

# NUTRITION COUNTRY PROFILE

## SOMALIA



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## Acknowledgments

This profile was prepared by Margaret A. Wagah, Lecturer, Kenyatta University, Nairobi, in collaboration with Estelle Bader and Chiara Deligia, Consultants, and Marie Claude Dop, Nutrition Officer, Nutrition Planning, Assessment and Evaluation Service, Food and Nutrition Division, Food and Agriculture Organization of the United Nations.

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## Summary

Somalia is located in the Horn of Africa. The country has been affected by a civil war since 1991 and the situation has been further aggravated by prolonged droughts. The combination of conflict and natural disasters has eroded livelihoods, caused structural food insecurity, population displacements and extreme poverty. Moreover, as a consequence of civil insecurity and of the absence of a central government, the Somali health and educational systems have ceased functioning. The country belongs to the group of Low-Income Countries Under Stress (LICUS).

Poverty and food insecurity affect vulnerable groups such as nomadic pastoral communities and internally displaced people particularly, as well as the rural population as a whole. Agriculture and livestock rearing are the most important sectors of the economy, but the country is still heavily dependant on external aid and remittances from Somali living abroad. The population is predominantly rural and very young, with a high crude birth rate and a very high dependency ratio.

The health and educational sectors now depend on international organizations and NGOs. Problems of insecurity limit the provision of services. As a consequence, the level of indicators of human development in Somalia is very low. Infant, child and maternal mortality rates are extremely high. Incidence of infectious diseases is very high, and immunization rates are low. Life expectancy is estimated at 47 years.

The food supply is based on milk and cereals. The dietary energy supply is insufficient to meet the population's energy requirements. The country depends heavily on imports of cereals, vegetable oil and sweeteners. The supply of fruit and vegetables, as well as that of meat, is low. Agro pastoral communities have a slightly more diversified diet than pastoral communities.

Although breastfeeding is common, the rate of exclusive breastfeeding is low and bottle-feeding is widespread. The limited data available also indicate a short duration of breastfeeding.

The security situation precludes conducting large-scale nutrition surveys. Many district surveys are carried out but an overall assessment of the situation at country level is impossible and trends cannot be estimated. Most surveys show that the level of wasting in underfives is extremely high but important variations between districts and over time are also observed. Central/South Somalia is the region most affected by wasting. Data on stunting are limited.

Iodine deficiency is probably a major public health problem as access to iodized salt is extremely limited, but data are lacking to assess the situation. Limited data show that vitamin A deficiency is highly prevalent. The coverage by supplementation of preschool children and mothers with vitamin A is still insufficient. Small-scale studies also show that the prevalence of anemia is very high among preschool children.

Summary Table				
Basic Indicators				Year
<b>Population</b>				
Total population		6.799	million	2002
Rural population		76	%	2000
Population under 15 years of age		44	%	2000
Annual population growth rate		3.2	%	2000/05
Life expectancy at birth		47	years	2000
<b>Agriculture</b>				
Agricultural area		70	%	2002
Arable and permanent cropland per agricultural inhabitant		0.3	Ha	2002
<b>Level of development</b>				
<b>Human development and poverty</b>				
Human development index		0.284	[0-1]	2001
Proportion of population living with less than 1\$ a day (PPP)	<b>MDG1</b>	60	%	1990
Population living below the national poverty line	<b>MDG1</b>	n.a.		
<b>Education</b>				
Gross primary enrolment ratio	<b>MDG2</b>	17	%	2002
Youth literacy (15-24 years)	<b>MDG2</b>	n.a.		
Ratio of girls to boys in primary education	<b>MDG3</b>	n.a.		
<b>Health</b>				
Infant mortality rate	<b>MDG4</b>	133	‰	2003
Under-five mortality rate	<b>MDG4</b>	225	‰	2003
Maternal mortality ratio (adjusted)	<b>MDG5</b>	1 100	per 100 000 live births	2000
Malaria-related mortality rate in under-fives	<b>MDG6</b>	373	per 100 000 deaths	2000
<b>Environment</b>				
Sustainable access to an improved water source in rural area	<b>MDG7</b>	27	% of population	2002
Nutrition indicators				Year
<b>Energy requirements</b>				
Population energy requirements		n.a.		
<b>Food supply</b>				
Dietary Energy Supply (DES)		1 734	kcal per capita/day	2001
Prevalence of undernourishment	<b>MDG1</b>	n.a.		
Percent of energy from protein		12	%	2000/02
Percent of energy from lipids		30	%	2000/02
Food diversification index		62	%	2000/02
<b>Food consumption</b>				
Average energy intake (per capita or per adult)		n.a.		
Percent of energy from protein		n.a.		
Percent of energy from lipids		n.a.		
<b>Infant and young child feeding</b>				
	<b>Age</b>			
Exclusive breastfeeding rate	<4 months	21	%	1999
Timely complementary feeding rate	6-9 months	n.a.		
Bottle-feeding rate	0-11 months	n.a.		
Continued breastfeeding rate at 2 years of age		8	%	1999
<b>Nutritional anthropometry</b>				
Stunting in children under 5 years		23	%	1999
Wasting in children under 5 years		17	%	1999
Underweight in children under 5 years	<b>MDG1</b>	26	%	1999
Women with BMI<18.5 kg/m <sup>2</sup>		n.a.		
<b>Micronutrient deficiencies</b>				
Prevalence of goitre in school-age children		n.a.		
Percentage of households consuming adequately iodized salt		<1	%	1999
Prevalence of clinical vitamin A deficiency in preschool children		n.a.		
Prevalence of vitamin A supplementation in children		39	%	1999
Prevalence of vitamin A supplementation in mothers		13	%	1999
Prevalence of anemia in women		n.a.		
Prevalence of iron supplementation in mothers		n.a.		

MDG: Millennium Development Goal; n.a.: not available

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<b>Acronyms</b>	
BFHI	Baby friendly hospital initiative
BMI	Body mass index
CDC	Centers for Disease Control
CED	Chronic energy deficiency
DEC	Delegation of the European Commission
DES	Dietary energy supply
DPT3	Diphtheria, pertussis (whooping cough) and tetanus vaccine – three doses
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Statistical Databases
FIVIMS	Food Insecurity and Vulnerability Information and Mapping Systems
FSAU	Food Security Analysis Unit
GDP	Gross domestic product
GNP	Gross national product
HIV/AIDS	Human immunodeficiency virus/ acquired immuno deficiency
IDA	Iron deficiency anaemia
IDD	Iodine deficiency disorders
IDP	Internally displaced people
ILO	International Labour Organization
IMC	International Medical Corps (Somalia)
ITU	International Telecommunication Union
MICS	Multiple Indicator Cluster Survey
MOH	Ministry of Health
MOHL	Ministry of Health and Labour
NGO	Non Governmental Organization
PPP	Purchase power parity
PWA	Pre war average
SRCS	Somali Red Crescent Society
SuRF	Surveillance of chronic disease Risk Factors
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNPD	United Nations Population Division
UNSTAT	United Nations Statistics Division
VAD	Vitamin A deficiency
WB	World Bank
WFP	World Food Programme
WHO	World Health Organization

## I.1 Context

Somalia is located in the Horn of Africa and lies along the Gulf of Aden and the Indian Ocean. It covers a total land area of 637 660 km<sup>2</sup> and has a coastline of 3 025 km. It is bordered by Kenya to the southwest, Ethiopia to the west and Djibouti to the north. It is principally a desert and is characterized by a harsh tropical climate that is mostly only favourable for nomadic livestock rearing (FAO, Forestry Division).

Rainfall patterns are mainly unreliable. The *gu* rains constitute the long rainy season from April to June, while *deyr* rains constitute the short rainy season from October to November. The dry season covers the rest of the year and peaks during July to September. Occasionally, heavy rains from the Ethiopian highlands result in floods especially in southern parts along the Juba River. Mean annual rainfall is 500 mm (FAO, 2005).

Somalia is one of the poorest countries in the world, a situation aggravated by an on-going civil war since 1991. The resulting collapse of political institutions, destruction of social and economic infrastructures, human losses, massive internal and external migrations and degradation of the environment have profoundly altered human development in Somalia. The absence of a central government throughout the 1990s led to the emergence of a northwest "Republic of Somaliland" in 1991, of a northeastern "Puntland State of Somalia" in 1998 and of a military administration in the southern regions of Bay and Bakool in 1999. The country is part of the group of Low-Income Countries Under Stress (LICUS). Although, after years of civil unrest, a Transitional Federal Charter of the Somali Republic was adopted in February 2004 and a government was formed, the political and security situation remain unstable (UNDP, 2001; UNDP & WB, 2003a and 2003b; UN, 2005a).

## I.2 Population

### Population indicators

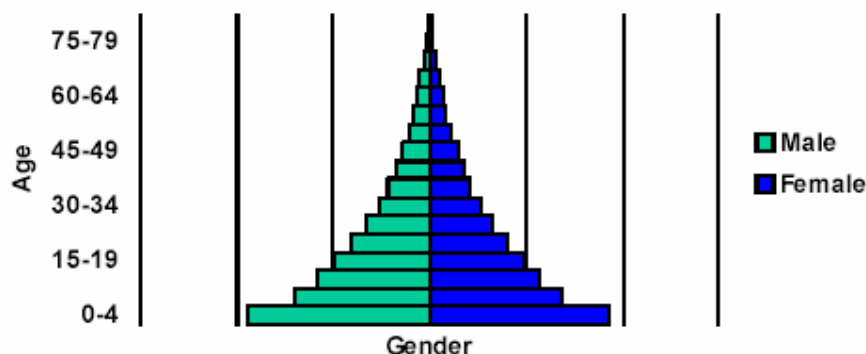
It is extremely difficult to track population data for Somalia with accuracy. Population movements resulting from the nomadic lifestyle have been accentuated by climatic hardship causing food shortages and by prolonged civil strife since 1991. However, the Somali population is estimated at 6.8 million, distributed as 24% of urban population, 17% of rural settled and 59% of nomads. The population is very young. Consequently the dependency ratio is high. Life expectancy is low.

It is estimated that the nomads face the worst conditions in terms of human development indicators and access to social services (UNDP, 2001). There are currently about 400 000 Internally Displaced People (IDPs) in Somalia, mostly from southern minority groups. Of these, some 250 000 live in Mogadishu almost completely out of reach of any concrete international assistance (UN, 2005a). IDPs are amongst the poorest population groups (WFP, 2001).

Table 1: Population indicators

Indicator	Estimate	Unit	Reference Period	Source
Total population	6.799	million	2002	UNDP
Annual population growth rate	3.20	%	2000-2005	UNDP
Crude birth rate	45.8	‰	2000-2005	UNDP
Population distribution by age:			2000	UNDP
0-4 years	18	%		
5-14 years	26	%		
15-24 years	20	%		
60 and over	4	%		
Rural population	76	%	2000	UNDP
Agricultural population	69	%	2004	FAOSTAT
Population density	11	inhabitants per km <sup>2</sup>	2000	UNDP
Median age	18	years	2000	UNDP
Life expectancy at birth	47	years	2000	UNDP
Population sex ratio	98	males per 100 female	2000	UNDP
Net migration rate	4.5	‰	2000-2005	UNDP
Total dependency rate	87	%	2000	UNDP

Population pyramid for 2001



Source: UNAIDS, 2002

### I.3 Agriculture

According to 2001 estimates, agriculture accounts for 65% of the Gross Domestic Product (GDP), with livestock representing 40% of the GDP and 65% of export earnings, even though the 1998 ban on livestock exports into neighbouring countries affected the Somalian economy. Agriculture represents about three quarters of the labour force, mainly in the form of pastoral nomadism (UNDP, 2001).

Primary food crops grown include bananas, sugarcane, maize, and wheat while meat products are beef, camel, lamb and chicken. Production of milk is very important for the pastoral population. A decline in agricultural production has however been experienced over the years. Long standing civil war, displacements, lack of credit, inadequate agricultural inputs, destruction of flood embankments, and inadequate extension services have contributed to poor agricultural performance. Agricultural recovery is also hindered by the presence of large numbers of IDPs (Montani & Omwega, 2002; FAO, 2004).

## Land use and irrigation statistics

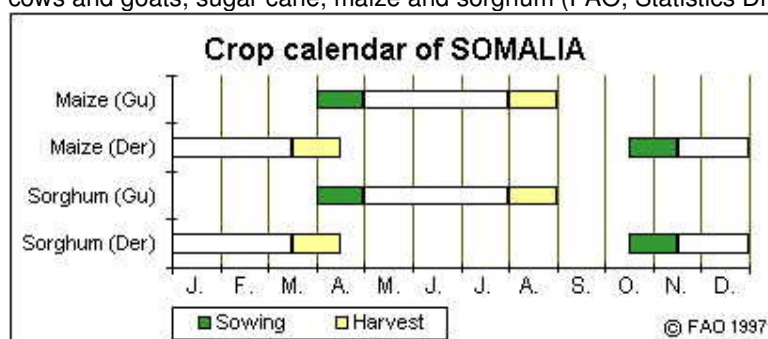
Table 2: Land use and irrigation

Type of area	Estimate	Unit	Reference period	Source
Total Land Area	62 734	1000 Ha	2002	FAO
Agricultural Area	70	%	2002	FAO
Arable lands & Permanent Crops	2	%	2002	FAO
Permanent Crops	<1	%	2002	FAO
Permanent Pasture	69	%	2002	FAO
Forested land areas	12	%	2000	FAO
Irrigated agricultural land	<1	%	2002	FAO
Arable & Permanent cropland in Ha per agricultural inhabitant	0.3	Ha	2002	FAO

*N.B. Percents are calculated on the total land area.*

## Main crops, agricultural calendar, seasonal food shortage

The main food and agricultural commodities produced in Somalia in 2002 were milk of camels, sheep, cows and goats, sugar cane, maize and sorghum (FAO, Statistics Division).



Source : GIEWS

Food shortages occur at the peak of the dry season from June to August (FAO, GIEWS).

## Livestock production and fishery

Livestock rearing in Somalia is dominated by the pastoral and agro-pastoral production systems. It accounts for a large share of the GDP and of export earnings but Saudi Arabia's ban on Somali livestock, because of concerns about the Rift Valley Fever, has severely affected the sector (FAO, 2004b).

The estimation of meat production in the table below is based on the number of animals slaughtered in the country; since there is unregistered cross-border trade in Somalia, the statistics are an underestimation of the national livestock production. Moreover, seasonal movements, displacement of communities due to civil unrest, frequent raiding of livestock and cultural taboos against counting animals compromise the reliability of statistics (FAO, 2004b).

Concerning fisheries, the pillage of Somali Indian Ocean and Red Sea waters by pirate ships is a growing concern for Somali coastal communities, as it could cause overfishing and depletion of fish stocks (UN, 2005a). In addition, the December 2004 tsunami has destroyed fishing boats, equipment and shelter of the traditional fishing communities.

Table 3: Livestock and fishery statistics

Livestock production and fishery	Estimate	Unit	Reference period	Source
Cattle	5 141 000	number of heads	2000	FAO
Sheep and Goats	26 042 000	number of heads	2000	FAO
Poultry Birds	3 000	thousands	2000	FAO
Fish catch and aquaculture	18000	tons	2002	FAO

## I.4 Economy

Somalia's economy remains in recession and has been weakened by many years of civil strife. Besides war, other factors have contributed to weakening the economy, for example poor basic services, high unemployment rates, a high dependency ratio, and a low per capita GNP. The country's per capita income is presently one of the lowest in the world (UNDP, 2001).

The country was long characterized by the absence of a functional central government and therefore a lack of a centrally planned economy. The situation is however different for Somaliland where there is a central government. There are also marked disparities between economic development in the north and in the south, and between the food economy zones, i.e. agro-pastoralists, pastoralists, riverine, and urban communities (UNDP, 2001).

The economy is however slowly progressing largely due to contributions from Somali emigrants who have played a significant role in reviving the country's economic life. The Somali receiving remittances from the Diaspora have better economic security and have access to private social services for health and education (UNDP, 2001).

Table 4: Basic economic indicators

Indicator	Estimate	Unit	Reference Period	Source
Gross Domestic Product per capita	795	PPP US \$	2000	UNDP
GDP annual growth	n.a.			
Gross National Income per capita	n.a.			
Industry as % of GDP	9	%	1988	WB
Agriculture as % of GDP	65	%	1988	WB
Services as % of GDP	26	%	1988	WB
Paved roads as % of total roads	12	%	1999	WB
Internet users	0.9	per 10 000 people	2002	ITU
Total debt service as % of GDP	n.a.			
Military Public expenditure	4.4	% of GNP	1986	UNDP

*n.a.: not available*

Major non-agricultural imports are second hand clothes, construction materials, and vehicles. Non-agricultural exports are hides and charcoal (UNDP, 2001).

## I.5 Social indicators

### Health indicators

Somalia is one of the countries in the world with the lowest levels for health indicators. Due to the absence of a central government, there is virtually no public health system. Current estimations place Somalia as the country with the highest maternal mortality rates in the world, at 1 100 per 100 000 live births in 2000, caused by absence of antenatal and postnatal care, malaria, malnutrition, anemia and the consequences of female genital cutting (UNDP, 2001; UNICEF, Database). Most childbirths take place without adequate medical facilities. In fact, for the country as a whole, 88% of childbirths took place at home in 2002. Childbirths are mainly attended by traditional birth attendants (43% of urban births and 61% of rural and nomadic births). Doctors' assistance is confined to urban areas (UNDP & WB, 2003b).

Immunization rates are very low, with great disparities between urban, rural settled and nomadic populations. Estimates are that only 15% of rural people have access to health services, compared to 50% of the urban people, although actual data are scarce. There have been no Yellow Fever vaccinations for a decade. Moreover, the public health sector is heavily dependant on foreign aid (UNDP, 2001).

It has been established through various surveys that major causes of morbidity and mortality among infants and young children are malnutrition, diarrhea, intestinal parasites, malaria, acute respiratory infections and tuberculosis (UNDP, 2001).

HIV/AIDS prevalence is estimated at less than 1%. However, the high mobility of the population (due to the nomadic life style and population displacements caused by food shortages), and the vicinity of countries with high prevalence rates, added to the high prevalence of sexually transmitted diseases (affecting 30% of women attending antenatal clinics in Somaliland) suggest that the HIV/AIDS epidemic could progress very quickly in Somalia and that the situation needs to be monitored closely (UNICEF, 2003a).

The provision of health care is dependent on UN agencies and NGOs. A high level of insecurity hinders efforts to reach the population in need of health care. Nevertheless efforts are made to increase the level of immunization, through measles catch-up campaigns and strengthening of routine immunization. Other activities have focused on malaria and response to acute nutritional emergencies. Distribution of insecticide-treated nets is ongoing (UN, 2005a).

Table 5: Health indicators

Indicator	Estimate	Unit	Reference Period	Source
<i>Mortality</i>				
Infant mortality	133	‰	2003	UNICEF
Under-five mortality	225	‰	2003	UNICEF
Maternal mortality ratio :				UNICEF
reported	n.a.			
adjusted	1100	per 100 000 live births	2000	UNICEF
<i>Morbidity</i>				
Malaria-related mortality rate in under-fives	373	per 100 000 deaths in under-fives	2000	UNSTAT
Percent of under-fives sleeping under a treated bed net	0.3	%	1999	UNSTAT
Prevalence of diarrhea in the last 2 weeks in under-fives	n.a.			
Oral Rehydration rate among under-fives	n.a.			
Percentage of under-fives with acute respiratory infections in the last 2 weeks	n.a.			
Tuberculosis prevalence	748	per 100 000 people	2003	UNSTAT
<i>HIV/AIDS</i>				
Prevalence of HIV/AIDS cases in adults	<1	%	2003	UNICEF
Percentage of women (15-24) who know that a person can protect herself from HIV infection by consistent condom use	2	%	2000	UNSTAT
<i>Immunization</i>				
Percent of infants with immunization against tuberculosis at 1 year of age	65	%	2003	UNICEF/WHO
Percent of infants with DTP3 immunization at 1 year of age	40	%	2003	UNICEF/WHO
Percent of infants with immunization against measles at 1 year of age	40	%	2003	UNICEF/WHO
Percent of pregnant women immunized against tetanus	n.a.			

n.a.: not available

## Water and sanitation

Improved water sources in urban areas are at an average distance of 0.5 km to 0.7 km from dwellings. In rural and nomadic areas, the average distance is about 1.2 km to 5.8 km (UNDP & WB, 2003b). Acute water shortage in Somalia has widespread implications on pasture, milk production and massive deaths of animals, and is therefore a major cause of food insecurity. Looting of water supply equipments as well as lack of maintenance of existing water points are factors aggravating the effects of intermittent droughts (UNICEF, 2001).

Concerning sanitation, about half of the population does not have access to proper toilets, using mainly pit latrines or open space. This concerns 6% of urban and 70% of rural and nomadic populations (UNDP & WB, 2003b).

Table 6: Access to safe water and sanitation

Indicator	Estimate	Unit	Reference period	Source
<i>Sustainable access to an improved water source:</i>				
Urban	32	% of population	2002	WHO
Rural	27	% of population	2002	WHO
<i>Access to improved sanitation:</i>				
Combined urban/rural	25	% of population	2002	UNICEF

## Access to health services

Table 7: Access to Health Services

Indicator	Estimate	Unit	Reference Period	Source
Health personnel: number of physicians	0.4	per 100 000 people	2002	UNDP
Population with sustainable access to affordable essential drugs	n.a.			
% of births attended by skilled health personnel	34	%	1999	UNICEF
Public expenditure on Health	0.2	% of GNP	1986	UNESCO

*n.a.: not available*

## Education

During the last two decades, the Somali education system ceased to function. Generations of children affected by the collapse of the educational system are commonly referred to as the "lost generations". Enrolment figures for basic education show that only 14%-17% of school age children are enrolled in the early grades. Somalia is one of the countries in the world with the lowest enrolment rates (UNDP, 2001).

Education is often provided by Non Governmental Organizations (NGOs) and private groups supported by Somali in the Diaspora, and local communities. The educational situation in Somaliland is better due to the existence of a functional ministry of education (UNDP, 2001).

Table 8: Education

Indicator	Estimate	Unit	Reference Period	Source
Adult literacy	19	%	2002	UNESCO
Adult literacy rate : females as % of males	52	%	1999	UNESCO
Youth literacy (15-24 years)	n.a.			
Gross primary enrolment rate	17	%	2002	UNDP
Grade 5 completion rate	72.5	%	1999	UNESCO
Ratio of girls to boys in primary education	n.a.			
Public expenditure on education	n.a.			

*n.a.: not available*

### Level of development, poverty

Somalia has been classified as one of the world's poorest countries. All Human development indicators remain low. The prolonged civil war, the collapse of social services and the number of IDPs contribute to the high prevalence of poverty in the country. The poorest populations are the pastoral and agropastoral communities affected by drought, and the urban IDPs. No studies have been conducted to determine the percentage of population living below the national poverty line (UNDP, 2001; WFP, 2002; UN, 2005a).

Presently, poor infrastructure and insecurity are a major hindrance to economic development especially in southern parts of the country.

In terms of economic performance, there are wide disparities between southern and northern parts of the country (UNDP, 2001).

Table 9: Human development and poverty

Indicator	Estimate	Unit	Reference period	Source
Human development index (HDI)	0.284	value between 0-1	2001	UNDP
Proportion of population living with less than 1\$ a day (PPP)	60	%	1990	WB
Population living below the national poverty line	n.a.			
Human poverty index (HPI-1)	n.a.			

*n.a.: not available*

### Other social indicators

Child labour is highly prevalent in Somalia and concerns children of IDPs especially (UNICEF, 2005). Surveys have revealed that 30% of IDP adults report that their families are dependant on the income earned by children, against 17% at the national level (UNICEF, 2003b). Children have also been recruited by military factions. Demobilization and reinsertion programmes are supported by UNICEF (UN, 2003a).

Table 10: Other social indicators

Indicator	Estimate	Unit	Reference period	Source
Gender related development index (GDI)	n.a.			
Women's wage employment in non-agricultural sector as % of total non agricultural employees	21.9	%	1990	UNSTAT
Ratification of ILO Convention 182 on The Worst Forms of Child Labour	Not ratified			ILO

*n.a.: not available*

## Part II: Food and nutrition situation

### II.1 Qualitative aspects of the diet and food security

#### Food consumption patterns

Milk, sorghum and maize are the staples of the Somali diet, complemented with beans, some vegetables (tomatoes and onions) and fruit. Rice and pasta are consumed by households that can afford them. Common dishes are *canjeero* (*anjera*), a flat unleavened bread, *soor*, a sorghum or maize porridge, *cambulo*, boiled maize with beans and oil. Dishes can be accompanied with milk or meat. Milk and meat are from camels, cattle or goat, and there is some wild game. Sugar and vegetable oil are consumed by all households. Tea is the common beverage. Fish consumption has been traditionally limited to coastal towns, although in recent years more fish is being consumed in the interior.

Location and livelihoods influence the diet. Pastoral communities rely on milk, while farmers consume more legumes and vegetables, and urban households have better access to more vegetables and imported cereals.

Within households, prioritisation of children was reported particularly in reference to food stress. No difference was found between the allocation of food between male and female children. Under-consumption by pregnant women was found to be widespread (Montani & Omwega, 2002).

#### Food security situation

Food security is defined as “A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FIVIMS). Food insecurity may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level. Food insecurity may be chronic, seasonal or transitory.

Many factors contribute to food insecurity in Somalia, differing between regions and livelihoods systems. Food insecurity is the result of a combination of harsh environmental conditions and prolonged conflict and civil insecurity. Natural disasters have eroded livelihoods. Internal displacement causes extreme poverty. Access to food remains a major problem for the most vulnerable groups – displaced people, rural minorities, female-headed households, rainfed farmers, pastoral communities, urban poor and returnees – due primarily to their low purchasing power and narrow economic base. The livelihoods of Somali are weak and traditional coping mechanisms are overstretched, causing an increased vulnerability to even relatively minor shocks (DEC, 2004).

The country experienced severe floods in the south in the late 1990s, followed by successive years of drought, especially inland and in the north. Coastal areas were also badly hit by the Indian Ocean tsunami that struck in December 2004, affecting over 16 000 families in traditional fishing communities (Save the Children, 2005). In 2004, approximately 350 000 IDPs and poor urban populations continued to be chronically food insecure (FAO, 2004).

According to the 2005 post *gu* assessment by FSAU finalized in July, 919 000 people are in need of immediate assistance, of which 197 000 are in a state of humanitarian emergency, 343 000 people face an acute livelihood crisis, and further 377 000 are IDPs (FSAU, 2005).

Concerning the agricultural sector, the 2005 *gu* season cereal production in the south was the lowest in a decade (44% of pre-war average (PWA)). In four regions cereal production was less than 10% of PWA (Hiran, Middle Juba, Gedo and Lower Juba). In the south, Middle Shabelle was the only region recording above normal cereal production (116% of PWA) as the region benefited from high river levels and flood gravity irrigation. In the North and Central regions, water and pasture conditions were good in most places, livestock body conditions were satisfying and improving. In the south, water and pasture conditions were generally normal in Bay, Bakool and Riverine areas in Shabelle, but stressed in Juba and Gedo (FSAU, 2005).

Concerning markets, both the Somali and Somaliland Shillings continued to remain stable over the last six months. Imported rice prices in the North and Central regions remained fairly stable through the *gu* 2005 season. Maize prices in Shabelle and Juba increased significantly and steadily since April 2005 (FSAU, 2005).

## II.2 National food supply data

### Supply of major food groups

Table 11: Trends in per capita supply of major food groups (in g/day)

Major food groups	Supply for human consumption in g/day					
	1965-67	1972-74	1979-81	1986-88	1993-95	2000-2002
Milk and eggs	749	765	689	677	658	593
Cereals (excl. beer)	215	183	221	292	171	187
Fruit and vegetables	141	146	65	101	108	89
Meat and offals	84	79	58	67	70	76
Sweeteners	27	41	25	26	50	81
Starchy roots	15	18	14	15	16	26
Pulses, nuts, oilcrops	10	14	12	16	13	10
Vegetable oils	6	7	16	14	7	10
Animal fats	7	7	6	6	7	6
Fish, seafood	2	2	4	7	11	7
Other	3	3	2	1	1	1

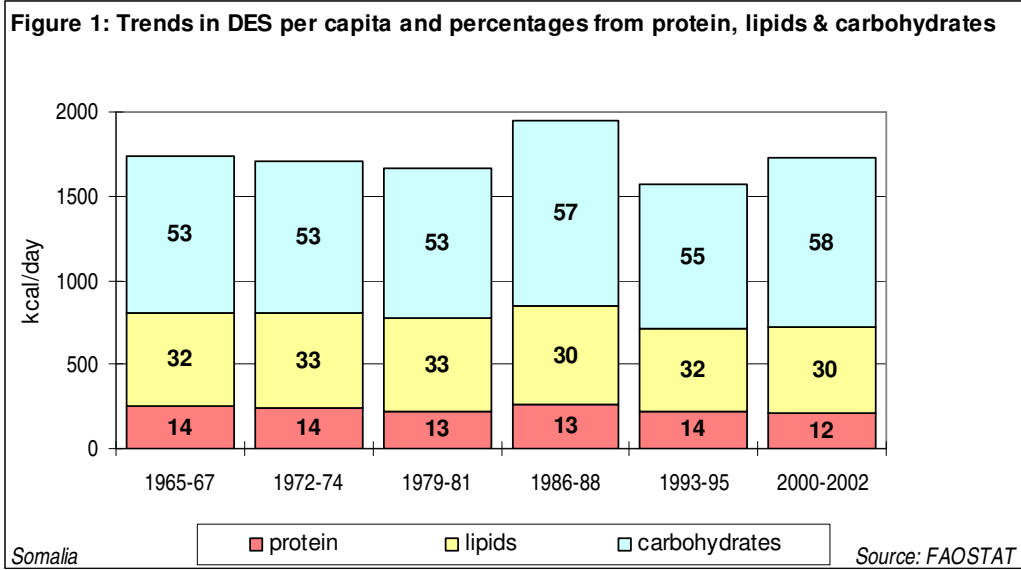
Source: FAOSTAT

In terms of supply, the major food group is milk. After a slight increase in the late 1970s, the per capita supply of this food group steadily decreased. Cereals rank second and were characterized by a relatively low and fluctuating supply. The supply of fruit and vegetables was limited and decreased steadily over the period. The supply of starchy roots increased but not enough to compensate for the reduction in cereals and remained very limited. The supply of fish increased relatively but remained at a low level. A significant increase in the supply of sweeteners was observed. The supply of vegetable oils increased significantly during the period 1979/81 to 1986/88 but decreased thereafter (FAO, FAOSTAT Database).

Because of the absence of a central government, supply statistics have remained unreliable. Thus estimates of food supplies can be considered at best as indications of the relative importance of the different food groups.

Dietary energy supply, distribution by macronutrient and diversity of the food supplies

- Figure 1: Dietary energy supply (DES), trends and distribution by macronutrient

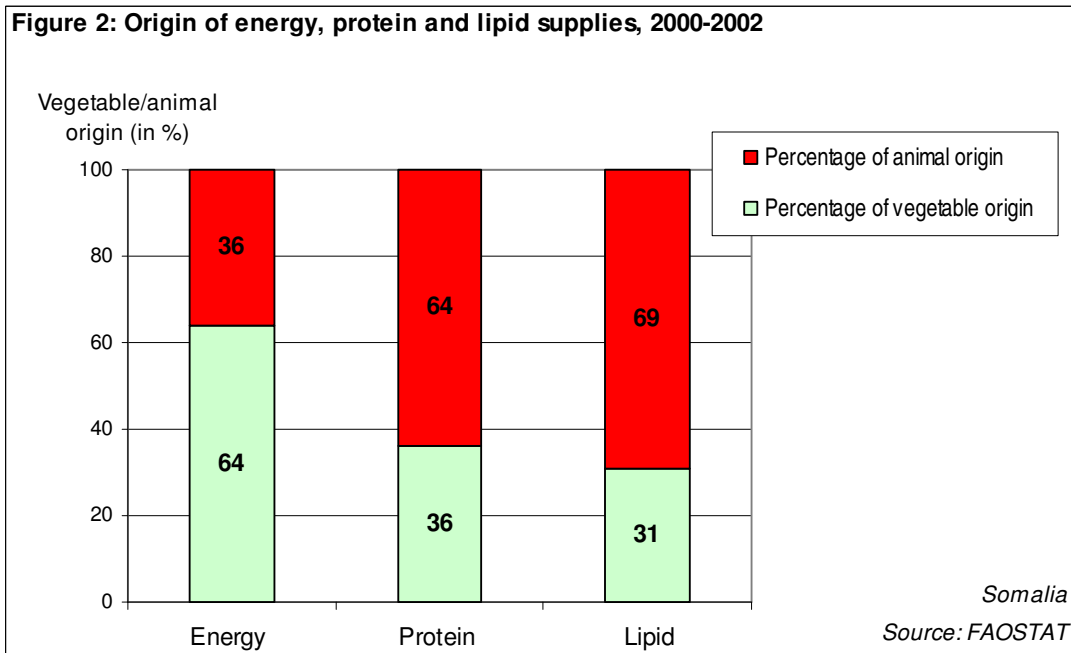


In 2001, the dietary energy supply (DES) which was estimated at 1 734 kcal/per capita/day was far from satisfying population energy requirements. Nevertheless it is difficult to assess the validity of this estimate. Fluctuations were observed but again their significance is uncertain.

The share of carbohydrates in the total DES was stable during a long period (53% from 1965/67 to 1979/81) and then increased to 58% in 2000/02. The dietary supply of lipids, representing 30% of energy, is at the upper limit of recommendations (energy from lipids not exceeding 30%) (WHO, 2003).

Vegetable/animal origin of macronutrients

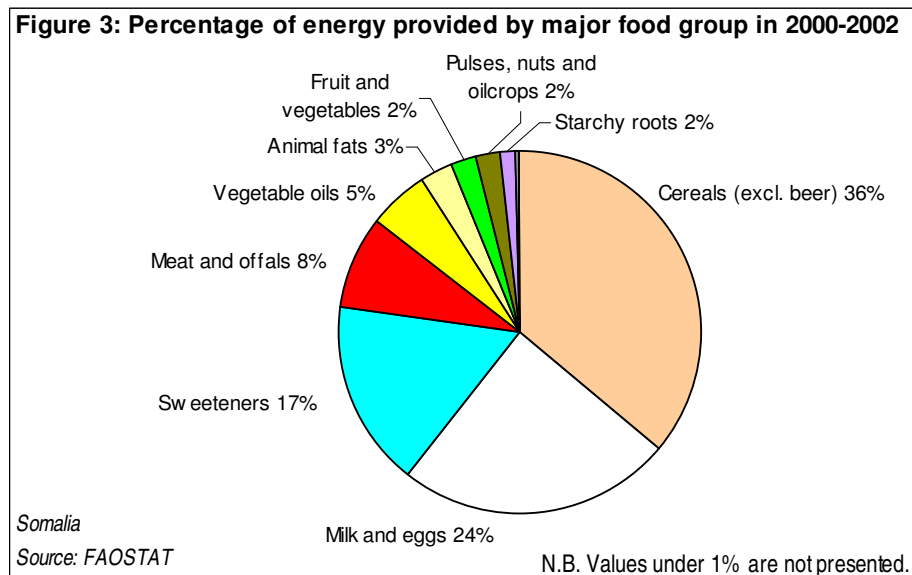
- Figure 2: Vegetable/animal origin of energy, protein and lipid supplies



The dietary supply of energy is mainly of vegetable origin while the supply of protein and lipids is mostly of animal origin because of the importance of the supply of milk.

#### Dietary energy supply by food group

- Figure 3: Dietary energy supply by food group



In 2000/02, cereals contributed to 36% of total DES, followed by milk and eggs (24%) and sweeteners (17%). These three food groups provided more than three-quarters (77%) of the DES.

Table 12: Share of the main food groups in the Dietary Energy Supply (DES), trends

Food groups	% of DES					
	1965-67	1972-74	1979-81	1986-88	1993-95	2000-2002
Cereals (excl. beer)	41	36	44	50	36	36
Milk and eggs	30	31	27	24	29	24
Sweeteners	6	9	5	5	11	17
Meat and offals	9	9	7	6	8	8
Vegetable oils	3	4	8	7	4	5
Animal fats	3	4	3	3	4	3
Fruit and vegetables	4	5	2	2	3	2
Pulses, nuts, oilcrops	3	3	3	3	3	2
Starchy roots	1	1	1	1	1	2
Fish, seafood	<1	<1	<1	<1	<1	<1
Other	<1	<1	<1	<1	<1	<1

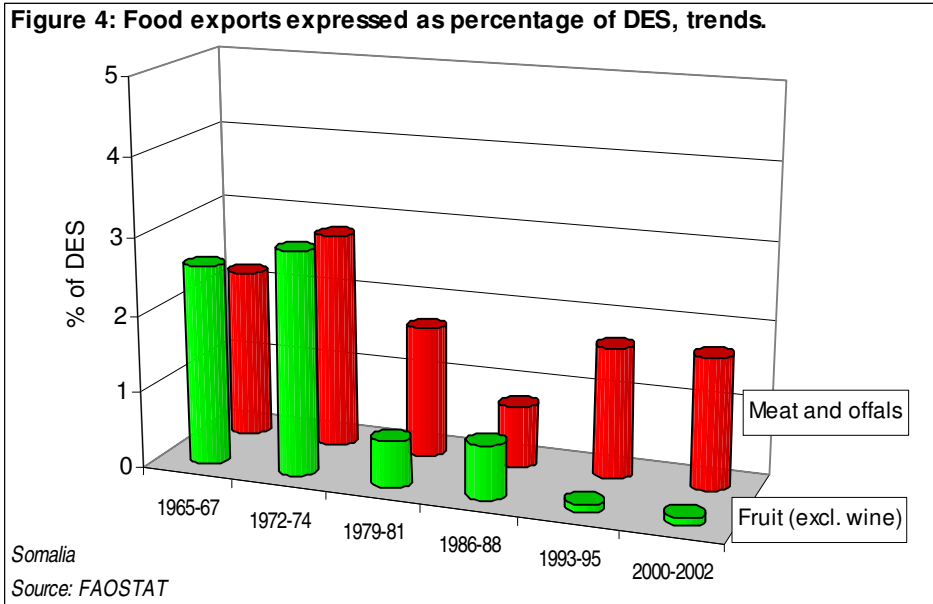
Source: FAOSTAT

From 1965/67 to 2000/02, cereals, milk and eggs and sweeteners have been the main food groups contributing to the total DES. The share of non-staple food groups in the DES has been increasing. The food diversification index progressed from 58% to 62%, which represents a relatively small increase. Because there is uncertainty regarding the validity of the supply statistics, both the level and the trend of the diversification index are difficult to interpret.

Food imports and exports expressed as percentage of DES

Fruit and meat and offals are the major food exports. Food exports never exceeded 3% of DES. In 2000/02, exports of fruit dropped to 0.1% of DES while exports of meat and offals were of 1.7%.

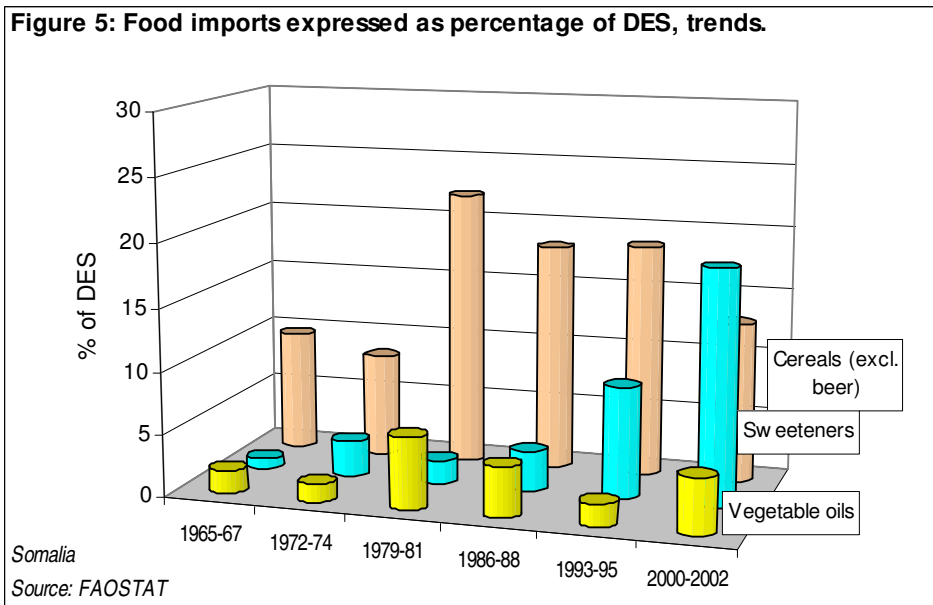
- Figure 4: Major food exports as percentage of Dietary Energy Supply (DES), trends



Note that only the 3 most important food groups are shown.

Cereals are Somalia's major food imports. Import of cereals was highest in 1979/81 and in the early 1990s during the droughts and floods with 22% and 19% of the total DES respectively, compared to 13% in 2000/02. Sweeteners represented the second largest food import, increasing from 1% in 1965/67 to 19% in 2000/02. Import of vegetable oils increased rapidly in the early 1990s to reach 4% of the DES in 2000/02.

- Figure 5: Major food imports as percentage of Dietary Energy Supply (DES), trends



Note that only the 3 most important food groups are shown.

## Food aid

In 2004, Somalia received a total food aid of 33 218 t, of which 29 278 t of cereals — mainly coarse grains (96%), blended/fortified cereals (3%), wheat (1%) — and 3 940 t of non-cereals — mainly pulses (93%) and oils and fats (7%). This food aid was mainly delivered as emergency food aid (99%), with a small part as project food aid (1%)<sup>1</sup> (WFP, 2004).

## **II.3 Food consumption**

### Surveys in different food economy zones

In 2004, a dietary diversity study was conducted by FSAU in agro-pastoral areas of Dinsor District, in southern Somalia and in pastoral areas of Dangorayo District in northern Somalia. A total of 420 households (265 agro-pastoral and 155 pastoral households) were surveyed during January 2004. Household dietary intakes were studied using the 24-hour recall and counts of food groups (12 food groups were used) consumed in the previous 24 hours. Anthropometric data on 378 children aged 6-59 months were collected on the same sample (FSAU, 2004).

In the pastoral areas, the assessment was conducted during a drought period and consequently, there was an acute shortage of animal products. The agro-pastoralists had just experienced late 2003 *deyr* rains and the assessment coincided with a time of increased energy requirements, as weeding and other cropping activities were at peak. To their advantage, the agro-pastoral villages had had relatively good harvests in the 2003 *gu* season and most households still had stocks of cereals (FSAU, 2004).

Overall, a majority of the households studied consumed at least three food groups in the previous 24 hours but agro-pastoral households had a more diversified diet than the pastoral households. The study showed that consuming less than three food groups pre-disposes the households to heightened food insecurity. While only 4% of the agro-pastoral households consumed two or less food groups in the previous 24 hours, this percentage reached 15% for pastoral households. The average meal frequency was of about 3 per day among the agro-pastoralists, while it was of about 2.6 for the pastoral households (FSAU, 2004).

The main food groups consumed by both communities were cereals, sugar, meat, pulses, milk and milk products and oils and fats. Consumption of vegetables, fruit and starchy roots were insignificant overall. Agro-pastoral households consumed more milk and meat than their pastoral counter-parts (FSAU, 2004).

The average household per capita energy intake for the two communities was about 2 600 kcal. This was higher than energy requirements estimated at about 2 100 kcal/day. However there were significant differences in energy intakes of the two study communities. Whereas the agro-pastoral had a surplus intake (about 3 100 kcal/per capita/day against their requirement of about 2 200 kcal/per capita/day), the pastoralists in Dangorayo had a deficit in energy intake (about 1 800 kcal/day against a per capita requirement of about 2 000 kcal/day). While only about 14% of the agro-pastoral households had insufficient energy intake at the time of study, more than half of the pastoral households had inadequate energy intake (FSAU, 2004).

Among the 378 children under five years that were studied (256 agro-pastoralists children, 122 pastoralists children), prevalence of wasting reached 12%, while prevalence of severe wasting was 2%. The prevalence of wasting in children was comparable among agro-pastoralists and pastoral households. There were no significant variation in malnutrition levels across the food economy groups, but higher malnutrition rates were correlated with lower meal frequencies at household level. Overall, dietary diversity at household level was associated with the nutritional status of under-fives (FSAU, 2004).

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<sup>1</sup> *Emergency* food aid is destined to victims of natural or man-made disasters; *Project* food aid aims at supporting specific poverty-alleviation and disaster-prevention activities; *Programme* food aid is usually supplied as a resource transfer for balance of payments or budgetary support activities. Unlike most of the food aid provided for project or emergency purposes, it is not targeted to specific beneficiary groups. It is sold on the open market, and provided either as a grant, or as a loan.

A previous study conducted in 2002 assessed dietary patterns at household level based on case studies in four food economy zones. The study was based on available secondary information and primary data collected through focus group discussions, interviews and observations. Each case study represented one of the four basic livelihood systems: agro-pastoral, pastoral, riverine and urban. Fieldwork for the case studies was conducted in two sites in Somalia within the following specific food economy zones identified by FSAU: Riverine and agro-pastoral in the Belet-Weyne district of Hiran, pastoral in northern Wagooyi Galbeed, and urban in Hargeysa town (Montani & Omwega, 2002). Recommended intakes for nutrients were taken from FAO & WHO (2002).

In the four food economy groups, the case studies revealed consumption patterns that, outside times of particular food stress, satisfied only the minimum or less than the minimum nutritional requirements of households. This was clear both for energy and nutrient requirements such as protein, lipids, iron and vitamins A and C. Some households in all food economy groups had difficulty meeting basic household energy requirements. Poor households across the four groups did not satisfy their minimum energy requirements during the dry season. The composition of diets varied between food economy zones with nutrient intake also showing some variation. Micronutrient intake was, in some cases, as low as 10% of requirements. Poor agro-pastoral households showed the lowest vitamin intakes. Iron intakes of poor riverine and both poor and middle wealth groups in the agro-pastoral zone covered only 60% or less of iron requirements (Montani & Omwega, 2002).

Not all consumption possibilities were exploited in some food economy zones. Bioavailability of nutrients could be enhanced in some cases by using appropriate preparation techniques. However, the main issues in relation to adequate food intakes are problems of level of production and purchasing power (Montani & Omwega, 2002).

#### **II.4 Infant and young child feeding practices**

In Somalia, infant and young child feeding practices often do not follow the World Summit for Children recommendations which stipulate that children should be exclusively breastfed for four to six months, and that breastfeeding should continue alongside complementary feeding till the child is two years of age.

According to the national survey of 1999, only one-fifth of children under 4 months were exclusively breastfed. Data are not available on timely introduction of complementary feeding. At age 12-15 months, 27% of children were still breastfed and at 20-23 months, this percentage was only 8% (UNICEF, 1999).

Other more local studies have highlighted inadequate practices regarding initiation of breastfeeding and complementary feeding, and the use of bottle feeding. Some discrepancies exist between studies that could be due to differences in definition of practices or to regional variations in feeding practices.

A harmful cultural practice has been the discarding of colostrum in the belief that it is harmful. Closely associated with this practice is the delay in initiating breastfeeding. It was established that 10% of mothers in rural areas of the northwest gave infants animal milk within the first 12 hours, while in Mogadishu, 75% of mothers reported having given water and sugar or animal milk diluted in water to their infant (UNICEF, 1998). Moreover, the widespread utilization of bottle-feeding predisposes infants and young children to high rates of diarrhea and malnutrition.

A local study conducted in Belet-Weyne district of Hiran (July 2002), revealed that 95% of children were introduced to foods other than breastmilk before 4 months. The most typical complementary foods were cereal based porridges (sorghum, maize), mashed sorghum with camel's milk and family food. The family diet consumed by children was monotonous, lacking variety and principally dictated by food availability and food prices in the local markets (UNICEF, 2002).

The Baby-Friendly Hospital Initiative (BFHI) is not applicable in Somalia because very few women give birth in hospitals. UNICEF promotes exclusive breastfeeding through health and nutrition education sessions regularly held at maternal and child health centres, through radio programmes and community advocacy (UNICEF Somalia, Supplementary feeding and breastfeeding).

Table 13: Type of infant and young child feeding

Survey name/date (Reference)	Type of feeding in the 24 hours preceding the survey		
	Indicator by age	Sample size	Percentage of children
MICS Tables Somalia, 1999 (UNICEF, 1999)	<b>Exclusive breastfeeding rate</b>		
	<4 months	n.a.	21.0
	<b>Timely complementary feeding rate</b>		
	6-9 months	n.a.	n.a.
	<b>Bottle-feeding rate</b>		
	0-11 months	n.a.	n.a.
	<b>Continued breastfeeding rate</b>		
	12-15 months (1 year)	n.a.	26.6
20-23 months (2 years)	n.a.	7.5	

## II.5 Nutritional anthropometry

### Low birth weight

The only available data state a prevalence of low birth weight (less than 2 500g) of 0.3%, but only 4.7% of neonates were weighed (UNICEF, 1999). Therefore a reliable estimate of the prevalence of low birth weight is not available.

### Anthropometry of preschool children

The only national survey documenting the nutritional status of preschool children in Somalia is the 1999 MICS (UNICEF, 1999). The survey showed a very high prevalence of wasting (17%) and a moderate prevalence of stunting (23%).

The level of wasting was above the threshold indicating a food crisis. All sectors, urban, rural and nomadic, showed the same level of prevalence. There were variations by region, the Central/South region being more affected (21%) than other regions. Severe wasting affected 4% of children overall. The level of education of mothers did not appear to influence prevalence of wasting.

The prevalence of stunting was higher in rural areas (27%) compared to nomadic populations (21%) and urban areas (17%). Central/South Somalia also has the highest prevalence of stunting (26%), with the lowest in the northeast (18%). Children of women with secondary and higher education were less frequently stunted than others. Boys showed slightly higher prevalences of both stunting and wasting than girls. The prevalence of underweight followed a pattern quite similar to that of stunting.

The displaced populations are highly vulnerable nutritionally as they have fewer opportunities for livelihood initiatives. They are amongst the most disadvantaged population groups in Somalia and child malnutrition rates have been shown to be very high amongst them. The nutritional status of children from farming communities is sensitive to seasonal stress. When rainfall is scarce, households become highly vulnerable to undernutrition (FSAU, 2002).

Many surveys are conducted by International relief organizations and NGOs. The surveys target population groups and districts that are considered particularly vulnerable due to displacement, seasonal stress, drought and problems of insecurity. Thus most surveys are conducted in difficult conditions and assessment of the prevalence of wasting and oedema is usually the main objective in order to detect major food crises requiring emergency food aid. Thus age of the children is not precisely determined during the surveys and estimates of prevalence of stunting and underweight are not published. The surveys are conducted at different times of the year and consecutive surveys in the same regions do not necessarily target the same population groups. Therefore it is difficult to assess trends in wasting. Many surveys show high to very high levels of wasting among underfives even when there is no major agricultural or security crisis.

Table 14: Anthropometry of preschool children

Name/date of survey (month/year) (Reference)	Background characteristics	Age (years)	Sex	Sample size	Prevalence of malnutrition							
					Percentage of children with							
					Stunting Height-for-age		Wasting Weight-for-height		Underweight Weight-for-age		Overweight Weight-for-height	
					< -3 Z-scores	< -2 Z-scores*	< -3 Z-scores	< -2 Z-scores*	< -3 Z-scores	< -2 Z-scores*	< -3 Z-scores	> +2 Z-scores
<b>Total</b>		0-4.99	M/F	4 267	12.1	23.3	3.5	17.2	6.9	25.8	n.a.	
<b>Sex</b>												
MICS Tables Somalia (1999) (UNICEF, 1999)		0-4.99	M	2 252	13.3	23.9	4.2	18.0	26.3	6.3	"	
		0-4.99	F	2 035	10.9	22.8	2.8	16.3	7.7	25.2	"	
<b>Age</b>												
		< 0.49	M/F	492	8.8	18.6	3.6	19.6	4.6	14.8	"	
		0.5-0.99	M/F	409	10.5	21.5	2.9	12.7	3.7	31.9	"	
		1-1.99	M/F	559	9.4	22.2	3.7	13.0	9.5	25.2	"	
		2-2.99	M/F	987	16.6	28.1	1.7	15.6	7.3	23.4	"	
		3-3.99	M/F	886	13.2	25.2	2.8	16.1	5.1	27.1	"	
		4-4.99	M/F	934	8.3	18.2	5.7	20.5	7.5	21.5	"	
<b>Residence</b>												
urban		0-4.99	M/F	1 963	12.5	16.7	0.0	16.7	4.2	22.8	"	
rural		0-4.99	M/F	1 443	13.6	26.9	3.5	16.4	8.4	29.7	"	
nomadic		0-4.99	M/F	743	11.6	20.8	3.8	17.1	6.1	27.8	"	
<b>Region</b>												
Central/South		0-4.99	M/F	2 037	12.5	25.7	4.6	21.2	9.5	27.5	"	
North/East		0-4.99	M/F	1 213	10.5	17.7	2.4	14.8	4.8	26.8	"	
North/West		0-4.99	M/F	1 017	12.5	22.6	2.0	10.1	2.8	21.0	"	
<b>Mother's education</b>												
no education		0-4.99	M/F	3 981	12.7	24.2	3.9	17.9	7.8	25.0	"	
primary		0-4.99	M/F	674	12.4	23.1	2.5	14.0	4.6	17.7	"	
secondary or higher		0-4.99	M/F	270	6.5	14.5	1.6	16.1	3.2	17.4	"	

\* Category <2 Z-scores includes <3 Z-scores.  
n.a.: not available.

Table 14: Anthropometry of preschool children (cont.)

Name/date of survey (month/year) (Reference)	Background characteristics	Age (years)	Sex	Sample size	Prevalence of malnutrition		
					Percentage of children with		
					Acute malnutrition (wasting and/or oedema)		
					< -3 Z-scores	< -2 Z-scores*	< -2 Z-scores*
<b>Region</b>							
Nutrition Survey, June 2005 (FSAU/UNICEF/SRCS/MOHL, 2005)	Sool (Taleex and Huddun Districts)	0.5-4.99	M/F	895	0.7	10.5	
Nutrition Survey, Oct. 2004 (FSAU/UNICEF/SRCS, 2004)	Gedo (Luq District)	0.5-4.99	M/F	920	5.0	25.4	
Nutrition Survey, Apr. 2004 (UNICEF/FSAU/MOH 2004)	Mudug (Galkacyo District)	0.5-4.99	M/F	906	1.9	9.7	
Nutrition Survey, Sep. 2004 (FSAU/SRCS, 2004)	Galgaduud (Dusamareb)	0.5-4.99	M/F	928	2.5	20.5	
Nutrition Survey, Sep/Oct. 2004 (UNICEF/FSAU/MOH/SRCS, 2004)	Bari (Alulla, Kandala & Iskushuban Districts)	0.5-4.99	M/F	909	1.9	14.6	
Nutrition Survey, Jul 2004 (UNICEF, 2004)	Benadir (Mogadishu IDPs)	0.5-4.99	M/F	900	3.2	15.8	
Nutrition Survey, June/July 2004 (FSAU/UNICEF, 2004)	Middle Juba (Jilib Riverine)	0.5-4.99	M/F	913	3.7	19.5	
Nutrition Survey, Apr 2004 (UNICEF/FSAU/MC/SRCS, 2004)	Bakool (Eiberde)	0.5-4.99	M/F	707	1.0	16.0	

\* Category <2 Z-scores includes <3 Z-scores.

Note: Because data on age were considered not to be reliable, reports do not document prevalence of stunting and underweight. Data taken from the Database on Somalia Nutrition Surveys, FSAU, personal communication.

Table 14: Anthropometry of preschool children (cont.)

Name/date of survey (month/year) (Reference)	Background characteristics	Age (years)	Sex	Sample size	Prevalence of malnutrition		
					Percentage of children with		< -2 Z-scores*
					Acute malnutrition (wasting and/or oedema)		
					< -3 Z-scores	Weight-for-height	
Nutrition Survey, Oct. 2003 (FSAU/MOHL/SRCS, 2003)	Togdheer (Burao IDPs)	0.5-4.99	M/F	359	1.9	15.3	
Nutrition Survey, May-June 2003 (FSAU/MOHL/UNICEF/SRCS, 2003)	Sool (Sool Plateau & Sannag Region)	0.5-4.99	M/F	895	0.8	12.5	
Nutrition Survey, Sep. 2003 (FSAU/IMC/UNICEF, 2003)	Bay (Dinsor District)	0.5-4.99	M/F	907	1.8	13.3	
Nutrition Survey, Jul. 2003 (UNICEF/FSAU/IMC/SRCS, 2003)	Hiraan (Belet weyne District)	0.5-4.99	M/F	901	2.9	17.9	
Nutrition Survey, May 2003 (FSAU/UNICEF, 2003)	Lower Juba (Jubbada Hoose) (Kismayo District)	0.5-4.99	M/F	913	1.9	12.3	
Nutrition Survey, Feb. 2003 (UNICEF/MOHL/FSAU, 2003)	W. Galbeed (Hargeisa IDPs & Returnees)	0.5-4.99	M/F	913	3.8	15.3	
Nutrition Survey, April/May 2002 (FSAU/MOHL/UNICEF, 2002)	Sahil (Sahil Region)	0.5-4.99	M/F	906	2.0	11.8	
Awdal Nutrition Survey Report, Nov. 2001 (UNICEF/MOHL/SRCS, 2002)	Awdal (Lughaya & Zeila Districts)	0.5-4.99	M/F	904	3.2	26.8	
Burao Nutrition Survey Report, Oct. 2001 (UNICEF, 2002)	Togdheer (Burao Town)	0.5-4.99	M/F	895	3.1	13.6	

\* Category <-2 Z-scores includes <-3 Z-scores.

Note: Because data on age were considered not to be reliable, reports do not document prevalence of stunting and underweight. Data taken from the Database on Somalia Nutrition Surveys, FSAU, personal communication.

#### Anthropometry of school-age children and adolescents

No data are available on anthropometry of school-age children and adolescents.

#### Anthropometry of adult women

According to the SuRF Report, the mean body mass index (BMI) among Somali women aged 15 years and above was 21.6 kg/m<sup>2</sup> in 2002. The prevalence of overweight (BMI of 25.0-29.9 kg/m<sup>2</sup>) was estimated at 19% the same year and the prevalence of obesity (BMI ≥30.0) was estimated at 2% (WHO, 2005). The representativeness of the data is however not documented.

#### Anthropometry of adult men

In 2002, the mean BMI of men aged 15 years and above was 20.5 kg/m<sup>2</sup>. Only 9.8% of these men were overweight and 0.3% were obese (WHO, 2005). The representativeness of the data is however not documented.

## **II.6 Micronutrient deficiencies**

#### Iodine deficiency disorders (IDD)

##### *Prevalence of goitre and urinary iodine level*

In Somalia, no data are available on the prevalence of goitre or on the level of urinary iodine. Iodine deficiency is most probably a public health concern as access to iodized salt is extremely low (UNICEF, Somalia, Micronutrient supplementation).

##### *Iodization of salt at household level*

In 1999, a MICS survey revealed that less than 1% of all households where salt was tested used adequately iodized salt (UNICEF, 1999).

#### Vitamin A deficiency (VAD)

##### *Prevalence of sub-clinical and clinical vitamin A deficiency*

After the severe drought of 1986, a rapid assessment was conducted in three drought-affected regions (Bakool, Bay and Gedo) and in Hiran. Ten villages in each region were randomly selected for data collection, and the sample included 30 children from each village. Children with a height under 110 cm (corresponding in a normal population to an age of approximately 60 months) were surveyed. In the Bay region, night blindness was reported in 3% of the children. Night blindness was most prevalent in Bakool, where 7% of the children were reported to be affected (CDC, 1987).

Vitamin A deficiency could be widespread because of the low supply and low consumption of fruit and vegetables and meat. Nevertheless the substantial supply of milk is a good source of vitamin A. A food consumption survey revealed insufficient intake of vitamin A among households but more data are needed to assess the extent of the deficiency (Montani and Omwega, 2002).

## Vitamin A supplementation

Table 15: Vitamin A supplementation of children and mothers

Survey name/date (Reference)	Background characteristics	Children				Mothers		
		Age (months)	Sex	Number of children	Percent of children who received vit. A supplements in the 6 months preceding the survey	Age (years)	Number of mothers <sup>1</sup>	Percent of mothers who received vit. A supplements within 2 months postpartum
MICS Tables Somalia (1999) (UNICEF, 1999)	<b>Total</b>	6-59	M/F	3 614	39.2	n.a.	1 142	13.4
	<b>Sex</b>							
		6-59	M	1 861	38.3			
		6-59	F	1 753	39.0			
	<b>Residence</b>							
	urban	6-59	M/F	1 711	40.9	n.a.	569	17.6
	rural	6-59	M/F	1 278	41.7	n.a.	366	11.2
	nomadic	6-59	M/F	652	28.2	n.a.	159	3.8
	<b>Region</b>							
	Central/South	6-59	M/F	1 875	35.1	n.a.	507	14.6
	North/East	6-59	M/F	952	35.6	n.a.	324	18.2
North/West	6-59	M/F	921	50.5	n.a.	290	5.5	

<sup>1</sup> Women with a birth in the 12 months preceding the survey.  
n.a.: not available.

In 1999, 39% of children under five years received vitamin A supplements in the 6 months preceding the survey. Children living in nomadic areas were less supplemented (28%). The coverage of supplementation also varied by region and was highest in the northwest region (51%) (UNICEF, 1999).

Among mothers with a birth in the 12 months preceding the survey, only 13% had received vitamin A supplements within 2 months postpartum. Supplementation covered only 4% of nomadic mothers and 6% of women living in the northwestern region (UNICEF, 1999).

Vitamin A deficiency has been established as one of the public health challenges in the country. UNICEF is involved in a vitamin A supplementation programme for children in various health facilities across the country. Close to 1 million children between the ages of six months and five years were provided vitamin A supplements in 2003. Despite the high supplementation coverage achieved by pairing this with National Immunization Days, there is scope for expanding routine supplementation to other health centres, especially in light of the high prevalence of undernutrition among young children (UNICEF Somalia, Micronutrient Supplementation).

### Iron deficiency anemia (IDA)

#### *Prevalence of IDA*

In 2001, UNICEF in collaboration with the Ministry of Health and Labour (MOHL) conducted a survey on anemia in Somaliland. The survey was localized and therefore does not offer a representative picture of the Somali situation. However, it revealed a prevalence of anemia of 60% among children under five years (hemoglobin < 11.0g/dL). Severe anemia (hemoglobin < 7.0g/dL) affected 8% of the children. The highest prevalence of any anemia was among children between 6 and 36 months (71%) (UNICEF & MOHL, 2001).

Determinants of the high prevalence of anemia among children may include the poor diet and inadequate complementary feeding practices. The supply and the consumption of meat are limited among the large majority of the households and the consumption of tea, containing inhibitors of iron absorption, is widespread. Malaria and intestinal parasites may also play a role in the high prevalence of anemia.

### *Interventions to combat IDA*

As follow-up to the survey findings, 20 health facilities were equipped with simple, cost-effective devices to screen patients for anemia. Iron-cum-folic acid supplements for pregnant women are regularly included in the expanded programme of immunization (UNICEF Somalia, Micronutrient Supplementation).

## **II.7 Policies and programmes aiming to improve nutrition and food security**

UN agencies, international organizations, local health authorities, national and international NGOs provide support to a variety of health services, ranging from curative care to immunization, ante-natal care, nutritional rehabilitation, etc. These services are rendered through a network of some 150 mother-and-child centres. However, not all Somali have access to these services, women having particularly difficult access to health care (UN, 2003b). Moreover insecurity is a major constraint which hinders provision of services and access of the population to health care centres.

## Reference list

- CDC**, 1987. *International Notes Rapid Nutrition Evaluation in Drought-affected regions of Somalia*. Centers for Disease Control.  
(available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/00001049.htm>).
- DEC**. 2004. *Food Security Programme for Somalia*. Delegation of the European Commission.  
(available at [http://www.delken.cec.eu.int/en/eu\\_and\\_somalia/cooperation/food\\_security.htm](http://www.delken.cec.eu.int/en/eu_and_somalia/cooperation/food_security.htm)).
- FAO**. 2004. *Consolidated Inter-Agency Appeal 2004*. Technical Cooperation Department, Food and Agriculture Organization of the United Nations, Rome.  
(available at [http://www.fao.org/reliefoperations/en/appeals/2004/highlight\\_40478.html](http://www.fao.org/reliefoperations/en/appeals/2004/highlight_40478.html)).
- FAO & WHO**. 2002. *Expert consultation on human vitamin and mineral requirements*. Food and Agriculture Organization of the United Nations, Rome, and World Health Organization, Geneva.
- FAO**. 2005. *AQUASTAT country profile: Somalia*. Land and Water Division, Food and Agriculture Organization of the United Nations, Rome.  
(available at <http://www.fao.org/ag/agl/aglw/aquastat/countries/somalia/index.stm>).
- FAO**. 2004b. *A review of the livestock sector in the Horn of Africa (IGAD countries)*. Food and Agriculture Organization of the United Nations, Rome.  
(also available at [http://www.fao.org/docs/eims/upload/164037/lsr\\_IGAD.pdf](http://www.fao.org/docs/eims/upload/164037/lsr_IGAD.pdf)).
- FAO**. *Forestry Division*. Country Profiles - Somalia. Food and Agriculture Organization of the United Nations, Rome.  
(available at <http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?sitetreeld=18927&langId=1&geold=0>).  
Accessed 2005.
- FAO**. *FAOSTAT Database*. Food and Agriculture Organization of the United Nations, Rome.  
(available at <http://faostat.external.fao.org/faostat>).  
Accessed 2005.
- FAO**. *GIEWS workstation*. Food and Agriculture Organization of the United Nations, Rome.  
(available at <http://www.fao.org/giews/workstation/english/index.htm>).  
Accessed 2005.
- FSAU**. 2005. *Highlights: FSAU Post Gu 2005 Seasonal Assessment*. Food Security Analysis Unit – Somalia, Nairobi.  
(available at [http://www.fews.net/centers/files/Somalia\\_200507en.pdf](http://www.fews.net/centers/files/Somalia_200507en.pdf)).
- FSAU**. 2004. *Dietary Diversity in Dangarayo and Dinsor Districts, Somalia*. Food Security Analysis Unit – Somalia, Nairobi.  
(available at <http://www.fsausomali.org/uploads/Other/243.pdf>).
- FSAU**. *Database on Somalia Nutrition Surveys*. Food Security Analysis Unit – Somalia, Nairobi, personal communication.
- Hemrich, G**. 2003. *Matching Food security Analysis to Context: the experience of the Somalia Food security Assessment Unit*. FAO International Workshop.  
(available at <ftp://ftp.fao.org/docrep/fao/meeting/009/ae506e.pdf>).
- ILO**. *C182 Worst Forms of Child Labour Convention, 1999 – list of ratifications*. International Labour Organization, Geneva.  
(available at <http://www.ilo.org/ilolex/cgi-lex/ratifce.pl?C182>).  
Accessed in May 2005.

- ITU.** *World Telecommunication Indicators Database.* International Telecommunication Union. (available at <http://www.itu.int/ITU-D/ict/statistics/>). Accessed 2005.
- Montani & Omwega.** 2002. *Food and utilisation study.* Food Security Analysis Unit (FSAU) Somalia. (available at <http://www.fsasomali.org/uploads/Other/75.pdf>).
- Save the Children,** 2005. *Country Brief 2004/2005.* Save the Children UK. (available at <http://www.savethechildren.org.uk/cb/Soma.pdf>).
- UN.** 2005a. *Report of the Secretary-General on the situation in Somalia – 16 June 2005. S/2005/392.* United Nations Security Council, New York. (available at <http://daccessdds.un.org/doc/UNDOC/GEN/N05/383/84/PDF/N0538384.pdf?OpenElement>).
- UN.** 2005b. *Humanitarian Situation in Somalia, Monthly Analysis.* United Nations, New York. (available at <http://www.reliefweb.int/library/documents/2005/unct-som.31jul.pdf>).
- UN.** 2003a. *Report of the Secretary-General on children and armed conflict – 30 October 2003. A/58/546–S/2003/1053.* United Nations Security Council, New York. (available at <http://daccessdds.un.org/doc/UNDOC/GEN/N03/555/09/PDF/N0355509.pdf?OpenElement>).
- UN.** 2003b. *Consolidated Appeals Process (CAP), Somalia 2004.* United Nations, New-York and Geneva.
- UN.** 2002. *Consolidated Interagency Appeal 2002: Somalia.* United Nations, New-York and Geneva.
- UN Somalia.** 2004. *Report on the Inter-Agency Internal Displacement Division Mission to Somalia - 7 to 16 December 2004.* United Nations System in Somalia. (available at [http://www.unsomalia.net/Reports\\_Publications/McNamara%20mission%20report\\_Dec04.pdf](http://www.unsomalia.net/Reports_Publications/McNamara%20mission%20report_Dec04.pdf)).
- UNAIDS.** 2002. *Epidemiological Fact Sheets, Somalia.* Joint United Nations Programme on HIV/AIDS, Geneva. (available at [http://www.who.int/emc-hiv/fact\\_sheets/All\\_countries.html](http://www.who.int/emc-hiv/fact_sheets/All_countries.html)).
- UNAIDS.** 2004. *Epidemiological Fact Sheets, Somalia.* Joint United Nations Programme on HIV/AIDS, Geneva. (available at <http://www.who.int/hiv/pub/epidemiology/pubfacts/en/>).
- UNDP.** 2001. *National Human Development Report for Somalia.* United Nations Development Programme. New York. (available at <http://www.unsomalia.org>).
- UNDP.** 2004. *Human Development Report 2004.* United Nations Development Programme. New York. (available at <http://hdr.undp.org/reports/global/2004/>).
- UNDP & WB.** 2003a. *Country re-engagement note – Somalia, April 2003.* United Nations Development Programme, New York, and the World Bank, Washington DC. (available at [http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/03/25/000112742\\_20040325090551/Rendered/PDF/282760Somalia0Country0reengagement0note.pdf](http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/03/25/000112742_20040325090551/Rendered/PDF/282760Somalia0Country0reengagement0note.pdf)).
- UNDP & WB.** 2003b. *Somalia socio-economic survey 2002. Report N. 1, Somalia Watching Brief.* United Nations Development Programme, New York, and the World Bank, Washington DC. (available at <http://www.so.undp.org/docs/whole%20SWB%20book.pdf>).

**UNESCO.** *Global Education Digest 2004.* Institute for Statistics, United Nations Educational, Scientific and Cultural Organization, Montreal.  
(available at [http://www.uis.unesco.org/TEMPLATE/pdf/ged/2004/GED2004\\_EN.pdf](http://www.uis.unesco.org/TEMPLATE/pdf/ged/2004/GED2004_EN.pdf)).

**UNFPA & WB.** 2004. *Female Genital Mutilation / Cutting in Somalia.* United Nations Population Fund and the World Bank.  
(available at <http://www.sacb.info/HIVAIDS/FGM/World%20Bank%20UNFPA%20FGM%20Report.pdf>).

**UNICEF.** 2003a. *Strategic Framework for the Prevention and Control of HIV/AIDS and STIs within Somali Populations 2003-2008.* United Nations Children's Fund, New York.  
(available at <http://www.sacb.info/HIVAIDS/HIV%20Strategic%20Framework.pdf>).

**UNICEF.** 2003b. *From Perception to Reality: A Study On Child Protection in Somalia.* United Nations Children's Fund, New York.  
(available at [http://www.db.idpproject.org/Sites/IdpProjectDb/idpSurvey.nsf/wViewCountries/C3B9CC01C598DA3AC1256E840055F8B2/\\$file/UNICEF+Chapter+8+protection.pdf](http://www.db.idpproject.org/Sites/IdpProjectDb/idpSurvey.nsf/wViewCountries/C3B9CC01C598DA3AC1256E840055F8B2/$file/UNICEF+Chapter+8+protection.pdf)).

**UNICEF,** 2002. *Nutrition Survey Report, Beledweyne District, Hiiran Region Somalia.* United Nations Children's Fund, New York.  
(available at <http://www.fsausomali.org/uploads/Other/108.pdf>).

**UNICEF.** 2001. *End Decade Multiple Cluster Survey for Somalia.* United Nations Children's Fund, New York.

**UNICEF.** 1999. *Multiple Indicator Cluster Survey, Tables from Somalia, 1999.* United Nations Children's Fund, New York.  
(available at <http://www.childinfo.org/MICS2/newreports/somalia/somaliatables.PDF>).

**UNICEF.** 1998. *Children and women in Somalia, a situation analysis.* United Nations Children's Fund, Somalia.

**UNICEF.** *The State of the World's Children 2005.* United Nations Children's Fund, New York.  
(available at [http://www.unicef.org/publications/index\\_24432.html](http://www.unicef.org/publications/index_24432.html)).

**UNICEF.** *Information by country.* United Nations Children's Fund, New York.  
(available at <http://www.unicef.org/statistics/>).  
Accessed 2005.

**UNICEF & MOHL.** 2001. *Report of Anaemia Survey in Somaliland.* United Nations Children's Fund, Hargeisa, Ministry of Health and Labour, Somalia.

**UNICEF Somalia.** *Activities. Supplementary feeding and breastfeeding.* United Nations Children's Fund, Somalia.  
(available at [http://www.unicef.org/somalia/nutrition\\_109.html](http://www.unicef.org/somalia/nutrition_109.html)).

**UNICEF Somalia.** *Micronutrient supplementation.* United Nations Children's Fund, Somalia.  
(available at [http://www.unicef.org/somalia/nutrition\\_106.html](http://www.unicef.org/somalia/nutrition_106.html)).

**UNPD.** *World Population Prospects: the 2004 Revision.* Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. New York, USA.  
(available at <http://esa.un.org/unpp>).  
Accessed in 2005.

**UNSTAT.** *Millennium Indicators Database.* United Nations Statistics Division, New York.  
(available at [http://unstats.un.org/unsd/mi/mi\\_goals.asp](http://unstats.un.org/unsd/mi/mi_goals.asp)).  
Accessed 2005.

- WB.** *World Development Indicators Database.* World Bank, Washington D.C. (available at <http://devdata.worldbank.org/data-query/>). Accessed 2005.
- WFP.** 2004. *Food Aid Monitor 2003.* International Food Aid Information System. World Food Programme of the United Nations, Rome. (available at: <http://www.wfp.org/interfais/index2.htm>). Accessed July 2005.
- WFP.** 2002. *Summary report of the Evaluation of Somalia PRRO 6073.00.* World Food Programme of the United Nations, Rome. (available at <http://www.wfp.org/eb/docs/2002/wfp006965~2.pdf>).
- WHO.** 2005. *The SuRF Report 2. Surveillance of chronic disease Risk Factor. Country-level data and comparable estimates.* World Health Organization, Geneva. (available at [http://www.who.int/ncd\\_surveillance/infobase/web//surf2/start.html](http://www.who.int/ncd_surveillance/infobase/web//surf2/start.html)).
- WHO.** 2003. *Diet, nutrition and the prevention of chronic diseases.* Report of a joint WHO/FAO Expert Consultation. WHO Technical Report Series 916. World Health Organization, Geneva.
- WHO.** 2001 *Female Genital Mutilation: Integrating the Prevention and the Management of the Health Complications into the curricula of nursing and midwifery. A Student's Manual.* World Health Organization, Geneva. (available at [http://www.who.int/gender/other\\_health/Studentsmanual.pdf](http://www.who.int/gender/other_health/Studentsmanual.pdf)).
- WHO.** 1983. *Measuring Change in Nutritional Status.* World Health Organization, Geneva.
- WHO.** *Global Database on Child Growth and Malnutrition.* World Health Organization, Geneva. (available at <http://www.who.int/nutgrowthdb/>). Accessed July 2005.