

WORKING ENVIRONMENT CHALLENGES OF THE FUTURE

**International expert seminar
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NRCWE, Denmark

Sergio Iavicoli

ISPESL (National Institute for Occupational Prevention and Safety), ITALY



The changing workforce



Source: G. Pellizza da Volpedo, *The Fourth State*, 1901

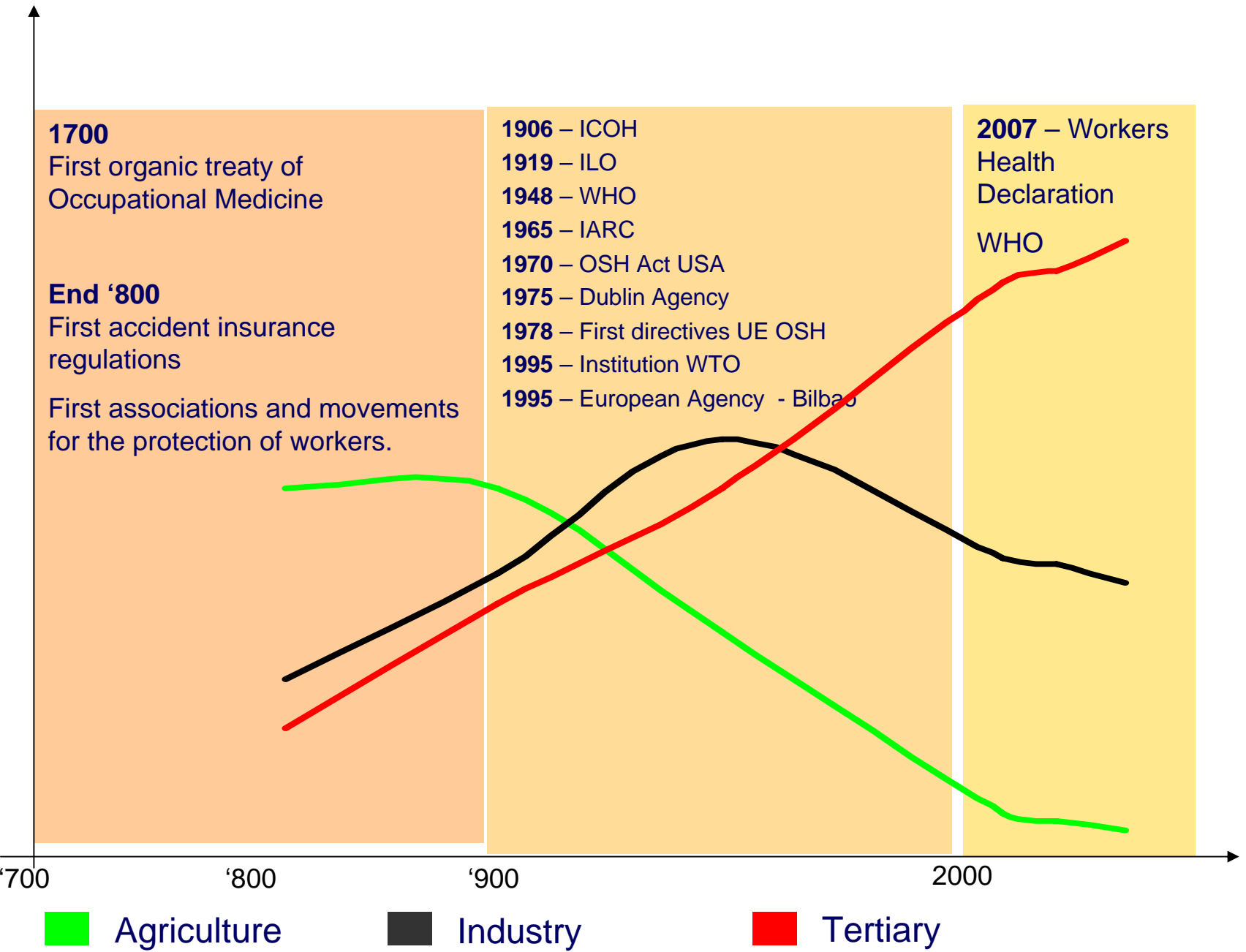
The changing workforce



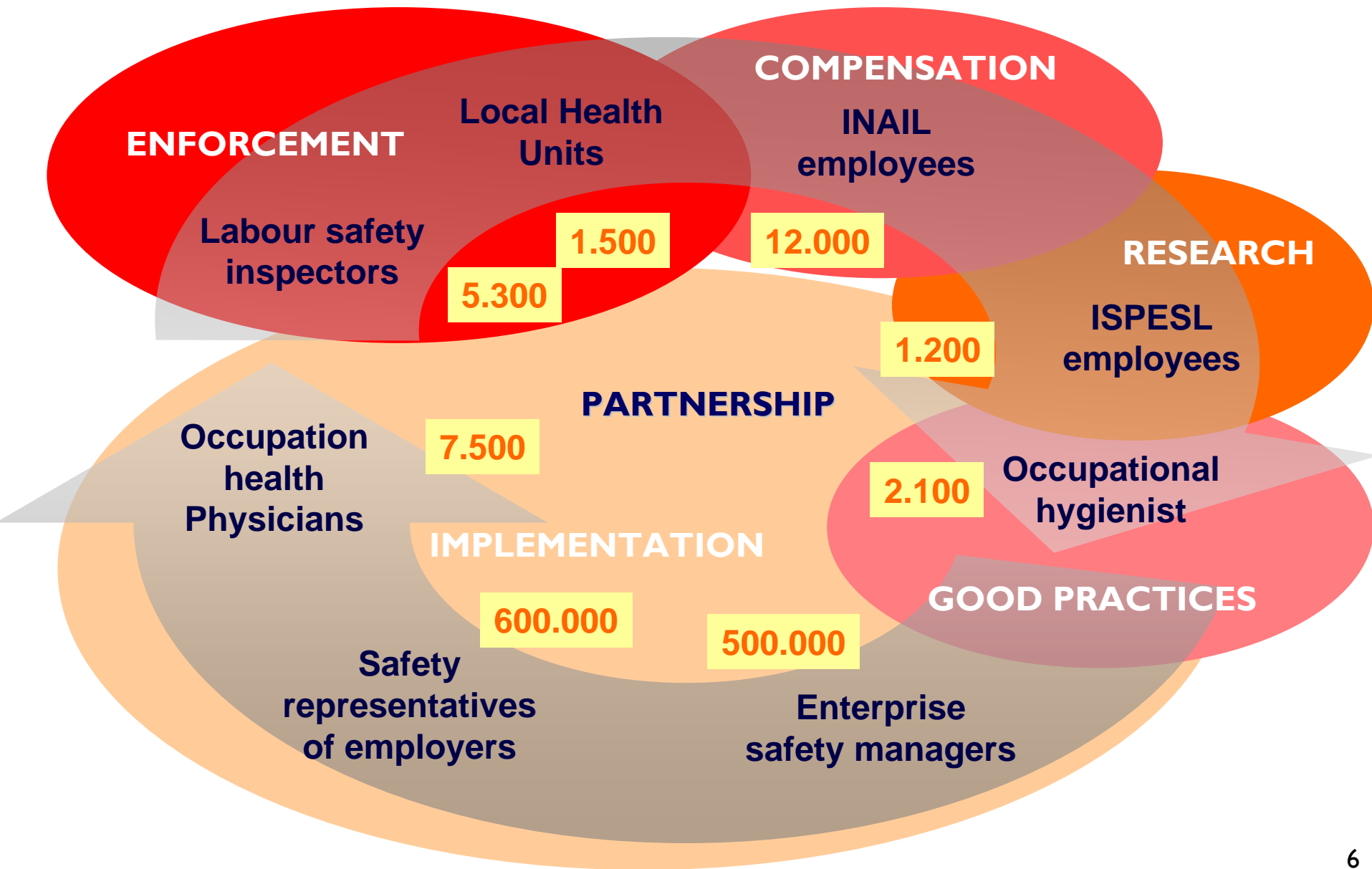
Facts on Safety and Health at Work

- Each year about 2.3 million men and women die from work-related accidents and diseases including close to 360,000 fatal accidents and an estimated 1.95 million fatal workrelated diseases.
- Hazardous substances cause an estimated 651,000 deaths, mostly in the developing world.
- In economic terms, roughly 4% of the annual global GDP, or US\$1.25 trillion, is siphoned off by direct and indirect costs of occupational accidents and diseases such as lost working time, workers' compensation and medical expenses.
- In the year 2000, the costs of occupational accidents in EU15 was 55 billion euro a year.
- It does not cover costs of work-related diseases that cause 1.6 to 2.2 times more days of temporary incapacity than accidents

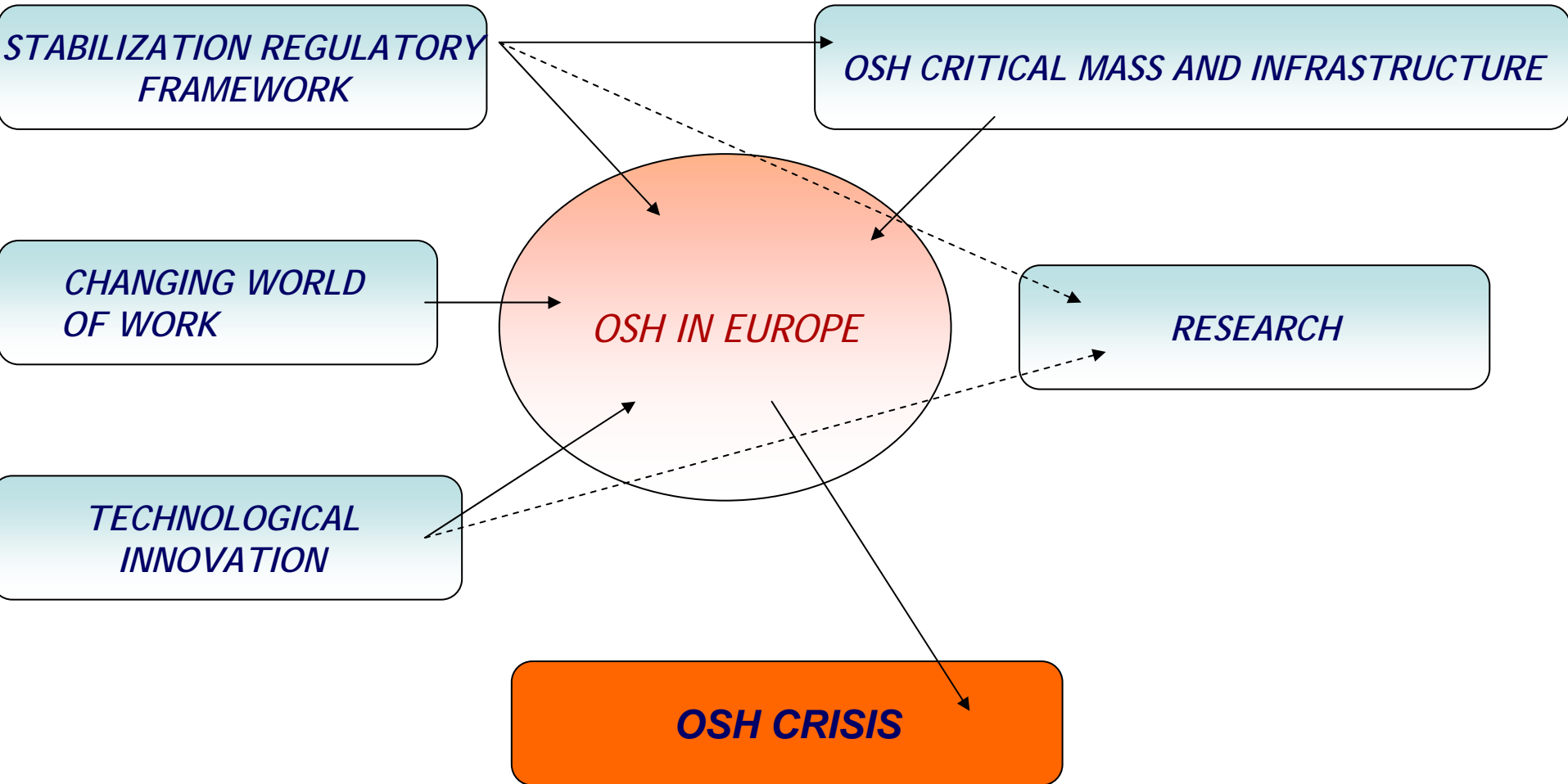
Changing World of Work and Health and Safety Politics



Human Resources in OSH in Italy



OSH in Europe



"Lost In Translation"

**Insufficient turnover
of OSH professionals**

**Limited resources and specific
OSH topics in research fund
(EU Framework Programs)**

**Downsizing
educational
academic programs**

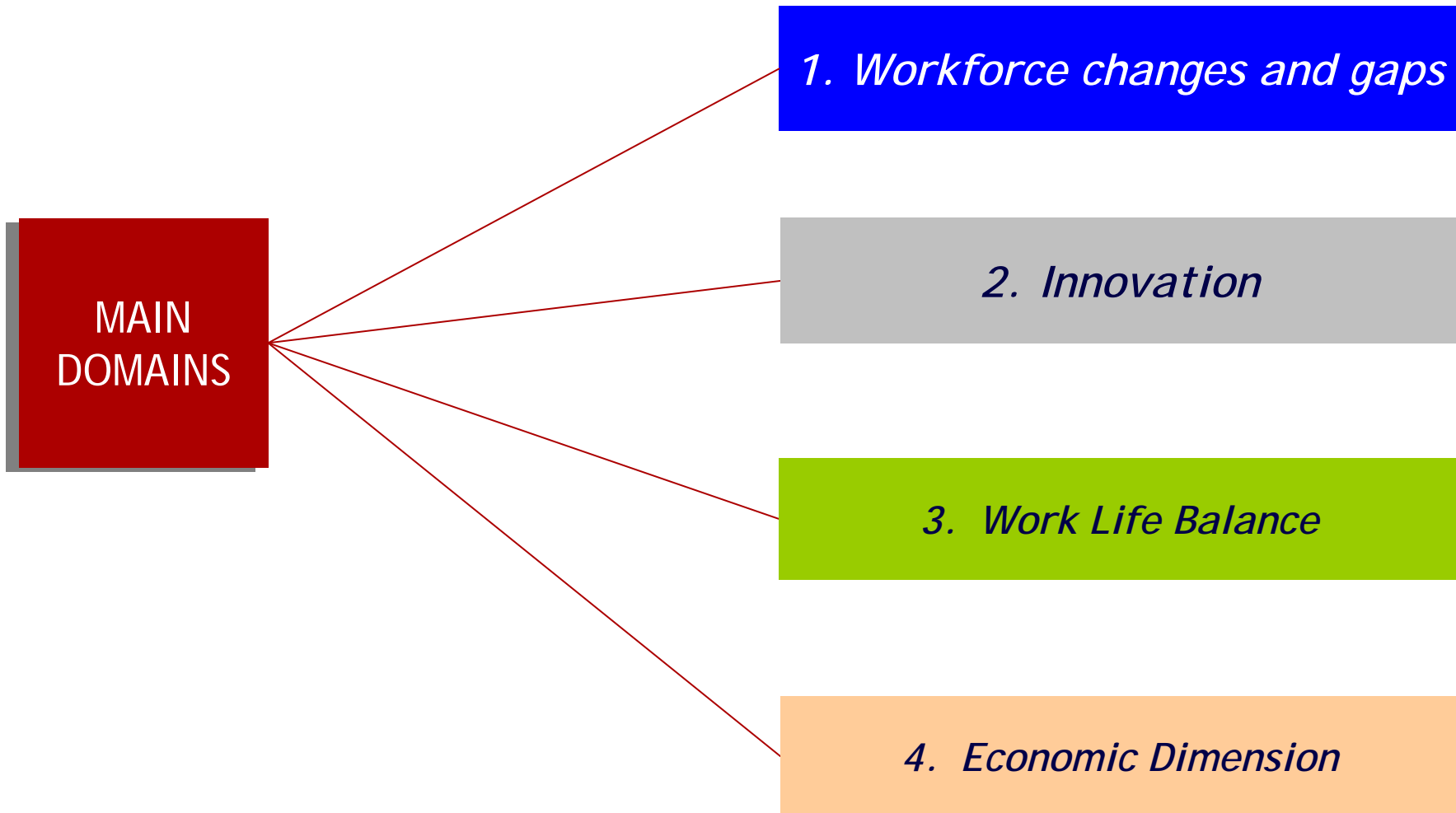
**Limited perception of
changing
research priorities**

**Downsizing of
research
infrastructure**

**Limited access to the
opportunities in innovative
techniques (diagnostic
in occupational medicine)**



Challenges and Opportunities for Planning OSH Research Priorities - MAIN DOMAINS





Workforce

Aging

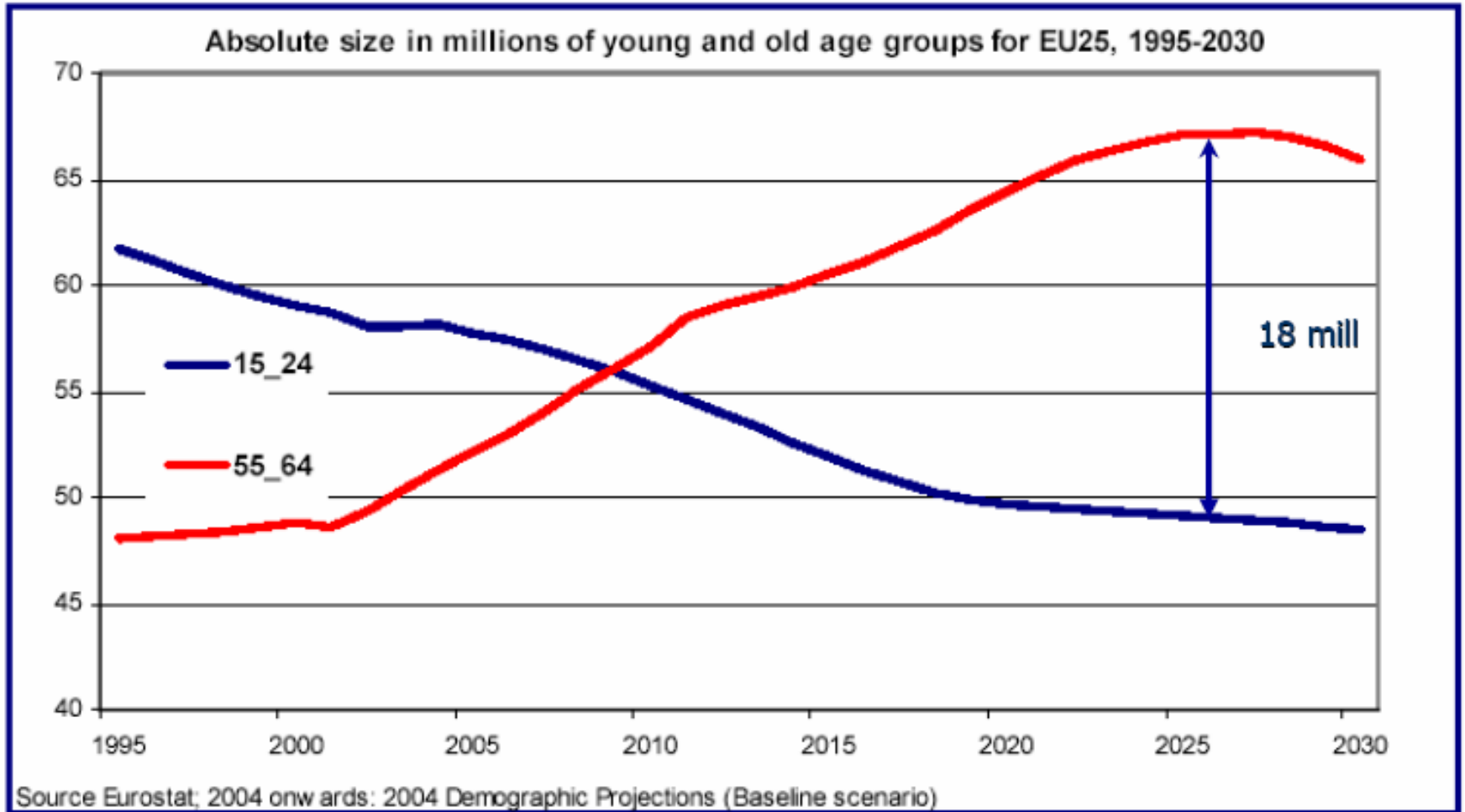
Gender

Working time

Migration

Restructuring

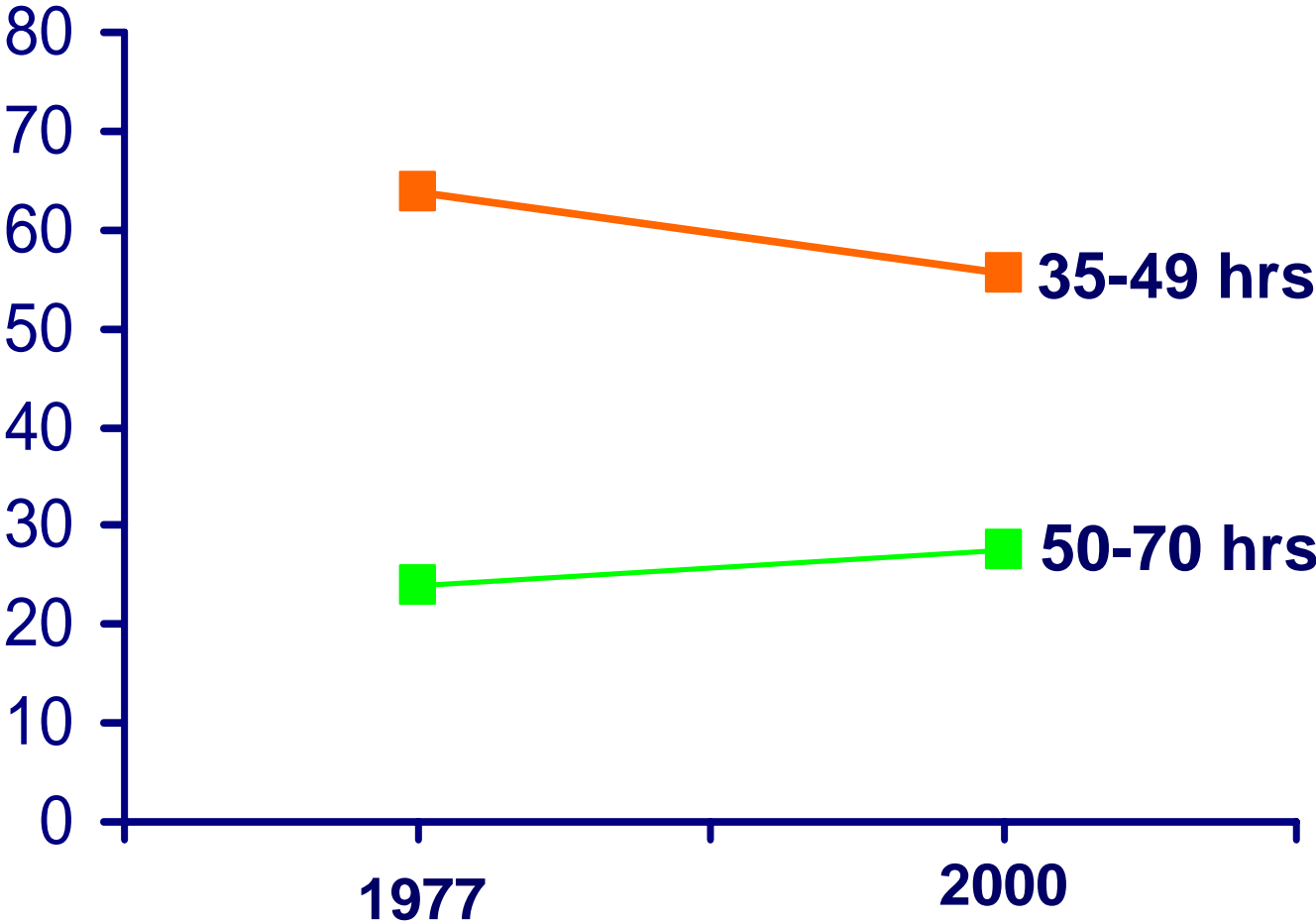
Ageing of workforce in the EU



24 hours Working Society



Hours Worked per Week (% of workforce)

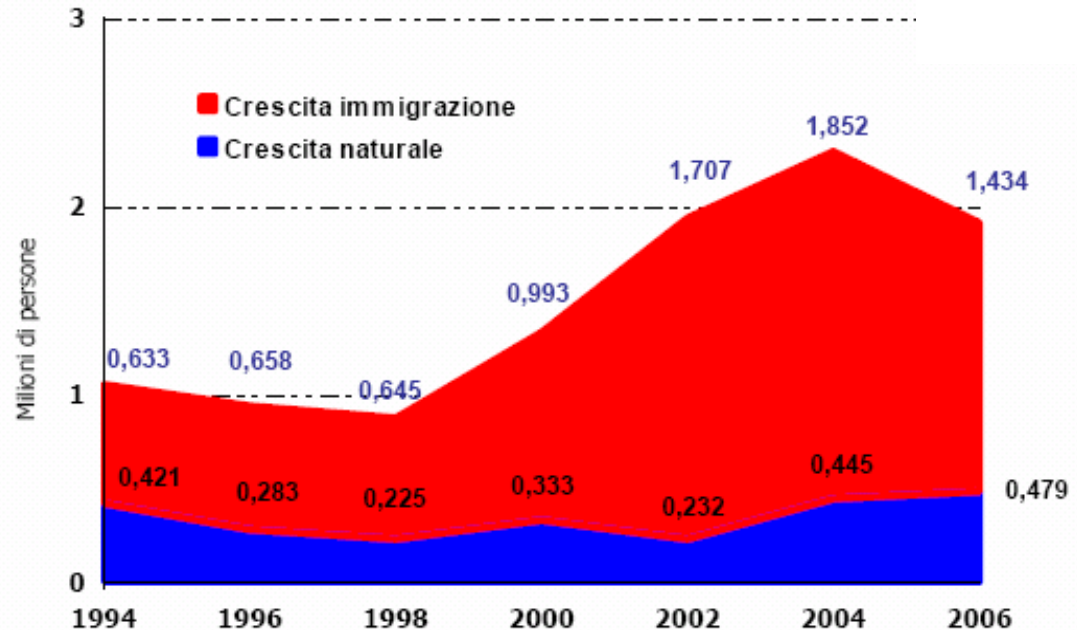


Source: Dept. of Labor Quality of Employment Survey NIOSH Quality of Work Life Survey

Migration



- 192 million people living outside their place of birth, which is about 3% of the world's population.
- 28 million migrants; 5,6 coming from European population (Eurostat, 2007).
- 80% of population's increase in 1994-2006 is due to migration.
- 32% of migrants do not come from European population, 22% from Africa, 16% from Asia, 15% from America.



Fonte: Elaborazione propria a partire da dati dell'EUROSTAT



- **3 million** (ISTAT, 2007)
- **90%** of increase in migrants in the five years 2002-2006.
- **49,6%** from Europe, **22,3%** Africa, **18%** Asia, **9,7%** America, **0,4%** Oceania.

european restructuring monitor *quarterly*

The ERM recorded a total of 721 cases of restructuring between 1/1/2009 – 31/3/2009. These cases involved 219,390 announced job losses and 89,625 announced job gains

Top five cases of announced job reduction (national)

Company	Jobs	Location	Restructuring type	Sector
PKP Cargo	9,000	Poland	Internal restructuring	Land transport
Police nationale	4,800	France	Internal restructuring	Public administration
Metro Group	4,000	Germany	Internal restructuring	Retail
Alitalia	3,650	Italy	Merger/Acquisition	Air transport
Petrom	3,000	Romania	Internal restructuring	Manufacture: non-metallic mineral products

Top five cases of announced job reduction (international)

Company	Jobs	Location	Restructuring type	Sector
General Motors	47,000	World	Internal restructuring	Manufacture: auto
Caterpillar	20,000	World	Internal restructuring	Manufacture: machinery
Nissan	20,000	World	Internal restructuring	Manufacture: auto
Anglo American	19,000	World	Internal restructuring	Mining of metal ores
United Technologies Corp.	18,000	World	Internal restructuring	Manufacture: machinery

Source: ERM, 1 Jan – 31 March 2009

Challenges

The work-ability preservation of workers affected by chronic-degenerative diseases in view of the ageing workforce

Shiftwork involving night work had been classified as a “probable carcinogen” by the IARC

Impact of company restructuring on occupational health

The evaluation of working life overall wellbeing also in a gender perspective



Innovations

Challenges

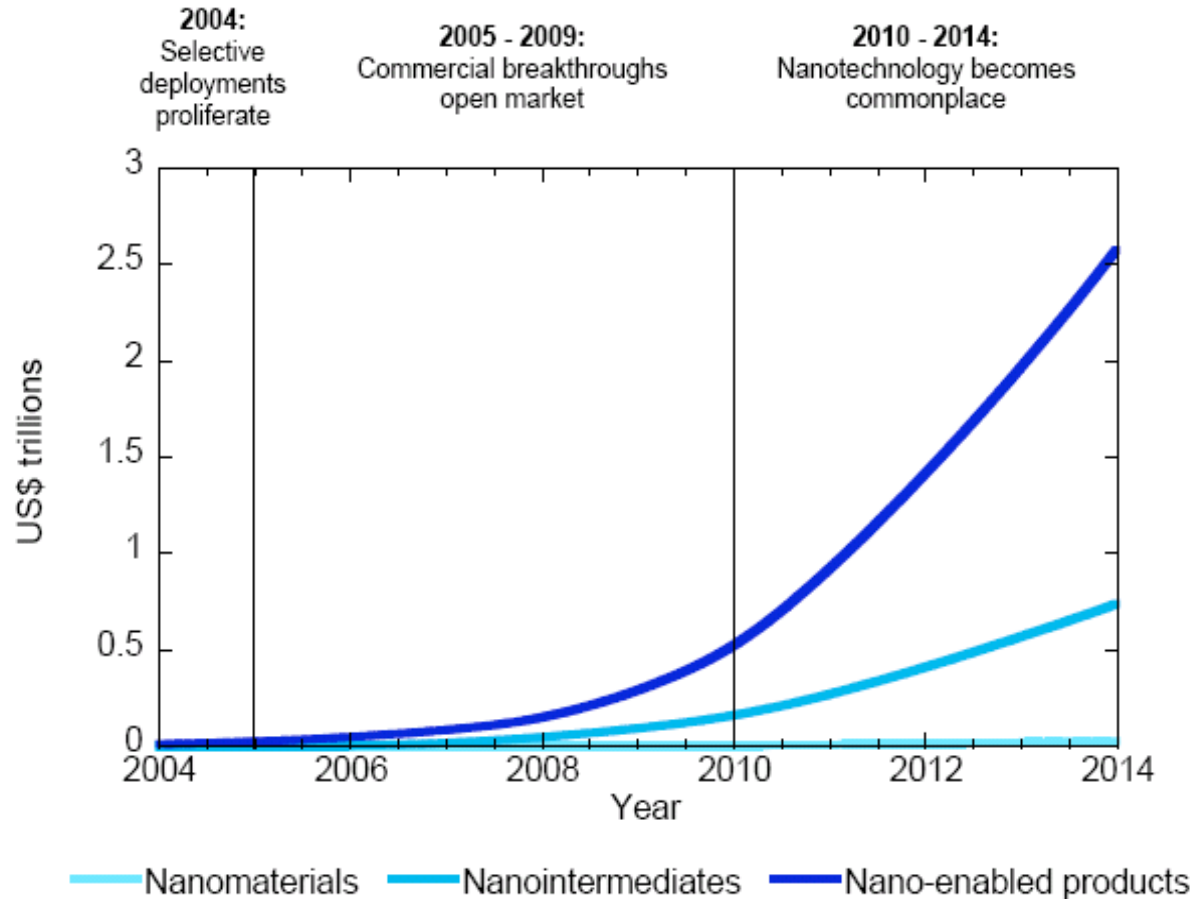
&

Opportunities

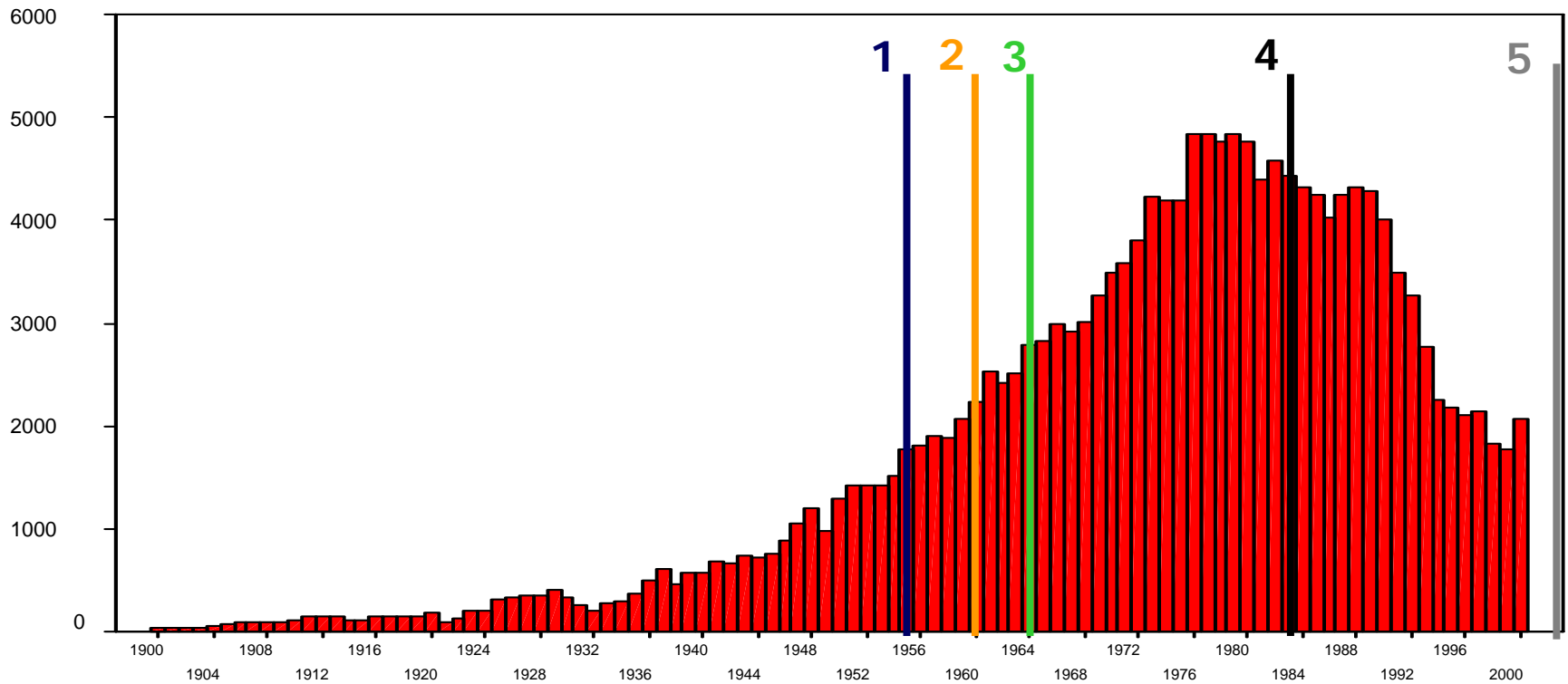
Innovations as Challenges

Nanotechnology

Global forecast of products sold incorporating nanotechnology



Worldwide Production of Asbestos from 1900 to 2000 (*thousands of tons*)



1. **DOLL R. Mortality from lung cancer in asbestos workers. Brit J Ind Med 1955;12:81-86**

2. **WAGNER et al. Diffuse pleural mesothelioma and asbestos exposure in the north western Cape Province. Br J Ind Med 1960;17:260-71**

3. **SELIKOFF IJ et al. Asbestos exposure and neoplasia. JAMA 1964;188:22-26**

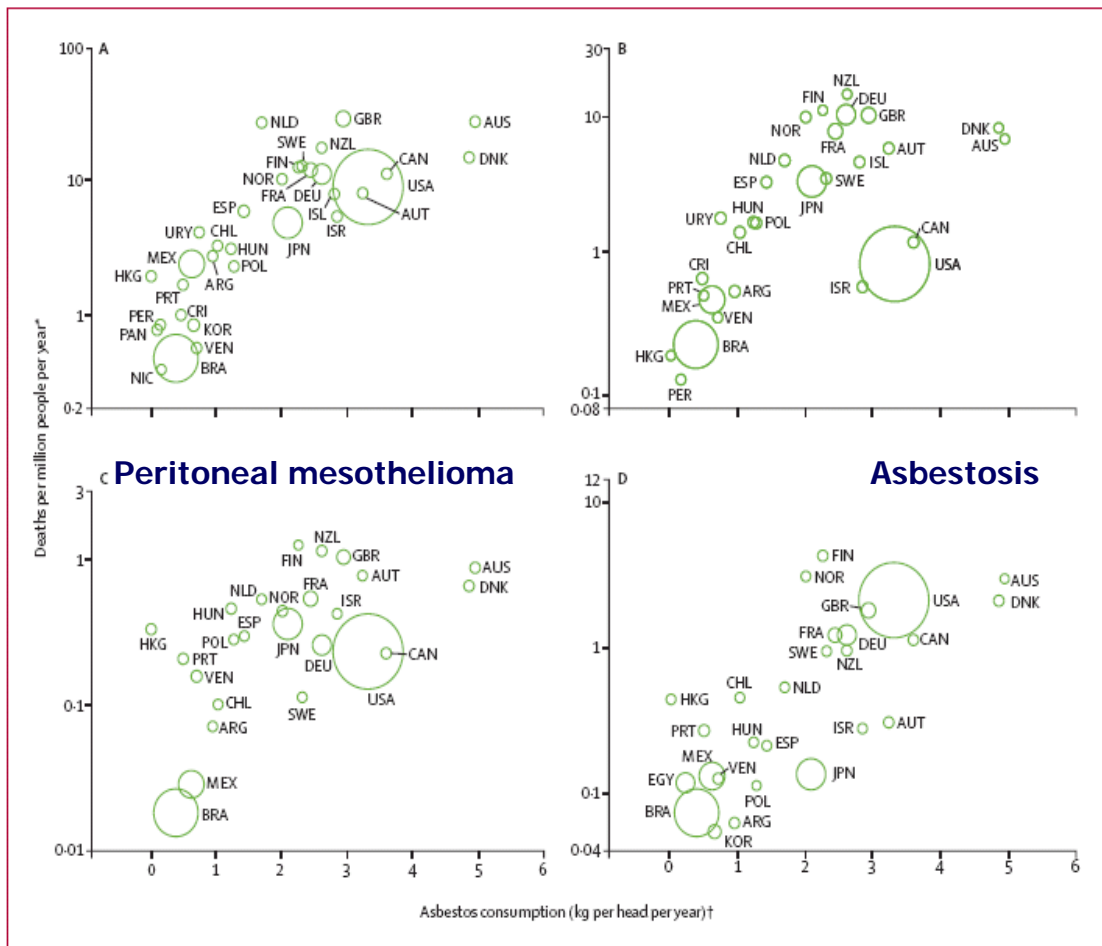
4. **First ban (with exceptions) on all types of asbestos (updated in 1996) in Iceland, 1983**

5. **42 National Asbestos Ban worldwide, 2006**

Asbestos consumption (1960 - 1969) and mortality rates of asbestos-related diseases (2000-2004)

All mesotheliomas

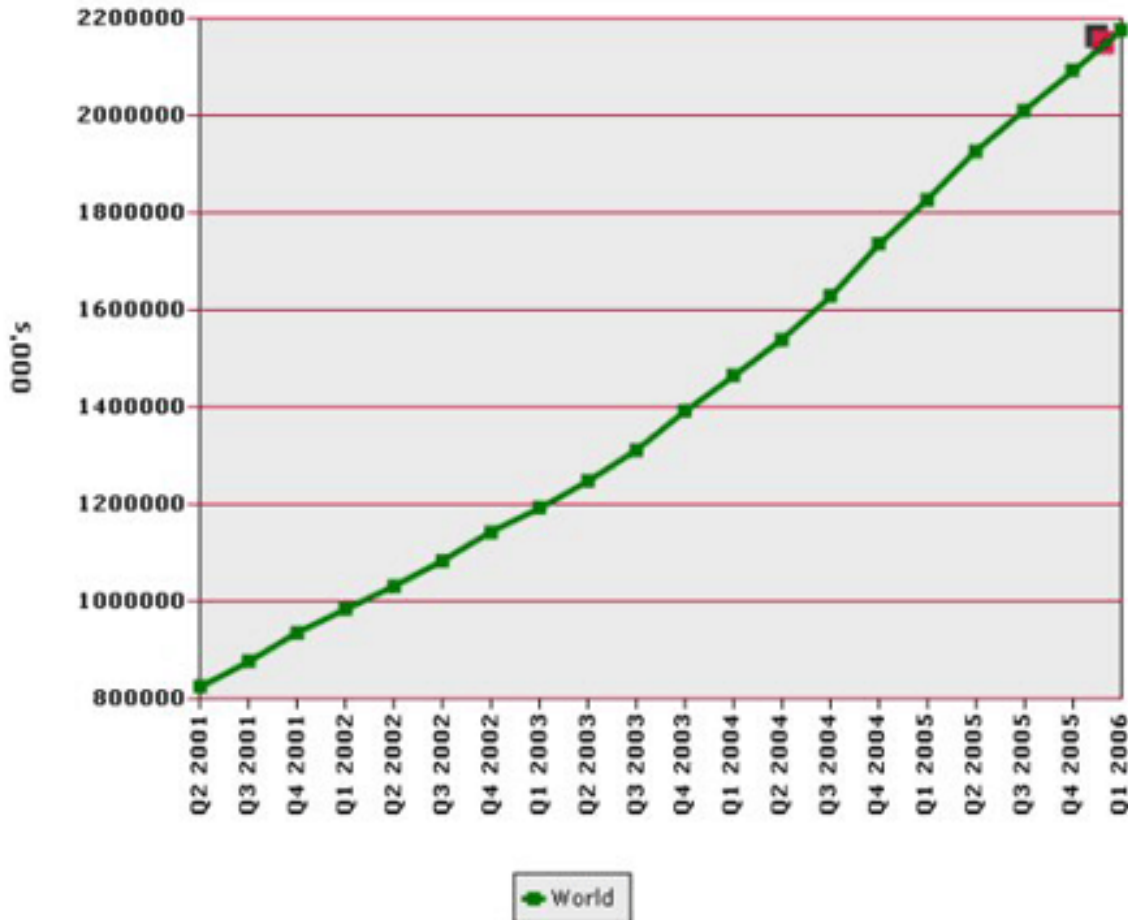
Pleural mesothelioma



Lesson learned from mobile phones



Number of Connections, Total



1999

IARC launched Multicentric Case-Control Study (INTERPHONE) including 13 countries

Innovations as an opportunity

New biological matrices for biomonitoring:

- Exhaled breath condensate
- Induced sputum
- Saliva

New tools:

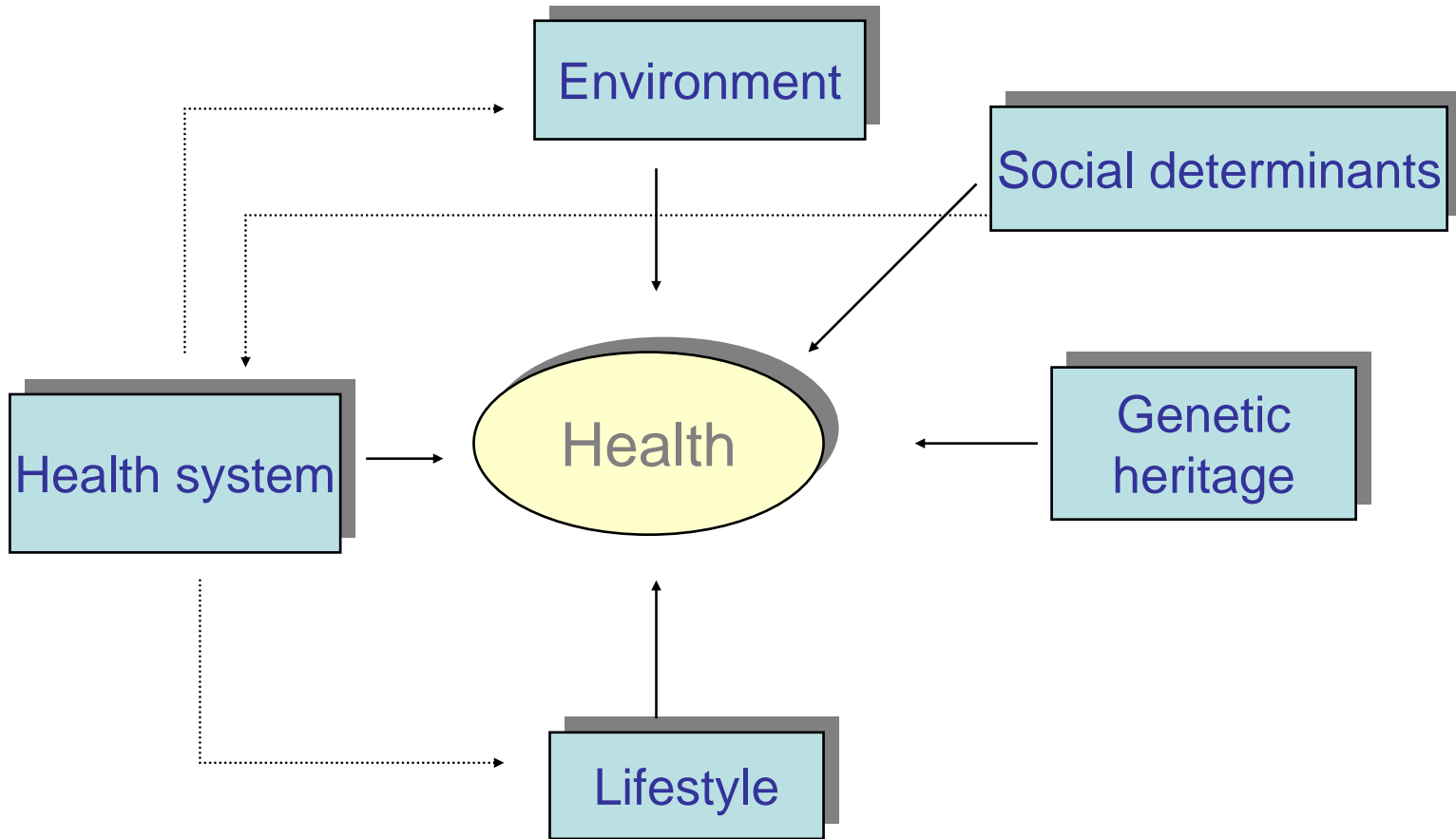
- DNA determination in plasma
- DNA microarrays
- Proteomic analysis of plasma
- Molecular fingerprint of exposure
- Cytogenetic analysis (FISH, micronuclei assay, spectral karyotyping)





**Work life
balance**

Social determinants



Stress at work

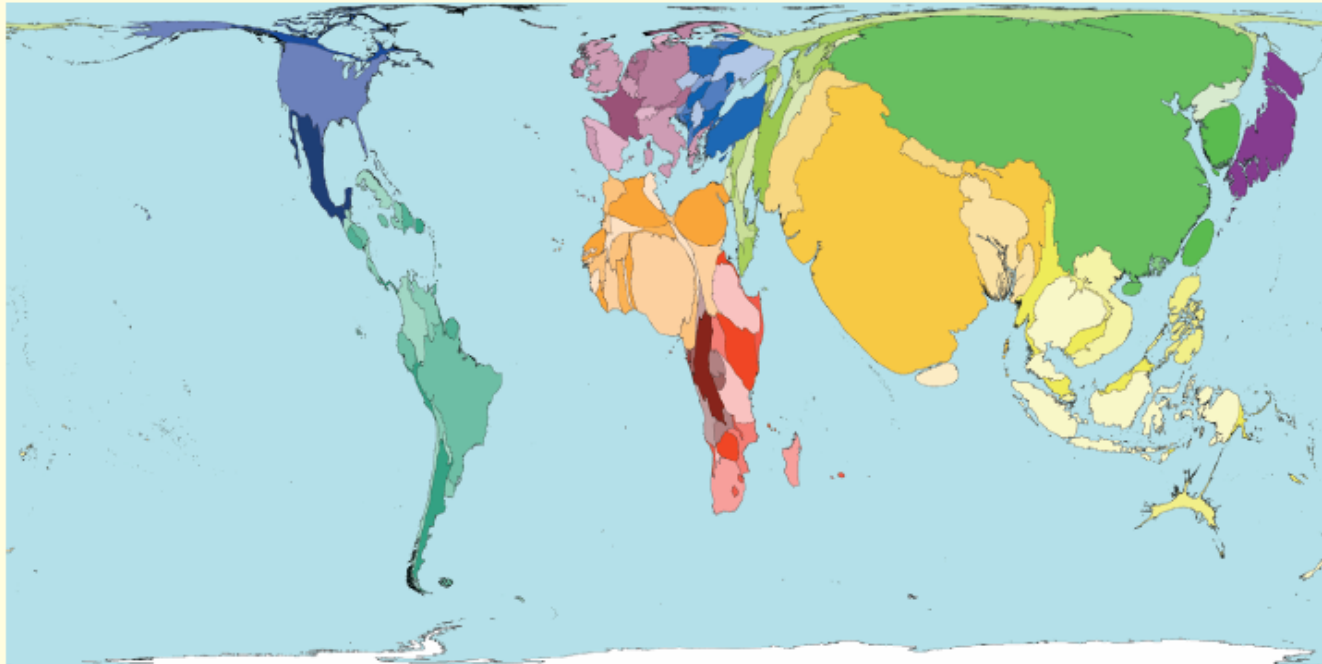
Work Related Stress affects more than 40 million individuals across the European Union...



...costing an estimated €20bn a year in lost time and health bills

It is the second most commonly reported cause of occupational disease and illness by workers

Commuting Time



Commuting time is a measure of how long people spend travelling to work, by whatever means. It could be by foot, bus, car, boat, train, bicycle or other means. The world average commuting time is 40 minutes, one-way. This is the average for people that work.

In Thailand, with the longest commuting times in the world, a total of 37 million hours is spent travelling to work everyday. If this number is doubled the total time commuting each day in Thailand can be calculated. The average working person living in Thailand spends 2 hours everyday travelling to and from work.

The shortest journeys to work are in Malawi, taking just 2 minutes.

Territory size shows the proportion of total time spent travelling to work worldwide that occurs there.



Land area

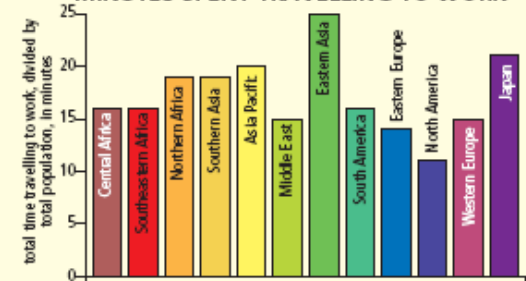
- Technical notes**
- Data are from the World Bank's World Development Indicators, 2005.
 - Commuting time is all the time spent travelling to (but not from) work by any means. Here only travel in one direction is counted. The work force ranges from 21% to 60% of the population.
 - See website for further information.

LONGEST AND SHORTEST COMMUTES

Rank	Territory	Value	Rank	Territory	Value
1	Thailand	35.5	191	Libyan Arab Jamahiriya	6.9
2	Kenya	26.8	192	Panama	6.3
3	Algeria	26.5	193	Oman	6.1
4	Central African Republic	26.2	194	Nicaragua	5.8
5	China	24.7	195	Bosnia Herzegovina	5.7
6	Taiwan	24.6	196	Guatemala	5.3
7	DPR Korea	24.6	197	Kuwait	4.1
8	Cuba	24.4	198	Peru	3.8
9	Liberia	23.2	199	Lebanon	3.8
10	Gambia	22.7	200	Malawi	2.2

average number of minutes spent travelling to work each day divided by total population*

MINUTES SPENT TRAVELLING TO WORK



“Currently, the average travel speed in central Bangkok during peak hours is just 7 mph for this lively city of 7.5 million.”

Bridges Magazine, 2005



Economic dimension

Absenteeism & Presenteeism



Absenteeism is the term generally used to refer to unscheduled employee absences from the workplace. If such absences become excessive, they can have a seriously adverse impact on a business's operations and its profitability. There are some **hidden cost factors** associated with absenteeism:

- Lost productivity of the absent employee;
- Overtime for other employees to fill in;
- Decreased overall productivity of those employees;
- Any temporary help costs incurred;
- Possible loss of business or dissatisfied customers;
- Problems with employee morale.



In contrast to absenteeism, **presenteeism discusses the problems faced when employees come to work in spite of illness, which can have similar negative repercussions on business performance.**

Presenteeism can have catastrophic effects on a company's output:

- hidden long-term costs;
- wider social problems beyond the enterprise.
- an employee who arrives at work despite illness may only operate at a fraction of his normal capacity despite requiring the same expenditure in wages, social contributions and taxes as an employee operating at 100%;
- they may also be more prone to mistakes;
- they may transmit the illness to fellow employees, causing a larger fallout in work efficiency. 9

Conclusions

CULTURE OF PREVENTION

FORECAST

INNOVATION

**COMMUNICATING TO
STAKEHOLDERS AND
DELIVERY TO
SOCIETY**

RAMAZZINI APPROACH