07HWY.PAR	Highway assignment parameter	par
— 07HWYNET.INT	Present highway network	int
— 07TRAN.acn	Control data for transit assignment	acn
— 07TRAN.iod	Impedance on transit network	iod
— 07TRAN.IRE	Assigned transit volume by link	ire
— 07TRAN.TNT	Present transit network	tnt
— 07TRAN.TPA	Transit assignment parameter	tpa
— 07TRAN.TRE	Assigned transit volume by route	tre
— 07VEHOD.aod	Present vehicle OD matrix	aod
— TrafficZone07.ZXY	Traffic zone boundary data	zxy
02_2015 Do Nothing Case		
— 07HWYNET.INT	Present highway network	int
— 07TRAN.TNT	Present transit network	tnt
— 15BUSPOD.aod	Public transport OD matrix in 2015	aod
— 15HWYWO.acn	Control data for W/O case highway assignment in 2015	acn
— 15HWYWO.IOD	Impedance on highway network of W/O case in 2015	iod
— 15HWYWO.IRE	Assigned highway traffic volume by link of W/O case in 2015	ire
— 15HWYWO.log	Log file for W/O case calculation in 2015	log
— 15HWYWO.PAR	Highway assignment parameter of W/O case in 2015	par
— 15TRANWO.acn	Control data for W/O case transit assignment in 2015	acn
— 15TRANWO.iod	Impedance on transit network of W/O case in 2015	iod
— 15TRANWO.ire	Assigned transit traffic volume of W/O case in 2015	ire
— 15TRANWO.TPA	Transit assignment parameter of W/O case in 2015	tpa
— 15TRANWO.tre	Assigned transit traffic volume of W/O case in 2015	tre
— 15VEHOD.aod	Vehicle OD matrix in 2015	aod
— TrafficZone07.ZXY	Traffic zone boundary data	zxy
03_2015 With Project Case		
— 15BUSPOD.aod	Public transport OD matrix in 2015	aod
— 15HWY.acn	Control data for W/ case highway assignment in 2015	acn
— 15HWY.DRE	Traffic flow by direction for W/ case highway assignment in 2015	dre
— 15HWY.IOD	Impedance on highway network of W/ case in 2015	iod
— 15HWY.IRE	Assigned highway traffic volume of W/ case in 2015	ire
— 15HWY.log	Log file for W/ case calculation in 2015	log
— 15HWY.PAR	Highway assignment parameter of W/ case in 2015	par
— 15HWYNET.INT	Highway network in 2015	int
— 15TRAN.acn	Control data for W/ case transit assignment in 2015	acn
— 15TRAN.iod	Impedance on transit network of W/ case in 2015	iod

Folder / File	Contents	File Type
<ul style="list-style-type: none"> ├── 15TRAN.ire ├── 15TRAN.ire ├── 15TRAN.TNT ├── 15TRAN.tpa ├── 15TRAN.tre ├── 15VEHOD.aod └── TrafficZone.ZXY 	<p>Assigned transit traffic volume of W/ case in 2015</p> <p>Assigned transit traffic volume of W/ case in 2015</p> <p>Transit network in 2015</p> <p>Transit assignment parameter of W/ case in 2015</p> <p>Assigned transit traffic volume of W/ case in 2015</p> <p>Vehicle OD matrix in 2015</p> <p>Traffic zone boundary data</p>	<p>ire</p> <p>ire</p> <p>tnt</p> <p>tpa</p> <p>tre</p> <p>aod</p> <p>zxy</p>
<p>04_2030 Do Nothing Case</p> <ul style="list-style-type: none"> ├── 07HWYNET.INT ├── 07TRAN.TNT ├── 07TRAN.TPA ├── 30BUSPTRD.aod ├── 30HWYTRD.acn ├── 30HWYTRD.DRE ├── 30HWYTRD.IOD ├── 30HWYTRD.IRE ├── 30HWYTRD.log ├── 30HWYTRD.PAR ├── 30TRANTRD.acn ├── 30TRANTRD.iod ├── 30TRANTRD.ire ├── 30TRANTRD.tre ├── 30VEHTRD.aod └── TrafficZone07.ZXY 	<p>Present highway network</p> <p>Present transit network</p> <p>Transit assignment parameter</p> <p>Public transport OD matrix in 2030</p> <p>Control data for W/O case highway assignment in 2030</p> <p>Traffic flow by direction for W/O case highway assignment in 2030</p> <p>Impedance on highway network of W/O case in 2030</p> <p>Assigned highway traffic volume by link of W/O case in 2030</p> <p>Log file for W/O case calculation in 2030</p> <p>Highway assignment parameter of W/O case in 2030</p> <p>Control data for W/O case transit assignment in 2030</p> <p>Impedance on transit network for W/O case in 2030</p> <p>Assigned transit traffic volume by link of W/O case in 2030</p> <p>Assigned transit traffic volume by route of W/O case in 2030</p> <p>Vehicle OD matrix in 2030</p> <p>Traffic zone boundary data</p>	<p>int</p> <p>tnt</p> <p>tpa</p> <p>aod</p> <p>acn</p> <p>dre</p> <p>iod</p> <p>ire</p> <p>log</p> <p>par</p> <p>acn</p> <p>iod</p> <p>ire</p> <p>tre</p> <p>aod</p> <p>zxy</p>
<p>05_2030 With Project (Excluding Expressway)</p> <ul style="list-style-type: none"> ├── 30BUSPOD.aod ├── 30HWY2.IOD ├── 30HWY2.IRE ├── 30HWY2.log ├── 30HWY2.PAR ├── 30HWYNET2.int ├── 30HWYWOE.acn ├── 30TRAN.TNT ├── 30TRAN.TPA ├── 30TRAN2.iod ├── 30TRAN2.ire ├── 30TRAN2.tre ├── 30TRANWOE.acn ├── 30VEHOD.aod └── TrafficZone.ZXY 	<p>Public transport OD matrix in 2030</p> <p>Impedance on highway network for W/ case in 2030</p> <p>Assigned highway traffic volume by link of W/ case in 2030</p> <p>Log file for W/ case calculation in 2030</p> <p>Highway assignment parameter of W/ case in 2030</p> <p>Highway network of W/ case in 2030</p> <p>Control data for W/ case highway assignment in 2030</p> <p>Transit network of W/ case in 2030</p> <p>Transit assignment parameter of W/ case in 2030</p> <p>Impedance on transit network for W/ case in 2030</p> <p>Assigned transit traffic volume by link of W/ case in 2030</p> <p>Assigned transit traffic volume by route of W/ case in 2030</p> <p>Control data for W/ case transit assignment in 2030</p> <p>Vehicle OD matrix in 2030</p> <p>Traffic zone boundary data</p>	<p>aod</p> <p>iod</p> <p>ire</p> <p>log</p> <p>par</p> <p>int</p> <p>acn</p> <p>tnt</p> <p>tpa</p> <p>iod</p> <p>ire</p> <p>tre</p> <p>acn</p> <p>aod</p> <p>zxy</p>
<p>06_2030 With Project Case</p> <ul style="list-style-type: none"> ├── 30BUSPOD.aod ├── 30HWY.acn ├── 30HWY.DRE ├── 30HWY.IOD ├── 30HWY.IRE ├── 30HWY.log 	<p>Public transport OD matrix in 2030</p> <p>Control data for W/ case highway assignment in 2030</p> <p>Traffic flow by direction for W/ case highway assignment in 2030</p> <p>Impedance on highway network for W/ case in 2030</p> <p>Assigned highway traffic volume by link of W/ case in 2030</p> <p>Log file for W/ case calculation in 2030</p>	<p>aod</p> <p>acn</p> <p>dre</p> <p>iod</p> <p>ire</p> <p>log</p>

Folder / File	Contents	File Type
├── 30HWY.PAR	Highway assignment parameter of W/ case in 2030	par
├── 30HWYNET.INT	Highway network of W/ case in 2030	int
├── 30TRAN.acn	Control data for W/ case transit assignment in 2030	acn
├── 30TRAN.iod	Impedance on transit network for W/ case in 2030	iod
├── 30TRAN.ire	Assigned transit traffic volume by link of W/ case in 2030	ire
├── 30TRAN.TNT	Transit network of W/ case in 2030	tnt
├── 30TRAN.TPA	Transit assignment parameter of W/ case in 2030	tpa
├── 30TRAN.tre	Assigned transit traffic volume by route of W/ case in 2030	tre
├── 30VEHOD.aod	Vehicle OD matrix in 2030	aod
└── TrafficZone.ZXY	Traffic zone boundary data	zxy
07_Zonal Parameters		
├── 2007 Zonal Parameter.xls	Socio-economic indicators by traffic zone	xls
├── 2015 Zonal Parameter (Trend Case).xls	Future demographic framework of trend case in 2015	xls
├── 2030 Zonal Parameter (Trend Case).xls	Future demographic framework of trend case in 2030	xls
└── 2030 Zonal Parameter (with UGB).xls	Future demographic framework of planned case in 2030	xls

Table 1.3.4 List of Database Files (03_MapInfo Database)

Folder / Files	Contents	File Type
01_Zone Analysis		
├── BusTerminal02.TAB	Existing bus terminal location	tab
├── ByWard.IND	Excel index file	ind
├── ByWard.TAB	Excel reference file	tab
├── ByWard.xls	Indicator by ward	xls
├── District02.TAB	District polygon layer	tab
├── IndexByWard.WOR	Workspace for ward analysis	wor
├── Link02.TAB	Existing highway network layer (link)	tab
├── Node02.TAB	Existing highway network layer (node)	tab
├── Road02.TAB	Existing road layer	tab
├── Subward02.TAB	Subward polygon layer	tab
├── SuperZone.TAB	Super-zone polygon layer	tab
├── TrafficZone.WOR	Workspace for traffic zone specification	wor
├── TrafficZone03.TAB	Traffic zone polygon layer	tab
├── Transit02.TAB	Existing transit network layer	tab
├── TripByWard.WOR	Workspace for trip analysis by ward	wor
└── Ward02.TAB	Ward polygon layer	tab
02_Network		
├── BusTerminal02.TAB	Existing bus terminal layer	tab
├── HighwayNetwork.WOR	Workspace for existing highway network analysis	wor
├── Link02.TAB	Existing highway network layer (link)	tab
├── Link04.TAB	Existing highway network layer (link)	tab
├── Node02.TAB	Existing highway network layer (node)	tab
├── Road02.TAB	Existing road layer	tab
├── Subward02.TAB	Subward polygon layer	tab
├── Transit03.TAB	Existing transit network layer	tab
├── TransitNetwork.WOR	Workspace for existing transit network analysis	wor
└── Ward02.TAB	Ward polygon layer	tab

Chapter 2 HIS Data Processing

2.1 Outline of Data Processing

The HIS master file is one of the most essential data. The HIS data processing can be divided into seven major tasks as illustrated in Figure 2.1.1. The HIS survey results include non-numeric information such as the residential address and address of the origin/destination places as well. This non-numeric information must be transformed into numeric data (a zone number) according to a zoning code system. After the coding, information is encoded with a data entry system. Encoded data are checked and errors are corrected. The cleaned information is referred to as the “sample HIS data”. The sample HIS data is expanded by zone based on the reported zonal total population (households) of the area and the corresponding sample rates. Whilst, the information obtained through the cordon line survey is processed to make the OD matrix of non-residents trips of Dar es Salaam. Besides, a truck OD matrix was also developed based on the Cargo Generation Survey. Three OD matrices: Person OD matrix developed from the expanded HIS data, the OD matrix by non-residents by the cordon traffic and interview survey, and the truck OD matrix are examined with the result of Screen Line survey. After the examination, with necessary modification of some variables such as expansion factors, the final HIS database was compiled as a master file for the analysis of transport demand of the Study area.

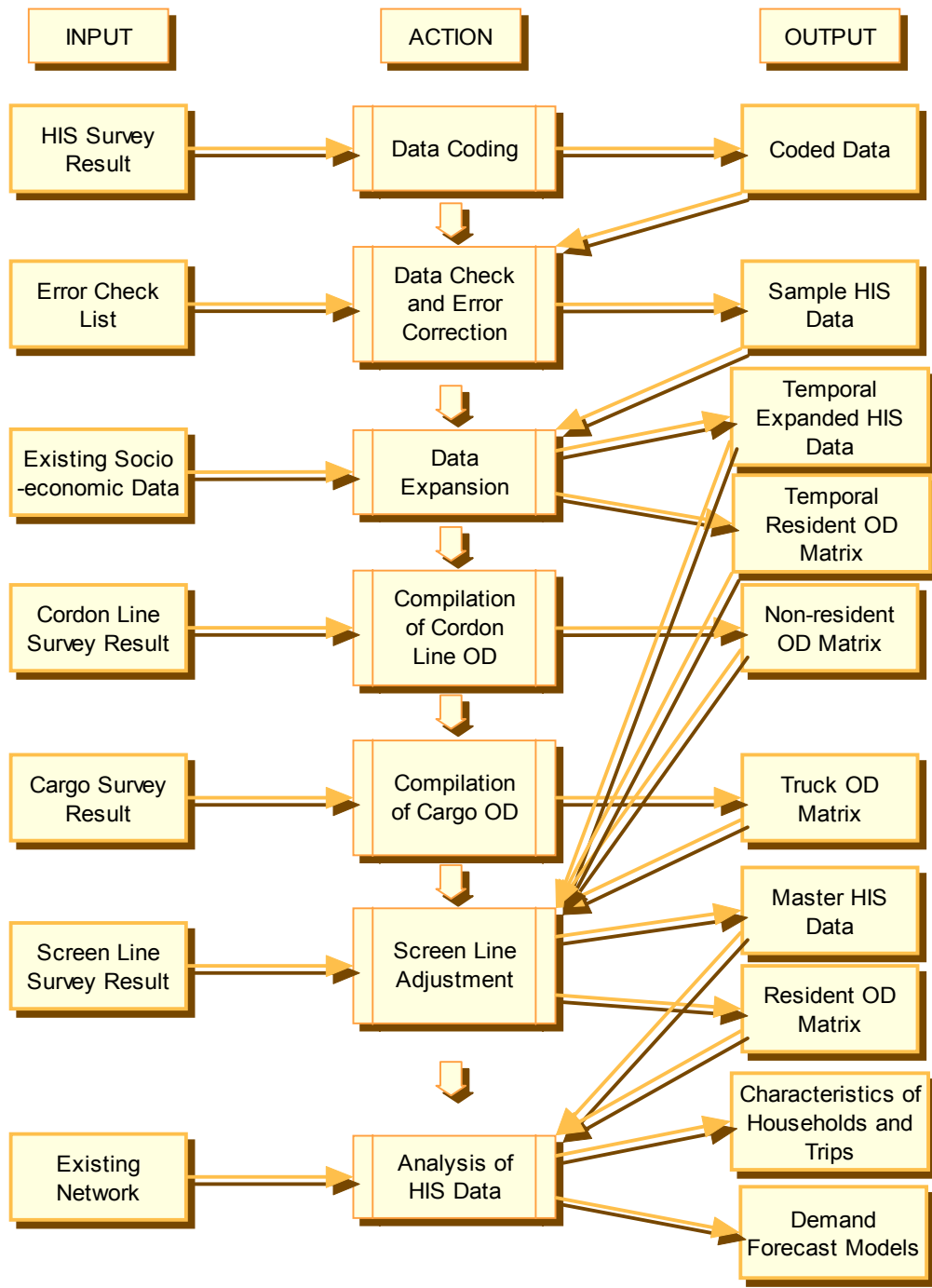


Figure 2.1.1 Data Processing of HIS Data

2.2 Coding and Encoding

(1) Coding

The original data in the survey sheets were edited and coded manually by referring a zone code system.

The zone code system consists of the name of landmarks and their corresponding subward code. The landmark table was verified in the field during the interview survey, and some landmarks were added if the answered landmark was not listed.

(2) Encoding

The household interview survey is composed of four different questionnaire forms:

- Form 1 – Household attributes
Socio-economic conditions such as number of household members, vehicle ownership, ownership of house and land and so on.
- Form 2 – Household member attributes
Socio-economic information of each individual members such as age, sex occupation, monthly income and so on.
- Form 3 – Trip information
Trip behavior such as origin and destination, trip purpose, mode used, departure and arrival time, transfer place and so on.
- Form 4 – Additional question for low income groups
Situation and opinion regarding public transport services

Each data was encoded using Microsoft Access platform for its data relational advantage. The cleaned data were compiled in the form of MS-Excel so that it can be easily handled. The compiled data structure of the above Form 1 to Form 4 is described in the following section.

2.3 Data Check and Error Correction

The initial manual data checking and the correction of errors were done repeatedly by the following sequential steps:

- Manual check during coding by coding staff
- Validation check of numerical data by data entry system
- Data checking referring to a check list
- Correction of errors

After completion of the manual error checking process, HIS database was further checked by the following manner:

- Re-check of numerical validation (range of values) of household and household member's information (see Table 2.3.1)
- Consistency (logical) check between information (see Table 2.3.2)

Table 2.3.1 Validation Check Items for HIS Data

Form	Code	Message	Content
Form-1	101	No zone code entered	Not less than one of District, Ward, and Sub-ward code is missing.
	102	No household number entered	
	103	Duplicate household number entered	
	104	Discrepancy in number of household members	
	105	Invalid house ownership code	Neither 1 or 2
	106	Invalid house material code	Less than 1 or more than 4
	107	Invalid number of rooms	Less than 1 or more than 10
	108	Invalid electricity code	Less than 1 or more than 3
	109	Invalid household income code	Less than 1 or more than 14
Form-2	201	No zone code entered	Not less than one of District, Ward, and Sub-ward code is missing.
	202	Invalid household number entered	
	203	Invalid number of household members entered	
	204	Invalid sex code	Neither 1 or 2
	205	Invalid age entered	Less than 7 or more than 99
	206	Invalid occupation code	Less than 1 or more than 24
	207	No working or school place entered	At least one of District, Ward, and Sub-ward code is missing.
	208	No working or school hour entered	
	209	No working or school days entered	
	210	Invalid industrial code	Less than 1 or more than 13
	211	Invalid individual income code	Less than 1 or more than 14
	212	Invalid driver license code	Less than 1 or more than 9
	213	Invalid car ownership code	Less than 1 or more than 4
	214	Invalid trip or no trip code	Neither 0 or 1
Form-3	301	No zone code entered	Not less than one of District, Ward, and Sub-ward code is missing.
	302	Invalid household number entered	
	303	Invalid number of household members	
	304	Invalid trip number entered	
	305	No arrival time entered	
	306	Invalid place code	Less than 1 or more than 4
	307	No arrival zone code entered	At least one of District, Ward, and Sub-ward code is missing.
	308	Invalid facility code	Less than 1 or more than 14
	309	No departure time entered	
	310	Invalid trip purpose code	Less than 1 or more than 7
	311	Invalid travel mode code or no travel mode entered	Less than 1 or more than 15
	312	Invalid drive code	Neither 1 or 2
	313	No number of passengers entered	
	314	Invalid parking code	Less than 1 or more than 4
	315	No parking charge entered	

Table 2.3.2 Consistency (Logical) Check Items for HIS Data

Target	Code	Message	Content
Sex and occupation	401	Invalid sex for housewife	Male but housewife
Age and occupation	411	Invalid age for elementary student	Less than 5 or more than 12
	412	Invalid age for secondary student	Less than 12 or more than 15
	413	Invalid age for university student	Less than 15 or more than 30
	414	Invalid age for housewife	Less than 12
	415	Invalid age for retired	Less than 50
Occupation and industry	421	Discrepancy between occupation and industry	If farmers but not agriculture
Driving license and car ownership	431	No license but car own	
Occupation and trip	441	Invalid travel purpose for students	Students or non-workers travel with "to go usual work place"
	442	Invalid travel purpose for students	Students or non-workers travel with "business activities" or "back to working place"
	443	Invalid travel purpose for workers	Workers travel with "to school"
Travel Time	451	Discrepancy between arrival time and departure time	
	452	Invalid travel time	Less than 1 min. or more than 3 hours
Purpose	461	Duplicate "to go usual work place"	
	462	Duplicate "to school"	
	463	Duplicate "to home"	
Travel Mode	471	Duplicate walking trip	

2.4 Compilation of Cordon Line OD Matrix

(1) Objectives

The objective of Cordon Line OD matrix compilation is to develop OD tables of trips made by non-residents. Through the HIS survey trip information of residents in Dar es Sallam can be obtained, however, trips crossing the border of the city by non-residents cannot be captured by HIS. Accordingly in order to obtain such trip information, the Cordon Line Survey including traffic count and roadside interview survey was conducted in the Study.

As part of the cordon line survey, manual traffic count survey was conducted at seven locations on major roads crossing the cordon line. During the survey, vehicles passing the cordon line are randomly invited to make an interview regarding passengers trip information.

The data processing of the cordon line survey data is composed of following steps:

- 1) Coding of the interview survey result
- 2) Data checking and correction of the coded data
- 3) Expansion of the data obtained from interview based on the counted volume
- 4) Elimination of residents trips (this is already included in HIS)
- 5) Compilation of an OD table for trips made by non-residents

(2) Expansion

Expansion of the samples was made by each survey location as follows:

- 1) Samples were expanded by mode (vehicle)
- 2) Expansion was done by hour
- 3) Traffic volume was expanded from 16 hours volume to 24 hours volume
- 4) Inbound traffic was adjusted to correspond to outbound traffic

(3) Elimination of residents' trips

The traffic count at cordon line survey locations may include trips made by non-residents, which are captured by HIS. Accordingly such trip information by residents obtained at the cordon line should be excluded in developing cordon line OD matrices.

(4) Compilation of an OD table made by non-residents

After elimination of residents' trips, each OD table by survey location was consolidated into one cordon OD table composing of trips made by non-residents.

2.5 Expansion and Screen Line Adjustment

An expanded OD table made from the HIS data needs to be calibrated with the traffic volume at the screen line by mode of transportation.

First, the number of person trips crossing the screen line was calculated from the expanded HIS. Consequently the person trips were converted into vehicular trips based on the average occupancy ratio by mode of transportation. This estimated vehicular traffic was compared with the actual traffic counts at each screen line survey location. If there are significant difference between them, adjustment is required to calibrate the OD matrices.

Adjustment should be made by mode of transportation by using the formula below:

$$A_i = (T_{si} - T_{ci}) / T_{pi}$$

Where: A_i : screen line adjustment factor for mode i

T_{si} : screen line traffic count of mode i

T_{ci} : estimated traffic made by non-residents (cordon OD matrix), passing through the screen line

T_{pi} : estimated traffic made by residents (HIS OD matrix), passing through the screen line

Chapter 3 Structure of HIS Database

The HIS database consists of the following three data sets:

- 1) Household information
- 2) Individual information
- 3) Trip information

The above information are compiled in the form of Microsoft Excel. This chapter describes the structure of each database.

3.1 Household Information

The household information data consists of 69 fields as shown in Table 3.1.1. The first field, “SURVEY FORM”, indicates the type of information. Field 2 to 66 store the answers by the sampled households. The last three fields keep supplementary information for further analysis, such as an expansion factor, traffic analysis zone.

Table 3.1.1 Structure of Household Information in HIS Database

Field No.	Field Name	Notes
1	SURVEYFORM	Survey Form Number (=1)
2	REGION	Region Name of Residence
3	DISTRICT	District Name of Residence
4	WARD	Ward Name of Residence
5	SUBWARD	Subward Name of Residence
6	LANDMARK	Landmark Name of Residence
7	CODE1	Region Code of Residence
8	CODE2	District Code of Residence
9	CODE3	Ward Code of Residence
10	CODE4	Subward Code of Residence
11	HHCODE	Household Number
12	VISIT1	Date of 1st Visit
13	VISIT2	Date of 2nd Visit
14	VISIT3	Date of 3rd Visit
15	AUDIT	Date of Data Audit
16	CODING	Date of Data Coding
17	ENTRY	Date of Data Entry
18	INTERVIEWER1	Name of Interviewer

Field No.	Field Name	Notes
19	INTERVIEWER2	Name of Interviewer
20	SUPERVISOR	Name of Supervisor
21	MALETOTAL	Total Number of Household Member (Male)
22	MALELT6	Number of Household Member Under 6 Years Old (Male)
23	MALEWORK	Number of Working Person in Household (Male)
24	MALESTD	Number of Student in Household (Male)
25	MALEOTHR	Other Household Member (Male)
26	MALEDIS	Disable Household Member (Male)
27	FEMATOTAL	Total Number of Household Member (Female)
28	FEMALT6	Number of Household Member Under 6 Years Old (Female)
29	FEMAWORK	Number of Working Person in Household (Female)
30	FEMASTD	Number of Student in Household (Female)
31	FEMAOTHR	Other Household Member (Female)
32	FEMADIS	Disable Household Member (Female)
33	HOWNSHIP	Household Ownership (1: Own. 2:Not Own)
34	MATERIAL	Material of Residence
35	MATERSTR	Other Materials
36	ROOMS	Size of Residence
37	LIGHT	Lighting of Residence
38	ELECOMSUM	Electricity Consumption
39	HHINCOM	Household Income
40	MCOWN	Number of Motorcycles Owned by Household
41	MCOTHR	Number of Motorcycles (Other available)
42	PCOWN	Number of Passenger Cars Owned by Household
43	PCOTHR	Number of Passenger Cars (Other available)
44	VANOWN	Number of Vans Owned by Household
45	VANOTHR	Number of Vans (Other available)
46	TRUCKOWN	Number of Trucks Owned by Household
47	TRUCKOTHER	Number of Trucks (Other available)
48	BCYCLOWN	Number of Bicycles by Household
49	BCYCLOTHR	Number of Bicycles (Other available)
50	BJAJOWN	Number of Bhajaj by Household
51	BJAJOTHR	Number of Bhajaj (Other available)
52	PARKINGLOT	Number of Parking Lost in Residence
53	GOOD1	Ownership of Refrigerator
54	GOOD2	Ownership of Washing Machine
55	GOOD3	Ownership of Air Conditioner
56	GOOD4	Ownership of Radio
57	GOOD5	Ownership of TV
58	GOOD6	Ownership of Satellite TV
59	GOOD7	Ownership of Camera
60	GOOD8	Ownership of Video Recorder
61	GOOD9	Ownership of DVD player
62	GOOD10	Ownership of Telephone
63	GOOD11	Ownership of Fax
64	GOOD12	Ownership of Mobile Phone
65	GOOD13	Ownership of PC
66	GOOD14	Internet Availability
67	EXPF	*Expansion Factor for Household
68	ZONECODE	*Subward Zone Code of Residence
69	TAZ	*Traffic Analysis Zone (TAZ) of Residence

Figure 3.1.1 shows an example of the outlook when the data is opened by Microsoft Excel.

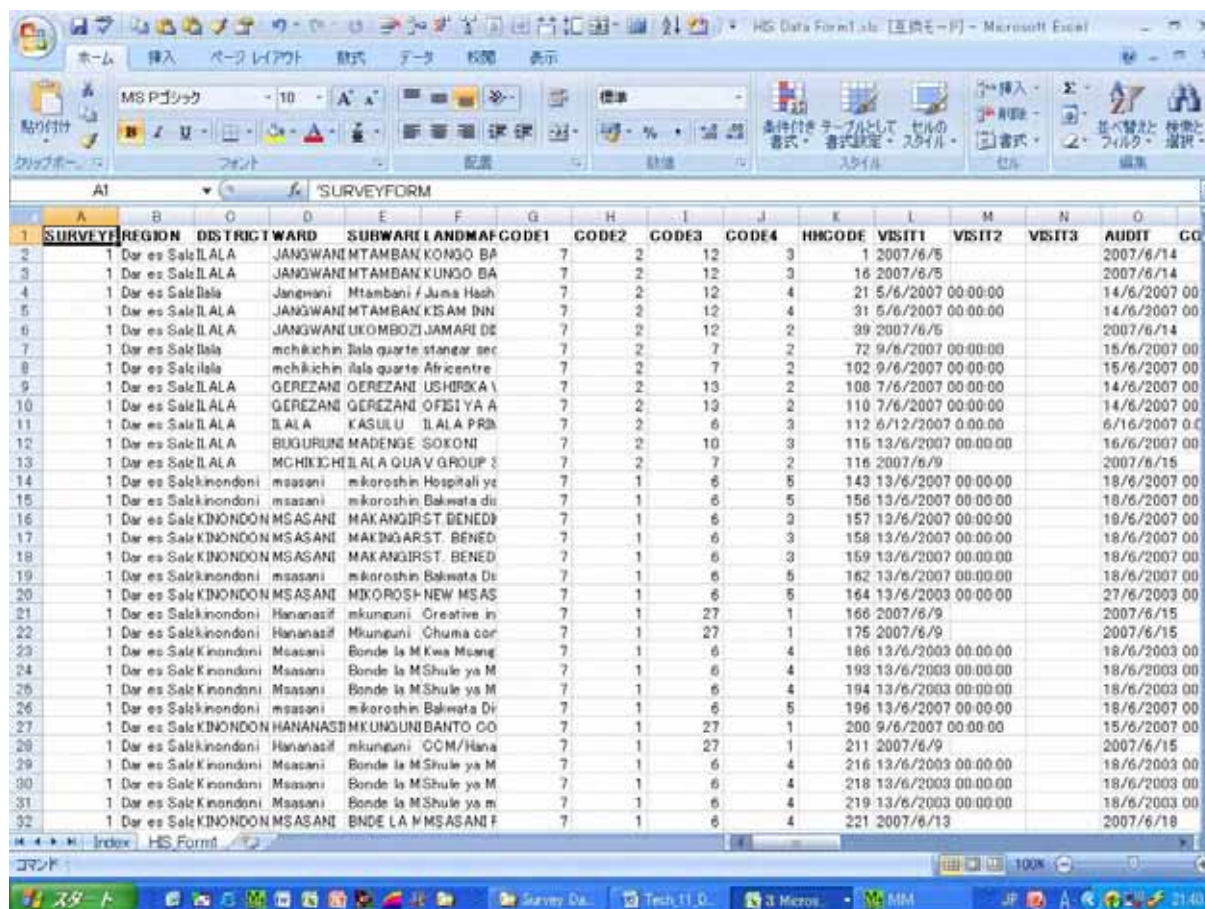


Figure 3.1.1 Outlook of Household Database Sheet

3.2 Individual Information

The individual information data consists of 29 fields as shown in Table 3.2.1. The first field, “FORM”, indicates the type of information. Field 2 to 25 keep the corrected individual information of all the member of sampled households. The last four fields are supplementary information for further analysis, such as an expansion factor, and working place zone.

Table 3.2.1 Structure of Individual Information in HIS Database

Field No.	Field Name	Notes
1	FORM	Survey Form Number (=2)
2	ZONECODE	Residential Zone Code (Subward Zone Code)
3	HHCODE	Household Number
4	HHMEMNO	Household Member Number
5	SEX	Sex of Household Member
6	AGE	Age of Household Member
7	OCCP	Occupation of Household Member
8	REGION	Region of Usual Working Place/School
9	DISTRICT	District of Usual Working Place/School
10	WARD	Ward of Usual Working Place/School
11	SUBWARD	Subward of Usual Working Place/School

Field No.	Field Name	Notes
12	LANDMARK	Landmark of Usual Working Place/School
13	CODE1	Region Code of Usual Working Place/School
14	CODE2	District Code of Usual Working Place/School
15	CODE3	Ward Code of Usual Working Place/School
16	CODE4	Subward Code of Usual Working Place/School
17	TIMESTART	Usual Working/School Hour (From)
18	TIMEEND	Usual Working/School Hour (To)
19	WORKDAY	Usual Working/School Day in a Week
20	INDST	Industrial Code (Worker Only)
21	PINCOME	Monthly Income of Household Member
22	LICENSE	Driving License of Household Member
23	CAROWN	Car Ownership of Household Member
24	TRIPMAKING	Trip Maker (0:No, 1:Yes)
25	TRIPS	*Number of Trips from Form3
26	EXPF	*Expansion Factor for Household member (involving Household Expansion Factor)
27	HHMEMID	*Household Member Code (Household Number & Household Member Number)
28	WORKZONE	*Subward Zone Code of Working Place/School
29	WORKTAZ	*TAZ of Working Place/School

FORM	ZONE	HHCODE	HHMEMKSEX	AGE	OCCP	REGION	DISTRICT	WARD	SUBWARD	LANDMARK	CODE1	CODE2	CODE3	CODE4
2	731401	864	1	1	33									
3	2	731401	864	2	2	28	1	DAR ES SAILALA	KISUTU	POSTA MPYUME YA L	7	2	14	
4	2	731701	893	1	1	32	5	DAR ES SAILALA	KARIAKOO DDC	RAHA INVE	7	2	11	
5	2	731701	893	2	2	25	21							
6	2	731701	905	1	1	28	7	DAR ES SATEMEKE	MIBURANI	UWANJIA WSHULE YA	7	3	12	
7	2	731701	905	2	2	20	14	DAR ES SATEMEKE	AZIMIO	AZIMIO KAHASSANI M	7	3	17	
8	2	731701	904	1	2	62	5	DAR ES SAILALA	KARIAKOO DDC	MOLYA	7	2	11	
9	2	731701	904	2	2	18	24							
10	2	731701	903	1	1	42	14	DAR ES SATEMEKE	AZIMIO	MJI MPYA MJI MPYA	7	3	17	
11	2	731701	903	2	2	38	14	DAR ES SATEMEKE	AZIMIO	MJI MPYA MJI MPYA	7	3	17	
12	2	731701	903	3	1	13	18	DAR ES SATEMEKE	AZIMIO	MJI MPYA FILE BAR	7	3	17	
13	2	731701	903	4	2	10	18	DAR ES SATEMEKE	AZIMIO	MJI MPYA FILE BAR	7	3	17	
14	2	710503	1013	1	1	39	14	DAR ES SAILALA	KIPAWA	ASR PORT CIVIL AVSA	7	2	9	
15	2	710503	1013	2	1	18	16	DAR ES SATEMEKE	TEMEKE	LEO STR TWAYIIBA	7	3	13	
16	2	710503	1013	3	1	18	20							
17	2	710503	1013	4	1	12	16	DAR ES SAKINONDON	MWANANYI	MWINJUMFRIDHWAA E	7	1	5	
18	2	710503	1013	5	2	36	14	DAR ES SAKINONDON	MWANANYI	MWINJUMFRIDHWAA E	7	1	5	
19	2	710503	1013	6	2	15	16	DAR ES SAKINONDON	MZIMUNI	IDRISA STIBUTIAMA F	7	1	8	
20	2	710503	1013	7	2	15	16	DAR ES SAKINONDON	KUNDUCHE	MTONGAN MUUNGANI	7	1	16	
21	2	731401	314	1	2	41	4	DAR ES SATEMEKE	MTONI	SABASAB/SABASAB	7	3	14	
22	2	731401	318	1	2	60	20							
23	2	731401	318	2	2	7	15	DAR ES SATEMEKE	MTONI	SABASAB/SHULE YA	7	3	14	
24	2	731401	318	3	2	9	15	DAR ES SATEMEKE	MTONI	SABASAB/SHULE YA	7	3	14	
25	2	731401	318	4	2	16	19							
26	2	731401	468	1	1	45	14	DAR ES SATEMEKE	MTONI	SABASAB/UHURU BU	7	3	14	
27	2	731401	468	1	2	64	22							
28	2	731401	468	2	1	47	14	DAR ES SAILALA	KARIAKOO SOKO	KUUWALZA PIL	7	2	11	
29	2	731401	468	3	1	10	18	DAR ES SATEMEKE	MTONI	SABASAB/UHURU BU	7	3	14	
30	2	731401	419	1	1	30	3	DAR ES SATEMEKE	KURASINI	SHIMO LA INTER CIT	7	3	16	
31	2	731401	419	2	2	25	21							
32	2	731401	443	1	2	31	24							

Figure 3.2.1 Outlook of Individual Database Sheet

3.3 Trip Information

The trip information data consists of 85 fields as shown in Table 3.3.1. The first field, “FORM”, indicates the type of information as same as the household and individual information. Field 2 to 67 store the trip information collected in the HIS survey. The last 18 fields are supplementary information for further analysis, such as an expansion factor, origin and destination zone in terms of traffic analysis zone.

Table 3.3.1 Structure of Trip Information in HIS Database

Field No.	Field Name	Notes
1	FORM	Survey Form Number (=3)
2	ZONECODE	Subward Zone Code of residence
3	HHCODE	Household Number
4	HHMEMNO	Household Member Number
5	SHEETNO	Survey Sheet Number
6	PLACEO	Origin Place (1:Home, 2:Working Place, 3: School, 4:Others)
7	REGIONO	Origin Region
8	DISTRICTO	Origin District
9	WARDO	Origin Ward
10	SUBWARDO	Origin Subward
11	LANDMARKO	Origin Landmark
12	CODE1O	Origin Region Code
13	CODE2O	Origin District Code
14	CODE3O	Origin Ward Code
15	CODE4O	Origin Subward Code
16	FACILITYO	Origin Landmark Code
17	DEPARTURE	Departure Time
18	PLACED	Destination Place (1:Home, 2:Working Place, 3: School, 4:Others)
19	REGIOND	Destination Region
20	DISTRICTD	Destination District
21	WARDD	Destination Ward
22	SUBWARD	Destination Subward
23	LANDMARKD	Destination Landmark
24	CODE1D	Destination Region Code
25	CODE2D	Destination District Code
26	CODE3D	Destination Ward Code
27	CODE4D	Destination Subward Code
28	FACILITYD	Destination Landmark Code
29	ARRIVAL	Arrival Time
30	PURPOSE	Trip Purpose
31	1STMODE	1st Transport Mode
32	1STTIME	Travel Time of 1st Mode
33	1STFARE	Travel Fare of 1st Mode
34	1STTRANS	Transit Place to Next Mode
35	1STWAIT	Waiting Time for Transit
36	2NDMODE	2nd Transport Mode
37	2NDTIME	Travel Time of 2nd Mode
38	2NDFARE	Travel Fare of 2nd Mode
39	2NDTRANS	Transit Place to Next Mode
40	2NDWAIT	Waiting Time for Transit
41	3RDMODE	3rd Transport Mode

Field No.	Field Name	Notes
42	3RDTIME	Travel Time of 3rd Mode
43	3RDFARE	Travel Fare of 3rd Mode
44	3RDTRANS	Transit Place to Next Mode
45	3RDWAIT	Waiting Time for Transit
46	4THMODE	4th Transport Mode
47	4THTIME	Travel Time of 4th Mode
48	4THFARE	Travel Fare of 4th Mode
49	4THTRANS	Transit Place to Next Mode
50	4THWAIT	Waiting Time for Transit
51	5THMODE	5th Transport Mode
52	5THTIME	Travel Time of 5th Mode
53	5THFARE	Travel Fare of 5th Mode
54	5THTRANS	Transit Place to Next Mode
55	5THWAIT	Waiting Time for Transit
56	6THMODE	6th Transport Mode
57	6THTIME	Travel Time of 6th Mode
58	6THFARE	Travel Fare of 6th Mode
59	6THTRANS	Transit Place to Next Mode
60	6THWAIT	Waiting Time for Transit
61	7THMODE	7th Transport Mode
62	7THTIME	Travel Time of 7th Mode
63	7THFARE	Travel Fare of 7th Mode
64	DRIVE	Drive by yourself? 1: Yes, 2: No (Motorcycle and Passenger Car Only)
65	PASSENGER	Number of Passenger including Driver
66	PARKING	Parking Place
67	PARKINGFEE	Parking Fee
68	RESTAZ	*Traffic Analysis Zone (TAZ) Code of Residence
69	WORKZONE	*Subward Zone Code of Working Place/School from Form2
70	WORKTAZ	*TAZ of Working Place/School from Form2
71	OZONE	*Origin Zone (Subward Zone Code)
72	DZONE	*Destination Zone (Subward Zone Code)
73	OTAZ	*Origin Zone (TAZ)
74	DTAZ	*Destination Zone (TAZ)
75	HHMEMID	*Household Member Code (Household Number & Household Member Number)
76	HHMEMTRIP	*Trip Code (Household Number & Household Member Number & Trip Number)
77	MMODE	*Representative Transport Mode
78	EXPF1	*Expansion Factor for Household Member
79	UNKWNZ	*Unknown Zone Code (0: Including Unknown Zone, 1: No)
80	SEX	*Sex of Household Member from Form2
81	AGEC	*Age Class of Household Member from Form2
82	OCCUP	*Occupation of Household Member from Form2
83	CAROWN	*Car Ownership of Household Member
84	CAROWNH	*Car Ownership of Household
85	EXPPF	*Expansion Factor for Trip (Final Expansion Factor involving EXPF1)

FORM	ZONECODE	HHCODE	HHMEMKSHEETNO	PLAGEO	REGIONO	DISTRICT	WARDO	SUBWARD	LANDMAF	CODE10	CODE20	CODE30	CODE40	FA
3	731401	864	2	1	1									
3	731401	864	2	2	2									
3	731401	864	2	3	4	DAR ES SATEMEKE	MBGALA	MORINGE	KINDALI BV	7	3	8	1	
3	731401	864	2	4	4									
3	731701	893	1	1	1									
3	731701	893	1	2	2									
3	731701	905	1	1	1									
3	731701	905	1	2	2									
3	731701	904	1	1	1									
3	731701	904	1	2	2									
3	731701	903	1	1	1									
3	731701	903	1	2	4	DAR ES SAKINONDON	KARIAKOO DDC		J&T CONS	7	2	11	3	
3	731701	903	3	1	1									
3	731701	903	3	2	3									
3	731701	903	4	1	1									
3	731701	903	4	2	3									
3	710503	1013	1	1	1									
3	710503	1013	1	2	2									
3	710503	1013	2	1	1									
3	710503	1013	2	2	3									
3	710503	1013	4	1	1									
3	710503	1013	4	2	3									
3	710503	1013	5	1	1									
3	710503	1013	5	2	2									
3	710503	1013	6	1	1									
3	710503	1013	6	2	4	DAR ES SATEMEKE	MBURANI	WAILES	ZAHANATI	7	3	12	4	
3	731401	318	1	1	1									
3	731401	318	1	2	4	DAR ES SAKINONDON	MAKURUM KAGERA		AGAPE NIU	7	1	2	3	
3	731401	318	3	1	1									
3	731401	318	3	2	3									
3	731401	458	1	1	1									

Figure 3.3.1 Outlook of Trip Database Sheet

Chapter 4 Technical Workshop

4.1 General

One of the major objectives of the Centre for Transport Studies (CTS, refer Technical Report No.3 Chapter 9) is capacity building in the field of transportation planning. As part of the preparatory activities towards the establishment of CTS, the JICA Study team was requested to hold a technical workshop to share the idea and knowledge of the database and transport models for Dar es Salaam with government officials of relevant organizations and academicians (lecturers and students) of higher learning institutions, namely, University of Dar es Salaam, Ardhi University, Dar es Salaam Institute of Technology and the National Institute of Transport.

Accordingly, the JICA Study Team organized a Technical Workshop from May 12, 2008 to May 17, 2008.

4.2 Objectives

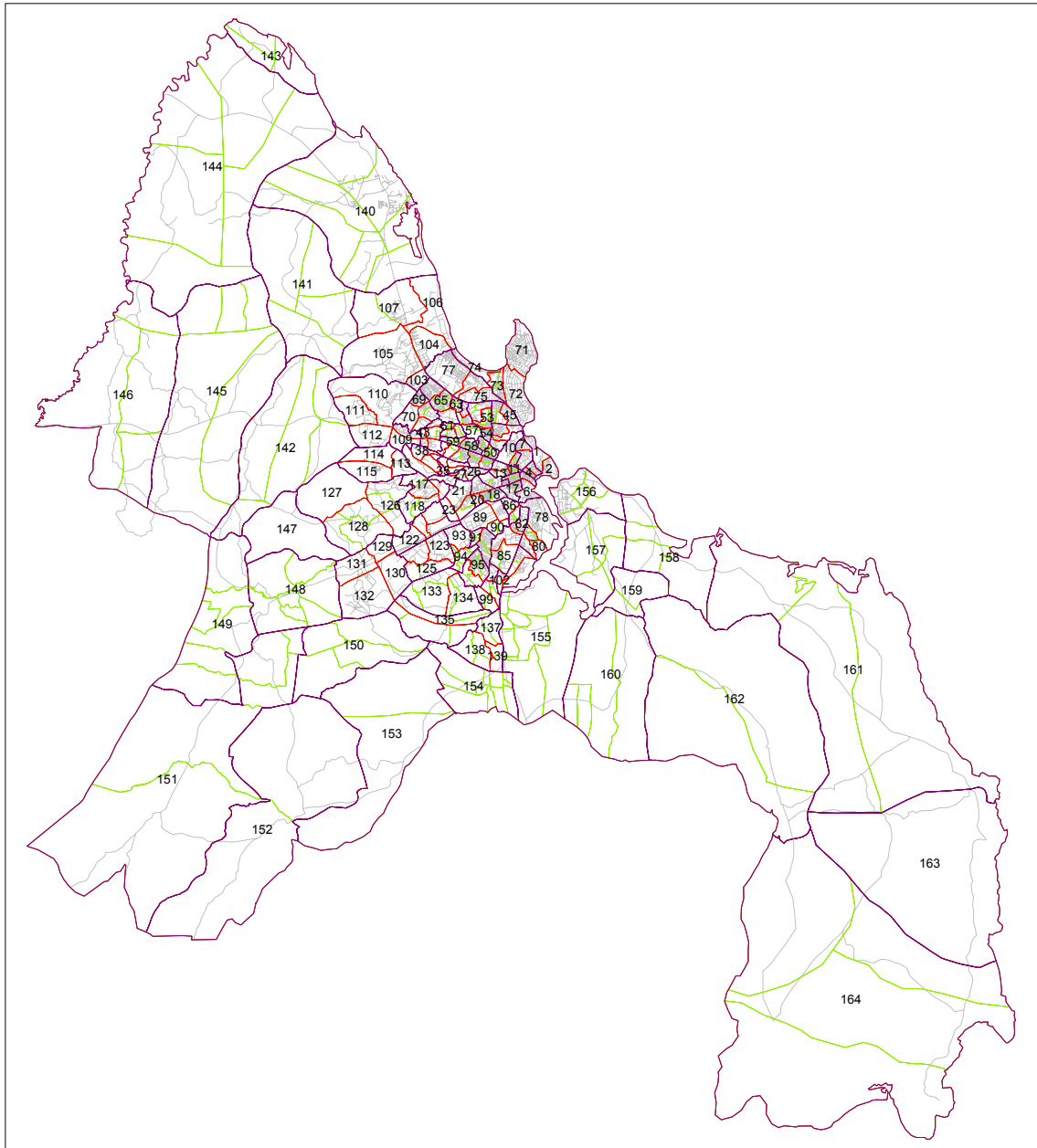
The workshop aimed to provide the following information with the participants:

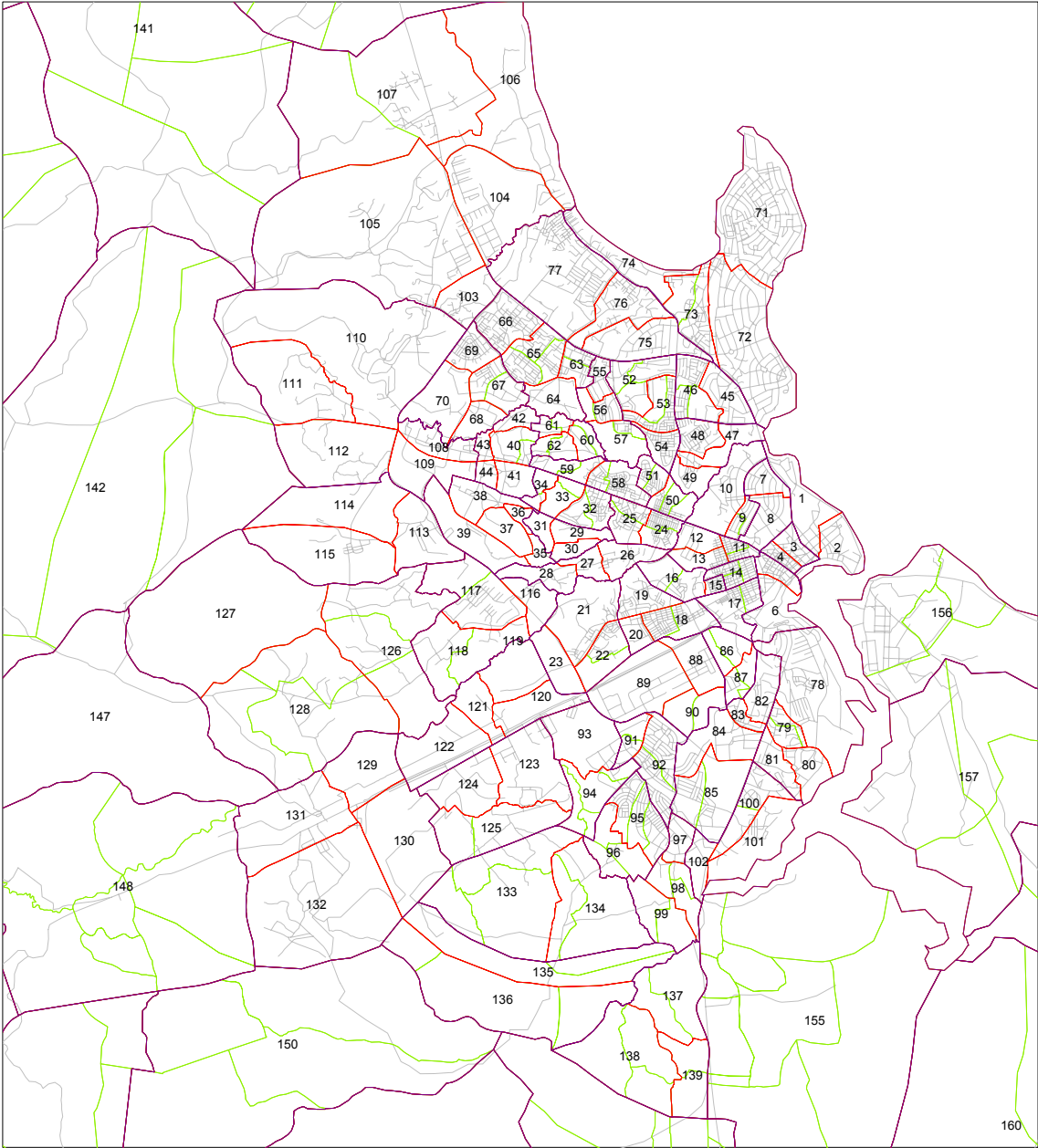
- Overview of the Dar es Salaam Transport Policy and System Development Master Plan
- Basic knowledge of transport demand forecasting procedures: conventional four step procedure
- Basic skill of using JICA STRADA and ArcGIS

4.3 Participants

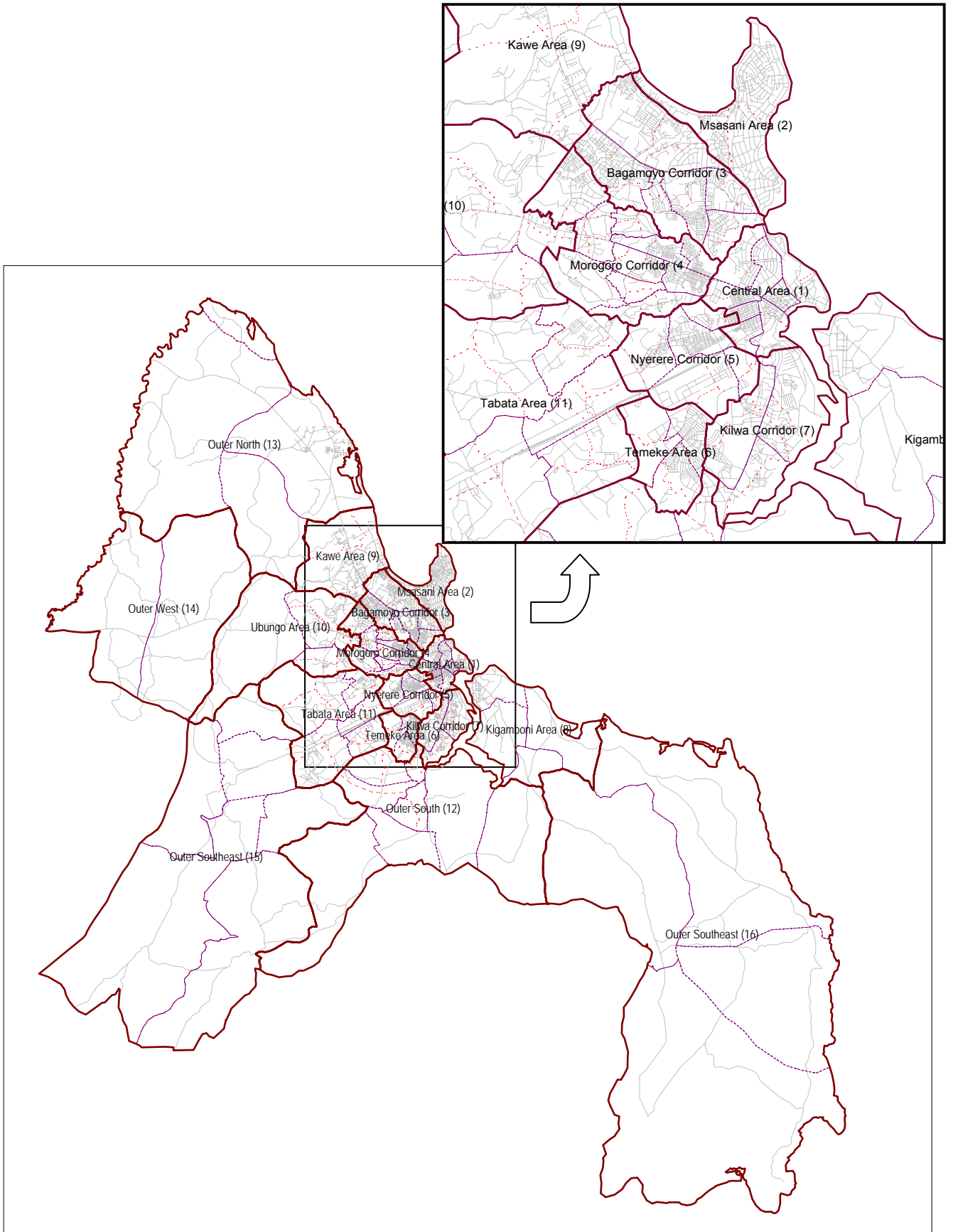
50 participants were invited from various organizations and institutes, namely NIT, UDSM, AU and DIT comprising lecturers and students from these academic institutions and some from DART, DCC and Temeke Municipality. A list of participants, workshop program and handouts are attached as Appendix.

Appendix 1 Traffic Analysis Zone Map





Appendix 2 Super Zone Map



Appendix 3 Zoning System Code Table

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Kinondoni	Magomeni	Suna	7	1	1	01	2	50	1	4
Dar es Salaam	Kinondoni	Magomeni	Dosi	7	1	1	02	2	50	1	4
Dar es Salaam	Kinondoni	Magomeni	Idrisa	7	1	1	03	2	50	1	4
Dar es Salaam	Kinondoni	Magomeni	Makuti A	7	1	1	04	2	51	1	4
Dar es Salaam	Kinondoni	Magomeni	Makuti B	7	1	1	05	2	51	1	4
Dar es Salaam	Kinondoni	Makurumla	Kibamba	7	1	2	01	2	32	2	4
Dar es Salaam	Kinondoni	Makurumla	Mianzini	7	1	2	02	2	32	2	4
Dar es Salaam	Kinondoni	Makurumla	Kagera	7	1	2	03	2	33	2	4
Dar es Salaam	Kinondoni	Makurumla	Kwajongo	7	1	2	04	2	33	2	4
Dar es Salaam	Kinondoni	Makurumla	Sisi Kwa Sisi	7	1	2	05	2	34	2	4
Dar es Salaam	Kinondoni	Makurumla	Kilimahewa	7	1	2	06	2	34	2	4
Dar es Salaam	Kinondoni	Makurumla	Mwembechai	7	1	2	07	2	34	2	4
Dar es Salaam	Kinondoni	Ndugumbi	Vigaeni	7	1	3	01	2	58	3	4
Dar es Salaam	Kinondoni	Ndugumbi	Makanya	7	1	3	02	2	58	3	4
Dar es Salaam	Kinondoni	Ndugumbi	Mikoroshini	7	1	3	03	2	59	3	4
Dar es Salaam	Kinondoni	Ndugumbi	Mapakani	7	1	3	04	2	59	3	4
Dar es Salaam	Kinondoni	Tandale	Mkunduge	7	1	4	01	2	60	4	4
Dar es Salaam	Kinondoni	Tandale	Kwa Tumbo	7	1	4	02	2	60	4	4
Dar es Salaam	Kinondoni	Tandale	Mtongole	7	1	4	03	2	61	4	4
Dar es Salaam	Kinondoni	Tandale	Pakacha	7	1	4	04	2	62	4	4
Dar es Salaam	Kinondoni	Tandale	Mharitani	7	1	4	05	2	61	4	4
Dar es Salaam	Kinondoni	Tandale	Sokoni	7	1	4	06	2	62	4	4
Dar es Salaam	Kinondoni	Mwananyamala	Bwawani	7	1	5	01	2	52	5	3
Dar es Salaam	Kinondoni	Mwananyamala	Kambangwa	7	1	5	02	2	53	5	3
Dar es Salaam	Kinondoni	Mwananyamala	Mwinjuma	7	1	5	03	2	54	5	3
Dar es Salaam	Kinondoni	Mwananyamala	Msisiri A	7	1	5	04	2	52	5	3
Dar es Salaam	Kinondoni	Mwananyamala	Kwa Kopa	7	1	5	05	2	52	5	3
Dar es Salaam	Kinondoni	Mwananyamala	Msisiri B	7	1	5	06	2	52	5	3
Dar es Salaam	Kinondoni	Msasani	Masaki	7	1	6	01	2	71	6	2
Dar es Salaam	Kinondoni	Msasani	Oysterbay	7	1	6	02	2	72	6	2
Dar es Salaam	Kinondoni	Msasani	Makangira	7	1	6	03	2	73	6	2
Dar es Salaam	Kinondoni	Msasani	Bonde la Mpunga	7	1	6	04	2	74	6	2
Dar es Salaam	Kinondoni	Msasani	Mikoroshini	7	1	6	05	2	73	6	2
Dar es Salaam	Kinondoni	Kinondoni	Ada Estate	7	1	7	01	2	45	7	3

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Kinondoni	Kinondoni	Kinondoni Shamba	7	1	7	02	2	46	7	3
Dar es Salaam	Kinondoni	Kinondoni	Kumbukumbu	7	1	7	03	2	46	7	3
Dar es Salaam	Kinondoni	Kinondoni	Kinondoni Mjini	7	1	7	04	2	46	7	3
Dar es Salaam	Kinondoni	Mzimuni	Idrisa	7	1	8	01	2	24	8	4
Dar es Salaam	Kinondoni	Mzimuni	Mwinyimkuu	7	1	8	02	2	24	8	4
Dar es Salaam	Kinondoni	Mzimuni	Makumbusho	7	1	8	03	2	25	8	4
Dar es Salaam	Kinondoni	Mzimuni	Mtambani	7	1	8	04	2	25	8	4
Dar es Salaam	Kinondoni	Kigogo	Mbuyuni	7	1	9	01	2	26	9	4
Dar es Salaam	Kinondoni	Kigogo	Kigogo Kati	7	1	9	02	2	27	9	4
Dar es Salaam	Kinondoni	Kigogo	Mkwajuni	7	1	9	03	2	28	9	4
Dar es Salaam	Kinondoni	Mabibo	Jitegemee	7	1	10	01	2	38	10	4
Dar es Salaam	Kinondoni	Mabibo	Azimio	7	1	10	02	2	36	10	4
Dar es Salaam	Kinondoni	Mabibo	Kanuni	7	1	10	03	2	37	10	4
Dar es Salaam	Kinondoni	Mabibo	Matokeo	7	1	10	04	2	35	10	4
Dar es Salaam	Kinondoni	Mabibo	Mabibo	7	1	10	05	2	39	10	4
Dar es Salaam	Kinondoni	Manzese	Uzuri	7	1	11	01	2	42	11	4
Dar es Salaam	Kinondoni	Manzese	Mvuleni	7	1	11	02	2	40	11	4
Dar es Salaam	Kinondoni	Manzese	Muongano	7	1	11	03	2	40	11	4
Dar es Salaam	Kinondoni	Manzese	Midizini	7	1	11	04	2	41	11	4
Dar es Salaam	Kinondoni	Manzese	Kilimani	7	1	11	05	2	43	11	4
Dar es Salaam	Kinondoni	Manzese	Mnazi Mmoja	7	1	11	06	2	44	11	4
Dar es Salaam	Kinondoni	Ubungo	NHC	7	1	12	01	5	108	12	10
Dar es Salaam	Kinondoni	Ubungo	Ubungo Kisiwani	7	1	12	02	5	109	12	10
Dar es Salaam	Kinondoni	Ubungo	Chuo Kikuu	7	1	12	03	5	110	12	10
Dar es Salaam	Kinondoni	Ubungo	Msewe	7	1	12	04	5	111	12	10
Dar es Salaam	Kinondoni	Ubungo	Kibo	7	1	12	05	5	112	12	10
Dar es Salaam	Kinondoni	Kibamba	Kibamba	7	1	13	01	5	146	13	14
Dar es Salaam	Kinondoni	Kibamba	Kibwegere	7	1	13	02	5	146	13	14
Dar es Salaam	Kinondoni	Kibamba	Kiluvya	7	1	13	03	5	146	13	14
Dar es Salaam	Kinondoni	Kibamba	Kwembe	7	1	13	04	5	146	13	14
Dar es Salaam	Kinondoni	Goba	Goba	7	1	14	01	4	141	14	13
Dar es Salaam	Kinondoni	Goba	Kinzudi	7	1	14	02	4	141	14	13
Dar es Salaam	Kinondoni	Goba	Kulangwa	7	1	14	03	4	141	14	13
Dar es Salaam	Kinondoni	Goba	Matosa	7	1	14	04	4	141	14	13
Dar es Salaam	Kinondoni	Kawe	Mzimuni	7	1	15	01	4	106	15	9

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Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Kinondoni	Kawe	Ukwamani	7	1	15	02	4	104	15	9
Dar es Salaam	Kinondoni	Kawe	Mbezi Juu	7	1	15	03	4	107	15	9
Dar es Salaam	Kinondoni	Kawe	Changanyikeni	7	1	15	04	4	107	15	9
Dar es Salaam	Kinondoni	Kawe	Makongo	7	1	15	05	4	105	15	9
Dar es Salaam	Kinondoni	Kawe	Mlalakuwa	7	1	15	06	4	103	15	9
Dar es Salaam	Kinondoni	Kawe	Lugalo	7	1	15	07	4	107	15	9
Dar es Salaam	Kinondoni	Kunduchi	Kilongawima	7	1	16	01	4	140	16	13
Dar es Salaam	Kinondoni	Kunduchi	Madale	7	1	16	02	4	140	16	13
Dar es Salaam	Kinondoni	Kunduchi	Mtongani	7	1	16	03	4	140	16	13
Dar es Salaam	Kinondoni	Kunduchi	Sala sala	7	1	16	04	4	140	16	13
Dar es Salaam	Kinondoni	Kunduchi	Tegeta	7	1	16	05	4	140	16	13
Dar es Salaam	Kinondoni	Kunduchi	Ununio	7	1	16	06	4	140	16	13
Dar es Salaam	Kinondoni	Kunduchi	Wazo	7	1	16	07	4	140	16	13
Dar es Salaam	Kinondoni	Mbweni	Mpjesi	7	1	17	01	4	143	17	13
Dar es Salaam	Kinondoni	Mbweni	Maputo	7	1	17	02	4	143	17	13
Dar es Salaam	Kinondoni	Mbweni	Mbweni	7	1	17	03	4	143	17	13
Dar es Salaam	Kinondoni	Bunju	Bunju A	7	1	18	01	4	144	18	13
Dar es Salaam	Kinondoni	Bunju	Bunju B	7	1	18	02	4	144	18	13
Dar es Salaam	Kinondoni	Bunju	Mabwe Pande	7	1	18	03	4	144	18	13
Dar es Salaam	Kinondoni	Bunju	Mbopo	7	1	18	04	4	144	18	13
Dar es Salaam	Kinondoni	Bunju	Boko	7	1	18	05	4	144	18	13
Dar es Salaam	Kinondoni	Makuburi	Makoka	7	1	19	01	5	113	19	10
Dar es Salaam	Kinondoni	Makuburi	Kibangu	7	1	19	02	5	114	19	10
Dar es Salaam	Kinondoni	Makuburi	Mwongozo	7	1	19	03	5	115	19	10
Dar es Salaam	Kinondoni	Mburahati	Barafu	7	1	20	01	2	29	20	4
Dar es Salaam	Kinondoni	Mburahati	Kisiwani	7	1	20	02	2	30	20	4
Dar es Salaam	Kinondoni	Mburahati	NHC	7	1	20	03	2	31	20	4
Dar es Salaam	Kinondoni	Makumbusho	Makumbusho	7	1	21	01	2	55	21	3
Dar es Salaam	Kinondoni	Makumbusho	Minazini	7	1	21	02	2	56	21	3
Dar es Salaam	Kinondoni	Makumbusho	Mbuyuni	7	1	21	03	2	56	21	3
Dar es Salaam	Kinondoni	Makumbusho	Mchangani	7	1	21	04	2	57	21	3
Dar es Salaam	Kinondoni	Makumbusho	Kisiwani	7	1	21	05	2	57	21	3
Dar es Salaam	Kinondoni	Sinza	Sinza E	7	1	22	01	2	67	22	4
Dar es Salaam	Kinondoni	Sinza	Sinza D	7	1	22	02	2	68	22	4
Dar es Salaam	Kinondoni	Sinza	Sinza B	7	1	22	03	2	67	22	4

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Kinondoni	Sinza	Sinza A	7	1	22	04	2	69	22	4
Dar es Salaam	Kinondoni	Sinza	Sinza C	7	1	22	05	2	70	22	4
Dar es Salaam	Kinondoni	Kijitonyama	Bwawani	7	1	23	01	2	63	23	3
Dar es Salaam	Kinondoni	Kijitonyama	Ali Maua A	7	1	23	02	2	63	23	3
Dar es Salaam	Kinondoni	Kijitonyama	Ali Maua B	7	1	23	03	2	64	23	3
Dar es Salaam	Kinondoni	Kijitonyama	Kijitonyama	7	1	23	04	2	65	23	3
Dar es Salaam	Kinondoni	Kijitonyama	Mpakani A	7	1	23	05	2	65	23	3
Dar es Salaam	Kinondoni	Kijitonyama	Mpakani B	7	1	23	06	2	65	23	3
Dar es Salaam	Kinondoni	Kijitonyama	Mwenge	7	1	23	07	2	66	23	3
Dar es Salaam	Kinondoni	Kimara	Matangini	7	1	24	01	5	142	24	10
Dar es Salaam	Kinondoni	Kimara	Kimara Stop	7	1	24	02	5	142	24	10
Dar es Salaam	Kinondoni	Kimara	Kimara Baruti	7	1	24	03	5	142	24	10
Dar es Salaam	Kinondoni	Kimara	Baruti	7	1	24	04	5	142	24	10
Dar es Salaam	Kinondoni	Kimara	Mavurunza	7	1	24	05	5	142	24	10
Dar es Salaam	Kinondoni	Kimara	Kimara B	7	1	24	06	5	142	24	10
Dar es Salaam	Kinondoni	Mikocheni	Regent State	7	1	25	01	2	75	25	3
Dar es Salaam	Kinondoni	Mikocheni	Mikocheni A	7	1	25	02	2	76	25	3
Dar es Salaam	Kinondoni	Mikocheni	Mikocheni B	7	1	25	03	2	77	25	3
Dar es Salaam	Kinondoni	Mbezi	Temboni	7	1	26	01	5	145	26	14
Dar es Salaam	Kinondoni	Mbezi	Mbezi	7	1	26	02	5	145	26	14
Dar es Salaam	Kinondoni	Mbezi	Msakuzi	7	1	26	03	5	145	26	14
Dar es Salaam	Kinondoni	Mbezi	Mpiji Magohe	7	1	26	04	5	145	26	14
Dar es Salaam	Kinondoni	Mbezi	Msumi	7	1	26	05	5	145	26	14
Dar es Salaam	Kinondoni	Mbezi	Makabe	7	1	26	06	5	145	26	14
Dar es Salaam	Kinondoni	Hananasif	Mkunguni	7	1	27	01	2	47	27	3
Dar es Salaam	Kinondoni	Hananasif	Kisutu	7	1	27	02	2	48	27	3
Dar es Salaam	Kinondoni	Hananasif	Hanna Nassif	7	1	27	03	2	49	27	3
Dar es Salaam	Ilala	Ukonga	Mongola Ndege	7	2	1	01	6	148	28	15
Dar es Salaam	Ilala	Ukonga	Mwembe Madafu	7	2	1	02	6	148	28	15
Dar es Salaam	Ilala	Ukonga	Mazizini	7	2	1	03	6	148	28	15
Dar es Salaam	Ilala	Ukonga	Ulongani	7	2	1	04	6	148	28	15
Dar es Salaam	Ilala	Ukonga	Gongo la Mboto	7	2	1	05	6	148	28	15
Dar es Salaam	Ilala	Ukonga	Markasi	7	2	1	06	6	148	28	15
Dar es Salaam	Ilala	Ukonga	Guluka Kwalala	7	2	1	07	6	148	28	15
Dar es Salaam	Ilala	Pugu	Bangulo	7	2	2	01	6	149	29	15

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Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Ilala	Pugu	Station	7	2	2	02	6	149	29	15
Dar es Salaam	Ilala	Pugu	Kichani	7	2	2	03	6	149	29	15
Dar es Salaam	Ilala	Pugu	Bomani	7	2	2	04	6	149	29	15
Dar es Salaam	Ilala	Pugu	Kigogo	7	2	2	05	6	149	29	15
Dar es Salaam	Ilala	Pugu	Kinyamwezi	7	2	2	06	6	149	29	15
Dar es Salaam	Ilala	Msongola	Yangeyange	7	2	3	01	6	152	30	15
Dar es Salaam	Ilala	Msongola	Mbondole	7	2	3	02	6	152	30	15
Dar es Salaam	Ilala	Msongola	Mvuleni	7	2	3	03	6	152	30	15
Dar es Salaam	Ilala	Msongola	Kigonga	7	2	3	04	6	152	30	15
Dar es Salaam	Ilala	Msongola	Kidole	7	2	3	05	6	152	30	15
Dar es Salaam	Ilala	Msongola	Mkera	7	2	3	06	6	152	30	15
Dar es Salaam	Ilala	Msongola	Sangara	7	2	3	07	6	152	30	15
Dar es Salaam	Ilala	Msongola	Uwanja wa Nyani	7	2	3	08	6	152	30	15
Dar es Salaam	Ilala	Msongola	Kiboga	7	2	3	09	6	152	30	15
Dar es Salaam	Ilala	Tabata	Mandela	7	2	4	01	5	116	31	11
Dar es Salaam	Ilala	Tabata	Matumbi	7	2	4	02	5	116	31	11
Dar es Salaam	Ilala	Tabata	Tabata Kisiwani	7	2	4	03	5	117	31	11
Dar es Salaam	Ilala	Tabata	Tabata	7	2	4	04	5	117	31	11
Dar es Salaam	Ilala	Tabata	Msimbazi	7	2	4	05	5	118	31	11
Dar es Salaam	Ilala	Tabata	Tenge	7	2	4	06	5	118	31	11
Dar es Salaam	Ilala	Kinyerezi	Bongokwa	7	2	5	01	6	147	32	15
Dar es Salaam	Ilala	Kinyerezi	Kinyerezi	7	2	5	02	6	147	32	15
Dar es Salaam	Ilala	Kinyerezi	Kifuru	7	2	5	03	6	147	32	15
Dar es Salaam	Ilala	Ilala	Karume	7	2	6	01	3	18	33	5
Dar es Salaam	Ilala	Ilala	Sharrif Shamba	7	2	6	02	3	19	33	5
Dar es Salaam	Ilala	Ilala	Kasulu	7	2	6	03	3	18	33	5
Dar es Salaam	Ilala	Ilala	Mafuriko	7	2	6	04	3	20	33	5
Dar es Salaam	Ilala	Ilala	Amana	7	2	6	05	3	19	33	5
Dar es Salaam	Ilala	Mchikichini	Misheni Kota	7	2	7	01	3	15	34	5
Dar es Salaam	Ilala	Mchikichini	Ilala Kota	7	2	7	02	3	16	34	5
Dar es Salaam	Ilala	Mchikichini	Msimbazi Bondeni	7	2	7	03	3	16	34	5
Dar es Salaam	Ilala	Vingunguti	Kombo	7	2	8	01	6	119	35	11
Dar es Salaam	Ilala	Vingunguti	Mtambani	7	2	8	02	6	120	35	11
Dar es Salaam	Ilala	Vingunguti	Mtakuja	7	2	8	03	6	121	35	11
Dar es Salaam	Ilala	Vingunguti	Miembeni	7	2	8	04	6	122	35	11

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Ilala	Kipawa	Karakata	7	2	9	01	6	129	36	11
Dar es Salaam	Ilala	Kipawa	Kipawa	7	2	9	02	6	130	36	11
Dar es Salaam	Ilala	Kipawa	Mogo	7	2	9	03	6	131	36	11
Dar es Salaam	Ilala	Kipawa	Kipunguni	7	2	9	04	6	132	36	11
Dar es Salaam	Ilala	Buguruni	Kisiwani	7	2	10	01	3	21	37	5
Dar es Salaam	Ilala	Buguruni	Malapa	7	2	10	02	3	22	37	5
Dar es Salaam	Ilala	Buguruni	Madenge	7	2	10	03	3	22	37	5
Dar es Salaam	Ilala	Buguruni	Mnyamani	7	2	10	04	3	23	37	5
Dar es Salaam	Ilala	Kariakoo	Kariakoo Mashariki	7	2	11	01	1	14	38	1
Dar es Salaam	Ilala	Kariakoo	Kariakoo Kaskazini	7	2	11	02	1	14	38	1
Dar es Salaam	Ilala	Kariakoo	Kariakoo Magharibi	7	2	11	03	1	14	38	1
Dar es Salaam	Ilala	Jangwani	Mnazi Mmoja	7	2	12	01	1	11	39	1
Dar es Salaam	Ilala	Jangwani	Ukombozi	7	2	12	02	1	11	39	1
Dar es Salaam	Ilala	Jangwani	Mtambani B	7	2	12	03	1	12	39	1
Dar es Salaam	Ilala	Jangwani	Mtambani A	7	2	12	04	1	13	39	1
Dar es Salaam	Ilala	Gerezani	Gerezani Mashariki	7	2	13	01	3	17	40	1
Dar es Salaam	Ilala	Gerezani	Gerezani Magharibi	7	2	13	02	3	17	40	1
Dar es Salaam	Ilala	Kisutu	Kisutu	7	2	14	01	1	3	41	1
Dar es Salaam	Ilala	Kisutu	Mtendeni	7	2	14	02	1	4	41	1
Dar es Salaam	Ilala	Mchafukoge	Kitumbini	7	2	15	01	1	5	42	1
Dar es Salaam	Ilala	Mchafukoge	Mchafukoge	7	2	15	02	1	6	42	1
Dar es Salaam	Ilala	Upanga Mashariki	Kitonga	7	2	16	01	1	7	43	1
Dar es Salaam	Ilala	Upanga Mashariki	Kibasila	7	2	16	02	1	8	43	1
Dar es Salaam	Ilala	Upanga Magharibi	Mfaume	7	2	17	01	1	9	44	1
Dar es Salaam	Ilala	Upanga Magharibi	Fire	7	2	17	02	1	9	44	1
Dar es Salaam	Ilala	Upanga Magharibi	Charambe	7	2	17	03	1	10	44	1
Dar es Salaam	Ilala	Kivukoni	Kivukoni	7	2	18	01	1	2	45	1
Dar es Salaam	Ilala	Kivukoni	Sea View	7	2	18	02	1	1	45	1
Dar es Salaam	Ilala	Kiwalani	Minazi Mirefu	7	2	19	01	6	123	46	11
Dar es Salaam	Ilala	Kiwalani	Yombo	7	2	19	02	6	125	46	11
Dar es Salaam	Ilala	Kiwalani	Kiwalani	7	2	19	03	6	124	46	11
Dar es Salaam	Ilala	Kiwalani	Kigilagila	7	2	19	04	6	125	46	11
Dar es Salaam	Ilala	Segerea	Kimanga Darajani	7	2	20	01	5	126	47	11
Dar es Salaam	Ilala	Segerea	Amani	7	2	20	02	5	126	47	11
Dar es Salaam	Ilala	Segerea	Liwiti	7	2	20	03	5	126	47	11

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Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Ilala	Segerea	Kimanga Kusini	7	2	20	04	5	127	47	11
Dar es Salaam	Ilala	Segerea	Ugombolwa	7	2	20	05	5	128	47	11
Dar es Salaam	Ilala	Segerea	Segerea	7	2	20	06	5	128	47	11
Dar es Salaam	Ilala	Segerea	Kisukuru	7	2	20	07	5	127	47	11
Dar es Salaam	Ilala	Segerea	Migonbani	7	2	20	08	5	127	47	11
Dar es Salaam	Ilala	Segerea	Tembomgwaza	7	2	20	09	5	128	47	11
Dar es Salaam	Ilala	Kitunda	Kitunda	7	2	21	01	6	150	48	15
Dar es Salaam	Ilala	Kitunda	Mzinga	7	2	21	02	6	150	48	15
Dar es Salaam	Ilala	Kitunda	Kipunguni	7	2	21	03	6	150	48	15
Dar es Salaam	Ilala	Kitunda	Kivule	7	2	21	04	6	150	48	15
Dar es Salaam	Ilala	Chanika	Mji mpya	7	2	22	01	6	151	49	15
Dar es Salaam	Ilala	Chanika	Kichangani	7	2	22	02	6	151	49	15
Dar es Salaam	Ilala	Chanika	Mahole	7	2	22	03	6	151	49	15
Dar es Salaam	Ilala	Chanika	Zavala	7	2	22	04	6	151	49	15
Dar es Salaam	Ilala	Chanika	Mgeule	7	2	22	05	6	151	49	15
Dar es Salaam	Ilala	Chanika	Kigezi	7	2	22	06	6	151	49	15
Dar es Salaam	Ilala	Chanika	Nyeburu	7	2	22	07	6	151	49	15
Dar es Salaam	Ilala	Chanika	Yongwe	7	2	22	08	6	151	49	15
Dar es Salaam	Ilala	Chanika	Vikongoro	7	2	22	09	6	151	49	15
Dar es Salaam	Ilala	Chanika	Tungini	7	2	22	10	6	151	49	15
Dar es Salaam	Ilala	Chanika	Lukooni	7	2	22	11	6	151	49	15
Dar es Salaam	Ilala	Chanika	Lubakaya	7	2	22	12	6	151	49	15
Dar es Salaam	Ilala	Chanika	Kimwani	7	2	22	13	6	151	49	15
Dar es Salaam	Ilala	Chanika	Zingiziwa	7	2	22	14	6	151	49	15
Dar es Salaam	Ilala	Chanika	Nzasa	7	2	22	15	6	151	49	15
Dar es Salaam	Temeke	Kigamboni	Tuamoyo	7	3	1	01	8	156	50	8
Dar es Salaam	Temeke	Kigamboni	Ferry	7	3	1	02	8	156	50	8
Dar es Salaam	Temeke	Kigamboni	Kigamboni	7	3	1	03	8	156	50	8
Dar es Salaam	Temeke	Kigamboni	Tungi	7	3	1	04	8	156	50	8
Dar es Salaam	Temeke	Vijibweni	Kisiwani	7	3	2	01	8	157	51	8
Dar es Salaam	Temeke	Vijibweni	Mkwajuni	7	3	2	02	8	157	51	8
Dar es Salaam	Temeke	Vijibweni	Vijibweni	7	3	2	03	8	157	51	8
Dar es Salaam	Temeke	Vijibweni	Kibene	7	3	2	04	8	157	51	8
Dar es Salaam	Temeke	Kibada	Sokoni	7	3	3	01	8	159	52	8
Dar es Salaam	Temeke	Kibada	Kichangani	7	3	3	02	8	159	52	8

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Temeke	Kibada	Kifurukwe	7	3	3	03	8	159	52	8
Dar es Salaam	Temeke	Kibada	Kiziza	7	3	3	04	8	159	52	8
Dar es Salaam	Temeke	Kibada	Uvumba	7	3	3	05	8	159	52	8
Dar es Salaam	Temeke	Kisarawe II	Chekeni Mwasonga	7	3	4	01	9	162	53	16
Dar es Salaam	Temeke	Kisarawe II	Kichangani	7	3	4	02	9	162	53	16
Dar es Salaam	Temeke	Kisarawe II	Kigogo	7	3	4	03	9	162	53	16
Dar es Salaam	Temeke	Kisarawe II	Lingato	7	3	4	04	9	162	53	16
Dar es Salaam	Temeke	Kisarawe II	Mkamba	7	3	4	05	9	162	53	16
Dar es Salaam	Temeke	Kisarawe II	Mwaninga	7	3	4	06	9	162	53	16
Dar es Salaam	Temeke	Kisarawe II	Ukooni	7	3	4	07	9	162	53	16
Dar es Salaam	Temeke	Somangira	Gezaulole	7	3	5	01	9	161	54	16
Dar es Salaam	Temeke	Somangira	Mwongozo	7	3	5	02	9	161	54	16
Dar es Salaam	Temeke	Somangira	Amani Gomvu	7	3	5	03	9	161	54	16
Dar es Salaam	Temeke	Kimbiji	Kizito Huonjwa	7	3	6	01	9	163	55	16
Dar es Salaam	Temeke	Kimbiji	Gorani	7	3	6	02	9	163	55	16
Dar es Salaam	Temeke	Kimbiji	Kijaka	7	3	6	03	9	163	55	16
Dar es Salaam	Temeke	Kimbiji	Kwa Chale	7	3	6	04	9	163	55	16
Dar es Salaam	Temeke	Kimbiji	Mikenge	7	3	6	05	9	163	55	16
Dar es Salaam	Temeke	Kimbiji	Ngabanya	7	3	6	06	9	163	55	16
Dar es Salaam	Temeke	Mbagala	Kizinga	7	3	7	01	7	137	56	12
Dar es Salaam	Temeke	Mbagala	Mangaya	7	3	7	02	7	137	56	12
Dar es Salaam	Temeke	Mbagala	Mbagala	7	3	7	03	7	139	56	12
Dar es Salaam	Temeke	Mbagala	Moringe	7	3	7	04	7	139	56	12
Dar es Salaam	Temeke	Mbagala	Kwanyoka	7	3	7	05	7	138	56	12
Dar es Salaam	Temeke	Mbagala	Kiburugwa	7	3	7	06	7	138	56	12
Dar es Salaam	Temeke	Mbagala	Kingugi	7	3	7	07	7	138	56	12
Dar es Salaam	Temeke	Chamazi	Msufini	7	3	8	01	7	153	57	12
Dar es Salaam	Temeke	Chamazi	Mwembe Bamia	7	3	8	02	7	153	57	12
Dar es Salaam	Temeke	Chamazi	Kiponza	7	3	8	03	7	153	57	12
Dar es Salaam	Temeke	Chamazi	Rufu	7	3	8	04	7	153	57	12
Dar es Salaam	Temeke	Chamazi	Magengeni	7	3	8	05	7	153	57	12
Dar es Salaam	Temeke	Chamazi	Kisewe	7	3	8	06	7	153	57	12
Dar es Salaam	Temeke	Yombo Vituka	Kilakala	7	3	9	01	7	134	58	12
Dar es Salaam	Temeke	Yombo Vituka	Vituka	7	3	9	02	7	133	58	12
Dar es Salaam	Temeke	Yombo Vituka	Barabara ya Mwinyi	7	3	9	03	7	134	58	12

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Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Temeke	Yombo Vituka	Machimbo	7	3	9	04	7	133	58	12
Dar es Salaam	Temeke	Yombo Vituka	Sigara	7	3	9	05	7	133	58	12
Dar es Salaam	Temeke	Charambe	Kibondemaji	7	3	10	01	7	154	59	12
Dar es Salaam	Temeke	Charambe	Mchikichini	7	3	10	02	7	154	59	12
Dar es Salaam	Temeke	Charambe	Kibangulile	7	3	10	03	7	154	59	12
Dar es Salaam	Temeke	Charambe	Rangi Tatu	7	3	10	04	7	154	59	12
Dar es Salaam	Temeke	Charambe	Mianzini	7	3	10	05	7	154	59	12
Dar es Salaam	Temeke	Charambe	Kurasini Mjimpya	7	3	10	06	7	154	59	12
Dar es Salaam	Temeke	Charambe	Nzasa B	7	3	10	07	7	154	59	12
Dar es Salaam	Temeke	Charambe	Machinjioni	7	3	10	08	7	154	59	12
Dar es Salaam	Temeke	Charambe	Kwazomboko	7	3	10	09	7	154	59	12
Dar es Salaam	Temeke	Charambe	Nzasa A	7	3	10	10	7	154	59	12
Dar es Salaam	Temeke	Charambe	Majimatitu	7	3	10	11	7	154	59	12
Dar es Salaam	Temeke	Tuangoma	Changanyikeni	7	3	11	01	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Goroka	7	3	11	02	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Kongowe	7	3	11	03	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Malela	7	3	11	04	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Masaki	7	3	11	05	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Masuliza	7	3	11	06	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Mikwambe	7	3	11	07	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Mwapemba	7	3	11	08	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Ponde	7	3	11	09	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Toangoma	7	3	11	10	7	160	60	12
Dar es Salaam	Temeke	Tuangoma	Vikunai	7	3	11	11	7	160	60	12
Dar es Salaam	Temeke	Miburani	Keko Machungwa	7	3	12	01	3	82	61	7
Dar es Salaam	Temeke	Miburani	Keko Juu	7	3	12	02	3	83	61	7
Dar es Salaam	Temeke	Miburani	Uwanja Wa Taifa	7	3	12	03	3	84	61	7
Dar es Salaam	Temeke	Miburani	Walesi	7	3	12	04	3	85	61	7
Dar es Salaam	Temeke	Miburani	Miburani	7	3	12	05	3	85	61	7
Dar es Salaam	Temeke	Temeke	Temeke	7	3	13	01	3	92	62	6
Dar es Salaam	Temeke	Temeke	Matumbi	7	3	13	02	3	92	62	6
Dar es Salaam	Temeke	Temeke	Njaro	7	3	13	03	3	91	62	6
Dar es Salaam	Temeke	Temeke	Maganga	7	3	13	04	3	91	62	6
Dar es Salaam	Temeke	Mtoni	Sabasaba	7	3	14	01	3	100	63	7
Dar es Salaam	Temeke	Mtoni	Relini	7	3	14	02	3	101	63	7

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Temeke	Mtoni	Mtoni	7	3	14	03	3	100	63	7
Dar es Salaam	Temeke	Mtoni	Bustani	7	3	14	04	3	102	63	7
Dar es Salaam	Temeke	Keko	Keko Mwanga B	7	3	15	01	3	87	64	5
Dar es Salaam	Temeke	Keko	Keko Mwanga A	7	3	15	02	3	86	64	5
Dar es Salaam	Temeke	Keko	Keko Magurumbasi A	7	3	15	03	3	87	64	5
Dar es Salaam	Temeke	Keko	Keko Magurumbasi A	7	3	15	04	3	86	64	5
Dar es Salaam	Temeke	Keko	Keko B	7	3	15	05	3	87	64	5
Dar es Salaam	Temeke	Kurasini	Mivinjeni	7	3	16	01	3	78	65	7
Dar es Salaam	Temeke	Kurasini	Kiungani	7	3	16	02	3	79	65	7
Dar es Salaam	Temeke	Kurasini	Shimo la Udongo	7	3	16	03	3	79	65	7
Dar es Salaam	Temeke	Kurasini	Kurasini	7	3	16	04	3	80	65	7
Dar es Salaam	Temeke	Kurasini	Minazini	7	3	16	05	3	81	65	7
Dar es Salaam	Temeke	Kurasini	Relini	7	3	16	06	3	101	65	7
Dar es Salaam	Temeke	Azimio	Mji Mpya	7	3	17	01	7	97	66	12
Dar es Salaam	Temeke	Azimio	Azimio Kichangani	7	3	17	02	7	98	66	12
Dar es Salaam	Temeke	Azimio	Azimio Kaskazini	7	3	17	03	7	98	66	12
Dar es Salaam	Temeke	Azimio	Azimio Mbuyuni	7	3	17	04	7	98	66	12
Dar es Salaam	Temeke	Azimio	Tambukareli	7	3	17	05	7	99	66	12
Dar es Salaam	Temeke	Azimio	Mtongani	7	3	17	06	7	99	66	12
Dar es Salaam	Temeke	Azimio	Msikitini	7	3	17	07	7	97	66	12
Dar es Salaam	Temeke	Tandika	Tandika	7	3	18	01	7	95	67	6
Dar es Salaam	Temeke	Tandika	Tamla	7	3	18	02	7	95	67	6
Dar es Salaam	Temeke	Tandika	Kilimahewa	7	3	18	03	7	96	67	6
Dar es Salaam	Temeke	Tandika	Maguruwe	7	3	18	04	7	95	67	6
Dar es Salaam	Temeke	Tandika	Mabatini	7	3	18	05	7	96	67	6
Dar es Salaam	Temeke	Tandika	Nyambwela	7	3	18	06	7	96	67	6
Dar es Salaam	Temeke	Sandali	Sandali	7	3	19	01	6	93	68	6
Dar es Salaam	Temeke	Sandali	Mwembeladu	7	3	19	02	6	94	68	6
Dar es Salaam	Temeke	Sandali	Mamboleo A	7	3	19	03	6	94	68	6
Dar es Salaam	Temeke	Sandali	Mpogo	7	3	19	04	6	94	68	6
Dar es Salaam	Temeke	Sandali	Mamboleo B	7	3	19	05	6	94	68	6
Dar es Salaam	Temeke	Chang'ombe	Toroli	7	3	20	01	3	88	69	5
Dar es Salaam	Temeke	Chang'ombe	Chang'ombe A	7	3	20	02	3	90	69	5
Dar es Salaam	Temeke	Chang'ombe	Bora	7	3	20	03	3	89	69	5
Dar es Salaam	Temeke	Chang'ombe	Chang'ombe B	7	3	20	04	3	90	69	5

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Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Dar es Salaam	Temeke	Mbagala Kuu	Kijichi	7	3	21	01	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Misheni	7	3	21	02	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Makuka	7	3	21	03	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Kizuiani	7	3	21	04	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Kibondemaji B	7	3	21	05	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Mbagala Kuu	7	3	21	06	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Kichemchem	7	3	21	07	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Mgeni Nani	7	3	21	08	5	155	70	12
Dar es Salaam	Temeke	Mbagala Kuu	Mwanamtoti	7	3	21	09	5	155	70	12
Dar es Salaam	Temeke	Makangarawe	Dovya	7	3	22	01	7	135	71	12
Dar es Salaam	Temeke	Makangarawe	Makangarawe	7	3	22	02	7	135	71	12
Dar es Salaam	Temeke	Makangarawe	Mashine ya Maji	7	3	22	03	7	136	71	12
Dar es Salaam	Temeke	Makangarawe	Buza	7	3	22	04	7	136	71	12
Dar es Salaam	Temeke	Pemba Mnazi	Buyuni	7	3	23	01	9	164	72	16
Dar es Salaam	Temeke	Pemba Mnazi	Yale yale Puna	7	3	23	02	9	164	72	16
Dar es Salaam	Temeke	Pemba Mnazi	Pemba Mnazi	7	3	23	03	9	164	72	16
Dar es Salaam	Temeke	Pemba Mnazi	Tundwi Songani	7	3	23	04	9	164	72	16
Dar es Salaam	Temeke	Mjimwema	Maweni	7	3	24	01	8	158	73	8
Dar es Salaam	Temeke	Mjimwema	Mjimwema	7	3	24	02	8	158	73	8
Dar es Salaam	Temeke	Mjimwema	Ungindoni	7	3	24	03	8	158	73	8
Dar es Salaam	Temeke	Mjimwema	Kibugumo	7	3	24	04	8	158	73	8
Dodoma	Condoa			01	1			10	166	0	18
Dodoma	Mpwapawa			01	2			10	166	0	18
Dodoma	Kongwa			01	3			10	166	0	18
Dodoma	Dodoma			01	4			10	166	0	18
Arusha	Monduli			02	1			10	166	0	18
Arusha	Arumeru			02	2			10	166	0	18
Arusha	Arusha			02	3			10	166	0	18
Arusha	Karatu			02	4			10	166	0	18
Arusha	Ngorongoro			02	5			10	166	0	18
Kilimanjaro	Rombo			03	1			10	166	0	18
Kilimanjaro	Mwanga			03	2			10	166	0	18
Kilimanjaro	Same			03	3			10	166	0	18
Kilimanjaro	Moshi			03	4			10	166	0	18
Kilimanjaro	Hai			03	5			10	166	0	18
Tanga	Lushoto			04	1			10	166	0	18

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Tanga	Korogwe			04	2			10	166	0	18
Tanga	Muheza			04	3			10	166	0	18
Tanga	Tanga			04	4			10	166	0	18
Tanga	Pangani			04	5			10	166	0	18
Tanga	Handeni			04	6			10	166	0	18
Tanga	Kilindi			04	7			10	166	0	18
Morogoro	Kilosa			05	1			10	166	0	18
Morogoro	Morogoro			05	2			10	166	0	18
Morogoro	Kilombero			05	3			10	166	0	18
Morogoro	Ulanga			05	4			10	166	0	18
Morogoro	Mvomero			05	6			10	166	0	18
Coast	Bagamoyo			06	1			10	165	0	17
Coast	Kibaha			06	2			10	165	0	17
Coast	Kisarawe			06	3			10	167	0	19
Coast	Mkuranga			06	4			11	168	0	20
Coast	Rufiji			06	5			11	168	0	20
Coast	Mafia			06	6			11	168	0	20
Lindi	Kilwa			08	1			11	168	0	20
Lindi	Lindi			08	2			11	168	0	20
Lindi	Nachingwea			08	3			11	168	0	20
Lindi	Liwale			08	4			11	168	0	20
Lindi	Runangwa			08	5			11	168	0	20
Mtwara	Mtwara			09	1			11	168	0	20
Mtwara	Newala			09	2			11	168	0	20
Mtwara	Masasi			09	3			11	168	0	20
Mtwara	Tandahimba			09	4			11	166	0	18
Ruvuma	Tunduru			10	1			11	166	0	18
Ruvuma	Songea			10	2			11	166	0	18
Ruvuma	Mbinga			10	3			11	166	0	18
Ruvuma	Namtumbo			10	5			11	166	0	18
Iringa	Iringa			11	1			10	166	0	18
Iringa	Mufindi			11	2			10	166	0	18
Iringa	Makete			11	3			10	166	0	18
Iringa	Njombe			11	4			10	166	0	18
Iringa	Ludewa			11	5			10	166	0	18
Iringa	Kilolo			11	7			10	166	0	18

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Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Mbeya	Chunya			12	1			10	166	0	18
Mbeya	Mbeya			12	2			10	166	0	18
Mbeya	Kyela			12	3			10	166	0	18
Mbeya	Rungwe			12	4			10	166	0	18
Mbeya	Ileje			12	5			10	166	0	18
Mbeya	Mbozi			12	6			10	166	0	18
Mbeya	Mbarali			12	7			10	166	0	18
Singida	Iramba			13	1			10	166	0	18
Singida	Singida			13	2			10	166	0	18
Singida	Manyoni			13	3			10	166	0	18
Tabora	Nzega			14	1			10	166	0	18
Tabora	Igunga			14	2			10	166	0	18
Tabora	Uyui			14	3			10	166	0	18
Tabora	Urambo			14	4			10	166	0	18
Tabora	Sikonge			14	5			10	166	0	18
Tabora	Tabora			14	6			10	166	0	18
Rukwa	Mpanda			15	1			10	166	0	18
Rukwa	Sumbawanda			15	2			10	166	0	18
Rukwa	Nkasi			15	3			10	166	0	18
Kigoma	Kibondo			16	1			10	166	0	18
Kigoma	Kasulu			16	2			10	166	0	18
Kigoma	Kigoma			16	3			10	166	0	18
Shinyanaga	Bariadi			17	1			10	166	0	18
Shinyanaga	Maswa			17	2			10	166	0	18
Shinyanaga	Shinyanga			17	3			10	166	0	18
Shinyanaga	Kahama			17	4			10	166	0	18
Shinyanaga	Bukombe			17	5			10	166	0	18
Shinyanaga	Meatu			17	6			10	166	0	18
Shinyanaga	Shinynga			17	7			10	166	0	18
Shinyanaga	Kahama			17	8			10	166	0	18
Kagera	Karagwe			18	1			10	166	0	18
Kagera	Bukoba			18	2			10	166	0	18
Kagera	Muleba			18	3			10	166	0	18
Kagera	Biharamulo			18	4			10	166	0	18
Kagera	Ngara			18	5			10	166	0	18
Mwanza	Ukerewe			19	1			10	166	0	18

Region Name	Municipality Name	Ward Name	Sub-ward Name	Region Code	District Code	Ward Code	Sub-ward Code	Screen Line Zone	Traffic Zone	Ward Seq Code	Super Zone
Mwanza	Magu			19	2			10	166	0	18
Mwanza	Nyamagana			19	3			10	166	0	18
Mwanza	Kwimba			19	4			10	166	0	18
Mwanza	Sengerema			19	5			10	166	0	18
Mwanza	Geita			19	6			10	166	0	18
Mwanza	Misungwi			19	7			10	166	0	18
Mwanza	Ilemela			19	8			10	166	0	18
Mara	Tarime			20	1			10	166	0	18
Mara	Senengeti			20	2			10	166	0	18
Mara	Musoma			20	3			10	166	0	18
Mara	Bunda			20	4			10	166	0	18
Manyara	Babati			21	1			10	166	0	18
Manyara	Hanang			21	2			10	166	0	18
Manyara	Mbulu			21	3			10	166	0	18
Manyara	Simanjiro			21	4			10	166	0	18
Manyara	Kiteto			21	5			10	166	0	18
North Unguja	North 'A'			22	1			12	169	0	21
North Unguja	North 'B'			22	2			12	169	0	21
South Unguha	Central			23	1			12	169	0	21
South Unguha	South			23	2			12	169	0	21
Urban West	West			24	1			12	169	0	21
Urban West	Town			24	2			12	169	0	21
North Pemba	Wete			25	1			12	169	0	21
North Pemba	Micheweni			25	2			12	169	0	21
South Pemba	Chake Chake			26	1			12	169	0	21
South Pemba	Mkoani			26	2			12	169	0	21
Kenya				31				13	170	0	22
South Africa				32				13	170	0	22
Zambia				33				13	170	0	22
Other Africa				40				13	170	0	22
Middle East				50				13	170	0	22
Europe				60				13	170	0	22
South America				70				13	170	0	22
North America				80				13	170	0	22
Asia				90				13	170	0	22