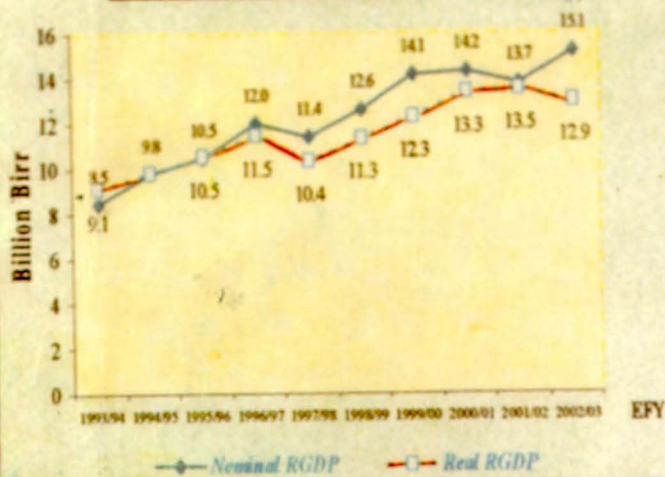
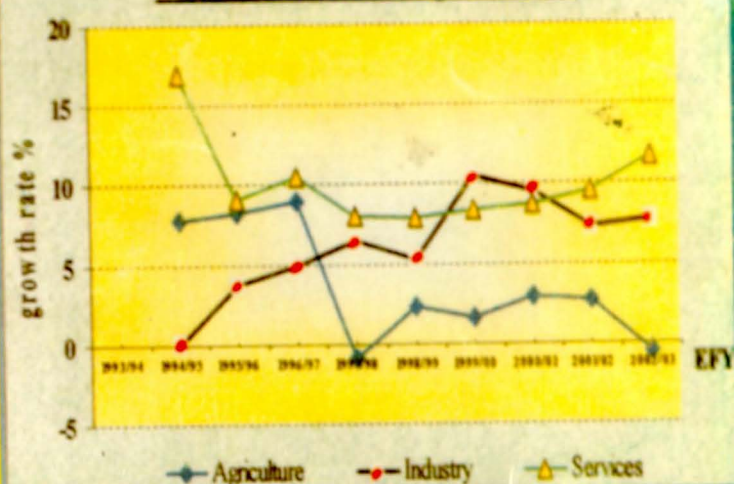


Estimation of Regional Gross Domestic Product

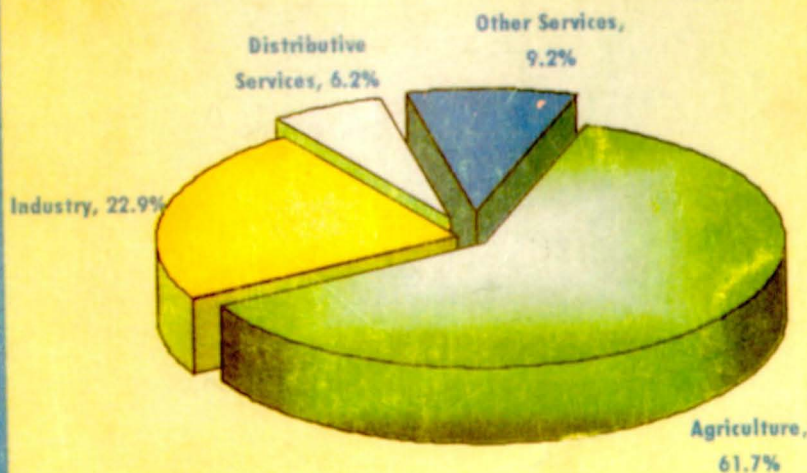
Time Series Data for Nominal and Real RGDP



Trends in sectoral GDP growth rates



Average Percentage Contribution of Component Economic Sectors to Real GDP



Report on The Regional Macro-economy and Its Structure (1993/94-2002/03)

Bureau of Finance and Economic Development

June, 2005

Bahir Dar

ACKNOWLEDGMENTS

9

BoFED would like to acknowledge various organizations of the Region, the Federal Government as well as private Enterprises, for providing the necessary data and publications that helped us to successfully complete this report. It is our firm conviction that untiring support would continue in the future.

All experts from the zonal Branch office of Finance and Planning who involved in facilitating the task of data collection deserve much appreciation.

We also extend our thanks to the National Accounts Unit of MoFED for its commendable technical support and valuable comments in all aspects of producing such document.

The members of the Regional Income Accounts (RIA) Team, who borne the brunt of the whole hard work, are lauded for their unreserved allegiance to accomplish this vital task.

Finally, we extend our sincere gratitude to **Sida**, for its consistent financial support; from inception to date, that made this task a success.

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II. OVERALL MACROECONOMIC PERFORMANCE OF THE ANRS

II-1. GDP, GDP Per capita and Percent Contributions

In the span of the ten years the real GDP of the ANRS has reached to a level of Birr 12.9 Billion varying between Birr 9.1 (1993/94), Billion and 13.5 Billion(2001/02). The performance of the economy was relatively bad during the years 1997/98 and 2002/03 because of reasons related mainly with lower agricultural productivity. Specially the devastating draught during year 2002/03 has strongly harmed the agricultural sector¹ which is the pillar of the economy.

Output measures, when stated on a per capita basis can be interpreted as a measure of regional standard of living. With this regard the average real per capita GDP of the region during the ten years was estimated to be Birr 728 which has been growing at an average rate of 2.2%. The highest real per capita output of the region has been Birr 792 in 2000/01(which during 2002/03 declined to Birr 732 due to the above mentioned reason). Though the relative growth of the economy (5.2%) is higher than the growth of the regional population (2.8%), the low per capita level (both in absolute value and growth rate) shows only its insignificance calling for much better effort to excel present performances. Because it is assumed that if growth rate in output exceeds the growth rate on population then living standards are rising.

In the decade under consideration the regional economy has shown a slight structural transformation (shift in share of RGDP) from agricultural sector to non agricultural sectors by about 8.3%.

A. Agriculture

Real GVA of agriculture rise from Birr 6.069 Billion in 1993/94 to Birr 7.801 Billion in 2000/01 while it slumped down during the last year (2002/03) to Birr 6.294 Billion. It contributed, on the average, to about 62% of the total real RGDP. This amount of output is produced by about 92 % of Economically active population in Agriculture and Allied Activities. Owing to the natural and other anticipated factors the growth trend of the agriculture sector showed a fluctuating performance.

Despite the downward pooling effect of the last year's GVA, during the previous nine years, real GVA of agriculture was growing at an average growth rate of 4.2% per annum. Here it uncovered that the well/ill performance of the regional economy is highly dependent to the performance of agriculture.

¹ From CSA reports on crop area coverage, crop yield and price data, it was investigated that during the 2002/03 crop year there was a 29.85% decline in total volume of Crop Production and a 41.11% increment in prices of all Major Crops which potentially have a double negative impact on the real GDP estimates. According to the "Overall Economic Performance Report" by the National Bank of Ethiopia this fact is also manifested by a -12.6% decline in Agricultural GDP (and a -3.9% decline in the national GDP).

B. Industry

The output of industry (Outputs of Quarrying, Manufacturing, Water and Electricity and Construction activities) have been increasing over the ten years. On the average, industry grows at 6.2% per annum. The smallest annual average growth rate of industry (0.08%) was recorded in 1994/95 while the highest, 10.55% was in 1999/2000.

The real GVA estimates of industry have been increasing from Birr 1.97 Billion in 1993/94 to Birr 3.59 Billion in 2002/03. Industry constitutes, on the average, about 22.9% of the total real RGDP estimates. Construction takes the largest share in the industry sector (81.9%) and next to the agricultural sector GVA in the RGDP (18.75%). The share of the manufacturing sub-sector in the Industry division is 9.9% but is still at a dismal level of 2.3% in the RGDP.

C. Services

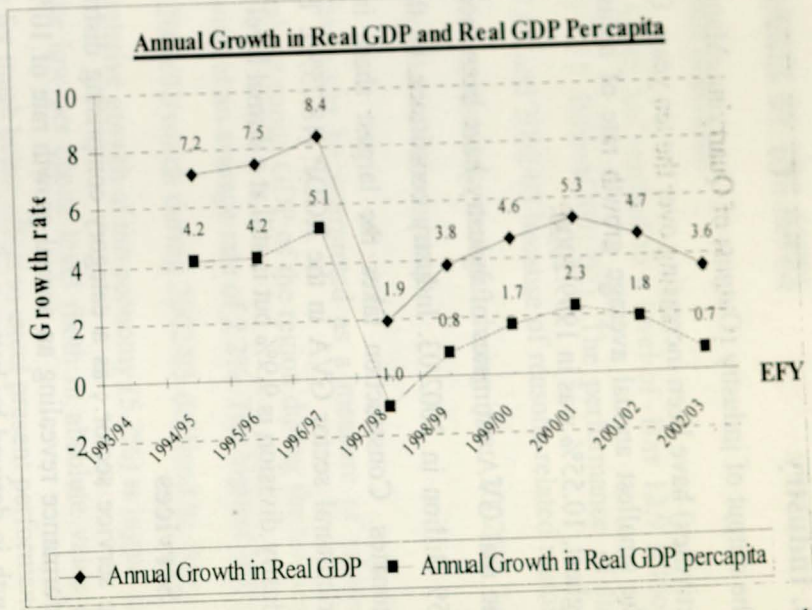
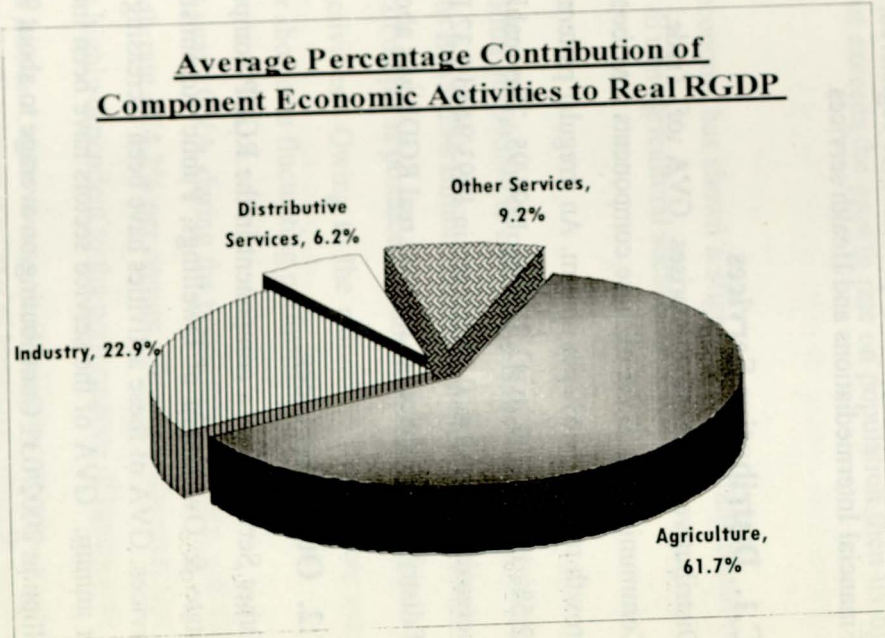
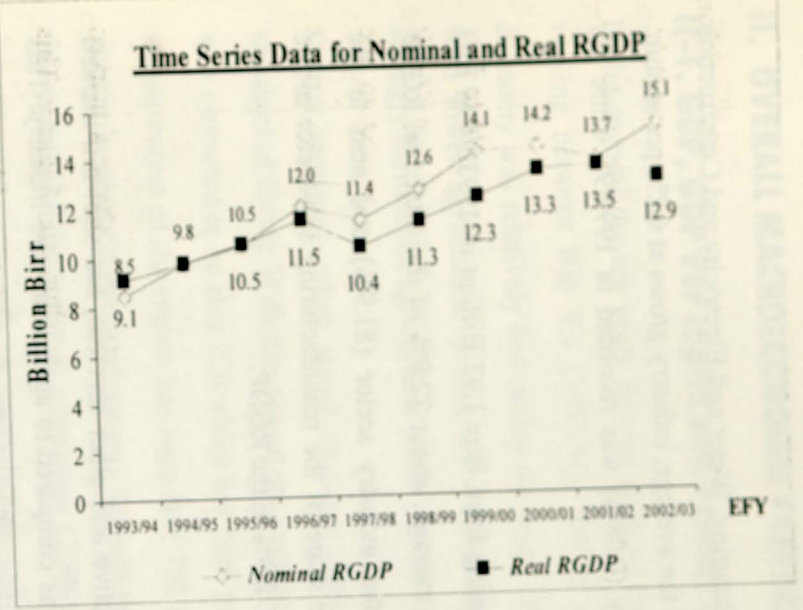
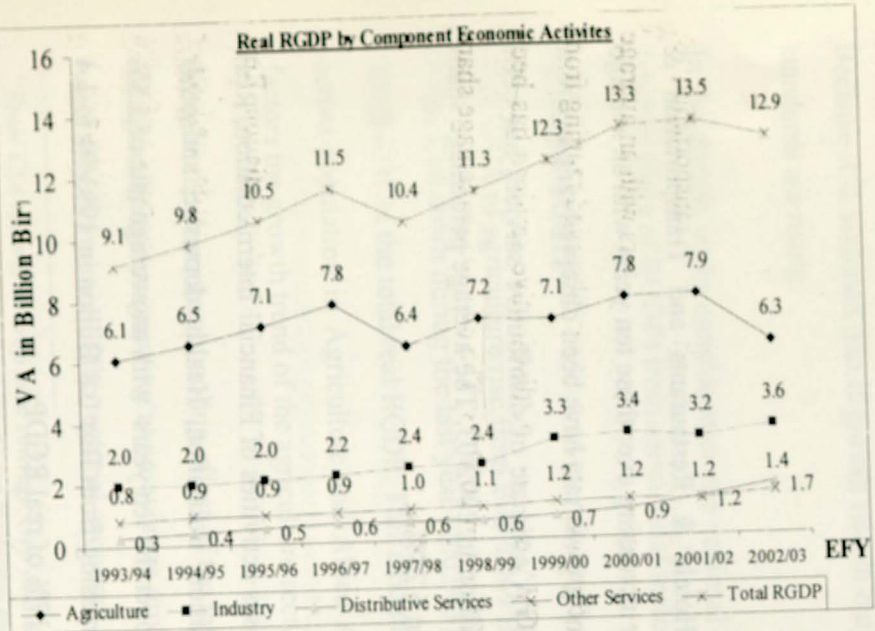
The service sector ; as a category comprising distributive and other services, has shown a marked performance revealing an annual growth rate of 10.% as compared to agriculture and Industry. This growth is derived by better performance registered; among others, in Trade, Hotels and Restaurants, Financial Intermediations and Health services

C.1. Distributive Services

Distributive services comprises GVA of Trade, Hotels & Restaurants and Transportation & Communication. GVA of these components have been increasing over these ten years with an average growth rate of 19.6% per annum. An irregular pattern of growth rate have been observed ranging from 12.5% in 1998/99 to 42.21% in 1994/95. The real GVA estimate of distributive services has been increasing from Birr 0.28 Billion in 1993/94 to 1.32 Billion in 2002/03. The average percentage share of distributive services to the total real RGDP was about 6.24%.

C.2. Other Services

“Other Services” as a component in the RGDP comprises activities of Financial Intermediation, Real Estate & Ownership of Dwellings, Public Administration, Education, Health, domestic, and other services. GVA of these activities have been increasing over the ten years with an average rate of 5.5% per annum. GVA of the service sectors have been increasing from Birr 0.8 Billion in 1993/94 to 1.4 Billion in 2002/03 . Contributing on average to about 9.17% of real RGDP.



II-2. GDP Growth & Sectoral Contribution to GDP Growth

Economic growth is typically measured by growths in the production of final goods and services. With this remark the yearly monetary value of goods & services produced in the ANRS has revealed an overall upward moving trend. The real average growth of RGDP ranges from the lowest 1.9% in 1997/98 to the highest rate of 8.4% in 1996/97 where, on the average, the total real RGDP was growing at a pace of 5.2% per annum. It is obvious that the sources of the GDP growth will be a sum total of the relative growth in the component economic activities that make it up. With respect to what part of growth in total GDP (output) is due to growth in the respective components is analyzed using the growth accounting equation.² Hence using this renowned equation it is found out that agriculture and allied activities have contributed averagely to about 47.6% of the registered 5.2% RGDP growth rate followed by services (25.06%) and Industry (24.08%).³

Decomposing sources of growth for the respective main Economic components of GDP, Agriculture's 3.7% growth is mainly contributed by about 84% growth in crop production followed by a 9.3% growth in Forestry and 6% in Livestock Production. In the Industry sector, about 80% of the observed 6.2% growth in the Industry Sector is derived from the construction activities. The remaining balance attributing to Manufacturing (10%), Electricity and Water (9%) and Quarrying (1%). Similarly the observed 10.1% growth in the Service Sector is mainly driven by a Trade Hotels and Restaurants (54%), Real Estate and Ownership of Dwellings (10.8%), Public Administration (9.5%), Education (8.3%), Transport and Communication (8.2%) and the rest by Health, Financial Intermediation and Domestic and Other Services (about 3% each respectively).

² Which states that "The growth of output equals the growth of weighted sum of all components" and which separates out the contribution of the different components driving the observed growth trend.

³ using the basic production function :

$$Y = f(A, I, S) \quad (\text{where } Y=\text{GDP, } A=\text{Agriculture, } I=\text{Industry, and } S=\text{Services})$$

$$\text{GDP} = \text{GVA of Agricultural} + \text{GVA of Industry} + \text{GVA of Services}$$

Rearranging the above relation to the fundamental equation of growth accounting

$$\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \frac{\Delta I}{I} + \frac{\Delta S}{S} \dots \dots \dots g = wArA + wIrI + wSrS$$

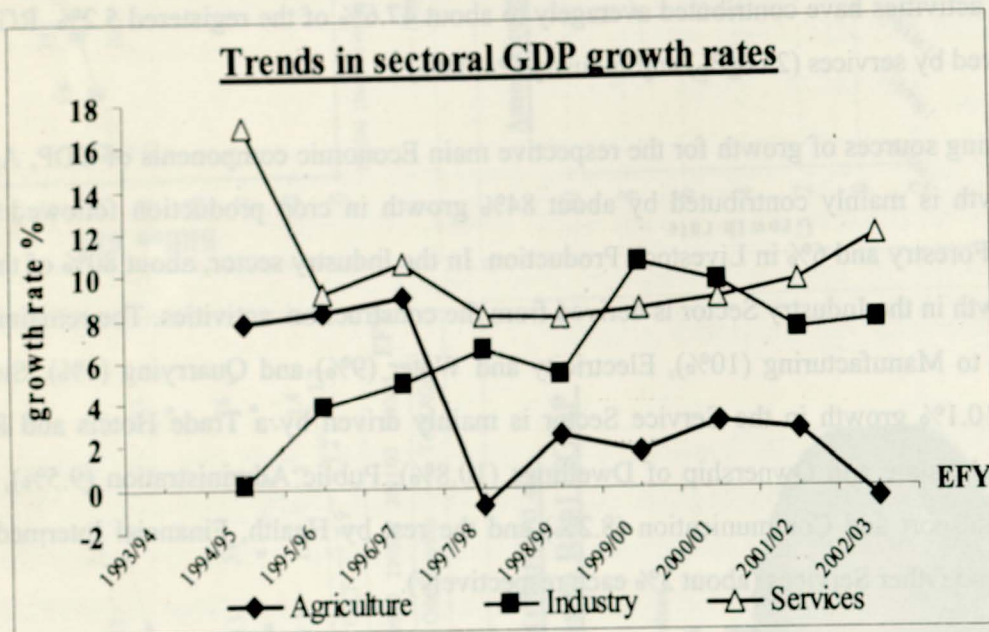
letting w be % share in the total GDP and r be the growth rate for the three components respectively.

It follows that :

$$\text{observed GDP growth rate}(\%) = ((\text{weight given to } A) * (\% \text{ growth of } A)) + ((\text{weight given to } I) * (\% \text{ growth of } I)) + ((\text{weight given to } S) * (\% \text{ growth } S))$$

At this point, it is worth paying to mention that a sustainable economic growth (in terms of GDP) is maintained in that the registered economic growth (5.2%) at a minimum exceeds the rate of growth in population supporting growth in living standards.

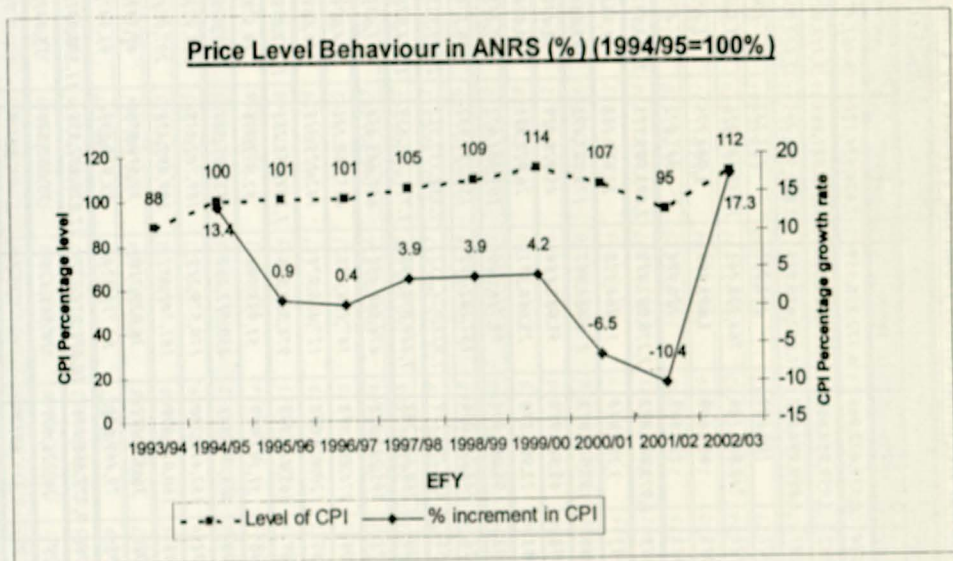
Looking into the eighteen different individual components (see summary tables) and applying the same technique, Crop Production, Construction and Trade, Hotels and Restaurant Economic activities have ranked the first three places with a share of 41%, 20% and 14% respectively in contributing to the registered 5.2% growth of RGDP.



II-3. State of Inflation

Inflation is a macroeconomic concept referring to an increase in the absolute price level over some defined time period. This increase in the price of all goods has the effect of reducing the purchasing power of money and money incomes and thus must be taken into account when planning future economic activity.

With this background the price level for the ANRS is computed using the CPI report by the CSA and adjusting it to the 1994/95 base year as the case for our RGDP estimation. Based on this, the percentage change in the price levels over the ten years is calculated showing a 12% change in the price level from 100% to 112% from the base year to year 2002/03. Averagely the inflation rate over the decade was about 3% using both Laspeyres index⁴ (3.0%) and Paasche index (2.8%)⁵. Owing to the interpretations of inflation levels, it implied that the quantity of goods & services that could have been purchased during the base year is greater than 2002/03. i.e. living in 2002/03 is 3% more expensive than in 1994/95. During the years 1997/98 and 2002/03 prices have risen with relatively low food crop supply together with other unfavorable conditions scaling up the Birr's purchasing power.



⁴ A measure of inflation is developed by computing the percentage change in CPI from one time period to the next:

$$\% \Delta (CPI) = \frac{CPI_t - CPI_{t-1}}{CPI_{t-1}}$$

⁵ This measure can be interpreted as the ratio of **Nominal GDP** and **Real GDP**.

$$P_t = \frac{\sum [P_{i,t} Q_{i,t}]}{\sum [P_{i,0} Q_{i,t}]}$$

where ' $Q_{i,t}$ ' represents the quantities produced and sold of the i -th good in the current time period, ' $P_{i,t}$ ' represents the current price of that i -th good and ' $P_{i,0}$ ' represents the base (1994/95) price of that same good.

Table 1:

Nomonal Regional Gross Domestic Product by Component Economic Sectors

Type of Industrial Group / Economic Activity /	Annual Value Added (in Birr)									
	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
A. AGRICULTURE	5,653,348,184	6,539,622,066	6,772,856,359	7,624,634,121	6,461,473,072	7,379,352,130	7,800,819,400	7,252,699,408	7,195,930,534	7,444,634,439
Crop Production	3,199,087,862	3,959,854,660	4,154,085,348	3,890,081,861	3,118,023,417	4,091,063,242	4,176,624,119	3,842,512,545	3,765,584,811	3,688,280,520
Livestock Production	1,776,387,283	1,829,994,882	1,852,610,015	2,681,923,445	2,377,904,257	2,321,050,735	2,525,245,639	2,307,370,936	2,311,737,178	2,838,969,590
Hunting	96,771	109,007	112,241	123,342	106,364	121,137	123,585	109,420	106,088	121,784
Forestry	677,350,121	748,842,188	764,228,461	1,050,183,326	963,540,596	965,766,332	1,089,563,827	1,100,918,538	1,110,255,045	909,966,844
Fishery	322,335	699,660	1,693,800	1,984,275	1,422,900	943,245	1,065,702	1,424,326	5,402,844	3,994,125
Agricultural Services	103,813	121,669	126,494	337,872	475,537	407,438	8,196,529	363,643	2,844,568	3,301,575
B. INDUSTRY	1,764,961,553	1,973,400,832	2,270,007,419	2,693,005,175	3,113,531,893	3,233,610,014	4,194,508,336	4,604,486,718	3,702,226,288	4,018,990,828
Mining & Quarrying	1,555,132	3,287,034	12,364,328	23,632,188	11,768,964	9,706,346	12,485,820	12,505,479	8,109,254	11,758,418
Manufacturing	167,015,444	187,578,613	176,486,567	175,303,493	195,664,370	218,972,282	334,141,279	321,308,133	368,205,756	385,901,105
Large & Medium Scale	59,096,058	69,540,979	51,082,184	45,028,329	58,430,066	78,713,619	192,570,191	173,145,847	136,009,000	147,621,472
Small Scale	16,428,883	22,951,330	25,658,383	26,970,491	29,820,446	28,735,622	25,938,860	27,869,404	80,977,756	82,644,472
Cottage & Handicrafts	91,490,502	95,086,304	99,746,000	103,304,672	107,413,858	111,523,041	115,632,227	120,292,882	151,219,000	155,635,161
Electricity & Water	134,111,521	143,243,006	157,182,192	159,731,982	176,174,614	191,467,923	311,430,933	318,684,983	337,298,898	349,539,295
Construction	1,462,279,456	1,639,292,179	1,923,974,332	2,334,337,512	2,729,923,945	2,813,463,463	3,536,450,305	3,951,988,123	2,988,612,380	3,271,792,010
C. SERVICE (I + II)	1,034,474,440	1,260,646,288	1,449,070,998	1,711,743,639	1,823,926,998	1,993,626,305	2,121,334,772	2,382,374,361	2,833,503,143	3,655,873,826
I. DISTRIBUTIVE SERVICES	263,333,973	395,231,358	474,560,452	607,685,454	611,693,388	703,897,298	822,625,187	998,134,534	1,294,878,619	1,896,748,744
Trade, Hotels and Restaurants	159,167,706	274,803,318	347,144,478	465,560,141	474,824,280	524,992,950	658,352,122	741,254,586	962,742,110	1,460,035,907
Transport & Communications	104,166,267	120,428,040	127,415,974	142,125,313	136,869,108	178,904,348	164,273,065	256,879,948	332,136,509	436,712,837
II. OTHER SERVICES	771,140,467	865,414,930	974,510,546	1,104,058,185	1,212,233,610	1,289,729,007	1,298,709,585	1,384,239,827	1,538,624,524	1,759,125,082
Banking and Insurance	24,506,846	31,147,917	51,935,598	52,852,336	49,578,963	52,105,687	71,741,529	61,505,775	65,633,974	61,922,361
Real Estate & Ownership of Dwellings	384,810,849	405,776,341	450,512,164	535,505,564	587,985,455	613,543,971	575,216,825	617,919,124	660,081,590	707,633,390
Public Administration	120,895,493	152,410,730	170,579,213	189,762,819	225,925,066	247,373,637	248,006,637	271,891,562	306,377,069	406,751,665
Education	137,766,645	160,031,849	181,742,637	199,499,418	207,054,016	219,484,588	240,930,987	261,219,375	318,275,747	364,997,549
Health	27,895,201	36,578,442	36,029,710	37,519,956	47,742,510	58,454,836	61,007,113	65,074,984	71,820,150	97,037,276
Domestic & Other Services	75,265,433	79,469,651	83,711,224	88,918,092	93,947,600	98,766,288	101,806,494	106,629,007	116,435,994	120,782,842
TOTAL RGDP	8,452,784,176	9,773,669,186	10,491,934,777	12,029,382,935	11,398,931,963	12,606,588,449	14,116,662,508	14,239,560,487	13,731,659,965	15,119,499,093
Population	13,727,725	14,126,003	14,564,425	15,002,846	15,441,268	15,879,689	16,318,111	16,792,335	17,151,760	17,652,773
Per Capita GDP	615.7	691.9	720.4	801.8	738.2	793.9	865.1	848.0	800.6	856.5
GDP Growth Rate (%)	0	0.00	7.35	10.94	5.26	6.57	7.63	6.47	4.98	5.61
GDP Percapita Growth Rate (%)	0	0.00	4.12	7.65	2.18	3.50	4.57	3.45	2.11	2.70

Table 2:

Real Regional Gross Domestic Product by Component Economic Sectors

Type of Industrial Group / Economic Activity /	Annual Value Added (in Birr)									
	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
A. AGRICULTURE	6,069,119,497	6,539,622,066	7,080,128,556	7,764,585,766	6,378,330,667	7,189,374,982	7,111,560,720	7,801,231,819	7,855,129,884	6,294,438,484
Crop Production	3,625,637,467	3,959,854,660	4,628,253,989	5,017,562,060	3,554,908,960	4,332,686,900	4,263,270,739	4,931,123,918	5,194,863,328	3,678,538,145
Livestock Production	1,715,164,185	1,829,994,882	1,678,700,247	1,950,174,876	2,003,111,184	2,013,259,156	1,972,807,372	1,978,246,612	1,639,256,700	1,674,947,915
Hunting	103,899	109,007	116,764	129,247	98,397	117,868	113,776	121,212	118,946	95,007
Forestry	727,790,082	748,842,188	772,047,504	795,340,764	818,780,317	842,178,385	865,472,276	890,681,871	1,017,131,870	936,278,430
Fishery	322,335	699,660	880,776	1,031,823	924,885	681,233	558,634	670,878	1,043,640	880,957
Agricultural Services	101,529	121,669	129,277	346,995	506,922	451,441	9,337,923	387,328	2,715,400	3,698,031
B. INDUSTRY	1,970,605,706	1,973,400,832	2,048,378,808	2,173,139,669	2,382,663,027	2,428,441,823	3,258,277,889	3,419,849,906	3,240,274,081	3,592,385,040
Mining & Quarrying	2,434,483	3,287,034	2,294,201	5,080,856	7,410,791	5,751,711	7,846,423	13,203,171	10,830,894	13,213,690
Manufacturing	168,661,637	187,578,613	179,413,535	186,512,348	209,047,920	229,590,018	376,016,104	339,852,774	366,102,263	412,244,807
Large & Medium Scale	62,509,053	69,540,979	46,903,117	43,163,659	55,513,123	71,955,531	218,887,278	180,674,342	138,643,158	159,752,759
Small Scale	17,654,846	22,951,330	27,332,192	32,371,892	36,341,979	33,662,569	24,783,969	28,567,481	75,019,130	85,525,017
Cottage & Handicrafts	88,497,738	95,086,304	105,178,226	110,976,797	117,192,818	123,971,918	132,344,857	130,610,951	152,439,975	166,967,038
Electricity & Water	137,828,386	143,243,006	150,369,260	153,560,942	161,854,871	166,109,127	284,557,943	294,304,195	306,346,803	316,725,793
Construction	1,661,681,200	1,639,292,179	1,716,301,813	1,827,985,522	2,004,349,446	2,026,990,967	2,589,857,419	2,772,489,766	2,556,994,121	2,850,200,750
C. SERVICE (I + II)	1,078,271,874	1,260,646,288	1,375,423,676	1,538,603,306	1,590,792,204	1,712,770,095	1,884,141,226	2,090,803,184	2,396,427,356	3,044,102,841
I. DISTRIBUTIVE SERVICES	277,922,454	395,231,358	474,929,500	596,170,320	590,449,562	634,090,826	731,519,373	876,175,073	1,201,544,029	1,657,918,228
Trade, Hotels and Restaurants	162,748,166	274,803,318	339,671,700	454,320,488	445,426,154	474,820,352	570,299,712	687,153,540	894,099,211	1,333,213,792
Transport & Communications	115,174,288	120,428,040	135,257,800	141,849,832	145,023,408	159,270,474	161,219,661	189,021,533	307,444,818	324,704,436
II. OTHER SERVICES	800,349,420	865,414,930	900,494,176	942,432,986	1,000,342,642	1,078,679,269	1,152,621,853	1,214,628,111	1,194,883,327	1,386,184,613
Banking and Insurance	26,413,525	31,147,917	35,964,795	43,010,598	42,221,480	43,936,247	39,457,961	47,702,239	81,098,781	89,469,351
Real Estate & Ownership of Dwellings	392,845,641	405,776,341	415,521,807	432,025,724	445,370,265	458,547,970	530,999,095	553,406,965	479,745,955	470,532,961
Public Administration	122,588,315	152,410,730	160,025,229	158,182,610	179,282,842	202,007,417	195,266,364	206,665,619	232,075,710	304,779,466
Education	154,918,882	160,031,849	169,353,404	184,833,347	195,584,843	220,913,692	229,106,763	240,540,874	230,292,846	328,853,321
Health	27,632,534	36,578,442	36,073,891	36,740,846	46,158,425	57,464,229	59,879,639	63,770,370	61,248,113	78,902,108
Domestic & Other Services	75,950,523	79,469,651	83,555,050	87,639,861	91,724,788	95,809,715	97,912,031	102,542,044	110,421,923	113,647,406
TOTAL RGDP	9,117,997,077	9,773,669,186	10,503,931,041	11,476,328,741	10,351,785,898	11,330,586,901	12,253,979,835	13,311,884,909	13,491,831,321	12,930,926,366
Population	13,727,725	14,126,003	14,564,425	15,002,846	15,441,268	15,879,689	16,318,111	16,792,335	17,151,760	17,652,773
Per Capita GDP	664.2	691.9	721.2	764.9	670.4	713.5	750.9	792.7	786.6	732.5
GDP Growth Rate (%)	0.00	7.19	7.47	8.36	1.93	3.76	4.63	5.28	4.71	3.56
GDP Percapita Growth Rate (%)	0.00	4.17	4.24	5.15	-1.05	0.77	1.65	2.29	1.85	0.72

Table 4:

Growth Rate of GVA of Component Economic Activities (Nominal and REAL)

Economic Activity	Nominal RGDP growth rate											Real RGDP Growth rate (1987=100%)										
	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	Average	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	Average
A. AGRICULTURE		15.7	3.6	12.6	-15.3	14.2	5.7	-7.0	-0.8	3.5	3.6		7.8	8.3	9.0	-0.8	2.4	1.7	3.0	2.7	-0.5	3.7
Crop Production		23.8	4.9	-6.4	-19.8	31.2	2.1	-8.0	-2.0	-2.1	2.6		9.2	16.9	12.6	-3.5	2.3	1.5	3.7	4.0	-0.9	5.1
Livestock Production		3.0	1.2	44.8	-11.3	-2.4	8.8	-8.6	0.2	22.8	6.5		6.7	-8.3	3.2	3.1	2.4	1.5	1.3	-1.6	-1.1	0.8
Hunting		12.6	3.0	9.9	-13.8	13.9	2.0	-11.5	-3.0	14.8	3.1		4.9	7.1	8.9	-3.4	2.0	0.9	1.8	1.3	-1.7	2.4
Forestry		10.6	2.1	37.4	-8.3	0.2	12.8	1.0	0.8	-18.0	4.3		2.9	3.1	3.1	3.0	3.0	2.9	2.9	4.5	2.8	3.1
Fishery		117.1	142.1	17.1	-28.3	-33.7	13.0	33.7	279.3	-26.1	57.1		117.1	25.9	21.4	9.7	-0.7	-4.4	-0.7	5.9	2.9	19.7
Agricultural Services		17.2	4.0	167.1	40.7	-14.3	1,911.7	-95.6	682.2	16.1	303.2		19.8	6.3	68.9	60.9	38.8	138.2	21.3	55.8	53.2	51.5
B. INDUSTRY		11.8	15.0	18.6	15.6	3.9	29.7	9.8	-19.6	8.6	10.4		0.1	3.8	4.9	6.5	5.3	10.5	9.6	7.3	7.8	6.2
Mining & Quarrying		111.4	276.2	91.1	-50.2	-17.5	28.6	0.2	-35.2	45.0	50.0		35.0	-30.2	24.3	31.1	15.0	19.0	26.1	18.6	19.0	17.5
Manufacturing		12.3	-5.9	-0.7	11.6	11.9	52.6	-3.8	14.6	4.8	10.8		11.2	-4.4	-0.3	3.7	5.2	14.9	10.4	10.0	10.3	6.8
Large & Medium Scale		17.7	-26.5	-11.9	29.8	34.7	144.6	-10.1	-21.4	8.5	18.4		11.2	-32.6	-21.2	-7.2	0.9	25.8	17.2	10.4	11.0	1.7
Small Scale		39.7	11.8	5.1	10.6	-3.6	-9.7	7.4	190.6	2.1	28.2		30.0	19.1	18.8	16.6	10.0	1.5	3.7	18.4	17.9	15.1
Cottage & Handicrafts		3.9	4.9	3.6	4.0	3.8	3.7	4.0	25.7	2.9	6.3		7.4	10.6	8.0	7.2	6.9	6.8	5.4	7.0	7.3	7.4
Electricity & Water		6.8	9.7	1.6	10.3	8.7	62.7	2.3	5.8	3.6	12.4		3.9	5.0	3.5	4.2	3.8	14.7	12.8	11.5	10.4	7.7
Construction		12.1	17.4	21.3	16.9	3.1	25.7	11.8	-24.4	9.5	10.4		-1.3	4.7	5.6	6.9	5.5	9.6	9.2	6.6	7.2	6.0
C. SERVICE (I + II)		21.9	14.9	18.1	6.6	9.3	6.4	12.3	18.9	29.0	15.3		16.9	9.1	10.5	8.1	8.0	8.4	8.8	9.6	11.6	10.1
I. DISTRIBUTIVE SERVICES		50.1	20.1	28.1	0.7	15.1	16.9	21.3	29.7	46.5	25.4		42.2	20.2	22.8	14.3	12.5	13.1	14.2	17.2	19.6	19.6
Trade, Hotels and Restaurants		72.7	26.3	34.1	2.0	10.6	25.4	12.6	29.9	51.7	29.5		68.9	23.6	28.6	17.5	14.7	15.7	16.5	18.4	21.8	25.1
Transport & Communications		15.6	5.8	11.5	-3.7	30.7	-8.2	56.4	29.3	31.5	18.8		4.6	12.3	8.5	6.4	7.2	6.0	7.8	14.3	13.2	8.9
II. OTHER SERVICES		12.2	12.6	13.3	9.8	6.4	0.7	6.6	11.2	14.3	9.7		8.1	4.1	4.4	4.9	5.7	5.9	5.8	4.7	6.1	5.5
Banking and Insurance		27.1	66.7	1.8	-6.2	5.1	37.7	-14.3	6.7	-5.7	13.2		17.9	15.5	17.5	10.7	9.0	4.8	7.4	14.6	14.1	12.4
Real Estate & Ownership of Dwellings		5.4	11.0	18.9	9.8	4.3	-6.2	7.4	6.8	7.2	7.2		3.3	2.4	3.2	3.2	3.1	5.5	5.3	2.4	1.9	3.4
Public Administration		26.1	11.9	11.2	19.1	9.5	0.3	9.6	12.7	32.8	14.8		24.3	5.0	1.9	5.6	7.3	5.1	5.2	6.2	9.0	7.7
Education		16.2	13.6	9.8	3.8	6.0	9.8	8.4	21.8	14.7	11.6		3.3	5.8	7.5	6.9	8.4	7.4	7.0	5.3	9.4	6.8
Health		31.1	-1.5	4.1	27.2	22.4	4.4	6.7	10.4	35.1	15.6		32.4	-1.4	0.2	8.1	12.0	10.4	9.7	7.6	10.1	8.9
Domestic & Other Services		5.6	5.3	6.2	5.7	5.1	3.1	4.7	9.2	3.7	5.4		4.6	5.1	5.0	4.9	4.8	4.3	4.3	4.8	4.6	4.7
TOTAL RGDP		15.6	7.3	14.7	-5.2	10.6	12.0	0.9	-3.6	10.1	6.9		7.2	7.5	8.4	1.9	3.8	4.6	5.28	4.7	3.6	5.21

II-4. GDP Forecast Estimates and Growth Targeting

Based on the past performance of the regional economy and its components the following forecast estimates could be used under the general assumption that merely the indicated average growth rate will uphold with other things (influencing factors) kept constant.⁶

Table - 5: Forecasted Estimates for Nominal RGDP and Component Sectors (Million Birr)

Economic Activity	Ten years' Average Growth Rate	Forecast Years				
		2003/04	2004/05	2005/06	2006/07	2007/08
A. AGRICULTURE	3.6	7710.4	7985.6	8270.7	8566.0	8871.8
B. INDUSTRY	10.4	4436.1	4896.4	5404.5	5965.4	6584.5
C. SERVICE (I + II)	15.3	4214.3	4858.0	5600.0	6455.3	7441.3
I. DISTRIBUTIVE SERVICES	25.4	2378.0	2981.4	3737.9	4686.3	5875.3
II. OTHER SERVICES	9.7	1929.3	2116.0	2320.8	2545.3	2791.6
TOTAL RGDP	6.9	16167.3	17287.7	18485.8	19766.9	21136.8

Table - 6: Forecasted Estimates for Real GDP and Component Sectors (1994/95=100%)(Million Birr)

Economic Activity	Ten years' Average Growth Rate	Forecast Years				
		2003/04	2004/05	2005/06	2006/07	2007/08
A. AGRICULTURE	3.7	9077.8	9414.7	9764.1	10126.4	10502.2
B. INDUSTRY	6.2	3395.9	3607.0	3831.2	4069.4	4322.4
C. SERVICE (I + II)	10.1	2998.2	3301.2	3634.8	4002.1	4406.5
I. DISTRIBUTIVE SERVICES	19.6	1975.5	2362.2	2824.6	3377.6	4038.8
II. OTHER SERVICES	5.5	1403.1	1480.5	1562.1	1648.3	1739.2
TOTAL RGDP	5.2	15439.9	16244.6	17091.3	17982.1	18919.3

If with some grounds we think of and plan to achieve the present real GDP percapita level of Birr 728 to Birr 1500 which empirically grows at a rate of of 2.2%, it roughly needs at least 30 years.⁷ With similar computation if we very ambitiously plan to achieve the Birr1500 GDP percapita in the next ten years, the magnitude for the required rate of GDP percapita growth would be 7%. Thus the next years call for a great injection in investment, saving and capital accumulation with faster technological progress and high productivity in the growth stimulating sectors. Posing a policy agenda whether to intervene and design policies to affect the ability to produce (supply side) or to affect the ability to spend (Demand Side).

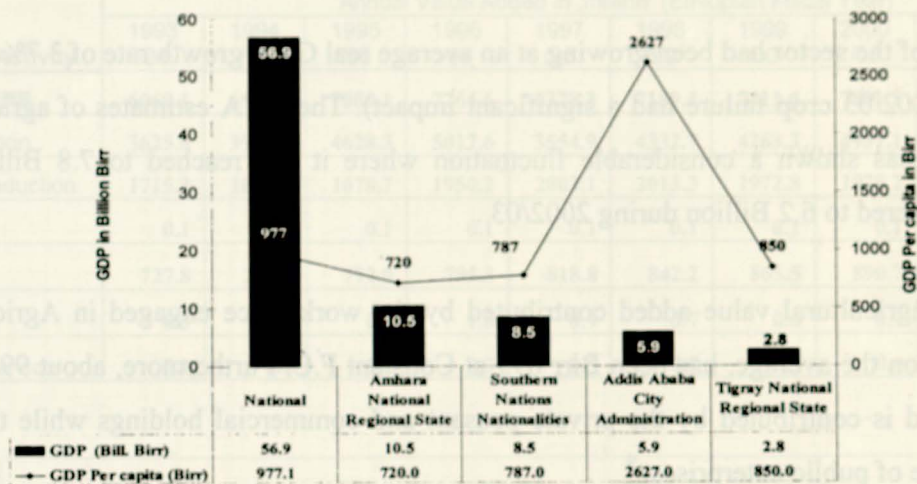
⁶ But, things will always change and no thing stays still! So it is up to the user to decide on.

⁷ Involving manipulations of the formula for compound interest : $P_t = P_0(1+r)^n$ where P_0 is the present level GDP per capita, P_t the planned GDP per capita and r the prevailing average growth rate in GDP per capita.

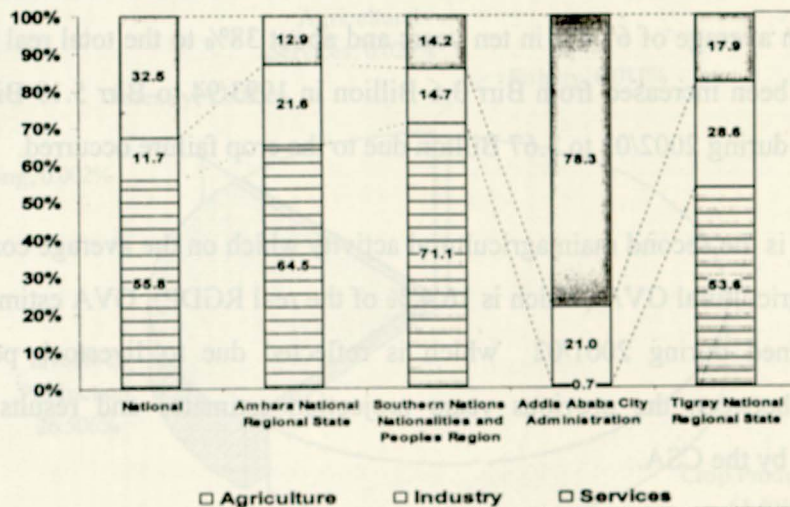
II-5. Comparison of the National and other region's GDP Estimates:

The following data provides a bird's eye view of National and other region's GDP and GDP per capita estimation results on a one time (1995/96 Nominal value).⁸

Comparison of GDP and GDP per capita between regions and national (1995/96) (Nominal)



Contribution of Component Economic Sectors to National & Regional Nominal GDP (1995/96)



Sources:

- The revised GDP Estimates for 1995/96 (1988 EC) Some notes on coverage, data sources and methods of Estimation (Provisional), National Accounts & Statistics Division, MoPED, September, 1998, Addis Ababa.
- Gross City Domestic Product and Expenditure Estimates, (1988-1995 EFY) (Preliminary Draft; Addis Ababa City Government, BoPED, Department of Policy Study and Analysis, November 2004, Addis Ababa .
- Gross Regional Production Estimates, SNNP Region BOPED, January 1994, Awassa, Estimates of Regional Income Accounts for Tigray Region (1994/95-1997/98), Final Report Volume II; Tigray National Regional Administrative State, BoPED, May, 1999; Mekele

⁸ Since the base year for the national estimate is different from that of the regions' it is preferred to compare the results in nominal bases to serve as a crude indicator though the ideal comparison should have been in real terms.

III. SECTORAL BREAKDOWN ANALYSIS OF ESTIMATION RESULTS

A. AGRICULTURE AND ALLIED ACTIVITIES

Agricultural economic activities have an average share of 61.71% to the total real RGDP estimates in the decade considered which is contributed by about 92 % of economically active population in the region.

GVA estimates of the sector had been growing at an average real GVA growth rate of 3.7% per annum (note that the 2002/03 crop failure had a significant impact). The GVA estimates of agriculture and allied activities has shown a considerable fluctuation where it has reached to 7.8 Billion during 2001/02 and lowered to 6.2 Billion during 2002/03 .

The per capita agricultural value added contributed by the work force engaged in Agriculture and allied activities, on the average, has been Birr 899 at Constant F.C. Furthermore, about 99.9% of the total value added is contributed by the private peasant and commercial holdings while the balance 0.1% is the share of public enterprises.⁹

Among the agricultural sub sectors the lions share of value added is derived from crop production which accounts for an average of 61.4% in ten years and about 38% to the total real RGDP. The real GVA estimates have been increased from Birr 3.6 Billion in 1993/94 to Birr 5.19 Billion in 2001/02 which again declined during 2002/03 to 3.67 Billion due to the crop failure occurred.

Livestock production is the second main agricultural activity which on the average contributed to 26.5 % of the total real Agricultural GVA (which is 16.4 % of the real RGDP). GVA estimates of livestock production has declined during 2001/02 which is reflected due to livestock population figure variations observed between the previous years projection estimates and results of the sample enumeration reported by the CSA.

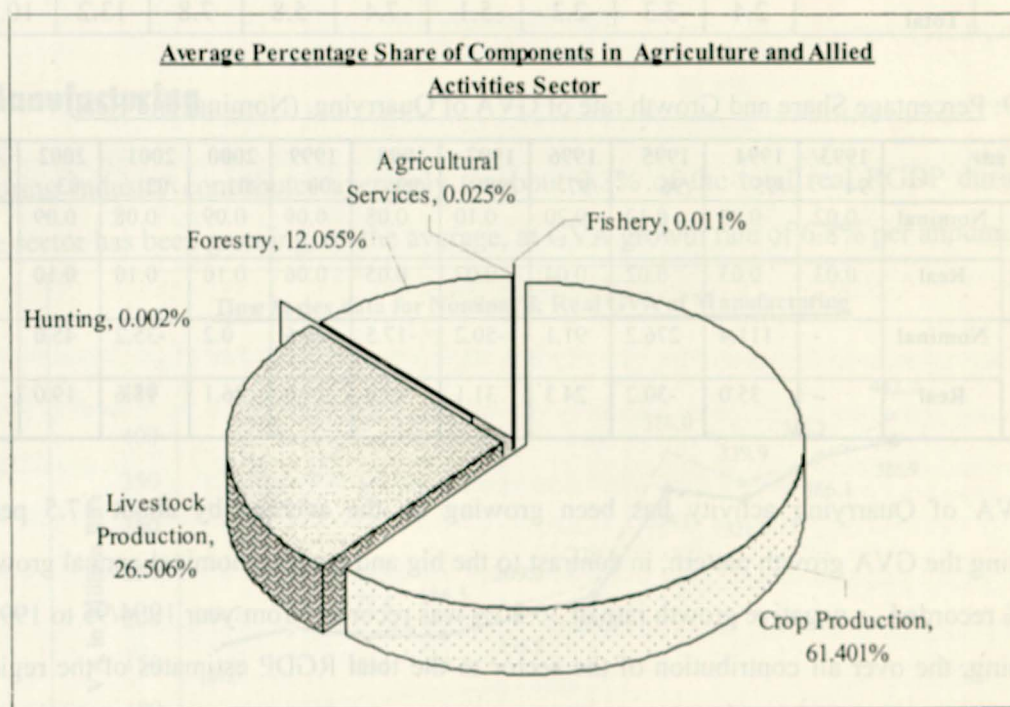
The contribution of forestry activities cover the third position where on the average about 12.05% of the total real GVA estimates of Agriculture and allied activities and about 7.4% of the total real RGDP. Its real GVA has been increasing from Birr 727.79 million in 1993/94 to Birr 936.3 million in 2002/03 increasing at an annual growth rate of 2.4%.

⁹ it is believed that a considerable amount of production activity by private agricultural (crop) investment firms are not included due to lack of organized data.

The contribution of other agriculture related activities; namely: hunting, fishery and agricultural services account to the remaining balance share(0.038%). It is worth mentioning that Fishery production and Agricultural Service Activities have shown a relatively better growth rate (19% and 51% respectively) compared to the other agricultural activities.

Table - 7: Real GVA Estimate of Agriculture and allied Activities by Sub sectors (In million Birr)

Economic Activity	Annual Value Added in ,million (Ethiopian Fiscal Year)									
	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03
AGRICULTURE	6069.1	6539.6	7080.1	7764.6	6378.3	7189.4	7111.6	7801.2	7855.1	6294.4
Crop Production	3625.6	3959.9	4628.3	5017.6	3554.9	4332.7	4263.3	4931.1	5194.9	3678.5
Livestock Production	1715.2	1830.0	1678.7	1950.2	2003.1	2013.3	1972.8	1978.2	1639.3	1674.9
Hunting	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Forestry	727.8	748.8	772.0	795.3	818.8	842.2	865.5	890.7	1017.1	936.3
Fishery	0.3	0.7	0.9	1.0	0.9	0.7	0.6	0.7	1.0	0.9
Agricultural Services	0.1	0.1	0.1	0.3	0.5	0.5	9.3	0.4	2.7	3.7



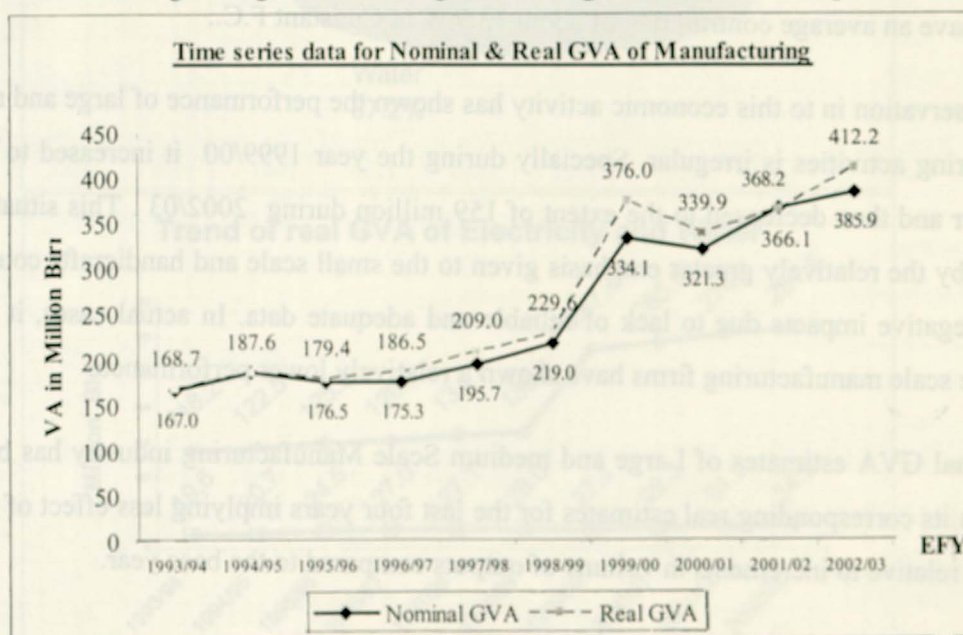
of the GVA estimates of the sector has been derived from licensed persons. On the average, the GVA estimates that has been derived from the formal activities of the sector, i.e. from licensed entities account about 86.87% of its total estimates at Constant F.C. On the other hand, the contribution of the informal activities (from non licensed entities) has been proportionately low. That is, on the average, about 13.13% of the total GVA estimate of the sector at Constant F.C. has been derived from such informally operating persons. In fact, as indicated in the method of estimation of these activities, its GVA has been estimated at a constant value added per person through out the estimation years. except the latter two year which is mentioned earlier.

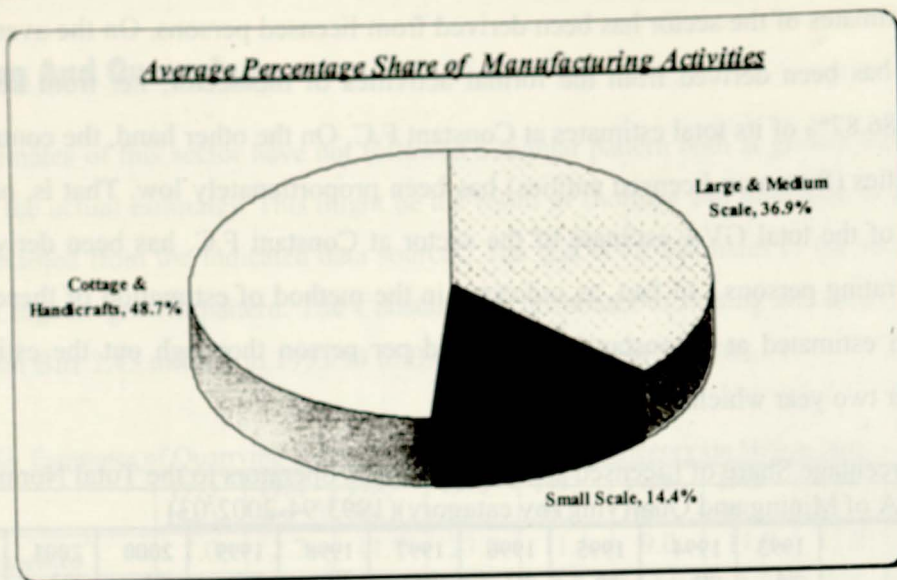
Table - 10: Percentage Share of Licensed and Non-Licensed operators to the Total Nominal and Real GVA of Mining and Quarrying (by category)(1993/94-2002/03)

		1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
Nominal GVA	Licensed	62.5	81.8	95	97.3	94.4	93.1	94.5	94.3	90.1	90.1	89.7
	Non Licensed	37.48	18.25	5	2.7	5.57	6.95	5.55	5.7	9.88	9.87	10.3
Real GVA	Licensed	76.1	81.8	73.1	87.5	91.2	88.3	91.2	94.6	92.6	92.6	86.9
	Non Licensed	23.9	18.3	27	12.5	8.9	11.7	8.8	5.4	7.4	7.4	13.1

B.2. Manufacturing

Manufacturing industry contributes averagely to about 2.3% of the total real RGDP during the ten years. The sector has been growing, on the average, at GVA growth rate of 6.8% per annum.





Real GVA of manufacturing activity has been increased from Birr 168.6 million in 1993/94 to Birr 413.6 million in 2002/03. With this performance it is observed that manufacturing activities have experienced a relatively better growth rate in that its real GVA is greater than the nominal GVA over the ten accounting years.

Among the three manufacturing component activities Cottage and Handicrafts averagely took about half (50.8%) of the total GVA of manufacturing industry. The contribution of Large and medium scale manufacturing activities comes second accounting for 35.5% while Small Scale manufacturing activities have an average contribution of about 13.7 % at Constant F.C..

Further observation in to this economic activity has shown the performance of large and medium scale manufacturing activities is irregular. Specially during the year 1999/00 it increased to GVA of 218 million birr and then decreased to the extent of 159 million during 2002/03 . This situation might be explained by the relatively greater emphasis given to the small scale and handicrafts coupled with the possible negative impacts due to lack of reliable and adequate data. In actual cases, it was true that some large scale manufacturing firms have shown a relatively lower performance.

The nominal GVA estimates of Large and medium Scale Manufacturing industry has been observed larger than its corresponding real estimates for the last four years implying less effect of market prices (inflation) relative to increments in volume of outputs compared to the base year.

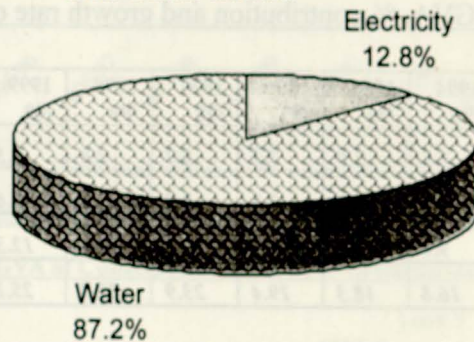
B.3. Electricity and Water

Real GVA of Electricity and Water has been increased to Birr 316.73 million in 2002/03 where it was Birr 137.83 million in 1993/94; on the average, growing at 7.7% within the past ten years. It is observed that Electricity and Water has shown a regular trend through out the estimation period with an average of 1.8% share to total RGDP.

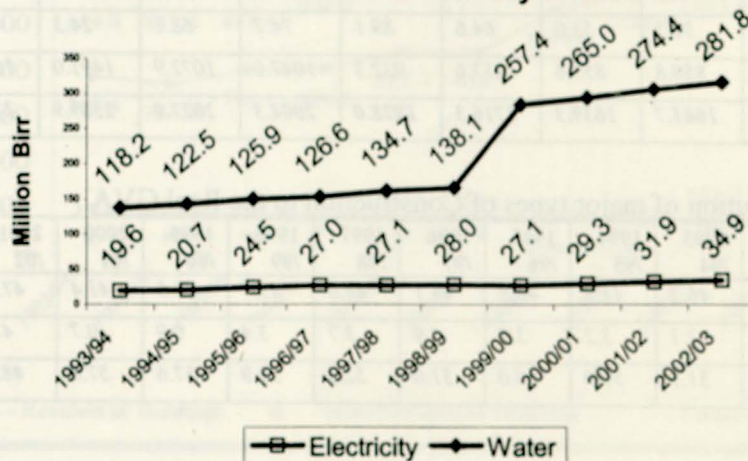
Table - 11: *Real GVA(in Million Birr), share in RGDP & Growth rate of Electricity and Water (%)*

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
Electricity	19.6	20.7	24.5	27.0	27.2	28.0	27.1	29.3	31.9	34.9	
Water	118.2	122.5	125.9	126.6	134.7	138.1	257.4	265.0	274.4	281.8	
Total GVA	137.8	143.2	150.4	153.6	161.9	166.1	284.6	294.3	306.3	316.7	
Share to RGDP	1.5	1.5	1.4	1.3	1.6	1.5	2.3	2.2	2.2	2.6	1.81
Growth Rate		3.9	5.0	3.5	4.2	3.8	14.7	12.8	11.5	10.4	7.68

Average % Share of components in electricity and water sector



Trend of real GVA of Electricity and Water



B.4. Construction

The GVA of construction activities has increased from Birr 1.66 Billion to Birr 2.85 Billion in the past ten accounting years growing at annual average growth rate of 6.0% and averagely contributing to about 18.75% of the total real RGDP estimates. Looking in to component types of construction activities; about 52.1 % are categorized under "other construction", while 44.8% are Residential Building Constructions and 3.1% are Non Residential Building Constructions. Further intra sectoral investigations revealed that Rural Construction takes covers 78.2% share of the total GVA followed by Private urban construction (13.2%), Bilateral/multilateral cooperation and NGOs construction activities (3.8%) and the Regional and Federal government Construction activities (2.3% and 2.5% respectively) and municipalities(0.1%).

Construction activities of the rural population in terms of rural dwellings and other agricultural type of constructions like soil conservation and afforestation works, permanent crop development, and land reclamation and improvement activities have contributed to a significance of rural construction.

Table- 12: Nominal & Real GVA, % contribution and growth rate of Construction sector (Bill. Birr)

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
<i>Nominal GVA</i>	1.5	1.6	1.9	2.3	2.7	2.8	3.5	4.0	3.0	3.2	
<i>Real GVA</i>	1.7	1.6	1.7	1.8	2.0	2.0	2.6	2.8	2.6	2.8	
<i>Real RGDP</i>	9.1	9.8	10.5	11.5	10.4	11.3	12.3	13.3	13.5	12.8	
<i>% share in real RGDP</i>	17.3	16.8	18.3	19.4	23.9	22.3	25.1	27.8	21.8	21.1	21.4

Table - 13: Real GVA of Construction Sector by Major Type of Construction (In million Birr)

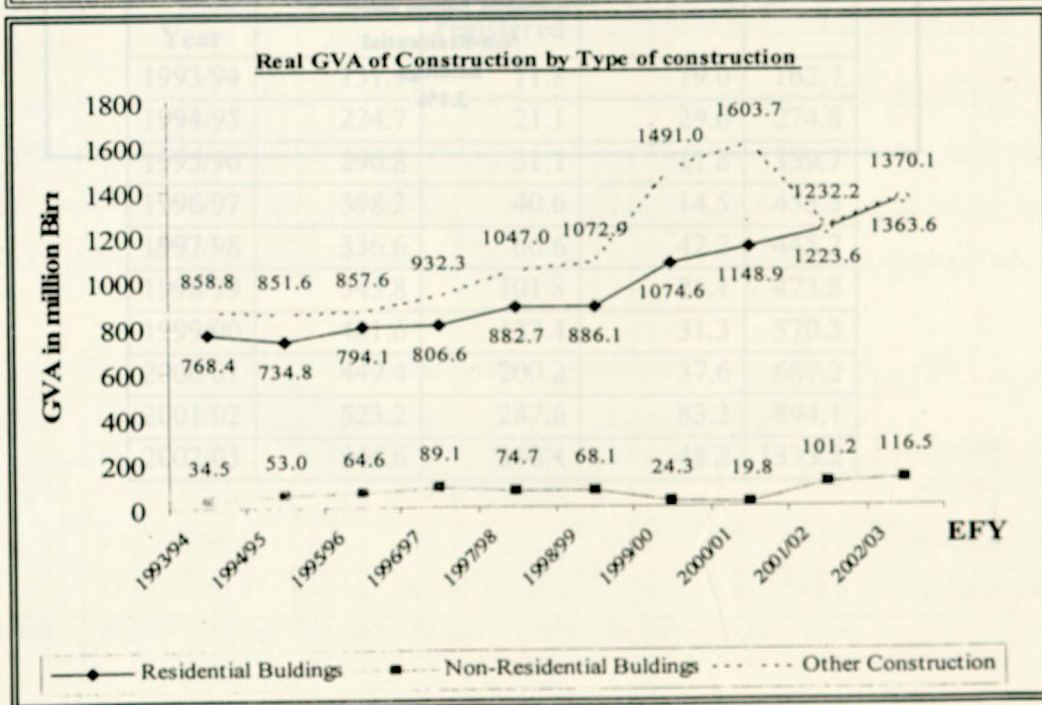
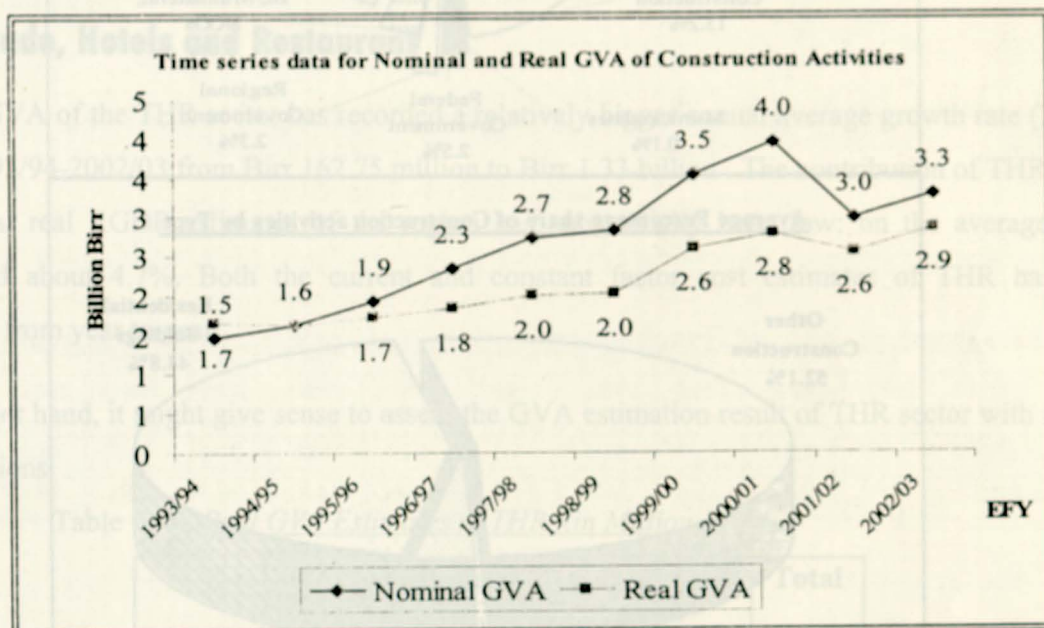
	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03
<i>Residential Buildings</i>	768.4	734.8	794.1	806.6	882.7	886.1	1074.6	1148.9	1223.6	1363.6
<i>Non-Residential Buildings</i>	34.5	53.0	64.6	89.1	74.7	68.1	24.3	19.8	101.2	116.5
<i>Other Construction</i>	858.8	851.6	857.6	932.3	1047.0	1072.9	1491.0	1603.7	1232.2	1370.1
<i>Total Construction GVA</i>	1661.7	1639.3	1716.3	1828.0	2004.3	2027.0	2589.9	2772.5	2557.0	2850.2

Table - 14: % contribution of major types of Construction to the Real GVA

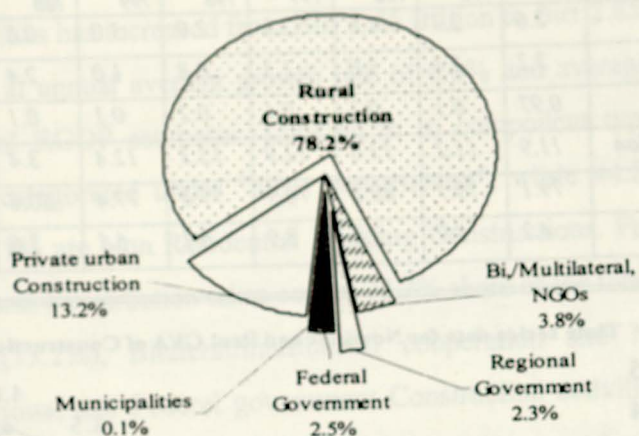
	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
<i>Residential Buildings</i>	46.2	44.8	46.3	44.1	44.0	43.7	41.5	41.4	47.9	47.8	44.8
<i>Non-Residential Buildings</i>	2.1	3.2	3.8	4.9	3.7	3.4	0.9	0.7	4.0	4.1	3.1
<i>Other Construction</i>	51.7	51.9	50.0	51.0	52.2	52.9	57.6	57.8	48.2	48.1	52.1

Table - 15: Percentage contribution of construction component activities by stake holders

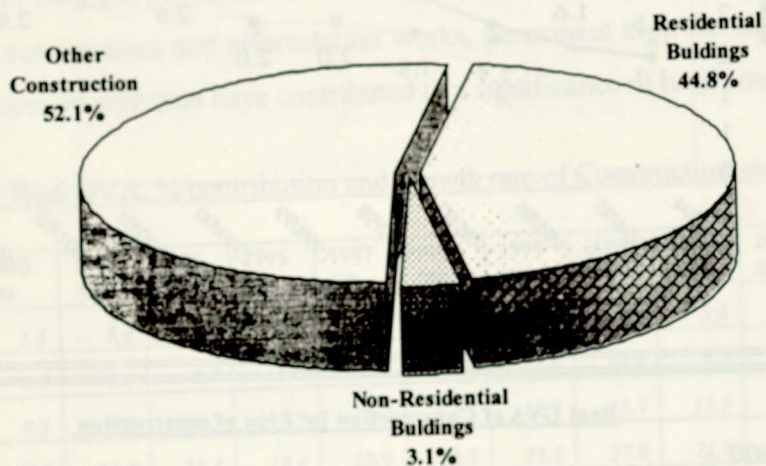
Sub Sector	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
Regional Government	2.6	2.7	1.6	2.9	2.9	3.0	0.8	0.6	2.2	3.3	2.2
Federal Government	2.2	2.4	1.0	1.3	0.8	1.0	2.4	2.8	6.1	4.5	2.4
Municipalities	0.97	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Private urban Construction	11.9	11.2	13.6	12.9	12.3	12.4	3.4	5.6	23.3	22.7	12.9
Rural Construction	79.1	79.7	80.2	78.9	77.8	77.4	80.6	78.2	67.4	68.2	76.8
Bi/Multilateral, NGOs	4.2	3.9	3.6	3.9	6.1	6.1	3.6	3.7	0.9	1.2	3.7



Average % contribution of real Construction GVA by Constructing Agents (1986-95 EFY)



Average Percentage share of Construction activities by Type



C. SERVICES

The 'Service' industry as an economic activity includes Trade, Hotels and Restaurants and Transport and Communication sectors as **Distributive Services** and Financial Intermediation, Real estate and ownership of Dwellings, Public Administrations, Education, Health and Domestic and other services as **Other Services**.

C.1. Distributive Services

C.1.1. Trade, Hotels and Restaurant

The real GVA of the THR sector has recorded a relatively bigger annual average growth rate (25.1%) during 1993/94-2002/03 from Birr 162.75 million to Birr 1.33 billion . The contribution of THR sector to the total real RGDP estimates of the region has substantially been low: on the average, have contributed about 4.7%. Both the current and constant factor cost estimates of THR has been increasing from year to year.

On the other hand, it might give sense to assess the GVA estimation result of THR sector with respect to its divisions.

Table - 16: *Real GVA Estimates of THR (in Million Birr)*

Year	Un Organized		Organized	Total
	Registered	Non registered		
1993/94	131.9	11.8	19.0	162.7
1994/95	224.7	21.1	29.0	274.8
1995/96	296.8	31.1	11.8	339.7
1996/97	398.2	40.6	14.5	453.3
1997/98	336.6	66.6	42.2	445.2
1998/99	345.8	101.8	26.1	473.8
1999/00	401.6	137.4	31.3	570.3
2000/01	449.4	200.2	37.6	687.2
2001/02	523.2	287.6	83.3	894.1
2002/03	944.6	340.4	48.2	1333.2

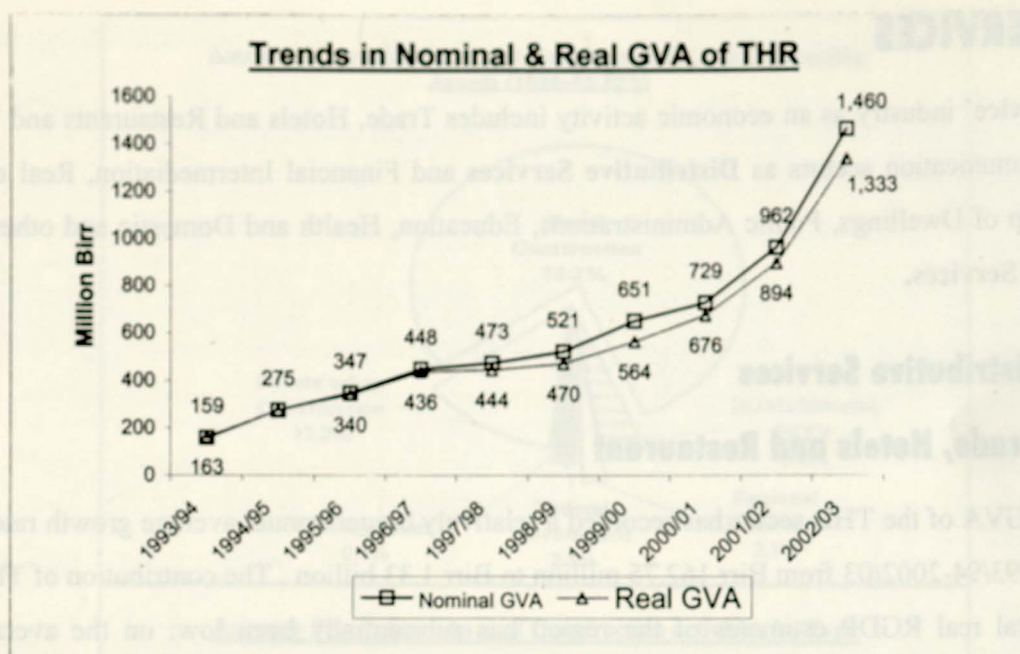


Table 17: Percentage share and Growth Rate of Real GVA of Trade Hotels and Restaurants

Year	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
<i>share in RGDP</i>	1.78	2.81	3.23	3.95	4.3	4.19	4.65	5.16	6.6	10.3	4.7
<i>Growth Rate</i>		68.85	23.6	28.44	17.47	14.65	15.72	16.5	18.4	21.8	25.1

C.1.2. Transport and Communication

The GVA estimate of transport and communication has been increasing from year to year. Its GVA at Constant F.C. has increased from Birr 116.02 million to Birr 324.7 million in 2002/03 growing at an annual average growth rate of 8.9%. On the other hand, transport and communication, on the average has taken a percentage share of 1.54% of the total real RGDP

Table - 18: Real GVA Estimates of Transport and communication by sub-sectors (Million Birr)

Subsector	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03
<i>Road Transport.</i>	75.03	77.69	83.52	85.03	125.29	134.75	143.09	172.8	286.33	306.03
<i>Water Transport.</i>	1.58	1.7	1.64	1.36	1.39	1.4	1.34	1.4	1.33	1.13
<i>Communication</i>	14.23	14.3	15.19	16.01	19.49	24.34	18.06	16.15	19.78	17.55
<i>Total</i>	90.84	93.69	100.35	102.4	146.17	160.48	162.48	190.35	307.44	324.7

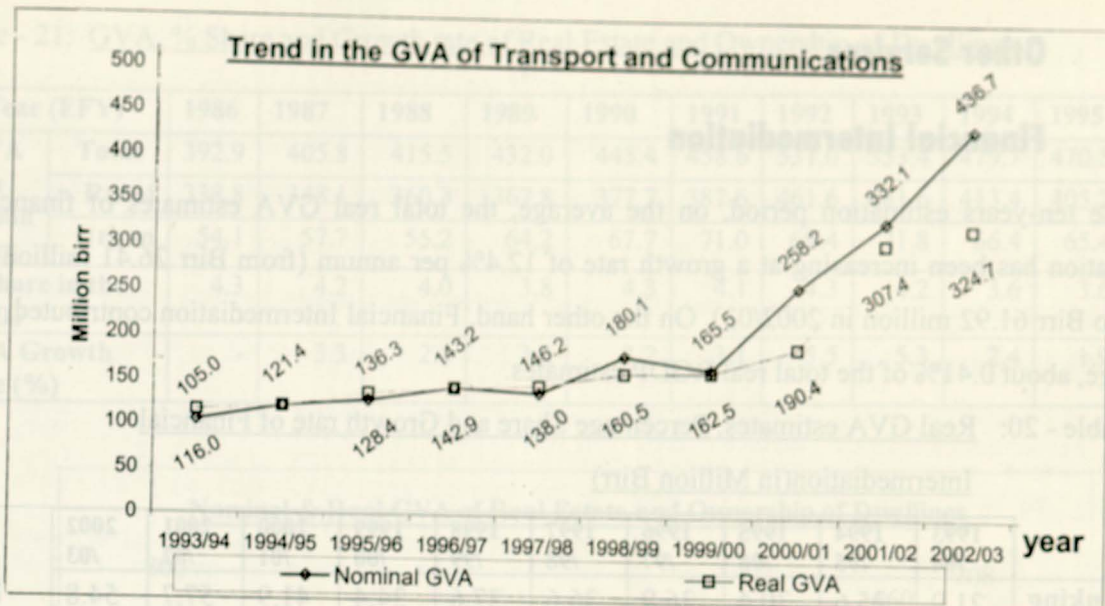
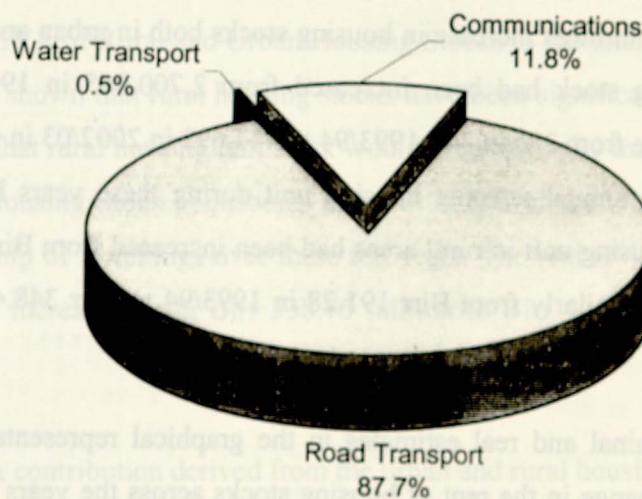


Table - 19: Percentage Contribution and Growth Rate of Transport and Communications Sector GVA

Year	1993 94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
GVA % contribution	1.3	1.2	1.3	1.2	1.4	1.4	1.3	1.4	2.3	2.5	1.54
Growth rate of GVA (%)	-	4.65	12.25	8.5	6.4	7.2	6	7.8	14.2	13.1	8.9

% Contribution of components of Transport & Communications Sector



C.2. Other Services

C.2.1. Financial Intermediation

During the ten-years estimation period, on the average, the total real GVA estimates of financial intermediation has been increasing at a growth rate of 12.4% per annum (from Birr 26.41 million in 1993/94 to Birr 61.92 million in 2002/03). On the other hand, Financial Intermediation contributed, on the average, about 0.41% of the total real RGDP estimates.

Table - 20: Real GVA estimates, Percentage Share and Growth rate of Financial Intermediation(in Million Birr)

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
Banking	21.9	25.6	30.4	36.9	36.6	37.6	34.4	41.9	57.7	54.8	
Insurance	4.5	5.5	5.5	6.1	5.7	6.3	5.0	5.8	7.9	7.1	
Total	26.4	31.1	36.0	43.0	42.2	43.9	39.5	47.7	65.6	61.9	
% share	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.6	0.7	0.4
Growth rate		17.9	15.5	17.5	10.7	9.0	4.8	7.4	11.2	9.0	12.4

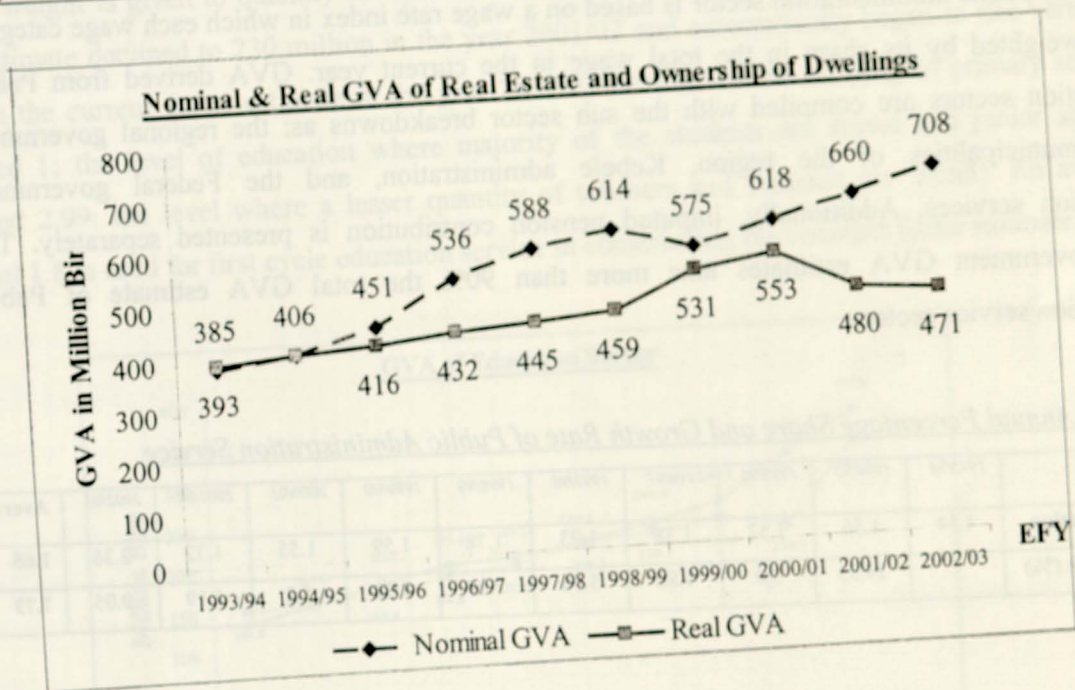
C.2.2. Real Estate and Ownership of Dwellings

The average percent contribution of GVA of Real Estate and Ownership of Dwellings to the RGDP estimates has been about 4.02%. The GVA contribution of Real Estate and Ownership of Dwellings has been growing at an average growth rate of 3.4% per annum at Constant F.C. during these years. This increment is achieved through increase in housing stocks both in urban and rural areas where the yearly estimate of housing stock had been increased from 2,700,065 in 1993/94 to 3,398,450 in 2002/03 in rural areas while from 285,203 in 1993/94 to 444,692 in 2002/03 in urban areas. Moreover, an increase in the average annual rent per housing unit during these years has been realized. The average annual rent per housing unit in rural areas had been increased from Birr 138.15 in 1993/94 to Birr 185.8 in 2002/03 and similarly from Birr 191.28 in 1993/94 to Birr 348.42 in 2002/03 in urban areas.

The gap between the nominal and real estimates in the graphical representation below shows the influence of the relative change in the rent of housing stocks across the years under consideration. It was noted that the price indexes on housing rent used to derive the GVA estimates of the sector at Constant F.C. has been increased greatly in both rural and urban areas during the ten years.

Table - 21: GVA, % Share and Growth rate of Real Estate and Ownership of Dwellings

Year (EFY)		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Average
GVA in million Birr	Total	392.9	405.8	415.5	432.0	445.4	458.6	531.0	553.4	479.7	470.5	
	Rural	338.8	348.1	360.3	367.8	377.7	387.6	461.6	481.6	413.4	405.2	
	Urban	54.1	57.7	55.2	64.2	67.7	71.0	69.4	71.8	66.4	65.4	4.02
% share in the RGDP		4.3	4.2	4.0	3.8	4.3	4.1	4.3	4.2	3.6	3.6	4.02
GVA Growth Rate (%)		-	3.3	2.4	3.2	3.2	3.1	5.5	5.3	2.4	1.9	3.4



The contribution of the GVA of Rural and Urban Housing Stocks to the total GVA of Real Estate and Ownership of Dwellings shown that rural housing stocks have been significantly larger. This is due to the assumption taken in that rural housing unit stock would proportionally match rural population size. On the average, Rural Housing Stock contributes to about 85.9% of the total real GVA estimates of Real Estate and Ownership of Dwellings over these ten years. The real GVA estimates derived from rural housing stock, has increased from Birr 338.76 million to Birr 405.2 million from 1993/94 to 2002/03 respectively.

On the average, the GVA contribution derived from the urban and rural housing stock accounts 14.1 % and 85.9%; of the total real GVA of Real Estate and Ownership of Dwellings respectively.

C.2.3. Public Administration Service

The GVA contribution of public administration service to the regional economy steadily increased throughout the ten accounting years. The real GVA estimate of the sector increases from Birr 122.59 million in 1993/94 to Birr 304.78 million in 2002/03. Public administration service grows at an annual average growth rate of 7.7% during these years. The contribution of public administration services to the total real RGDP estimates, on the average, has been about 1.65%.

Real GVA of public administration sector is based on a wage rate index in which each wage category has been weighted by its share in the total wage in the current year. GVA derived from Public Administration sectors are compiled with the sub sector breakdowns as: the regional government (ANRS), municipalities of the region, Kebele administration, and the Federal government administration services. Additionally, imputed pension contribution is presented separately. The regional government GVA estimates take more than 90% the total GVA estimate of Public Administration service sectors.

Table - 22: *Annual Percentage Share and Growth Rate of Public Administration Service*

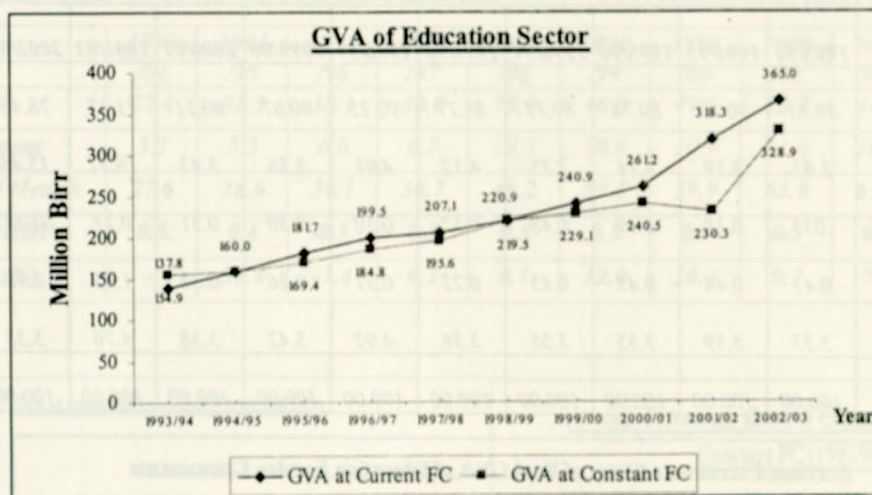
Year	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	Average
% contribution	1.34	1.56	1.52	1.38	1.73	1.78	1.59	1.55	1.72	2.36	1.65
Growth rate (%)	-	24.33	5.0	1.88	5.56	7.29	5.08	5.2	6.19	9.05	7.73

C.2.4. Education Service

Real GVA of education sector has increased from about Birr 154.91 million in 1993/94 to Birr 329 million in 2002/03 growing at an annual average growth rate of 6.8%. The GVA of education service by the government (including higher education) takes the lion's share (93.66 %) of total real GVA estimates. The GVA contribution of higher education at Constant F.C. was increased from Birr 4.53 million in 1993/94 to Birr 51.01 million in 2002/03 where on the average higher education accounts about 3.68% of the total GVA estimates. At the same time, the GVA estimate of non governmental schools had been increased from Birr 0.58 million in 1993/94 to Birr 84.33 million in 2002/03 where as continuing education was estimated at Birr 0.66 million in 1993/94 and was increased to Birr 1.34 million in 2002/03.

Non-governmental and continuing educational services on the average account only 0.83% of the total constant factor cost GVA estimates sector. On the other hand, the imputed pension contribution at constant factor cost was increased from Birr 8.38 million in 1993/94 to Birr 17.55 million in 2002/03 accounting on the average to about 5.34% of the total GVA estimates.

The rise in real GVA estimates over the ten years might be explained due to quantity and quality increments relative to the base period(1994/95). The increment is; in fact, due to increment in quantity as more weight is given to quantity in constructing composite indexes. Also, we notice the constant factor estimate declined to 230 million in the year 2001/02 and automatically began to rise vertically to match the current factor estimate in the year 2002/03 because of the merging of primary schools (weighted 1; the level of education where majority of the students are found and junior schools (weighted 2.99: the level where a lesser quantity of teachers and students are found). An average weight of 1.8 is used for first cycle education service in constructing the constant factor estimate.



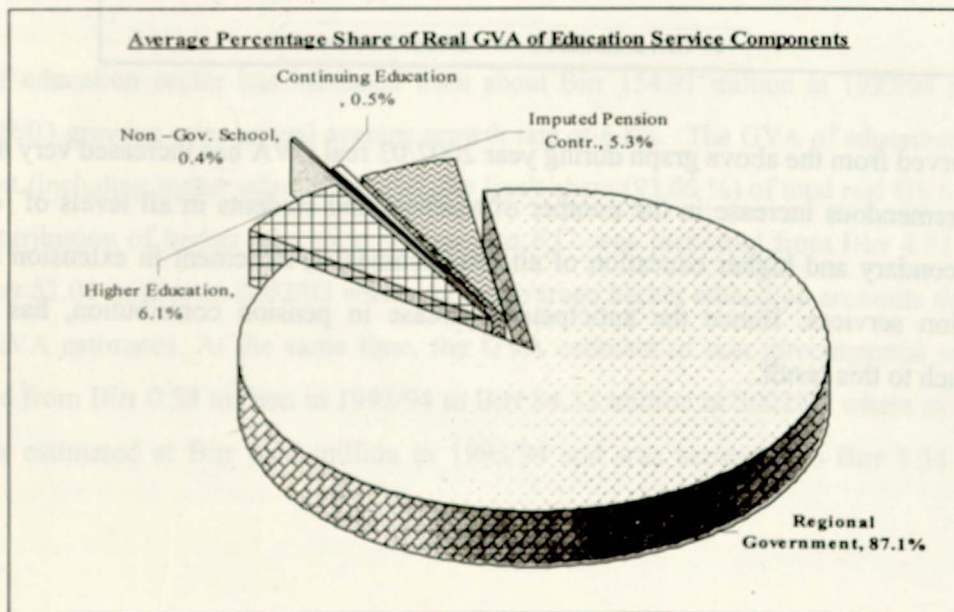
As can be observed from the above graph during year 2002/03 real GVA has increased very drastically because of a tremendous increase in the number of teachers and students in all levels of education /first cycle, secondary and higher education of all establishments/, increment in extension and night school education services. Hence the anticipated increase in pension contribution, has therefore contributed much to this result.

Table - 23: Real GVA (In million Birr), % share and Growth rate(%) of Education Sector

Category	1993/94	1994/05	1995/96	1996/87	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	Average
1. Regional Government	140.8	144.7	153.1	168.3	177.9	199.3	209.7	220.2	177.7	258.0	
2. Higher Education	4.5	5.1	5.4	5.5	5.9	7.8	8.5	9.1	37.6	51.0	
3. Non government schools	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0	63.9	84.3	
4. Continuing Education	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	3.3	1.3	
5. Imputed Pension Contribution	8.4	8.9	9.3	9.4	10.2	12.0	9.0	9.2	11.0	17.6	
Total GVA	154.9	160.0	169.4	184.8	195.6	220.9	229.1	240.5	230.3	328.9	
Average Growth Rate (in %)	-	3.3	5.8	7.5	6.9	8.4	7.4	7.0	5.3	9.4	0.068
% Share from the total RGDP	1.7	1.6	1.6	1.6	1.9	2.0	1.9	1.8	1.7	2.5	0.0183

Table - 24: Percentage Share of GVA of Components of Education

Category	Percentage Share										Average
	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	
Regional Government	89.81	90.40	89.74	89.77	89.77	90.25	90.67	90.51	71.17	78.45	87.05
Higher Education	3.83	3.19	3.74	3.75	4.12	4.01	3.36	3.43	16.32	15.46	6.12
Non-Gov. School	.037	0.38	0.49	0.48	0.52	0.50	0.30	0.31	0.27	0.25	0.35
Continuing Education	0.41	0.44	0.47	0.45	0.22	0.31	0.26	0.38	1.45	0.48	0.48
Imputed Pension Contr.	5.57	5.59	5.55	5.55	5.36	4.92	5.42	5.38	4.76	5.33	5.34
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00



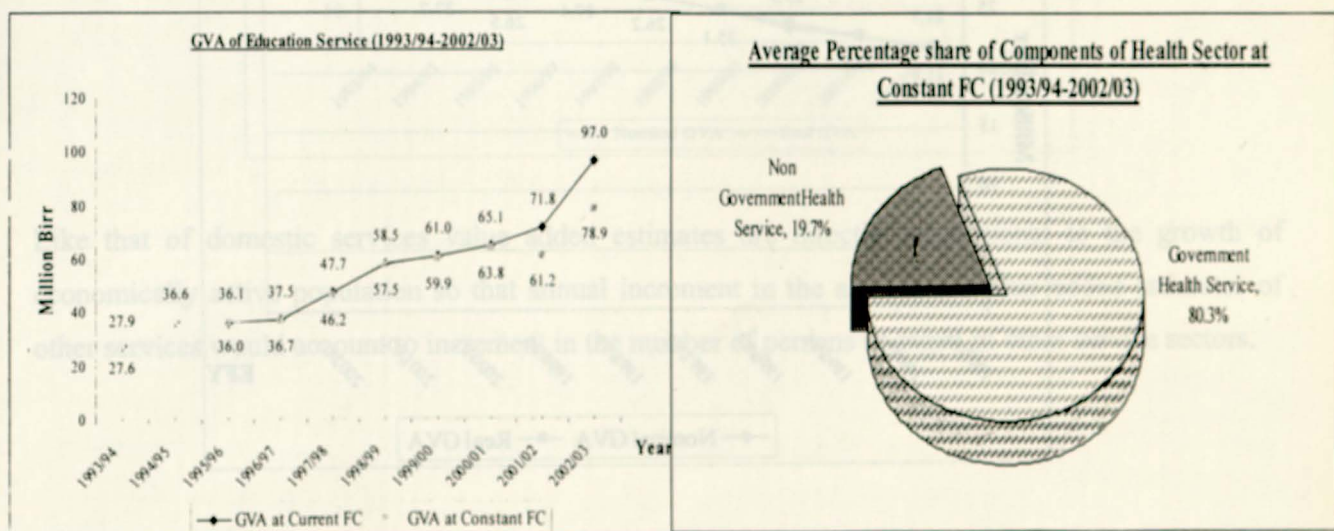
C.2.5. Health Service

The real GVA estimates of health services were computed using wage rate index of the sector which again is used to deflate the nominal GVA estimates. The total real GVA estimates were increased from about Birr 27.63 million in 1993/94 to about Birr 78.9 million in 2002/03 growing at annual average GVA growth rate of 9.9%. The GVA contribution of health sector to the regional real RGDP have been; on the average, about 0.44% during these ten years.

Both Nominal and Real GVA of the health sector during the ten years has shown an increment from year to year. The services given by the government accounted the lion's share of the total real GVA estimate which covered; on the average, 80.3%. The remaining 19.7% covered by non government health sectors. Government health services had been increased from Birr 22.4 million to Birr 59.6 million whereas that of the non government increased from Birr 5.2 million to Birr 19.3 million in the decade.

Table - 25: Real GVA (In million Birr), % share and Growth rate of Health Services (1993/94-2002/03)

Description	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	Average
Government	22.4	31.3	30.1	30.0	35.9	46.8	49.0	52.2	44.3	59.6	
Non Government	5.2	5.3	6.0	6.7	10.3	10.6	10.9	11.6	16.9	19.3	
Total GVA of Health	27.6	36.6	36.1	36.7	46.2	57.5	59.9	63.8	61.3	78.9	
% Share in RGDP	0.3	0.4	0.3	0.3	0.5	0.5	0.5	0.5	0.4	0.6	0.4
Growth Rate (%)	-	32.4	-1.4	0.2	8.1	12.0	10.4	9.7	7.6	10.1	9.9

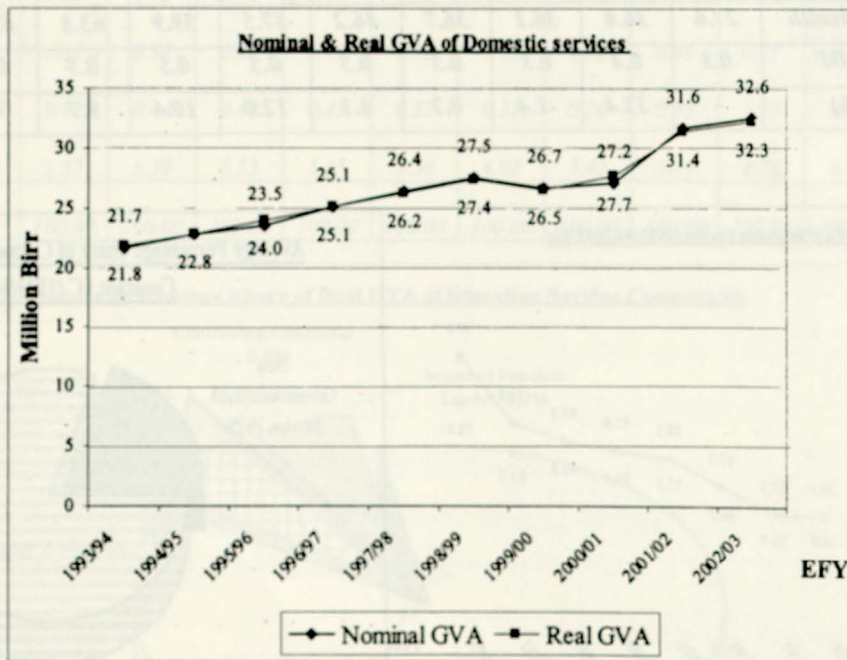


C.2.6. Domestic Services

Real GVA of domestic services was about Birr 21.8 million in 1993/94 and increased to Birr 34.5 million in 2002/03. On the average these economic activities account for about 0.2% of the total real RGDP estimates in the course of the accounting years. The sector was growing at an average rate of 4.6 % per annum. Value added estimates are assumed to be directly proportional to the growth of economically active population owing the fact that the number of domestic servants would proportionate growth in economically active population. Hence the annual increment in the amount of value added estimates of domestic servants would not be considered as the increment in the income of persons engaged in domestic service sectors but increment in the number of persons.

Table - 26: Real GVA Estimate, % share and Growth rate of Domestic Services

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
GVA (Million Birr)	21.8	22.8	24.0	25.1	26.2	27.4	26.5	27.7	31.4	32.3	
% share in RGDP	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Average Growth rate	0.0	4.5	5.0	4.9	4.8	4.7	3.1	3.3	4.7	4.5	4.4

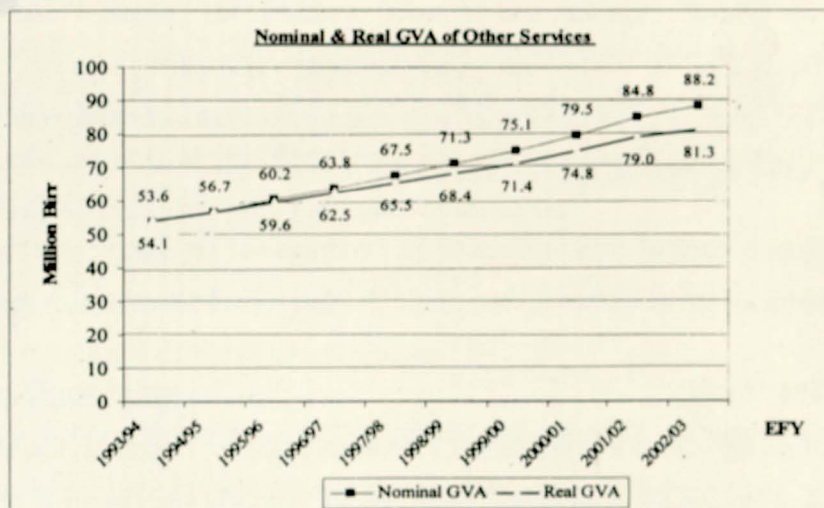


C.2.7. Other Services

The GVA estimate of Other Service Sector at constant factor costs has shown an increment from about Birr 54.1 million in 1993/94 to about Birr 87.3 million in 2002/03 with an average annual contribution of only 0.6% of the total RGDP estimates of the region during these years. In real terms the sector has shown an annual average growth rate of 5.1 %.

Table - 27: Real GVA Estimate, % contribution and annual growth rate of Other Services

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03	Average
GVA (Million Birr)	54.1	56.7	59.6	62.5	65.5	68.4	71.4	74.8	79.0	81.3	
% share in RGDP	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.59
Average Growth rate	0.0	4.7	5.2	5.1	5.0	4.8	4.7	4.7	4.9	4.6	4.9



Like that of domestic services value added estimates are directly proportional to the growth of economically active population so that annual increment in the amount of value added estimates of other services would account to increment in the number of persons engaged in other service sectors.

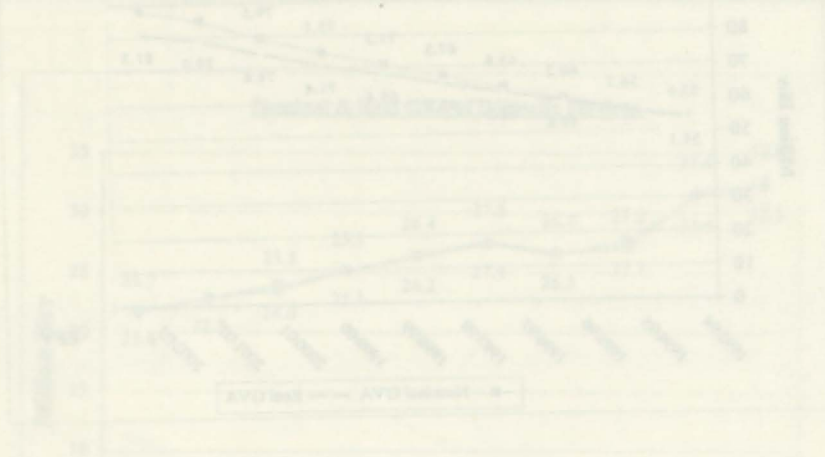
4.2.4. Domestic Services

Other Services

The GVA of the Other Services sector is estimated to be about 24.1 million in 1991, which is only 0.6% of the total RGDP. The annual average growth rate of 1.4% is estimated to be in line with the overall growth rate of the economy. The sector is expected to continue to expand at the same rate as the rest of the economy.

Table 27: Real GVA Estimate, % Contribution and Annual Growth Rate of Other Services

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Real GVA (Million)	24.1	24.3	24.4	24.5	24.6	24.7	24.8	24.9	25.0	25.1	25.2	25.3
% Contribution to RGDP	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Annual Growth Rate	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4



The fact that domestic services value added estimates are directly proportional to the growth of economically active population so that annual increment in the amount of value added estimates of other services would account to increment in the number of persons engaged in other services sector.

Real GVA Domestic Services

ANNEXES

- Annex-1** Definition and Coverage of Economic Activities (ISIC)
- Annex-2** Methodologies used in the estimation of sectoral GVA
- Annex-3** Sources of Data for the RGDP Estimations
- Annex-4** Definition of Important Terminologies
- Annex-5** Conversions and Formula

2. INDUSTRY

2.1. Mining and Quarrying

2.2. Live Stock Husbandry

The range of domesticated live animals (Cattle, Goats, Sheep, Asses, Mules, Horses, Camels, etc.) and production of livestock products such as meat, milk & milk by-products, animal dung, skins & hides, wool, eggs, honey, and wax are included in the livestock husbandry. Both private and public enterprises holdings are included.

2.3. Hunting, Fishing and Aquaculture

Hunting, fishing and aquaculture activities are included in the industry sector. Hunting activities are those in which animals are hunted for their skins, horns, tusks, teeth, etc. and are included in the industry sector. Fishing activities are those in which fish and other aquatic animals are caught and are included in the industry sector. Aquaculture activities are those in which fish and other aquatic animals are raised in ponds, tanks, etc. and are included in the industry sector.

1. Agriculture And Allied Activities

The Agriculture and allied activities cover Crop production, Livestock production, Hunting, Agricultural Services, Forestry logging and related activities and Fishery. The annual production derived from all these sub sectors takes the lion's share in the regional economy. Data from both private and public economic establishments are used in the estimation process. The economic activities covered, data sources and the methodologies used in the respective sub activities is presented as follows.

1.1. Crop Production

Crop agriculture is categorized under Agriculture, Hunting and Forestry and grouped under Division: Agriculture, Hunting and Related Service Activities of ISIC. Crop production activities cover growing of temporary and permanent field crops, which are grown and harvested annually under rain fed, and irrigation practices. All Cereals, Pulses and Oil Seeds, Vegetables, Fruits, Spices, Tubers and Roots, Stimulants and other Industrial crops cultivated in the region are covered. In addition to private peasant and commercial agriculture, production activities by public enterprises are also included.

Intermediate inputs used in crop production like commercial fertilizers, improved seeds, local seeds, and chemicals such as insecticides, pesticides and rodenticides are also included.

1.2. Live Stock Husbandry

The rearing of domesticated live animals (Cattle, Goats, Sheep, Asses, Mules, Horses, Camels, Bee keeping and Poultry) and production of livestock products such as meat, milk & milk by-products, animal dung, skins & hides, wool, eggs, honey, and wax are included in the livestock husbandry. Both private and public enterprises holdings are included.

1.3. Hunting

Hunting, as an economic activity includes trapping of wild animals for home consumption and commercial purposes. The regionally adjusted economically active population data which is based on the 1994/95 household income consumption and expenditure survey by CSA indicated that about 0.002% of the total population is engaged in this activity. Lack of data on

the number, types and market prices for hunting products in the region made the estimation to be difficult.

1.4. Agricultural Services

The agricultural service activities include such crop and livestock production service activities (except veterinary activities) like renting of tractors, harvester and threshers with their operators on fee or contract basis mostly performed on farms by both private and state enterprises.

1.5. Forestry

Forestry activities include gathering of fuel wood, charcoal burning, tree residues, sawdust, natural gum, incense, medical herbs, and production of timber and poles for construction and industry. Though, activities such as gathering and foraging of wild berries, fruits, seeds, roots and thatching grass, bamboo, and collection of medicinal herbs are categorized to this sub sector due to lack of organized data their value added is not estimated.

1.6 Fishing

Fishery subsector includes fishing in coastal offshore water and inland water like catching of fish from lakes, rivers, dams, canals for commercial and/or subsistence purpose. Fishing in the ANRS includes catching of fish from lakes, big and small rivers, irrigation dams and ponds carried out both by individuals and Fishermen associations.

2. INDUSTRY

2.1. Mining and Quarrying

With respect to the 1990 UN – ISIC. It covers activities like extracting & preparation for further processing of minerals that occur in nature as solids such as coal and ores, liquids such as crude petroleum and gases such as natural gas. Underground and surface mines as well as extraction of quarries that are usually called construction materials and all supplemental activities for concentrating ores and pre-processing other crude materials for marketing are included. However, most of the activities underlined in this sector are not operational not only in the region but also in the country at large. Thus, the economic sector; "Mining and Quarrying" refers only to Quarrying activities in the case of our region that has been adopted in the GVA estimation procedure of the sector. In specific, such economic activities like quarrying of stone, sand and clay, pumice and others, are functional in the region and hence included in the estimation process.

Mining and quarrying activities undertaken by households for own consumption are included in the gross output of the sector regardless of whether the output is used in its entirety by the producing household or part is sold on the market.

The crushing and grinding of rocks to produce gravel is classified as a quarrying activity if carried out by units whose main activity is quarrying, but as manufacturing if done by units that are not also engaged in quarrying. Similar problems may arise if there is vertical integration of stone, gravel or sand quarrying with construction of roads and other construction works. If in some cases it remains impossible to separate establishments of vertically integrated companies, all their output should be classified in the activity to which the major part of the production cost relates.

2.2. Manufacturing

Manufacturing activities are defined as the mechanical or chemical transformation of substances into new products, whether the work is performed by power driven machines or by hand, and whether it is done in a factory or at home, whether it is done in public sector or private sector, and whether the products are sold at whole sale or retail level. Moreover, the assembly of the component parts of manufactured products is considered as manufacturing activities.

GVA estimation procedure of manufacturing activities is dealt using three main divisions namely: Large and Medium Scale Manufacturing, Small Scale Manufacturing and Cottage /Handicraft manufacturing.

2.2.1. Large and Medium Scale Manufacturing Industry

Large and Medium Scale Manufacturing activities include all public and private establishments which employ ten or more persons and use power driven machines in their manufacturing activities. Bound to this definition an attempt has been made to reach all manufacturing enterprises falling in this category. However, it was unfortunate that some enterprises could not be willing to give the information needed due to various reasons for some of the years. Thus, to minimize the chance of under coverage, some further ways of obtaining the necessary data are performed. The number and type of holdings of the different establishments covered may vary from year to year due to processes of transferring of ownerships from public to private.

2.2.2. Small Scale Manufacturing

Small scale manufacturing activities cover all establishments, which employ less than ten persons and use power driven machinery in manufacturing activities irrespective of the form of ownership of the enterprise. All establishments in the region categorized under this division are covered of which more than 80% of them are found to be Grain Mills.

2.2.3. Cottage /Handicraft Manufacturing

This sub sector is limited to those manufacturing establishments producing goods primarily for sale and don't use power driven machines in performing their main manufacturing activities, both private and public forms of owner ship are included. About 95% of the total persons engaged in manufacturing are engaged in this sub sector (the 1994 population and housing Census result).

2.3. Electricity and Water

2.3.1 Electricity

Electricity as an economic activity include the generation, transmission & distribution of electricity, primarily for sale to households, industrial, commercial & other users. The generation, transmission & distribution of electricity either from hydro, diesel or any other source mainly for use by other economic agents are covered under this sub-sector. The generation of electric power for own consumption whose activities are other than electric power generation & distribution is excluded. However, in cases where some production units generate their own electric power for their operation, the cost incurred could be used as intermediate input of that productive unit.

The Ethiopian Electric Power Corporation (EEPCO) mainly controls electricity activities in the region. Due to this reason, value added estimation from the sub-sector includes those towns electrified by the corporation. 24 branches and 43 districts & substations are covered in this estimation. In fact there are few towns in the region with electricity access electrified and controlled either by their municipalities or a committee. Due to problems in accessing the required data from these towns it is not included in this estimation.

2.3.2. Water

The collection, purification, and distribution of water to House Holds, industrial, commercial and other uses, excluding irrigation works, are included here. The production, purification and distribution of water in urban areas have risen from 57 towns in 1993/94 to 79 in 2000/01 and 84

in 2002/03. This indicates that almost all urban centers accessible for potable water in the region have been covered for the estimation of value added for the last two years.

2.4. Construction

Construction as an economic activity covers all types of new constructions and major repair and maintenance works. It comprises constructions of:

- Residential Buildings (non-storied detached houses to one or more storied residential buildings)
- Non – Residential buildings (factory buildings, stores, ware houses, office buildings, farm buildings, restaurants, hotels, garages, schools, hospitals, clinics, health station and health posts, cultural buildings, religious buildings, recreational buildings and others.)
- Other construction works (like roads, sewers, bridges, viaducts, subways, athletic fields, tunnels, airports, electric transmission lines, telecommunication lines, harbours, canals, water wells, water ways, dams and ditches, ...etc)
- Land reclamation and improvements including afforestation and soil conservation works
- Permanent crop developments
- Major repair and maintenance activities except motor vehicles and fuel stations are also included in construction activities.

Construction activities by establishment refers to the following categorization:

1. Public sector construction (those undertaken by the government (both regional and federal government) and by autonomous government departmental enterprises.
2. Private Enterprise Sector construction (those non-government establishments, which are organized in nature and keep their accounts regularly and activities being performed for business purposes with prime objective of making profit.
3. House Hold Construction (constructions undertaken for the purpose of House Hold uses)
4. Residual sector construction (construction activities of unorganised different private and other agencies...that are categorized not elsewhere.

However, due to lack of breakdown data in accordance to the above institutional classification, GVA of construction is indirectly estimated.

3. SERVICES

The 'Service' sector economic activities include Trade, Hotels and Restaurants and Transport and Communication sectors as **Distributive Services** and Financial Intermediation, Real estate and ownership of Dwellings, Public Administrations, Education, Health and Domestic and other services as **Other Services**.

3.1. Distributive Services

3.1.1. Trade, Hotels and Restaurants

Trade, Hotels and Restaurant (THR) economic sector includes the activities of such establishments or economic entities like: Sale, maintenance and repair of motor vehicles and motorcycles, retail Sale of automotive fuel, Wholesale trade, and commission trade; except of motor vehicles and motor cycles , Retail trade, except motor vehicles and motor cycles, repair of personal and household goods and Hotels and Restaurant Services.

These are the sub-sectors categorized as major divisions categorized under the THR economic sector. However, in the actual estimation process of the value added estimation of the sector, it has been compiled with little adjustments such that sale of motor vehicles and motor cycles have been treated under 'General trade'.

Since it was found that a large number of economic establishments have not been classified in line with the above mentioned ISIC classification but they were classified independently as "mixed or unclassified" category. Hence each major division of the sector are reclassified in three sub-categories of economic establishments as:

- Unorganized-Registered establishments
- Unorganized-Non-registered establishments
- Organized establishments

Unorganized-Registered establishments are those establishments working legally with license but do not keep regular records of financial statements of their operation. Unorganized-non-registered establishments are working informally without license. Organized establishments are those establishments mainly engaged in wholesale trading activity and working with license. These are few in number but do regularly keep records of their financial statements.

3.1.1a) Wholesale Trade:

Economic activities pertinent to wholesale trade are defined to be reselling without substantial transformation or processing of goods at a wholesale base to other traders or agencies. Five organized wholesale enterprises in the region are covered; namely: Ethiopian Grain Trade Enterprise (EGTE), Merchandise Whole Sale and Import Trade Enterprise (MEWIT), agricultural Inputs Supply Enterprise (AISE), Ambasel Trading House Plc., and PHARMID-Bahir Dar. For the unorganized ones all licensed establishments/persons reported by zonal departments of trade and industry were covered.

3.1.1b) Retail Trade:

Retail trade covers units, which may resale without transformation of new and used goods for intermediate consumption or for final uses to households, individuals or other producing units. Renting of goods for personal or household uses except recreational goods like cycle, motorcycle, boats, is included. Repair and installation services rendered by the retailer are included in the retail trade. Licensed establishments include registered types of activities which have reached to 61863 in number for the year 2002/03.

3.1.1c) Hotels and Restaurants:

Activities under this sub sector include services rendered by hotels, boarding houses, eating houses, cafes and restaurants. Camping and lodging facilities on a fee basis are also included. Lodging facilities provided by private and government enterprises, as well as canteens in plants, offices and clubs are also included, where the details of these activities can be separated.

In the region, this sub sector covers eight hotels under the Ghion Hotels Administration and two private hotels. In addition a total number of 21049 and 22970 licensed unorganized establishments were included in the regional coverage, in the years 2001/02 and 2002/03 respectively.

3.1.1d) Maintenance & Repair of Motor Vehicles and Fuel Stations:

This sub sector covers establishments in the region which undertake activities on maintenance and repair of motor vehicles and motorcycles, washing, polishing and towing of vehicles, as well as the retail sale of automotive fuel (fuel-stations) and lubricating or cooling products. In

this respect, up to 1231 unorganized private establishments have been covered in the accounting year 2002/03.

3.1.2 Transport and Communication

The activities performed in transport and communications sector are:

- Transportation of persons by motor vehicles and other road carriers, aircraft, rail way and water transport.
- Shipment of goods by motor vehicles and other road carriers air craft, railways and ships.
- Supporting services to transport activities, and
- Communication services.

The provisions of transport services for own use within enterprises in other economic activities is not included in this sector.

Transport and communication activities covered in the estimation process include: Road transport, Water transport, and Communication services. Due to lack of sufficient data, the activity of air transport is not included in this paper.

3.1.2A. Road Transport

Road transport service incorporates activities that are undertaken on commercial bases i.e the operations of public, organized and unorganized private enterprises, urban and inter-urban passenger and freight transport services including pack animal transport services, especially in rural areas are covered. Urban passenger transport includes small and big taxis and passenger and freight horse driven carts. Inter-urban passenger transport includes those categorized by size of carrying capacity; greater than 44 passengers as large, less than 44 & greater than 24 passengers as medium & less than 24 passengers as small inter-urban busses. Freight transport services categorized by type as dry and fuel cargo in different sizes are included. These freight transport services are classified by size as: truck and truck trailers, dry freight, tanker & tanker trailers, and fuel freight transport services.

3.1.2B. Water Transport

Water transport in the case of Amhara Region refers only to the operations of Lake Tana Water Transport Enterprise. Other local transportation in Lake Tana, serves for own use on transporting fuel wood, charcoal & fishing actives etc are included in their respective sectors.

Mean while, Lake Tana water Transport Enterprise incorporates other allied activities such as hotels, quarrying, agricultural and other ancillary activities that we can't separate their data under the main activity of passenger and freight water transport services. Therefore, their output is classified in the activity to which the major part of the production cost relates, i.e. transport services.

3.1.2C. Communications

In the communication sub-sector, economic activities operated under Ethiopian Telecommunication Corporation and the Ethiopian Postal Service Agency are covered.

Under Ethiopian Telecommunications Corporation, the type of activities as telephone, telegram, telex etc. are included, while under Ethiopian Postal Service Agency domestic and international mail service, postage meter machine, money order, and postal order commission, box rental and key sales etc. are included.

3.2. Other Services

3.2.1. Financial Intermediation

"Financial Intermediation is defined as the productive activity in which an institutional unit incur liabilities on its own accounts for the purpose of acquiring financial assets by engaging in financial transaction in the market", UNSNA 1993. The role of financial intermediation is to channel funds from lender to borrower by intermediating between them.

For estimating gross value added of this sector in the region, the activities covered are the operation of branches of Commercial Bank of Ethiopia, Development Bank of Ethiopia, Construction and Business Bank of Ethiopia, Dashen Bank, Wegagen Bank, Awash International Bank, 74 Workers' Saving and Credit Cooperatives, Amhara Credit and Saving Institution, Ethiopia Insurance Corporation, The United Insurance Share Company, Nyala Insurance S.C, Nile Insurance S.C. and Africa Insurance S.C.

3.2.2. Real Estate and Ownership of Dwellings

Real estate and ownership of dwellings as an economic activity cover all business units engaged in renting, management, and operation of real estate and ownership of dwellings. This includes non-residential buildings, apartment buildings and dwellings, the sub division and development of land into lots and the operation of residential and industrial estate and the activities of real estate agents, brokers, and managers. It also includes imputed service of owner occupied dwellings. The system of National Account treats owner occupied as incorporated enterprises, which produce housing services for their own consumption. In this case, the region's coverage includes the owner occupied residential and non-residential dwellings, residential houses enterprise's private and public organization's, municipalities and kebele houses which are rented, freely occupied and paying differences. However, Renting of Machinery and Equipment without operator, and of personal and household Goods, Computer and related activities, Research and Development and other business activities are not included due to lack of organized data.

3.2.3. Public Administration Service

The activities of public administration is defined as administration of the states, the economic and social policy formulation, and provision of services to the community as a whole and perform compulsory social security activities.

The GDP contribution of Public Administration Consists of the administrative services of the regional government at all levels i.e. from regional to Woreda levels including Kebele administrations. This sector covers services produced (rendered) by Regional Government , Sector Bureaux, Offices and Commissions excluding education and health services, Administrative Support of the Federal Government in the region (Federal Offices in the region), Municipalities and Kebele Administrative services.

3.2.4. Education Service

The education service activities classified in the ISIC cover the provision of primary education, general secondary education, technical and vocational secondary education, higher education and adult and other educations which follow the curriculum of the ministry of education.

GVA of education services of ANRS, cover the education services of the regional government from primary formal education to secondary education including the services of vocational and technical schools and teacher training institutes and also the services of night schools are included. The sector also covers the educational services of higher education located in the region. In addition, the services of Non-Governmental schools are incorporated. The general administrative and auxiliary services of the regional bureau of education and its branch offices to the lower administrative level of the region and the services of Ministry of Education in the region are included.

3.2.5. Health Service

The health service covers the provision of medical, surgical, dental and other health services. Hence in the regional estimation context services of: Regional Bureau of Health including its branch offices to the lower administrative level, The Federal government in the region, Health (medical) institutes of the region (Hospitals, health centres, clinics, health posts...etc.), Non-Governmental institutions (mainly private clinics) and Traditional Medical Practitioners are incorporated in the estimation process. (NB health services for the military, police, and other organizations are not incorporated only because of the absence of disaggregated data).

3.2.6. Domestic Services

The 1993 UN-ISIC categorizes Domestic Services as "Private Households With Employed Persons". These economic activities cover activities of private households employing all kinds of domestic personnel such as maids, cooks, waiters, valets, butlers, laundresses, gardeners, gatekeepers, stable hands, chauffeurs, caretakers, governesses, baby-sitters, tutors, secretaries, etc. In the case of our region, only the service of maids is included.

3.2.7. Other Services

"Other Services" include all other economic activities which are not classified under the aforementioned main components "Other Community, Social, and Personal Service activities".

Therefore the term "Other Service sectors" is an operational definition adopted to refer to these activities as:

- Sewerage and refuse disposal, sanitation and similar activities
- Activities of membership organizations not elsewhere classified

- Recreational, cultural, and sporting activities
- News agency activities
- Library, archives, museums, and other cultural activities
- Other service activities
- Extra – territorial organizations and bodies
- Private Households with employed persons

All the above activities are not exhaustively covered in the regional estimation process due to various associated constraints. Therefore only Sewage and refuse disposal, sanitation and similar activities, activities of membership organizations, recreational and cultural and sport activities and other service activities have been covered.

Annex 2. Methodologies used for Sectoral GVA Estimations

1. AGRICULTURE AND ALLIED ACTIVITIES

1.1. Crop Production

The production method, which involves deduction of the Gross Value of Intermediate Consumption from the Gross Value of Output for all Crops. Valuation of crop output at current factor cost for each accounting year is based on the weighted and simple averages of producer's prices. Intermediate inputs are valued using average purchaser's prices at the prevailing market prices. The 1993/94 market prices are used as base year prices for valuations in real terms.

Gross value added from crop by-products such as hay and straw is omitted considering the offsetting effect of the crop output as intermediate input for Livestock. However; the output of Teff Straw for construction purpose is quantified by taking 40% of total straw production, which is obtained by using a 2.2: 1 residue-crop ratio. Value added estimation for public enterprises has also adopted the production approach involving deduction of cost of intermediate inputs from gross value of outputs, which is obtained from their respective audit reports or financial statements.

Estimations at constant factor cost for all crops are computed by the method of double deflation; where both output and intermediate inputs are valued using base year prices. In addition, Estimations at constant factor cost for public enterprises is carried out by using the adjusted price indices at country level because of lack of quantity and price data for output or services given by the respective enterprises.

1.2. Live Stock Husbandry

The estimation process in this economic activity used the production method where it involves valuation of the Gross outputs from livestock, the physical changes and cost of intermediate inputs. Value added is obtained by subtracting cost of intermediate inputs from Gross value of output. The different livestock products are quantified using different rates & coefficients such as slaughtering rate, milking rate, egg laying rate, wool production rate, honey and wax production rate etc. Annual production quantity of these products is multiplied by the corresponding fiscal year average Producers' or Purchasers' prices to get Gross value of output.

The number of livestock and poultry for the accounting years before the national agricultural sample enumeration (during 2001/02) was obtained by adjustments made on year 1997/98 data reports from BoA. In the case of years 2002 and 2003 the enumeration results for the region were taken that showed a significant variation compared to the previous adjacent year 2001.

Producers' prices for live animals is computed as a weighted average for the weights being the respective number of animals under each livestock category using CSA's data. Prices for livestock products are simple annual averages. Some indirect pricing techniques are adopted for determining prices of rare livestock products such as Goat and Camel milk.

The values of meat, hides & skins are estimated based on the number of animals slaughtered with some allowance for wastage and unusable parts. Milk and milk products such as butter & "Arera" are valued using the number of milk giving (lactating) animals, their respective annual yields and proportion of by-product obtained from total quantity of milk produced.

The Value added for animal dung production has adopted an indirect way of estimation, which is based on per capita expenditure on dung cake for fuel. The value at current factor cost is obtained by multiplying the per capita expenditure (which is obtained by extrapolating 1994/95 expenditure values and the adjusted price index on fuel and energy consumption) with the annual population size while values at constant factor cost is obtained by using the base year expenditure. Here it is assumed that the pattern of expenditure/consumption due to substitution effects to be constant.

Valuation of intermediate inputs in livestock production like cost of feed, health services, and breeding services; has adopted different techniques. For instance, cost of prepared animal feed is estimated by multiplying annual quantity of Oil Cake produced from Bahir Dar Edible Oil Factory and small-scale oil processing plants in the region by average annual purchasing prices. The amount of salt consumed is assumed to be 1 kilo gram rock salt per annum per cattle and is valued using average purchaser's price.

Cost of livestock health service is obtained by multiplying the total number of cattle vaccinated, treated and those got breeding service by the respective service charge each year. Poultry feed valuation is based on the assumption that most of local breeds scavenge on open farmyards and an average of 1.2-kg grain equivalent quantity is consumed per annum. Amount

of milk converted to butter and eggs used for hatching are considered as intra sectoral intermediate input.

Values for honey and wax are estimated using annual quantity of honey production based on the number of traditional and modern Beehives, their respective annual rate of productivity and average producers' prices. Wax production is assumed to be 40% of honey production and prices to be 45% of honey prices.

The value added from public enterprises such as Gondar Dairy Development Enterprise and Chefa Dairy Development Enterprise is estimated by using their respective profit and loss statement. Costs of intermediate inputs are deducted from the total revenues to obtain value added at current factor costs. Value added at constant factor cost for public enterprises is estimated using the adjusted price indices at country level.

1.3. Hunting

Due to some associated drawbacks an indirect method of estimation has been adopted to arrive at the value added from this economic activity. First, the proportion of the number of persons engaged in hunting activity to the number of economically active population in the division Agriculture, Forestry and Fishing activities' is obtained. Next, an assumption is made that the opportunity cost of gross out put per person from the hunting activity would approximate to the gross value of out put per person in the Crop & Livestock Agriculture. The number of persons engaged in hunting activity in each year is multiplied by the value of gross out put per person which is obtained by taking a proportional proxy as compared to value of output per person in the agriculture activity both at current and constant factor cost. Finally, value added for this economic activity is arrived by deducting cost of intermediate inputs, which is assumed to be 10 % of the GVO in hunting.

1.4. Agricultural Services

The estimation methodology adapted production method which applied deductions of intermediate costs from gross value of out put. The Gross value of out put being revenue obtained from rent of machinery and other income and intermediate inputs consisting of cost of fuel, lubricants, and other costs of giving the service. Value added at constant F.C is estimated using the adjusted general price index.

1.5. Forestry

The estimation method for the forestry activities involved the production method. Where quantity of forestry production could not be obtained, an indirect way of estimating through data on consumption expenditure is used. Quantities and prices of the respective forest products are used to value at current factor cost and base year prices (adjusted price indices) for valuations at constant factor cost.

In cases of indirect estimations per capita consumption /expenditure/ data are used to value the respective forest products in accordance to the population size for the accounting year under consideration owing to the net import-export situation and nil substitutive assumptions.

Prices for forestry products are taken from CSA publications. In cases where producer's prices could not be obtained, a certain percentage allowance for the trade & transport margin is deducted from retail prices. For some products like sawn wood and transmission poles prices are collected by consulting private joineries, sawmill enterprises and the Ethiopian Light & Power Authority branches in the region.

GVO for non wood forest products like natural gum and incense are valued using annual production quantity and producer's prices for GVO and an assumed 58.7% on GVO for cost of intermediate inputs which is obtained from a case study on areas producing these products.

1.6 Fishing

The value added from fishery subsector is estimated by the production method which is computed by multiplying annual quantity of fish produced with producers' prices and deducting cost of intermediate inputs, which is assumed to be 10% of the gross value of fish production.

2. INDUSTRY

2.1. Mining and Quarrying

The GVA estimates of the sector is estimated using the production approach by classifying the activity into two groups. The first group constitute those licensed operators who are paying royalty fees. The second group contains those non licensed entities who are working informally with no royalty fee payments.

For the organized enterprises or establishments for which adequate profit and loss statements are available on mining and quarrying activities, it could be estimated based on either the production or income method. However, in cases where full accounts or financial statements are hardly available an indirect method of estimation has been applied to arrive at the GVO. In doing so, royalty fee payment rate has been used as a basic multiplier. This royalty fee payment rate of 3% that has been fixed in the region has also been applied in the estimation procedure so as to arrive at the GVO estimates. That is the amount of royalty fee collected for each type of construction material is divided by the royalty rate (3%) so as to arrive at the GVO estimates of the sector. On the other hand, 25% of the gross value of output is assumed to be Intermediate input consumptions. The GVA estimates at Current Market Price (CMP) has then been computed as GVO less intermediate consumptions and to arrive at the GVA estimates at CFC, indirect tax which is equal to royalty fee has been deducted from the GVA estimates at CMP.

Concerning the non-licensed operators, an indirect method of estimation has been applied using the data on the 1995/96 informal survey of CSA as benchmark year estimates. In doing so, the methodology applied in the estimation procedure has been application of the population estimates of the region and other different multipliers.

First the number of economically active population estimate of the region has been derived as 55.28% of the total population estimates. The next step has been to estimate the number of persons engaged in this economic activities assuming about 0.0071% of the total number of the derived economically active population estimates has been engaged informally in the economic activities of this sector. It would be reminded that the assumption behind using these proportions is that the number of persons engaged in the informal sector had been growing proportionately to the total population growth of the region. That means the proportion of economically active population and of persons engaged in the informal sector had been remaining constant for all over the estimation years.

A value added per capita estimate of Birr 1,087 has been taken from the 1995/96 CSA informal survey report regarding ANRS, with the assumption that it would remained constant all over the estimation years. Finally, the per capita value added is then multiplied by the number of persons engaged in the sector to get the GVA estimates of the years. But for the years 2001/02

and 2002/03, the GVA per person is taken to be 2386 annually and the number of persons to be 336 and 345 respectively (Source is urban informal sector of CSA)

The total GVA estimate of the sector at CFC is then computed to be as the sum of the estimates derived from the two entities, licensed and non licensed entities. Volume indexes have been used to arrive at the GVA estimates at Constant F.C. of the first group, licensed entities. That is extrapolating the base year value added by the volume indices of the current year in question provides the value added estimates at Constant F.C. of this group. On the other hand, the GVA estimates of the second group, i.e. of non licensed ones both at CFC and Constant F.C. has been taken equal as the same per capita value added has been applied all over the estimation years.

2.2. Manufacturing

GVA estimation procedure of manufacturing activities is dealt using three main divisions namely: Large and Medium Scale Manufacturing, Small Scale Manufacturing and Cottage /Handicraft manufacturing.

2.2.1. Large and Medium Scale Manufacturing Industry

GVA of large and medium scale manufacturing industries can be estimated either by production or income approach. Value added using production approach is obtained by deducting the value of intermediate consumption from gross value of output. GVO is the value of goods and services produced during the accounting period. Intermediate consumption consists of all non-durable goods and non-factor services used up in the process of production. In using income method it is simply the sum of compensation of employees, operating surplus, depreciation and net indirect tax.

In the case of large and medium scale manufacturing sub-sector both production and income methods of estimation have been used depending on the availability of their audit reports. Fore fear of not including VA of some private enterprises that hardly provide their audit reports, CSA reports on the Value added of large scale manufacturing is taken as a complement to fill the gap.

The estimates of real GVA have been computed by deflation method using Country (and adjusted regional) level General Consumer Price indices.

2.2.2. Small Scale Manufacturing

The estimation method applied for small scale industries is similar to that of large and medium scale manufacturing as long as the necessary data on employment, output, intermediate inputs, value added, wages and salaries, etc, is readily available. However, due to lack of consistent annual reports Surveys conducted by CSA on urban areas for the year 1995/96 and report on small scale manufacturing industry (1995/96 and 2002) are mainly used as bench marks for the corresponding subsequent years from which value added for each industrial group and establishment is computed. Owing to the fact that these surveys under estimated the total number of establishments in the region (because the survey covers only urban areas) an alternative option is given to compromise the total number of establishments collected from zonal trade and industry departments and use value added per establishment from the CSA survey. A benchmark value added and is used for both urban and rural area establishments, assuming that their production capacity and source of power is almost similar. Hence, multiplying the total number of establishments (excluding grain mills) by the benchmark year value added of each industrial group is used as methodology to get GVA of the sector. Real estimates are computed by multiplying nominal GVA with the general price index.

Grain Mill

According to the UN SNA concept, grain mill activity is considered as manufacturing activity, and is categorized under small scale manufacturing industry. However, CSA's surveys for small-scale industries have not included grain mill activity. Since the share of number of grain mills in the total number of small-scale industries is found to be more than 84%, therefore the amount of tax collected from grain mills, as an indicator, in order to arrive at total taxable income. This method is used so as not to inflate the VA by using the CSA's approach. Expertise agreed that that taxable income would proxy gross profit. Average taxable income will be multiplied by the total number of grain mills registered by the Bureau of Finance to get total taxable income of grain mills in each zone and sum up for the region. First, the ratio of profit to value added is calculated (based on the business plan of grain mills as a case study report from South Gondar Zone Trade & Industry Department,). Then, gross taxable income is divided by this ratio to get gross value added from those grain mills registered by zonal finance departments & computed average value added per grain mill. Since the total number of grain mills (tax payers) reported from Finance Bureau/BoFED/ is less than that of the official reports of the Bureau of Trade and Industry (BoTI), it was preferred to use the total number of grain

mills reported from BoTI & the respective Zonal Trade and Industry Departments. Therefore by multiplying the average value added per grain mill with the total number of grain mills registered by BoTI, GVA from grain mills has been computed. VA estimation for grain mills at constant factor cost, number of grain mills for each year is multiplied by the average value added per grain mill of the base year.

2.2.3. Cottage /Handicraft Manufacturing

Estimation of value added from this sub sector is based on the two surveys reports by CSA where the results are used as a benchmark to estimate values for the other accounting years. The ratio of persons engaged in Cottage/Handicraft activity to the total economically active population has been computed for 1995/96 and a proportional number of persons is multiplied by the respective value added per person engaged in each industrial group for the other years.

2.3. Electricity and Water

2.3.1 Electricity

Since data on output, intermediate consumption and cost components are readily available from EEPCO, either production or income methods can be applied to arrive at current factor cost estimates. However, production method has been followed in this particular estimation procedure. To derive constant factor cost estimates Laspeyre's quantity index has been constructed for each year. Then the base year value added has been extrapolated by the corresponding index number.

2.3.2. Water

The method of estimation adopted in water sub sector has been done with two major divisions. The largest portion of the urban population in the towns of the region is supplied with protected safe water yielding sources. Thus urban water here refers that those urban areas, which have access to safe water and have water service offices that provide us the necessary data. On the other hand rural water refers to the difference obtained by deducting the 84 urban centers (in 2002/03) from total population of the region.

For those urban areas, since detailed data on revenue and expenditure have been obtained from water service offices of each urban center, production method have been applied to estimate gross value added at current factor cost.

Deflating the current estimates using Paasche price index provides constant factor cost estimates. Weighted average price indices are constructed by taking prices and quantities of water sold in 10 selected urban centers, the weights being the volume of water sold in each selected towns.

Concerning water services in rural and some portion of the population of the towns, indirect method of estimation has been adopted. In doing so, first the number of rural and urban population without access to safe water of the current year in question have been estimated.

To estimate the value added contribution of water sub sector from non-potable water services in rural areas, estimates on annual per capita expenditure on rural water has been applied that has been taken from the 1995/96 and 1999/00 household income, consumption and expenditure surveys of CSA. On the average, the annual per capita expenditure estimate on rural water has been taken Birr 9.19 from 1993/94 to 1998/99 and Birr 16.85 for the years 1999/00 and 2002/03. Furthermore, the GVA estimates of this population group at CFC and Constant F.C. has been taken equal, as the same annual per capita expenditure on water has been applied through out the estimation years. Finally, the GVA estimates of water sub sector both at CFC and Constant F.C. has been compiled as a summation of the value added derived from urban potable water supplies and rural and part of urban non potable water services.

2.4. Construction

The GVA of construction sector is estimated using production method by applying GVA to GVO ratio estimates for different type of constructions. Some assumptions are taken with the application of multipliers depending on the nature of the data and type of institutional sectors.

Construction VA from regional and federal governments is estimated from the annual actual capital expenditure data of construction items (expenditure items under descriptive codes of 8201, 8202 and 8203 for residential buildings, non residential buildings and other constructions). About 39.85% of these expenditures is assumed to be the ratio of GVA to GVO. GVA from construction activities by municipalities is computed following similar approaches corresponding to the above expenditure categorizations.

The value added estimation procedures for private construction activities in urban areas residential and non-residential buildings are treated as follows. In the GVA estimation procedure of residential buildings, first the total numbers of housing units in urban areas were forecasted using population growth rate and similar rate of proportion of housing units based on the 1994 population and housing census. Together with some supporting case study reports from BOUD. The estimates are computed in three categories, as :Category I = Wood /stone and mud wall with corrugated iron sheet roof, Category II = Wood/stone and mud wall with thatch roof and Category III = Stone /Bricks /hallow blocks & cement wall with corrugated iron roof.

Table - 28: Total Number of urban housing units forecasted.

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03
Category I	226,197	237,816	251457	265,098	278,738	292,378	306,061	321,985	342632	352640
Category II	50,727	53,381	56443	59,505	62,567	65,628	68,637	72,208	76909	79155
Category III	8,279	8,697	9196	9,695	10,193	10,692	11,202	11,785	12530	12896
Total	285,203	299,894	317,096	334,298	351,498	368,698	385,901	405,978	432071	444692

From the total number of housing units forecasted, the number of new and replaced residential buildings and the number of housing units under heavy and minor maintenances with respect to the three categories are determined. Regional coefficients for the average period of replacement, heavy and minor maintenances had been established using the census result and the work manual of BoWUD. Out of the total number of forecasted housing units, the number of new residential buildings constructions ranges from 4.67% to 6.54% and the total number of replacements was established as 2.51% of the total number of forecasted housing units. Furthermore, to arrive at the number of each category the following percentages were applied to the calculated proportion of each construction type.

Table - 29: Proportion of construction type by category

Construction Type	Category		
	I	II	III
New Residential Buildings	79.31%	17.79%	2.90%
Replacement	79.31%	17.79%	2.90%
Heavy maintenance	5.02%	5.02%	7.53%
Minor maintenance	5.02%	12.55%	10.04%%

In order to arrive at the total number of residential buildings by type, the following numbers of years were assumed.

Table - 30: Assumed Number of Years for Replacement and Maintenance

Construction Type	I	II	III
Replacement	25	15	40
Heavy Maintenance	10	5	10
Minor Maintenance	5	2	5

Next; average construction cost per housing unit by category was used to arrive at the total cost of construction. In general, except for the public & some organized private enterprises; an average estimation of cost was made, based on the period of construction for each type, with a close consultative with experts of Municipalities, Bureau of Works and Urban Development and respective zonal Departments. Regional averages of cost breakdown of a building unit, using three major types of construction material (i.e. the categories I,II,III.) were applied for the estimation. Attempt has been made, so as to obtain data on the actual cost of construction of residential & non-residential buildings, with building permits from each municipality. The regional average unit cost per building for dwellings was estimated as presented in the following table.

Table - 31: Estimate of Average Construction Cost per Housing Unit (in Birr)

Year	Category		
	I	II	III
1993/94	11,743	5,872	24,429
1994/95	13,380	6,690	32,439
1995/96	15,245	7,623	43,076
1996/97	17,370	8,685	57,203
1997/98	19,988	9,994	75,404
1998/99	20,287	10,144	67,790
1999/00	21,170	10,886	72,745
2000/01	23,204	11,603	77,538
2001/02	21567	10784	66552
2002/03	21138	10569	65226

The total construction cost of residential buildings both in urban and rural areas was then computed. In doing so a 100% construction expense for new buildings was taken while 60% for replacements and 10% and 7% for heavy and minor maintenances of the average construction cost per housing unit respectively. To arrive at the GVA estimates of residential building construction, a GVA to GVO ratio were established. (59.942% for category I, 60.049% for category II and 39.850 % for category III)

Total cost of construction for relatively large private non-residential buildings is distributed over the entire period of years under construction. For the case of non-residential small buildings, average number and cost obtained from the towns, was applied to estimate their values. In order to arrive at the GVA estimates of non-residential building constructions in urban areas, a GVA to GVO ratio of 39.85% has been used.

To compute Value added estimates of major repair and maintenance activities of non-residential buildings in urban areas; a 7% of the GVA estimates of new residential building constructions was used for the 1993/94 – 1998/99 years while 10% in the last four years (1999/00 – 2002/03) estimates. For the value added estimation process of rural dwellings constructions, similar procedure to urban private residential building construction has also been applied. An average number of 4.62 persons per housing unit in rural areas is used to forecast the total number of housing units (See table below).

Table - 32: Number of total Rural Dwellings (Forecasted)

	1993 /94	1994 /95	1995 /96	1996 /97	1997 /98	1998 /99	1999 /00	2000 /01	2001 /02	2002 /03
Category I	394,449	404,762	416,235	427,709	439,183	450,657	*	*	482092	496174
Category II	2,303,928	2,364,806	2,431,842	2,498,877	2,565,913	2,632,948	*	*	2816604	2898878
Category III	1,688	2,772	2,851	2,930	3,008	3,087	*	*	3302	3398
Total	2,700,065	2,772,340	2,850,928	2,929,516	3,008,104	3,086,692	3,251,788	3,337,686	3304068	3398450

The number of new constructions is proxies the number of new households. The total number of replaced rural dwelling constructions is assumed to be 1.58% of the total housing units are estimation. Furthermore the number of housing units under heavy maintenance and minor maintenances has been computed as 3.16% and 7.21% of the total housing units respectively.

To obtain the total number of rural dwelling construction types, the following percent multipliers are used accordingly

	I	II	III	Remark
No of housing units	14.6%	85.3%	0.1%	
Replacement	1.58%	1.58%	1.58%	as% forecasted Housing units
Heavy maintain	3.16%	3.16%	4.74%	" " " "
Minor maintain	3.16%	7.9%	6.32%	" " " "

The other component of rural construction was other 'rural constructions'. Here, the rural agriculturally economically active population was treated in two strata as, those who were involved and not involved in rural dwelling constructions. First, the number of rural agriculturally economically active population is estimated based on the census result. Next, this number is arranged in to teams by strata assuming that construction works are handled by team approach. This team approach is used to derive the value added of other rural constructions of those who were not involved in rural dwelling constructions.

Additionally, the GVO and GVA estimates of repair and maintenance activities were assumed to be 10% of other rural constructions. The over all results were used to derive the output of other rural constructions by those who were involved in rural dwelling constructions. Since, there was no reliable data on other rural construction, it was assumed and taken half of the working days needed or spent for rural dwellings construction. And the estimate of the output from those who involved in rural dwellings construction and their per capita (per team of ten agricultural economically active population) were applied to the forecasted economically active population from 1994 census. The contribution of those not involved (assuming that one housing unit being constructed by a team of ten members) was estimated using the same per capita of strata I.

A 10% of the GVA of rural construction is assumed to be a VA component of major repair and maintenance activities in rural areas.

GVA of construction activities by bilateral and multilateral cooperation agents and NGOs in the region, the total annual actual expenditures has been used using GVA to GVO ratios of 39.85% for Non Residential Buildings, 25% for Water Construction, 35% for Road Construction and 80% for Agricultural, soil conservation and development construction activities.

Total annual construction related expenditures are taken from annual/quarter performance reports. Construction expenditure by bilateral and multilateral agents is assumed to be spent 100% of their annual allocated budget. The value added component of these agents is estimated to be about 39.85 % of their annual actual expenditure estimates (GVA to GVO ratio).

3. SERVICES

3.1. Distributive Services

3.1.1. Trade, Hotels and Restaurant

a. Organized Establishments

Organized establishments engaged in THR economic sector regularly keep financial statements about their annual operation. The method of estimation for this group has been adopted production approach, where it involves the deduction of intermediate inputs from the gross trade margin, which is the difference between the total revenue and sales and costs of goods sold.

b. Unorganized Registered Establishments

Average tax amount of each establishment in all woredas for the indicated categories in the sub sectors was calculated first. And by applying the tax rate formula, value of total gross trade margin from sales of goods and sales of services were estimated for each registered ones.

During the estimation, a single man or family establishment was assumed. That is the taxpayer was assumed to be as a single man, since the approach of tax decision applies the same assumption and most of the establishments use family labor. Estimation has been done for each indicated number of woredas and using zonal and regional weighted averages of per capita results regional estimation has been done for the total number of registered establishments. Since there are significant number of establishments, which could not be classified in either sub-sectors and the ratios of taxpayers to the total number of licensed establishments do not have uniform representation, the aggregate weighted average per capita value added was chosen for the estimation. Therefore, the gross value added from registered unorganized establishments of each sub sector was obtained by multiplying the aggregate per capita with the total number of establishments (licenses).

c. Unorganized Non-Registered Establishments

The estimation processes for the non-registered/informal establishments were based on benchmark year's data, obtained from the sample survey result of C.S.A, for 1996. Estimation

for the years in question has been made based on the assumption that their ratio of the total number of unorganized establishments remains the same and the establishment per capita value added will have the same trend to the registered ones.

Regarding the constant factor cost estimate, the National General Consumer Price Index adjusted to the regional base year, 1994/95. Then the current value added estimate of each year was deflated by the corresponding consumer price index to obtain constant factor cost value added from the sector.

To derive the real GVA estimates of THR, the general National consumer price index adjusted for the region (base year) has been applied on its nominal estimates.

3.1.2. Transport and Communication

3.1.2A. Road Transport

In order to estimate gross value of output from road transport sub-sector, both production and income methods can be possible. The gross value of output is equal to the sum of revenue earned from the provision of passengers and freight transport services and commission income earned from the provision of coordinating services.

According to the principles suggested by SNA and European System of Regional Accounts gross value added from transport service should be allocated to the region where the producer unit is resident. Based on this principle, for inter-urban passenger transport service, by taking the number of vehicles under each association in the region, the parameters such as average carrying capacity, average load factor, average distance in kilometers covered per day and average working days per year have been used to arrive at total passenger-kilometers, which is an indicator of the total volume of services performed. This has been multiplied by an average fare (Fare per passenger-km) to obtain gross value of output.

The procedure of estimating the value of the parameters for the region was as follows; the average carrying capacity was estimated by taking a load factor of a certain percentage of passengers from the average passenger seats of each size of the busses. The distance in kilometers covered per day was estimated by taking an average trip that could be served in each size of vehicle per day. The average working days per year also have been estimated. Finally, an average fare per passenger-km was directly applied from the results obtained using

the average annual fares actually paid, according to the road level & load category of the busses, per passenger per trip served each year in the region.

So as to estimate the gross value added of inter-urban passenger transport services a ratio of intermediate inputs should be estimated first. Hence, the ratio of the cost of intermediate consumption which is being used at national level that is, 57 percent of the gross value of output is considered as intermediate consumption for all categories of inter-urban busses.

Accordingly, for the parameters already mentioned above, the following assumptions have been used for each of the categories (i.e. small, medium & large) of inter-urban busses, so as to estimate their gross value of output/services and gross value added both at current and constant factor cost. The method of constant factor cost estimation is simply multiplying the yearly volume of services (i.e. passenger-km) rendered by each category by the corresponding per unit value added (base year price).

Assumptions for Small busses used to derive Parameters:

- a) An average capacity of 17 passenger seats, & a load factor of 15 passengers
- b) An average distance covered per Vehicle per day is 180 km
- c) Average working days of a vehicle is 240 per year
- d) An average fare per passenger-km was estimated for each year.

Some transport operators particularly of small busses in the region may not be organized in any of the associations. Therefore, to consider such a contribution, a 10 percent under coverage has been added in the operations of small size busses.

Assumptions for medium busses used to derive Parameters:

- a) An average capacity of 40 passenger seats & a load factor of 36 passengers
- b) An average distance covered per day 180 kms
- c) Average working days of 240 per year
- d) An average fare per passenger-km was estimated for each year.

Assumptions for large busses used to derive Parameters:

- a) An average capacity of 60 passenger seats & a load factor of 60 passengers (100%)
- b) An average distance covered per day 339 Kms
- c) Average working days of 240 per year
- d) An average fare per passenger-km was estimated for each year.

For the operations of dry freight transport services also the required data were not available in their branch offices in the region. Therefore, the only choice was collecting the annual

performance of dry freight transport services from the head offices of dry freight transport associations and/or enterprises operating in the region for the period under study. For private dry freight transport services also, a 10 per cent addition for allowance of under coverage has been taken so as to consider the unorganized private dry freight transport activities, for none reported operation. Then, since their available data incorporates all the necessary parameters (variables) for the estimation purposes, the total gross value of output is simply a summation of the estimated gross value of output of these different organizations.

63 percent of the gross value of output that is applied at national level is taken to be as an average ratio for intermediate inputs in the region's estimation of gross value added for the years under study whether for private or public dry freight transport associations.

As there are no permanent (resident) offices and any other registered independently working cargo for fuel freight transport activities in the region, its contribution to the gross value added from the sector is assumed to be zero, i.e. this sub-sector's activity is not included in the sector.

In estimating the gross value of output of the operations of taxis, the parameters as; number of trips, distance of a trip in kilometers, total number of taxis served per trip, average number of passengers served per trip and average charges (fares) paid per trip per passenger was collected from each town in the region where the service is provided, using regionally developed format by categorizing the taxis into two types according to their size or capacity. The ratio of intermediate inputs to gross output was taken to be 61% for small & 51% for big taxis.

For both passenger and freight horse driven carts, the estimation procedure was first by taking their respective numbers. Average per capita gross value of output is computed according to their performance in each town where the service is provided. The cost of intermediate consumption has been assumed to be 25 percent of its gross value of output by consulting the tax collectors of the municipalities of each town.

In the case of pack animal transport, no information is available at regional level. Hence, the gross value of output has been obtained by taking the per capita cash expenditure on pack animals transport from the 1995/96 Household Budget Survey of CSA and multiplying by the total population figure.

The base year value added divided by its total passenger-km or freight ton-km gives value added per passenger-km or per freight ton-km respectively. The yearly physical volume of

services rendered by each category of transport multiplied by the corresponding base year per unit value added (value added per passenger-km or freight ton-km of the base year) will give the value added at constant factor cost of the road transport sub-sector. Constant factor cost estimates of horse driven carts were derived by constructing volume indices. The index was constructed by multiplying value added per cart by the number of carts of each year according to their category.

3.1.2B. Water Transport

Since full financial report data are obtained from the enterprise both the two methods could be used. Production approach has been applied to estimate GVA from the sub sector

A weighted volume index is to be constructed to derive the constant factor cost value added estimates. The quintal of goods and number of passengers transported can measure the volume of output. A weighted volume index is then constructed for each type of services and multiplying the index by the respective base year value added provides value added at constant factor cost. The weights applied for the construction of the index are the shares of each type of services rendered out of the gross value of output in the base year.

3.1.2C. Communications

The production method has been applied for the estimation of gross value added by using detailed income and expenditure data on quantity of services rendered both from Telecommunications and Postal Services head offices.

In order to prepare the constant factor cost estimates, first the volume of services provided by each type of communication service had been identified. Then weighted volume indices have been constructed using those volume indicators. The weights are being established on the bases of the share of each type of services in the total gross value of output in the base year. The weighted volume indices so derived are multiplied by the base year value added to obtain the constant factor cost estimates. The number of domestic and international telephone calls, and the number of telegram and telex messages have served as volume indicators with regard to telecommunication services, while for the postal services the number of domestic and international mails handled have been used as volume indicators.

3.1.3. Financial Intermediation

3.1.3A) Banking

The banking sub-sector renders services to their customers and intern customers are charged a nominal amount that is substantially lower than the expenses. In practice, however, banks pay lower rate of interest than would otherwise be the case to those who lend them money and charge higher rate of interest to those who borrow them. The resulting net receipts of interest used to defray their expenses and provide an operating surplus. This scheme of interest rates avoids the need to charge their customers for service provided. To avoid this difficulty, SNA recommends that an imputed service charge should be included in the gross output. This measure is known as Financial Intermediation Services Indirectly Measured (FISIM), SNA, 1993.

The imputed service charge is equated to the excess of property income received on loans and other investment made from the deposits they hold over the interest they pay on these deposits. The property income they receive, as a result of investing their own fund should not be include in the imputed service charges though in practice it may be difficult to separate out such incomes. Actual charges for services rendered are categorized in the income and expenditure statements as exchange commission and other income. From other income component usually bad debts collection and income from sales of fixed asset are excluded.

Due to the supra regional nature of banking and insurance activities, Production method is not appropriate. According to EUROSTAT guideline top-down allocation are generally recommended because there is little or no information at local unit or regional level in most countries.

For banking sub sector gross value added is obtained using income method i.e. gross value added is equal to the summation of compensation of employees, depreciation and operating surplus, which are directly collected from the respective head offices of each bank for the last two years.(unlike the previous years, where these data were obtained by allocation).

Value added of Workers' Savings & Credit Cooperative has been estimated by using production method.

3.1.3B) Insurance

In the case of insurance sub-sector, the gross out put consists of only the charge of service of insuring. The premium charged by insurance companies consists of payments for the service of insuring, a payment for the risk of insuring (in the case of casualty insurance) and also a substantial amount of saving allocated to the household sector in case of life insurance. It is necessary to separate out the charge for service of insuring from other type of component of premiums.

In the case of casual insurance, the payment of risk is taken to claims paid. Hence, the service charge is equal to the difference between the premiums received and claims paid. In the case of life insurance, the service charge is considered to be equivalent to the excess of receipts on account of prima annuities less re-insurance and net addition of life fund in respect to net increase in accruing liabilities. The net additions of life fund represent the saving of the household sector.

With respect to insurance sub-sector the gross output is estimated as the sum of net premium income earned (gross premium collected less premium ceded), interest income and other related income less the sum of claim paid and un expired risk.

However, due to its supra regional nature like banking activity, gross value added of insurance sub sector is estimated by income method.

In driving the gross value added at constant prices for banking sub - sector a deflated volume index of loans and deposits is first constructed and then is multiplied by the base year value added at current factor cost for subsequent years. In the case of insurance sub sector deflated volume index of gross premium collected is multiplied by the base year value added at current factor cost for subsequent years.

3.1.4. Real Estate and Ownership of Dwellings

The GVA of this sector is estimated using the production approach. Gross output of this sub sector equals to gross rent income which is obtained by multiplying total housing stock by average annual rent per housing unit.

2.1.3. Financial Intermediation

The annual projected mid-year population data of the region and the housing stock (by type of tenure) data has been taken from the 1994 Population and Housing Census are used : categorized as owner occupied, rented for kebele, rented for public housing agencies, rented for other organization, rented for private household, paying difference in rent, rent free and non stated. From the total number of housing stock of urban center, about 50% of the housing stocks are owned by households, 42% are rented from private households and kebele and the remaining 7.3% of housing stock are rented from public housing agency, rented from other organization, paying difference in rent and others.

The number of person per housing unit is obtained by taking the ratio of population by housing stock. The average number of persons per housing unit was estimated at 4.62 and 4.37 in rural and urban areas respectively, which is used as a bench mark year estimate so as to apply for the projection of housing stocks in the coming years. It is assumed that the proportion of persons per housing unit remains constant for the other projected years. Hence, the total housing unit for each of the ten consecutive years is estimated using this method.

The average annual rent for urban rented house is obtained from the 1994 Population and Housing Census; result for Amhara Region and for non-rented housing unit is assumed the same as for rented housing units. So non rented or owner occupied housing units are imputed where equal amount of average rent is applied. For rural areas, average annual rent is taken from the 1995/96 and 2002 final reports on Household Income, Consumption and Expenditure Surveys report of CSA. The survey results indicate average expenditure on rent per household rather than housing unit. The average rent per household changes to annual average rent per housing unit. The 1994 Population and Housing Census result indicated that 92.4 percent of housing unit were shared by one household, 5.1 percent of the housing unit shared by two households and about 0.8 percent shared by three and above households. From the above ratio, the average rent per housing unit was estimated. Finally, to arrive at the estimate of the average annual rent for other years the rent component of urban and rural consumer price index for urban and rural area is used to adjust for other years.

Intermediate Consumption for this sector is the cost of repair and maintenance only. Ten percent (10%) of the total gross output has been taken for both urban and rural areas as intermediate consumption. Finally, the gross value added of the sector at CFC has been

obtained by deducting intermediate consumption from gross value of output. GVA estimates at Constant F.C., is obtained by deflating the CFC estimates by price indexes on housing rents.

3.1.5. Public Administration Service

According to the UN-SNA, the gross output of public administration services is equal to the total cost incurred to provide these public goods and services in the year under consideration. Since there is no operating surplus and the outputs are not marketed, the convenient method is to use the total cost of government bodies, which includes compensation of employees, cost of intermediate inputs, consumption of fixed capital and indirect taxes paid if any. The sectors' GVA at current market prices is defined as the sum of compensation of employees, consumption of fixed capital and indirect taxes or gross output less cost of intermediate inputs.

As in the case at national level, the accounts of regional government organs, the gross output and value added do not include the cost of consumption of fixed capital. This is because of the government accounts do not include provision for the consumption of fixed capital. Therefore, gross value added is derived as the sum of compensation of employees.

In the actual computation of regional government final consumption expenditure from the Bureau of Finance annual revenue and expenditure reports, the following adjustments have been followed.

1. Expenditure on purchase of motor vehicles and equipment included in the recurrent expenditure is reclassified as capital expenditure.
2. Developmental expenditures of recurrent nature, which are included in the capital budget of Bureau of Finance, are reclassified as recurrent expenditure.
3. Government transfers payments that are not made in exchange for goods or services supplied are not considered as government costs of production where it has been assumed 45% of it to be as outlays on personal services.

After adjusting the above expenditure types, those expenditures that were reclassified as recurrent should also be distributed as employee benefits and cost of intermediate inputs. Uniforms of police personnel are to be included in compensation of employees and hence in value added.

Outlays on an imputed pension contribution, which is calculated as 6 percent of pension contribution from the total current annual wages and salaries of employees of government (excluding education & health employees pension revenue) taken from the recurrent budget of government organs in the GVO or GVA estimates. It would be noticed that the 4% of the current gross wages and salaries contribution of the government employees are already assumed to include and treated as an outlays on personal services.

A detailed data on income and expenditure statements of municipalities was collected from each municipality in the region and hence 58 municipalities have been covered. In addition to municipalities, 341 Town and 2893 rural Kebeles have been covered in the region. The value added estimation of Kebeles was taken based on wages and salaries of employees.

In order to estimate GDP contribution of the municipalities, the compiled data on the recurrent and capital type of expenditure that was obtained from respective municipalities in the region, are used. Expenditure items in detail are first organized. The RGDP components are then computed to arrive at the value added estimates of the sub – sector.

As indicated above, Kebele administration service is included under this sector. To estimate the GDP contribution of Kebele administration services, the data on the number of Kebeles, the number of Kebele employees (average), and their monthly salaries, in both urban and rural areas are applied. Four workers per urban Kebele administrations with total average monthly payment of Birr 4800 (400Birr by 12 months) is assumed to arrive at GDP contribution of this sub-sector. This figure, the data on the number and monthly salaries of kebele workers are collected from sample kebele administrations. Concerning rural kebele administrations, the GVA contribution of one person per rural kebele was taken 200 birr per month.

Thus, the gross output and value added at current factor cost of public administration is the sum of the gross output and value added of all regional government bodies (excluding education and health), including municipalities, town and rural Kebeles and the activities of Federal Government in the region, i.e. the total sum of compensation of employees of the above mentioned bodies. Total real GVA of public administration services. have been estimated using the wage rate index.

3.1.6. Education Service

A production method of estimation is applied to estimate the gross value added estimate of governmental education service of the region. Gross Value of output of governmental education service is the sum of outlays on personal services and goods and services, which were obtained from the annual recurrent and capital budget actual expenditure reports. The GVA estimates are then computed to be GVO less outlays on goods and services. In other terms, the GVA component refers outlays on personal services and pension payment of both the employees and of the government (6%) and recurrent type of actual expenditure from the capital budget and 45 % of the unallocated portion of the recurrent budget are aggregated to arrive at the value added estimate of education services of the regional government.

For higher education service of the region, (Gondar college of teacher education, Gondar Medical Science College, Bahir Dar University and Blue Nile College) data on personal services (annual salary of employees) and operating surplus of their extension education service are obtained from respective colleges located in the region. The imputed pension contribution is also computed as 6% of annual salary of the employees of higher education services.

In the 1993/93 – 1998/99, in the estimation procedure of GVA of non-governmental schools, similar procedure to government education was applied. On the other hand, in 1999/00 - 2002/03, GVA for non – government schools has been estimated indirectly using the average value added estimate per private school for the previous years and multiplying it by the number of private schools.

With respect to continuing education at various levels, as already mentioned above two methods were applied; that is by collecting the income & expenditure data from the reports of Zonal Education Departments, and in the absence of such data, estimations multiplying the number of students attending night schools at each level by average tuition fee. From this total tuition fee, 10% is assumed to be retained in the school as operating cost. In 1999/00 and 2000/01, the GVA is computed as the total revenue collected from night school students' registration fee and monthly payments less some expenses disbursed in running night schooling.

Value Added at constant factor cost is estimated by extrapolating base year value added by using composite index and quantity indices. That is except higher education where quantity index is applied for all of the accounting periods, composite index is applied for the other education categories, regional government, non-government schools and continuing education. In computing composite index, as suggested by National Income Accounts Department of MoFED is to have the value of quality index as 30% and the value of quantity index 70%. Therefore, the estimation procedure of the regions education sector at constant factor cost is estimated by using this suggested ratio. The indices are constructed separately for government schools, higher education, non-government schools and continuing education. These indices are estimated from the trend of the previous years.

GVA estimates of higher education at Constant F.C. of the years before 2000/01 are computed using quantity index while that of the other categories of education by composite indexes. For the last two years, data on the number of teachers and students of each level and both types of education service was taken from the statistical bulletin of the bureau of education to construct the composite indices and volume index of higher education and continuing education and implicit index for pension contribution. Little change was made due to the new education policy made in the country in the method of estimation. Due to the merging of Primary and Junior schools (considered as first cycle education,) the weights of the two are merged as an average. Moreover the weight for private secondary schools is fixed as that of government's secondary school weight in constructing the constant factor estimate of the sector.

3.1.7. Health Service

The value added estimate of the regional government health service, hence, is computed as a sum of outlays on personal services from the recurrent budget, outlays on personal service type of expenditures from the capital budget, and 45% as outlays on personal service from the unallocated portion of the ordinary budget actual expenditure .

For GVA estimation of private modern health services, gross value of output and value added has been estimated from the income and expenditure statements of certain junior, medium and higher clinics. A crude assumption is taken to use the average per capita GVA of the clinics to be multiplied by the total number of clinics according to their standard and data of the zones under consideration.

Concerning traditional medical practitioners, an attempt has been made to estimate the average value added of traditional medical practitioners based on the data received from office of ANRS Traditional Medical Practitioners Association (4700 in number). The classification of their income & expenses on intermediate consumption are made in consulting with the association as 435 of them are getting a daily average income of Birr 100, while 85 of them are getting Birr 10 and the rest 4180 of them are getting Birr 5. With close consultation it is assumed that 35% of their income is used for intermediate consumption and the number of working days in a year are being 240.

For the derivation of real GVA of health sector, deflation method has been applied. This deflation method was based on first by establishing the total number of employees of public and private modern health service by wage category, and then by constructing the index for the accounting years under consideration. Finally, the current GVA estimates were deflated by the wage rate index so constructed. Using the 1993/94 – 1998/99 wage rate growth trend, the 1999/00 – 2000/01 wage rate index are also constructed for deflation and in the last two years the nominal value first has been converted in to an index with the base-year value. Then the price index is constructed assuming 30% of the change in nominal GDP is due to the change in average wage rates. Dividing the nominal value by the price indices result the constant factor estimate.

3.1.8. Domestic Services

CSA's survey report on the value added from domestic service activities is used with assumptions of:

- The percentage distribution of economically active population by economic activity remains constant. The Percentage of domestic servants out of the total economically active population are, then, assumed to be 6.58% and 0.17% in urban and rural areas respectively.
- On the average, monthly cash wages paid to a domestic servant is obtained from CSA report of retail price of goods and services in urban and rural areas.
- 50% of Per Person (PP) food expenditure in both urban and rural areas is assumed to be annual wage in kind for a domestic servant. Food expenditure estimate per person is obtained from the CSA report on Household Income, consumption and Expenditure Survey.

The GVA of domestic servants at CFC is then computed as the product of total annual cash and in kind wages paid to domestic servants and the number of domestic servants. On the other hand, GVA at Constant F.C. estimate is estimated by multiplying the number of domestic servants of the respective years by the base year annual cash wages & wage in kind noticed that no intermediate input costs are considered to domestic servants.

3.1.9. Other Services

Use of multipliers with some basic assumptions is the basis for GVA estimation in this sector. First, it is assumed that the proportional distribution of economically active population by industrial group remains constant. Hence percentage of economically active population who are engaged in "other Services" out of the total economically active population has been estimated about 2.66 % and 0.07% in urban and rural areas respectively. Value added per person per annum in urban areas is assumed from CSA survey report. The Value added per person per annum estimates in rural areas is assumed to be 50% of that of the urban areas.

Annex 3 Sources of Data for the RGDP estimations

Economic Activity as to the ISIC	Source of Data
Agriculture and Allied Activities	
Crop Production	<ul style="list-style-type: none"> ☞ CSA, ☞ BoA, ☞ Agricultural Inputs Supplying Enterprise, ☞ Gojjam-Gondar Agricultural Development Enterprise, ☞ Ethiopian Seed Enterprise, ☞ Shoa Robit Agricultural Development Center
Livestock Production	<ul style="list-style-type: none"> ☞ CSA, ☞ BoA, ☞ Ethiopian Dairy Development Enterprises, ☞ Breed improvement & multiplication centers in the region (Cattle, Sheep and Goat and Poultry), ☞ Small Farmers Dairy Development Projects, ☞ Ethiopian Research Organization:(Adet, Sirinka & Sheno Research Centers), ☞ Socio economic profile of ANRS, ☞ Bahir Dar Edible Oil Factory, ☞ Other regional studies made on livestock and related areas.
Hunting	<ul style="list-style-type: none"> ☞ the 1994/95 household income consumption and expenditure survey by CSA
Forestry	<ul style="list-style-type: none"> ☞ CSA, ☞ BoA & Departments of Agriculture (DoA), ☞ Ethiopian Natural Gum processing and marketing enterprise, ☞ Ambassel Trading Enterprise, ☞ Ethiopian Light & Power Authority (Bahir Dar-Branch), ☞ Amhara Regional Conservation strategy Vol. I. Introduction and the natural resource base ☞ Incense project study – at East Gojjam Administrative Zone
Agricultural Mechanization Services	<ul style="list-style-type: none"> ☞ Bure Agricultural Mechanization Service Center (the only public enterprise) and Zeleke Agricultural Mechanization Service Center
Fishery	<ul style="list-style-type: none"> ☞ BoA, annual performance reports for quantity of fish marketed ☞ Lakes Fisheries Development section in BoA is the main source of data for quantity of fish produced in the region and average producer's prices. ☞ Ethiopian Fish Production and Marketing Corporation: Bahir Dar Branch. ☞ Socio economic profile of the Amhara National Regional State ☞ Fishery Research Center; Bahir Dar

Industry

Mining and Quarrying	<ul style="list-style-type: none"> ☞ Regional bureau of Water, ☞ Bureau of Mines and Energy (BoMWE) and Zonal departments. ☞ Zonal Departments of Water Mines and Energy. ☞ CSA survey of Urban Informal Sector Sample Survey of 1995/96
Manufacturing	<ul style="list-style-type: none"> ☞ Financial report of large and medium scale manufacturing industries, ☞ Survey reports of CSA; ☞ Reports of trade and industry both at the Bureau and Zonal Departments ☞ Tax collection documents of both Bureau and Zone Finance Departments, ☞ Population forecast reports by Bureau of Finance and Economic Development ☞ Zonal Trade and Industry Departments ☞ BoPED/BoFED's annual statistical Bulletins.
Electricity	<ul style="list-style-type: none"> ☞ Ethiopian Electric Power Corporation (EEPCCO)
Water	<ul style="list-style-type: none"> ☞ The respective towns water service offices were our sources of data ☞ The 1999/00 Household Income, Consumption & Expenditure survey of CSA
Construction	<ul style="list-style-type: none"> ☞ MoF, and MoFED. ☞ The Ethiopian Roads Authority (ERA) ☞ Ethiopian Civil Aviation Authority ☞ Ethiopian telecommunications corporation, ☞ Ethiopian Postal Services Agency, ☞ Commercial & Development Banks of Ethiopia. ☞ The respective municipalities. ☞ Zonal Work and Urban Development Departments. ☞ Office of Investment of the region ☞ The 1994 report of CSA on Ethiopian Population and Housing Censuses ☞ BoPED/BoFED quarterly reports and annual statistical abstracts ☞ Amhara Development Association /ADA/, ☞ Organization for Rehabilitation and Development in Amhara /ORDA/ ☞ Ethiopian Social Rehabilitation and Development Fund (ESRDF) ☞ The Office of the Regional Council ☞ Bureau of Works and Urban Development.

Distributive Services

Trade Hotel and Restaurants	<ul style="list-style-type: none"> ☞ Financial/audit reports for organized enterprise, ☞ For unorganized establishments, data were obtained from regional government organs: Zonal Departments of Trade and Industry, each woreda's finance offices ☞ The 1995/96 Central Statistical Authority survey result on Distributive & Services Trade
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Definition of Important Terminologies

Transportation	<ul style="list-style-type: none"> ☞ Region's Bureau of Transport and its respective zonal departments (particularly for passenger transport services) ☞ Other sources of output data were both public and private organized dry freight transport enterprises/associations (for freight transport operators) ☞ The respective urban municipalities (for urban transport activities) ☞ CSA's Household Income, Consumption & Expenditure Survey report & BoPED's Population Department (For Pack Animal Transport) ☞ Lake Tana Water Transport Enterprise (For Water Transport) ☞ The national income parameters of MoFED (for intermediate consumption)
Other Services	
Communication (Telecommunication and Postal Service)	<ul style="list-style-type: none"> ☞ Ethiopian Telecommunication Corporation ☞ Ethiopian Postal Service Agency
Financial Intermediations	<ul style="list-style-type: none"> ☞ Commercial Bank of Ethiopia ☞ Development Bank of Ethiopia, ☞ Construction and Business Bank of Ethiopia, ☞ Dashen Bank, Wegagen Bank, Awash International Bank, ☞ Workers' Saving and Credit Cooperatives, ☞ Ethiopia Insurance Corporation ☞ The United Insurance Share Company, ☞ Nyala Insurance S.C, ☞ Nile Insurance S.C. and ☞ Africa Insurance S.C.
Real estate and Ownership of Dwellings	<ul style="list-style-type: none"> ☞ Statistical Bulletins of Bureau of Planning and Economic Development of the Amhara National Regional State ☞ The revised report on 1995/96 Household Income, Consumption and Expenditure Survey Volume II of CSA, ☞ The 1994 Population and Housing Census of Ethiopia result for Amhara Region, ☞ The report on Housing Characteristics of the 1994 census result and consumer price indices of Ethiopia at country, rural and urban levels, and Consumer price indices of Ethiopia of CSA.
Public Administrations	<ul style="list-style-type: none"> ☞ The annual recurrent and capital expenditure statements prepared by the Bureau of Finance and Economic Development. ☞ Zonal Works and Urban Development Departments of the respective municipalities and kebele administrations ☞ The respective Branch offices of Federal Government offices in the region (pension & Social Security & Ethiopian Television, Civil aviation, Road authority). ☞ Ethiopian Road Authority (Head Office of ERA) ☞ The Civil Service Commission of the region (for wage category of regional government institutions employees)

Education	<ul style="list-style-type: none"> ☞ BoFED(For both recurrent and capital expenditure on educational service) ☞ annual budgetary revenue and expenditure reports and Bureau of Education and its Zonal Departments ☞ Higher Education Centers For data on higher education services in the region) ☞ Non-Government educational institution.
Health	<ul style="list-style-type: none"> ☞ Bureau of Health ☞ Annual recurrent and capital budget expenditure report of BoFED. ☞ Zonal Departments of Health (For private clinics) ☞ The Amhara National Regional State Association for Traditional Medical Practitioners ☞ civil service commission for government health institutions
Domestic services	<ul style="list-style-type: none"> ☞ The 1994 population and Housing censuses analytical report of the Amhara Region of CSA (For economically active population by economic activity) ☞ Document on the average retail price of goods and services and results of household income and expenditure by CSA
Other Services	<ul style="list-style-type: none"> ☞ the 1994 population and housing census of Ethiopia(For economically active population by economic activity)

Annex 4 Definition of Important Terminologies

Term	Definition
National accounts	National accounts are based on the internationally recommended System of National Accounts (SNA) 1993 and are a coherent, consistent and integrated set of macroeconomic accounts; balance sheets and tables based on a set of internationally agreed concepts, definitions, classifications and accounting rules. National accounts provide a comprehensive accounting framework within which economic data can be compiled and presented in a format that is designed for purposes of economic analysis, decision-taking and policy-making.
Gross domestic product (GDP)	Gross domestic product is an aggregate measure of production equal to the sum of the gross values added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). The sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchasers' prices, less the value of imports of goods and services, or the sum of primary incomes distributed by resident producer units.
GDP - output based	Output-based GDP is the sum of the gross values added of all resident producers at basic prices, plus all taxes less subsidies on products.
GDP at current prices	Gross domestic product (GDP) at current prices is GDP at prices of the current reporting period. Also known as nominal GDP
GDP at constant prices	Gross domestic product (GDP) at constant prices refers to the volume level of GDP. Constant price estimates of GDP are obtained by expressing values in terms of a base period. In theory, the price and quantity components of a value are identified and the price in the base period is substituted for that in the current period. Two main methods are adopted in practice. The first, referred to as "quantity revaluation", is based on a methodology consistent with the above theory (i.e., by multiplying the current period quantity by the base period price). The second, commonly referred to as "price deflation", involves dividing price indexes into the observed values to obtain the volume estimate. The price indexes used are built up from the prices of the major items contributing to each value.
Gross domestic product at market prices	Gross domestic product at market prices is the sum of the gross values added of all resident producers at market prices, plus taxes less subsidies on imports.
GDP deflator	GDP deflator is the <u>implicit price deflator</u> for GDP of which the movements in an implicit price deflator reflect both changes in price and changes in the composition of the aggregate for which the deflator is calculated.

Term	Definition
GDP per capita	GDP per head calculated as the aggregate of production (GDP) divided by the population size
Shares of GDP	A simple fraction expressed in percentages of GDP of the values of the final expenditure components or gross value added by kind of economic activities. The shares do not necessarily add-up to 100 percent due to statistical discrepancies and valuation issues.
Gross Regional Domestic Product (RGDP)	Aggregate of the gross value added or income from each industry or economic activity of the regional economy.
Gross value added	<p>Gross value added is the value of output less the value of intermediate consumption; it is a measure of the contribution to GDP made by an individual producer, industry or sector; gross value added is the source from which the primary incomes of the SNA are generated and is therefore carried forward into the primary distribution of income account.</p> <p>Or</p> <p>It is the difference between gross output and intermediate inputs. Gross outputs of a production unit during a given period is equal to the gross value of the goods and services produced during the period and recorded at the moment they are produced, regardless of whether or not there is a change of ownership.</p>
Intermediate consumption	<p>Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital; the goods or services may be either transformed or used up by the production process.</p> <p>Or</p> <p>It refer to the value of goods and services used in the production process during the accounting period.</p>
Annual growth rate	<p>Annual growth rates are rates expressed over the corresponding period of the previous year. The annual growth rates are expressed as:</p> $Y_t/Y_{t-1} - 1.$
Nominal growth	Growth rates expressed as rate of change between two periods of which the values of the two periods are valued in prices of each of the reporting period.
Real growth	Growth rates expressed as rate of change between two periods of which the values of the two periods have the same prices as the reference period
Trend	A long-term movement in an ordered series, say a time series, which may be regarded, together with the seasonal, cyclical and irregular (random) component, as generating the observed values.
Main aggregates	Consist of macroeconomic constructs like <u>Gross Domestic Product (GDP)</u> by kind of economic activities;

Term	Definition
Base year	The base period is generally understood to be the period with which other periods are compared and whose values provide the weights for a price index. However, the concept of the base period is not a precise one and may be used to mean rather different things. (in this document it refers to the price reference-period, that is, the period whose prices appear in the denominators of the price relatives used to calculate the index.
Fiscal year	A 12-month accounting period that does not necessarily coincide with a calendar year (i.e. <i>Hamle till Sene</i> according to Ethiopian Fiscal Year; or January till December)
Economically active persons or Population	Economically active persons/population are persons/population engaged in production included within the boundary of production of the SNA.
Price index	A price index reflects an average of the proportionate changes in the prices of a specified set of goods and services between two periods of time.
Volume index	A volume index is most commonly presented as a weighted average of the proportionate changes in the quantities of a specified set of goods or services between two periods of time; volume indices may also compare the relative levels of activity in different countries

Annex 5 Conversions and Formula

GDP	= [(quantity of A X price of A) + (quantity of B X price of B) + ... + (quantity of N X price of N)] for every good and service produced within the country /region less intermediate consumption.
Rate of Growth of GDP	<p>The growth rate of GDP is derived on the basis of constant price series in national currency, using the following formula:</p> $\text{Growth Rate}_y = \left(\frac{GDP_y}{GDP_{y-1}} - 1 \right) * 100$ <p>where y denotes the year.</p>
Rate of Growth of Components	<p>The growth rate of each component is derived on the basis of constant price series in national currency, using the following formula:</p> $\text{Growth Rate}_y = \left(\frac{\text{Component Value}_y}{\text{Component Value}_{y-1}} - 1 \right) * 100$ <p>where y denotes the year.</p>
Average Rate of Growth	<p>The average growth rate for a period of n years is derived as the geometric mean of the annual growth rates for that period, using the following formula:</p> <p><i>Average Growth Rate for n years =</i></p> $\left(\text{POWER}((RGDP (\text{Year-n}) / RGDP (\text{Base Year})), 1/n) - 1 \right) * 100$
GDP per capita	= (GDP) / (population)
GDP deflator	= [(nominal GDP) / (real GDP)] - 1
Percentage Distribution (Share of GDP)	<p>The share of each component of GDP is derived on the basis of current price series in national currency, using the following formula:</p> $\text{Share} = \frac{\text{Component value of country}}{\text{GDP value of country}} * 100$ <p>for each component and for each year.</p>

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