Supporting Document 5.1

5.1 Macro Demand Forecast

Communication services in Ethiopia have mainly consisted of telephone services using a PSTN (Public Switched Telephone Network), together with mobile phones and Internet services in the metropolitan area and two neighboring local cities.

Although services such as telegraphs and TELEX have been also provided besides the services mentioned above, and these traditional services are displaced by other services as technology progresses in the future, we have made forecasts for the demand for telephones, mobile phones and the Internet services, which will increase from now on.

In addition, the micro demand forecast will be carried out in Japan, based on the information and data which were collected during the investigation period and the results of on-site questionnaires (sample surveys) about the communication demand carried out with companies, universities, office workers, and the general public as the target. And the micro demand forecast will be compared and examined with the macro demand forecast result, and finally the demand will be settled. Then a master plan will be set up based on this result.

(1) Telephone services (main telephone)

It is known that there is close correlation between GDP/capita and the telephone propagation level (telephone density/100 inhabitants). On the other hand, regarding the number of applications pending, the variation is large when GDP/capita is low (5,000 dollars or less). When GDP/capita is high (10,000 dollars or more) the number of applications pending becomes almost zero. Upon examining the correlation between GDP/capita and the fixed telephone demand (the number of subscribers plus the number of applications pending) of 46 nations of the world, it turned out that the degree of correlation was high (R^2= 0.8308) and the ITU model can be applied to the telephone demand forecast for Ethiopia in the long run.

However, at the initial stage where GDP/capita is very low, since the degree of correlation went down, compatibility with the current situation in Ethiopia (in the year of 2000) was strived for. The telephone demand forecast nationwide and for each region was carried out based on the macro forecasting model technique of ITU with parameters of GDP/capita, GRDP/capita, the population forecasting result, and expressed demand (number of main telephone subscribers plus waiting applicants).

The approximate equation of the demand forecast model was determined as follows with 46 worldwide nations that were considered similar in terms of the economy, the population, and the country area as the target.

$$y = 0.004 x^{0.9889} \quad (R^2=0.8308)$$

As mentioned above, since ITU model (demand density=0.511) should be in consistency with the present condition (demand density=0.691) of Ethiopia in an initial stage, this equation was adjusted to the following prediction formula.

$$y = 0.18 + 0.004 x^{0.9889}$$

y: Demand density,x: GDP/GRDP per capita

Note: The demand forecast was carried out with the total population of 63,495,000 (statistical data issued by Central Statistical Agency: 2000 year), expressed demand of 438,891 (283,683 main telephone subscribers plus 155,208 waiting applicants), and GDP/capita of USD 135 as the basic data.

Comparing the demand density of each region with the calculated value using the ITU model with the GRDP/capita base, in four regions, the demand density is higher and in seven other regions the demand density is lower than the value calculated using ITU model.

Regions that are higher than the value calculated: Addis Ababa, Harari, Dire Dawa and Tigray

States, which are lower than the value calculated: Oromiya, Gambella, Amhara, SNNAPR, BGR, Affar, and Somali.

Although it is considered that there are various reasons for the regions being lower than the value calculated, the main reason is considered to be the low degree of a supply of telecommunications facilities.

The Ethiopia government considers the narrowing of the digital divide to be important as a basic measure and also considers it to be required that demand density in these 7 regions should be dealt with as great an extent as possible with the value calculated using the ITU model.

The method was adopted that the demand in the first year was adjusted in line with the current situation, made to rise at a fixed rate over 20 years and was made to be consistent with the value calculated by the ITU model in 2020. As a result of the trial calculation it turned out that the main lines demand in 2020 is to increase by about 12% over the basic calculated value.

After all, there is no great difference between the total demand that was predicted taking GDP/capita as a parameter and the total demand that was predicted for each region with GRDP/capita as a parameter. Therefore, the demand, which was predicted with parameter GRDP/capita that showed the characteristics of regions, was adopted.

The error of the ITU model drawn from data for similar countries in the world (especially when GDP/capita is as low as US$100-300) and potential demand was also taken into consideration and 20% was added to the predicted demand as the demand. The result is shown in Table 5-1 and Figure 5-1.

Table 5-1 Telephone Demand Forecast

ITU Model	2000	2005	2010	2015	2020
GDP/capita (+20%)	526,602	692,354	910,830	1,196,942	1,553,929
GRDP/capita(+20%)	529,595	698,060	920,654	1,210,695	1,568,938

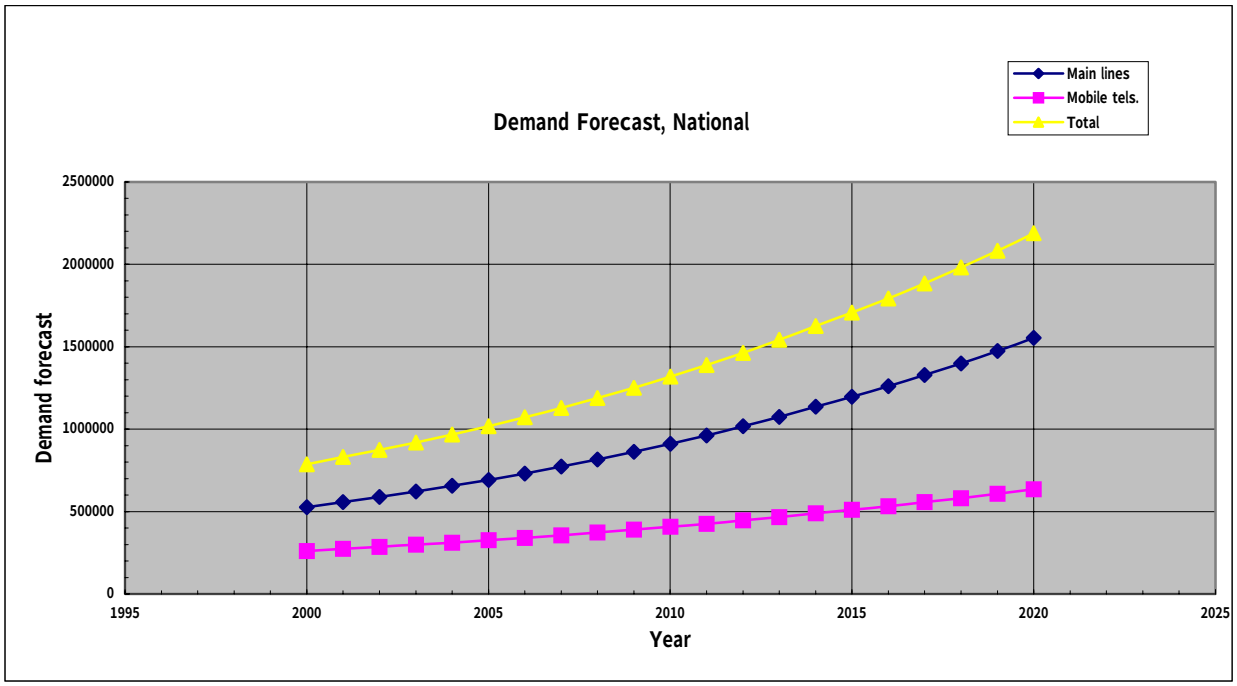

Figure 5-1 Demand Forecast (Telephone and Mobile Telephone)

(2) Mobile telephones

Although ETC has only carried out mobile services in the metropolitan area of Addis Ababa and two urban cities (Nazareth and Sodore), it is planned that, as the demand for mobile telephones is large, ETC will construct additional mobile communication equipment in 2002 and will extend mobile service area to 12 main local cities, and also will gradually expand construction after 2003 on the roads between main cities targeted.

The usage fee for mobile telephones (monthly basic charge: 50Birr, phone call charge: 0.75Birr/min.) is largely higher than the charge for a fixed telephone line (monthly basic charge: 8Birr, phone call charge: 0.2Birr/6min.). It is also considered that the demand from company staff and government agencies will be substantial for the time being. By the reduction of mobile phone charges it is thought that mobile phones will permeate through to the general public.

The following ITU model approximate equation was adopted for mobile telephone demand.

$y = 0.0011x + 0.1942$ (R^2=0.8727)

y: Mobile telephone penetration rate, x: GRDP/capita

The demand-forecast result is shown in Table 5-2.

Table 5-2 Mobile Telephone Demand Forecast

ITU Model	2000	2005	2010	2015	2020
GRDP/capita(+20%)	261,061	325,765	407,527	510,316	634,868

In the ITU model for mobile telephones, when GDP/capita is more than 1,000 USD, the number of applicants linearly increases according to the amount of GDP/capita. On the other hand, when GDP/capita is lower than 1,000 USD, the number of applicants abruptly decreases according to the decrease in the amount of GDP/capita. Through this phenomenon, it is estimated that although demand exists focusing on business, since the coverage of the mobile communication service is limited to metropolitan areas, the number of subscribers does not increase because of physical restrictions such as the equipment capacity being extremely small.

This prediction also considered the above-mentioned reasons, with the demand trend of countries which have a GDP/capita of 1000 dollars or more being referred to and the ITU model being examined, thus extending the application scope from GDP/capita of 100 dollars to 1,000 dollars.

Although the actual demand for 2000 is 69,000, the present telephone call traffic is large, and subscriptions have therefore been put on hold until the system is extended, which means that the potential demand may be increasing. 20% of the demand was added to the prediction result, which was considered as the demand.

Since it is anticipated that mobile telephone services will mainly be provided first for government agencies, banks, companies, and office workers as target for the time being, the demand for mobile telephones in each region was distributed using the ratio of the number of national employees of private sectors and that of employees of private sectors in each region as a factor shown in Table 5-3.

Table 5-4 shows the estimated results.

Table 5-3 Number of Employees in Private Sector

Region	Number of employees in private sector	Ratio (%)
Tigray	15,305	3.98
Affar	6,128	1.59
Amhara	53,278	13.84
Oromiya	76,398	19.85
Somali	6,743	1.75
BGR	1,434	0.37
SNNPR	24,910	6.47
Gambella	639	0.17
Harari	2,732	0.71
Addis Ababa	189,033	49.12
Dire Dawa	8,270	2.15
Total	384,869	100.0

Table 5-4 Mobile Telephone Demand

Year		2000			2005			2010			2015			2020	
Region	Population	ITU	ITU*1.2	Population	ITU	ITU*1.2	Population	ITU	ITU*1.2	Population	ITU	ITU*1.2	Population	ITU	ITU*1.2
TIGRAY	3,694,000	8,666	10,400	4,223,000	11,758	14,110	4,802,000	14,858	17,829	5,420,000	17,957	21,548	6,067,000	21,056	25,268
AFFAR	1,216,000	3,462	4,155	1,359,000	4,697	5,637	1,510,000	5,936	7,123	1,662,000	7,174	8,609	1,818,000	8,412	10,094
AMHARA	16,295,000	30,137	36,164	18,626,000	40,888	49,065	21,182,000	51,666	61,999	23,908,000	62,444	74,932	26,780,000	73,221	87,866
OROMIYA	22,354,000	43,224	51,868	25,817,000	58,643	70,371	29,621,000	74,101	88,921	33,635,000	89,560	107,472	37,807,000	105,018	126,021
SOMALI	3,698,000	3,811	4,573	4,218,000	5,170	6,204	4,798,000	6,533	7,839	5,448,000	7,896	9,475	6,124,000	9,258	11,110
BENISHANGUL	537,000	806	967	610,000	1,093	1,312	689,000	1,381	1,657	773,000	1,669	2,003	861,000	1,958	2,349
SNNPR	12,515,000	14,088	16,906	14,490,000	19,114	22,937	16,602,000	24,153	28,983	18,791,000	29,191	35,030	21,047,000	34,230	41,076
GAMBELLA	211,000	370	444	240,000	502	603	271,000	635	762	304,000	767	920	339,000	899	1,079
HARARI	160,000	1,546	1,855	190,000	2,098	2,517	222,000	2,650	3,181	258,000	3,203	3,844	296,000	3,756	4,508
ADDIS	2,495,000	106,959	128,351	2,887,000	145,115	174,138	3,328,000	183,368	220,041	3,791,000	221,621	265,945	4,243,000	259,873	311,847
DIRE DAWA	318,000	4,682	5,618	384,000	6,352	7,622	458,000	8,026	9,631	536,000	9,700	11,640	621,000	11,375	13,650
NATIONAL TTL	63,495,000	217,751	**261,301**	73,044,000	295,430	**354,516**	83,483,000	373,306	**447,967**	94,526,000	451,182	**541,418**	106,003,000	529,057	**634,868**

(3) Internet

Internet service started mainly for Addis Ababa in 1996, afterward POP (Point of Presence) was installed in eight local cities in 2001, and its service was improved and the total number of applicants exceeded 4,000 at the end of 2001.

It is very difficult to analyze the numbers of subscribers to Internet services over a long period due to the incomplete data. Therefore, in the overall plan we decided to predict using three scenarios. Internet services are definitely considered to be utilized for e-mail, and utilized in various fields such as e-commerce, e-Government, distance learning, remote medical treatment, and become more widespread. However the charges for subscription fees and monthly charges for Internet service are set up remarkably high, so it is anticipated that this spread will be centered on companies, government agencies and universities, etc.

Subscribers are estimated by assuming the following three cases:

a) Optimistic: the number of subscribers doubles every year, giving a maximum of (70% of mobile subs.+20% of fixed telephone subs.) increase by 2020.

b) Moderate: the number of subscribers doubles every two years, giving a maximum of (70% of mobile subs.+20% of fixed telephone subs.) increase by 2020.

c) Pessimistic: the number of subscribers doubles every three years, giving a maximum of (70% of mobile subs.+20% of fixed telephone subs.) increase by 2020.

Moderate forecast of the Internet subscribers up to year 2020 is shown below.

Table 5-5 Forecast of Internet Subscribers (Moderate Case)

Year	2001	2002	2003	2004	2005	2006	2007	2009	2010	2020
Subs.(‘000)	4.1	8.2	16.4	32.8	75.6	151.2	154.4	157.6	160.8	670.0

(4) Demand forecast applied logistic curve model

The logistic curve model is used for a situation where the annual increase rate is gradually decreasing while demand becomes saturated in the future. This method is used at the time of predicting the rate of telephone penetration for an area, for example, a capital of a country, where it is possible to predict the development of demand and where development is predicted to advance until the saturated condition that supply will meet demand in the future.

The current rate of telephone penetration in Ethiopia is 1% or less, and GDP/capita is $135 (year 2000) and is expected to be $277 in 2020. The saturation period of the demand for telephones seems to be getting further away considering such extremely low-income levels. In addition, it is difficult to predict such as saturation density, and it is considered only inaccurate values can be obtained. However, saturation period is tentatively calculated in this master plan for the purpose of confirming the index.

The logistic curve model can be shown mathematically by the following formula.

$Y/N=K/(1+me^{-\alpha T})$ ……(1)

Y : Subscriber demand in the year T
N : Population in the year T
T : Predicted time unit
m, : Constant
e : Natural logarithm base (=2.7182)
k : Critical value

(Note) The value k is directly related to telephones for office use and for residential use.

As shown in Table 5-6, it is predicted that urbanization will be gradually carried out.

Table 5-6 Urban Rate

Year	1995	1996	1997	1998	1999	2000	2001	2020
Urban rate %	13.9	14.1	14.3	14.5	14.7	14.9	15.1	19.57
Urban pop	7,587	7,950	8,315	8,691	9,074	9,473	9,743	20,747
Rural pop	47,062	48,422	49,802	51,191	52,598	54,022	55,601	85,259
TTL pop	54,649	56,372	58,117	59,882	61,672	63,495	65,344	106,003
Tel. Demand	342,238	363,100	394,365	419,282	428,828	438,891		

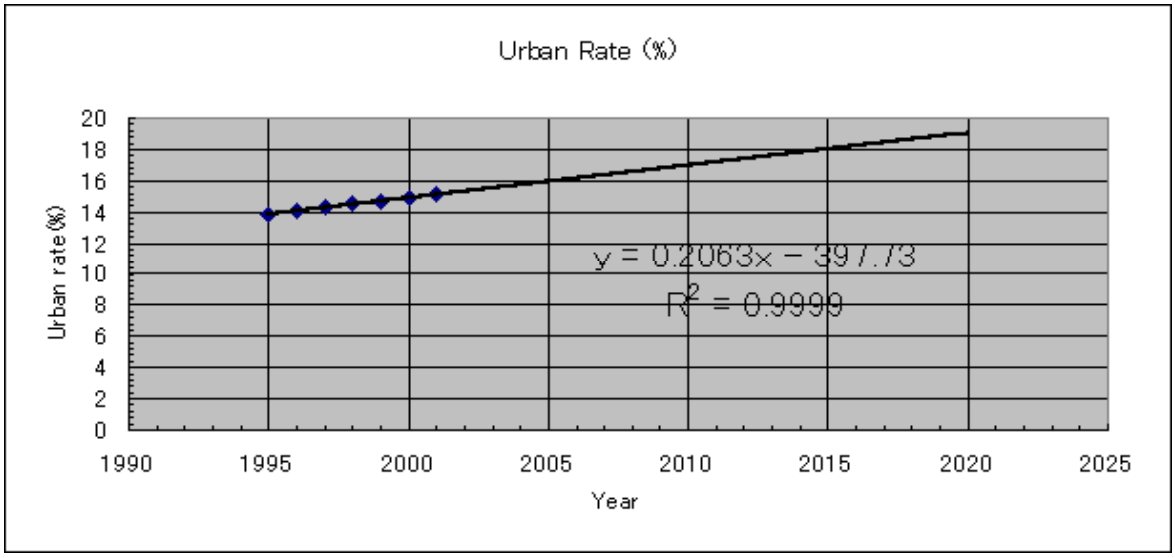

Figure 5-2 Urban Rate

In order to create the formula (1), the following conditions are assumed for the telephone demand at the time of saturation.

1) One telephone is provided for one household in urban regions and one telephone for 5 households in rural regions.

2) Statistics on Ethiopia show that the average number of people per household is 5. Therefore, the rate of telephone penetration is 20% for urban regions and 4% for rural regions.

3) Figure 5-2 shows that urbanization of population to date moves up in straight line. However, this tendency is considered to become steady at certain point. It is tentatively assumed that urbanization will continue until 2020 and then stabilize. In this case, the urban rate is approximately 20%.

4) Although the year in which demand will saturate is unknown, according to the above conditions, urban population is assumed to be 20%, and (urban regions 20% x 20%) + (rural regions 4% x 80%) = whole regions 7% is assumed to be the rate of residential telephone penetration at the time of saturation on the national level.

5) The ratio of the number of telephones for residential use to that for office use is about 2:1 in a country with stable demand. Therefore, 7%x1.5=10.5% is set for value k.

Next, when numeric values are applied to the formula (1) to tentatively calculate, the value m can be obtained by setting T=0 for the year 1995:

$m=((k/N)-Y)/Y\ e^{-\alpha T}$
Since T=0,
m=(0.105x54,649,000-342,238)/342,238x1=15.77
$Y/N=k/(1+15.77\ e^{-\alpha T})$

When T=5 (year 2000),

Y=438,891
N=63,495,000
$e^{-\alpha T}$ = ((k N)-Y)/Y m=((0.105x63,495,000-438,891)/438,891x15.77=0.9
-5 α ln e=ln0.9=-0.105
=0.021

Therefore,
$Y/N=0.105/(1+15.77\ e^{-0.021T})$

Table 5-6 Calculation Results

T=10 (2005)	T=15 (2010)	T=20 (2015)	T=25 (2020)
Y/N=0.0076 N=73,044,000 Y=555,134	Y/N=0.0084 N=83,483,000 Y=701,257	Y/N=0.0092 N=94,526,000 Y=869,639	Y/N=0.010 N=106,003,000 Y=1,060030

Applying a rate of telephone penetration of 10.5% under hypothetical conditions to the ITU model, a GDP/capita of a level of US$2,800 to 2,900 can be discerned. The logistic model and the ITU model will now be compared. There was a difference of approximately 4% between the logistic model and the ITU model in the year 2005. This will expand to 18% over a 15-year period.

Considering that the logistic model was originally a method of analyzing communications infrastructure installed in metropolitan areas of newly industrialized countries to developed countries, and considering the combination of conditions for establishing a communications infrastructure where the current rate of telephone penetration does not reach 1.0 and the situation in society where 85% of the population lives in the countryside, there is a possibility that the logistic model is not appropriate for demand forecasting in Ethiopia. Since specification of a saturated state is difficult and it can be determined that the possibility of under valuation is high, ITU calculation values were therefore adopted for this master plan.

Table 5-7 Comparison of demand forecast results between ITU model and logistic model

Year	2005	2010	2015	2020
Logistic model	555,134	701,257	869,639	1,060,030
ITU model	576,962	759,025	997,452	1,294,941
Ratio logistic/ITU	0.96	0.92	0.87	0.82

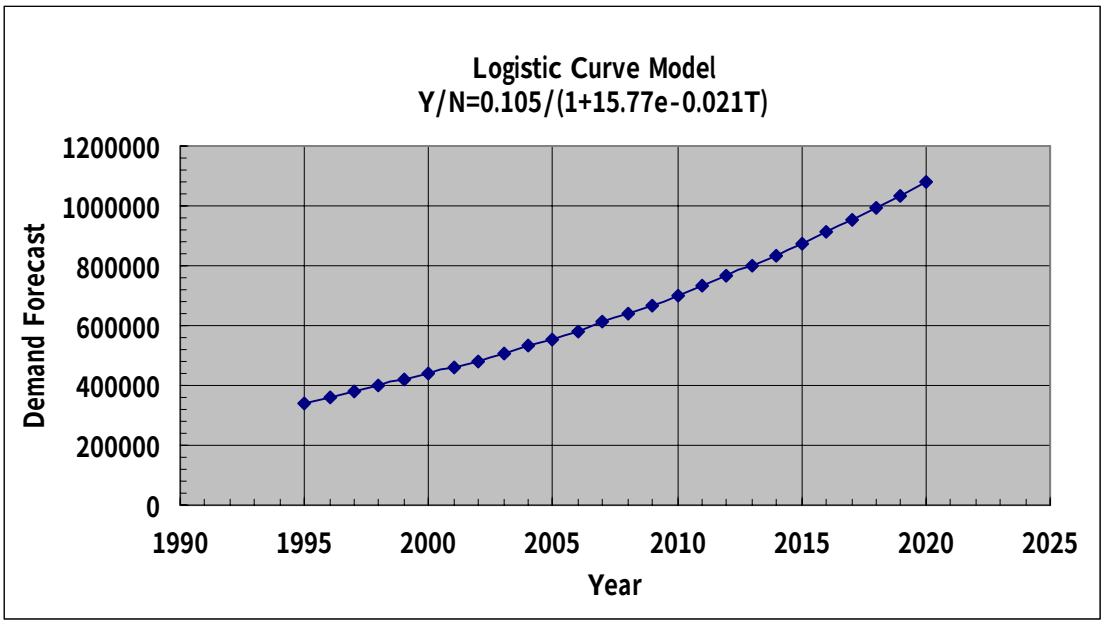

Figure 5-3 Telephone Demand (Logistic Curve Model)

(5) Allocation of demands to Woreda

Macro levels of demand forecasted using the demand prediction model then have to be distributing to each Woreda by applying population rate.

Next, it is necessary to divide the demand each Woreda into urban and rural areas.

The attributes of people living in urban and rural areas are different, and it can generally be considered that inhabitants of urban areas have a greater financial income. In the initial stages of extending communication services, the demand for telephones for business use such as by administrative bodies, banks, hospitals, and business enterprises is large, and this demand is extremely large compared to that for rural areas due to such offices being concentrated in urban (*) areas.

According to the statistical abstract 2000 published by the Central Statistic Authority, the total number of employees nationwide is urban: 2,300,000, rural: 2,360,000, with the percentage of employees in the private sectors being 1.6% and 17% respectively.

Considering employees in the private sectors that receive a relatively high income compared to employees of government agencies will subscribe to telephones, the demand is divided between urban and rural areas based on a number of employee ratios (10:1). This urban demand is such that a town of a population of 1,000 or more in which a telephone station and telephone installation are established is defined as an urban area of Woreda, and the total number for urban demand is allocated based on the respective population ratios.

The demand remaining when the demand allotted to urban areas is subtracted from the demand distributed to Woreda is then taken to be the demand for rural areas of Woreda.

The number of demands for each administrative unit (region) and for each town is shown in Table 5-8 and Table 5-9, respectively.

(*) Central Statistic Agency defines a community of a population of 1,000 or more as "urban" and a community with a population of less than 1,000 as “rural” and the ETC also adopts this definition.

Table 5-8 Telephone Demand

	2000			2005			2010			2015			2020		
TIGRAY	Population	ITU	ITU*1.2	4.56%	ITU	ITU*1.2	4.41%	ITU	ITU*1.2	4.22%	ITU	ITU*1.2		ITU	ITU*1.2
URBAN	622,000	24,003	**28,803**	765,703	31,177	**37,413**	956,948	40,554	**48,664**	1,187,404	52,759	**63,311**	1,460,003	67,913	**81,495**
RURAL	3,072,000	2,400	**2,880**	3,457,297	3,118	**3,741**	3,845,052	4,055	**4,866**	4,232,596	5,276	**6,331**	4,606,997	6,791	**8,150**
TTL	3,694,000	26,403	**31,684**	4,223,000	34,295	**41,154**	4,802,000	44,609	**53,531**	5,420,000	58,035	**69,642**	6,067,000	74,704	**89,645**
AFFAR				3.93%			3.99%			3.61%					
URBAN	99,000	1,399	**1,679**	119,255	2,772	**3,326**	144,604	4,641	**5,569**	175,848	7,205	**8,645**	209,965	10,487	**12,585**
RURAL	1,117,000	140	**168**	1,239,745	277	**333**	1,365,396	464	**557**	1,486,152	720	**865**	1,608,035	1,049	**1,258**
TTL	1,216,000	1,539	**1,847**	1,359,000	3,049	**3,659**	1,510,000	5,105	**6,126**	1,662,000	7,925	**9,510**	1,818,000	11,536	**13,843**
AMHARA				4.67%			4.40%			4.25%					
URBAN	1,680,000	43,155	**51,787**	2,062,584	64,295	**77,155**	2,591,331	92,791	**111,349**	3,213,849	131,132	**157,358**	3,957,362	180,255	**216,307**
RURAL	14,615,000	4,316	**5,179**	16,563,416	6,430	**7,715**	18,590,669	9,279	**11,135**	20,694,151	13,113	**15,736**	22,822,638	18,026	**21,631**
TTL	16,295,000	47,471	**56,965**	18,626,000	70,725	**84,870**	21,182,000	102,070	**122,484**	23,908,000	144,245	**173,094**	26,780,000	198,281	**237,937**
OROMIYA				4.74%			4.52%			4.31%					
URBAN	2,648,000	77,533	**93,039**	3,292,110	107,730	**129,276**	4,149,896	147,795	**177,355**	5,176,475	201,035	**241,241**	6,392,398	268,207	**321,849**
RURAL	19,706,000	7,753	**9,304**	22,524,890	10,773	**12,928**	25,471,104	14,780	**17,735**	28,458,525	20,103	**24,124**	31,414,602	26,821	**32,185**
TTL	22,354,000	85,286	**102,343**	25,817,000	118,503	**142,204**	29,621,000	162,575	**195,090**	33,635,000	221,138	**265,366**	37,807,000	295,028	**354,034**
SOMALI				4.52%			4.38%			4.16%					
URBAN	560,000	3,237	**3,885**	673,322	6,899	**8,279**	839,885	12,047	**14,457**	1,040,654	19,212	**23,054**	1,275,884	28,583	**34,299**
RURAL	3,138,000	324	**388**	3,544,678	690	**828**	3,958,115	1,205	**1,446**	4,407,346	1,921	**2,305**	4,848,116	2,858	**3,430**
TTL	3,698,000	3,561	**4,273**	4,218,000	7,589	**9,107**	4,798,000	13,252	**15,902**	5,448,000	21,133	**25,360**	6,124,000	31,441	**37,729**
BENISHANGUL				4.35%			4.50%			4.05%					
URBAN	47,000	724	**868**	58,262	1,331	**1,597**	72,086	2,166	**2,600**	89,832	3,313	**3,975**	109,557	4,792	**5,750**
RURAL	490,000	72	**87**	551,738	133	**160**	616,914	217	**260**	683,168	331	**398**	751,443	479	**575**
TTL	537,000	796	**955**	610,000	1,464	**1,757**	689,000	2,383	**2,860**	773,000	3,644	**4,373**	861,000	5,271	**6,325**
SNNPR				4.70%			4.46%			4.24%					
URBAN	958,000	23,786	**28,544**	1,205,639	38,154	**45,784**	1,516,878	58,682	**70,418**	1,886,691	87,459	**104,951**	2,322,058	124,973	**149,967**
RURAL	11,557,000	2,379	**2,854**	13,284,361	3,815	**4,578**	15,085,122	5,868	**7,042**	16,904,309	8,746	**10,495**	18,724,942	12,497	**14,997**
TTL	12,515,000	26,165	**31,398**	14,490,000	41,969	**50,363**	16,602,000	64,550	**77,460**	18,791,000	96,205	**115,446**	21,047,000	137,470	**164,964**
GAMBELLA				4.10%			4.63%			4.01%					
URBAN	36,000	617	**741**	44,093	945	**1,133**	53,904	1,408	**1,690**	67,593	2,052	**2,462**	82,276	2,876	**3,452**
RURAL	175,000	62	**74**	195,907	94	**113**	217,096	141	**169**	236,407	205	**246**	256,724	288	**345**
TTL	211,000	679	**815**	240,000	1,039	**1,247**	271,000	1,549	**1,859**	304,000	2,257	**2,708**	339,000	3,164	**3,797**
HARARI				3.62%			3.44%			3.25%					
URBAN	97,000	5,351	**6,421**	117,683	6,735	**8,083**	140,582	8,468	**10,162**	166,483	10,690	**12,828**	195,354	13,350	**16,020**
RURAL	63,000	535	**642**	72,317	674	**808**	81,418	847	**1,016**	91,517	1,069	**1,283**	100,646	1,335	**1,602**
TTL	160,000	5,886	**7,063**	190,000	7,409	**8,891**	222,000	9,315	**11,178**	258,000	11,759	**14,111**	296,000	14,685	**17,622**
ADDIS				2.94%			2.73%			2.35%					
URBAN	2,495,000	213,215	**281,444**	2,887,000	283,910	**340,692**	3,328,000	346,372	**415,646**	3,791,000	422,410	**506,892**	4,243,000	509,843	**611,812**
RURAL	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
TTL	2,495,000	234,537	**281,444**	2,887,000	283,910	**340,692**	3,328,000	346,372	**415,646**	3,791,000	422,410	**506,892**	4,243,000	509,843	**611,812**
DIRE DAWA				4.14%			3.78%			3.51%					
URBAN	229,000	8,186	**9,824**	283,114	10,695	**12,835**	346,776	14,028	**16,834**	417,463	18,327	**21,993**	496,055	23,660	**28,392**
RURAL	89,000	819	**982**	100,886	1,070	**1,283**	111,224	1,403	**1,683**	118,537	1,833	**2,199**	124,945	2,366	**2,839**
TTL	318,000	9,005	**10,806**	384,000	11,765	**14,118**	458,000	15,431	**18,517**	536,000	20,160	**24,192**	621,000	26,026	**31,231**
URBAN TTL	9,473,000	401,207	**507,035**	11,508,765	554,644	**665,572**	14,140,890	728,953	**874,743**	17,213,292	955,593	**1,146,711**	20,743,912	1,234,939	**1,481,927**
RURAL TTL	54,022,000	18,799	**22,559**	61,535,235	27,073	**32,488**	69,342,110	38,258	**45,910**	77,312,708	53,318	**63,982**	85,259,088	72,510	**87,012**
NATIONAL TTL	63,495,000	441,328	**529,594**	73,044,000	581,717	**698,060**	83,483,000	767,211	**920,653**	94,526,000	1,008,911	**1,210,693**	106,003,000	1,307,449	**1,568,939**