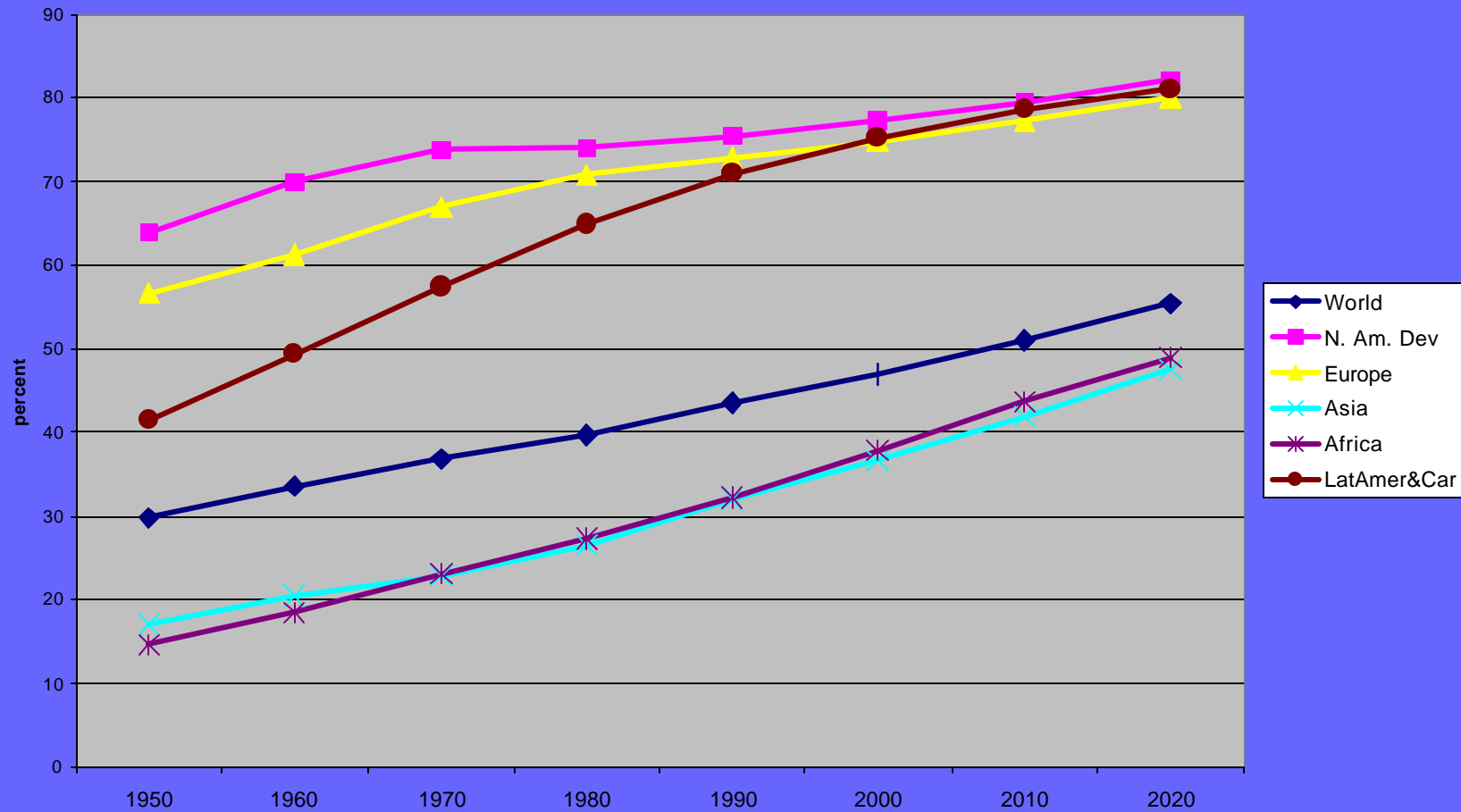


Analysis of disparities in nutritional status by wealth and residence:

Examples from Angola,
Central African Republic & Senegal

Gina Kennedy
World Bank Urban Symposium
December 15-17, 2003

Urbanisation is increasing



Source: United Nations Population Division

and so is urban poverty

Country	Percent urban poor		Absolute number of urban poor	
Ghana 1987/88 and 1992/3	23.73	28.59	1,132,000	1,348,000
India 1977/8 to 1993/4	19.34	23.34	64,335,000	75,932,000
Nigeria 1985/6 and 1992/3	22.12	31.03	8,092,000	10,234,000

Source: Haddad, Ruel and Garrett, 1999

World nutrition situation (1)

In developing countries

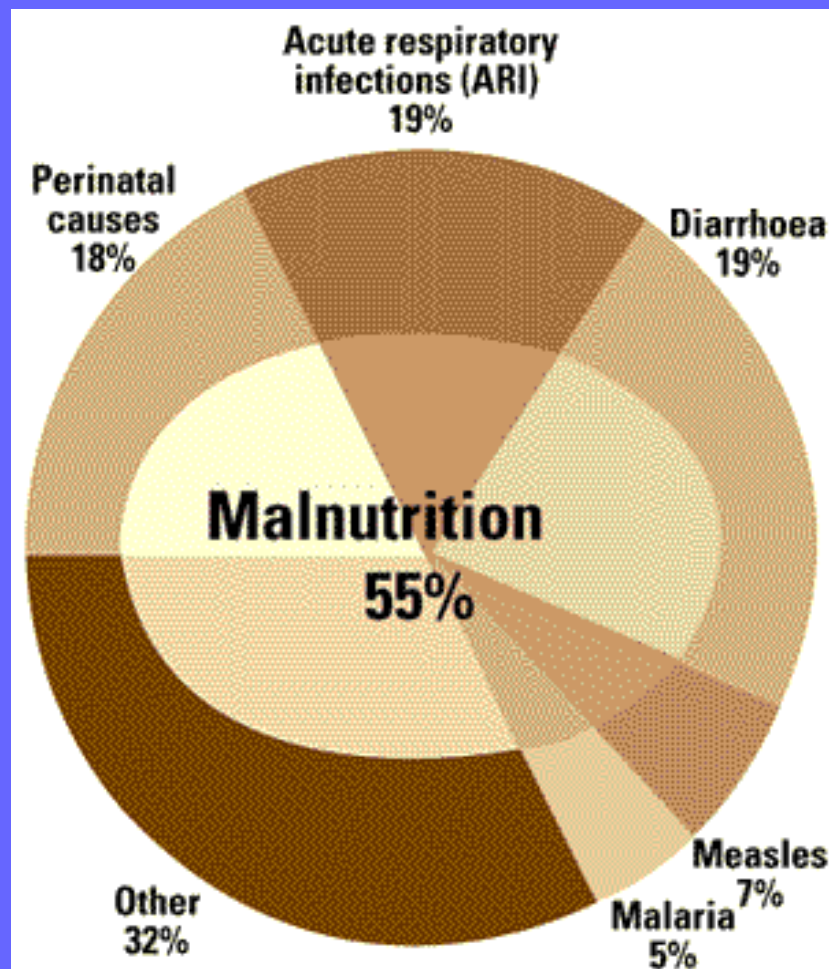
- ⇒ 24 million infants are born each year with impaired growth (LBW)
- ⇒ 28% of under fives are underweight (153 million)
- ⇒ 32% of under fives are stunted (175 million)
- ⇒ 799 million people are undernourished (w/o adequate access to food)

World nutrition situation (2)

- ◆ **Iron Deficiency Anaemia**
affects as many as 2 billion people
- ◆ **Iodine Deficiency**
740 million people are affected by
Iodine Deficiency
- ◆ **Vitamin A Deficiency**
140 million children are vitamin A deficient

Impact of Child Malnutrition

Malnutrition contributes to over half of all child deaths



UN Millennium Development Goals



① Eradicate extreme poverty and hunger

② Achieve universal primary education

③ Promote gender equality and empower women

④ Reduce child mortality

⑤ Improve maternal health

⑥ Combat HIV / AIDS, malaria and other diseases

⑦ Ensure environmental sustainability

⑧ Build a global partnership for development

1.4. Malnutrition -
Prevalence of
underweight children

3.8. Female / Male literacy
rates

7.29. Population with access
to safe water

7.30. Population with access
to secure sanitation

Anthropometric Indicators

Stunting or chronic malnutrition reflects low height for age and is the best indicator of persistent deprivation over extended periods of time.

Underweight is a measure of weight relative to age. It is most often used to monitor the nutrition status of individual children

Wasting or acute malnutrition is a measure of weight relative to height. It is associated with temporary shocks, such as famine or episodes of illness.



Methodology (1)

- UNICEF Multiple Indicator Cluster Surveys
 - Angola (2001)
 - Central African Republic (2000)
 - Senegal (2000)
- Anthropometric measures of children under five years of age
- Identification of Urban/Rural residence
- Wealth Index Quintile

Methodology (2)

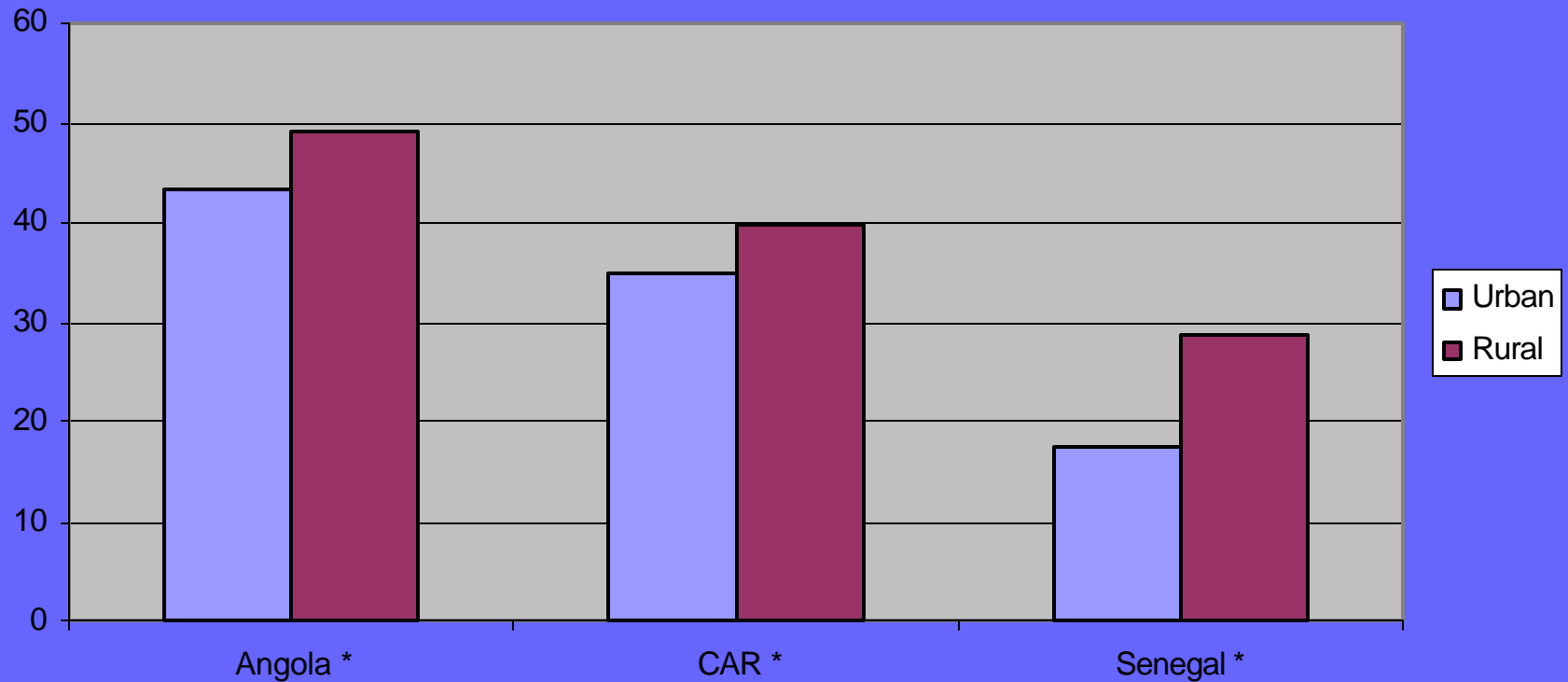
- Data were cleaned
 - Children age 0-59 months
 - Flagged records discarded
 - Each sub-set contained at least 25 observations
- Statistical analysis performed in SPSS version 11.5 and Epi-Calc

Analysis based on prevalence of stunting and underweight using:

- Simple Urban/Rural Comparison
- Wealth quintile
 - Comparison of first quintile to every other quintile
 - Comparison within the same quintile between urban and rural
- Linear regression

What we normally see...prevalence greater in rural areas

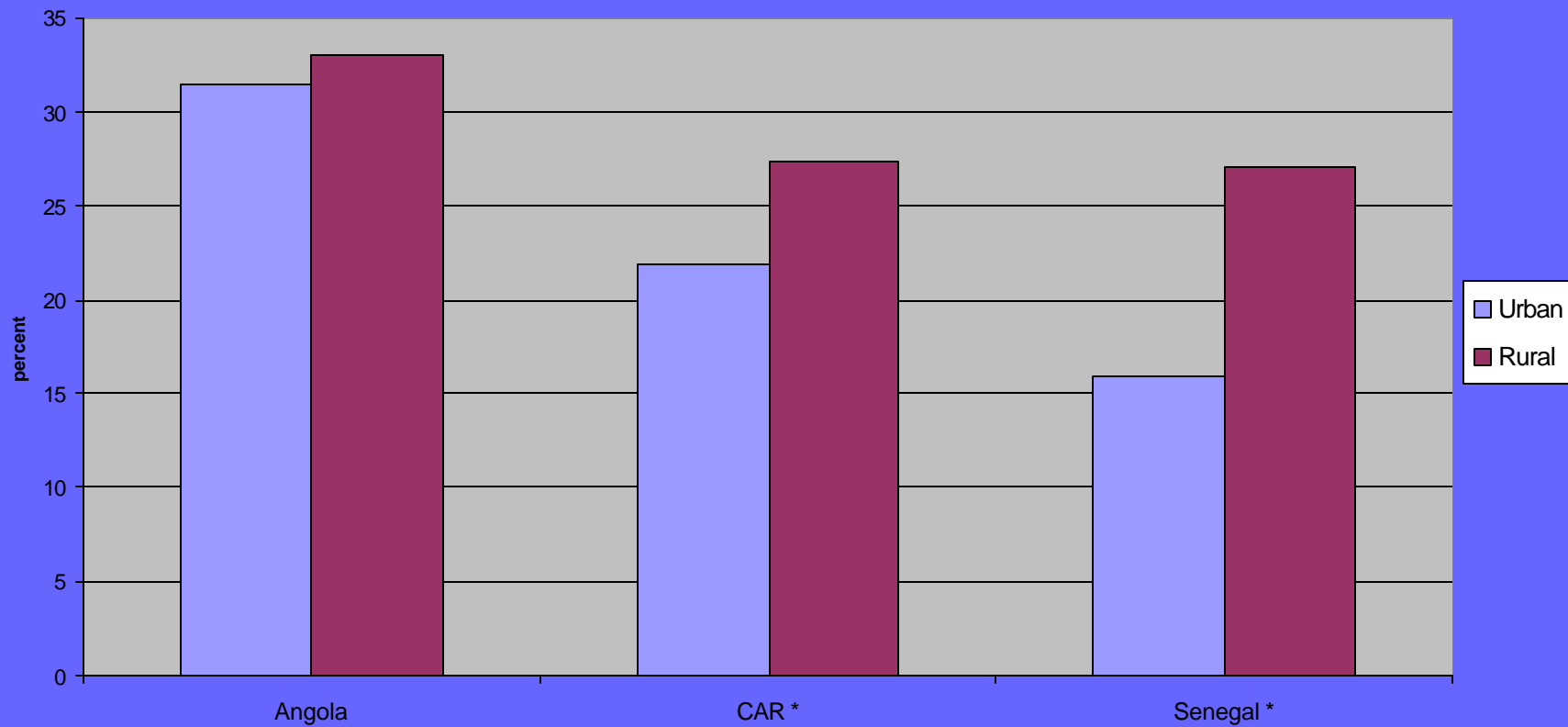
Prevalence of Stunting by Residence



* Indicates p-value < 0.05

and the same with Underweight

Prevalence of Underweight by Residence



* Indicates p-value < 0.05

For Stunting, no significant differences are evident for same wealth quintiles ...in Angola

Wealth Index (Quintiles)		Urban		Rural		p value (χ^2)
		(n)	(%)	(n)	(%)	
Poorest	1 st	37	27.03	1796	34.63	0.335659
	2 nd	144	25.00	1956	30.06	0.199731
	3 rd	464	21.77	1701	24.28	0.260038
	4 th	845	17.28	511	21.14	0.077512
Least poor	5 th	872	13.65	92	14.13	0.898653

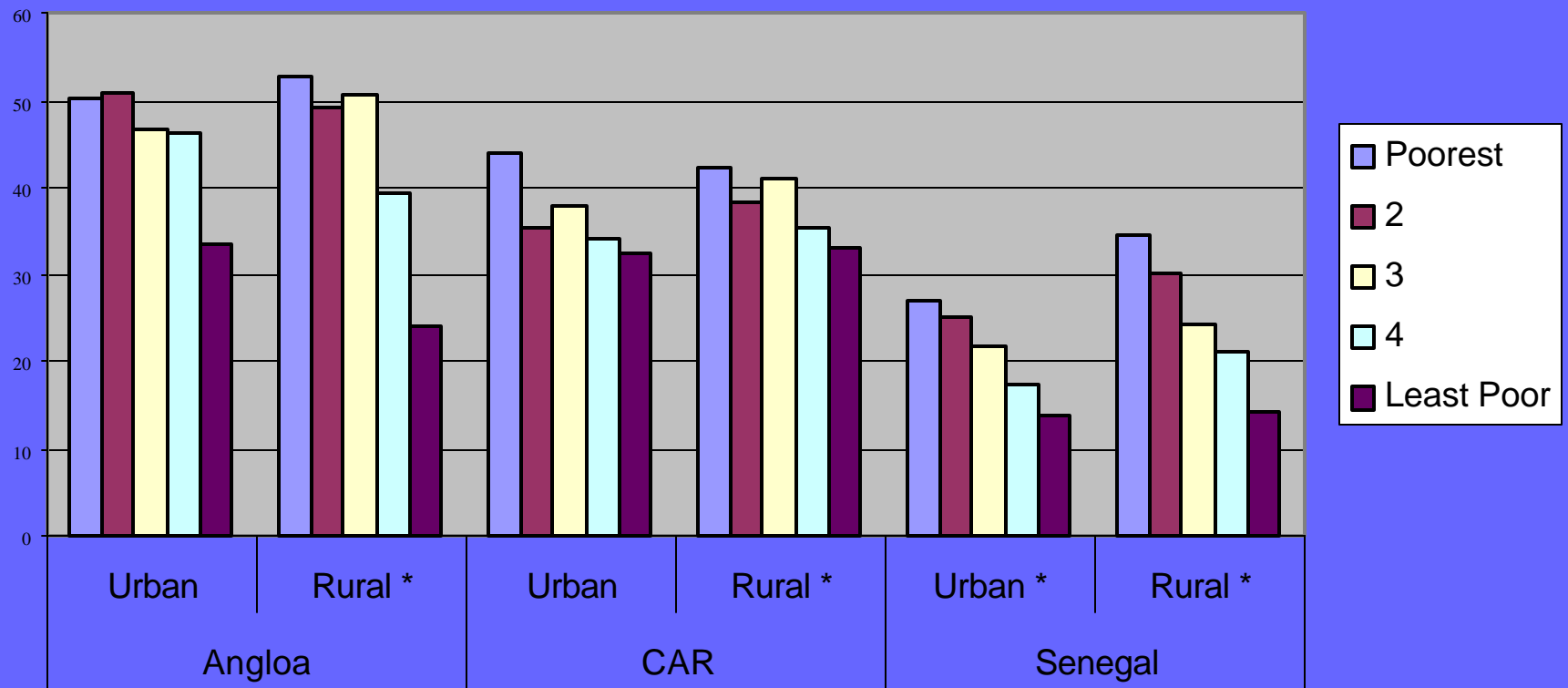
in Central African Republic

Wealth Index (Quintiles)		Urban		Rural		p value (χ^2)
		(n)	(%)	(n)	(%)	
Poorest	1 st	335	43.88	2649	42.36	0.595974
	2 nd	573	35.43	2153	38.32	0.204619
	3 rd	782	37.98	1988	41.00	0.144424
	4 th	1414	34.23	882	35.26	0.613872
Least poor	5 th	1653	32.30	412	33.25	0.712593

and in Senegal

Wealth Index (Quintiles)		Urban		Rural		p value (χ^2)
		(n)	(%)	(n)	(%)	
Poorest	1 st	37	27.03	1796	34.63	0.335659
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Wealth and stunting are correlated



Main Conclusions

- Overall, stunting prevalence is lower for urban populations
- Stunting levels increase significantly in lower poverty quintiles – both urban and rural
- Simple comparisons of urban and rural populations mask these inequalities
- The patterns are similar for underweight, but the indicator of underweight is more difficult to interpret

Discussion (1)

- Inequalities exist between the poorest and wealthier quintiles in both urban and rural areas – others have shown these disparities are often greater in urban areas
- Diet, burden of disease and care practices – are the underlying causes of undernutrition – differences between urban and rural are important

Discussion (2)

- Food purchases are influenced by price and income and urban residents purchase most of their food.
- Dietary Quality is an important consideration for proper linear growth as well as other nutritional problems
- Improving dietary quality is a strategy which can be used to address evolving nutrition concerns

Urban Challenges

- Increasing urbanisation, urban poverty and inequalities
- Changes in diet, even for the poor
- Changes in levels of physical activity and adoption of sedentary lifestyles.
- Links between undernutrition and risk of overweight and obesity.

