

# The geography of food: over and under supply

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**Unisa, 5 June 2013**



**Population Health, Health Systems and Innovation**

# Overview

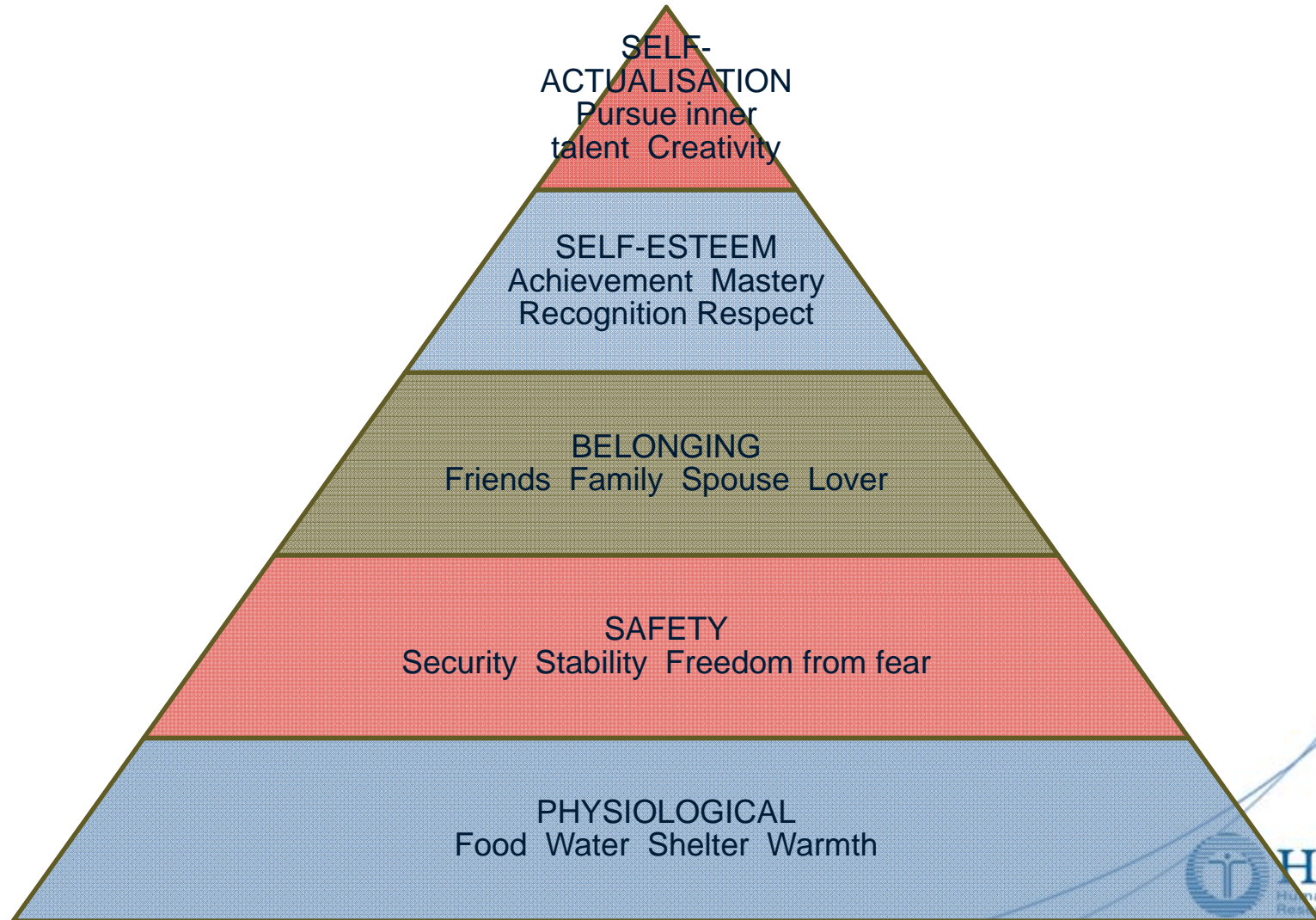
- Introduction and background
- Uneven production
- Uneven consumption
- Wastage
- Conclusion



# Introduction

# What is food?

- Food – basic need

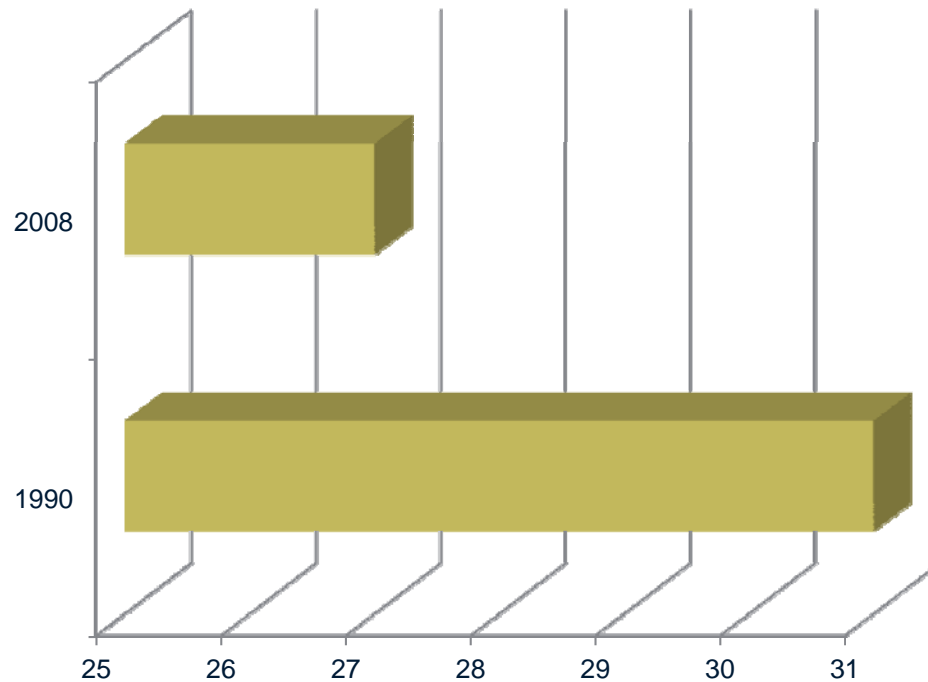


# Background

- 1.3 billion tonnes of food wasted every year
- 20 000 children under the age of 5 die daily from hunger
- Millennium Development Goals
  - By 2015 halve the proportion of people who suffer from hunger in South Africa
    - Prevalence of underweight children under five
    - Proportion of population below minimum level of dietary energy consumption

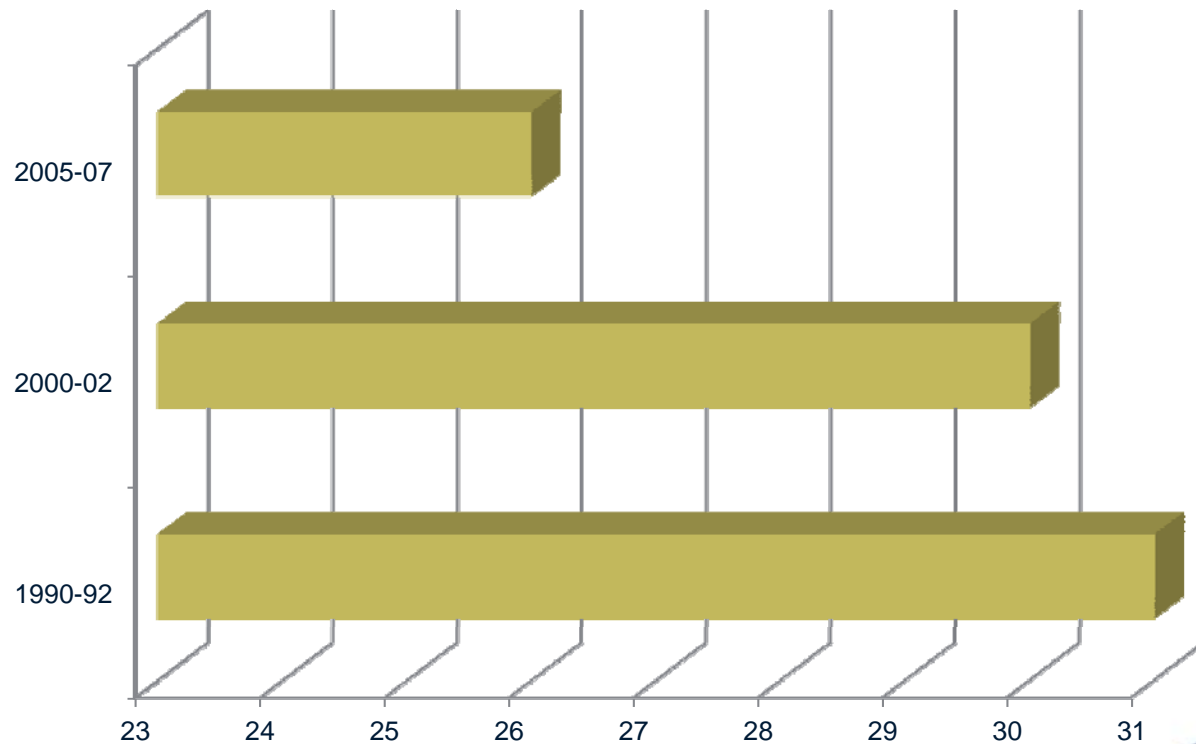
# Progress on MDG

- Prevalence of underweight children under five
  - One in four children still underweight



## Progress on MDG (2)

- Proportion of population below minimum level of dietary energy consumption
  - Proportion of under-nourished people





# Uneven production



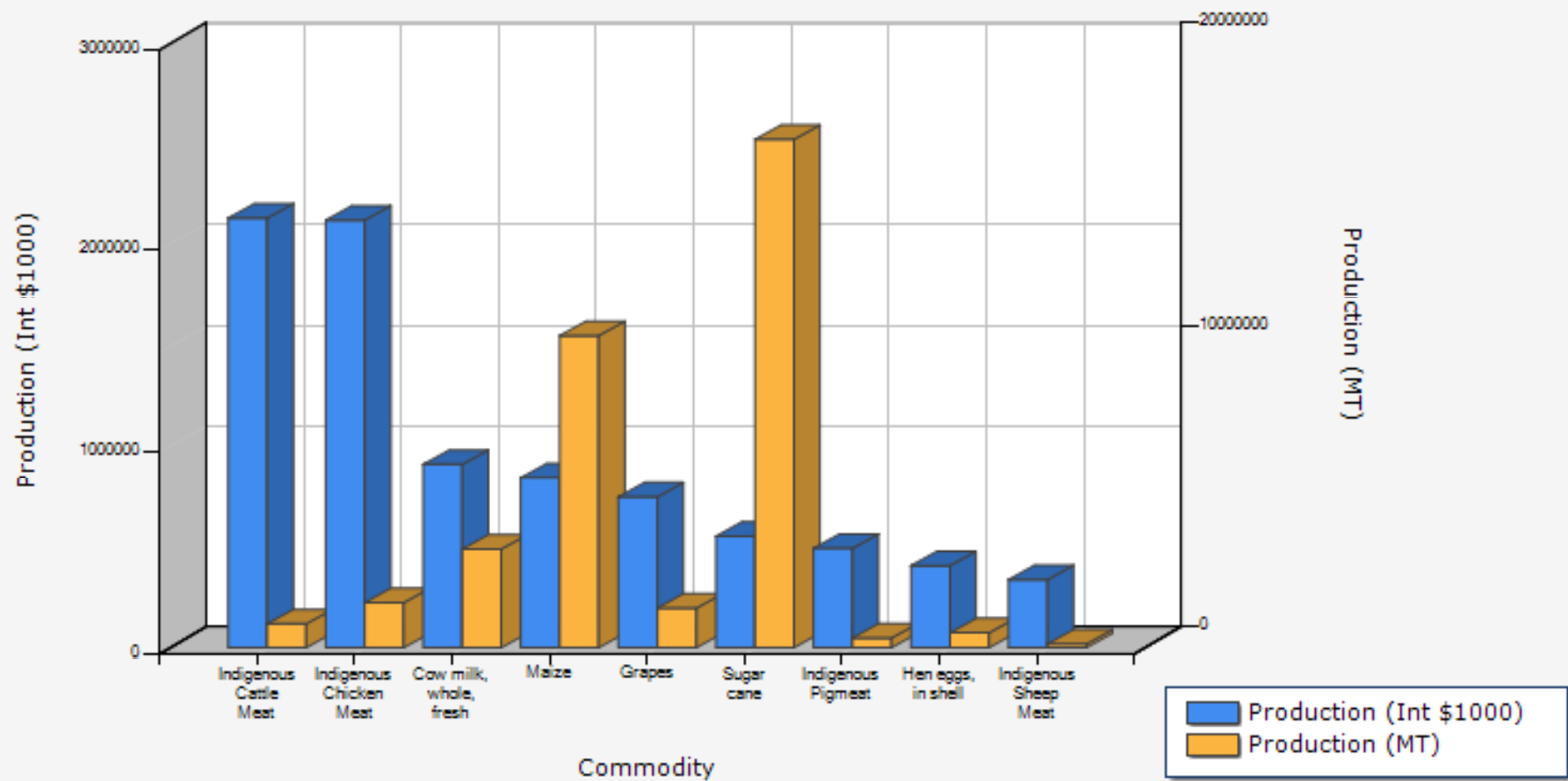
# Variation in production

- Spatial variation in food production
  - Environmental capacity
    - Climate, soil, water
  - Human capacity
    - Population size, agricultural skill

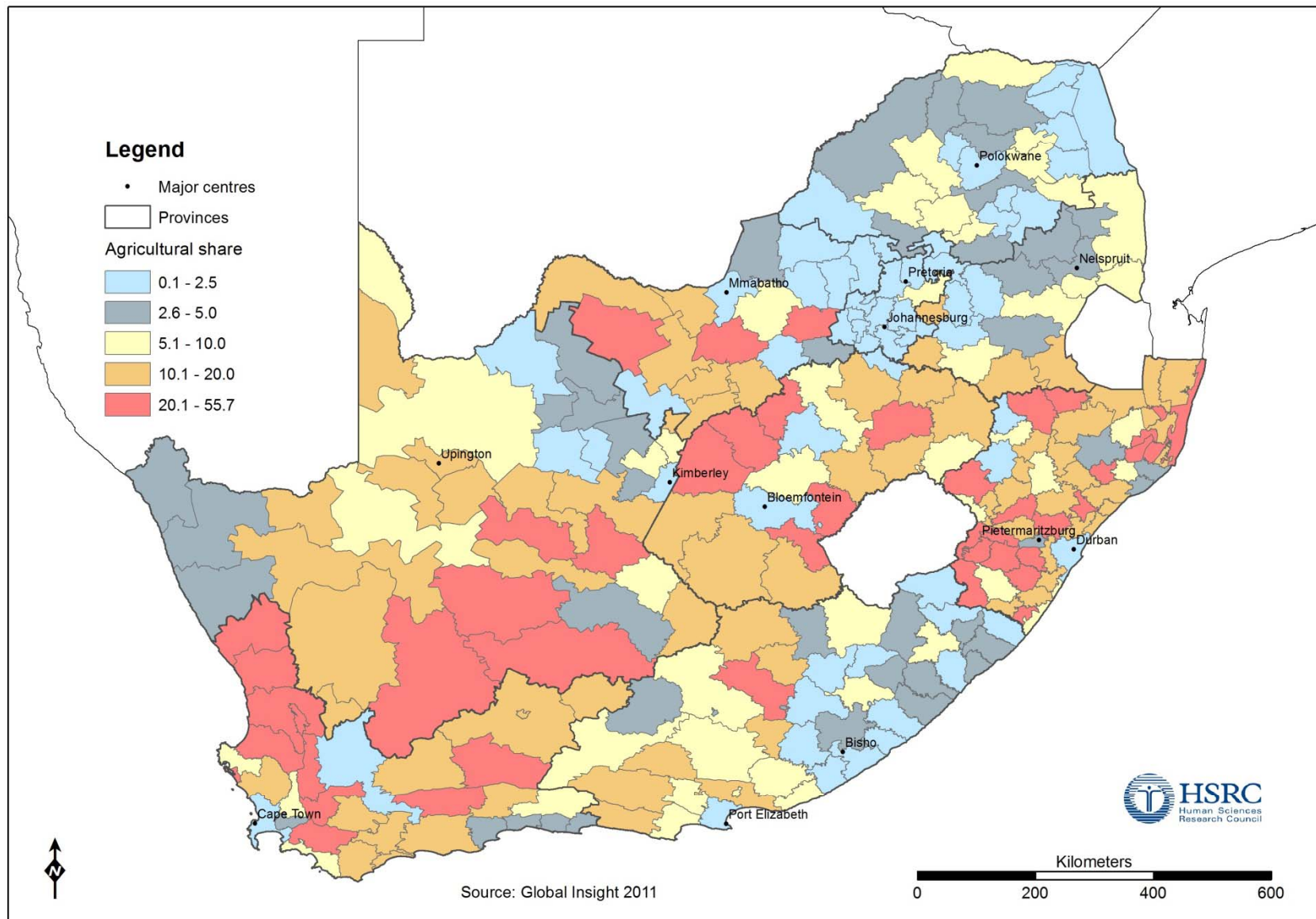


# South African production

Top production - South Africa - 2011



# Agricultural share in GDP



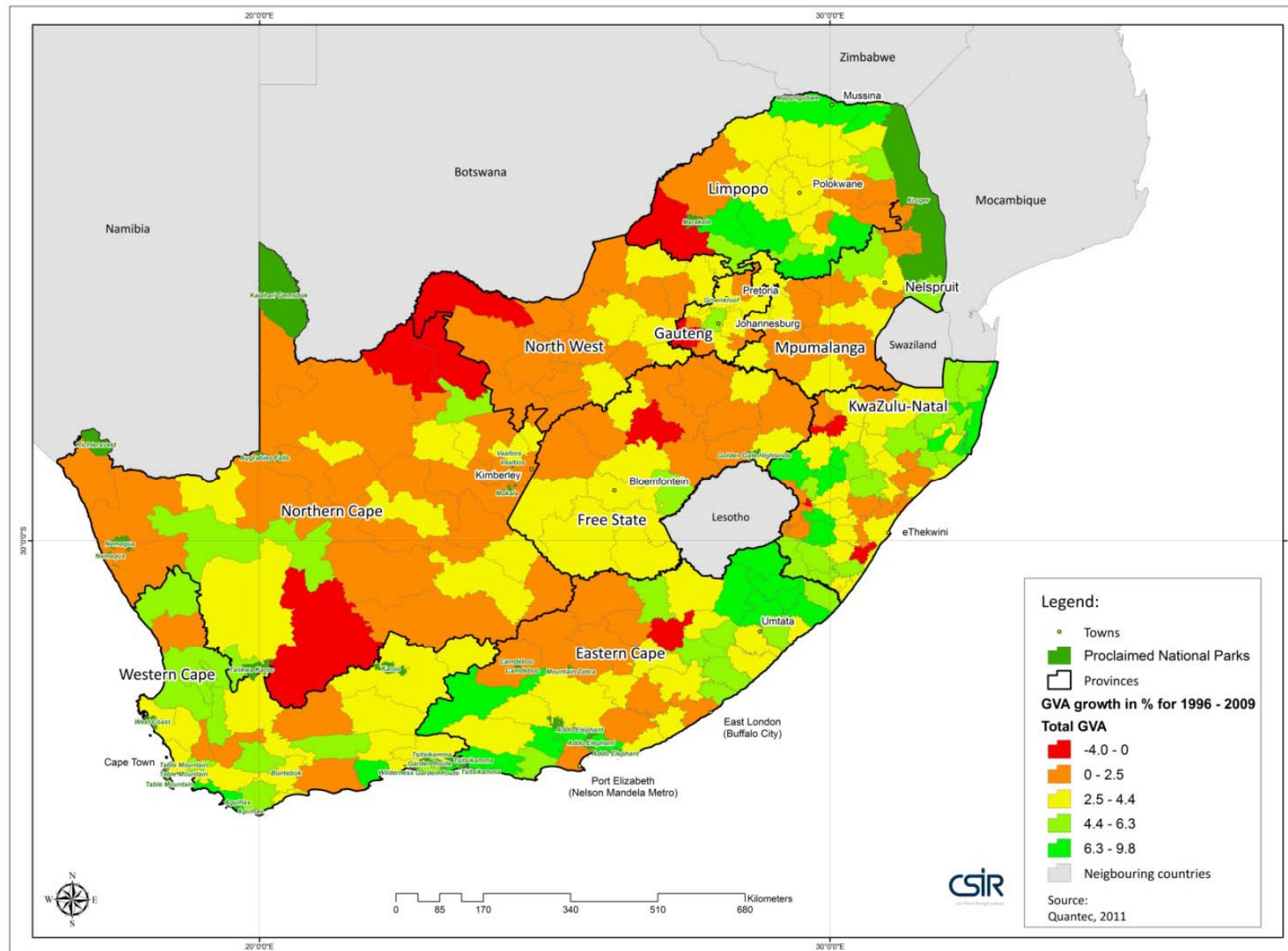
# South African demographics

- 2000 - 2010

Population growth	Agricultural population growth
1.1%	-1.8%

Rural population	Urban population
38.3%	61.7%
	↑ 2%

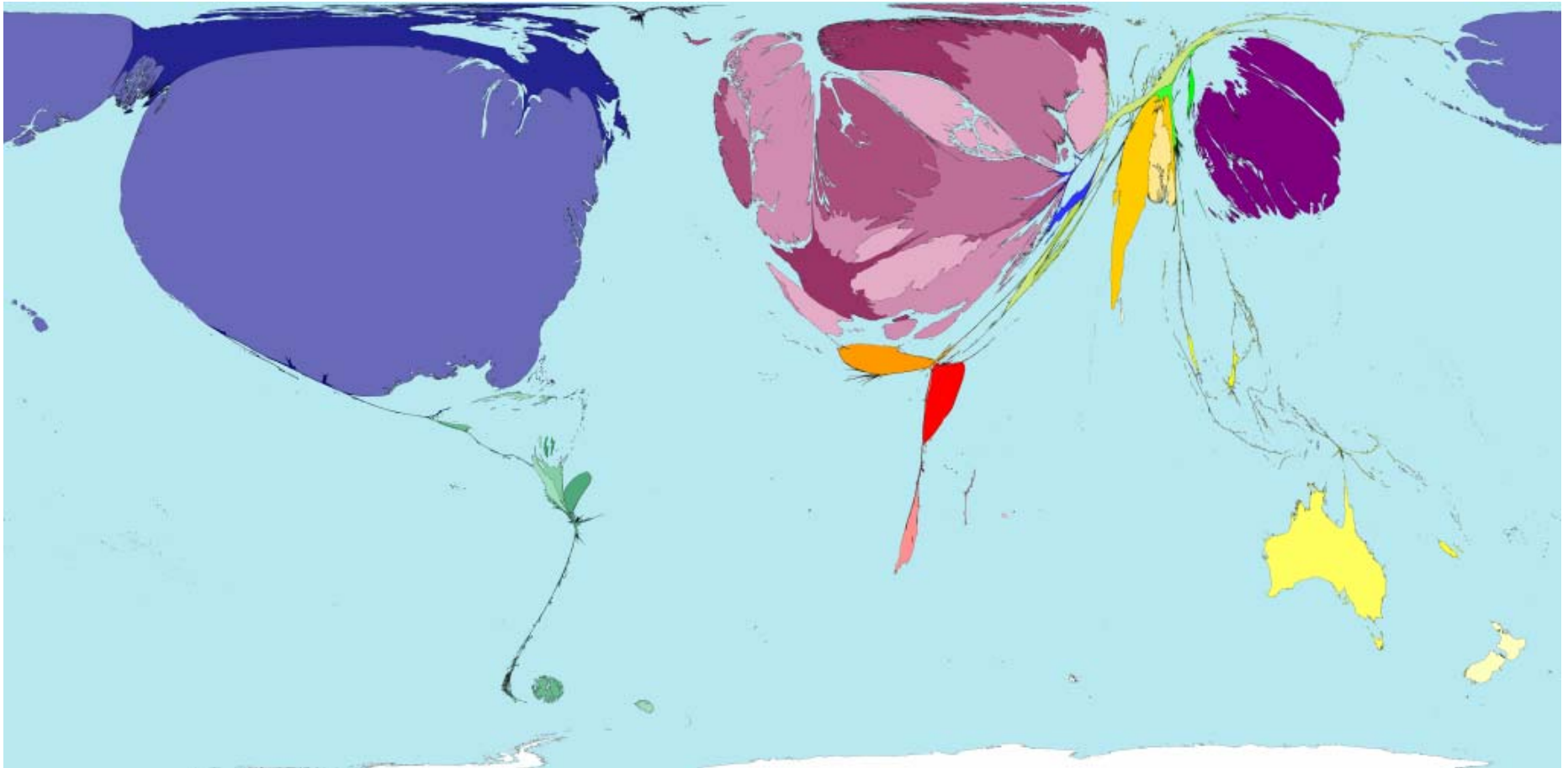
# Economic growth





# International food aid 2005

Country size indicates proportion of contributions to international food aid programmes



Source: World Mapper



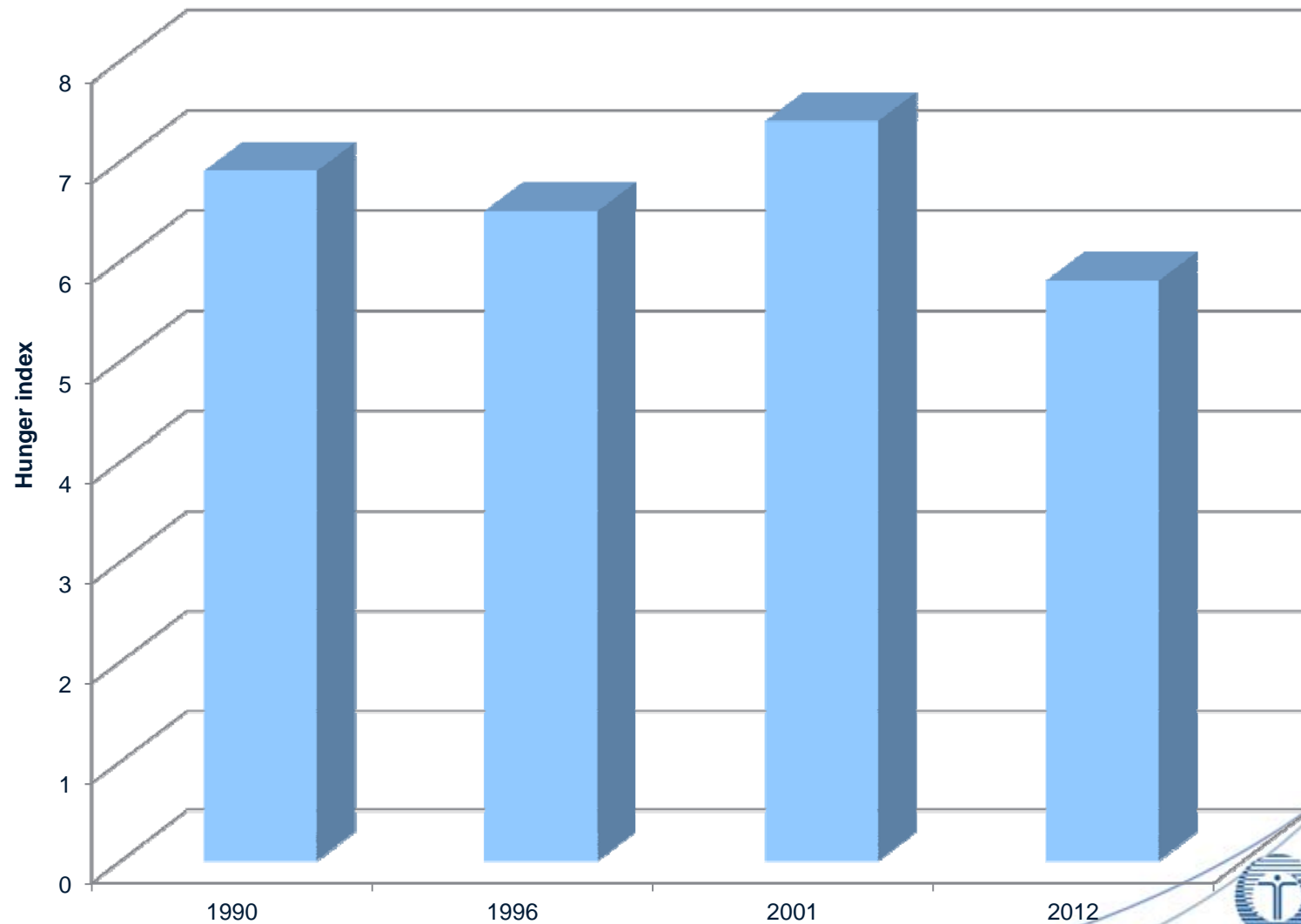
# Uneven consumption

# Uneven consumption (1)

- Malnutrition
  - Wasting
  - Stunting
  - Obesity
- Over consumption – calorie intake
- Under consumption
  - Global hunger index
    - Under nourishment
    - Child mortality
    - Child underweight



# Global hunger index



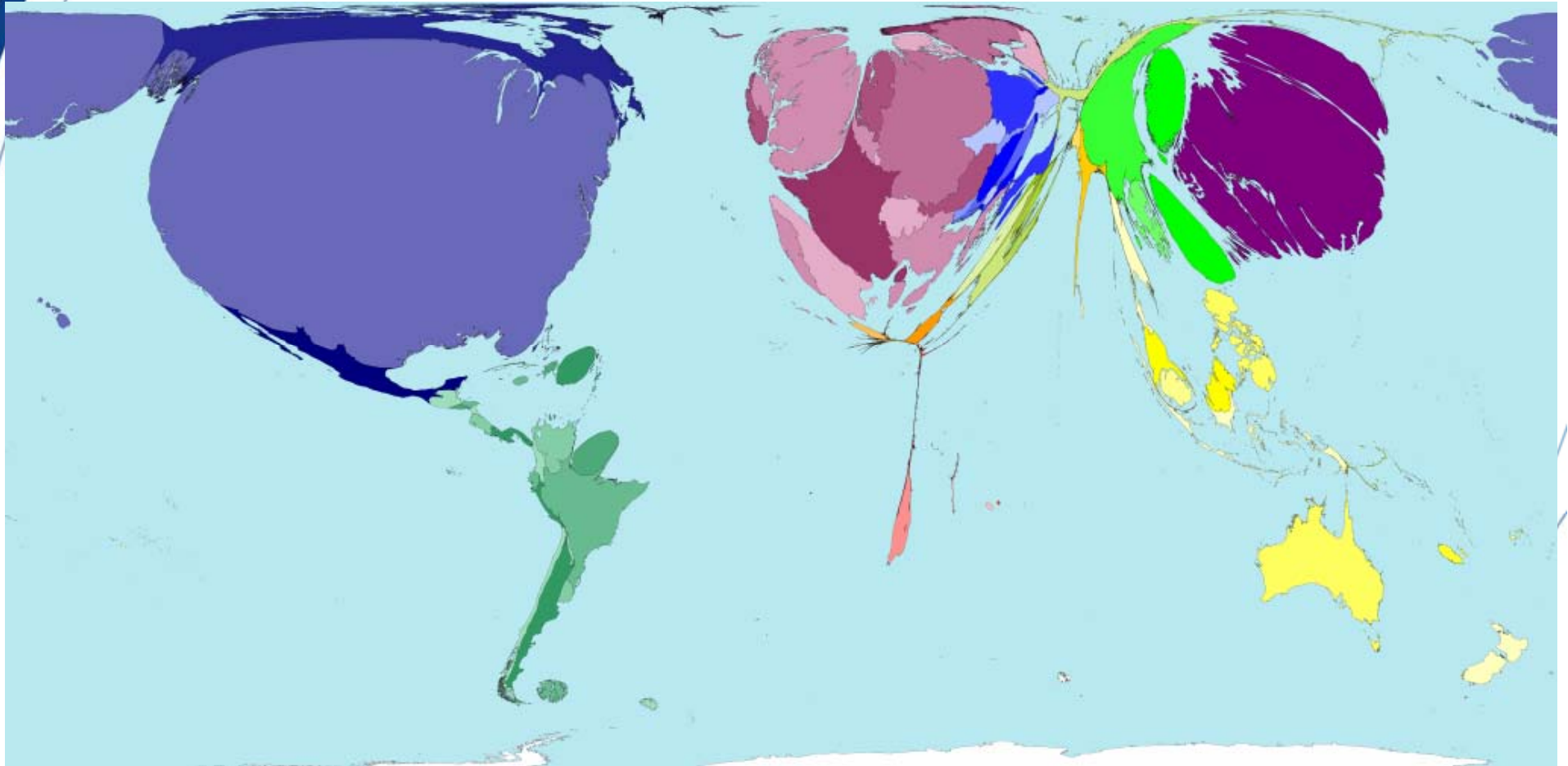
# Insufficient consumption

- Under consumption
  - Complexity of the relationships between hunger, disease, poverty, corruption and conflict
  - Insufficient calorie intake



# Fast foods

Country size indicates proportion of McDonald outlets in world

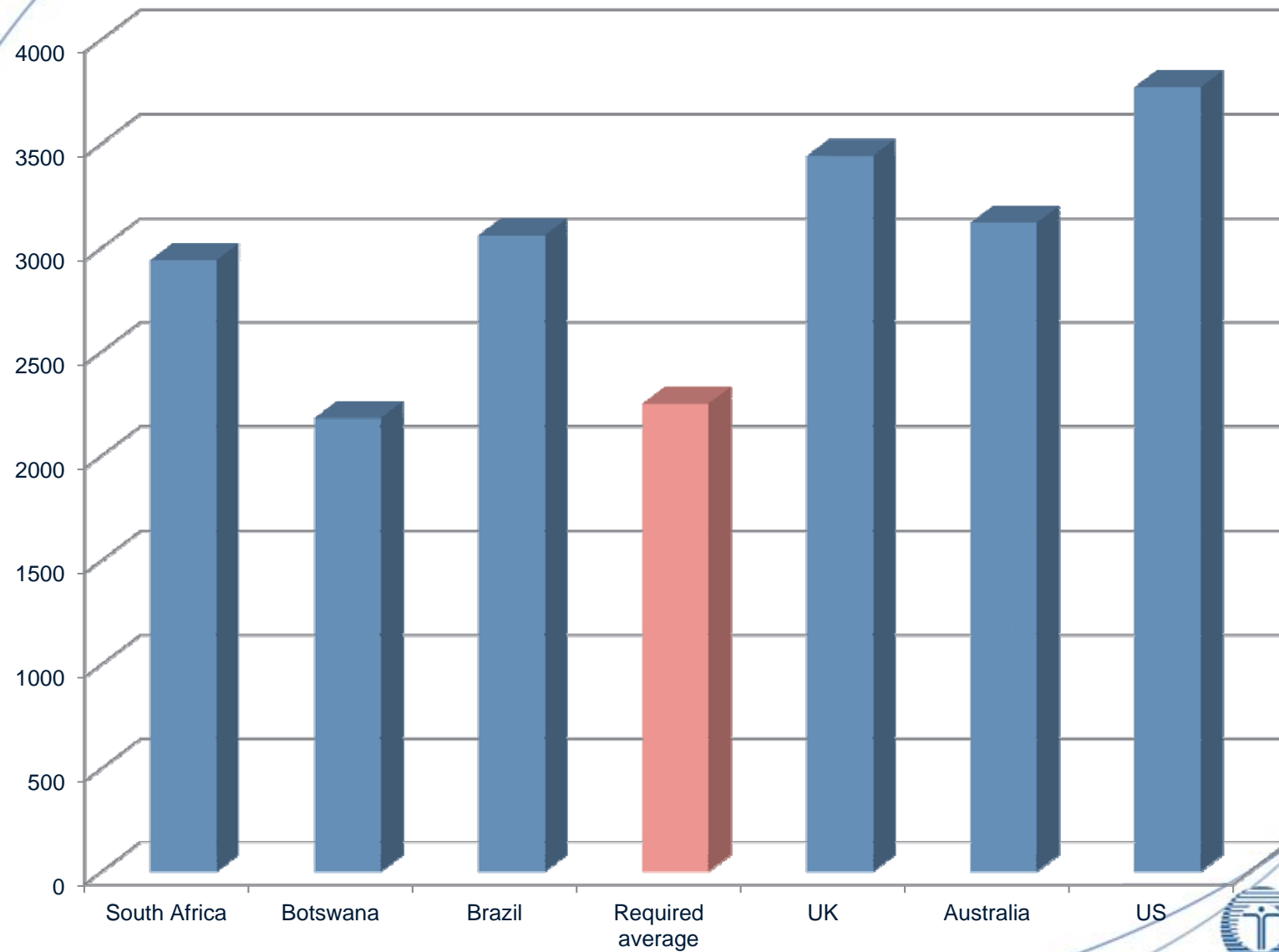


Source: World Mapper

# Changes in consumption

- Increase in per capita income
  - Greater consumption of meat, fish and dairy
  - Increased consumption of sugar and animal fats
- Increase in chronic heart disease
- Urban dwellers – greater variety and less time to prepare food
- Different reasons for consumption patterns
  - Culture Urban/ rural
  - Economics Policies

# Calorie intake



# Health impacts

- Chronic heart disease
  - 27000 in 2002
  - Low risk



# Wastage

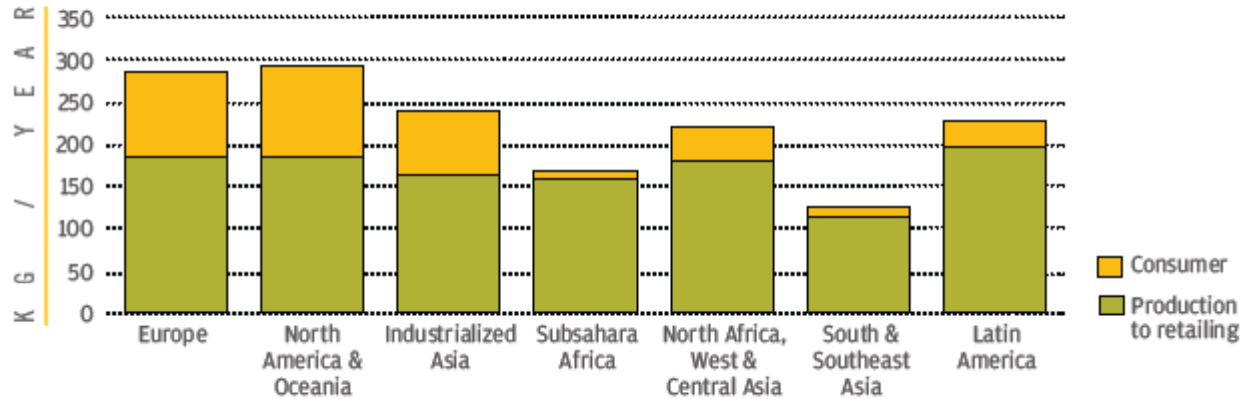
# Wastage (1)

- Consumer food wastage in two ways
  - Unused
  - Over-prepared or cooked
- Production wastage
  - Harvesting techniques
  - Storage
  - Cooling
  - Infrastructure
- R32.5 billion annually in South Africa



# Type of wastage

PER CAPITA FOOD LOSSES AND WASTE, AT CONSUMPTION AND PRE-CONSUMPTION STAGES



Source: FAO

- Wastage in Africa – production based
- Consumer waste – US and Europe

# Wastage trends

- Overall food loss in 2007
  - 177 kg per capita per annum
- Developed world trends
  - 280-300 kg per capita annum in Europe and North America
- Per capita consumption lower in developing countries
  - Wastage less
- Recycling of one national retailer
  - 6000 tonnes per annum

# Solutions for wastage

- Solutions for wastage
  - Cooking waste used as fuel for a power station
  - Expired food sold at reduced prices
  - Worm farms
  - Reducing packaging
  - Consumer recycling
- Locally sourced food





# Conclusion

# Measuring the future

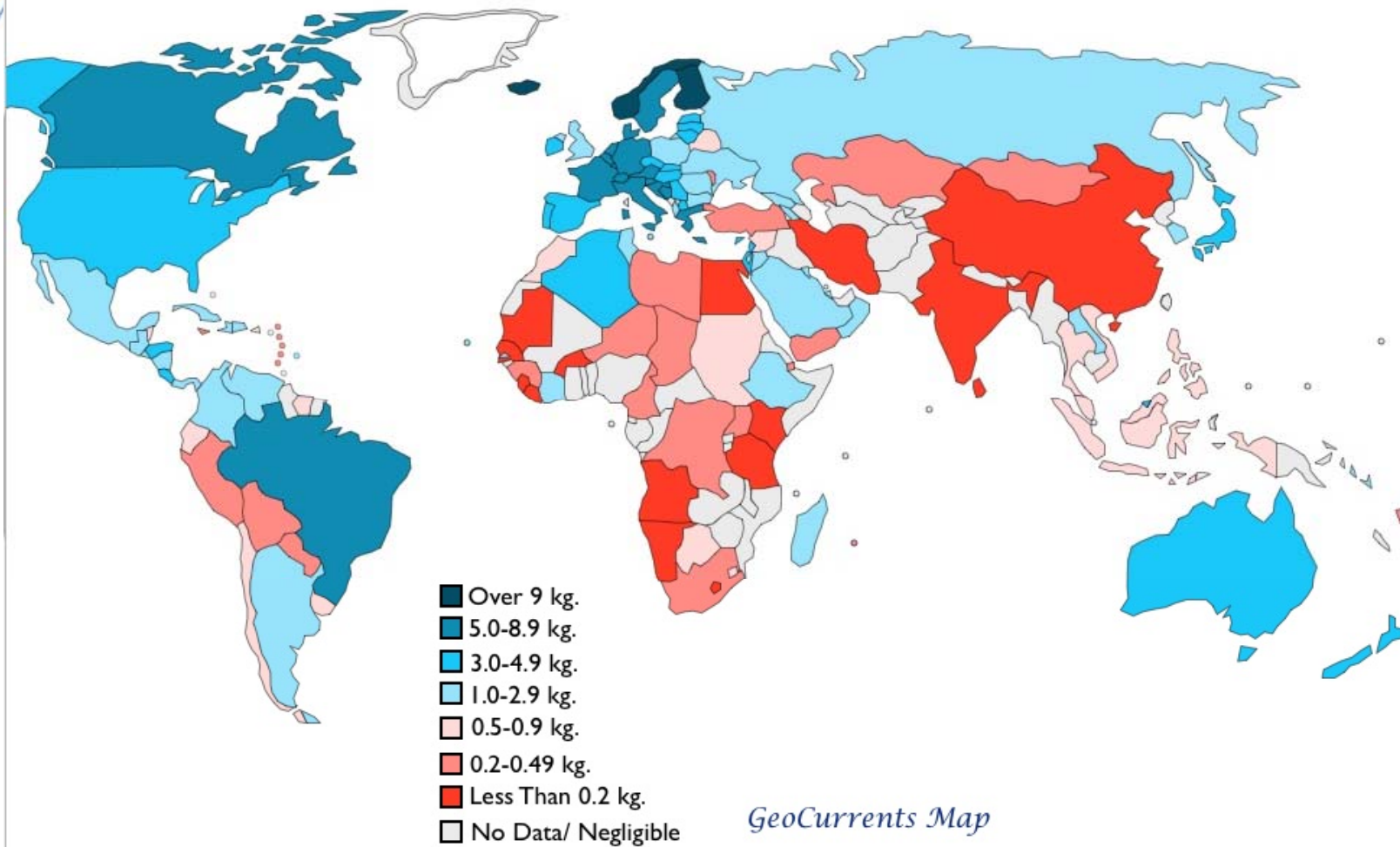
- Next nutrition indicator for MDGs
  - Stunting [height for age]
  - Complemented by household food consumption and individual nutrient intake
- Personal footprint
  - Don't buy more food than what is necessary
  - Plan meals
  - Shop more frequently, buying less each time
  - Store food properly
  - Treat expiry dates as guidelines

# Geography of food

- Food production
  - Increase of 60% required by 2050
- Food justice
  - Enough produced but distribution unequal
- More geographies of food
  - Food wastage and waste management
  - Coffee consumption
    - \$80+ billion annual international coffee market
    - Finland - 12kg per capita per annum
    - Coffee producing countries are not big coffee consumers

# On the bean track

Annual Per Capita Coffee Consumption, 2008



*GeoCurrents Map*

[http://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_coffee\\_consumption\\_per\\_capita](http://en.wikipedia.org/wiki/List_of_countries_by_coffee_consumption_per_capita)



# Lastly



- Think
  - Where does your food come from?
  - What type of food do you buy?
- Eat
  - Calorie intake
- Save
  - How can you let your food last longer?
  - Are you wasting?





**Thank you**  
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# Discussion

- What is your food geography?
- What can you do to reduce your food wastage footprint?

