

Pekka Puska

Director General

National Institute for Health and Welfare (THL)

Helsinki, Finland

President, World Heart Federation (WHF)

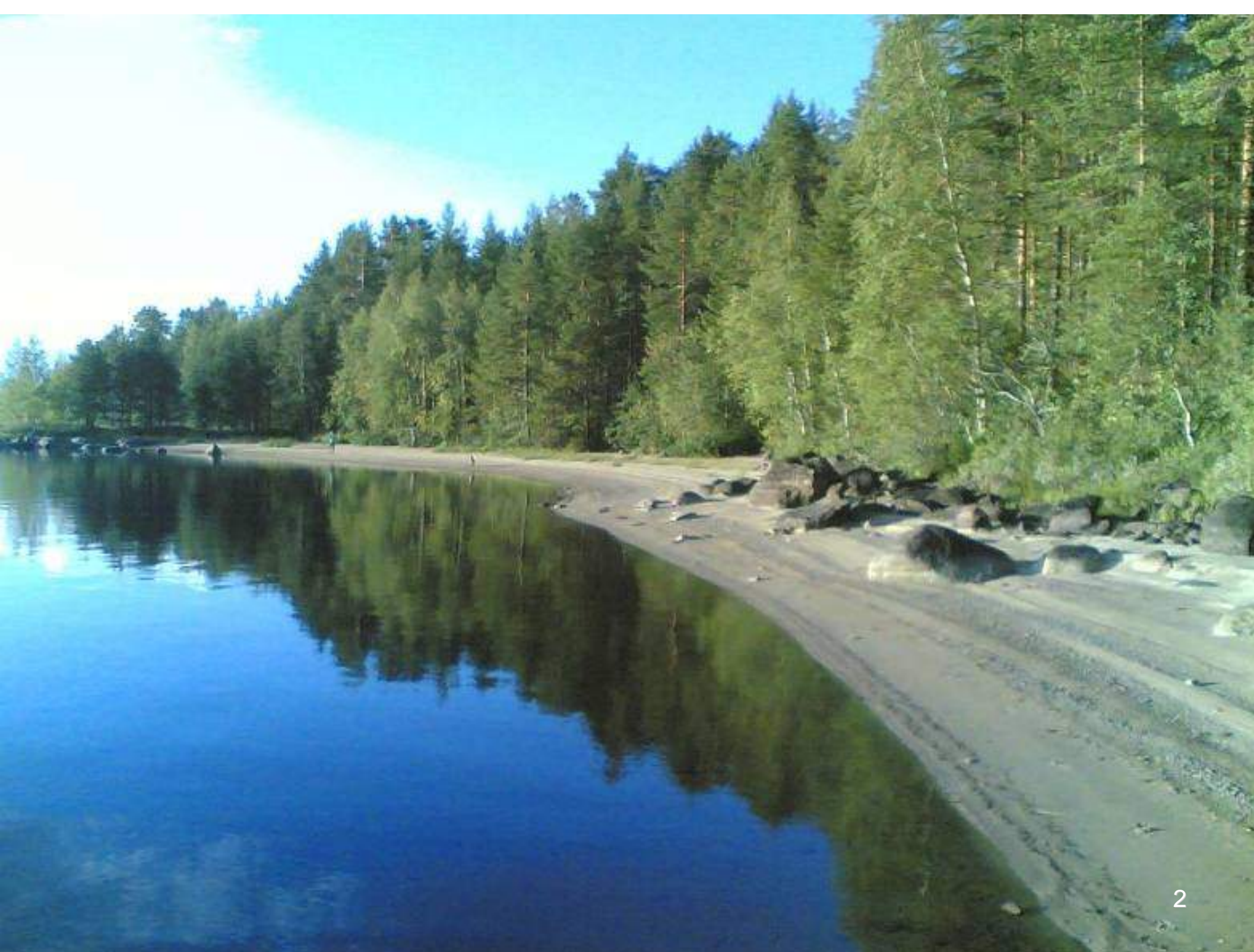
FAT AND HEART DISEASE

- Yes, we CAN make a change.

The case of North Karelia, Finland

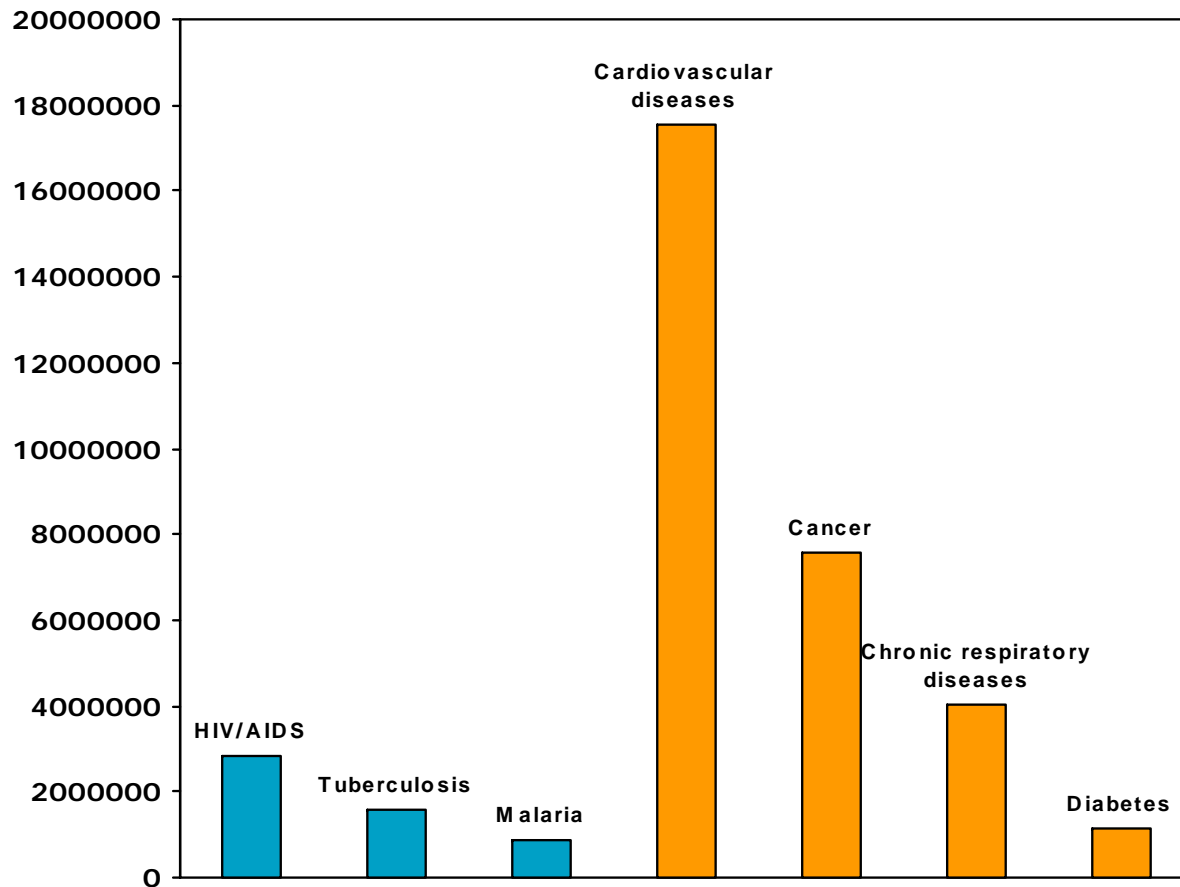
**International Expert Meeting in Health
significance of fat quality of the diet
Barcelona 1-2.2.2009**

World Heart Federation
7 rue des Batoirs, P.O. Box 155
1211 Geneva 4, Switzerland
www.worldheart.org



Global Health Burden

Estimated global deaths by cause, all ages, 2005



Source : WHO 2005: «Preventing Chronic Diseases: A Vital Investment»

Global Public Health in Transition

Chronic diseases – especially cardio-vascular diseases

- **Leading health problem in industrialized countries**
- **Main killers and rapidly growing problem in developing countries**



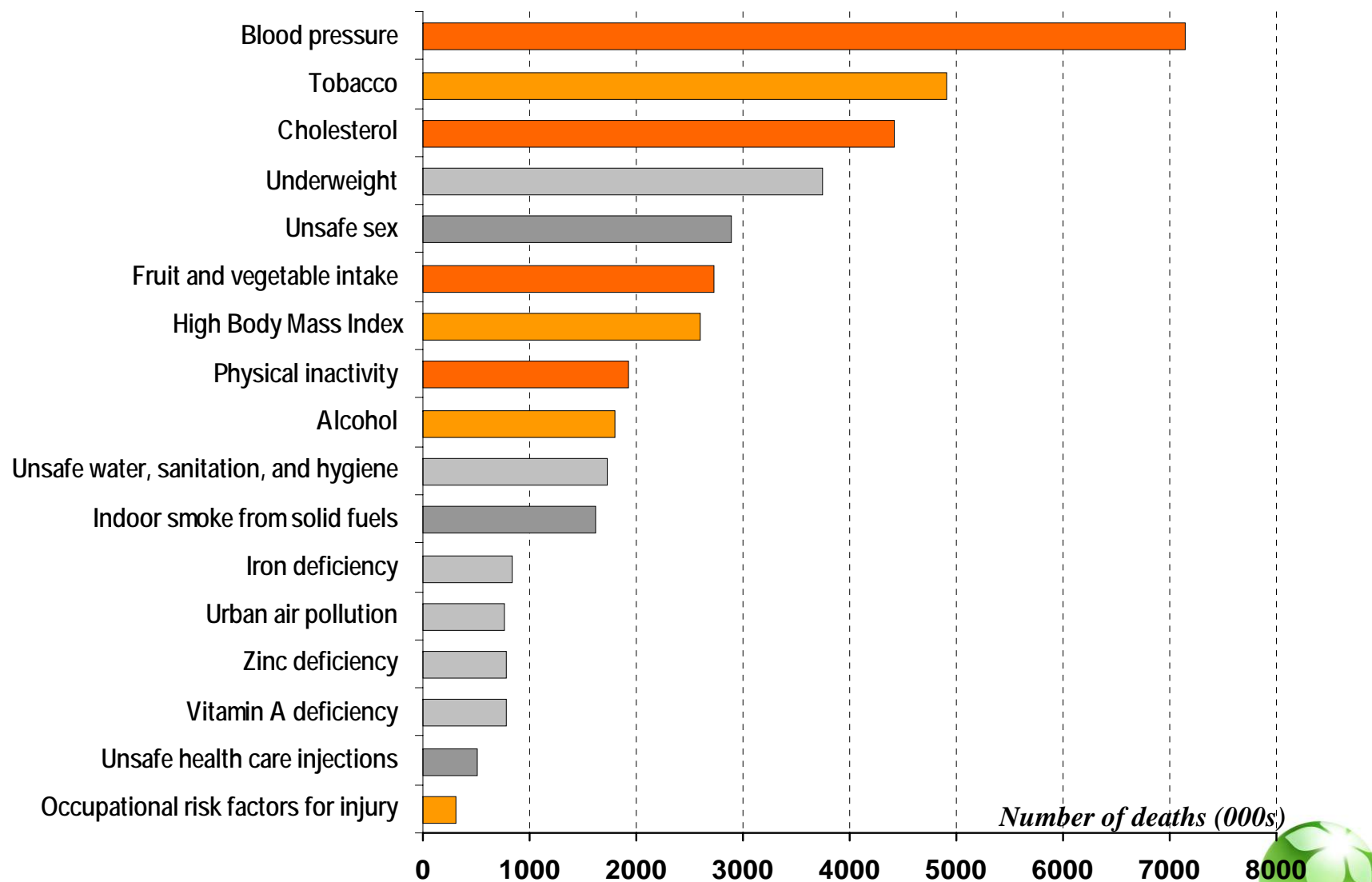
Lifestyle Transition

- **Emerging global epidemic of NCDs is to a great extent a consequence of changes in the diets, of declining physical activity and of increase of tobacco use**
- **The determinants of these changes are urbanisation, changes in occupations, population ageing and many global influences**
- **Risks are increasingly accumulating in lower socio-economic groups of the population**



WORLD

Deaths in 2000 Attributable to Selected Leading Risk Factors



Six of the Seven Top Determinants of Mortality in Developed Countries Relate to How We Eat, Drink and Move

 **Diet and physical activity, together with tobacco and alcohol, are key determinants of contemporary public health**

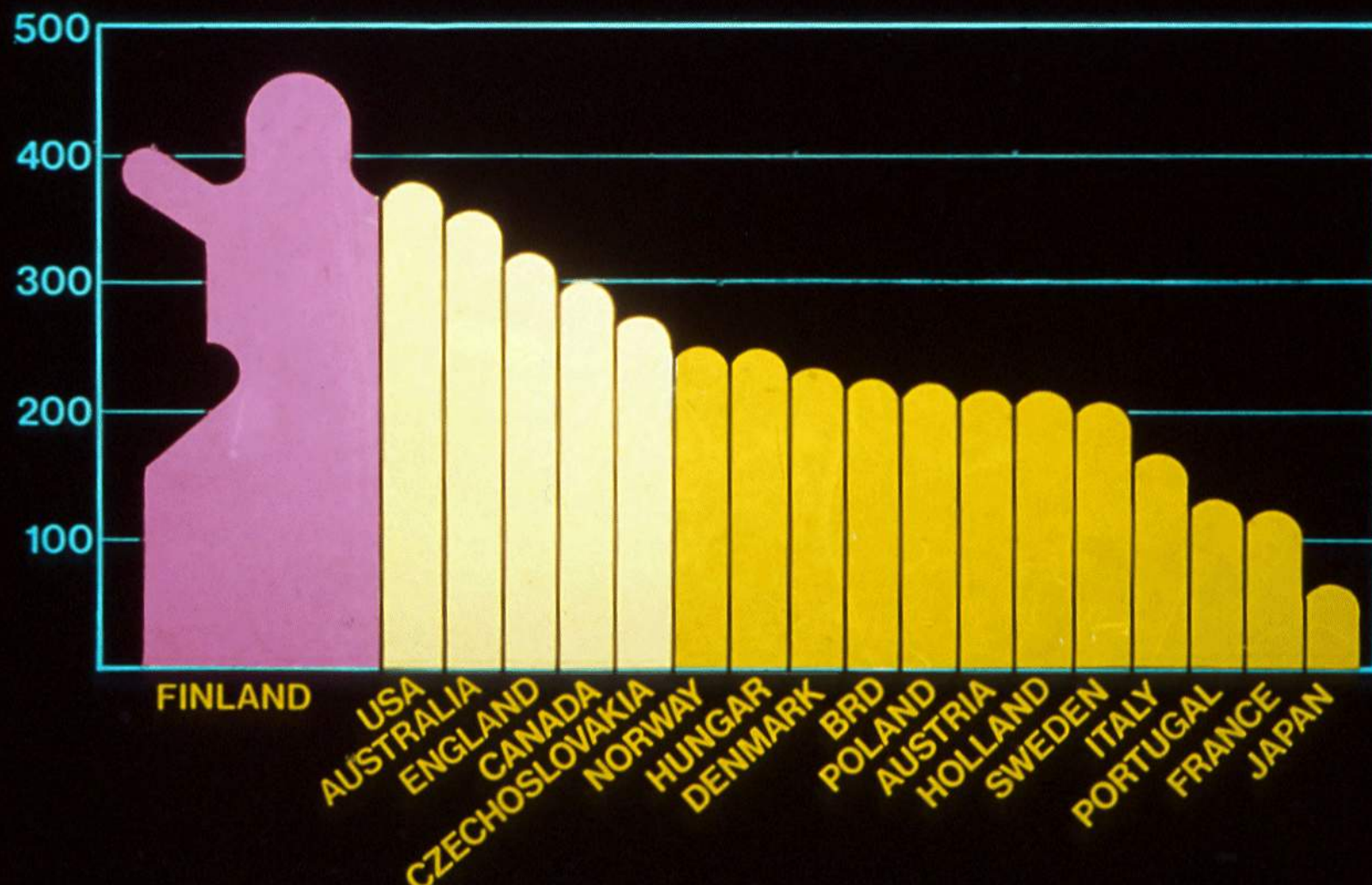




MORTALITY RATES OF ISCHAEMIC HEART DISEASE AMONG MEN IN SELECTED COUNTRIES



CHD mortality
per 100.000 men in 1973



NORTH KARELIA PROJECT FINLAND



National Public Health Institute



North Karelia Project Principles for Defining the Intermediate Objectives



- Due to the chronic nature of CVD, the potential for the control of the problem lies in primary prevention
- The risk factors were chosen on the basis of best available knowledge:
 - previous studies
 - collective international recommendations
 - epidemiological situation in North Karelia
- Chosen risk factors:
 - smoking
 - elevated serum cholesterol (diet)
 - elevated blood pressure



From Karelia to National Action



- **First province of North Karelia as a pilot (5 years), then national action (1972–77)**
- **Continuation is North Karelia as national demonstration (1977–95)**
- **Good scientific evaluation to learn of the experience**
- **Comprehensive national action**



North Karelia Project

Practical intervention



- **Emphasis on persuasion, practical skills, social & environmental support for change**
- **Research team & local project office with comprehensive community involvement**
- **Main areas:**
 1. **Media activities (materials, mass media, campaigns)**
 2. **Preventive services (primary health care etc.)**
 3. **Training of professional and other workers**
 4. **Environmental changes (smoke free areas, supermarkets, food industry etc.)**
 5. **Monitoring and feedback**



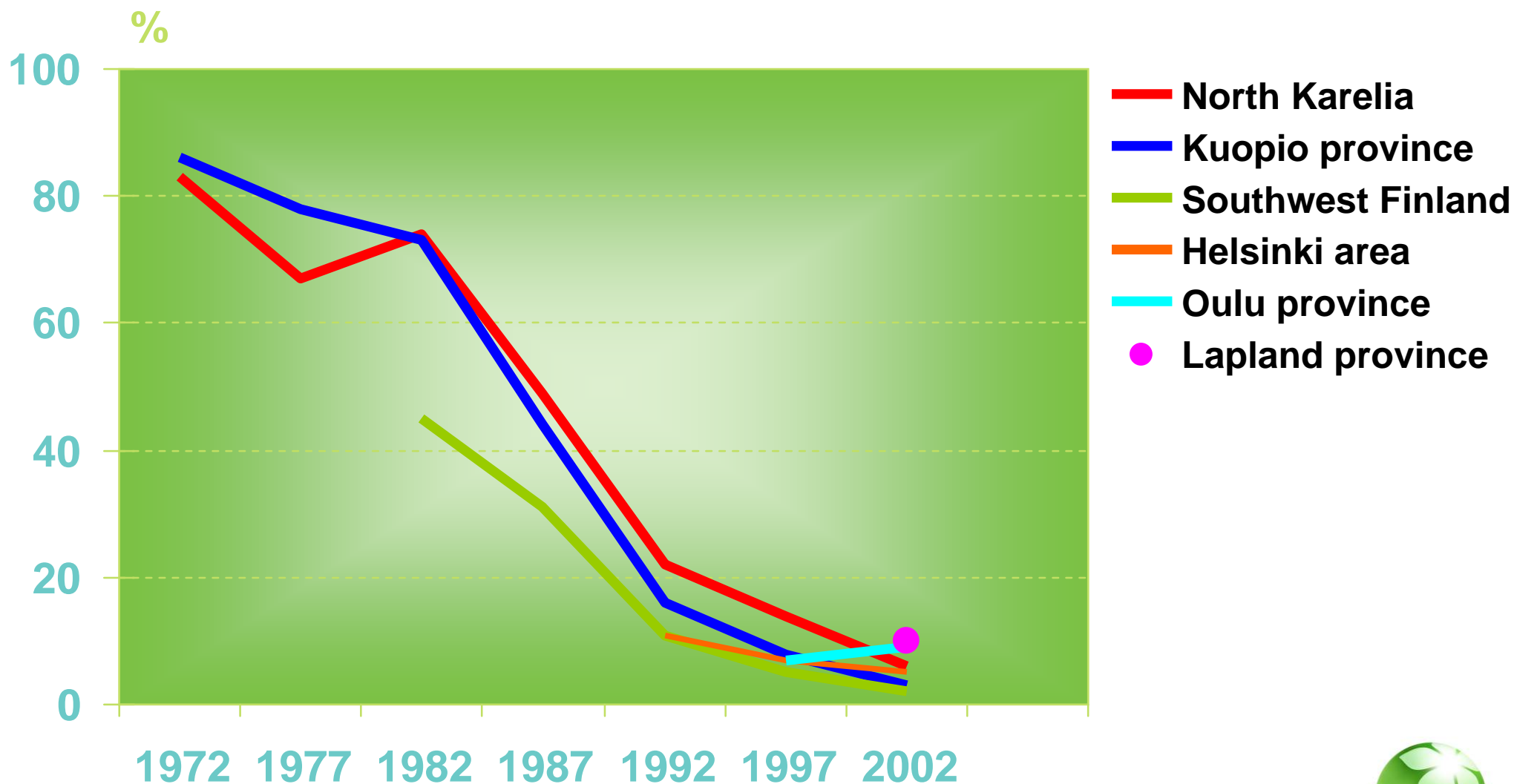
Evaluation / Monitoring



- **North Karelia – all Finland**
- **Monitoring systems**
 - **health behaviour**
 - **risk factors**
 - **nutrition**
 - **diseases, mortality**



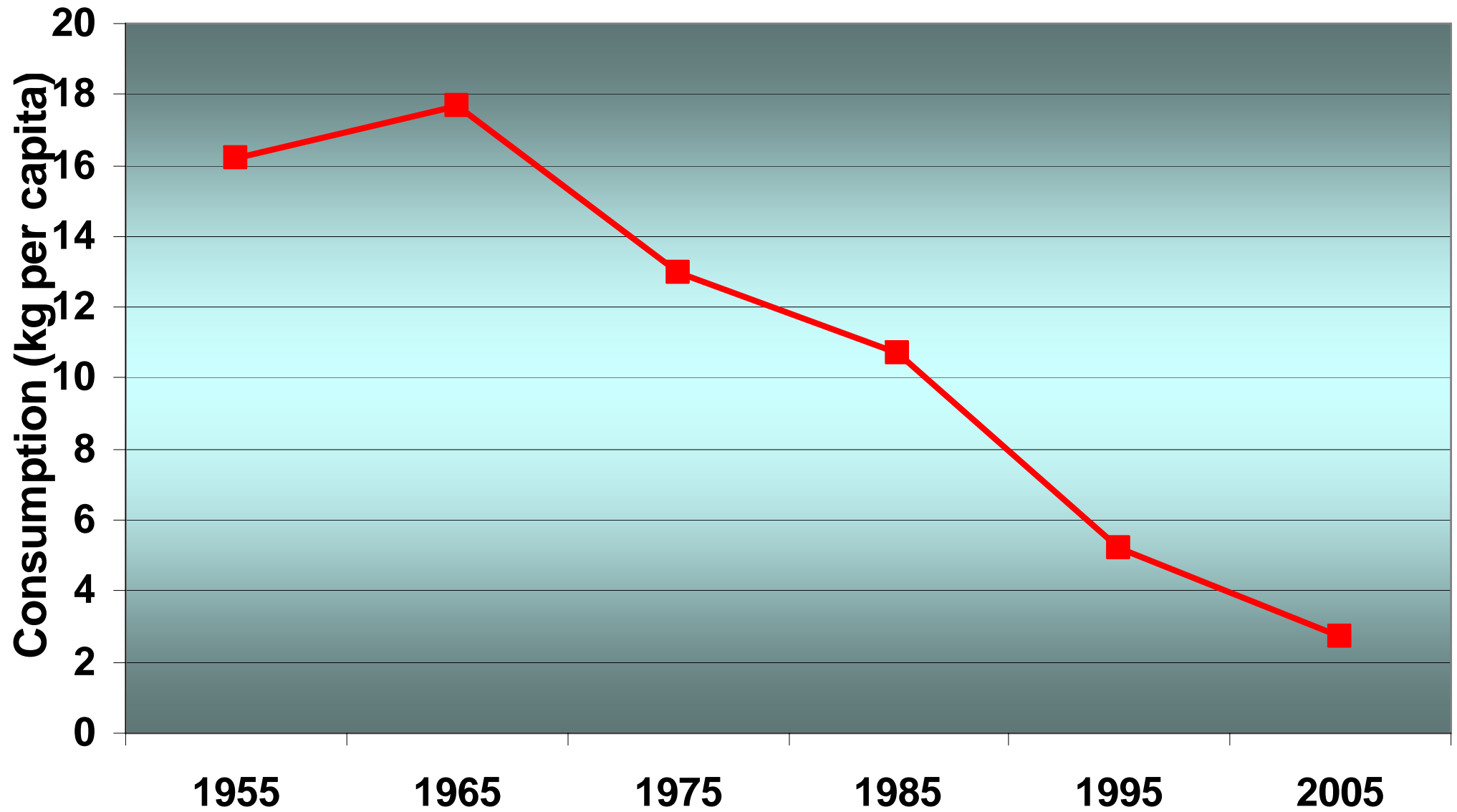
Use of Butter on Bread (men age 30-59)



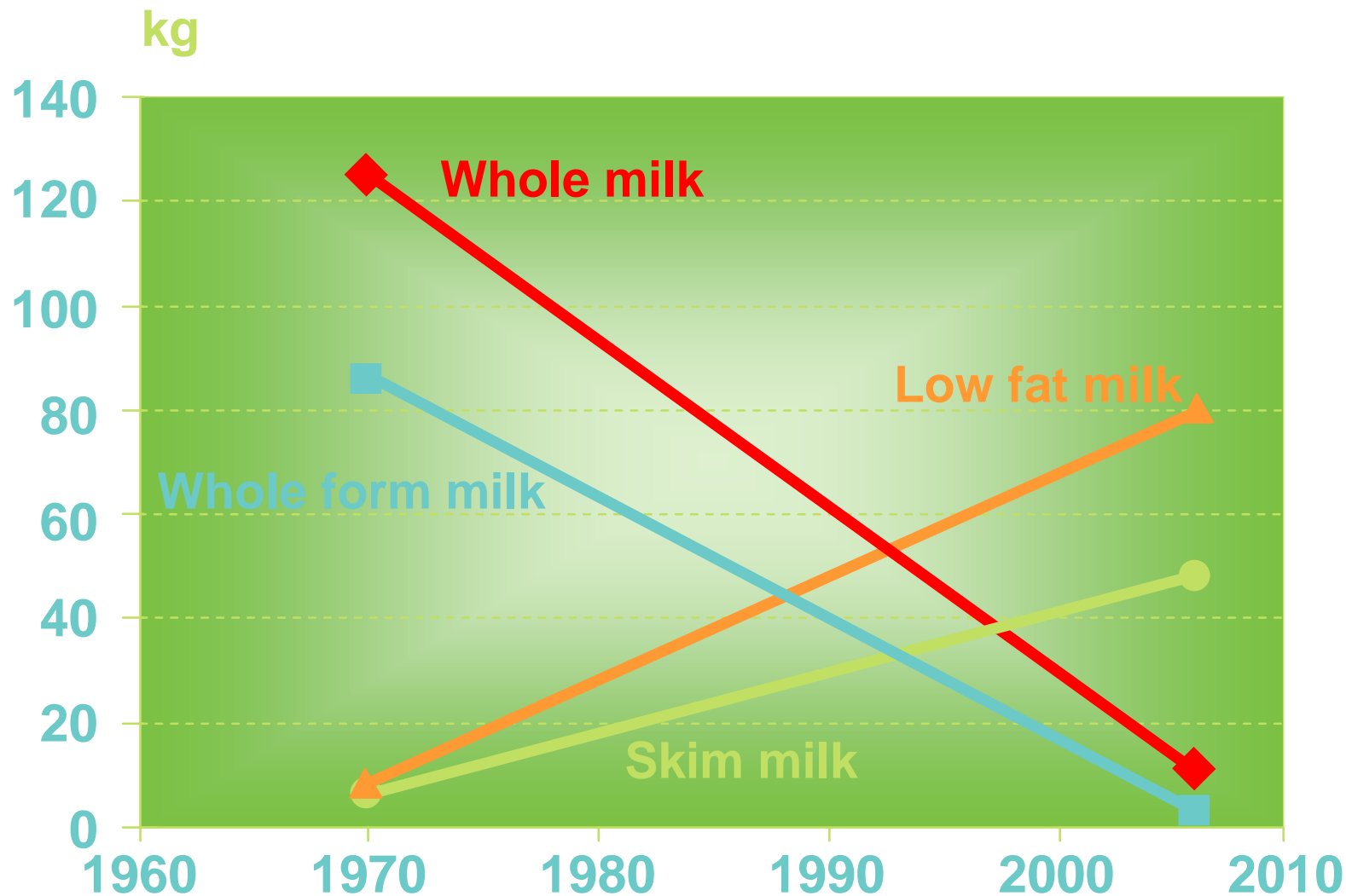
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Butter consumption per capita in Finland



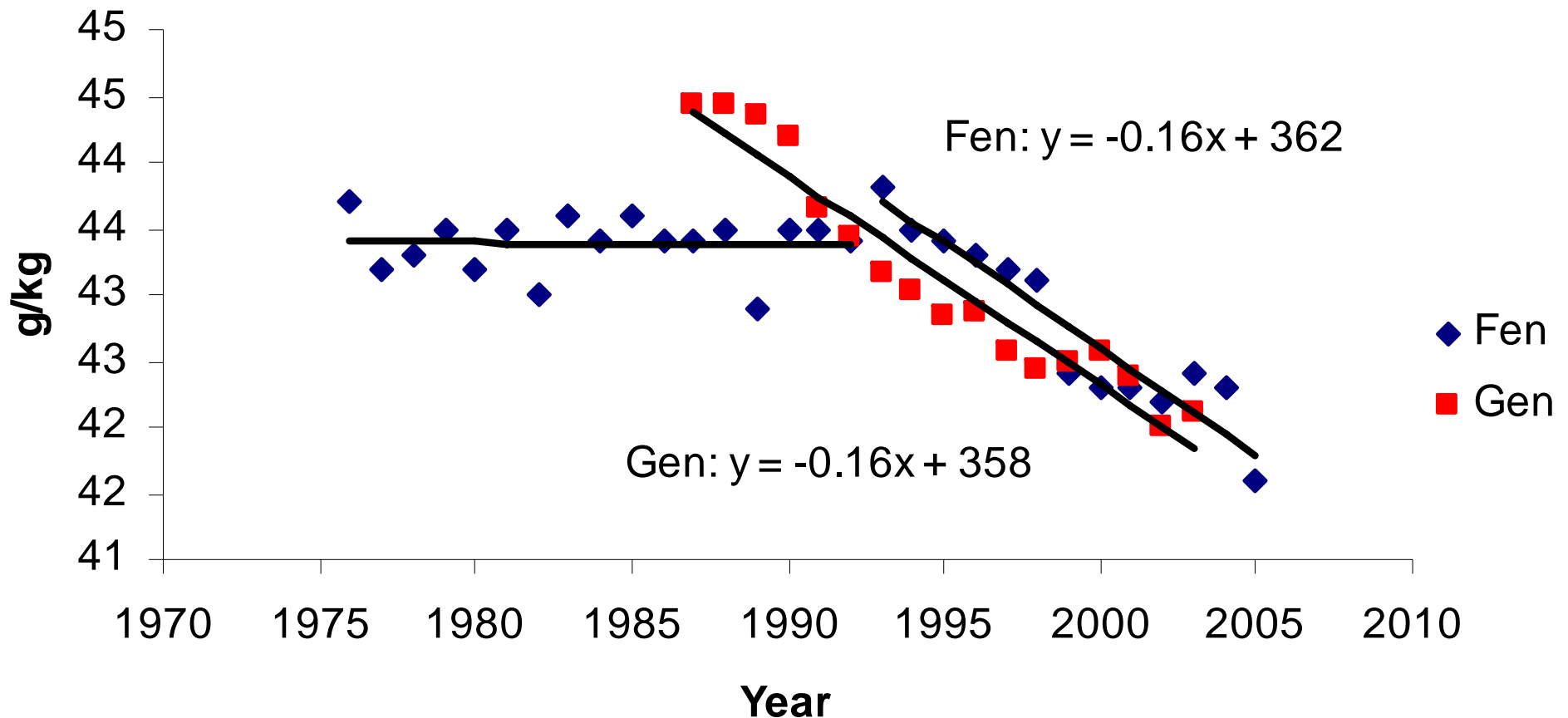
Milk Consumption in Finland in 1970 and 2006 (kg per capita)



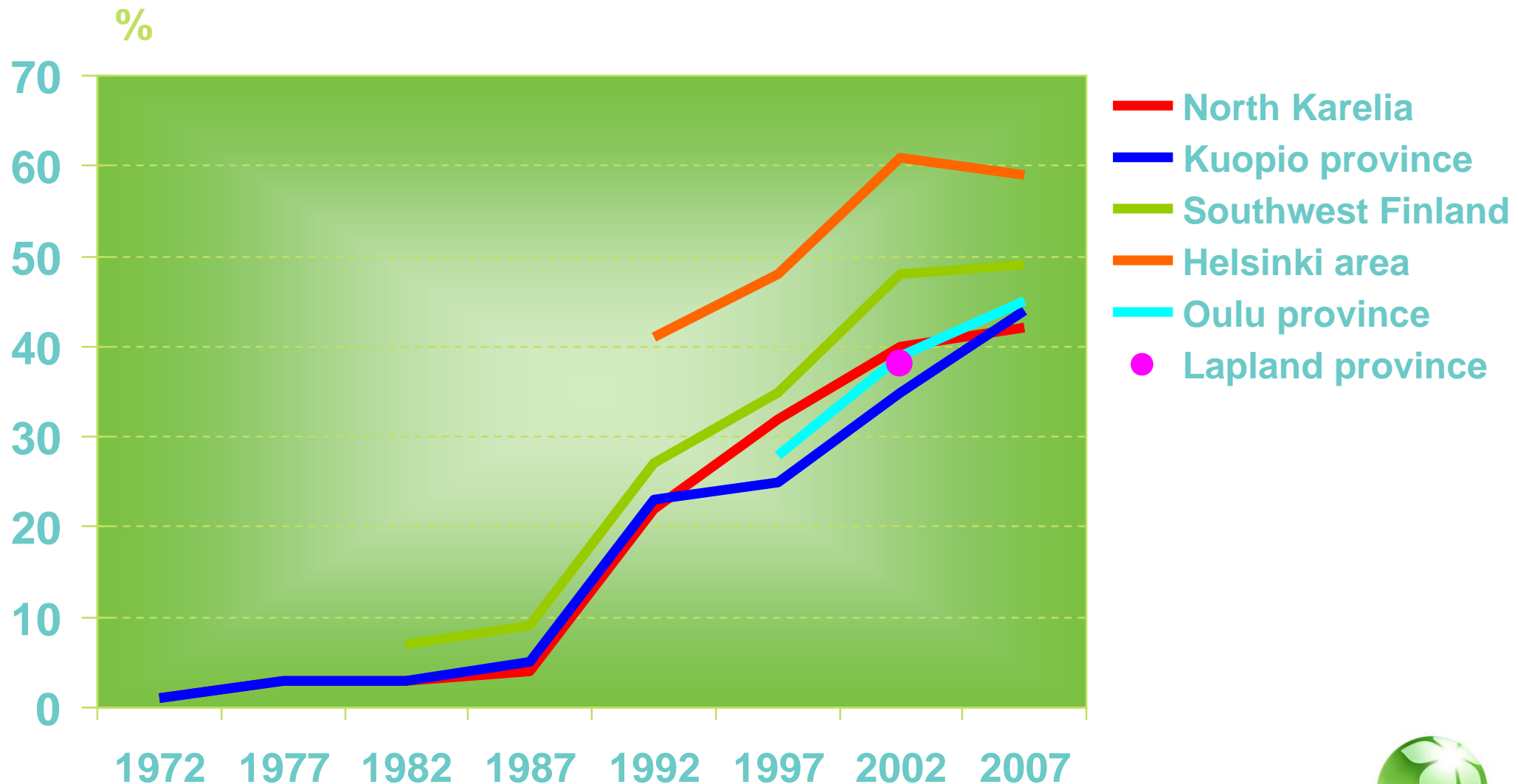
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Change in fat content of Finnish cow milk



Use of Vegetable Oil for Cooking (men age 30–59)



Biscuit Example

- Leading Finnish biscuit manufacturer (LU Finland Ltd) has removed some 80.000 kg of SAFA by changing the fats used
- All trans fats removed
- Major change to rapeceeed oil



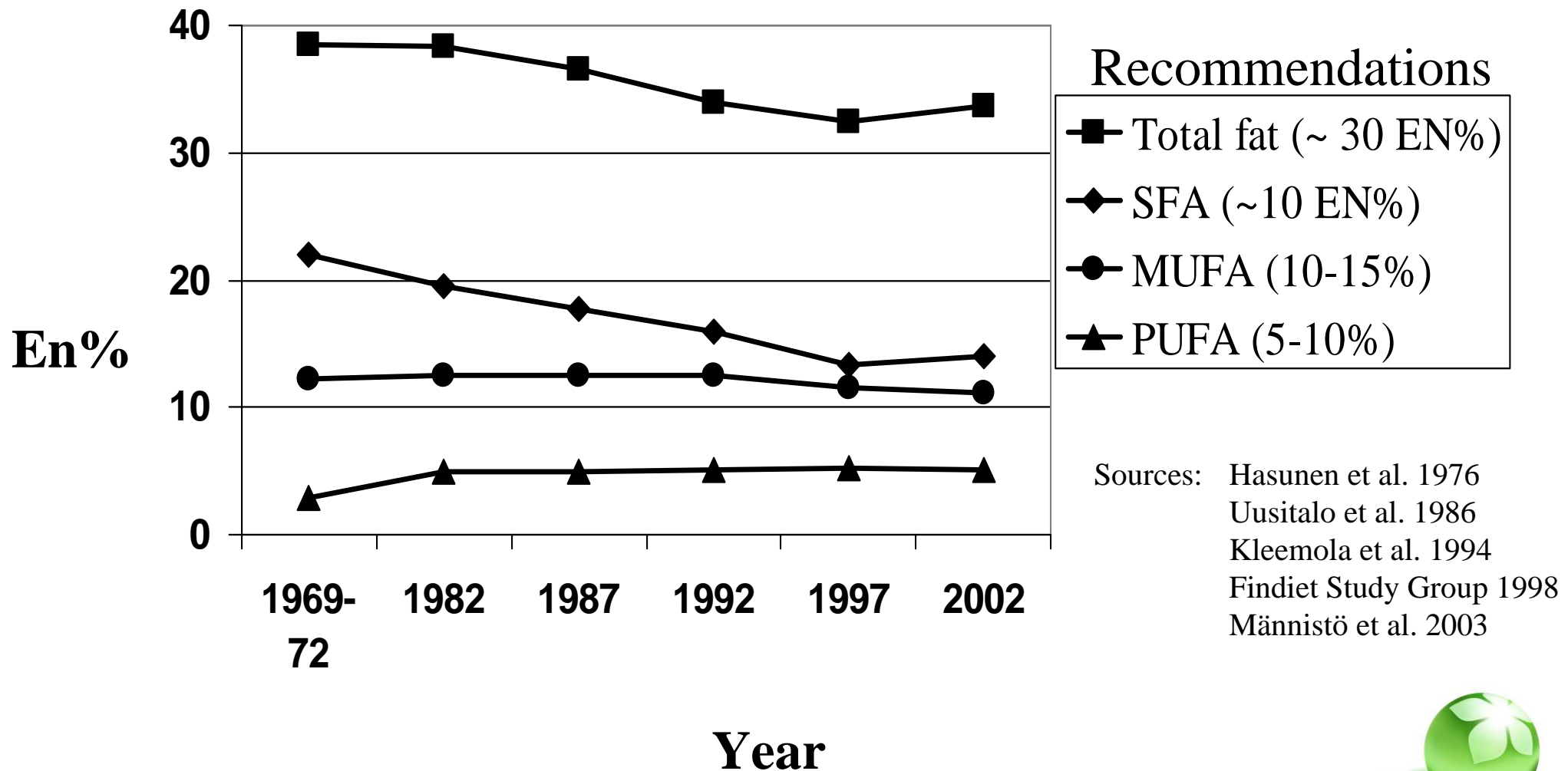
Fruits and Vegetables – Supermarkets



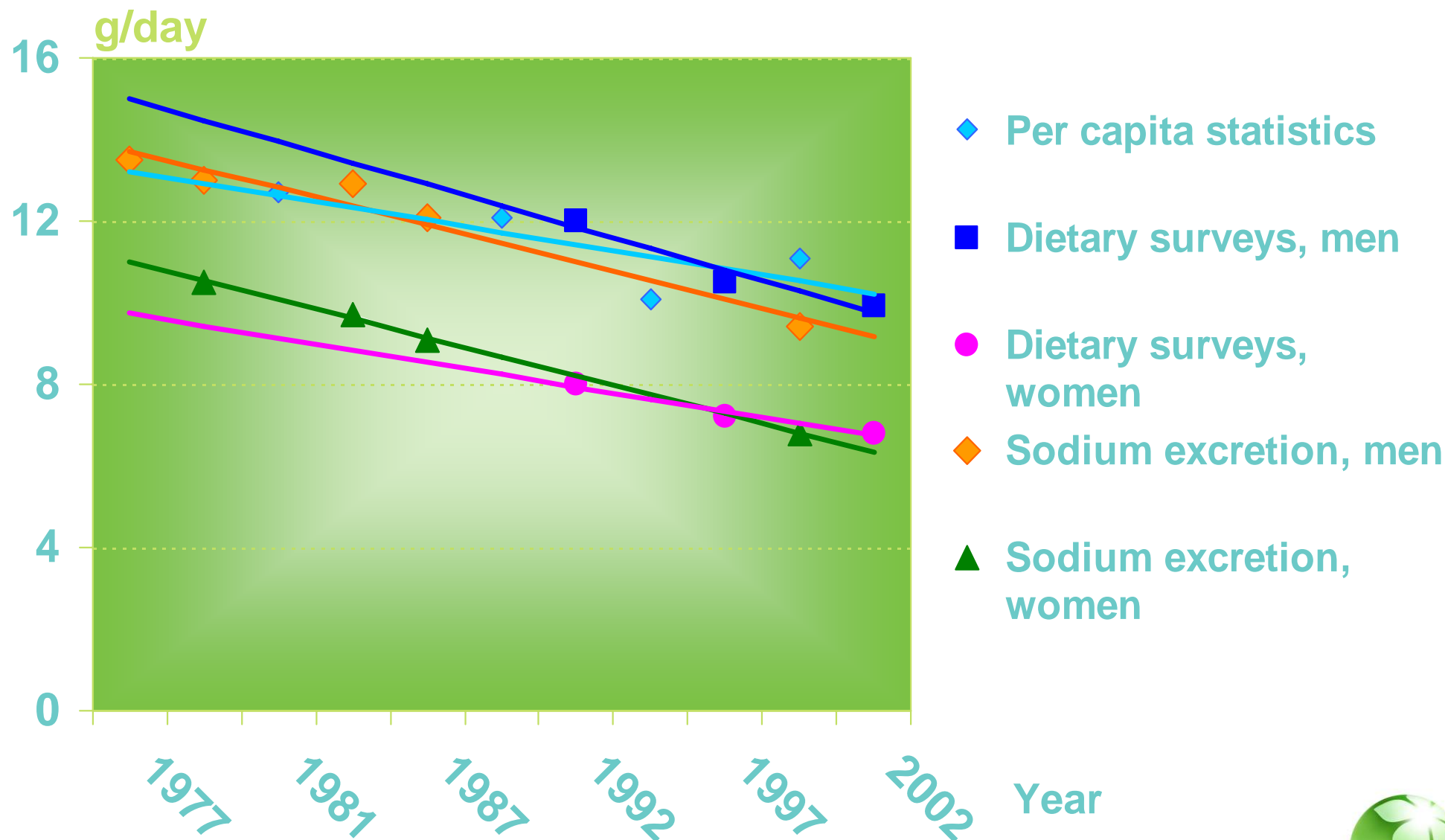
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Fat Intake as Percentage of Energy in Finland



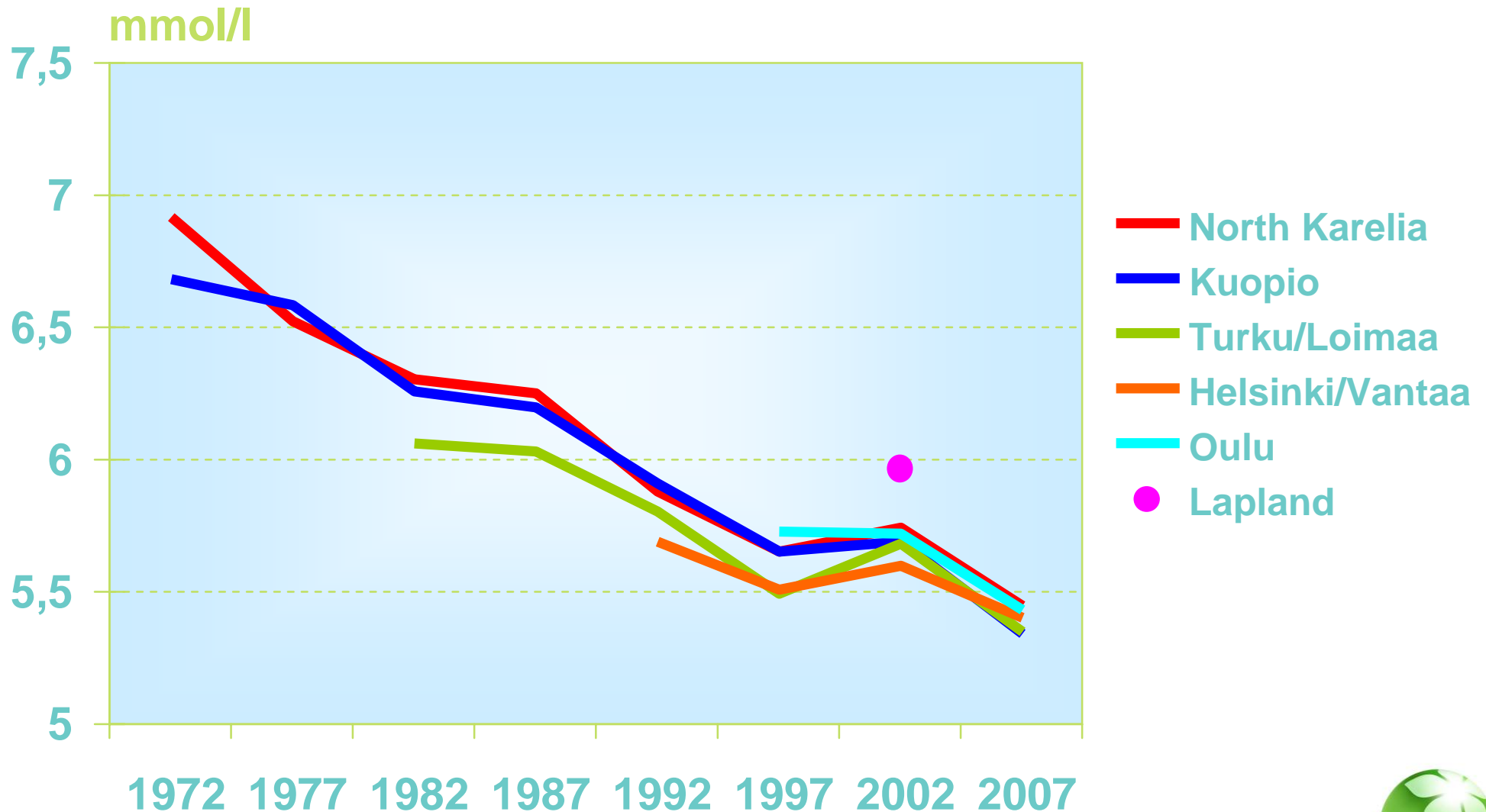
Salt Intake in Finland 1977–2002



The Finnish Heart Symbol



Serum Cholesterol in Men Aged 30–59 Years

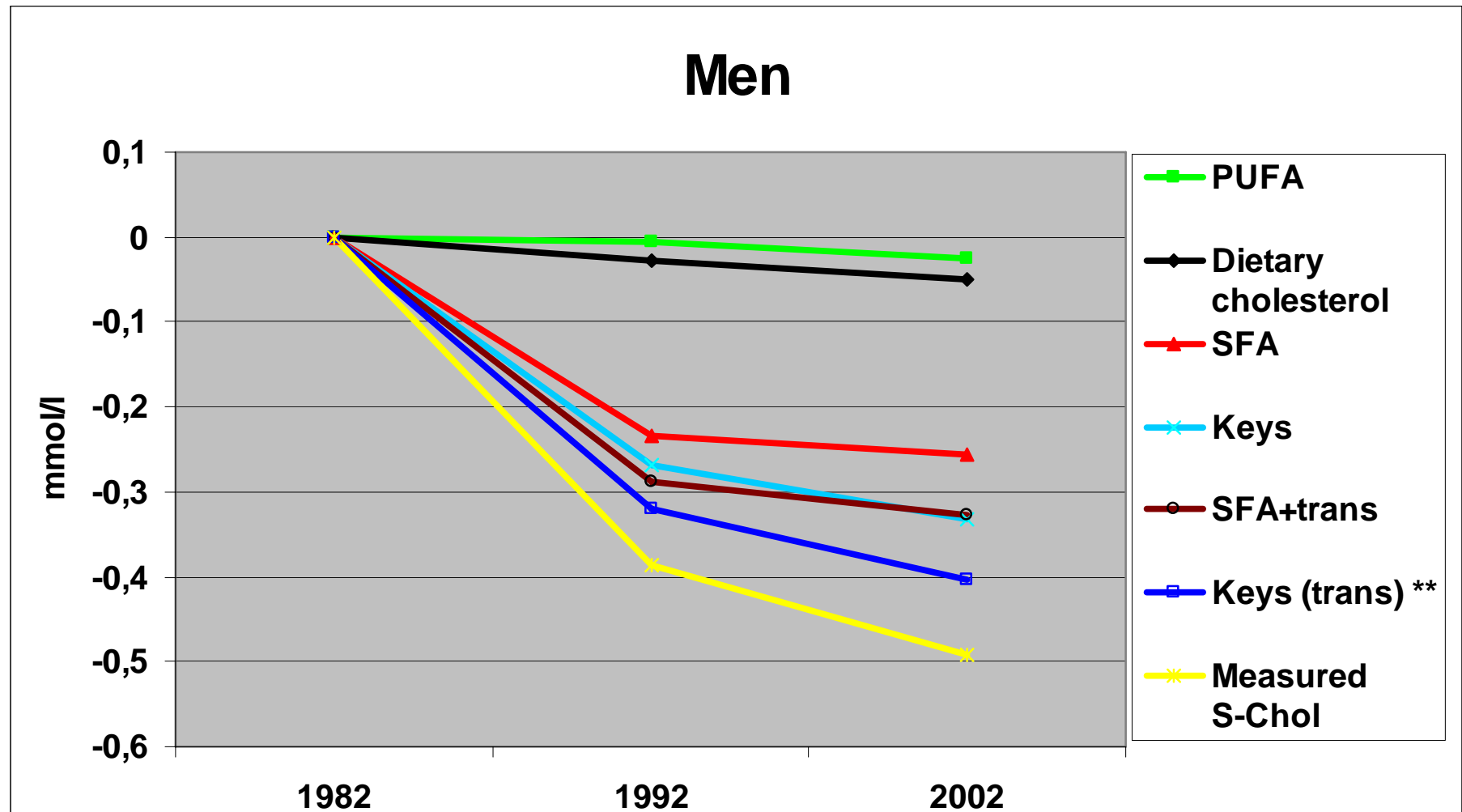


FINRISK Studies 1997 & 2002

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Estimates of S-Chol changes in 1982–2002*



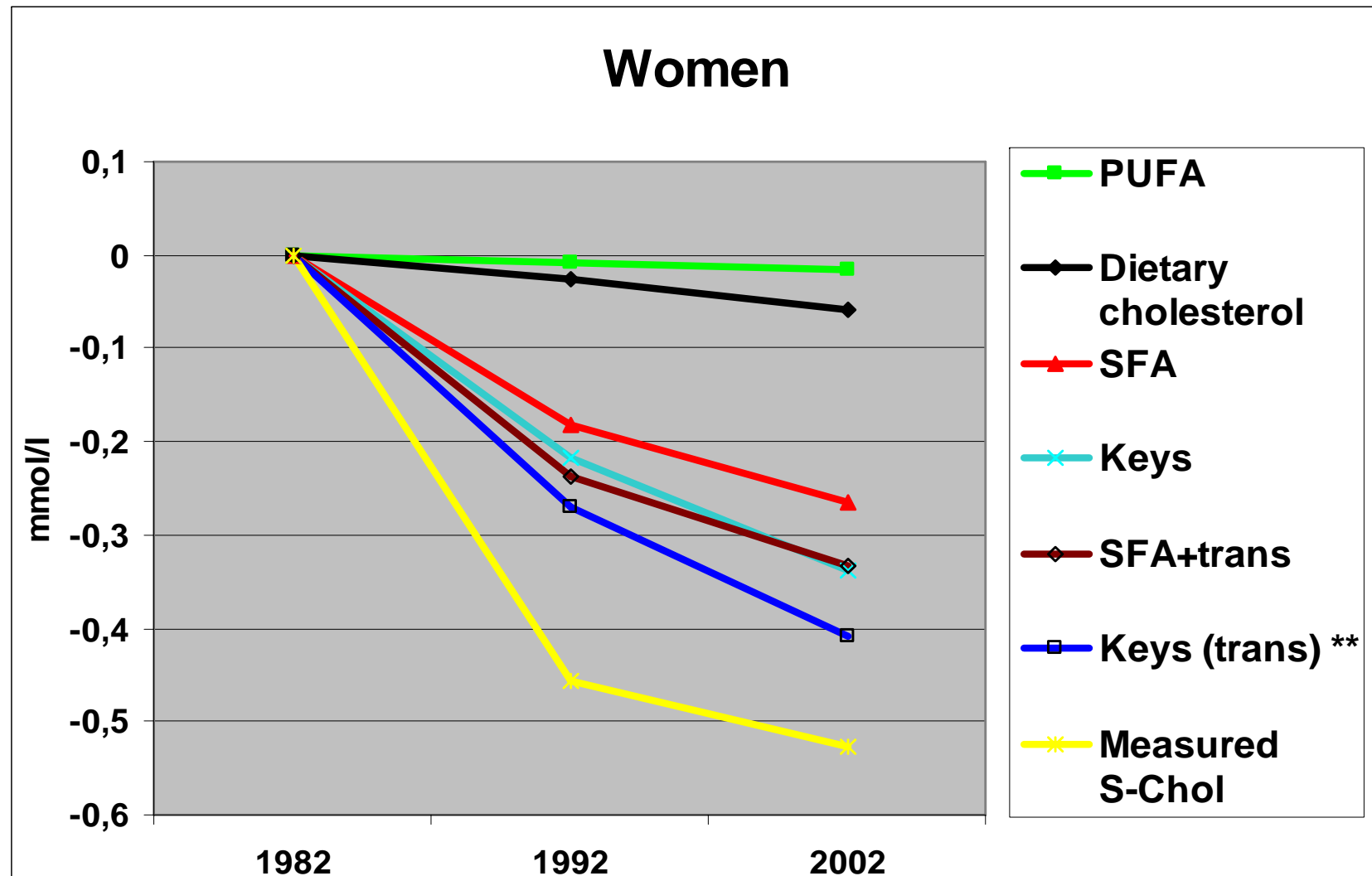
* Based on calculated intakes of dietary fatty acids and cholesterol. Standardized to the 2001 Finnish population. Users of cholesterol lowering medication excluded in -92 and -02.

** Trans fatty acids included as SFA

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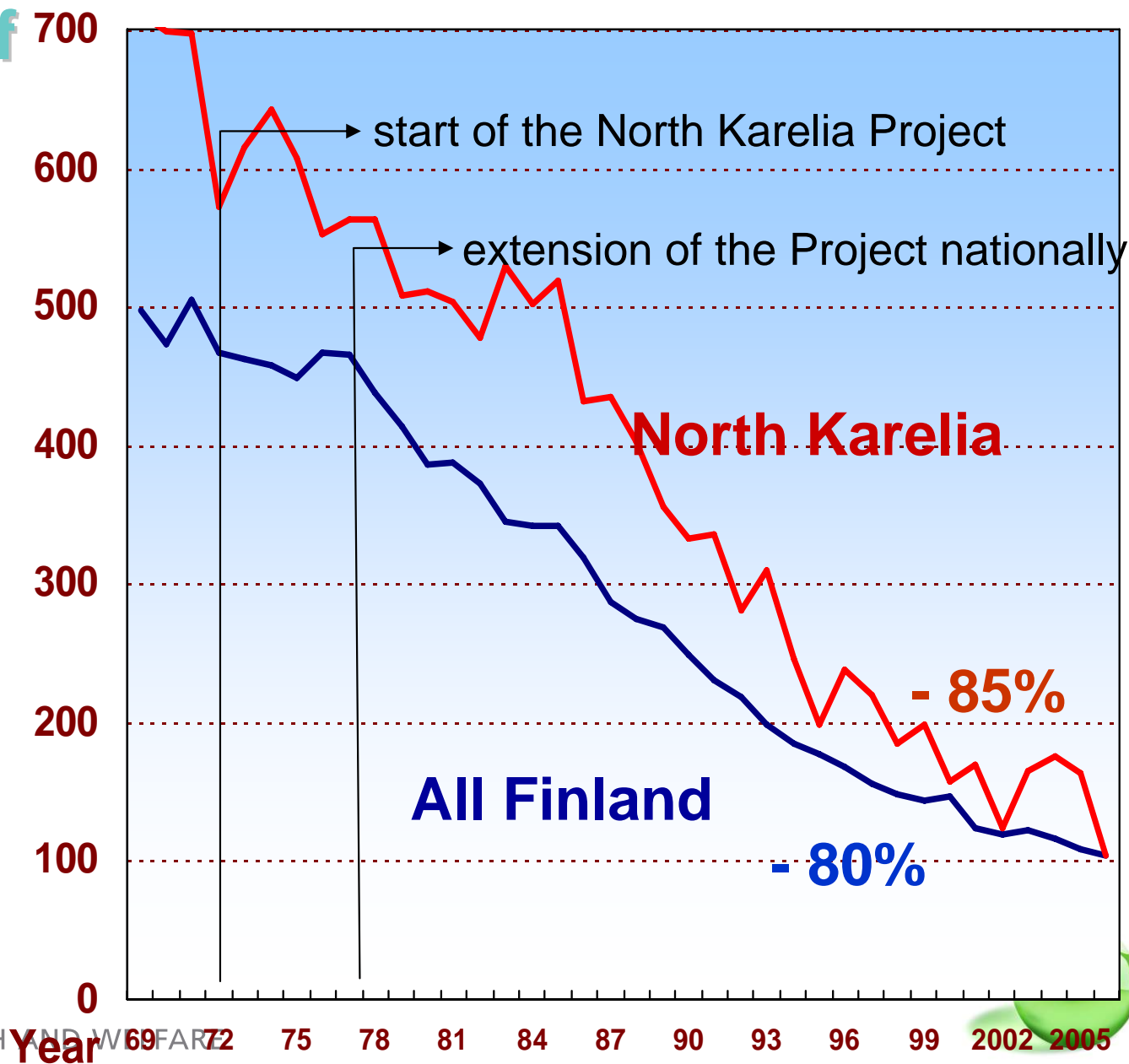
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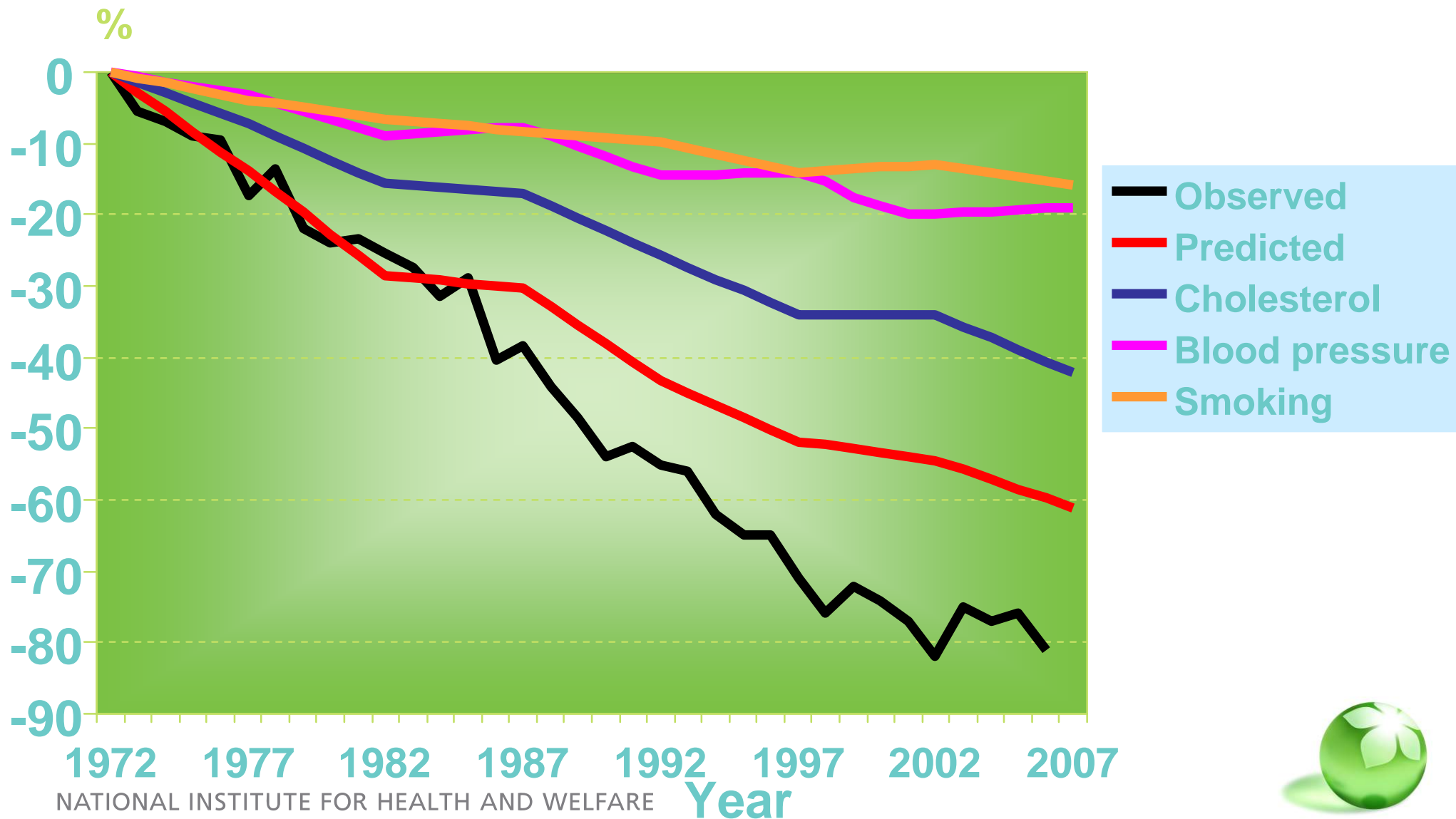
Age-adjusted mortality rates of coronary heart disease in North Karelia and the whole of Finland among males aged 35–64 years from 1969 to 2006.

**Mortality per
100 000
population**

Age-standardized to European
population



Observed and Predicted Declines in Coronary Mortality in Eastern Finland, Men



Mortality Changes in Finland from 1969–71 to 2006 (Men 35–64 Years, Age Adjusted)

	Rate (per 100.000)		Change from 1969–71 to 2006
	1969–71	2006	
All causes	1328	583	- 56%
All cardiovascular	680	172	- 75%
Coronary heart disease	489	103	- 79%
All cancers	262	124	- 53%





Suomi Finland

From Karelia to National Action

Major Elements of Finnish National Action 1.

- **Research & international research collaboration**
- **Health services (especially primary health care)**
- **North Karelia Project, other demonstration programmes**
- **Health Promotion Programmes (coalitions, NGO's, collaboration with media etc.)**
- **Schools, educational institutions**



Major Elements of Finnish National Action 2.

- **Industry, business – collaboration**
- **Policy decisions, intersectoral collaboration, legislation**
- **Monitoring system: health behaviours, risk factors, nutrition, diseases, mortality**
- **International collaboration**



Sound Combination of Population Strategy With High Risk Strategy

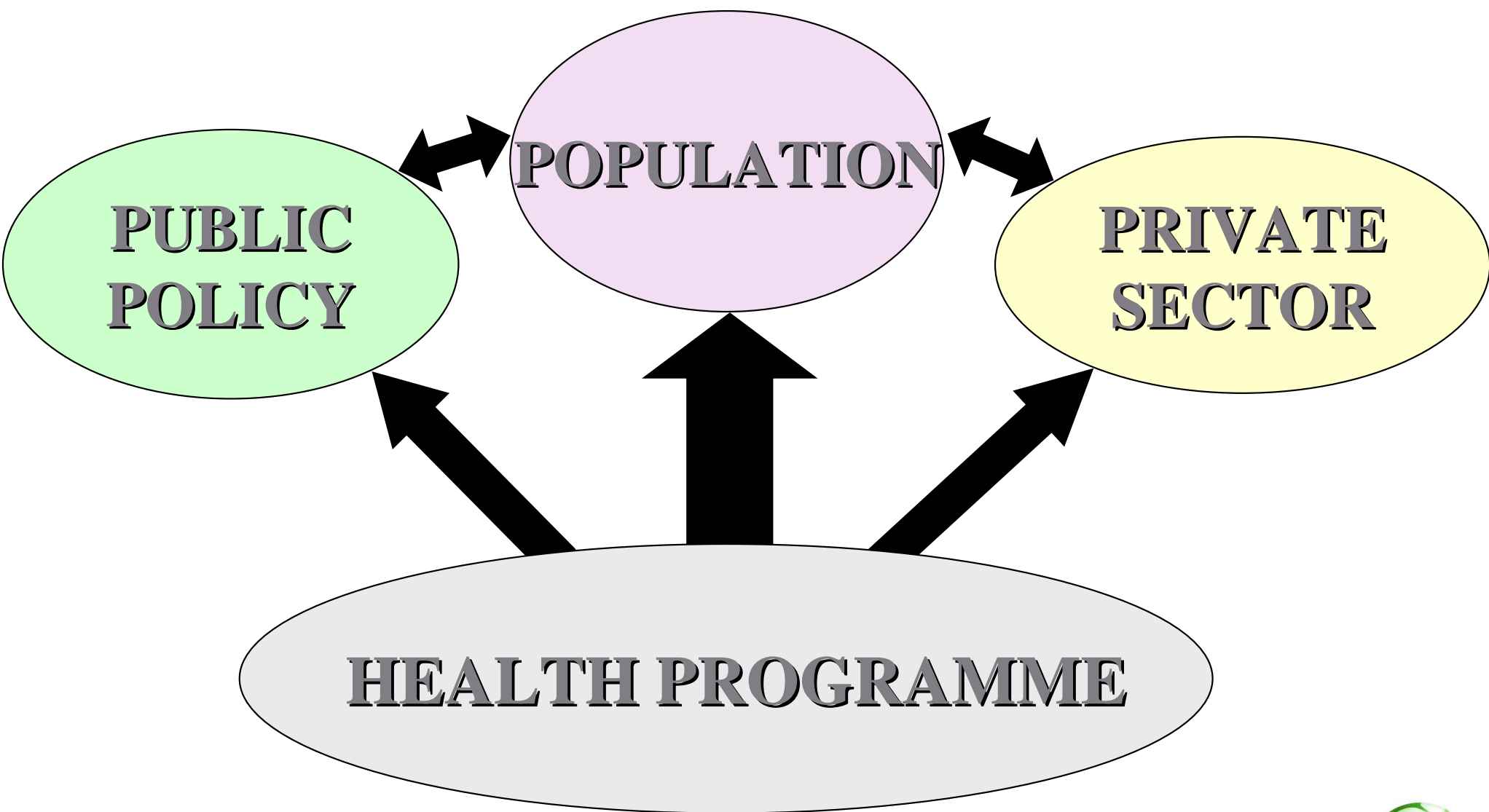
1. *Population strategy:*

- Greatest public health gains
- Cost effective
- Results also in other health benefits

2. *High risk strategy:*

- Great benefits to the persons concerned
- Effective use of health services





CVDs are to a Great Extent Preventable Diseases

- Medical evidence for prevention exists.
- Population-based prevention is the most cost-effective and the only affordable option for major public health improvement in NCD rates.
- Major changes in population rates can take place in a surprisingly short time.



Finland Has Shown



- **Prevention of cardiovascular diseases is possible and pays off**
- **Population based prevention is the most cost effective and sustainable public health approach to CVD control**
- **Prevention calls for simple changes in some lifestyles (individual, family, community, national and global level action)**
- **Influencing diet and especially quality of fat is a key issue**
- **Many results of prevention occur surprisingly quickly (CVD, diabetes) and also at relatively late age**
- **Comprehensive action, broad collaboration with dedicated leadership and strong government policy support**





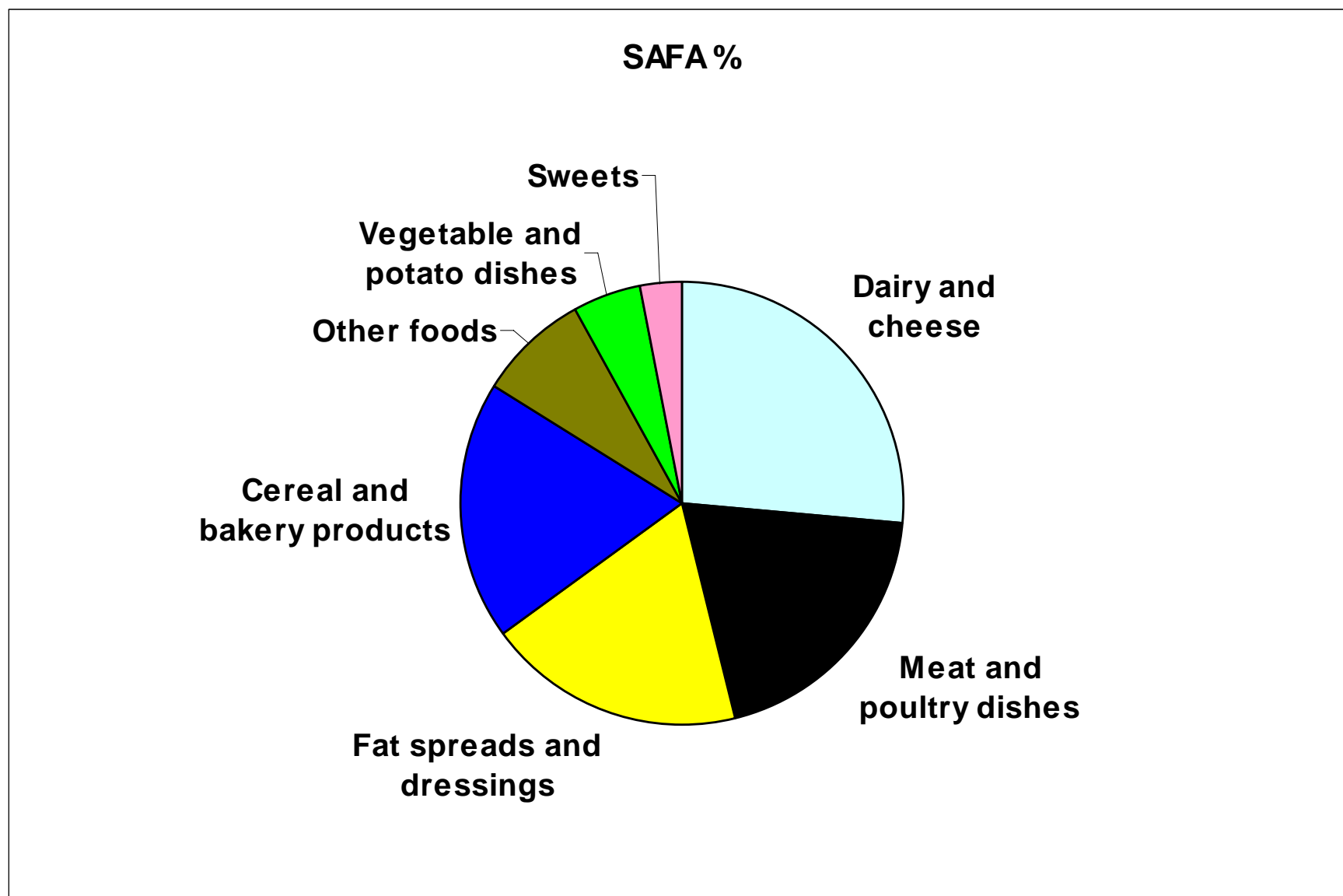
Summi

Finland

THANK YOU



Average contribution to SAFA intake by food groups among Finnish adults, 25-74 years (n = 2 039)



Average contribution to PUFA intake by food groups among Finnish adults, 25-74 years (n = 2 039)

