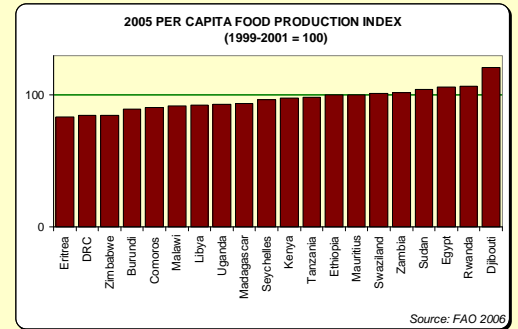
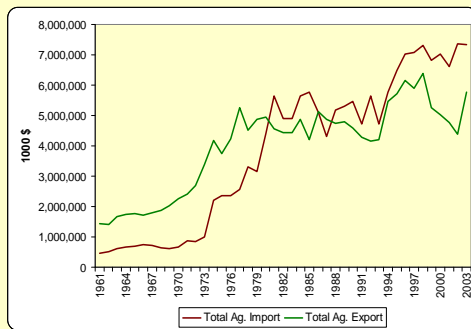
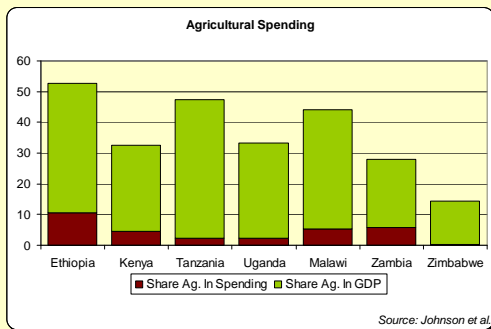
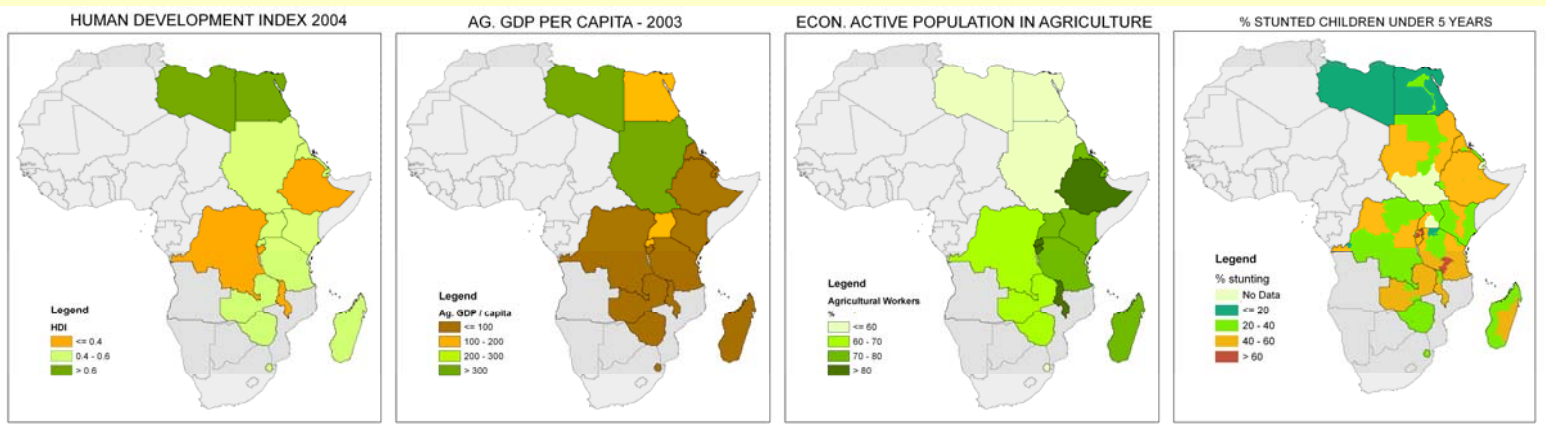


# REGIONAL TRENDS REPORT FOR THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA (COMESA)



July 2007

Regional Strategic Analysis and  
Knowledge Support System for Eastern and  
Central Africa (ReSAKSS-ECA)

International Livestock Research

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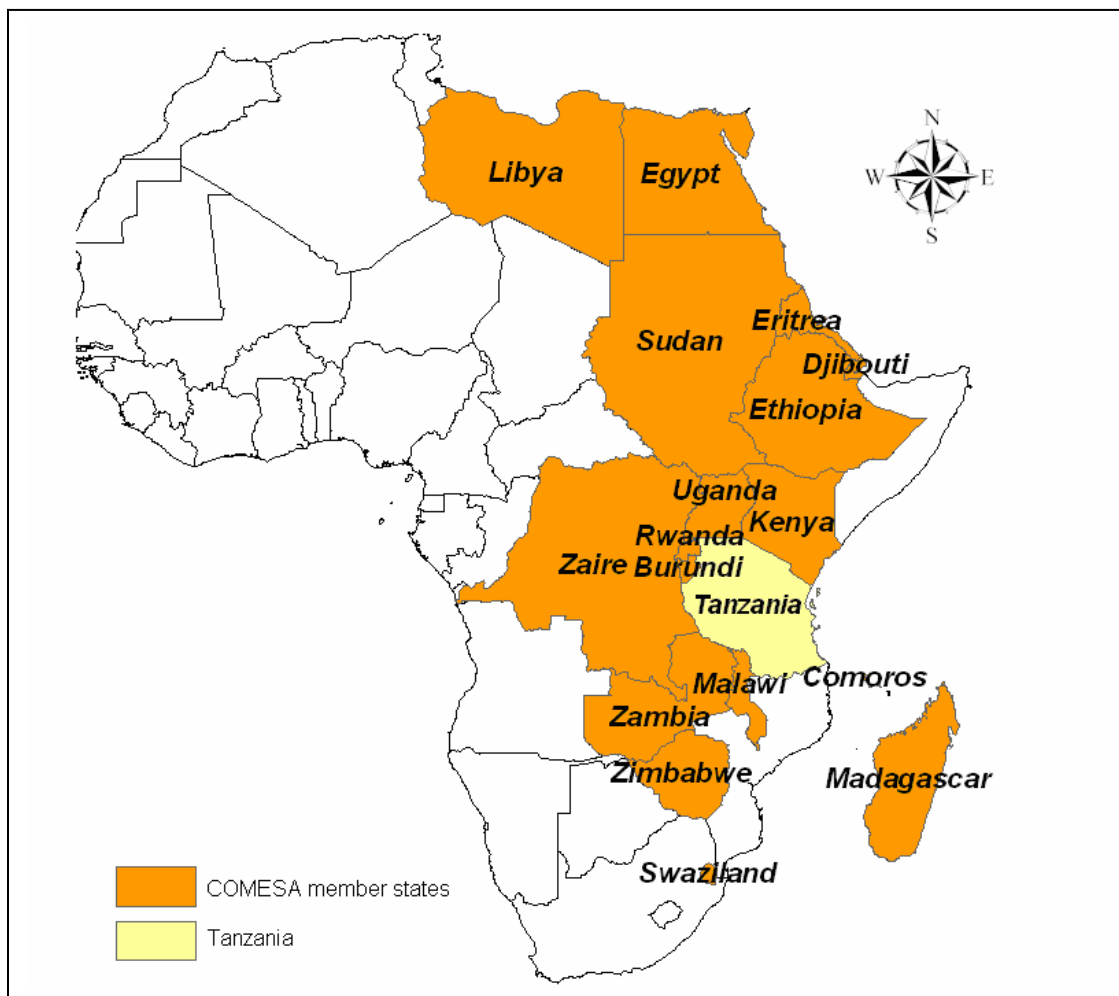
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# 1. Introduction

The Regional Strategic Analysis and Knowledge Support System (ReSAKSS) node for Eastern and Central Africa (ECA) has been set up to support agricultural and rural development strategy formulation and implementation. The support is in form of data, information and analysis for the different stakeholders at regional and national levels, comprised of regional organizations such as the Common Market for Eastern and Southern Africa (COMESA), the East African Community, the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA), governments, donors, civil society and the private sector. Besides analysis, the ReSAKSS-ECA node is expected to establish a monitoring and evaluation system that allows benchmarking and subsequent monitoring of key agricultural and economic development indicators, especially those of the Comprehensive Africa Agriculture Development Programme (CAADP) and the Millennium Development Goals (MDGs).

Figure 1: COMESA member states



This report, the first in what will be a series of annual reports, presents the status and trends of key economic and agricultural development indicators of the COMESA<sup>1</sup> region (Figure 1). The report is not intended to offer explanations for the trends of variables presented for the various countries, but rather to provide a comparative perspective so that each country can look at its own performance against that of other countries. COMESA, with its headquarters in Lusaka, Zambia, was created in 1994 to promote regional economic integration through trade and investment. It is the largest regional economic community in Africa with a total population of about 400 million in 2005 (UN 2006), making up 45% of Africa's population. COMESA had a total gross domestic product (GDP) of over US\$ 260 billion in 2005 (World Bank 2006<sup>2</sup>), about 30% of Africa's GDP.

## 2. Socio-economic development in COMESA

### 2.1 Human development is low in COMESA

Human development, as measured by the human development index (HDI),<sup>3</sup> is low in most COMESA countries. The UN has classified countries, based on their HDI score, into three categories: high, medium and low. Only two countries in COMESA, Seychelles and Mauritius, which account for less than 1% of the region's population, are in the high HDI category. Seven countries—Libya, Egypt, Comoros, Sudan, Madagascar, Uganda and Swaziland—are in the medium HDI category. The remaining 10 countries, with almost 60% of the COMESA population are classified as low HDI countries, all with a score of less than 0.5, with Burundi and Ethiopia having the lowest levels of human development in the region. However, since 1990 all but five (Democratic Republic of Congo (DRC), Kenya, Swaziland, Zambia and Zimbabwe) COMESA countries have seen their HDI scores increase (see Table 1).

**Table 1: Human development index for COMESA countries**

	1975	1980	1985	1990	1995	2000	2004
<b>High</b>							
Seychelles	..	..	..	..	..	..	0.842
Mauritius	..	0.659	0.690	0.724	0.747	0.776	0.800
<b>Medium</b>							
Libya	..	..	..	..	..	..	0.798
Egypt	0.439	0.487	0.540	0.579	0.611	..	0.702
Comoros	..	0.480	0.498	0.504	0.517	0.533	0.556
Sudan	0.349	0.376	0.396	0.428	0.465	0.500	0.516

<sup>1</sup> COMESA, with its headquarters in Lusaka, Zambia, has 19 member states: Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

<sup>2</sup> GDP at current prices (US dollars).

<sup>3</sup>The HDI provides a composite measure of three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary levels) and having a decent standard of living (measured by purchasing power parity (PPP) and income). The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as respect for human rights, democracy and inequality.

	1975	1980	1985	1990	1995	2000	2004
Madagascar	0.400	0.437	0.436	0.446	0.458	..	0.509
Uganda	..	..	0.412	0.409	0.412	0.474	0.502
Swaziland	0.530	0.562	0.584	0.624	0.603	0.534	0.500
<b>Low</b>							
Djibouti	..	..	..	..	0.477	0.487	0.494
Zimbabwe	0.546	0.574	0.640	0.637	0.589	0.527	0.491
Kenya	0.461	0.509	0.530	0.546	0.524	0.499	0.491
Eritrea	..	..	..	..	0.409	0.428	0.454
Rwanda	0.342	0.388	0.401	0.340	0.335	0.435	0.450
<i>Tanzania</i>	..	..	..	0.435	0.422	0.416	0.430
Zambia	0.468	0.475	0.484	0.462	0.424	0.409	0.407
Malawi	0.320	0.351	0.362	0.371	0.412	0.402	0.400
DRC	0.414	0.423	0.431	0.422	0.393	..	0.391
Burundi	0.285	0.311	0.345	0.353	0.324	..	0.384
Ethiopia	..	..	0.291	0.311	0.323	0.352	0.371

Source: UNDP (2006).

## 2.2 Poverty levels are high in COMESA

Most people in COMESA live in poverty, with more than half the population living on less than one dollar a day. Measured according to national poverty lines, poverty rates in the period 1990–93 ranged from 35% to 78%; between 1998 and 2006 the range was 31–84%. Seven countries (Kenya, Uganda, Madagascar, Rwanda, Burundi, Zambia and Ethiopia) conducted at least two household surveys during the 1990–2006 period. Of these seven countries, only three (Uganda, Rwanda and Ethiopia) experienced poverty reduction. Poverty increased in the other four countries and this trend is consistent whether poverty rates are measured using the one-dollar-a-day criterion or the national poverty line, except for Rwanda where poverty increased according to the dollar-a-day criterion (Table 2).

**Table 2: Poverty trends in COMESA, 1990–2006**

	Dollar-a-day poverty rate (%) <sup>1</sup>		National poverty rates (%) <sup>2</sup> for the last survey	
	1990	1999	1990–1993	1998–2006
Kenya	22.1	23.9	48.8	45.9
Uganda	55.7	40.8	56.4	31.1
Madagascar	42.8	45.9	70.0	80.7
Malawi	73.8	51.0	–	65.3
Zimbabwe	36.0	52.4	–	–
Rwanda	49.8	58.9	77.8	64.1
Burundi	58.8	65.4	35.0	68.0
<i>Tanzania</i>	78.6	78.3	38.6	35.7
Zambia	69.0	79.3	69.7	72.9
Ethiopia	87.4	85.2	51.1	44.2
DRC	79.6	92.4	–	83.6

Eritrea	n/a	n/a	–	66.4
Sudan	n/a	n/a	–	–
Swaziland	n/a	n/a	–	–

<sup>1</sup> UNIDO (2004); <sup>2</sup> Poverty reduction strategy papers for each respective country.

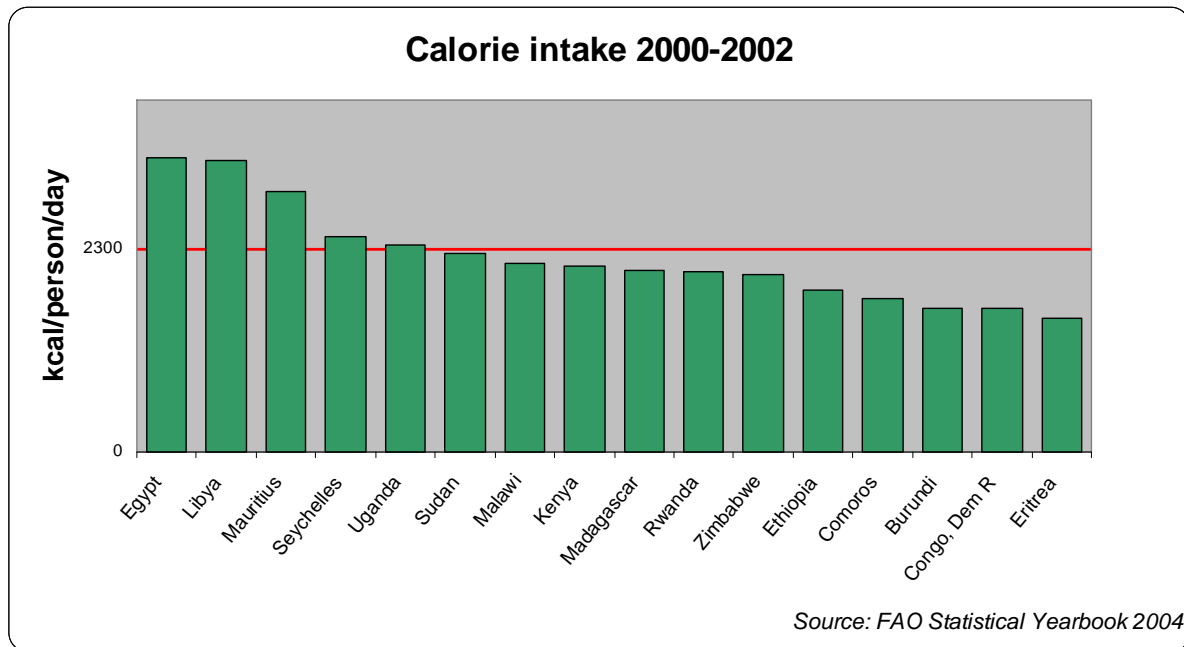
Source: Johnson and Makombe (2006); CBS (2007); UBOS (2007).

At this rate, few countries in COMESA will be able to achieve the first MDG of halving poverty by 2015, unless there are massive investments in areas that will stimulate economic growth in individual countries. The type of investments and where they need to be made is not the subject of this report, but will be addressed based on country assessments under CAADP. By the end of 2007, several COMESA member states are expected to have undertaken a comprehensive review of their agricultural sectors in order to align them to the CAADP agenda, and developed compacts that lay out the strategies and commitments for achieving the stated goals and targets for the agricultural sector, including commitments to increase the share of the agricultural budget in the total national budget in line with the 10% that heads of state and government made in Maputo in 2003, as well as achieving an annual agricultural sector growth of 6%.

### 2.3 Hunger remains a threat in COMESA

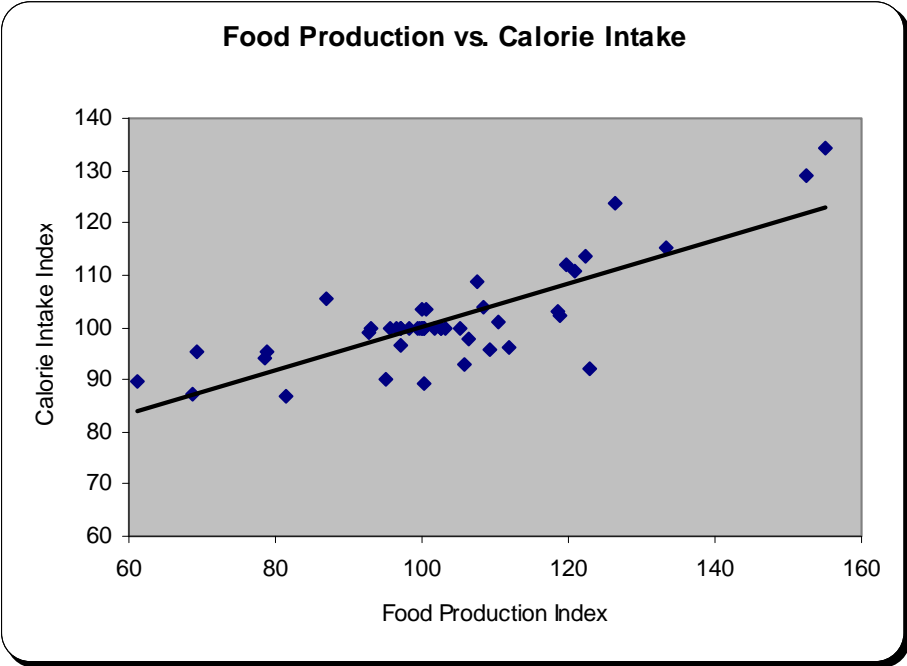
The level of hunger is high in the COMESA states and for many of them the situation has deteriorated since 1990. In 2000–2002, the population of only five countries (Egypt, Libya, Mauritius, Seychelles and Uganda) consumed more than the recommended daily intake of 2300 calories. People in the other 14 COMESA states consumed less than the recommended daily calorie intake, with Burundi, DRC and Eritrea at the lowest end of the scale. Egypt, Libya and Mauritius had the highest levels of daily calorie intake (Figure 2).

Figure 2: Daily calorie intake in COMESA countries.



The low levels of calorie intake are highly correlated with the levels of per capita agricultural production in individual countries (with a correlation coefficient of 0.797). Countries that have experienced lower levels of per capita food production have also seen their daily calorie intakes decline, an indication of the great reliance for food security on the performance of the agricultural sector in COMESA (Figure 3).

**Figure 3 : Food production vs. calorie intake in COMESA.**



### 2.4 Economic performance

Despite having almost half the population of Africa, COMESA only has about one-third of the continent’s GDP (Table 3). And even then, three countries—Egypt, Sudan and Libya—dominate the rest, accounting for over 61% of COMESA’s GDP in 2004, yet they have less than a third of the region’s population.



**Table 3: Gross domestic product, 1990 prices<sup>1</sup>**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
COMESA	144.1	147.8	153.5	159.3	165.0	170.5	176.8	180.7	186.7	195.4
Africa	506.1	528.6	545.8	565.3	581.1	599.8	622.0	642.2	671.6	702.4
COMESA's share (%)	28.5	28.0	28.1	28.2	28.4	28.4	28.4	28.1	27.8	27.8

<sup>1</sup> US\$ billions.

Source: UN (2006).

Between 1995 and 2003, most COMESA countries experienced modest economic growth, the majority growing at rates of between 2% and 5% per annum. During this period, three countries (Zimbabwe, DRC and Burundi) experienced negative growth, probably due to their political environments. The country with the highest rates of economic growth during this period was Rwanda with an average annual growth at 11.2%. This country was recovering from civil war. By 2003, only Madagascar had reached a 7% annual rate of GDP growth, the target set by the New Partnership for Africa's Development (NEPAD) in 2001 (Table 4).

**Table 4 : GDP growth in COMESA countries, 1995–2003**

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Madagascar	1.71	2.15	3.70	3.93	4.70	4.80	6.00	-12.7	9.60
Tanzania	3.56	4.21	20.52	3.72	3.53	5.10	6.24	7.24	7.10
Uganda	9.39	6.22	5.50	9.72	6.53	4.37	6.45	4.73	6.26
Sudan	5.30	-15.92	6.10	5.95	6.00	8.27	6.39	6.45	6.08
DRC	0.70	-1.10	-5.40	-1.70	-4.30	-6.90	-1.10	3.10	5.60
Libya	0.92	3.92	1.32	0.44	0.11	3.21	3.31	-0.20	5.60
Malawi	9.02	9.67	6.70	1.50	3.10	3.30	-4.10	1.80	4.40
Zambia	-2.49	6.60	3.30	-1.87	2.22	3.57	4.87	3.30	4.31
Mauritius	4.42	5.56	5.76	6.02	2.90	9.16	5.28	1.71	4.21
Egypt	4.56	5.12	4.02	6.11	5.38	3.52	3.19	3.11	4.12
Djibouti	5.60	-5.09	4.60	-0.19	2.20	0.73	1.90	2.57	3.53
Eritrea	2.86	9.25	7.90	1.78	0.02	-13.12	9.23	0.66	3.00
Swaziland	3.79	3.92	3.84	3.20	3.52	2.07	1.75	3.57	2.16
Comoros	-2.25	1.66	-1.10	-1.10	1.90	-1.13	2.30	2.35	2.06
Kenya	4.41	4.14	2.09	1.61	1.29	-0.17	1.14	1.06	1.66
Rwanda	33.52	14.88	14.34	9.20	6.47	6.26	6.67	9.34	0.71
Burundi	-7.06	-8.60	0.33	4.58	-0.97	-0.90	2.25	4.47	-0.53
Ethiopia	6.16	10.62	5.17	-0.54	6.31	5.35	7.71	1.60	-3.92
Seychelles	-0.62	1.88	15.08	11.23	1.94	-0.12	-1.90	0.30	-5.37
Zimbabwe	0.16	9.73	1.43	0.49	-3.60	-7.65	-2.67	-4.37	-10.37

Source: UN (2006).

Per capita GDP in COMESA is low. In 2003, more than half the countries had GDP per capita of less than US\$ 500 and for the majority it was either declining or increasing very slowly during the 1993–2003 period (Table 5). Only four countries—Seychelles, Libya, Mauritius and Swaziland—had per capita incomes of over US\$ 1000 per annum in 2003. There is wide disparity in per capita incomes in COMESA countries, ranging from US\$ 147 in Burundi to US\$ 6637 in Seychelles in 2003. These disparities are also reflected by HDI scores (see Table 1).

**Table 5 : GDP per capita (1990 prices) in COMESA**

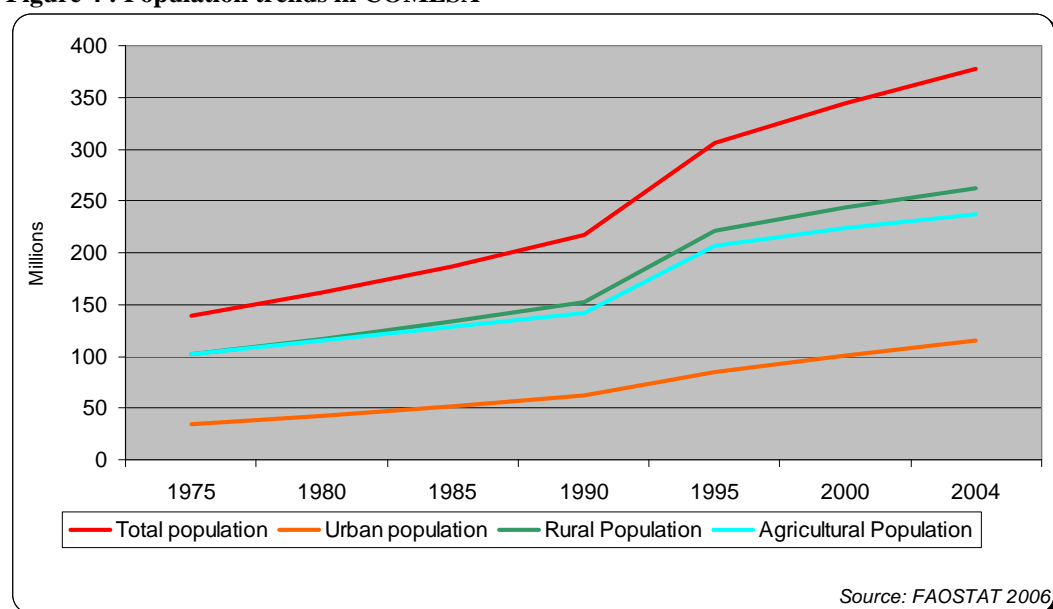
	1995	1996	1997	1998	1999	2000	2001	2002	2003
Seychelles	5643	5716	6549	7255	7362	7310	7119	7079	6637
Libya	5140	5237	5203	5123	5028	5089	5155	5044	5223
Mauritius	2909	3036	3176	3333	3395	3669	3824	3851	3974
Swaziland	1056	1080	1103	1121	1146	1158	1171	1208	1233
Egypt	786	811	828	862	891	906	917	927	947
Sudan	701	576	597	618	640	679	708	739	770
Djibouti	831	768	777	748	739	722	718	720	730
Zimbabwe	787	850	850	844	804	736	710	675	601
Zambia	385	400	404	387	388	393	405	411	421
Rwanda	300	330	346	342	332	330	337	358	355
Eritrea	389	418	441	436	422	353	370	356	351
Comoros	401	396	380	366	362	349	347	346	344
Kenya	339	344	343	340	337	329	325	322	320
Uganda	250	258	264	281	291	294	303	307	315
<i>Tanzania</i>	<i>148</i>	<i>151</i>	<i>177</i>	<i>180</i>	<i>182</i>	<i>187</i>	<i>195</i>	<i>205</i>	<i>215</i>
Madagascar	217	215	217	219	222	226	233	198	211
Malawi	184	197	205	202	203	204	191	190	194
Ethiopia	151	162	166	161	167	171	180	178	167
Burundi	168	152	151	157	154	150	150	152	147

Source: UN (2006).

## 2.5 Population and population growth rates in COMESA

In 2005, COMESA had a population of almost 400 million, 45% of Africa's population of 869 million. Most of the population in COMESA is rural, with only 31% living in urban areas in 2005. Urbanization has increased, but only slightly. In the last 30 years, the share of population living in urban areas increased from 25% in 1975 to 31% 2005. However, even though the population in COMESA is largely rural, there is an increasing share of rural people whose livelihoods are independent of agriculture. In 1975, being rural was synonymous with being agricultural. The share of rural population was equal to the share of the agricultural population. In 2005, the share of the rural population was 70%, but the agricultural population was 63%, an indication of the importance and growth of non-agricultural activities in rural areas (Figure 4).

**Figure 4 : Population trends in COMESA**



COMESA has countries with some of the highest population growth rates in the world. Three countries (Eritrea, Uganda and Burundi) have population growth rates of more than 3% a year (Table 6). For several COMESA countries, population growth rates have been higher than GDP growth rates, hence the declining per capita incomes. Economies are not growing fast enough to keep pace with population growth and if the situation does not improve, the quality of life will decline further for those countries, and reduce further the likelihood of achieving the MDGs.

**Table 6 : Population growth rates in COMESA, 1975–2004**

	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000	2000–2004
Eritrea					3.1	3.9
Uganda	3.1	3.3	3.9	3.4	3.2	3.4
Burundi	2.4	3.6	3.0	1.5	0.8	3.2
Madagascar	2.9	3.0	3.0	3.1	3.2	3.0
Comoros	4.3	3.6	3.1	3.1	3.2	3.0
DRC	3.4	3.0	3.3	3.8	1.9	3.0
Ethiopia					2.9	2.6
Rwanda	3.4	3.1	2.8	-4.8	10.1	2.5
Sudan	3.2	3.2	2.1	2.5	2.4	2.3
Malawi	3.6	3.5	6.1	1.3	2.6	2.1
Egypt	2.3	2.6	2.5	2.1	2.0	2.1
Libya	4.9	4.9	2.7	2.1	2.0	2.0
Djibouti	10.3	3.3	7.7	1.5	3.5	1.7
Kenya	4.1	4.1	3.9	3.2	2.3	1.5
Zambia	3.6	3.5	3.3	2.9	2.2	1.2
Mauritius	1.7	1.0	0.8	1.3	1.1	1.0
Seychelles	1.7	0.9	1.2	1.1	1.1	0.9

	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000	2000–2004
Swaziland	3.1	3.6	4.1	2.2	2.2	0.9
Zimbabwe	3.5	4.3	3.9	2.4	1.6	0.6
<b>COMESA</b>	<b>3.2</b>	<b>3.2</b>	<b>3.1</b>	<b>8.3</b>	<b>2.5</b>	<b>2.4</b>
Tanzania	3.3	3.5	3.5	3.7	2.6	2.0
Total	3.2	3.3	3.2	7.6	2.5	2.4
<b>Africa</b>	<b>3.0</b>	<b>3.1</b>	<b>3.0</b>	<b>2.7</b>	<b>2.5</b>	<b>2.3</b>

Source: FAOSTAT (2006).

### 3. Agriculture in COMESA

#### 3.1 Agriculture is important in COMESA economies

The agricultural GDP of COMESA was about US\$ 50 billion in 2003, a little over 40% of the total for the continent. However, like for total GDP, three countries—Sudan, Egypt and Libya—accounted for over 60% of the value of agricultural production in COMESA (Table 7).

**Table 7 : Agricultural GDP, 1990 prices<sup>1</sup>**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	Share (%) in 2003
Sudan	10,212	7,792	8,750	9,477	10,282	10,360	10,774	11,640	12,246	25.77
Egypt	8,202	8,367	8,669	8,972	9,277	9,621	9,968	11,408	11,767	24.76
Libya	5,192	5,250	5,596	5,627	5,463	5,556	5,706	6,419	6,280	13.21
Ethiopia	4,627	5,307	5,487	5,288	5,509	5,630	6,276	6,080	5,340	11.24
Uganda	2,198	2,210	2,250	2,479	2,627	2,724	2,856	2,901	3,047	6.41
Kenya	2,137	2,232	2,259	2,295	2,323	2,277	2,308	2,327	2,362	4.97
Rwanda	711	853	888	981	1,065	1,159	1,249	1,430	1,368	2.88
Zimbabwe	1,272	1,524	1,574	1,609	1,668	1,722	1,654	1,278	1,265	2.66
Madagascar	985	1,011	1,042	1,070	949	954	992	980	992	2.09
Malawi	614	736	737	813	895	944	885	906	968	2.04
Zambia	599	595	564	571	629	639	622	612	643	1.35
Burundi	538	485	480	496	501	512	531	552	539	1.13
Mauritius	282	296	306	300	230	304	326	272	276	0.58
Eritrea	135	129	215	338	312	176	226	144	191	0.40
Comoros	103	105	104	102	101	98	103	106	112	0.24
Swaziland	75	91	90	92	100	96	87	99	102	0.21
Djibouti	14	15	15	15	16	16	16	17	17	0.04
Seychelles	14	15	15	15	15	15	17	17	15	0.03
<b>COMESA</b>	<b>37,910</b>	<b>37,012</b>	<b>39,042</b>	<b>40,540</b>	<b>41,962</b>	<b>42,801</b>	<b>44,599</b>	<b>47,187</b>	<b>47,529</b>	100.00
<i>Tanzania</i>	2,333	2,390	2,667	2,718	2,830	2,926	3,087	3,240	3,370	
<b>Total</b>	<b>40,243</b>	<b>39,402</b>	<b>41,709</b>	<b>43,258</b>	<b>44,792</b>	<b>45,727</b>	<b>47,685</b>	<b>50,427</b>	<b>50,899</b>	
Africa	93,038	98,976	100,429	105,933	108,761	107,587	112,811	117,517	122,555	

<sup>1</sup>US\$ millions.

Source: UN (2006).

Agriculture is the most important sector in COMESA. Even though on average agriculture accounts for 25% of COMESA's GDP (Table 8), over 60% of the population depend on this sector for their livelihoods and employment. During the 1993–2003 period, agriculture accounted for about 50% of the GDP for Ethiopia and Burundi, and was least in the GDPs of Seychelles and Djibouti.

**Table 8 : Share of agriculture in GDP for COMESA countries**

Country	1975	1980	1985	1990	1995	2000	2003
DRC	19.7	31.5	27.4	31.2	51.8	53.9	51.9
Burundi	60.5	55.9	54.8	51.2	49.1	46.3	49.0
Sudan	38.7	33.3	34.4	29.1	49.6	46.4	45.6
Ethiopia					61.1	47.4	43.0
<i>Tanzania</i>	<i>34.1</i>	<i>39.5</i>	<i>46.1</i>	<i>49.6</i>	<i>43.7</i>	<i>41.5</i>	<i>41.3</i>
Rwanda	49.2	45.9	41.8	43.8	44.4	40.6	41.3
Comoros	38.1	45.1	40.6	41.4	43.2	40.5	40.9
Malawi	36.8	33.4	27.7	32.8	32.8	32.8	33.0
Uganda	66.7	49.5	51.8	49.3	42.5	33.8	30.9
Madagascar	41.1	36.1	42.1	31.8	33.2	26.1	26.8
Zambia	8.8	7.9	8.7	11.5	16.2	19.9	20.8
Egypt	28.0	19.8	18.8	16.2	14.3	15.4	14.8
Zimbabwe	16.2	13.1	20.7	14.8	13.4	19.7	14.6
Kenya	30.2	27.6	28.6	25.0	26.4	17.0	14.0
Eritrea					11.2	14.1	13.6
Libya	2.2	1.7	3.4	7.2	8.8	8.2	8.8
Swaziland	19.7	17.8	16.2	10.6	12.3	10.8	8.3
Mauritius	26.9	11.4	13.8	10.9	9.1	6.0	5.5
Djibouti	2.5	3.6	2.5	2.7	2.8	3.1	3.1
Seychelles	12.4	6.8	5.8	4.8	4.2	2.9	2.9
COMESA					26.3	25.1	25.5
Africa					18.4	17.9	18.2

Source: UN (2006).

The contribution of the sector to employment ranges from a low of 5% of the economically active in Libya to a high of over 90% in Burundi (Table 9). For all COMESA countries, except Libya, Mauritius, Egypt, Sudan and Swaziland, agriculture employs more than 60% of the economically active population. Therefore, growth of the agricultural sector is critical not only for general economic growth but certainly for the majority of people in COMESA who live predominantly in rural areas and for whom agriculture is the main source of livelihood.

**Table 9 : Share of economically active population employed in agriculture in COMESA countries**

	1975	1980	1985	1990	1995	2000	2004
Rwanda	93.2	92.8	92.2	91.7	91.2	90.8	90.1
Burundi	93.2	92.9	92.3	91.6	91.0	90.4	89.7
Malawi	89.4	87.2	87.0	86.6	84.9	83.0	81.3
Ethiopia					84.4	82.4	80.7
Tanzania	87.9	85.8	85.1	84.4	82.5	80.5	78.7
Uganda	88.5	87.1	85.8	84.5	82.5	80.1	78.1
Seychelles	86.2	83.9	84.4	82.4	80.6	78.9	76.9
Djibouti	86.2	84.2	83.4	82.0	80.4	78.5	76.8
Eritrea					79.1	77.6	76.3
Kenya	84.0	82.2	80.9	79.6	77.6	75.5	73.6
Madagascar	82.9	81.5	79.8	78.1	76.3	74.2	72.5
Comoros	82.1	80.6	78.6	77.6	75.7	73.7	71.8
Zambia	77.5	75.9	75.2	74.4	72.0	69.3	67.0
DRC	73.5	71.6	69.7	67.8	65.5	63.2	61.3
Zimbabwe	74.5	72.4	70.3	68.2	65.5	62.7	60.2
Sudan	75.5	72.2	70.8	69.5	65.4	61.1	57.4
Swaziland	57.9	50.2	45.1	39.5	37.0	33.9	31.6
Egypt	59.2	57.3	48.9	40.5	37.0	33.6	30.8
Mauritius	30.5	27.1	22.0	16.7	14.1	11.8	10.3
Libya	30.7	24.9	17.9	10.9	8.1	6.0	4.7
<b>COMESA</b>	<b>75.2</b>	<b>73.4</b>	<b>70.6</b>	<b>68.0</b>	<b>68.9</b>	<b>66.5</b>	<b>64.3</b>
COMESA + TZ	76.8	75.0	72.4	70.1	70.4	67.9	65.8
<b>Africa</b>	<b>72.5</b>	<b>69.0</b>	<b>66.1</b>	<b>63.3</b>	<b>60.4</b>	<b>57.6</b>	<b>55.4</b>
Developing Countries	69.4	66.6	64.0	61.4	58.5	55.4	53.0
<b>World</b>	<b>54.2</b>	<b>52.0</b>	<b>50.5</b>	<b>48.9</b>	<b>46.8</b>	<b>44.7</b>	<b>43.1</b>

Source: FAOSTAT (2006).

In 2003 per capita agricultural GDP was less than US\$ 200 per annum for all COMESA countries, except Libya, Sudan and Mauritius. Libya had the highest per capita agricultural GDP at US\$ 1115, while Djibouti had the lowest at US\$ 23 (Table 10). Just like GDP per capita agricultural incomes also show wide disparity in COMESA. For half the countries in COMESA, agricultural GDP per capita was less than US\$ 100 in 2003.

**Table 10 : Agricultural GDP per capita in COMESA**

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Libya	1079.9	1070.6	1118.9	1103.1	1050	1047	1054.4	1163	1115.7
Sudan	347.9	259.2	284.3	300.9	319.2	314.9	321	340.2	351.3
Mauritius	251	260.4	266.1	258.3	196	256.3	271.9	224.8	226.3
Seychelles	184.8	192.1	199.6	198.8	196.7	196.2	221.7	210.7	188.3
Egypt	134	134.1	136.4	138.5	140.5	143	145.3	163.2	165.1
Rwanda	130.8	150.3	143.7	143.3	142.1	144.5	149	166.1	156.2
Comoros	169.9	168.4	161.5	154.8	148.2	139.8	143.3	143.3	147.5
Uganda	105.2	102.6	101.4	108.5	111.5	112.1	113.7	111.7	113.4

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Zimbabwe	107.6	126.9	129.1	130.4	133.7	136.7	130.3	99.9	98.3
Swaziland	79	94.4	91.7	92.1	98.3	93.4	84.9	95.8	98.2
Tanzania	75.4	75.2	81.9	81.6	83.2	84.2	87	89.5	91.3
Malawi	60.7	71.3	69.6	74.6	79.9	82	75	75.1	78.4
Burundi	87.3	78	76.7	78.6	78.6	78.9	80.1	81	76.6
Ethiopia	77.1	85.9	86.5	81.2	82.4	82.2	89.3	84.4	72.4
Kenya	78.5	79.9	78.9	78.2	77.4	74.2	73.6	72.6	72.1
Zambia	62.6	60.7	56.3	55.7	60	59.7	57.1	55.1	56.9
Madagascar	70.7	70.3	70.4	70.1	60.3	58.9	59.5	57.1	56.3
Eritrea	43.5	40.9	66.7	101.9	91	49.6	60.9	37.1	47.1
Djibouti	22.8	23.8	23.2	22.9	22.6	22.2	22.2	22.3	22.6

Source: UN (2006).

In half the COMESA countries, agricultural incomes are increasing while the incomes are declining in the others. Between 2000 and 2003 agriculture in COMESA grew at an annual average rate of about 4%, higher than the population growth rate of about 2%. Over this period, in only 3 countries—Sudan, Rwanda and Egypt— did agriculture grow at more than 6% a year, the target growth rate for the agricultural sector under CAADP, set by African heads of state and government.

### 3.2 Agriculture in regional and international trade

Agricultural exports in COMESA were 16% of total exports in 2002, but that share has declined from an average of 43% during the 1979–1981 period. Agricultural imports in 2002 accounted for 19% of the total imports. While the shares of agricultural exports and imports have declined, the share of agricultural imports in total imports is higher than the share of agricultural exports in total exports. This shows an increasing reliance on food imports in COMESA, especially imports of cereals since the mid-1980s. For four countries namely, Malawi, Ethiopia, Burundi and Uganda, agricultural exports account for more than 50% of all exports (Table 11). Agricultural exports are least important in Libya and Seychelles, each with less than 1% of their total exports being agricultural. However, agricultural imports constitute almost 20% for each of these two countries. DRC is the only COMESA country with more than 50% of its imports comprised of agricultural products in 2002.

**Table 11: Share of agricultural imports and exports in total imports and exports**

Countries	Share of agricultural imports (%)				Share of agricultural exports (%)			
	1979–1981	1989–1991	1999–2001	2002	1979–1981	1989–1991	1999–2001	2002
Malawi	8.2	13.1	8.1	20.5	89.4	93.6	96.8	83.0
Ethiopia	13.8	25.0	15.6	11.5	92.8	89.4	61.9	72.2
Burundi	18.2	9.5	14.2	18.5	97.0	94.1	78.1	72.1
Uganda	11.2	5.1	9.8	13.8	99.3	90.5	58.0	57.0
Madagascar	17.9	13.3	15.0	18.5	82.9	57.9	31.3	44.9
Rwanda	14.5	14.8	23.0	19.3	92.9	89.7	55.2	43.4
Tanzania	9.8	5.9	20.4	14.8	73.9	69.3	72.8	38.6
Zimbabwe	3.4	3.0	6.9	17.3	37.7	41.1	43.7	28.2



Countries	Share of agricultural imports (%)				Share of agricultural exports (%)			
	1979–1981	1989–1991	1999–2001	2002	1979–1981	1989–1991	1999–2001	2002
Kenya	7.3	9.0	13.9	11.1	54.0	61.1	57.3	28.2
Comoros	43.0	37.4	31.3	24.3	83.1	75.5	28.7	22.0
Sudan	19.0	24.8	27.7	25.0	92.8	97.6	25.1	21.5
Mauritius	26.2	13.4	13.6	15.2	67.0	32.4	19.7	17.8
Swaziland	7.3	14.6	17.2	13.6	53.8	56.9	32.1	14.7
Egypt	43.6	35.8	20.4	23.5	24.9	15.2	9.6	11.7
Zambia	10.5	5.1	11.3	16.9	0.7	1.8	10.1	8.3
DRC	25.5	27.3	46.0	54.2	16.8	13.2	11.0	6.4
Eritrea			9.9	12.8			5.7	5.0
Seychelles	20.4	16.8	10.2	16.2	16.5	1.4	0.6	0.4
Libya	17.9	23.7	26.3	19.3	0.0	0.3	0.4	0.1
COMESA*	22.6	22.1	18.3	19.2	42.6	18.0	18.4	15.8
COMESA* + Tanzania	21.9	21.3	18.4	19.0	43.5	18.8	19.2	15.7
Africa	16.2	17.3	15.2	16.1	11.3	9.1	8.8	8.8
World	12.0	10.0	7.0	7.0	12.0	10.0	7.0	7.0

\* Missing data for Djibouti.

Source: FAO (2006a).

### 3.3 Performance of the agricultural sector in COMESA

Agricultural productivity remains low in COMESA. Using crop yields as a measure of agricultural productivity, COMESA's crop yields are below world averages, except for three commodities: tea, wheat and sugar-cane (Table 12). While these paint a promising picture, they happen to be unique commodities, grown on large-scale commercial farms by few people. The crops on which the majority of the population in COMESA depend for food and incomes have very low yields. For example, the yield for maize, the most important staple food in COMESA, was only 35% of the world average in 2005. Even though maize yield was higher in 2005 at 1.67 tonnes (t)/ha than in 1975 at 1.44 t/ha, the rate of increase has been slower than that of the rest of the world. Thus, while in 1975 COMESA maize yield was 51% of the world average, in 2005 it dropped to 35%. While the rest of the world is making progress in increasing the productivity of maize and other crops, COMESA is not, and this is true for all crops, except tea, wheat and sugar-cane. If COMESA is to make progress in the fight against hunger and poverty, the region must invest in improving agricultural productivity; the measures to do this will vary depending on the circumstances in each country. Yield variations across countries could be due to different reasons and the measures have to be specific to each country, agro-ecological zone or development domain as defined by a combination of agricultural potential, population density and market access.

**Table 12 : Crop yields in COMESA, 1975–2005**

	1975			1990			2005		
	COMESA	WORLD	%	COMESA	WORLD	%	COMESA	WORLD	%
Tea	1.03	0.71	145	1.76	1.12	157	2.04	1.43	143
Wheat	1.88	1.57	120	3.17	2.56	124	3.74	2.90	129
Sugar-cane	70.58	53.76	131	74.94	61.60	122	71.87	65.61	110
Rice	2.53	2.51	101	2.80	3.53	79	3.95	4.02	98
Plantains	7.77	6.32	123	5.79	6.02	96	6.12	6.30	97
Cassava	6.15	8.60	72	7.22	10.02	72	9.27	10.87	85
Coffee	0.49	0.51	96	0.48	0.53	91	0.59	0.73	81
Potatoes	8.50	13.62	62	10.34	15.13	68	9.85	17.35	57
Tobacco	0.95	1.31	73	1.35	1.53	88	0.85	1.65	52
Soybeans	1.48	1.66	89	1.59	1.90	84	1.17	2.34	50
Spices	1.17	1.12	104	0.69	1.24	56	0.69	1.40	49
Banana	6.06	11.78	51	6.16	13.90	44	7.25	16.32	44
Yam	4.51	9.27	49	4.44	9.64	46	3.59	8.97	40
Palm oil	7.02	5.93	118	5.00	9.98	50	5.30	13.76	39
Maize	1.44	2.81	51	1.66	3.68	45	1.67	4.75	35

Source: FAOSTAT (2006).

Per capita production has declined in COMESA over the last 30 years for most crops except soybeans, potatoes, tea and wheat, yet these are not the most important crops in terms of providing food or cash income for most people in the region (Table 13). Per capita production of key staples such as cassava, banana and yams declined between 1975 and 2005, as did that of key cash crops including tobacco and coffee.

**Table 13: Per capita crop production index\***

Crop	1975	1980	1985	1990	1995	2000	2005
Soybeans	100	310	326	355	217	236	245
Potatoes	100	105	120	119	110	125	155
Tea	100	105	140	149	122	120	144
Wheat	100	77	70	119	107	106	135
Spices	100	100	100	100	100	100	100
Rice, paddy	100	88	77	83	75	78	86
Sugar-cane	100	104	111	104	81	78	83
Cassava	100	90	93	93	62	70	78
Banana	100	89	87	87	58	62	69
Groundnuts in shell	100	74	47	41	42	48	56
Tobacco leaves	100	116	103	111	108	101	55
Plantains	100	68	67	68	47	44	47
Oil palm fruit	100	79	67	60	45	37	44
Yams	100	95	83	73	41	37	40
Coffee, green	100	71	60	56	40	32	34

\* 1975 = 100.

Source: FAOSTAT (2006).

### 3.4 Intra-COMESA trade

Intra-COMESA trade has grown at an annual average rate of about 10% since 2000. In 2004, total volume of trade (imports and exports) was almost US\$ 4 billion, with imports accounting for 55%. Five countries—Uganda, Sudan, DRC, Zambia and Kenya—dominate intra-COMESA imports at 68%, while for intra-COMESA exports, the five dominant countries are Kenya, Zambia, Egypt, Uganda and Zimbabwe at 72% of the total (Table 14). Since 2000, intra-COMESA exports have grown at an average annual rate of 6%, while intra-regional imports have grown at an average annual rate of almost 16%. For more than half of the COMESA countries, trading within the region more than doubled between 2000 and 2004, a good sign of the improved functioning of COMESA as a regional market.

**Table 14 : Value of intra-COMESA trade<sup>1</sup>**

	Imports					Share (%)
	2000	2001	2002	2003	2004	
Uganda	152.4	281.4	281.9	301	435.8	20.68
Sudan	198.3	243.9	275.2	416.1	350.4	16.63
Congo DR	107.1	47.2	134.1	143.1	277.2	13.15
Zambia	85.3	137.1	125.4	266.6	201.7	9.57
Kenya	77.4	144.4	117.5	144.6	174	8.26
Egypt	186.1	236.4	557.4	189.4	152	7.21

	Imports					Share (%)
	2000	2001	2002	2003	2004	
Madagascar	63.5	37.8	33.6	65.3	86.3	4.10
Mauritius	58.3	66.7	85.7	89.7	85.3	4.05
Zimbabwe	57.7	99.9	108.9	26	77.8	3.69
Malawi	52.8	53.2	65.9	83.8	74.3	3.53
Ethiopia	107.6	125.2	130	90.9	47.9	2.27
Burundi	19.9	50.5	28.1	47.5	46.2	2.19
Rwanda	28.7	13.1	12.4	11.9	33.6	1.59
Djibouti	73.4	72.5	67.9	100.9	31	1.47
Seychelles	12.5	11.4	24.6	13.7	22.6	1.07
Comoros	5	3.6	3.3	4.5	7.7	0.37
Eritrea	7.8	1.6	2	7.8	3.2	0.15
Swaziland	0.5	0.4	1.5	2	0.3	0.01
<b>COMESA</b>	<b>1294.3</b>	<b>1626.3</b>	<b>2055.4</b>	<b>2004.8</b>	<b>2107.3</b>	<b>100</b>

	Exports					Share (%)
	2000	2001	2002	2003	2004	
Kenya	445.5	464.5	625.5	433.6	530.7	30.80
Zambia	151.5	86.1	67.1	85.7	269.7	15.65
Egypt	51.5	68.5	62.9	131.6	164.9	9.57
Uganda	68.7	93.8	80.9	95.2	146.7	8.51
Zimbabwe	161.6	35.9	214.4	124.7	136.1	7.90
Swaziland	69.4	51.4	100.5	119.1	119.9	6.96
Malawi	39.4	76.9	47.4	68.9	101	5.86
Sudan	78.7	60.3	62.4	77.2	62.3	3.62
Mauritius	76.9	88.8	103.1	58.6	58	3.37
Madagascar	16.6	11	14.4	13.5	41.4	2.40
Congo DR	33.7	61.5	214.4	174.1	30.5	1.77
Rwanda	33.2	30.3	14.8	20.8	26.8	1.56
Ethiopia	155.1	96.5	116.6	95.1	18.2	1.06
Djibouti	4.1	10.8	17.4	27.5	8.4	0.49
Burundi	4.7	8	4.3	4	7.8	0.45
Eritrea	0.2	0.1	0.1	0.5	0.6	0.03
Seychelles	2.2	3.6	2.8	0.5	0.2	0.01
Comoros	0.1	0.1	0.1	0.2	0.1	0.01
<b>COMESA</b>	<b>1393.1</b>	<b>1248.1</b>	<b>1749.1</b>	<b>1530.8</b>	<b>1723.3</b>	<b>100</b>

<sup>1</sup> US\$ millions.

### 3.5 Extra-COMESA trade

The volume of COMESA global trade was over US\$ 70 billion in 2003 (Table 15), with imports accounting for 55%. COMESA's global trade has been growing at an average annual rate of about 6.5%, compared with intra-COMESA trade which has been growing at 10%. Despite the growth in intra-regional trade in recent years it accounts for only 5% of total COMESA trade, with similar proportions for both imports and exports. Therefore, COMESA is still very reliant on markets outside the region for most of its imports and exports. However, while the value of imports is higher than the value of exports, the value of exports has been growing faster than that of imports,

implying that COMESA has been narrowing its trade deficit with the rest of the world. In 1997, the trade deficit was US\$ 13.5 billion, but in 2003 it had fallen to US\$ 7.5 billion, a drop of almost 50%. Between 1997 and 2003, COMESA exports grew at an annual average rate of 8%, much faster than the growth of imports at 3%.

**Table 15 : COMESA global trade 1997 to 2003<sup>1</sup>**

	1997	1998	1999	2000	2001	2002	2003
Exports	20,541	18,665	19,678	23,772	21,766	24,426	31,678
Imports	34,064	37,915	36,132	35,730	35,059	42,368	39,225
Total	54,605	56,580	55,810	59,502	56,825	66,794	70,903

<sup>1</sup>FOB US\$ millions.

\*Intra-COMESA estimates are derived from partner country trade statistics, extra-COMESA data are extracted from World Trade Organization (WTO) Website 2006.

Source: COMESA (2006)

## 4. Why has agriculture under-performed in COMESA?

The review of agriculture in COMESA shows a sector that has performed poorly. Factors that have led to this poor performance vary from one country to another. During the CAADP country consultations and stocktaking exercises these issues will be articulated and inform strategies to address them. In this section, we briefly highlight some of the factors that apply to almost all countries in the region.

### 4.1 Public spending in agriculture is low

Public expenditure in agriculture is low and has been declining in most countries. African heads of state and government have realised that they need to increase the share of agricultural spending in the national budgets. Consequently in 2003 in Maputo, Mozambique, the leaders committed themselves to increasing the share of agriculture to 10% of the national budget. The status of agricultural spending in 2002 for some COMESA countries is shown in Table 16. At that time, only Ethiopia had reached the 10% target. Updated data are hard to obtain, but more data will be obtained in 2007. The sector reviews by countries in the process of aligning their agricultural strategies to the CAADP agenda should also create an opportunity to get the most recent data for each country.

However, it is not only a matter of increasing budgetary allocations to agriculture; how the resources are used is equally, if not more important. Increased public spending should therefore support quality investment portfolios and these need to be informed by analytical studies, especially regarding the sources of growth in agriculture and the drivers of that growth. Efficiency in the utilization of public resources is another issue that needs to be addressed. Without dealing with these issues, simply increasing the budget to agriculture will not achieve the growth target of 6% per annum, but only satisfy a political and public relations objective.

**Table 16 : Agricultural spending in some COMESA countries in 2002**

Country	Agriculture expenditure (US\$ millions)	Percentage of total expenditure	Per cent of agricultural GDP	Agricultural ODA from all donors (US\$ millions)
Ethiopia	295	10.6	9.4	29.0
Kenya	110	4.5	6.0	10.7
Tanzania	30	2.3	0.7	54.0
Uganda	27	2.3	1.2	24.5
Malawi	27	5.2	4.9	20.5
Zambia	38	5.9	6.2	14.2
Zimbabwe	5	0.3	0.5	3.3

Note: All amounts are in constant 2000 US dollars.

Sources: National expenditure data sources were various issues of the IMF's Government Statistics Yearbook and statistical appendices; and PRSPs and public expenditure reviews. Overseas Development Aid (ODA) data are from OECD's Creditor Reporting System Database. Adapted from: Johnson and Makombe (2006).

## 4.2 Crop and livestock pests and diseases are rampant

Diseases of crops and livestock are widespread in the COMESA region. In addition, agricultural intensification generally leads to even higher pest pressure. Unfortunately, there is limited information on the spatial distribution of these diseases, but below we give some examples, illustrating the seriousness and impact of the problem.

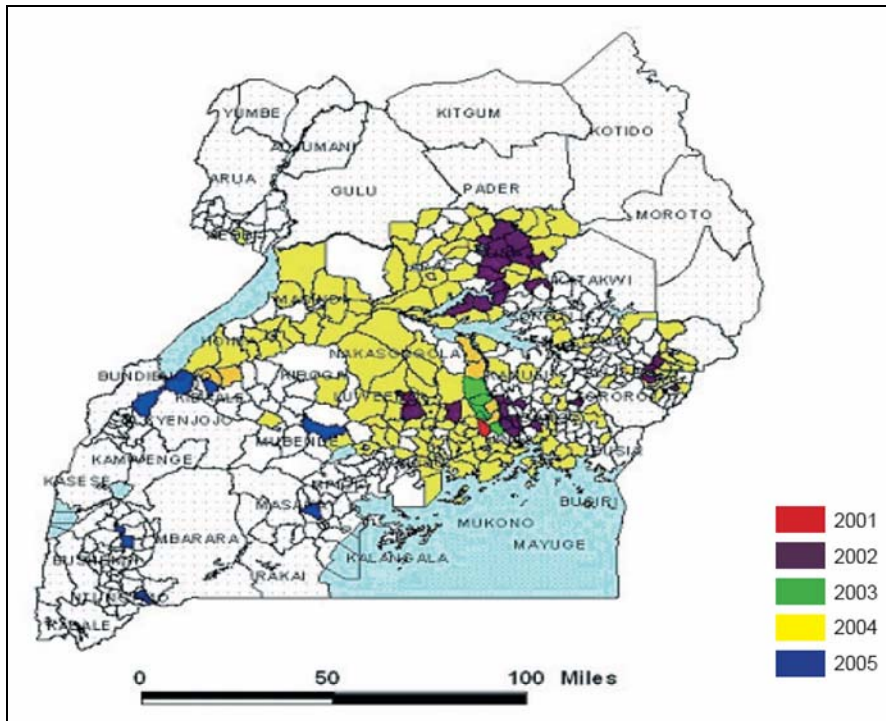
Stem borers are one the most important problems in cereal production in Eastern Africa. In Kenya alone, farmers estimate crop losses due to stem borers at 15% of their harvest, amounting to 400,000 tonnes of maize (Hassan 1998). Another major pest problem in maize is striga. Striga (*Striga harmonthica*) is a parasitic weed that attacks several cereal grains, particularly maize and sorghum, but also sugar-cane, finger millet, Napier and other native grasses. It originates from Africa but has spread to other parts of the tropics and warm temperate regions. In Kenya, striga infestation is most severe in Nyanza and Western provinces, where it occurs in about 180,000 acres and results in crop losses estimated between KSh 800 million (US\$ 11.4 million) and KSh 2200 million (US\$ 31.4 million) per year (Woomer, 2004).

The approximately 2 million hectares of wheat in Eastern, Central and Southern Africa are mainly grown in Ethiopia, Kenya, South Africa and Zimbabwe. The major wheat diseases can be found almost throughout the region. These include the three rusts of wheat, *Septoria tritici* blotch in the wet and cool areas and fusarium head blight in some areas (not so common but can be found some years in wet areas). In warmer areas such as Zambia you could also find spot blotch caused by helminthosporium. Barley yellow dwarf virus has also been reported to occur in the region (Global Rust Initiative, 2006). The East African highlands are a known 'hot spot' for the evolution of new rust races. The favourable environmental conditions, plus the presence of host plants year-round favour the build-up of pathogen populations. There is for example available evidence that suggests that a new race Ug99 is now established in the eastern African highlands and spreading. Most wheat cultivars currently grown in the African wheat zone are highly susceptible to this race (Singh et al. 2006).

Cassava mosaic disease (CMD) is undoubtedly the most important constraint to the production of cassava in Africa. During the 1990s, a major regional pandemic of an unusually severe form of CMD expanded to affect parts of at least five countries, causing massive economic losses and destabilising food security (Legg and Thresh, 2000). The epidemic, that spread to affect most of Uganda, devastated the country's cassava production, causing losses valued in excess of US\$ 60 million annually between 1992 and 1997 (Otim-Nape et al. 1997). Farmers abandoned the crop in large parts of the country and in eastern districts widespread food shortages led to some famine-related deaths (Thresh and Otim-Nape 1994). During the second half of the 1990s, the epidemic spread to the neighbouring countries of Sudan, Kenya, Tanzania and eastern DRC, with a similar impact on cassava cultivation (Legg 1999).

Banana xanthomonas wilt (BXW), previously restricted to Ethiopia, has recently spread to East Africa. Since it was first observed in Uganda in 2001, BXW has spread to neighbouring countries. Apart from 32 of Uganda's 54 districts at the time (Figure 5), BXW has been observed in Tanzania, Rwanda and DRC. The spread of the disease threatens the livelihoods of millions of people who depend on banana as a food and income source in the Great Lakes Region—an area that boasts the highest per capita consumption of banana in the world (INIBAP, 2007).

**Figure 5 : Figure 5. Districts of Uganda affected by BXW**

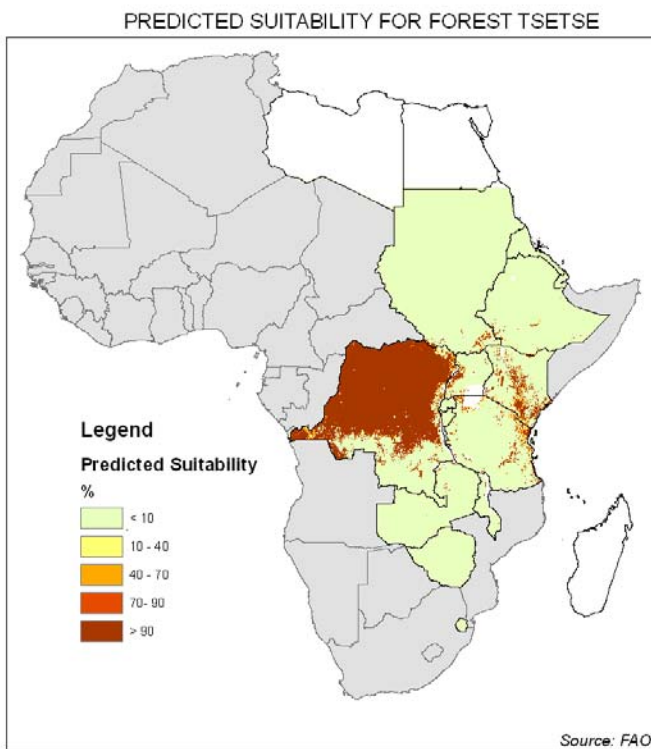


Source: INIBAP, 2007

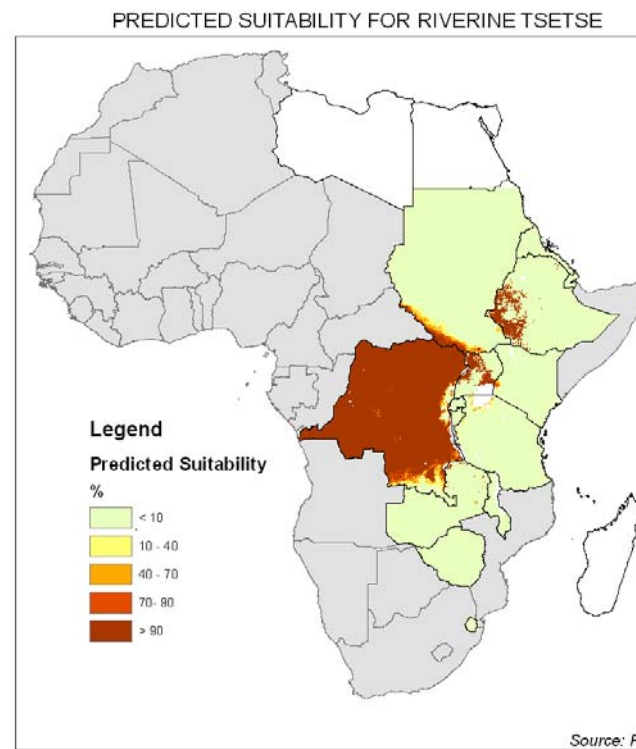
Tsetse-transmitted trypanosomiasis is an infectious disease unique to Africa and caused by various species of blood parasites. The disease affects both people (Human African Trypanosomiasis (HAT) or sleeping sickness) and animals (Animal African Trypanosomiasis (AAT)). It occurs in 37 sub-Saharan countries covering more than 9 million square kilometres, an area which

corresponds approximately to one-third of the Africa's total land area. The infection threatens an estimated 60 million people and about 50 million cattle. Currently, 500,000 people are estimated to be infected with HAT. Every year, AAT causes about 3 million deaths in cattle while approximately 35 million doses of trypanocidal drugs are administered. AAT has a severe impact on agriculture in sub-Saharan Africa. The economic losses in cattle production alone are in the range of US\$ 1.0–1.2 billion. An evaluation extrapolated for the total tsetse-infested lands values total losses, in terms of agricultural GDP, at US\$ 4.75 billion per year (FAO 2006b).

The predicted suitability of the area in COMESA for the three major tsetse groups: forest, riverine and savannah tsetse are shown in Figures 6, 7 and 8 respectively. The areas with more than 50% suitability for at least one type of tsetse fly covers 40% of the total COMESA area (Figure 9).

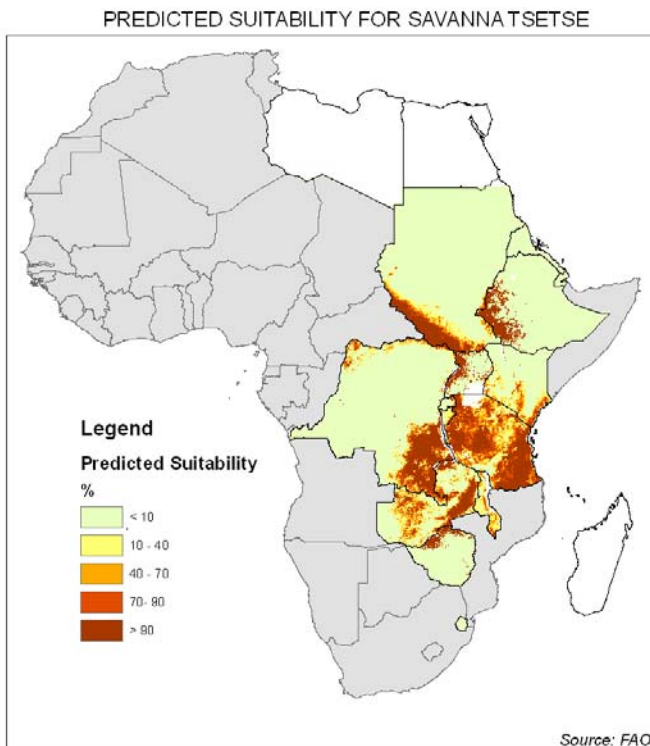


**Figure 6: Predicted suitability for forest tsetse in COMESA.**

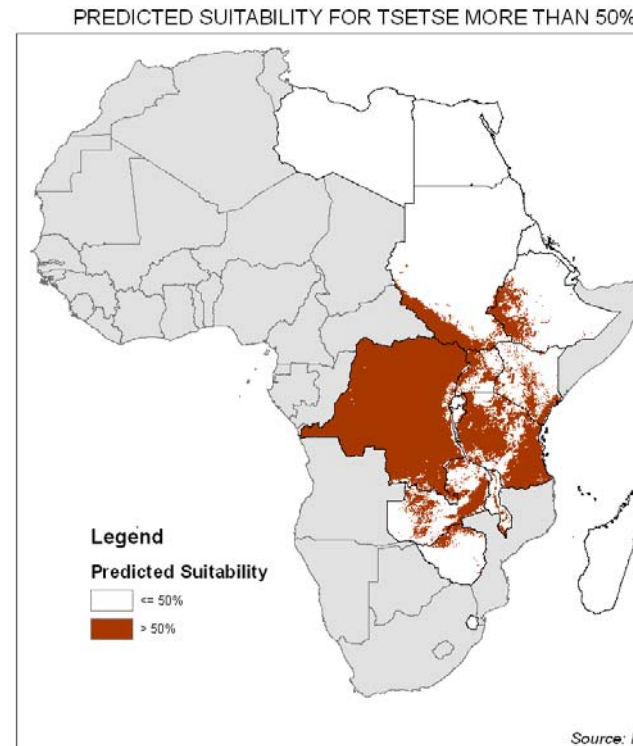


**Figure 7: Predicted suitability for riverine tsetse in COMESA**





**Figure 8: Predicted suitability for savannah tsetse in COMESA.**



**Figure 9: Predicted suitable areas for tsetse flies in COMESA.**

### 4.3 Climate change and vulnerability to shocks

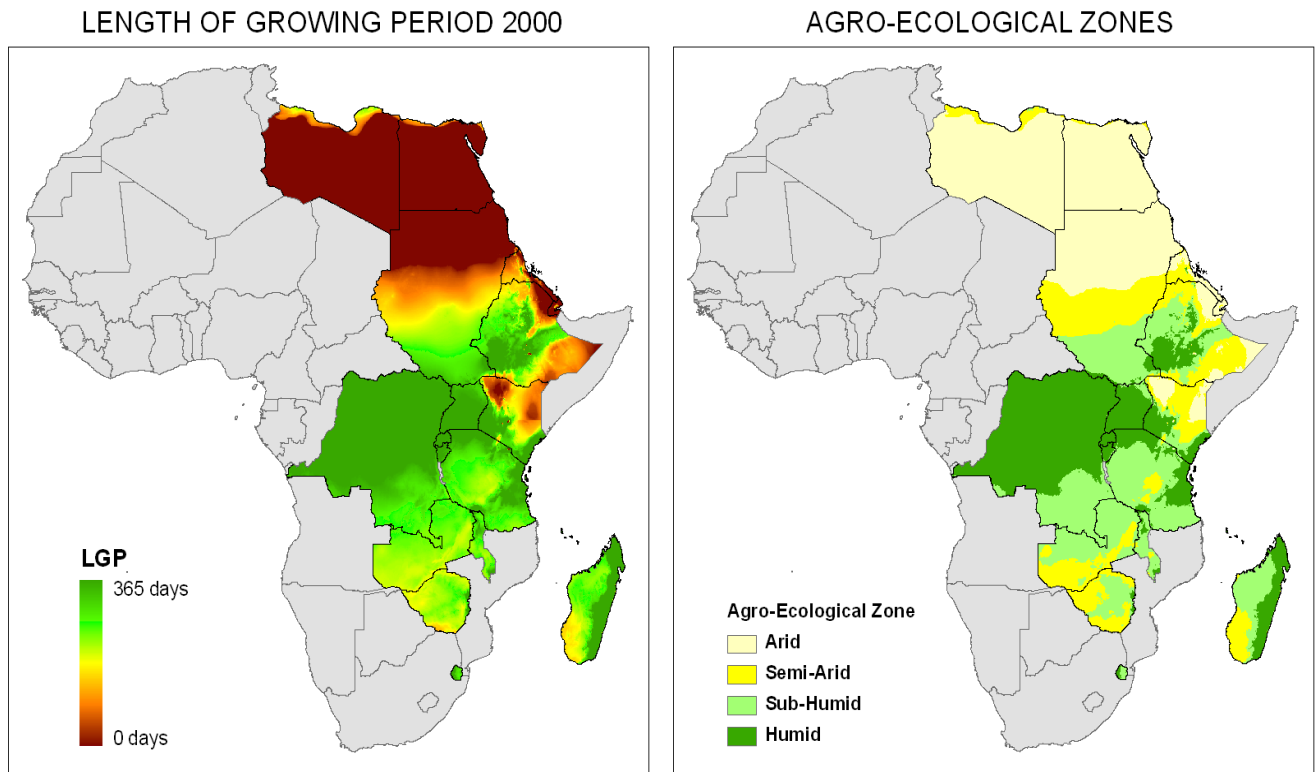
Most of the agriculture in COMESA has to be carried out in rather harsh conditions. Half of the total land area in COMESA is arid/semi-arid (Table 17). In three countries (Egypt, Djibouti and Libya) more than 90% of the land area is arid while the rest semi-arid. Growing crops in these areas is only possible through irrigation. For another four countries the arid/semi-arid environment constitutes more than 50% of the land: Eritrea, Sudan, Kenya and Zimbabwe. However, these countries depend greatly on agriculture for economic growth (contributing to exports and GDP) as well as for the livelihoods of the majority of the population. In Djibouti, Eritrea and Kenya, for example, about three-quarters of the economically active population are employed in agriculture (see Table 9).

**Table 17 : Agro-ecological zones in COMESA**

	Arid	Semi-Arid	Sub-Humid	Humid
Egypt	98.1	1.9	0.0	0.0
Djibouti	94.9	4.5	0.5	0.0
Libya	94.4	5.2	0.3	0.0
Eritrea	53.0	44.9	1.3	0.7
Sudan	50.5	28.2	19.9	1.5
Kenya	23.7	37.3	13.9	25.0
Ethiopia	14.0	34.0	32.4	19.6
Comoros	3.2	0.0	0.0	96.8
Madagascar	0.1	22.5	42.5	34.9
Uganda	0.1	0.1	10.5	89.3
Rwanda	0.1	0.0	0.0	99.9
<i>Tanzania</i>	<i>0.1</i>	<i>5.2</i>	<i>67.3</i>	<i>27.4</i>
DRC	0.0	0.0	20.9	79.1
Zimbabwe	0.0	57.5	40.9	1.6
Burundi	0.0	0.0	12.3	87.7
Malawi	0.0	5.6	81.5	12.9
Swaziland	0.0	0.0	55.9	44.1
Zambia	0.0	37.8	62.1	0.0
<b>Total</b>	<b>34.7</b>	<b>17.3</b>	<b>24.4</b>	<b>23.5</b>

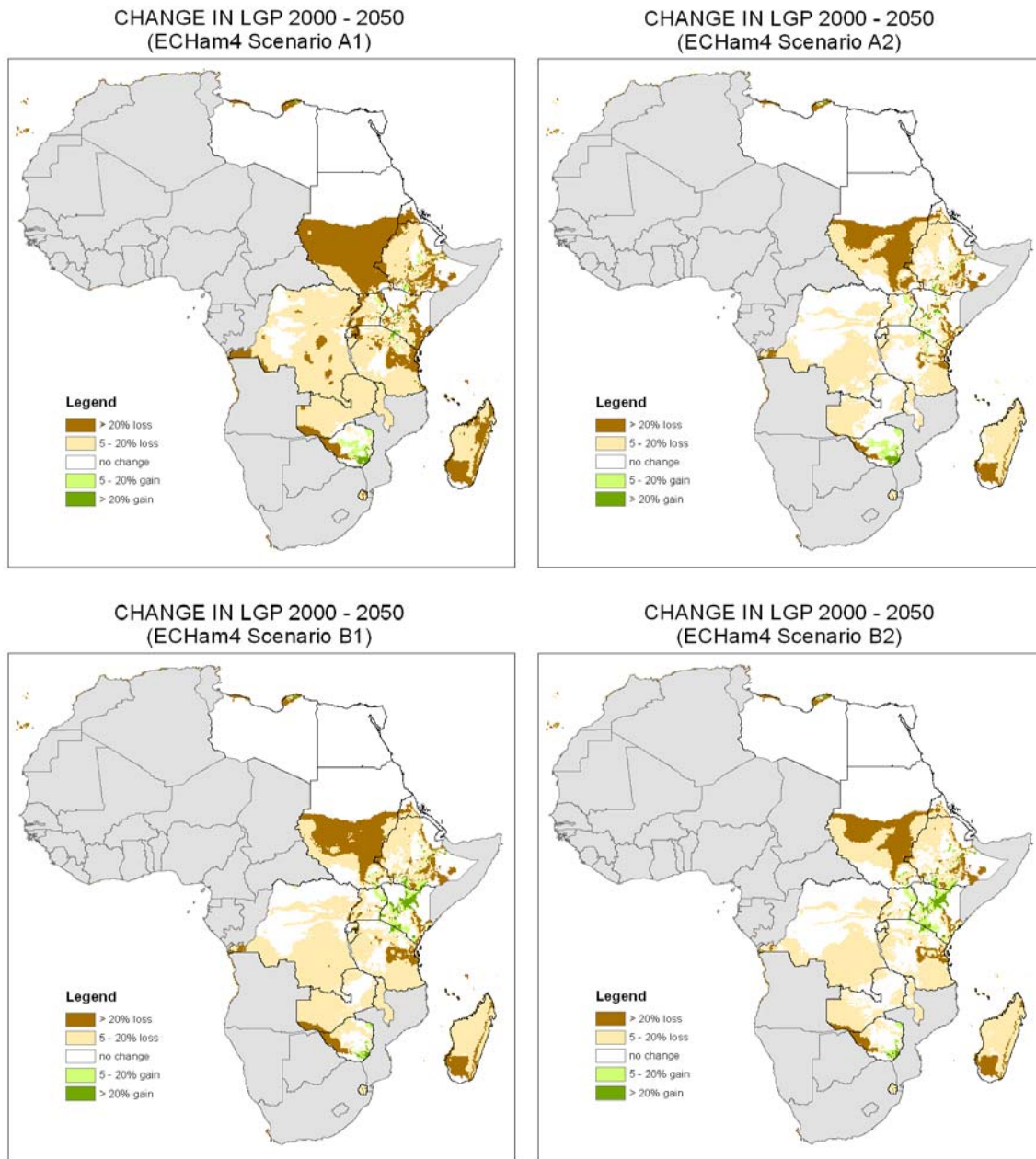
Source: Authors' calculations based on Jones (2004).

The length of growing period and agro-ecological zones for COMESA are shown in Figure 10. The length of growing period is predicted to change quite considerably in the next couple of decades.



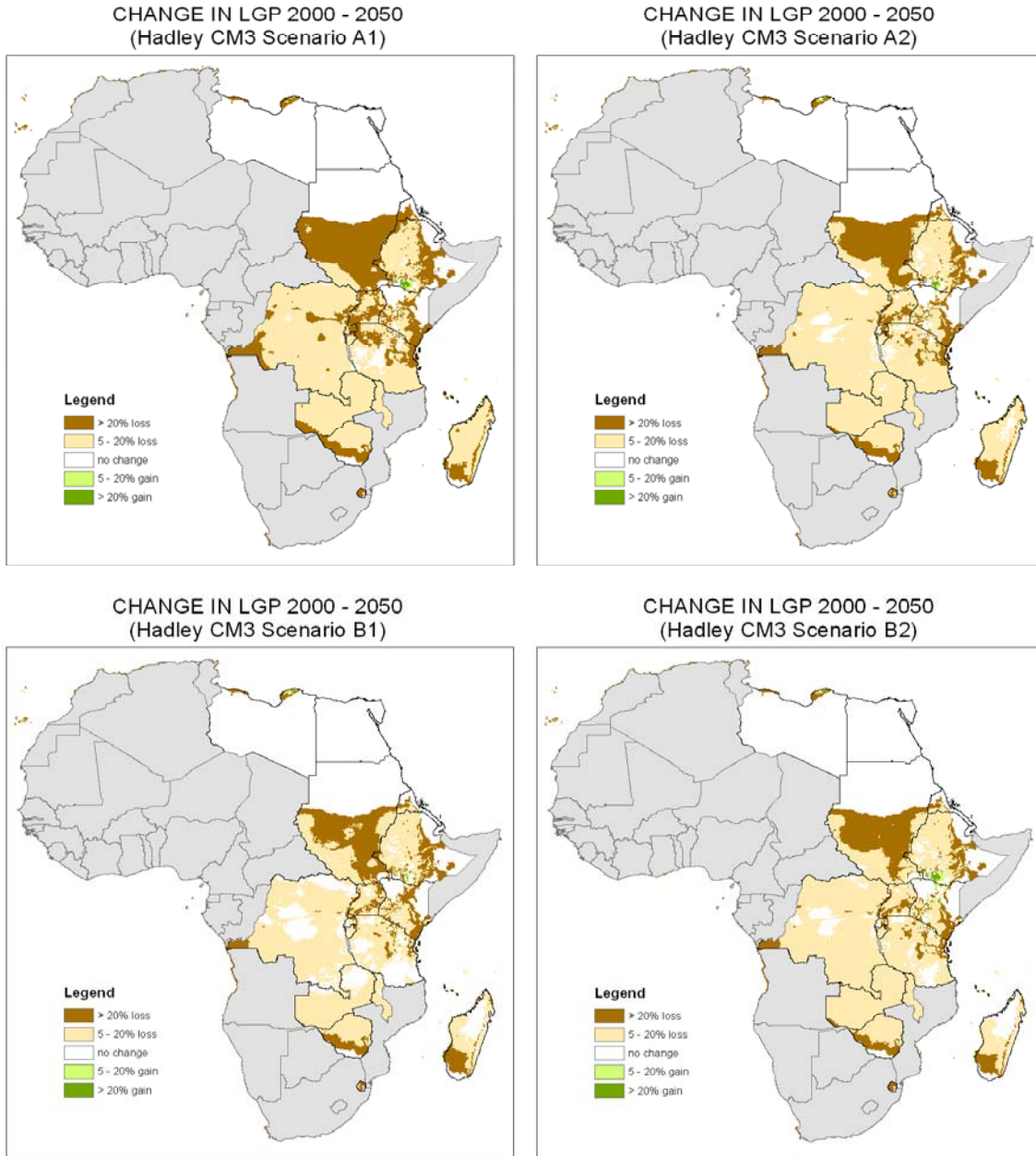
**Figure 10: Length of growing period and agro-ecological zones in COMESA**

These changes predicted by different general circulation models and under different scenarios are depicted in Figures 11 and 12. Out of the 19 models in use worldwide, 2 are considered to model the rainfall in Eastern Africa quite well. These two models are: HADCM3 (Hadley Centre Coupled Model version 3) which is generally known to be a relatively ‘dry’ model; and ECHAM4 (European Centre Hamburg GCM version 4) which is regarded as a ‘wetter’ model. Within each of these models, different scenarios were run. The ‘A’ scenarios place more emphasis on economic growth whereas the ‘B’ scenarios emphasize environmental protection; the ‘1’ scenarios assume more globalisation while the ‘2’ scenarios assume more regionalisation (Figures 13 and 14).



Source: Thornton et al. (2006).

**Figure 11: Change in LGP according to the ECHAM4 model under different scenarios.**



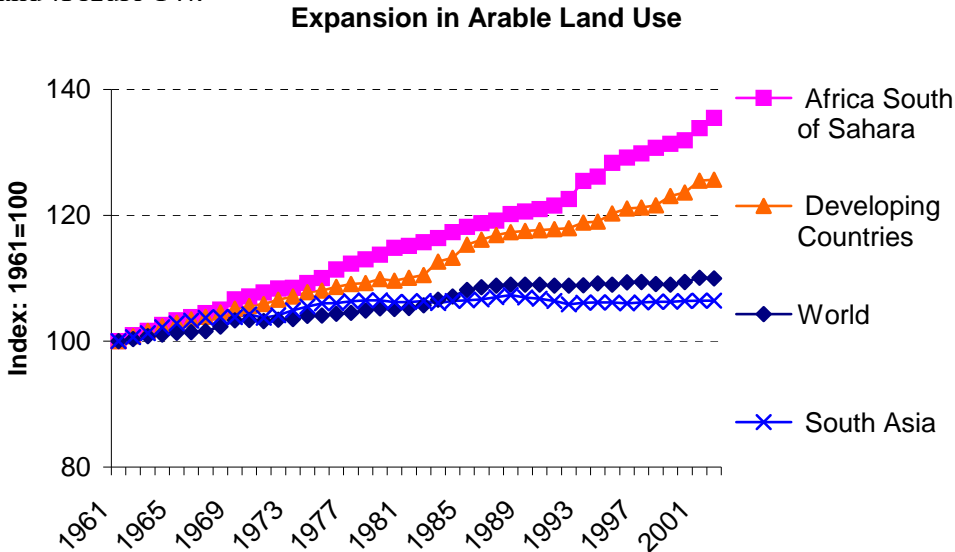
**Figure 12: Change in LGP according to the HADCM3 model under different scenarios.**

In each of these models and scenarios, we can see major losses, especially in the already marginal arid and semi-arid regions. We can also see that the frequency and magnitude of extreme events (droughts and floods) is predicted to increase. In summary, the already harsh environment is getting even more difficult to deal with. This, in combination with high poverty levels and a strong dependence on the natural environment, leaves most of the COMESA citizens very vulnerable to the expected climate change. Extreme and prolonged stress, climate variability and change can affect the quality, quantity and reliability of many of the services natural resources provide (water and agriculture). This in turn has a critical impact on food intake, health and livelihoods of rural people.

## 5. Increasing agricultural production in COMESA

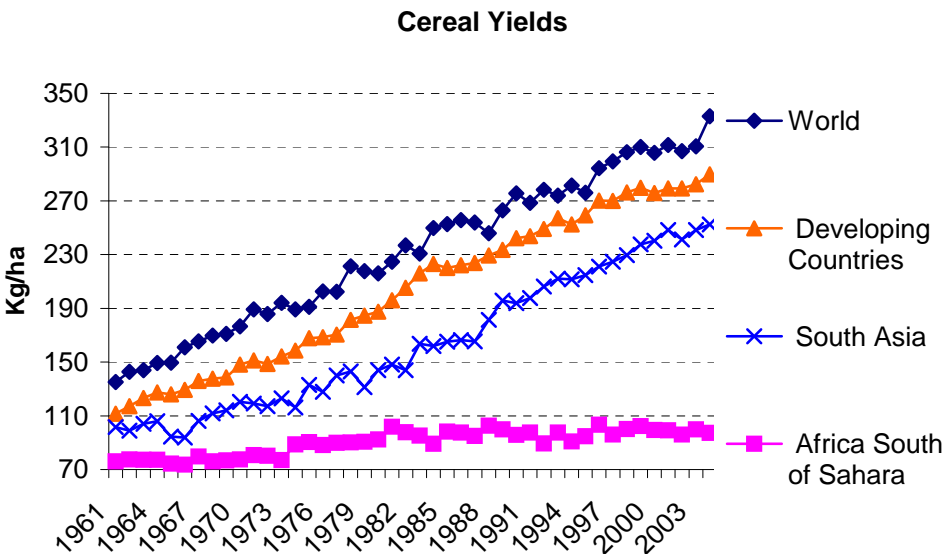
### 5.1 Potential to expand production and productivity

Although agricultural production has been going up in sub-Saharan Africa (and in COMESA), most of this is due to the expansion of agricultural land (Figure 13). In other regions of the world, the productivity of the land (measured by crop yields) has also gone up considerably, whereas in sub-Saharan Africa this has been negligible as compared to the expansion in arable land (Figure 14).



Source: FAOSTAT (2005).

**Figure 13: Expansion in arable land and cereal yields**



**Figure 14: Cereal yields.**

Agricultural production is carried out in a variety of ways. In the dry areas, pastoralists rear livestock while in the higher potential areas, a mix of crops and livestock can be found. In COMESA most agriculture is rainfed, with few areas using irrigation. Total land area, area under crops, urban area, pastoral areas and other areas for all the COMESA countries are shown in Table 18. The hyper-arid, arid and semi-arid pastoral areas were grouped as ‘no cropping dry’. These areas constitute 57% of the total COMESA area, but are not really suitable for rainfed cropping. The pastoral areas in the subhumid, humid, temperate and highland zones were grouped as ‘no cropping arable’. These areas add up to 5% of the total COMESA area. Unless this land is degraded or has other limitations, it is fit for agricultural expansion. The ‘other’ class includes forests, wetlands and protected areas where agricultural expansion might not be appropriate.

**Table 18 : Land use in COMESA1**

	Total area	Mixed cropping	%	No cropping—dry	%	No cropping—arable	%	Other	%
DRC	2,293,706	259,107	11.3	92,303	4.0	251,803	11.0	1,690,154	73.7
Uganda	206,890	132,090	63.8	17,850	8.6	10,115	4.9	46,665	22.6
Kenya	567,970	115,005	20.2	383,690	67.6	22,270	3.9	46,495	8.2
Malawi	94,563	63,253	66.9	12,892	13.6	3,352	3.5	14,901	15.8
Zambia	739,342	98,127	13.3	450,241	60.9	23,174	3.1	167,140	22.6
Sudan	2,480,513	534,918	21.6	1,837,268	74.1	47,661	1.9	60,091	2.4
Ethiopia	1,116,996	522,835	46.8	534,891	47.9	16,512	1.5	42,674	3.8
Eritrea	118,009	25,746	21.8	90,457	76.7	1,066	0.9	740	0.6
Madagascar	587,704	135,171	23.0	313,701	53.4	4,964	0.8	133,868	22.8
Zimbabwe	385,765	202,052	52.4	154,131	40.0	1,127	0.3	27,407	7.1
Libya	1,571,491	11,956	0.8	1,556,075	99.0	0	0.0	2,016	0.1
Egypt	964,827	47,333	4.9	910,192	94.3	0	0.0	6,490	0.7
Burundi	24,905	22,865	91.8	0	0.0	0	0.0	2,040	8.2
Rwanda	24,310	21,080	86.7	0	0.0	0	0.0	3,230	13.3
Djibouti	20,750	415	2.0	20,003	96.4	0	0.0	332	1.6
Swaziland	17,281	7,534	43.6	1,672	9.7	0	0.0	8,075	46.7
Comoros	1,909	249	13.0	0	0.0	0	0.0	1,660	87.0
Mauritius	1,840	1,280	69.6	0	0.0	0	0.0	560	30.4
Total	11,218,771	2,201,016	19.6	6,375,366	56.8	382,044	3.4	2,254,538	20.1
Tanzania	883,981	446,799	50.5	229,875	26.0	59,244	6.7	147,895	16.7

<sup>1</sup> Square kilometres.

Source: Own calculations based on Kruska et al. (2003).

Even though as a region there seems to be potential to expand, the competition with other land uses and environmental degradation are issues to be kept in mind. At individual country level the potential is variable, especially in the small densely populated countries such as Rwanda and Burundi and the dry countries like Libya, Egypt and Djibouti, where increasing agricultural production is less likely to come from expanding area. In combination with the high population growth and the potential for environmental degradation, the only sustainable way forward seems improved productivity in the land under current use.

## 5.1 Agricultural development domains in COMESA

Recent empirical studies in Uganda, Ethiopia and Kenya (e.g. Pender et al. 1999; Pender et al. 2006; Ehui and Pender 2005) suggest that three factors—agricultural potential, access to markets and population density—can be used to predict the type of agricultural enterprises and development pathways encountered in different rural communities. The different geographic areas delineated through mapping the combination of these three factors are termed ‘development domains’. A development domain is defined as a geographical region having similar comparative advantages, based upon similar agroclimatic conditions (Hijmans, access to markets and population density).

Eight classes of development domain emerge by combining these three factors. According to a recent study in the ASARECA region (Omamo et al. 2006), it is especially the agricultural development domain characterized by high agricultural potential, low market access and low population density (HLL) that emerges as the priority for efficient, equitable and sustainable growth in the region. The greatest scope for broad-based benefits from regionally conceived initiatives in agricultural development resides primarily in this domain. The study further concludes that agriculture-based growth in the LLL (low agricultural potential, low market access and low population density), HHH (high agricultural potential, high market access and high population density) and HLH (high agricultural potential, low market access and high population density) domains is also important and likely offers scope for both poverty reduction and benefits from regional cooperation. But such potential is likely to be more difficult to achieve. According to the same study, in the ASARECA region agriculture-based growth in the LHH (low agricultural potential, high market access and high population density), HHL (high agricultural potential, high market access and low population density), LLH and LHL (low agricultural potential, high market access and low population density) domains is unlikely to be large enough to warrant major investments in agricultural development. Best-bet growth enhancing options in these areas are likely to lie outside agriculture. A map with COMESA’s development domains is shown in Figure 15 and the area under each of the domains is shown in Tables 19, 20 and 21



## DEVELOPMENT DOMAINS

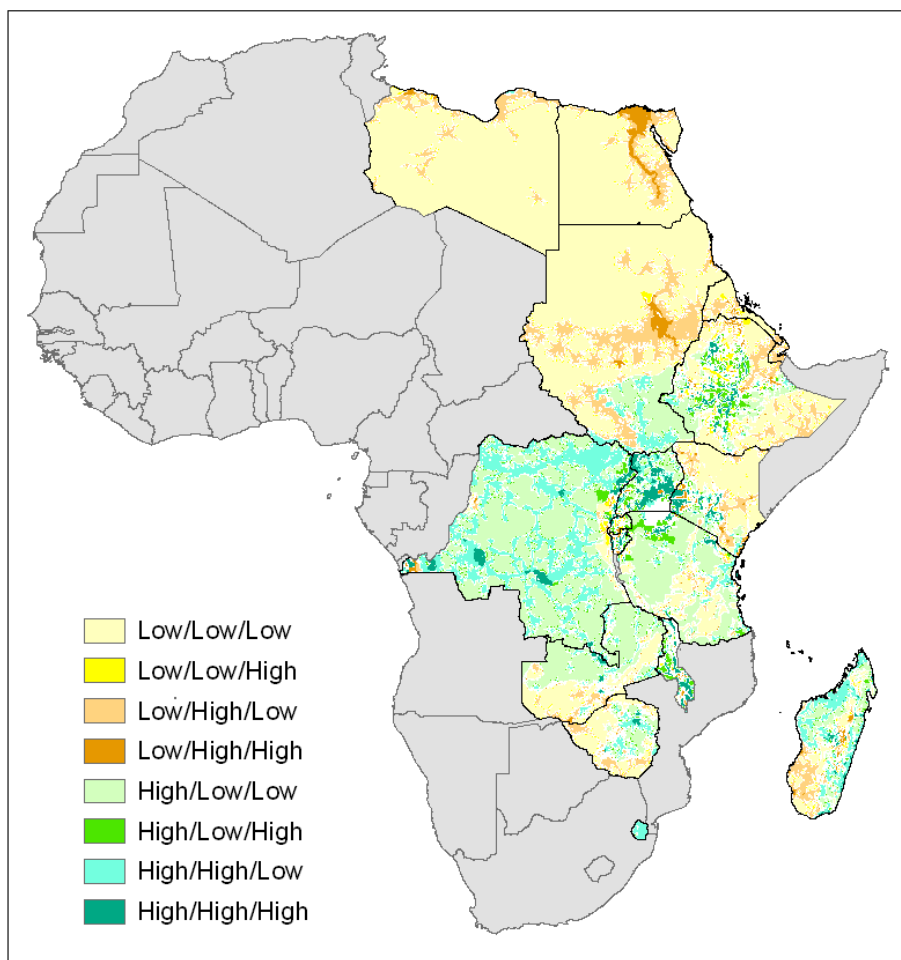


Figure 15 : COMESA's agricultural development domains.

Table 19 : Area and population per development domain

	Area (km <sup>2</sup> )	%	Population 2000	%
<b>Low agricultural potential</b>				
Low market access/low pop. density	5,405,865	44	49,265,040	9
Low market access/high pop. density	136,957	1	28,861,948	5
High market access/low pop. density	1,411,732	12	28,533,351	5
High market access/high pop. density	208,980	2	139,160,516	26
<b>High agricultural potential</b>				
Low market access/low pop. density	2,882,958	24	66,421,000	12
Low market access/high pop. density	286,873	2	59,641,945	11
High market access/low pop. density	1,530,342	13	44,207,930	8
High market access/high pop. density	362,529	3	121,146,900	23

Source: CIESIN et al. (2005) and own calculations.

Almost half of COMESA's region (44%) is situated in the low density but low potential LLL areas, where typically livestock systems undergird livelihoods. Improved animal health, breeding for disease resistance and improved nutrition, and improved pasture management are therefore crucial, while at the same time addressing the natural resource management challenges (Omamo et al. 2006). Five COMESA countries—Libya, Egypt, Eritrea, Sudan and Kenya—have more than half their area situated in this LLL domain.

Twenty-four per cent of the COMESA region is under the high potential HLL domain. The ASARECA study suggests a focus on technical change toward more intensive production of key non-perishable commodities in these areas. There is a danger that today's HLL zones could become tomorrow's HLH zones, with all their problems borne of high agricultural potential, but high population density and low market access. To avoid such an outcome as rural populations grow, major investments in rural infrastructure are urgently required. DRC, Tanzania and Zambia all have about half of their land area in the high potential HLL domain.

**Table 20 : Share of land per country under the different development domains**

	LLL	LLH	LHL	LHH	HLL	HLH	HHL	HHH
DRC	1.84	0.66	0.63	0.54	55.03	1.44	36.83	3.02
Tanzania	22.04	0.91	4.40	0.45	54.86	5.01	9.92	2.41
Zambia	32.20	0.00	7.58	0.14	49.00	0.13	9.97	0.98
Uganda	1.07	1.60	0.64	2.67	27.44	9.80	24.16	32.63
Madagascar	19.35	0.62	16.58	2.17	24.74	1.18	31.49	3.86
Zimbabwe	42.92	0.00	17.04	0.10	22.49	0.27	15.96	1.22
Malawi	7.36	2.37	5.32	5.49	19.99	18.47	12.97	28.05
Ethiopia	38.94	6.27	15.10	3.00	13.82	11.92	3.63	7.33
Rwanda	0.33	27.39		14.71	11.81	29.07	0.13	16.55
Kenya	55.07	1.18	15.97	4.14	9.89	2.00	4.51	7.24
Sudan	63.31	0.36	20.95	1.46	9.18	0.00	4.73	0.00
Burundi	0.29	10.89	0.16	12.38	4.51	32.18	3.20	36.38
Djibouti	25.86	0.12	70.01	3.47	0.39		0.14	
Egypt	78.55	0.07	16.00	5.39				
Eritrea	63.82	4.80	28.05	3.29				0.03
Libya	90.15	0.12	8.84	0.58			0.30	0.01

LLL = low agricultural potential, low market access, low population density; LLH = low agricultural potential, low market access, high population density; LHL = low agricultural potential, high market access, low population density; LHH = low agricultural potential, high market access, high population density; HLL = high agricultural potential, low market access, low population density; HLH = high agricultural potential, low market access, high population density; HHL = high agricultural potential, high market access, low population density; HHH = high agricultural potential, high market access, high population density.

Source: Authors' calculations.

**Table 21 : Country shares (%) in total COMESA area under the different development domains**

	LLL	LLH	LHL	LHH	HLL	HLH	HHL	HHH
DRC	0.79	11.20	1.04	5.99	44.09	11.56	56.16	19.34
Tanzania	3.64	5.95	2.78	1.91	16.98	15.56	5.84	5.95
Zambia	4.44	0.00	4.01	0.51	12.68	0.33	4.91	2.03
Sudan	29.29	6.52	37.12	17.53	7.97	0.03	7.81	0.00
Ethiopia	8.11	51.59	12.04	16.15	5.40	46.75	2.70	22.87
Madagascar	2.09	2.62	6.85	6.07	5.01	2.40	12.13	6.24
Zimbabwe	3.09	0.01	4.70	0.18	3.04	0.36	4.10	1.32
Uganda	0.04	2.50	0.10	2.73	2.04	7.31	3.42	19.35
Kenya	5.83	4.92	6.48	11.35	1.96	3.98	1.71	11.48
Malawi	0.13	1.71	0.37	2.60	0.69	6.36	0.85	7.68
Rwanda	0.00	4.93		1.74	0.10	2.50	0.00	1.13
Burundi	0.00	2.03	0.00	1.51	0.04	2.86	0.05	2.57
Djibouti	0.10	0.02	1.05	0.35	0.00		0.00	
Egypt	14.15	0.48	11.04	25.11				
Eritrea	1.37	4.07	2.31	1.83				0.01
Libya	26.91	1.43	10.11	4.44			0.32	0.04

LLL = low agricultural potential, low market access, low population density; LLH = low agricultural potential, low market access, high population density; LHL = low agricultural potential, high market access, low population density; LHH = low agricultural potential, high market access, high population density; HLL = high agricultural potential, low market access, low population density; HLH = high agricultural potential, low market access, high population density; HHL = high agricultural potential, high market access, low population density; HHH = high agricultural potential, high market access, high population density.

Source: Authors' calculations.

## 6. Conclusion

This report brings together a wealth of information on socio-economic, bio-physical and agricultural trade within the COMESA region. The information was collected from a variety of sources and an effort was made to collect time series data wherever possible. The trends analysis presented here will allow individual countries to assess their performance. They can assess their progress over time and also their own performance against the performance of other member states. It is also a useful tool for tracking progress towards CAADP, MDG and country development targets.

The report provides an assessment of the performance of the agricultural sector indicating that the sectors has not performed well and, as a result, per capita production has declined, calorie intake has fallen and malnutrition is still rampant in the region. Some key factors that may be responsible for poor performance of the sector include under funding of the sector by many governments, widespread crop and livestock diseases, and climate variability and change.

Despite poor performance, there is potential to increase agricultural production in COMESA: yield increases in the last four decades are far below world and even developing countries averages, there is limited possibility to expand the area under farming, and a look at the development domains indicates that much of the area has a high potential for efficient, equitable and sustainable growth through agricultural development. With the right investments in

technological change and infrastructure, a quarter of COMESA's area can be turned into highly productive land.

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