

Issues on Global Food security

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Food Security

Assured physical availability and economic accessibility by all people to enough food for a healthy active life in an environmentally and socially acceptable manner

To take into account:

- Amount
- Distribution
- Quality (safe, nutritious, balanced)
- Cultural acceptability
- Proper food utilization
safe water,
education,
and health.

Global Initiatives: The World Food Summit (WFS)

“We pledge our political will and our common and national commitment to achieving food security for all and to an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015.” (Rome Declaration, 1996)

- At the World Food Summit (WFS) in November 1996, 186 countries committed themselves to reducing the number of undernourished people by half by 2015.
- Donors pledged to provide support, in technology transfer and the provision of food aid.
- In 2002, the 186 countries reaffirmed their commitment.
- 2015 is the current target against which progress in food security and development are measured.

International Targets of Development Millennium Development Goals

“We will spare no effort to free our fellow men, women and children from the abject and dehumanizing conditions of extreme poverty ...”.

(Millennium Declaration, 2000)

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop global partnerships for development

Outline of the discussion

- Global status of food security and implications for meeting the MDG targets, particular focus on Sub-Saharan Africa.
- Trends in hunger, food availability, food distribution, consumption.
- Underlying causes of food insecurity.
- The role of technology in addressing food security.

Global trends

Other Regions

Asia

Latin America and the Caribbean

North Africa

Sub-Saharan Africa



our future through science

Global Scenario

- No large scale food scarcity in the last decade
 - Growth rate in food production worldwide increased to ~ 3 % pa, surpassing surpassed the population growth rate, leading to increased food availability per person.
- Despite this abundance, however, food is highly unevenly distributed
 - Many low-income countries have difficulty producing adequate supplies of food and are thus food insecure at the national level.
 - But more widespread is inequality in food consumption within countries as a result of uneven purchasing power, which can afflict even the highest income countries

Global Progress: World Food Summit Goals

- Latin America and the Caribbean

- Steady progress over the past decade, the most positive
- 74 million hungry people in LAC, by 2015, this number is expected to be cut in half to 37 million.
- The distribution gap in the LAC region is projected to fall by 32% between 2002-04 and 2015.

- Asia

- Aggregately, food security situation projected to remain virtually unchanged through the next decade.
- The number of hungry people is projected to rise from 214 million in 2002-04 to 228 million in 2015, with exceptions - Bangladesh, Indonesia, the Philippines, Sri Lanka, Vietnam projected to meet the goals set at the WFS.

- Sub-Saharan Africa

- Already the most vulnerable region, is expected to deteriorate even further.
- The number of hungry people in the region is projected to reach 471 million in 2015, marking a 34-percent increase from 2002-04.
- The distribution gap is projected to increase 19 percent during the same time period

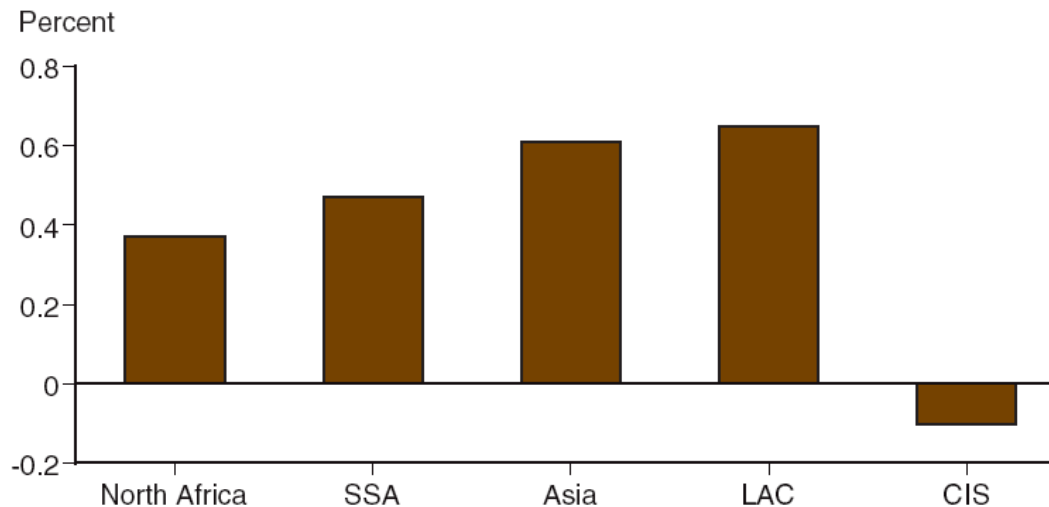
Global Progress: Trends in Hunger, Food Distribution and consumption

- Some terms:
 - **domestic food supply**, which is the sum of domestic production and commercial and food aid imports;
 - **food availability**, which is food supply minus nonfood use such as feed and waste;
 - **import dependency**, which is the ratio of food imports to food supply;
 - **food consumption** which is equal to food availability.

Global trends in food consumption

- Per capita calorie consumption at the global level in 2002 was roughly 2,800 calories, growing at 0.4% pa for last decade.
- Developed significantly higher than the world average, over 3,300 calories in 2002.
- Developing world exceeded that at the world level, absolute intake levels were still lower than the global average, equaling about 2,660 calories in 2002.

Growth in calorie consumption between 1990 and 2002

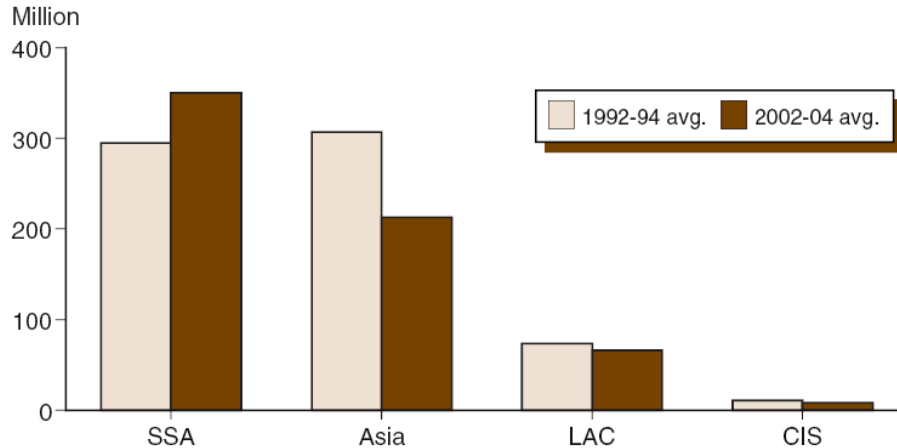


Note: SSA = Sub-Saharan Africa; LAC = Latin America and the Caribbean; CIS = Commonwealth of Independent States.

Source: USDA, Economic Research Service, using data from FAOSTAT, (<http://faostat.fao.org>).

Sub-Saharan Africa (SSA):

Number of hungry people: Change during the last decade*



* North Africa is not included because, according to our assessment, there is not a significant number of hungry people in the region.

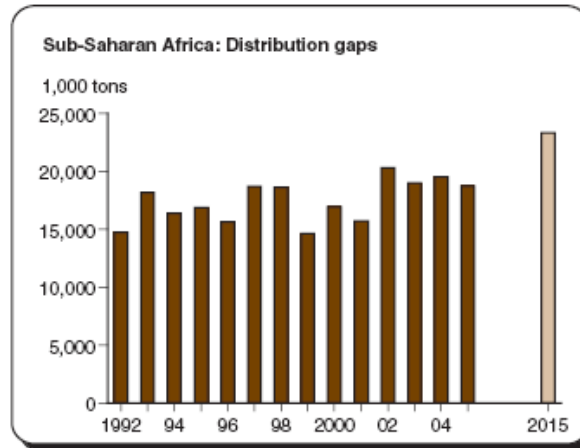
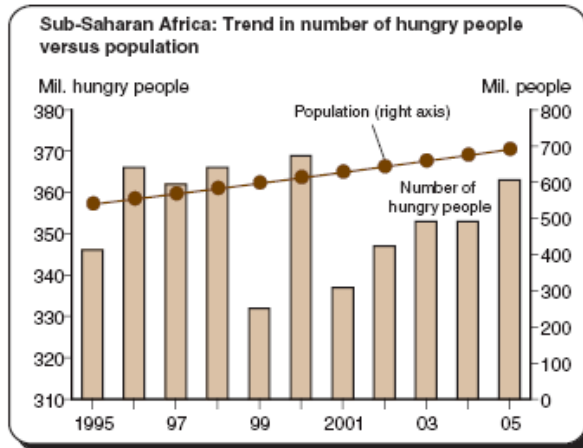
Note: SSA = Sub-Saharan Africa; LAC = Latin America and the Caribbean;
CIS = Commonwealth of Independent States.

Source: USDA, Economic Research Service.

- SSA is the only region where the number of hungry people has risen by over 19 % during the last decade.
- In 2002-04, roughly 350 million people, more than half of the region's population, fell into this category.
- The region's production of grains and root crops (staple foods) grew at a rate of 2.4 percent per year, (higher Asia at 1.7% or LAC at 1.9%).
- However, SSA's relatively high population growth (2.6% pa since 1992), negated these gains in production.

The number of hungry people actually fell in Angola, Mozambique, and Ghana. Angola has far exceeded the goal of the World Food Summit.

Trends in Hunger, distribution gaps, consumption



Sub-Saharan Africa: Consumption trends

	Daily calorie consumption		Annual growth in calorie consumption	Share of cereals in diet	
	1992	2002		1992-2002	1992
Sub-Saharan Africa	2,162	2,207	0.40	<i>Percent</i>	
Angola	1,793	2,083	1.64	48.6	48.1
Kenya	1,913	2,090	1.13	29.1	31.6
Senegal	2,193	2,280	0.10	47.2	47.7
Sudan	2,168	2,228	0.20	63.5	59.5
Tanzania	1,983	1,975	0.13	59.6	52.9
Zambia	1,901	1,927	-0.04	47.4	51.3
Zimbabwe	1,912	1,943	0.57	65.0	63.7
				61.7	53.5

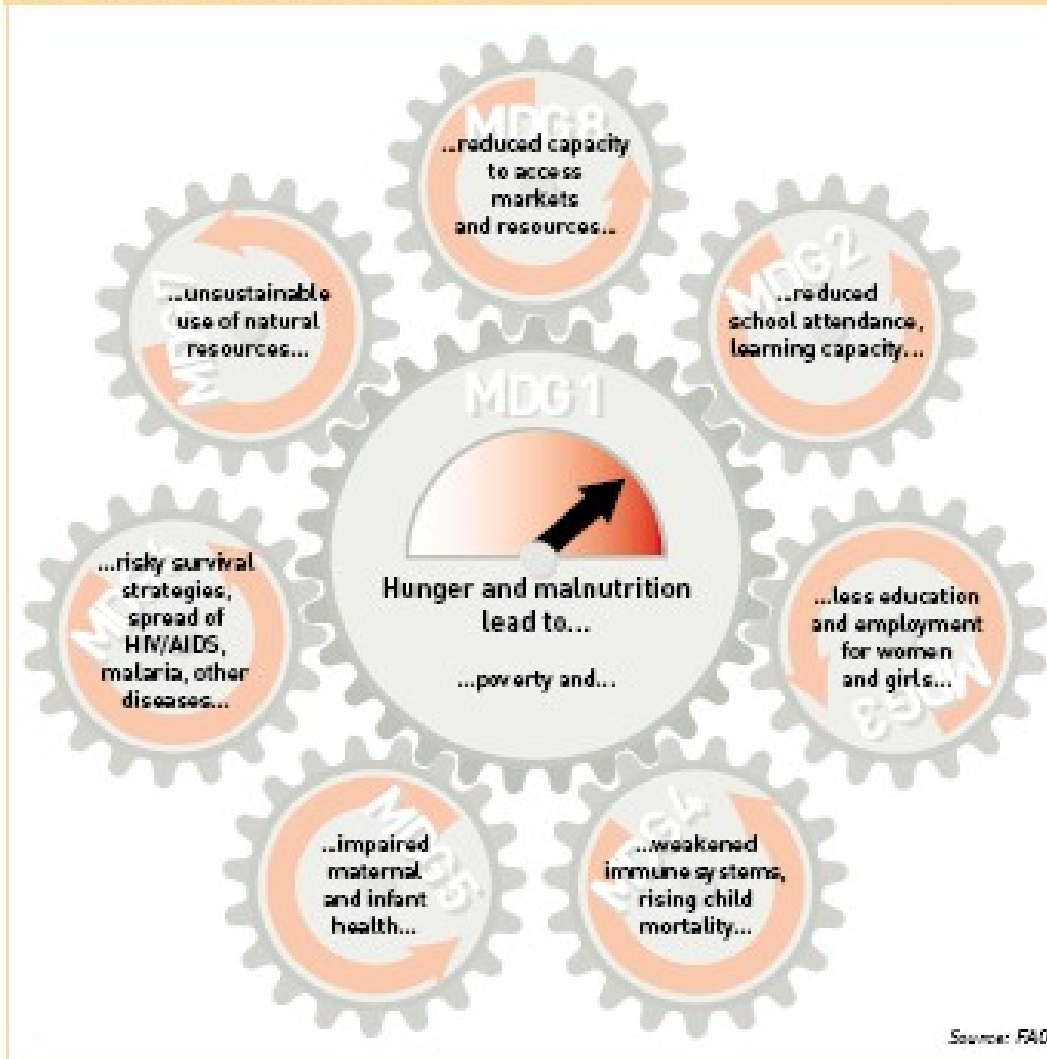
*SQ stands for status quo and describes the amount of grain equivalent needed to support 2002-2004 levels of per capita consumption. NR stands for nutritional requirements and describes the amount of grain equivalent needed to support nutritional standards.

Source: USDA, Economic Research Service, using data from FAOSTAT (<http://faostat.fao.org>) and World Food Program.

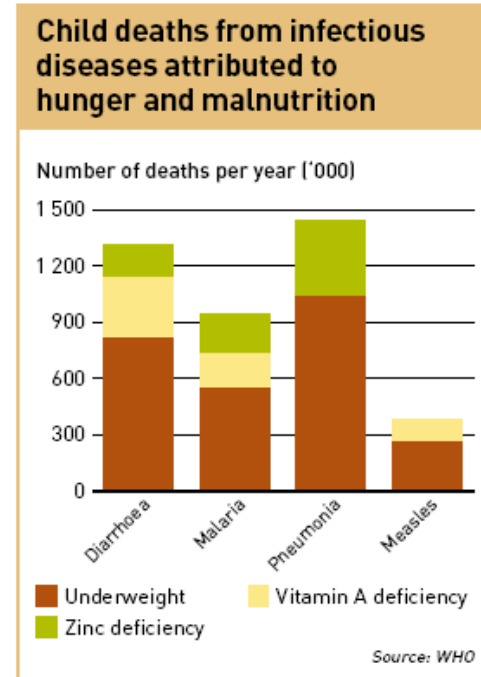
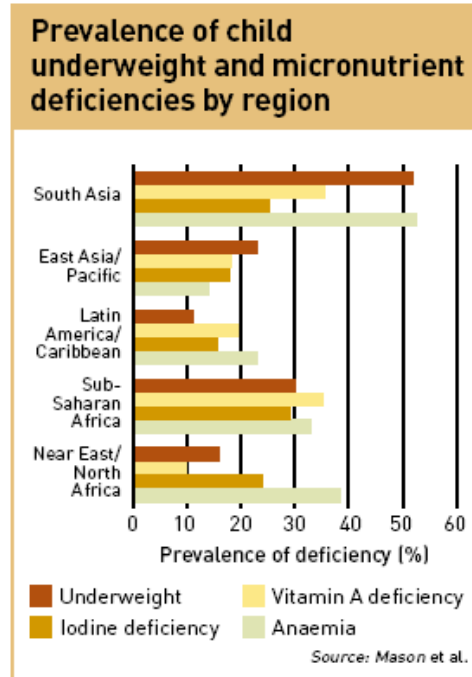
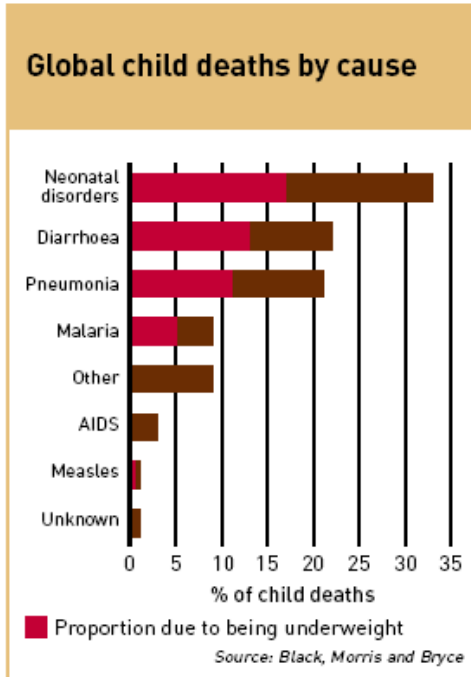
“**distribution gap**” measures the food needed to raise consumption in each income quintile to the minimum nutritional requirement.

The vicious cycle of hunger and poverty

Running in reverse: persistent hunger slows progress towards other Millennium Development Goals

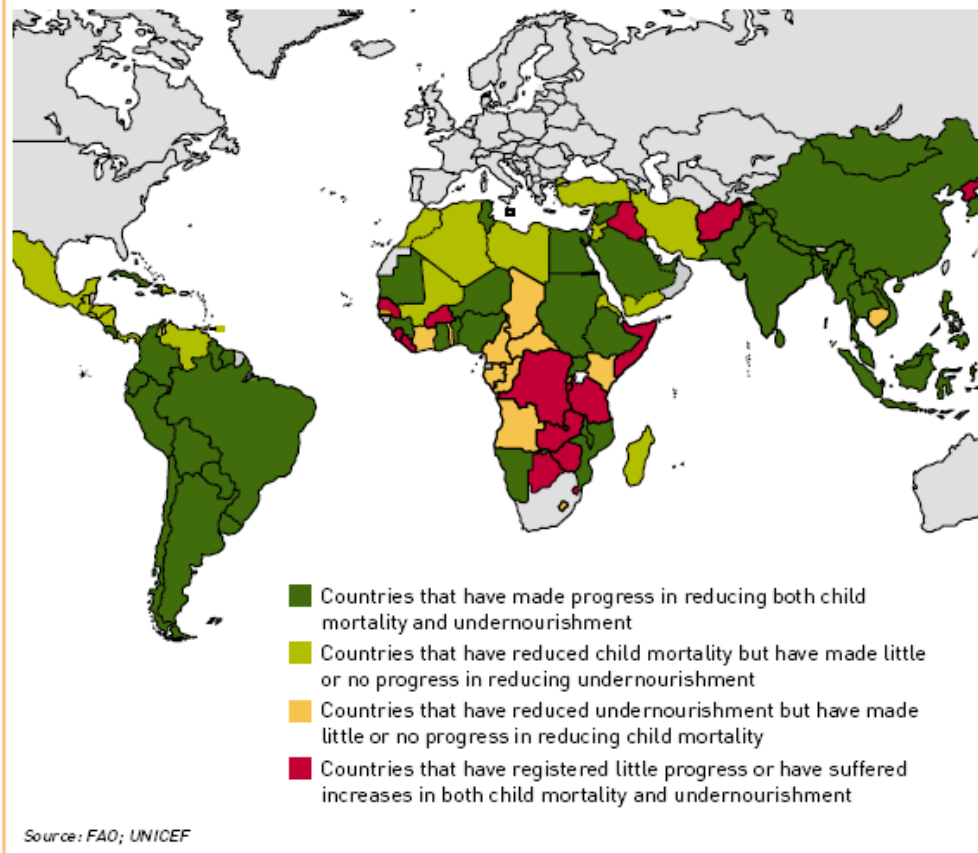


Hunger, Malnutrition and Child Mortality



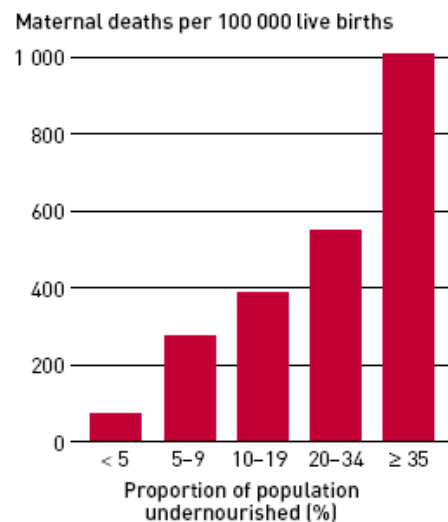
Hunger and child Mortality

Progress in reducing child mortality and hunger since 1990

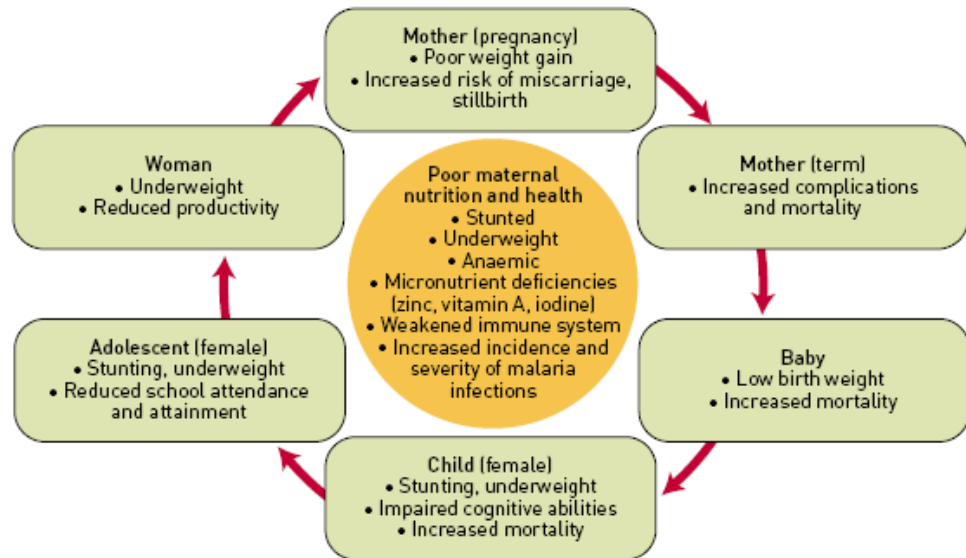


Improving maternal health and breaking the cycle of poverty, hunger and malnutrition

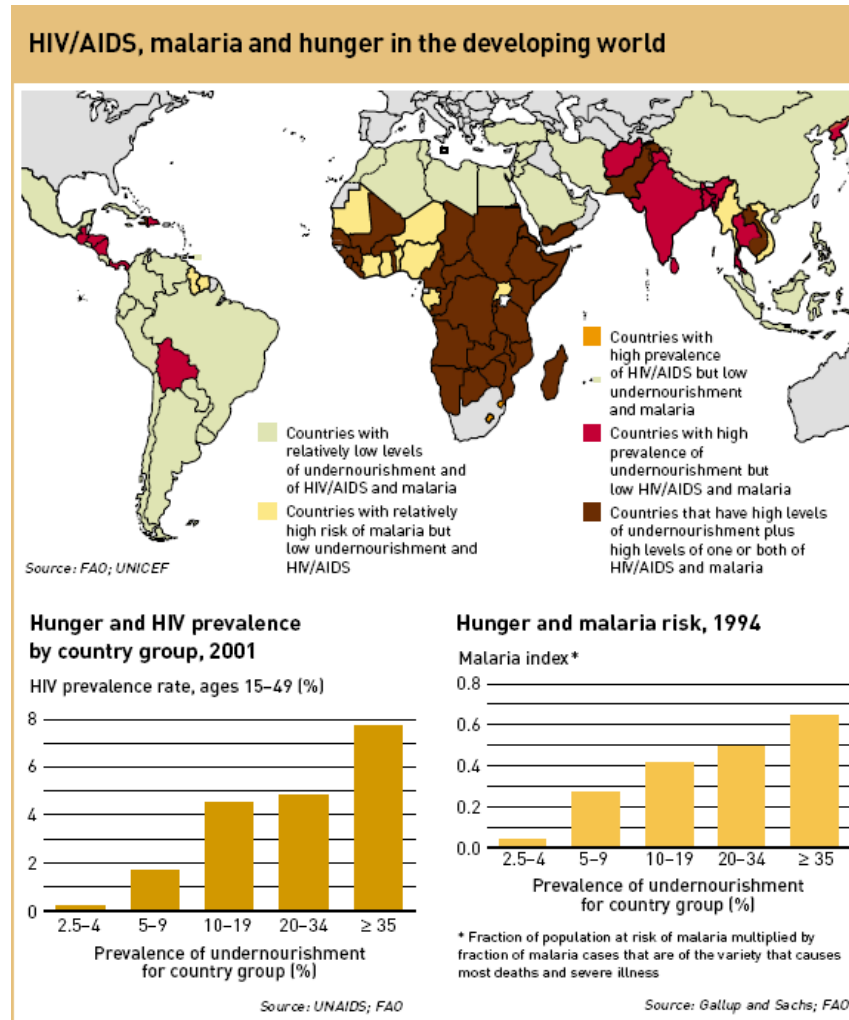
Maternal mortality ratio for countries grouped by prevalence of hunger



Maternal health and the cycle of poverty, hunger and malnutrition

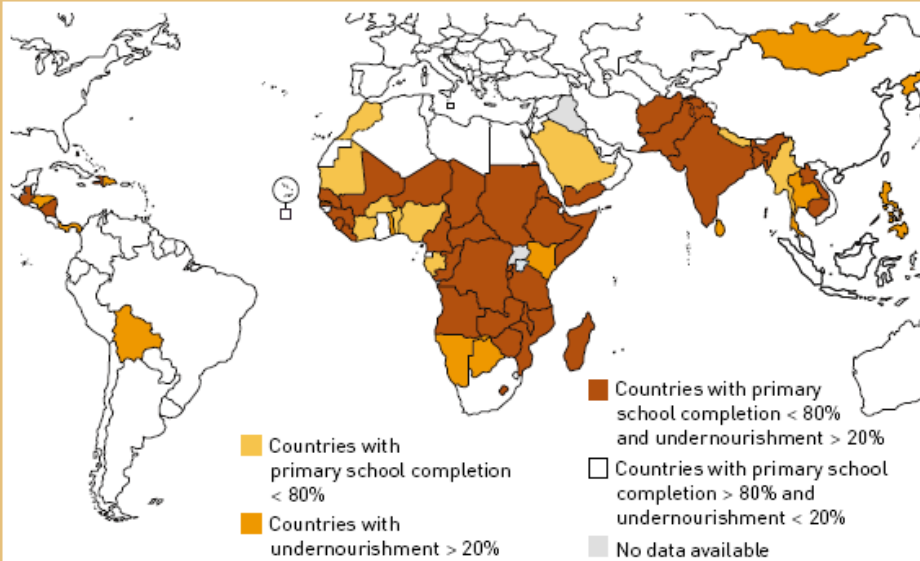


HIV/AIDS, malaria and tuberculosis: undernutrition as both symptom and cause

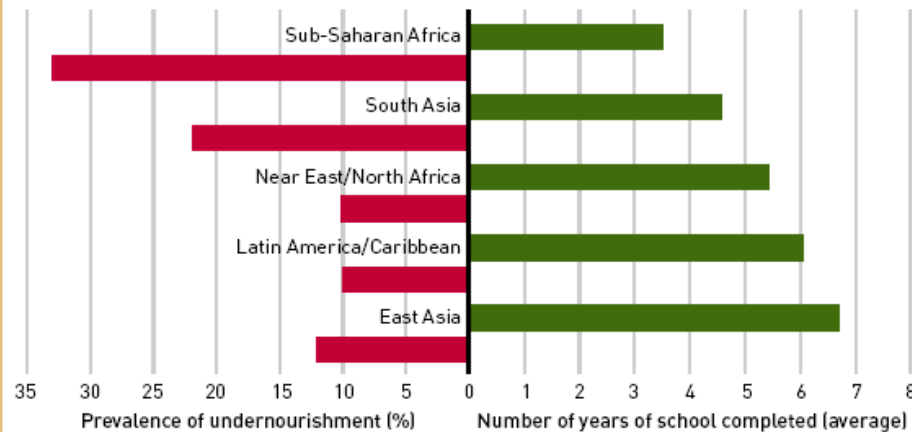


Education and hunger reduction

Primary school completion and undernourishment in the developing world



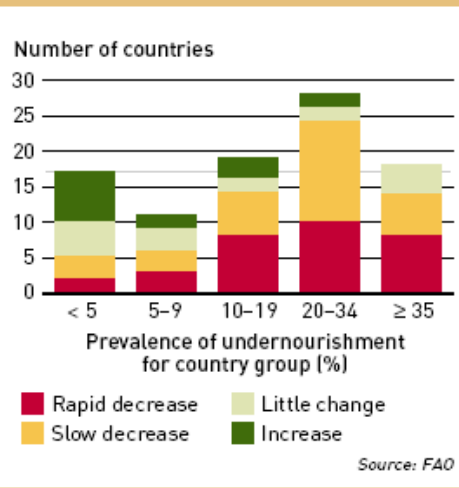
School attainment and undernourishment by region, 2000



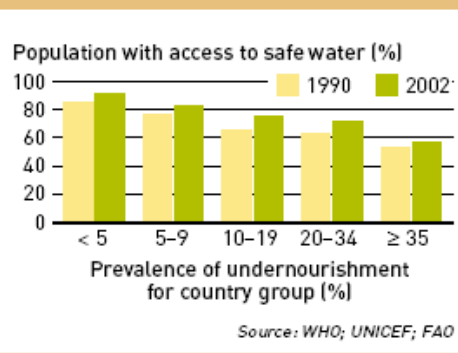
Source: UNESCO; FAO

Improving environmental sustainability and food security by empowering the rural poor

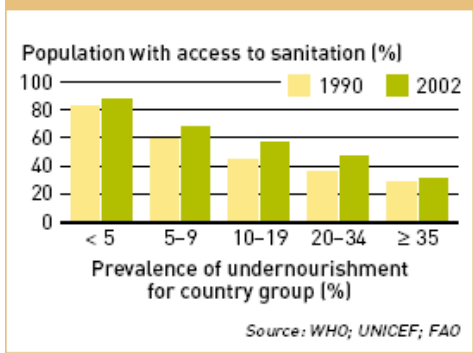
Changes in forest cover, 1990–2000, by undernourishment prevalence group



Access to improved water and prevalence of undernourishment



Access to improved sanitation and prevalence of undernourishment



Underlying causes of global food insecurity

The key components of food security

- Imports
 - Low-income, food-insecure countries, have low foreign earnings
 - The forex is shared for other imports, fuel, fertilizer, medicines
 - Donor aid a critical component of food import, but globally this is dwindling
- Food (Crop and Livestock) production
- Purchasing power and access to food
 - households having insufficient resources to purchase the food they need from available food supplies.
 - This is a function of both the level of income and its distribution among households.
 - Average gross national income (GNI) in SSA countries are

Underlying Causes – A Complex dynamic

Socio-economic and Political

- Governance
 - Poor food distribution
 - Ineffective policies
 - Poor infrastructure and service delivery
 - Limited agricultural technologies
 - Social Unrest
 - Economic crises
- Rapid population growth
- Poverty
- Environmental degradation
- Conflict,
- Disease/ HIV/AIDS.

Physical/Climatic

- Drought
- Global warming, high CO₂
- Poor soil fertility



Good Governance and hunger reduction

- Good governance: “the set of traditions and institutions by which authority in a country is exercised” World Bank
- extends to providing essential “public goods”, ranging from peace and security to roads and electricity in rural areas. (IFPRI)

- Indicators

- Political stability
- Government effectiveness
- Rule of law
- Control of corruption



Conflict – Major cause of instability, displacement and food insecurity

- Several countries undergoing major internal conflict and civil war, DRC, the Sudan



*Displaced
people highly
food insecure*

Absence of conflict: the case of Angola

- 1992-94, consumption for the entire country ~12 million people, was below the nutritional requirement. By 2002-04, however, consumption was below that target for only about 3 million people.
- This progress was achieved during a time when the country reached a peace agreement following more than two decades of civil war.
- As a result of the new-found security and stability, food production (6% annual increase from 1992/94 to 2002/04) and export earnings rose considerably.
- Stability enhanced oil production, that coupled with higher oil prices enhanced economic growth.

Ghana – the benefits of good governance

- Success in food security was achieved during peace time as the country gained external support by demonstrating improvement in governance.
- The number of hungry people fell from an average of 10 million in 1992-94 to roughly 4 million in 2002-04 due to;
 - Increased import capacity
 - Export earnings have doubled in the last decade due to a depreciating currency, which has made the country's exports more competitive, and a strengthening of prices for major exports. Gold and cocoa comprise nearly two-thirds of the country's export earnings.
- Food supplies per capita increased due to a slowdown in population growth over the last decade from an annual rate of 2.75% to 2.2%

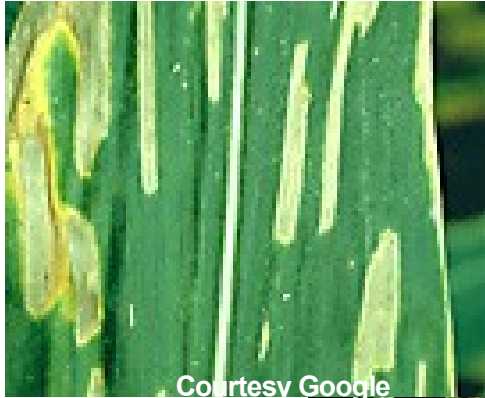
Sub-Saharan Africa: Trends in food production



Crop Production:

- Cereals remain the key component of consumption
- Bulk of cereals come from domestic production not imports → regional production performance critical
- Since 1990, SSA had the highest growth in grain production at 1.65% **but** this growth was outstripped by the region's high population growth.
- Yields lowest in the world, at 1/3 world average
- ~ 90% of growth in production came from area expansion, serious environmental implications.

Sub-Saharan Africa: trends in food production



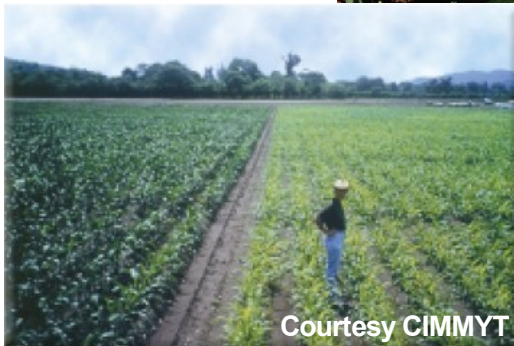
Grey Leaf Spot

Courtesy Google

Maize streak virus



Courtesy Ed Rvbicki



Courtesy CIMMYT

Nitrogen deficiency

- Limitations to Crop Production:
 - Drought the single most important limiting factor to production
 - Poor soil fertility compounds the problems of production even when the seasons are good
 - The complex interactions of drought and disease
 - Yield potential of existing improved crops yet to be attained

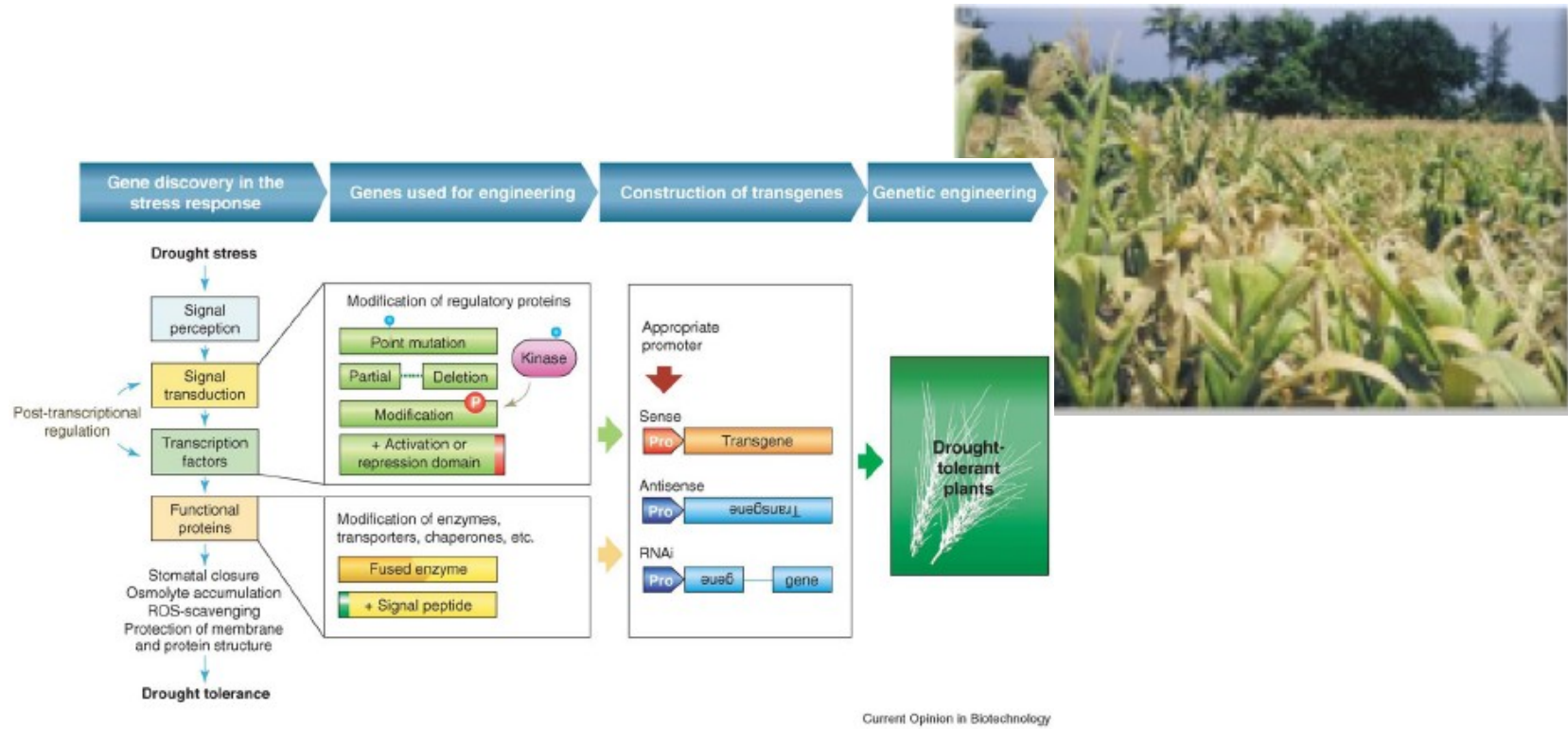
Food production in SSA is an unpredictable enterprise.

The Role of Technology in Global Food Security

Technology can positively impact

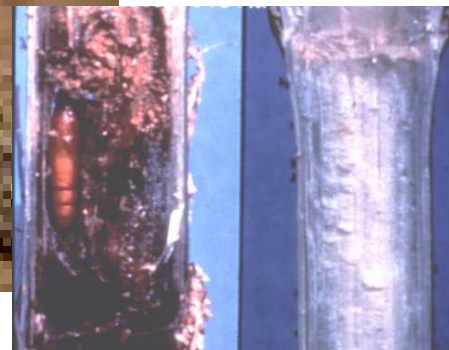
- **Food production supply**
- **Food quality (with all essential nutrients)**
- **Efficient and maximal utilisation of genetic resources for food and medicine**
- **Environmental sustainability**

Technology and crop adaptation



Crops that can be grown in under increasingly water deficient environment

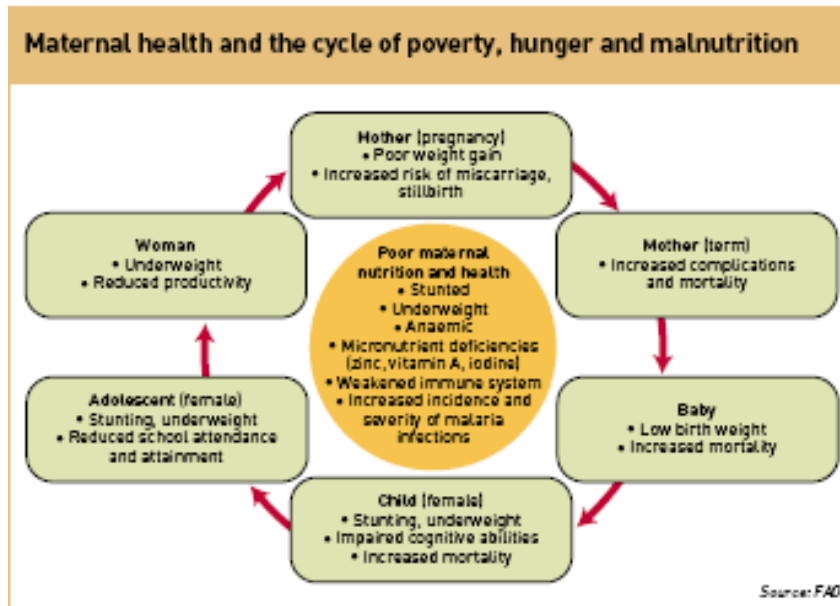
Technology and disease and pest resistance.....



Normal Transgenic

.....and crops that can withstand overlapping stresses

Technology and food quality



Staples with vitamins and essential nutrients

Bold new approaches

Economic growth and hunger reduction

- Improved food supply (locally produced or imported)
- Improved infrastructure and service delivery
- Access to new technologies for improved food production
- Overall Human Capacity Development
 - Ability to discern which technologies are suitable, ability to adapt them to the local situation
 - Home grown technology development
 - Leadership and good government

Food security impacts on development

Shifting into forward gear: eliminating hunger is key to achieving the Millennium Development Goals



Thank you!

