

# Public Policy for the Prevention of Chronic Diseases

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# Public Policy and the challenge of Non Communicable Diseases

- Background
  - Is public policy justified?
  - Can it work?
- Tobacco Control
- Food Policy
- Incentives for healthy living



**DIRECTIONS IN DEVELOPMENT**

Human Development

Public Policy and the Challenge  
of Chronic Noncommunicable  
Diseases

# Three Broad Channels to Improve NCD Outcomes

- Achieve higher incomes through economic growth
- Control NCD risk factors through population-based interventions
- Provide direct medical care to individuals in a clinical setting

All three play an important role in improving NCD outcomes—none in isolation is likely to be adequate to significantly improve upon current trends



# Economic Rationale for NCD Interventions for Prevention and Treatment

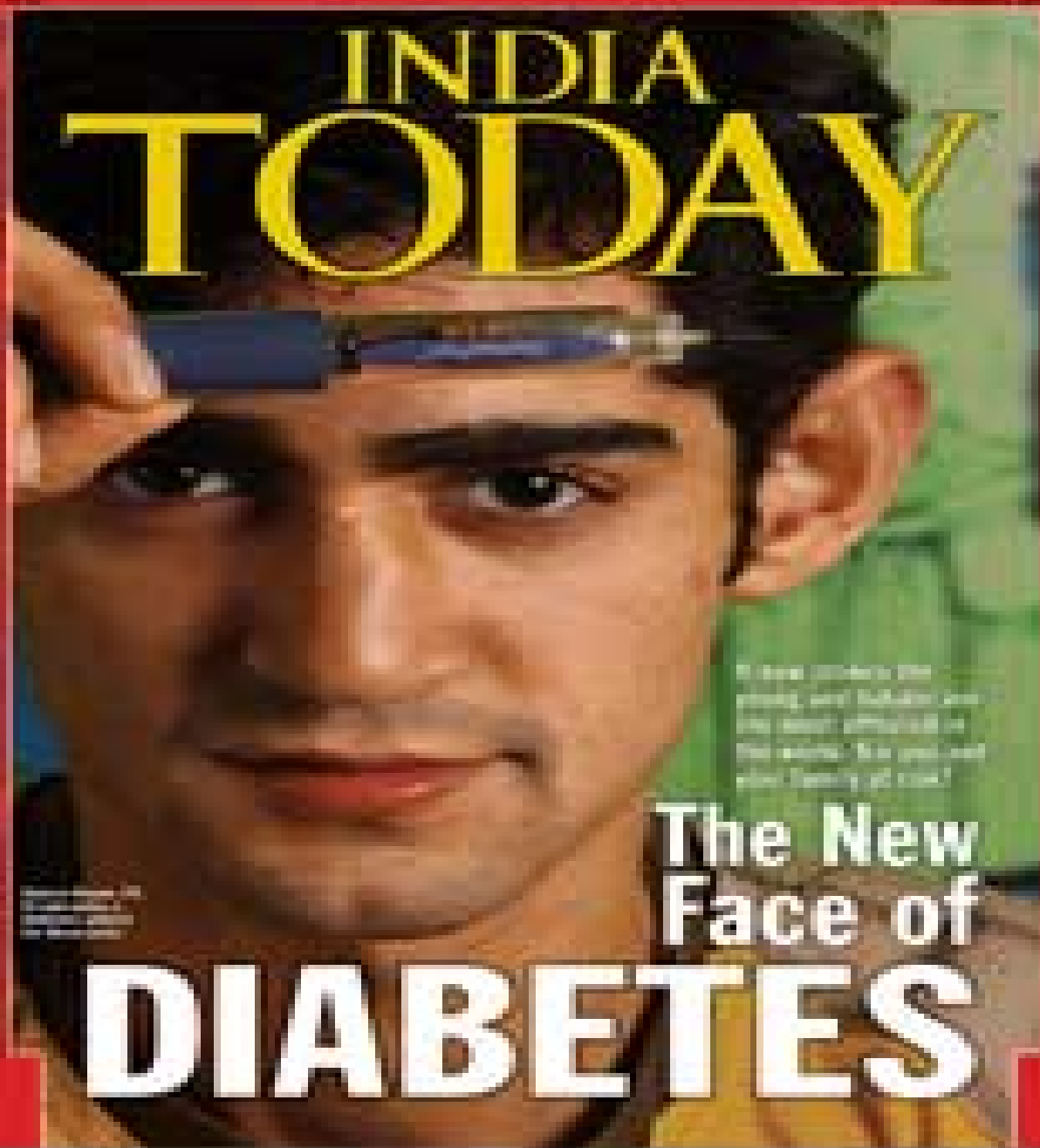
- Presence of externalities (e.g., second-hand smoke; drunk driving; pollution, etc.): potential role for taxation
- Incomplete and/or inadequate information to make an informed choice about health
- Potential catastrophic cost of NCD treatment: public role to address insurance market failures and provide financial protection
- Time inconsistency
- Equity considerations



**Are there any advantages in not having risk factors for NCDs?**

Death is unavoidable and the rise of NCDs reflects the success of combating CDs

# INDIA TODAY



How does the  
young man  
feel about  
the disease?  
What are the  
challenges of  
living with it?

The New  
Face of

# DIABETES

PHOTOGRAPH BY  
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**Comparison between persons with low-risk- factor profile and others in two large cohorts in the US, c 1970- 1995 follow-up: 16-22 years**

<b>Cohort</b> (sex/age)	<b>Risk free*</b> %	<b>Coronary Heart Disease**</b> Age-adjusted mortality per 100,000		<b>Estimated additional Le (years)</b>
		<i>Low risk</i>	<i>Other</i>	
Men 18-39	9.4	0.6	5.9	9.5
Men 35-39	9.9	0.2	1.5	6.3
Men 40-57	6.0	4.4	19.9	5.9
Men 40-59	4.8	8.8	38.1	6.0
Women 40-59	6.8	3.5	14.5	5.8

•\*Low cholesterol, low blood pressure and non-smoker

•\*\* Lower mortality also for other CVD, Cancer and all causes, not for injuries and violence

*Source: Stamler J, et al. JAMA 1999;282,2012-18*

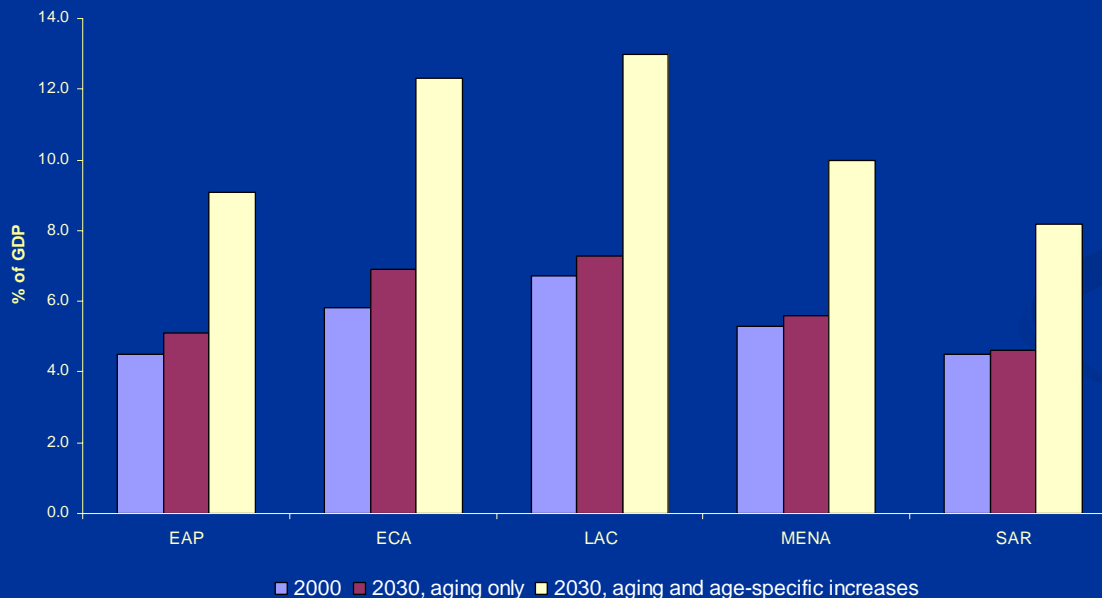
# What about health care costs, old people spend more?

- The highest HCE occur 6 month before death
- After adjusting for time to death
  - Age was significant associated with expenditures in Long term care
  - Age not associated with ambulatory care, hospital care or drug expenditures
  - High correlation with density of specialized hospitals and physicians

*Main sources: Werblow et al, Health Economics 2007 using Swiss data  
Fischer et al, Annals of Internal Medicine, 2003,138,273-287*

# Aging will not be the Main Driver of Higher NCD Expenditures

Potential Changes in Total Health Spending as a Percentage of Gross Domestic Product, Regional Averages



Plausible increases in age-specific health expenditures would have a much larger impact than aging alone

Greater demand for insurance coverage and expensive technologies are likely to be the main drivers

Important to ensure that financing systems are sustainable over the long-term in the face of a rising burden of NCDs



# Preventing Risk Factors through Public Policy

- Tobacco Control
- Preventing Diet related- risk factors and disease

# Policy Tools

- Economic incentives
- Informational environment
- Regulations

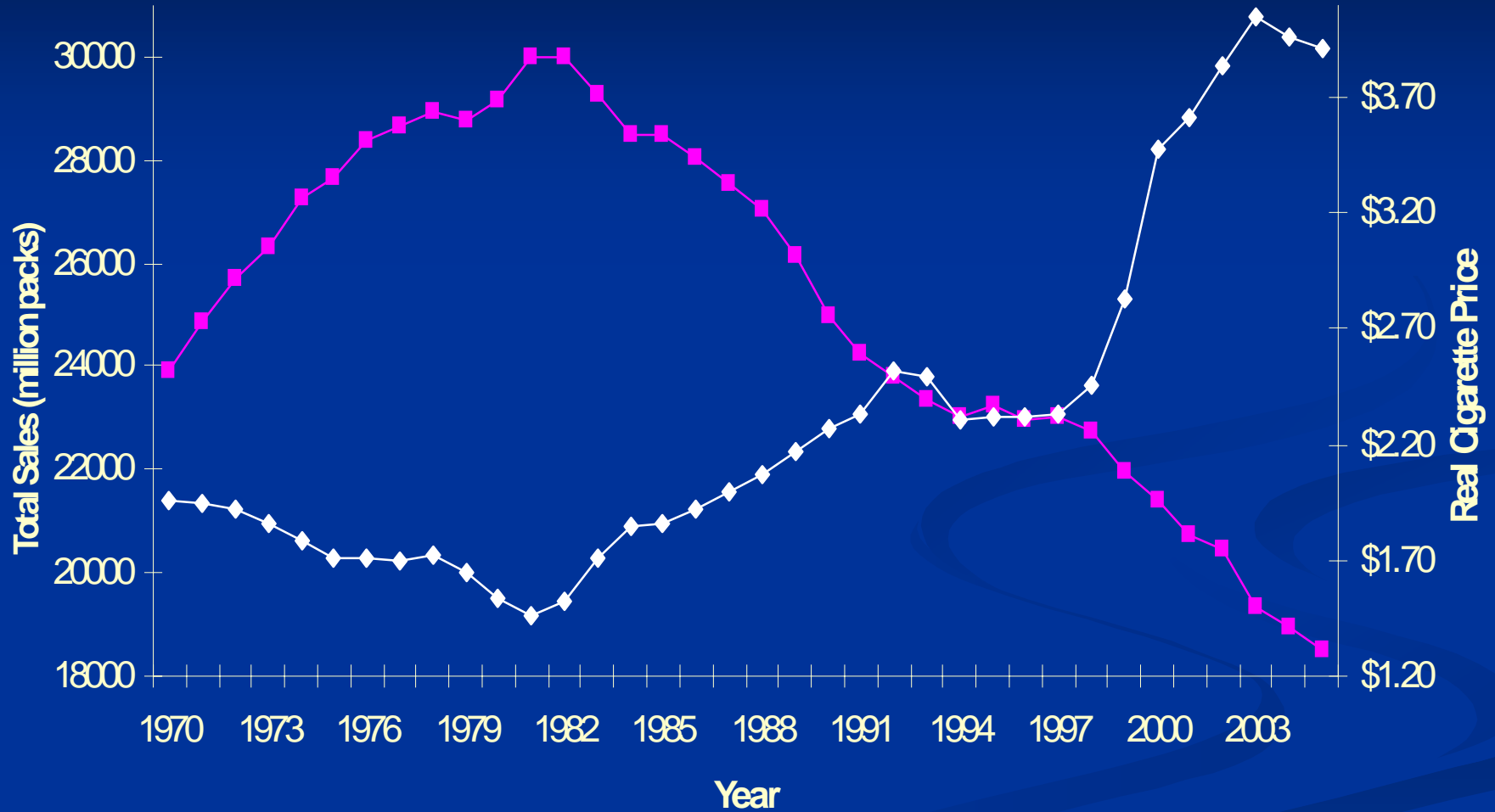
# Tools for Tobacco Control

Policy	Evidence	Cost –effectiveness ratio
<b>Economic disincentive</b>		
Excise taxation	++++	low
<b>Informational environment</b>		
Counter-advertising	+++	high
Mass media campaign	++ (with other)	medium
Warning labels	+	high
Warning labels with photo	+++	low

# Tobacco Control Regulations

Policy	Evidence	Cost –effectiveness ratio
Smoke-free workplace	++ (on smoker) ++++ (on non-smoker)	low
Smoke-free public places	++	–
Smoke-free restaurants	+++ (on workers)	medium
Over the counter NRT	+	high
Limit sales to minors	–	high

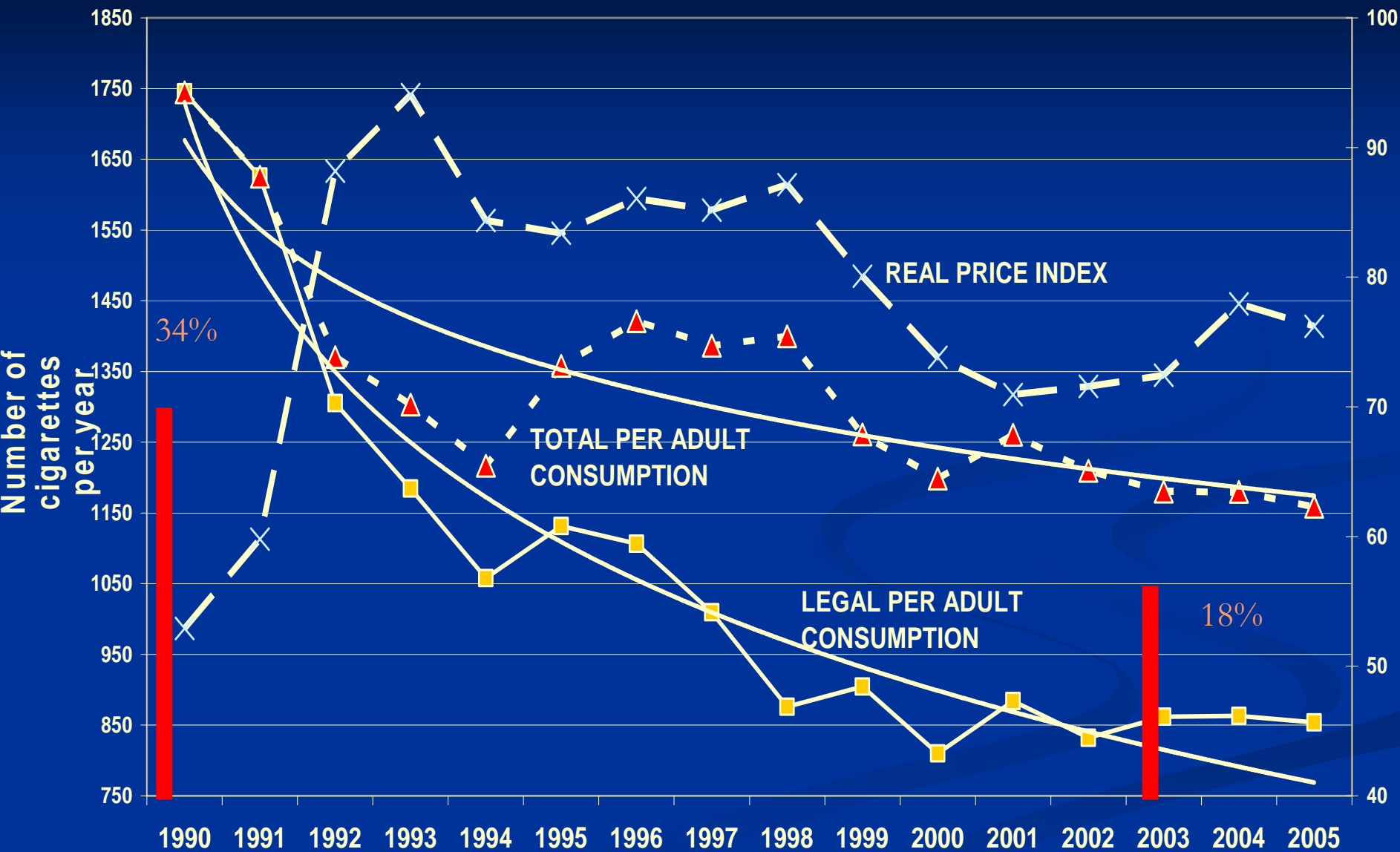
# Total Cigarette Sales and Cigarette Prices, US, 1970-2005



■ Cigarette Sales (million packs) ◆ Real Cigarette Price

2005 data preliminary

# Legal and total per adult consumption and real price index (Dec 93=100)



Sources: SFR, IBGE and External Trade Secretariat

# Highly effective: not easy

- Smuggling from countries with lower prices
- Design of excise taxes
  - Ad valorem
  - Specific
- Political economy
  - Tobacco lobby with policy makers
  - Tobacco production/growers
- Support from FCTC

## SPECIFIC TAXES

### Advantages

- Simplicity: tax liability easy to measure (measure quantity rather than value); taxes can be prepaid on sales.
- Health benefits: external costs of smoking same for high and low price brands – tax rate should be the same.

### Disadvantages

- Revenues do not increase automatically with inflation;
- Encourages longer/stronger cigarettes;
- Encourages substitution to (high-price) imported brands;
- Encourages substitution to smuggled or tax-free low-quality alternatives.

## AD VALOREM TAXES

### Advantages

- Indexed to cigarette price inflation;
- May discourage substitution from low-price to high-price brands, as gap in the prices increases;
- Discourages investment in advertising (where advertising costs are reflected in the price).

### Disadvantages

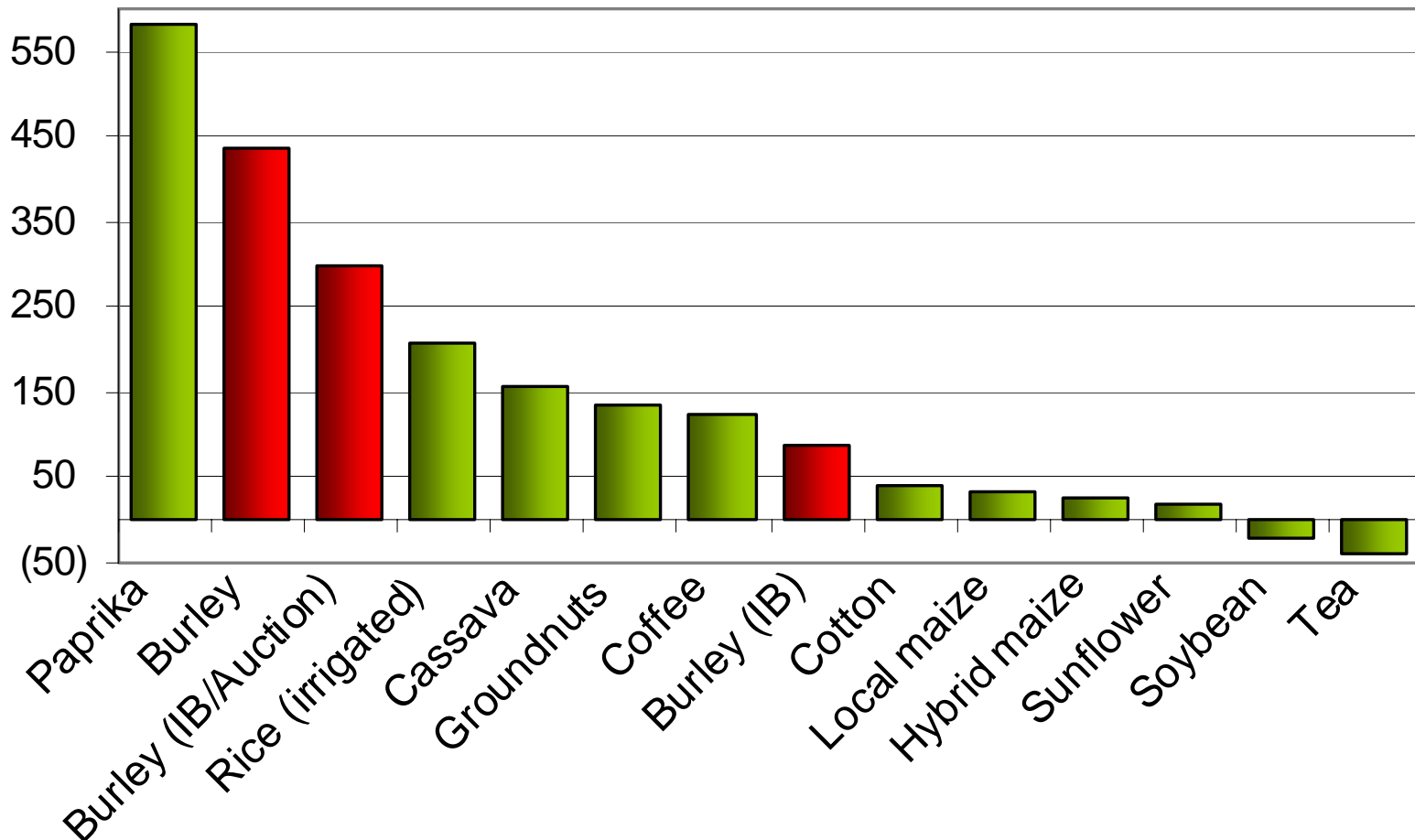
- More difficult to collect at retail points of sale (too many people to be taxed along the chain);
- Imposition at wholesale stage creates potential for tax avoidance and revenue loss;
- Smaller health benefits than equivalent specific tax .

# Malawi

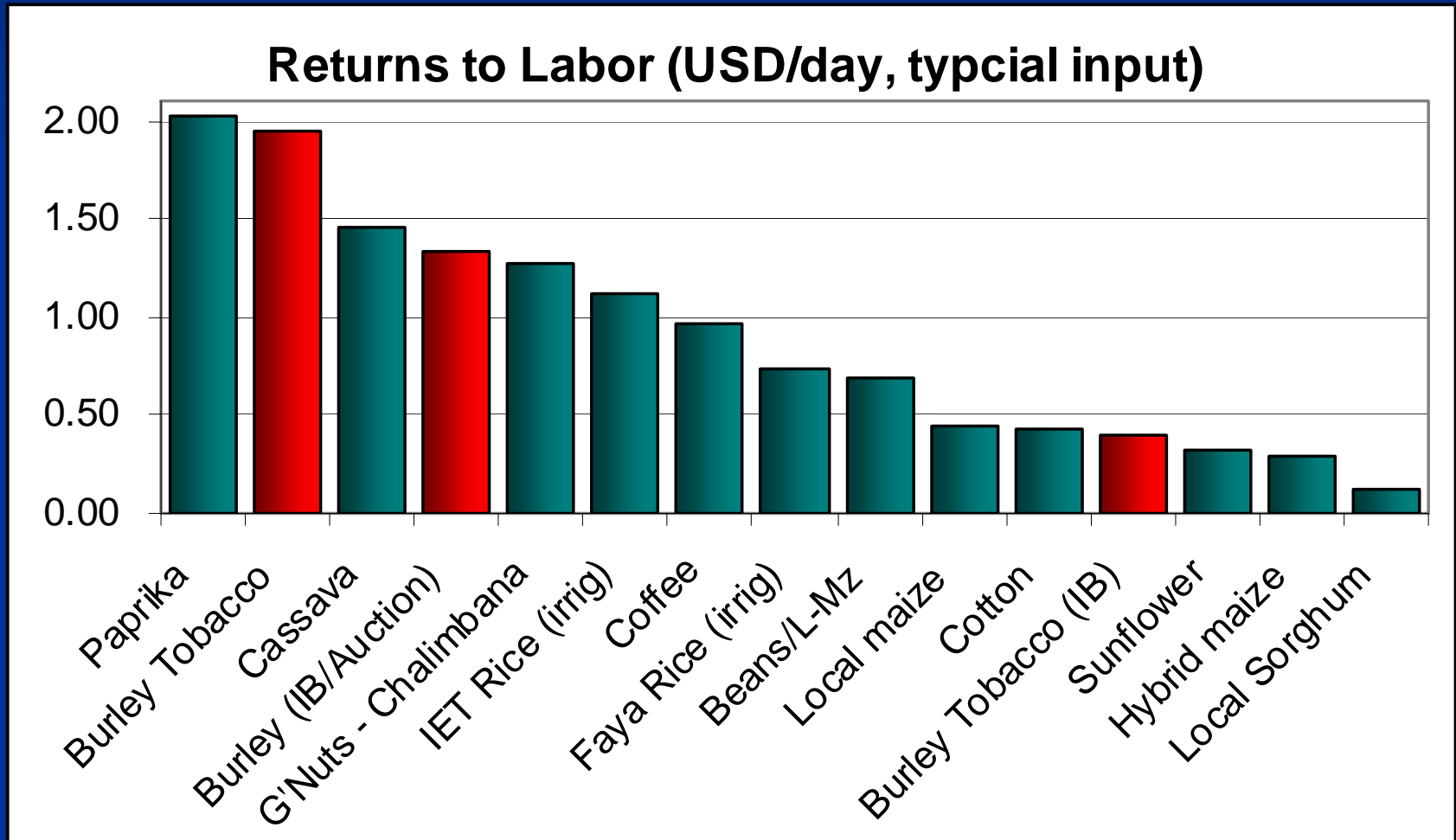
- 40% GDP from tobacco
- 1 in 5 employed in tobacco
- Extremely small farm sizes

# Malawi – profits

Net Profit - Smallholder (USD/ha, typical input)



# Malawi – returns to labor



Tomato not shown = \$9.32/day

# Beyond the evidence for tobacco control

- The policy building process requires a comprehensive approach that includes tobacco growers in poor countries
- Defending the small growers and small producers may backlash (Indonesia)
- Civil society has shown to be an effective agent for policy change

# Diet-related risk

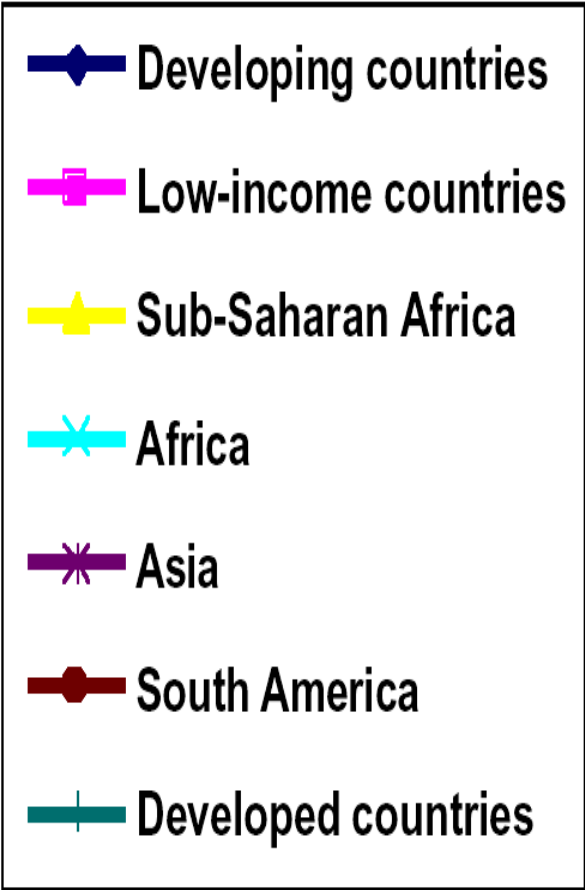
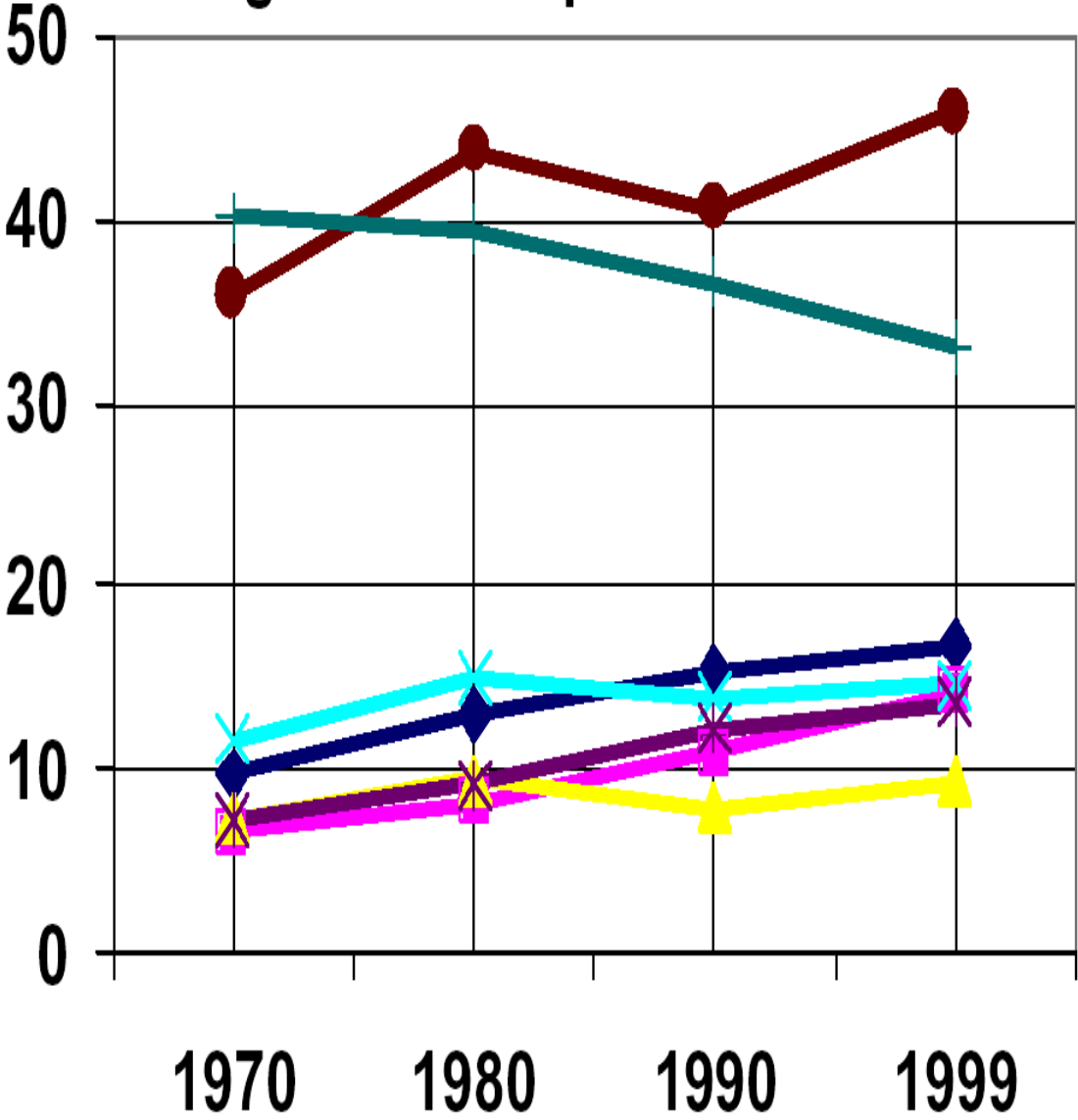
# Reduction of diet-related risk

- Unlikely to be via economic growth as with other health problems
  - Countries experience an increase in obesity rates as GDP increases
- Health care
  - As part of NCDs, catastrophic insurance (risk sharing) is justified
- Public Policies for the Prevention of Risk factors
  - The most promising avenue

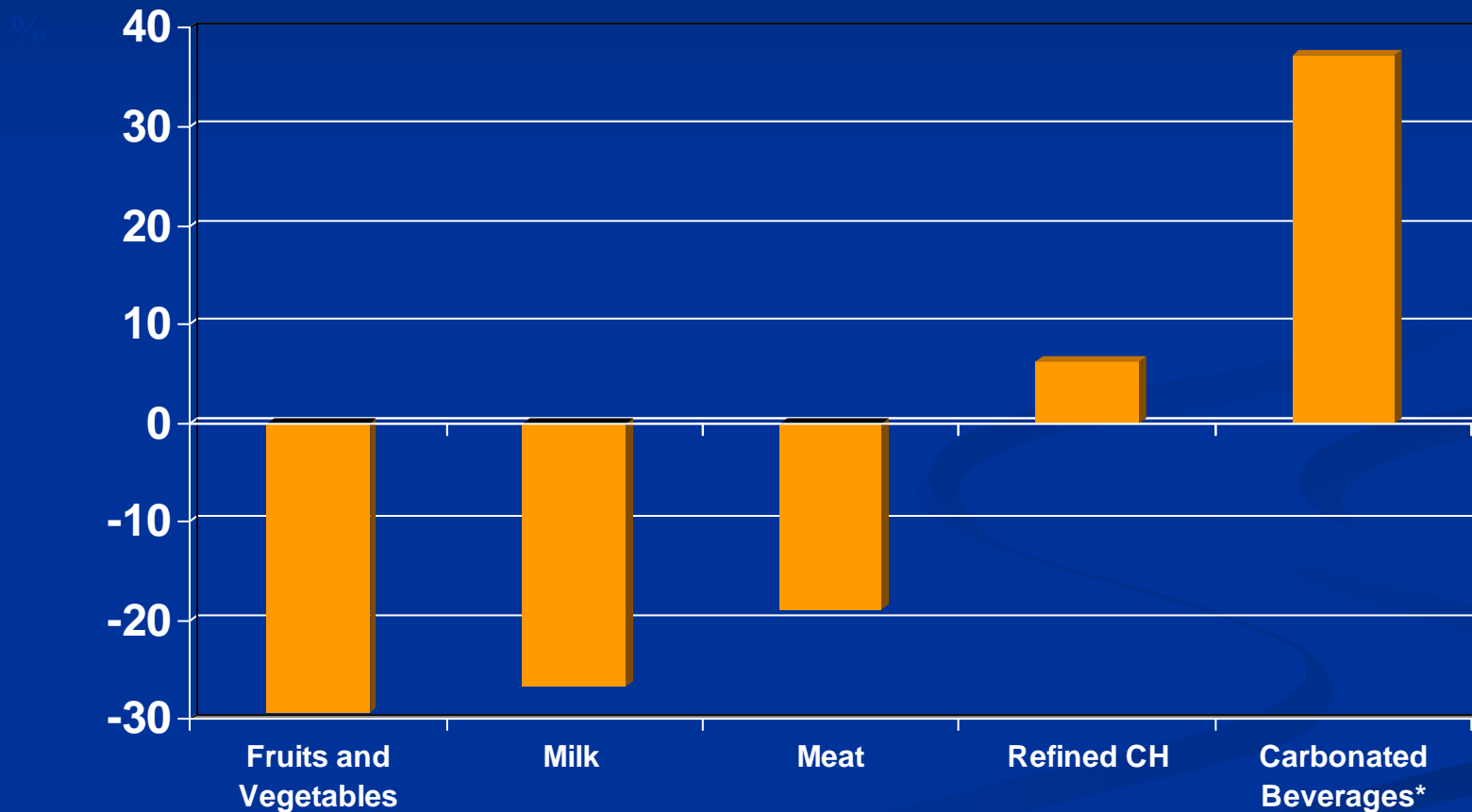
# Primary Prevention of Diabetes: Clinical Trials

<b>STUDY</b>	<b>INTERVENTION</b>	<b>REDUCTION</b>
Malmo, Feasibility Study, Sweden	Exercise & Diet	<b>52 %</b>
Da Qing, China	Diet Alone	<b>31%</b>
	Exercise Alone	<b>42%</b>
	Diet & Exercise	<b>46%</b>
Finnish Diabetes Prevention Study	Diet & Exercise	<b>58%</b>
United States- Diabetes Prevention Program	Diet & Exercise	<b>58%</b>
	Metformin	<b>31%</b>

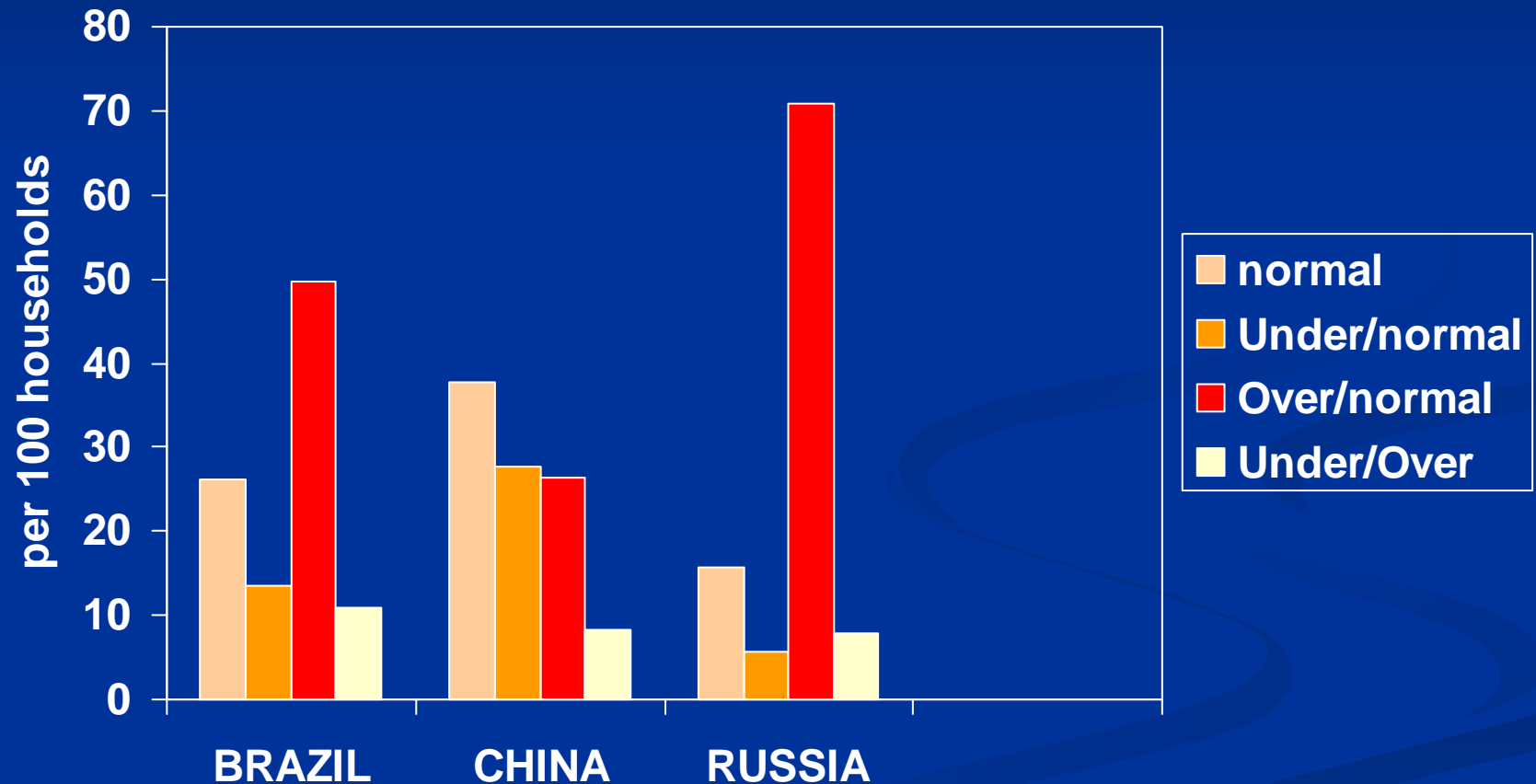
# Sugar consumption trends



# Change in the mean purchase of foods in 1998 relative to 1984 (%) by food groups in México



# Prevalence of overweight and underweight in Brazil, China and Russia



Source: Doak et al. J Nutr. 2002

# Implications for Public Policy

## Focus on Food Policy

- The obesity and diabetes epidemic in developing countries is occurring at a faster pace than economic development
- To develop sound prevention policies it is necessary to explain the changes from the perspective of the Agro-food system as a whole

## **The Economics of Food Choice**

# The economics of food choice

- Biological adaptation of crops
- Reduction in production costs
- Better transportation
- Removal of trade barriers



**Improved food availability**

*Particularly processed foods*



# Fruits and vegetables

- In most cases remain local
- Short shelf life
- Government has no incentives to regulate or set standards
- Supermarkets have taken on role of regulation, standards and distribution
- Distribution is costly



**Higher prices per caloric unit**



# Public Policy tools

- Shape the informational environment
- Direct regulation
- Economic incentives

# Shaping the informational environment

Policy	Strength of the evidence	Cost-effectiveness ratio
Direct education By phone or in person	+++	high
Restriction in advertisement (to children) and health claims	+	?
Food labeling	++	low
Information at point of purchase	+	medium
School interventions	++	medium
Media campaigns	++	high

# Direct regulation

Policy	Strength of the evidence	Cost-effectiveness
Elimination of trans-fatty acids	+++	low
Reduced salt content in processed products	+++	low*

\* Economic consequences for food producers

# Economic incentives

Policy	Caveats
<b>Population level:</b> Tax products with high fat or sugar content	<ul style="list-style-type: none"><li>■ Unexpected consequences</li><li>■ Industry opposition</li></ul>
Health Care Plans	<ul style="list-style-type: none"><li>■ experimental</li></ul>

# **Incentives for Healthy Living** *acting on the demand*

- Family signs a pledge, promising to practice healthy behaviors

**reduced co-payments**

- Individual incentives to enroll in a Healthy Living Program

**vouchers for health related products**

**vouchers for dental care**

**credits for individual health rewards**

**account to purchase a series of services**

# The Role of Public Policy

## Background

- There is evidence and justification to implement public policy for tobacco control and diet-related diseases

## Tobacco Control

- Excise taxation on tobacco products
- Design the policy building process

## Diet- related risk

- Shaping the informational environment is an immediate approach.

- There are still many unanswered questions
  - The role of community based programs
  - Incentives for healthy living
  - How to facilitate that the poor have access to a healthy diet
- Surveillance and Impact evaluation
  - Learn from operations

Thank you!