

**Changes in consumption  
of food over the history  
and  
future trends to be  
expected**

# HISTORY



Potatoes  
Rice  
Cereals

} staple food



+  
+

seasonal vegetables  
sometimes with meat- fish or eggs

# Food consumption per capita (kcal/person)

	1970	2000	2015	2030
World	<b>2400</b>	2800	<b>2950</b>	3050
Europe/USA	<b>3050</b>	3300	<b>3450</b>	3500
Asia	<b>2050</b>	2500	<b>2900</b>	3000
Developing Countries	<b>2100</b>	2400	<b>2600</b>	2750

Responsible for the **increase**:

- 1. FAT**
- 2. SUGAR**
- 3. MEAT**

# What to expect from 2000-2050? (source FAO)

## Drivers of food consumption



- **Cereals (54-49%)**
- **Milk**  
(especially USA/EU → replacement drinks and juices)

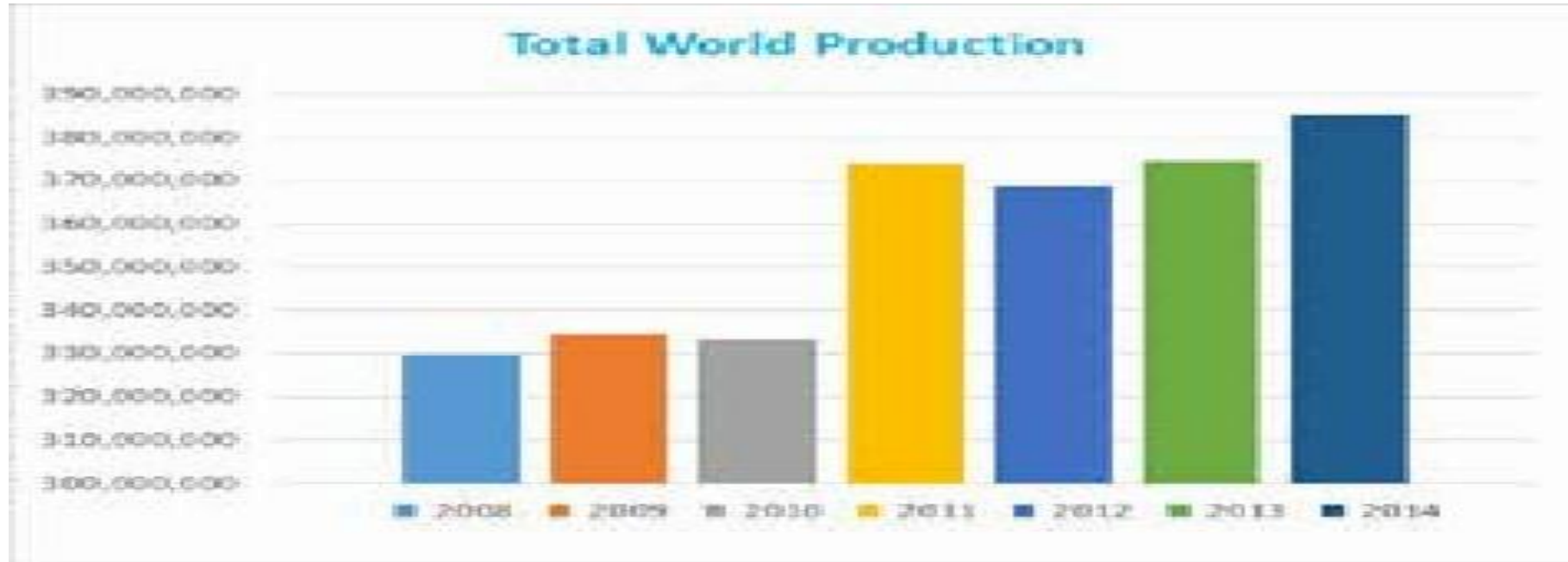


- **Meat**
- **Eggs**



- **Seafood**
- **Root crops**  
(potato/vegetables)
- **Oil / fat / sugar**  
(more in EU-USA-China and India. Less in SA and Africa)

# Increase of potato production over the years



# The drivers and consequences of food consumption (1)

## Drivers

socio-economic  
urbanization  
trade policies  
market liberalization  
increased incomes  
women in employment  
consumer attitudes

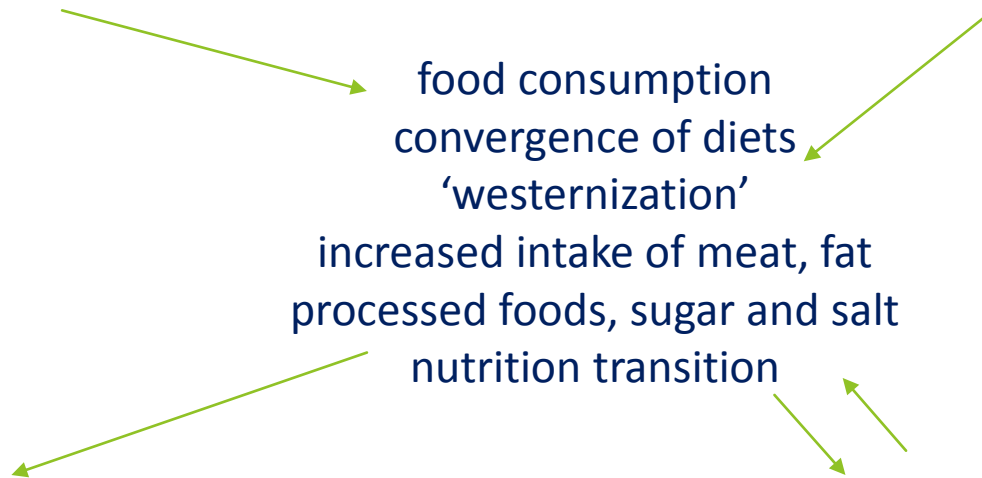
food supply  
changes in retail- rise in supermarkets  
year round  
availability of food  
long-product shelf life  
intensive food production methods  
food industry market

food consumption  
convergence of diets  
'westernization'  
increased intake of meat, fat  
processed foods, sugar and salt  
nutrition transition

## Consequences

health  
diseases of urbanization  
obesity  
cordial diseases

agriculture/food production  
loss of biodiversity  
effects on the environment-land and water use  
carbon footprint





# The drivers and consequences of food consumption (2)

## INCOME

**Worldwide**      2% growth over the 30-40 years

### China

1980 → 2015      400% growth of income



**poverty rate**      1978      -/- 20%  
1998      -/- 6%



### **move in consumption (1978-2000)**

- less carbo hydrates
- more fat
- more sugar
- more meat

# The drivers and consequences of food consumption <sup>(3)</sup>

## URBANISATION

1900 → 10% of world population in cities

2010 → over 50% in cities

Urbanisation will continue



# The drivers and consequences of food consumption (4)

## GLOBAL DIETARY SHIFTS

- Increased intake of caloric sweeteners
- Edible oil increases in most of the lower and middle income economies
- Increased animal source foods
- Increased intake of processed foods, refined carbohydrates
- Reduce intake of fruits and vegetables and legumes
- Reduced preparation time, increased intake of pre-cooked foods

# The drivers and consequences of food consumption (5)

**TRADE LIBERALISATION** → removal food barriers

**MAYOR FOOD COMPANIES** →



**RETAILING** →  
availability of products  
cheaper food  
increased buying power of consumer

# The drivers and consequences of food consumption (6)

## AGRICULTURE

- Shortage of land
- Shortage of water
- Increase output/Ha
- Climate change
- Generic modification?



## Potato needs less water as other crops

How much WATER is needed to produce 1 kg of:



300 ltr



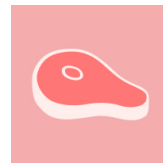
500 ltr



800 ltr



2.500 ltr



15.000 ltr

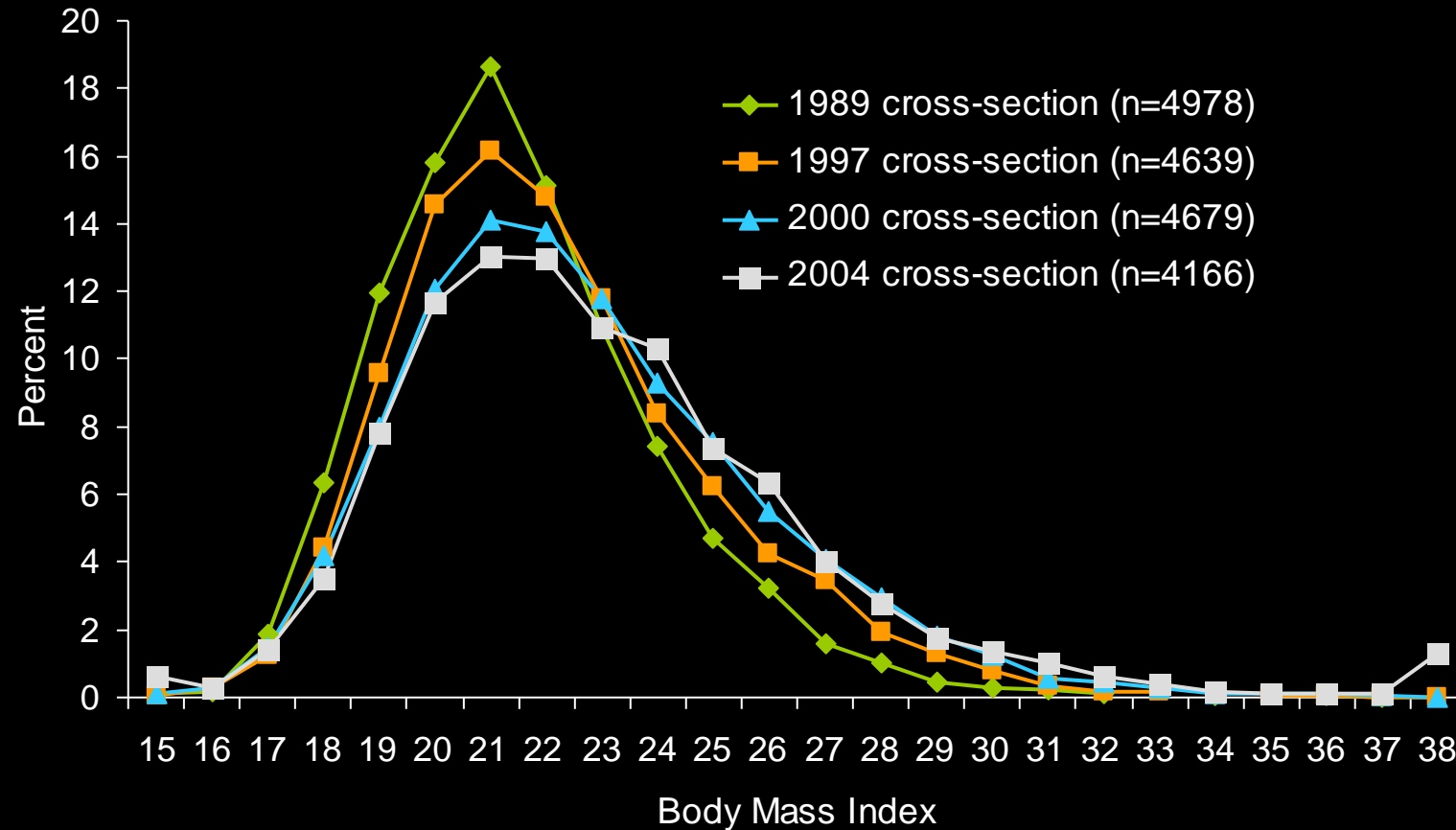
# Health Impact

(1)



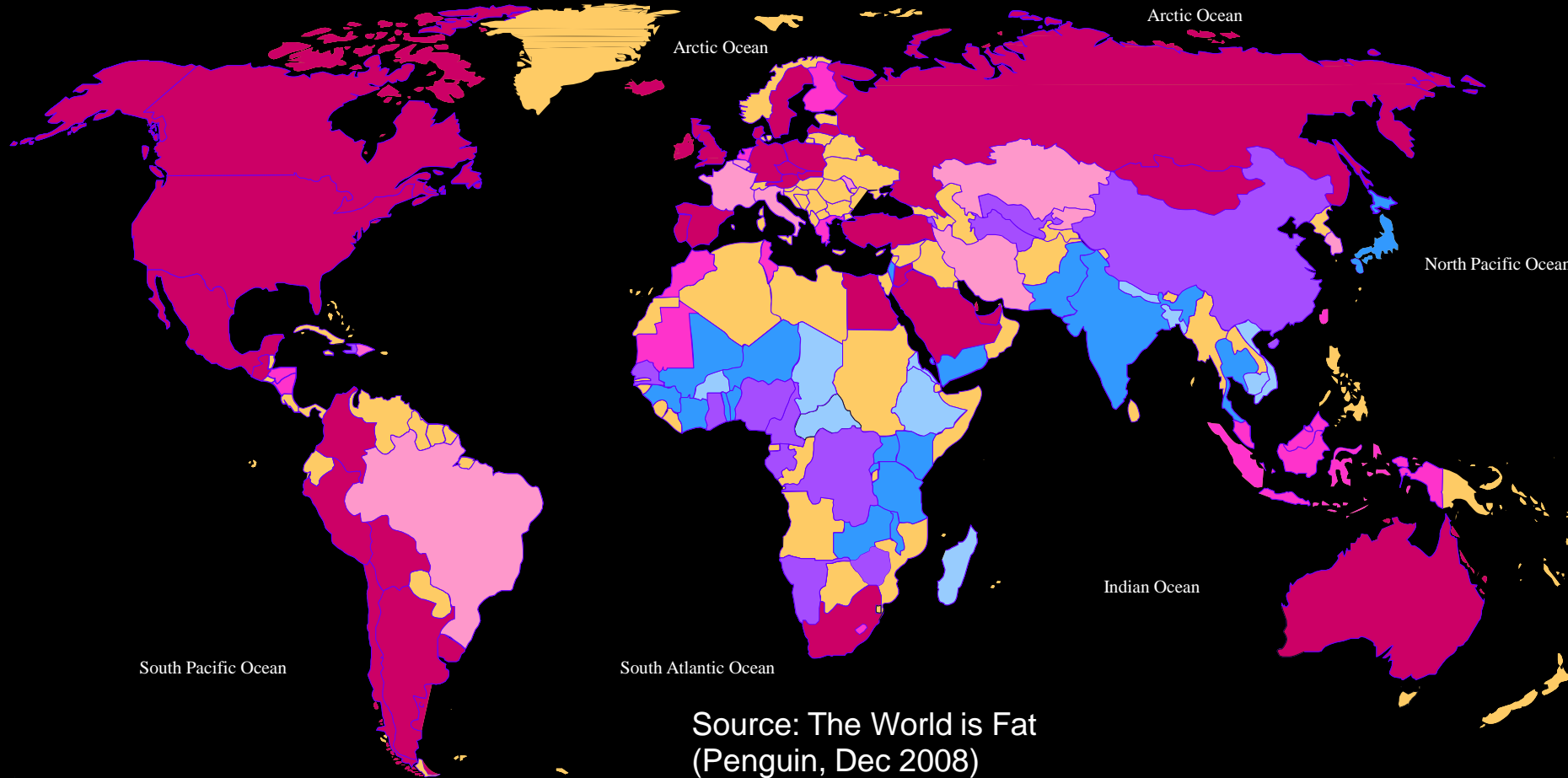
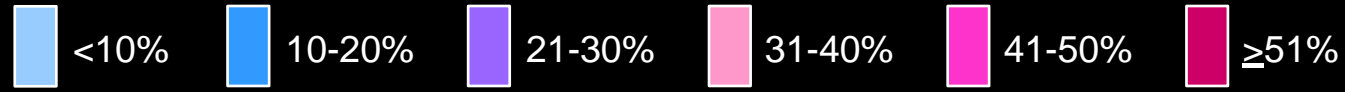
*“There are in the world more people with Overweight than UNDERweight!!”*

# Overweight more than tripled among Chinese men and doubled among women. The 11-Year Change in the BMI Distribution for a Cross-Section of Chinese Adults 20-45.



Source: Bell et al, Int'l Jour. Obes 2001.25:1-8

# Patterns Of Overweight & Obesity Globally For Nationally Representative Samples (Percentage overweight + Obese)



## The Effect of Income Changes on Total Fat Intake in China

For every 10% increase in income, intake of the proportion of energy from fat is increasing greater among the poor than the rich in China.

Most importantly there are significant changes found in all income groups



# Health Impact

(5)

**A vast shift from breast milk and water to a large variety of caloric beverages**



## Major Global Dietary Shifts



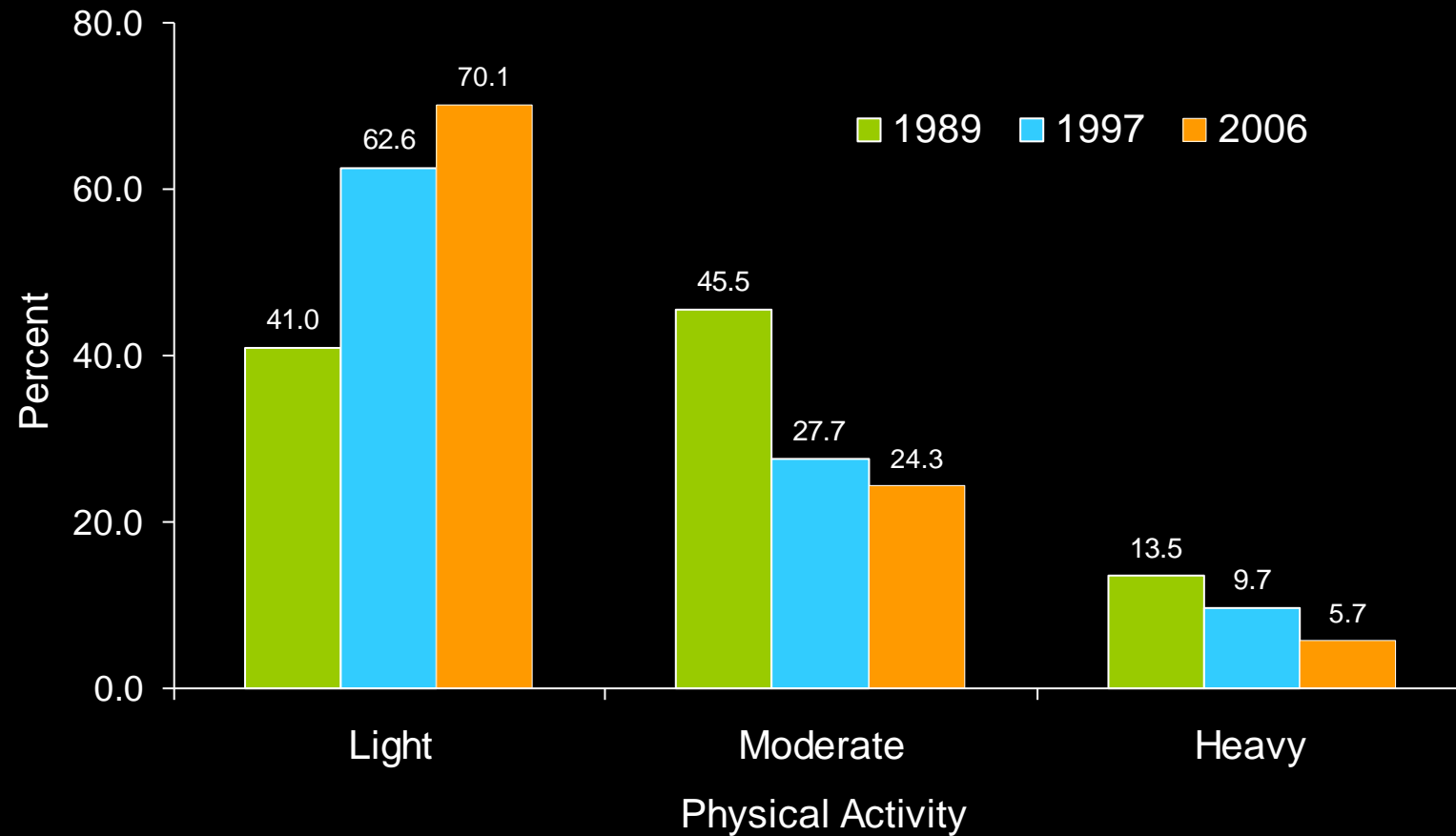
# Health Impact

(7)

## From Traditional to Modern Leisure



# Chinese Adults in the Same Occupations Use Much Less Energy: the Physical Activity Profiles of Urban Chinese Adults Aged 20-45, 1989 and 2006



Source: Du Lu, Zhai, Popkin. (2002) Pub H Nutr 5:169-174.



**If we do nothing.....  
we burst!**



# How to proceed?

**Aging**

**Globalisation**

**Urbanisation**



will bring new challenges for future policy

Clearly action needed at all levels; however I believe the only way to produce concerted change is to look to the models of tobacco use, seat belt, other major public health changes

Regulations, taxation, mass education are key components.

# Conclusions

- Less calories and more variety in calories
- Ensure still sufficient staple food and micro nutrition's
- Less sugar, less fat
- Increase fruit and vegetables
- Agriculture policy
  - Grow in value instead of full focus for volume
  - More varieties



