Department of Occupational Medicine, formerly ISPESL

The White Book on occupational exposure to engineered nanomaterials and the stakeholders engagement: from research to policy approach

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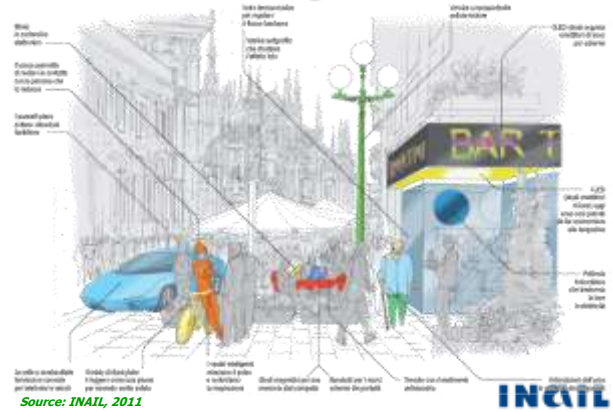
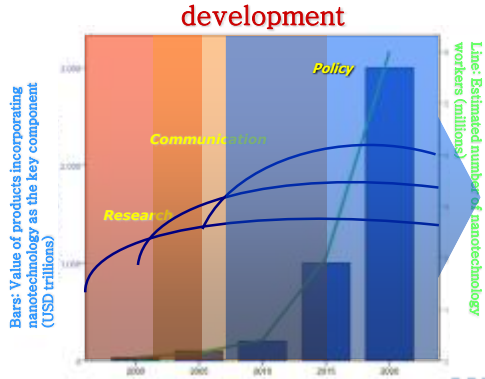
Nanotechnologies in our life



Source: INAIL, 2011

Forecast of Nanotechnologies development

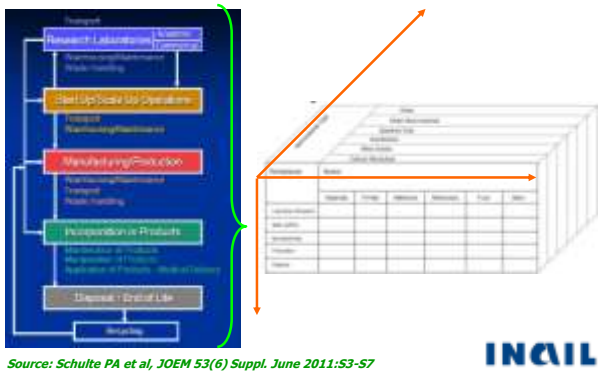


Source: modified from Roco MC, 2011

Potential impact at the workplace

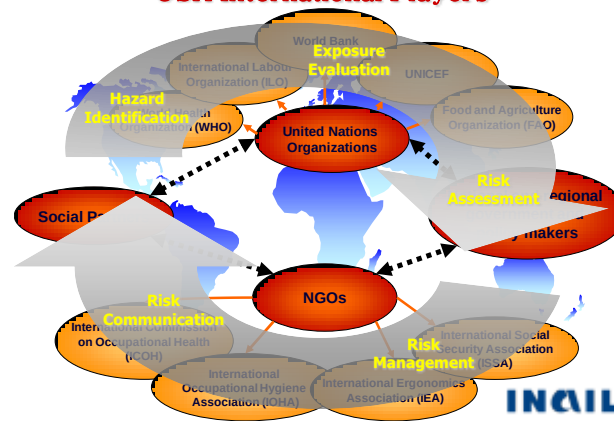
- *In 2014, 10 million manufacturing jobs worldwide – 11% of total manufacturing jobs – will involve building products that incorporate emerging nanotechnology (Lux Research, 2004)*
- *By 2015, the global market for nanotechnology related products is predicted to employ 1 million workers in the United States alone (NIOSH, 2007)*
- *It is expected that by 2020 approximately 20% of all goods manufactured around the world will be based to some extent on the use of nanotechnology (ILO, 2010)*
- *The number of researchers and workers involved in one domain or another of nanotechnology was estimated at about 400,000 in 2008 worldwide, with average annual growth rate of approximately 25% (Roco MC, 2011)*

Life cycle of nanomaterials and exposure assessment at the workplaces



Source: Schulte PA et al, JOEM 53(6) Suppl. June 2011:S3-S7

OSH International Players



Emerging Research Priorities in Italy

PRIO2007: a *study to assess new tendencies starting from the priority research areas already identified by ISPESL in 2000*

Major Results

Research priorities	Research	Transfer of Knowledge
Risks related to nanotechnology and exposure to nanomaterials	4.92 (1	
Assessment of psychosocial organizational risks	4.63 (2	
Occupational health and accident prevention with special reference to Construction	4.57 (3	
Migration and work	4.54 (4	
Health promotion	4.49 (5	

Source: Rondinone BM et al. Scand J Work Environ Health (2010)

Key questions

Summary of the key issues related to nanotechnology and OSH in terms of scientific knowledge level

Levels of knowledge:

0 = no information; 1 = very limited; 2 = limited; 3 = fair; 4 = good; 5 = very good

Source: Iavicoli S, Rondinone BM, Boccuni F. Hum Exp Toxicol (2009) 28: 433–443

The National Network *NanOSH Italy*

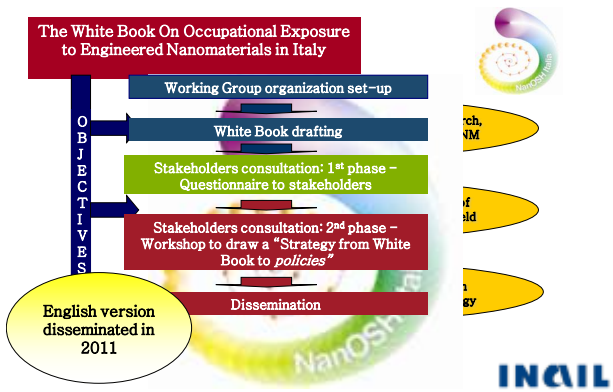
The White Book on Engineered Nanomaterials and OSH Effects

TOPICS

1. Definitions
2. Perspectives in production sectors
3. Research needs and mapping
4. Exposure characterization
5. Health effects of ENMs
6. Risk assessment and risk management
7. Policies and communication

http://www.ispesl.it/nanotecnologie/?pag=whitebook

From the White Book to the *policies*



The stakeholders consultation

The stakeholders identification

22 *Stakeholders invited to participate in representation of their Institution / Scientific association / Enterprise / Trade Union, identified among the subjects who play a key role in the decision making process for OSH policy in Italy*

73% *Percentage of respondents representative of 4 groups of interest*

The survey (1/2)

Questionnaire structured in two sections:

1. ***What is the added value for your knowledge in reading the White Book?***

Main results

For the majority of respondents the White Book is immediately relevant for their Organization interests and it contains information useful to arise their level of knowledge on this matter

Gaps and needs:

- *Continuous update on nano-related issues*
- *Harmonization of language for the different targets (experts vs stakeholders)*
- *Further involvement of social parties in the risk prevention strategy*

The survey (2/2)

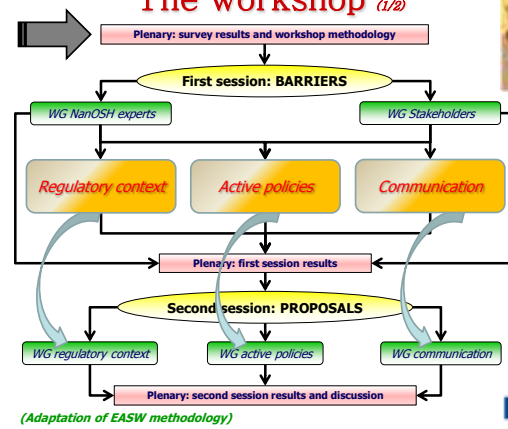
2. ***What are the key questions for the policy development?***

Main results

Level of priority for the policy strategies (absolute frequencies and percentage)

	Low	Medium	High
To invest in public research	-	5 (31,3%)	11 (68,8%)
To enhance the research in private sector	2 (12,5%)	4 (25,0%)	10 (62.5%)
To reduce the economical risk for enterprises	1 (6,3%)	5 (31,3%)	10 (62,5%)
To promote good practices	-	2 (12,5%)	14 (87,5%)

The workshop (1/2)



(Adaptation of EASW methodology)

The workshop (2/2)

Main results

Proposals:

- to improve the dialogue between research and enterprises' representatives
- to strengthen the network involving research bodies, universities and enterprises
- to create a "National Authority" qualified to examine and validate the scientific information for a continuous update of the state of the art in this field
- to develop a National database of exposure's scenarios

The added value of this path → *An approach to the policy making process merging both research and stakeholders expertises!*

The way forward

- ✓ *Dissemination of results in a report as an attachment of the White Book*
- ✓ *Enlargement of the stakeholders group in order to develop a "policy community" on the issue*
- ✓ *Proposal to add the item of occupational exposure to nanomaterials in the National political agenda*

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Thank you for your attention!

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