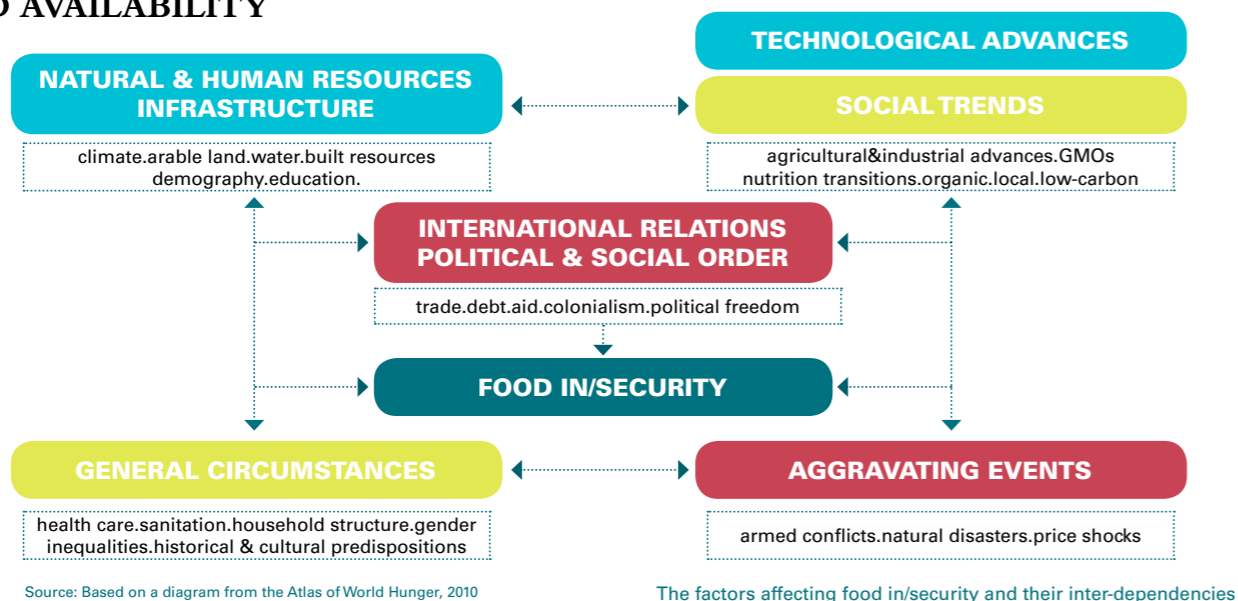


# FOOD AVAILABILITY



1930s Great Depression in the USA  
The average American spends 41% of personal income on food

1948 Universal Declaration of Human Rights recognizes the right to a standard of living adequate for the health and well-being of a person and their family, including food.

1960-1970s Green Revolution. The Rockefeller Foundation supports the development and introduction of new wheat and rice seed varieties into Latin America and Asia. Doubling of production



1960-1970s Failure of Green Revolution in Africa  
Poor Governmental investments in African countries, 5% of budget spent on agriculture investments, 4% of arable land irrigated, 60% of population dependent for income and food on agricultural sector.

1972 The Club of Rome "Limits to Growth" report on the consequences of a rapidly growing world population and finite resource supplies.



1961 World Food Program (WFP) established as a UN organization to promote food security, support economic and social development through food aid and help build assets and promote the self-reliance of poor people and communities.

1971 Founding of Greenpeace by a small group of activists  
Major opposition to the 2006 established Alliance for Green Revolution in Africa (AGRA)



1985 World Health Organization (WHO) & Food and Agriculture Organization (FAO) recommend an average daily energy intake of 2.250 calories to sustain light activity.

1988 Launch of the first Fairtrade label Max Havelaar

1996 World Food Summit adopts a resolution to halve the number of undernourished people by 2015 (became one of the Millennium Development Goals of the United Nations)

1997 Fairtrade Labelling Organizations International (FLO) established in Bonn, Germany as a union of 25 labelling initiatives with the goal to set worldwide Fairtrade standards and certification and support Fairtrade producers.



**FOOD POLITICS**  
The complexity of inter/national and individual interests, technological advance, natural and demographic resources, cultural aspects and market trends concerning food production, distribution and consumption. Source: Paarlberg, Food Politics

**CHRONIC HUNGER**  
The status of a person, whose food intake regularly provides less than their minimum energy requirements with estimated average requirement 1800 kcal per day. Source: FAO, Basic definitions

**MALNUTRITION**  
Poor nutritional health due to inadequate, unbalanced or excessive intake of protein, energy and/or micronutrients in a diet manifested in various clinical conditions. Source: FAO, Basic definitions

**FAMINE**  
Acute shortage of food over a certain period of time and at a specific region leading to large number of people dying on starvation or the consequences of it. Source: Paarlberg, Food Politics

**FOOD SECURITY**  
Exists when all people at all times have both physical and economic access to sufficient quantity, quality and balanced variety of culturally acceptable food to ensure an active and healthy life. Source: FAO, Atlas of World Hunger

**FOOD AID**  
Food aid is the international non-commercial delivery of food supplies as a relief to a temporary food shortage or food price inflation in the recipient country or in form of supporting development aid. Source: Paarlberg, Food Politics

1990s Genetically modified food introduced to the market

1999 World population reaches 6 Billion

2000 United Nations' members agree on eight Millennium Development Goals to be reached by 2015; one of them is to halve the number of undernourished people worldwide by year 2015

2008 World Food Price Crisis

1798 Thomas Malthus "Essay on the Principle of Population" Food production will not be able to satisfy consumption provided the exponential population growth will go on, but resources such as land, water, nutrients are fixed assets.



1800s Protestant English and Anglo-Irish colonial landlords own 95% of Irish countryside; Laissez-faire policy on English-controlled export of Irish-grown grains and inadequate food aid during the Great Potato Famine

1845 Fungus attacks Ireland's major staple food - potatoes.

1858-1947 British Raj in the Indian subcontinent

1942 Defeat of the British Empire at Singapore in World War II. Japan invades Burma

1942 British scorched earth policy to prevent potential further invasion of Japan into India. Trade limitations, dislocation of Bengal population due to food shortage.

1942 British imperialism policy on wheat export from Bengal. Local shortage of rice. Reluctancy of wealthy Provincial Governments to ship food aid in order to avoid unrest.



1958-1961 Communist Party of China under Mao Zedong Rural industrialization, agricultural collectivization, ban on private farming, prosecution of counter revolutionaries.

1967-1970 Nigerian Civil War Self-proclamation of the southeastern provinces as Republic of Biafra.

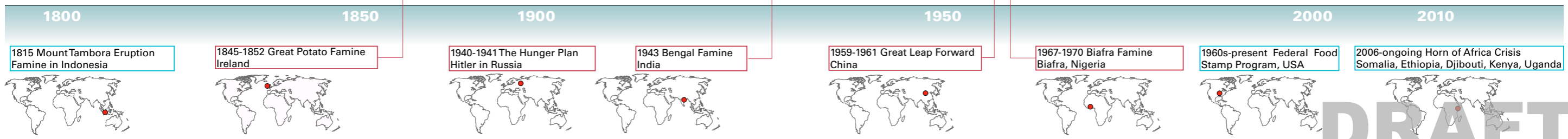
1969 Ban on Red Cross aid (including food aid) to Biafra by the Nigerian government

1970s Family planning policy One-Child Policy in China (1978-present day) restricting married, urban couples to having only one child. Rural couples, ethnic minorities, and parents without any siblings themselves are exempted.

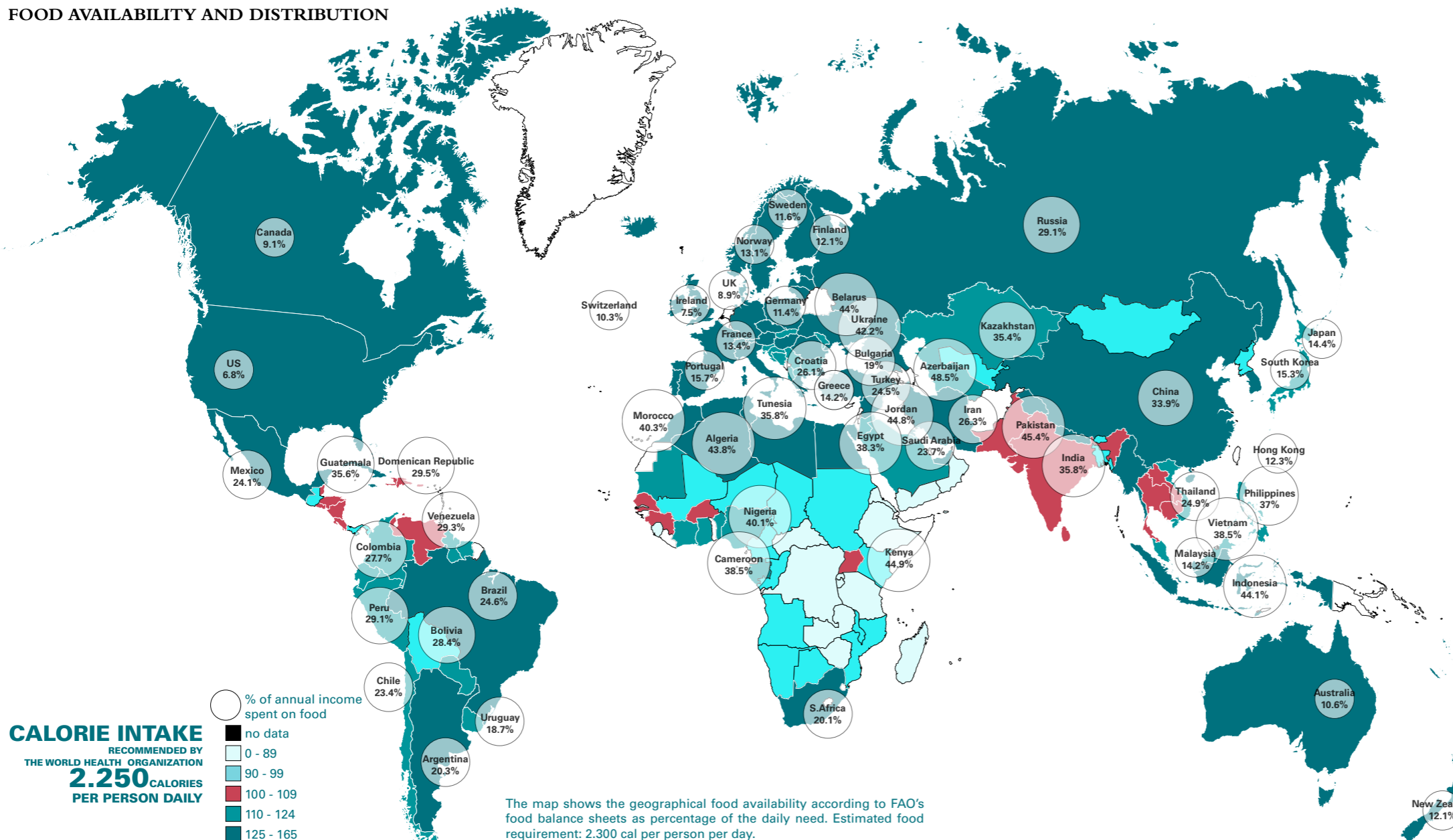


**Horn of Africa Crisis**  
Geographical data: 2.000.000m<sup>2</sup>  
Affected countries: Somalia, Ethiopia, Djibouti, Kenya and Uganda  
Affected population: 12.3 million (Sept. 2011)

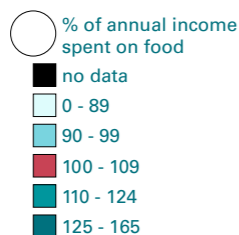
Causes:  
- severe drought in 2 consequent seasons  
- rebel group Al-Shabaab controlling southern Somalia  
- complicated and delayed humanitarian aid deliveries and assistance despite early warning systems  
- high food prices affect local markets due to import dependencies



## FOOD AVAILABILITY AND DISTRIBUTION



**CALORIE INTAKE**  
RECOMMENDED BY  
THE WORLD HEALTH ORGANIZATION  
**2.250** CALORIES  
PER PERSON DAILY



## FOOD AVAILABILITY

According to FAO's food balance sheets method data is collected on total food production, imports, exports, industrial uses, national reserves and waste, population structure and country-specific distribution to estimate whether food supplies are adequate to feed a country's population. The calories available are divided by population number and by 365 days to be compared to an estimated daily food requirement. Food availability at national scale does not necessarily coincide with food consumption on household and individual level due to income and distribution inequalities or inadequate support from the government.



Global number of people undernourished as of 2010

- Asia and the Pacific 578 million
- Sub-Saharan Africa 239 million
- Latin America & the Caribbean 53 million
- Middle East & North Africa 37 million
- Developed Countries 19 million

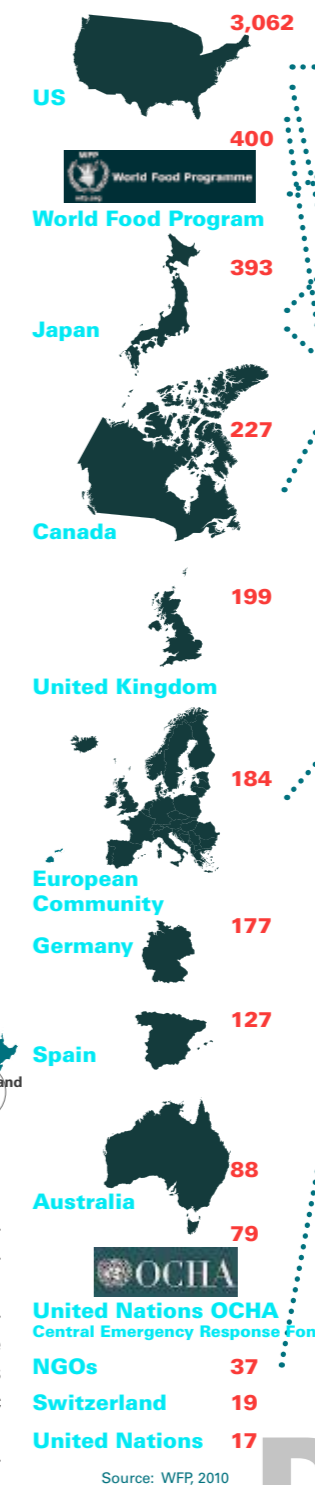
Source: FAO, 2010

## FOOD AID ISSUES

Historically food aid was introduced by developed countries to dispose of surplus agricultural production and create long-term trade relationships with recipient countries. Food aid is usually targeted according to the donor's interests and does not reach those in real need partly because of poor infrastructure or other aggravating circumstances (warfare, government policies etc). It might harm domestic markets and local producers and does not improve food security on the long-term like development assistance programs in agriculture, education and health do.

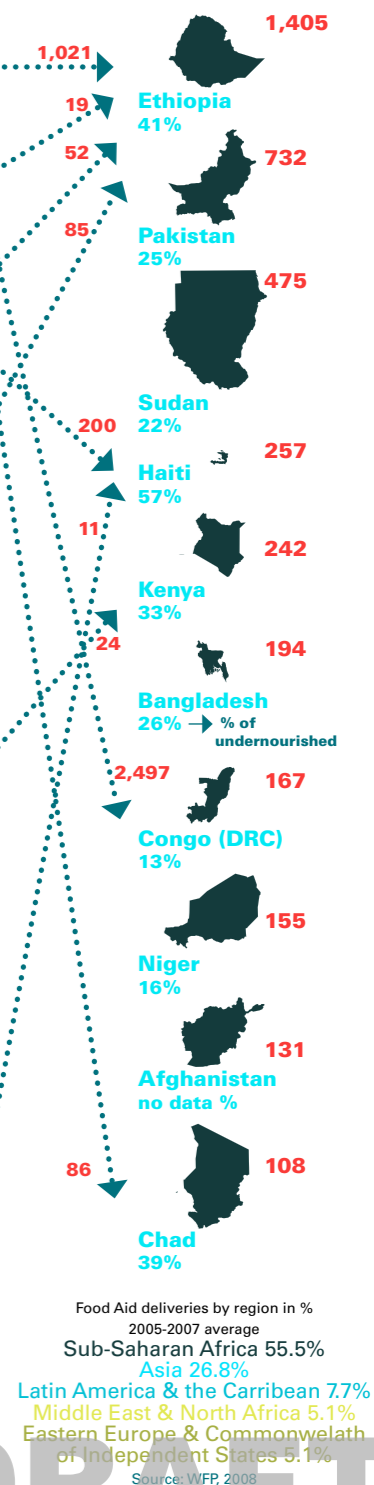
## Top 10 Donors of Food Aid Year 2010

all commodity types  
in thousand tons

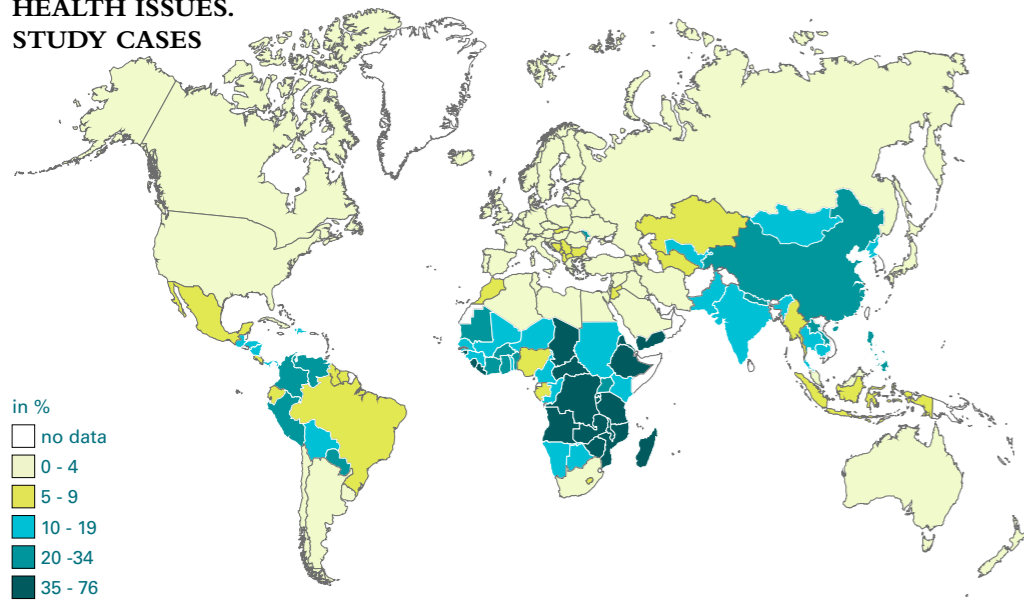


## Top 10 Receptiors of Food Aid Year 2010

actual tons received  
in thousand tons



**HEALTH ISSUES. STUDY CASES**



The map shows the prevalence of undernourishment in total population in %, FAO, 2009 or most recent

**MEASURING MALNUTRITION**

Malnutrition refers both to insufficient nutrients in a diet or their poor absorption as well as to the excessive consumption of nutrients relative to physical activity. Typical manifestations of the first are growth failure and wasting in children. Overnutrition usually leads to obesity. Micronutrient deficiencies are also common (such as Vitamine A, iodine and iron deficiency) due to an unbalanced diet.

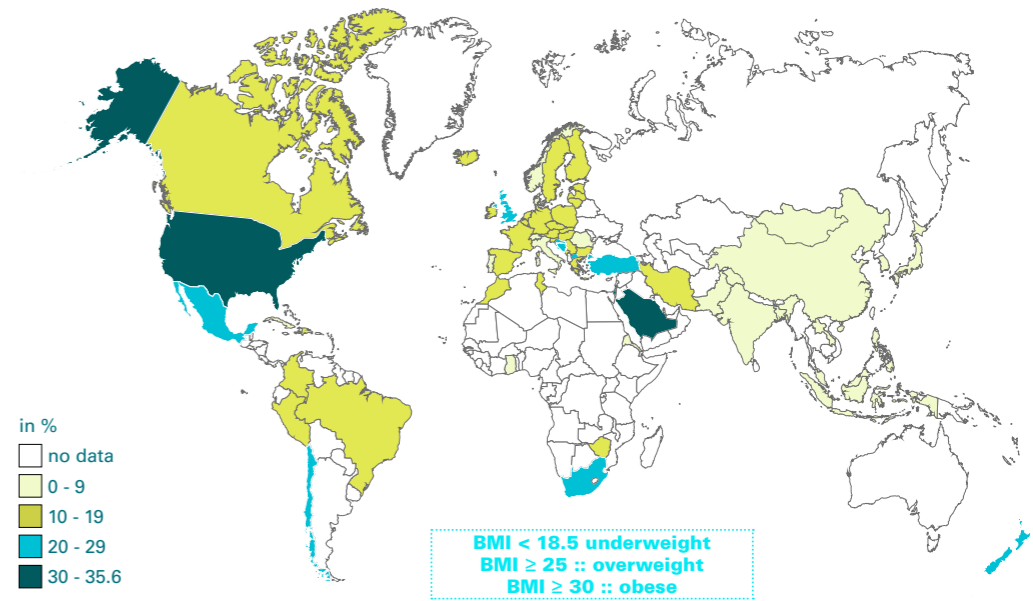
**925 million** people in the world are undernourished  
FAO 2010

**5 million** children under age 5 die each year of undernourishment in developing countries UNICEF 2006

The Body Mass Index (BMI) is a tool to classify underweight, overweight and obesity in adults through weight in kilograms divided by the square of the height in meters (kg/m<sup>2</sup>). Hunger is measured by comparing per capita available calories with a minimum dietary requirement (2.250 calories daily energy intake recommended by WHO and FAO) or by the actual number of people suffering undernourishment and its physical features as a percentage of the total population.

**1.5 billion** people in the world are overweight or obese  
WHO 2008

**43 million** children under age 5 are overweight  
WHO 2010



Percentage of adults with BMI > 30, WHO, 2009 or most recent



**FOOD INSECURITY IN THE UNITED STATES**

Data on food security at subnational level reveals unexpected rates of household poverty and uneven distribution of hunger vulnerability within poor but rich countries as well that are not suggested by the national averages. Such is the case in the United States.

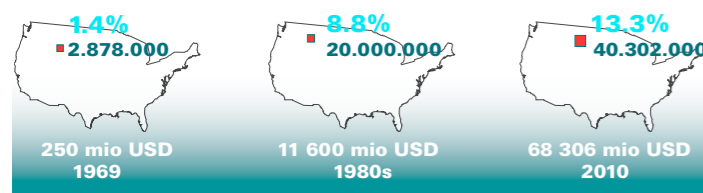
**Average poverty rate**  
national level **14%** 2010  
**Average poverty rate**  
state level **5-50%** 2010

The First federal program was introduced between 1939-1943 as a relief program for the poor and unemployed during the 1930s Great Depression in the US. It was then again undertaken in 1961 by the US Department of Agriculture as the federal Food Stamp Program (since 2008 - Supplemental Nutrition Assistance Program) distributing coupons or newly debit cards to eligible low-income families and individuals. Comprehensive nutrition education aims to encourage participants to maintain a healthy diet and purchase from local producers as a reaction to growing obesity rates in the US. \$ 82.7 billion have been appropriated by the US Congress for all Food and Nutrition Service (FNS) programs in the year 2010. Same programs cost \$1.6 billion in 1970, the first full year of the agency's operation.

Source: United States Department of Agriculture, 2011

Average participation of US citizens as a percentage and as a total number in the federal Food Stamp Program, respectively SNAP, and total annual cost of the program in million US Dollars.

Source: United States Department of Agriculture, 2010



Food insecurity in the United States as % of households, 2006

All Households 10.9 %  
Households with Children 15.6 %  
White (non-Hispanic) 7.8 %  
Black (non-Hispanic) 21.8 %  
Hispanic 19.5 %  
In Poverty 36.3 %

Source: Nord, Andrews and Carlson 2007, 10



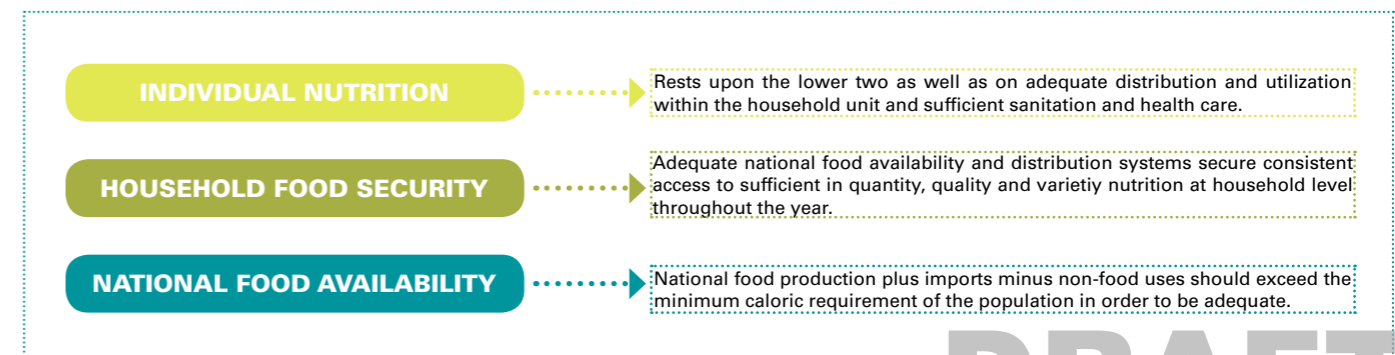
Fact sheet on Brazil's population  
Total Population 194,946,470  
% of undernourishment 6 %  
% of adult obesity 11.1 %  
% personal income spent on food 24.6 %  
% of population below poverty line 26 %  
Source: World Bank, FAO, 2010

**Rural Population**  
**80%** 1970s  
**Urban Population**  
**80%** 2000s

**DOUBLE BURDEN OF MALNUTRITION IN BRAZIL**



Subnational data also reveals a growing trend of coexistence of undernutrition and obesity in one and the same country. Mostly affected are developing nations such as in Brazil, Mexico and China where correlations are observed between income inequality, social status and adopting foreign lifestyles on the one hand and nutrition transition to high-calorie diets, less physical activity, low education level and lack of government prevention programs on the other hand.



Source: Based on the Atlas of World Hunger, 2010

This diagram depicts the levels of food (in)security and their dependence

**DRAFT**  
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