



PROF RENATO GENNARO | UNIVERSITY OF TRIESTE

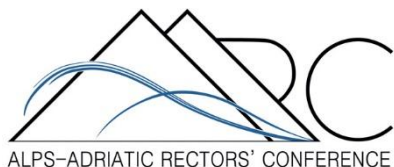
EUSDR PA NO. 7 STEERING GROUP MEETING

20 MAY 2014, BUDAPEST

H.I.NO. HEALTH IMPACT OF NANOTECHNOLOGY

THE PROJECT AIMS TO FILL UP THE GAP IN UNDERSTANDING
THE **HEALTH IMPACT OF NANOTECHNOLOGY** PUTTING
TOGETHER SCIENTISTS WORKING ON **NP HEALTH EFFECTS** IN
COUNTRIES ALONG THE DANUBE RIVER

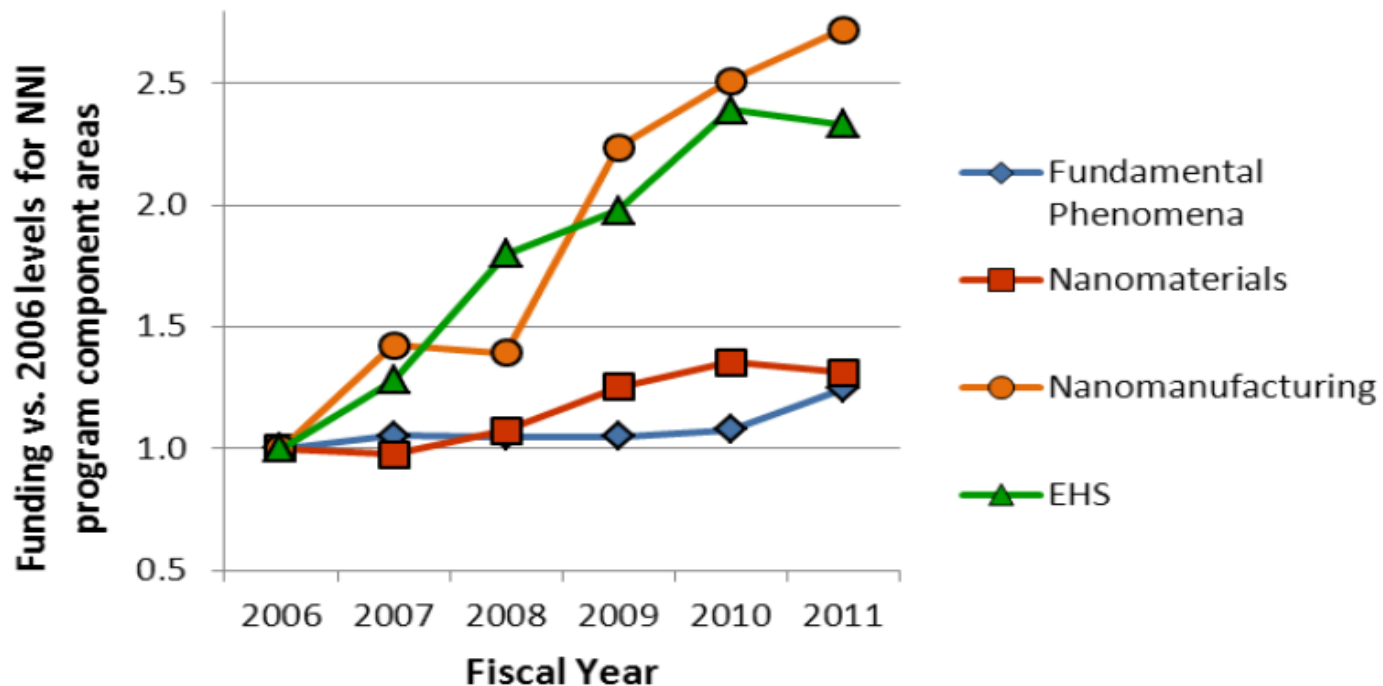
H.I.NO. IS A JOINT CONTRIBUTION OF



IN THE FRAMEWORK OF THE EUSDR –
PA7

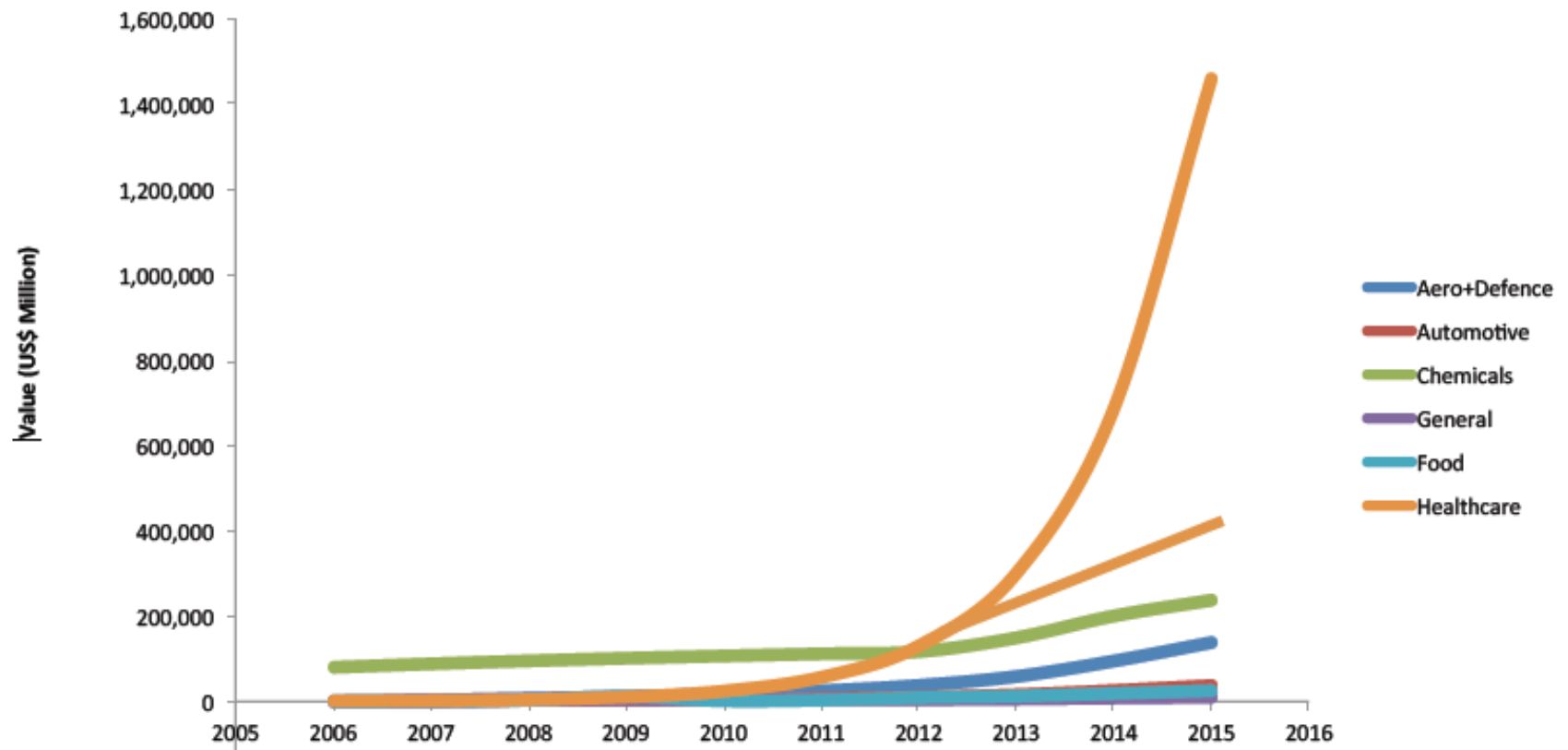
EVOLUTION OF NNI INVESTMENTS

- Funding for more fundamental work maintained
- Large percentage increases for nano manufacturing and for environment, health, and safety

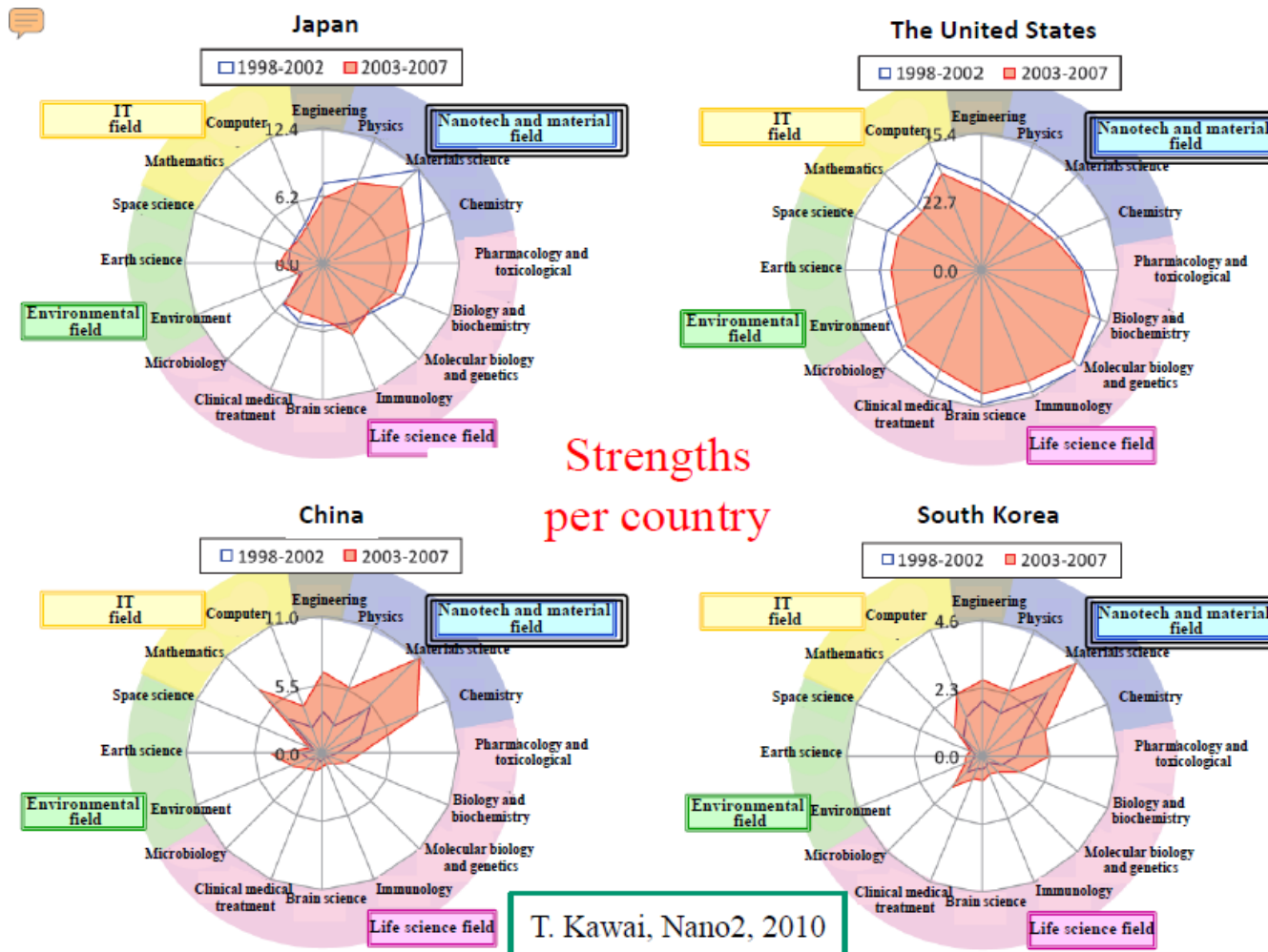


NANOTECHNOLOGY: GLOBAL MARKET EVOLUTION

Nanotechnology Market Evolution 2006-15



NANOTECHNOLOGY IN DIFFERENT COUNTRIES



EXISTING PROBLEMS

- There is the need to better evaluate **nanoparticles exposure** of workers, consumers and NPs fate in the environment
- The knowledge about NPs **health and safety issues is limited**
- **Nanotoxicology is an emerging discipline**, but there are many gaps in knowledge

EXPECTED OUTCOMES

- studying penetration of NPS available on the market into the body and possible health **effects of nanoparticles**
- defining preventive **measures to be applied** to avoid the possible adverse effects related to NP
- producing **guidelines** inside the concept of living labs for workers and consumers to help people living in the Danube region
- **disseminating** the knowledge in nanotoxicology

IMPACTS OF THE PROJECT

■ Scientific impacts

- Identifying the possible **toxicity** related to NP exposure
- Defining **preventive measures** to be applied
- Producing **guidelines** inside the concept of living labs for workers and consumers
- Better **knowledge** on nanotechnology health and safety issues
- Better **protection measures** to be applied

→ Better information and knowledge dissemination for workers and consumers

IMPACTS OF THE PROJECT

■ Impacts on knowledge society

- **Disseminating** knowledge
- Increasing **collaboration** among scientists along the Danube river
- Producing **high quality research** for a better knowledge of NP safety
- **Guidelines** to be used by stakeholders of the macro-region.

■ Connections with EUSDR – Priority Area 7

- **cooperation among universities** and research facilities
- upgrading **research** and **education** outcomes
- **disseminate knowledge** and preventing the possible toxicity related to NP exposure

NETWORK AREA: 19 UNIVERSITIES AND RESEARCH CENTERS

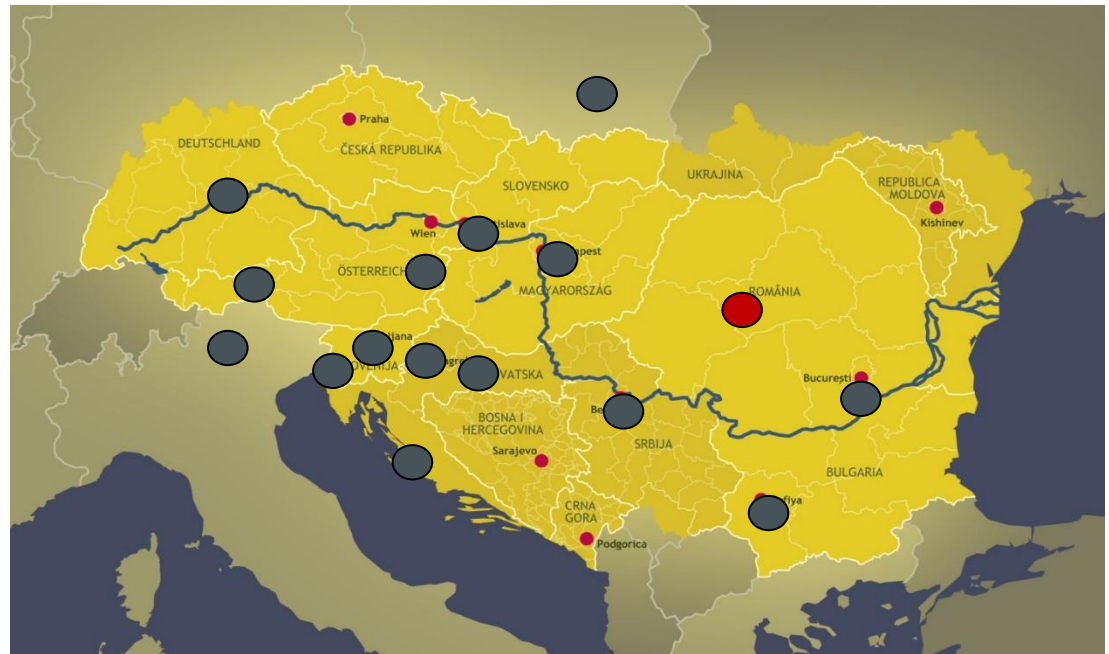
Coordinator

Simion ASTILEAN (Romania)

Institute of Interdisciplinary Research in BioNanoSciences, Cluj-Napoca

Partners

- Austria: 2
- Bulgaria: 1
- Croatia: 3
- Germany: 1
- Hungary: 1
- Italy: 2
- Poland: 1
- Romania: 2
- Serbia: 1
- Slovakia: 2
- Slovenia: 3



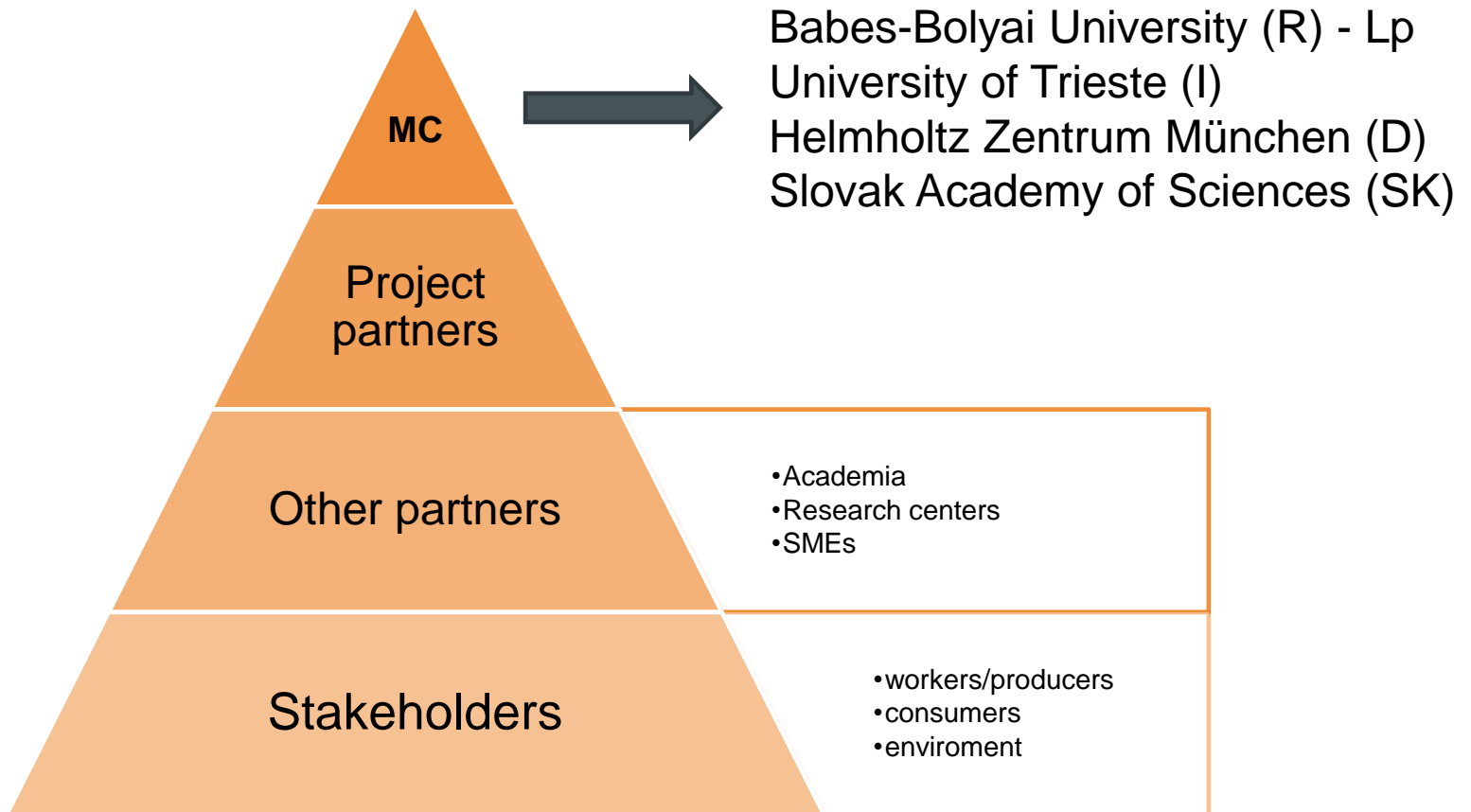
Coordination: Romania

8 Universities, as members of DRC

8 other Universities of Danube Region

3 Research Centers of Danube Region

PROJECT PYRAMID



PLANNED ACTIVITIES

CORE

management

knowledge data-base

networking

dissemination

MODULES

Research

- identify toxicity
- define preventive measures
- guidelines (white paper)

Capacity Building

- training
- consultants

BENEFICIARIES

EUSDR

- PA4 water quality
- PA5 environmental risks
- PA6 quality of air and soil
- PA7 knowledge
- PA8 competitiveness
- PA9 people

DECISION MAKERS

- local
- regional
- national
- cross borders

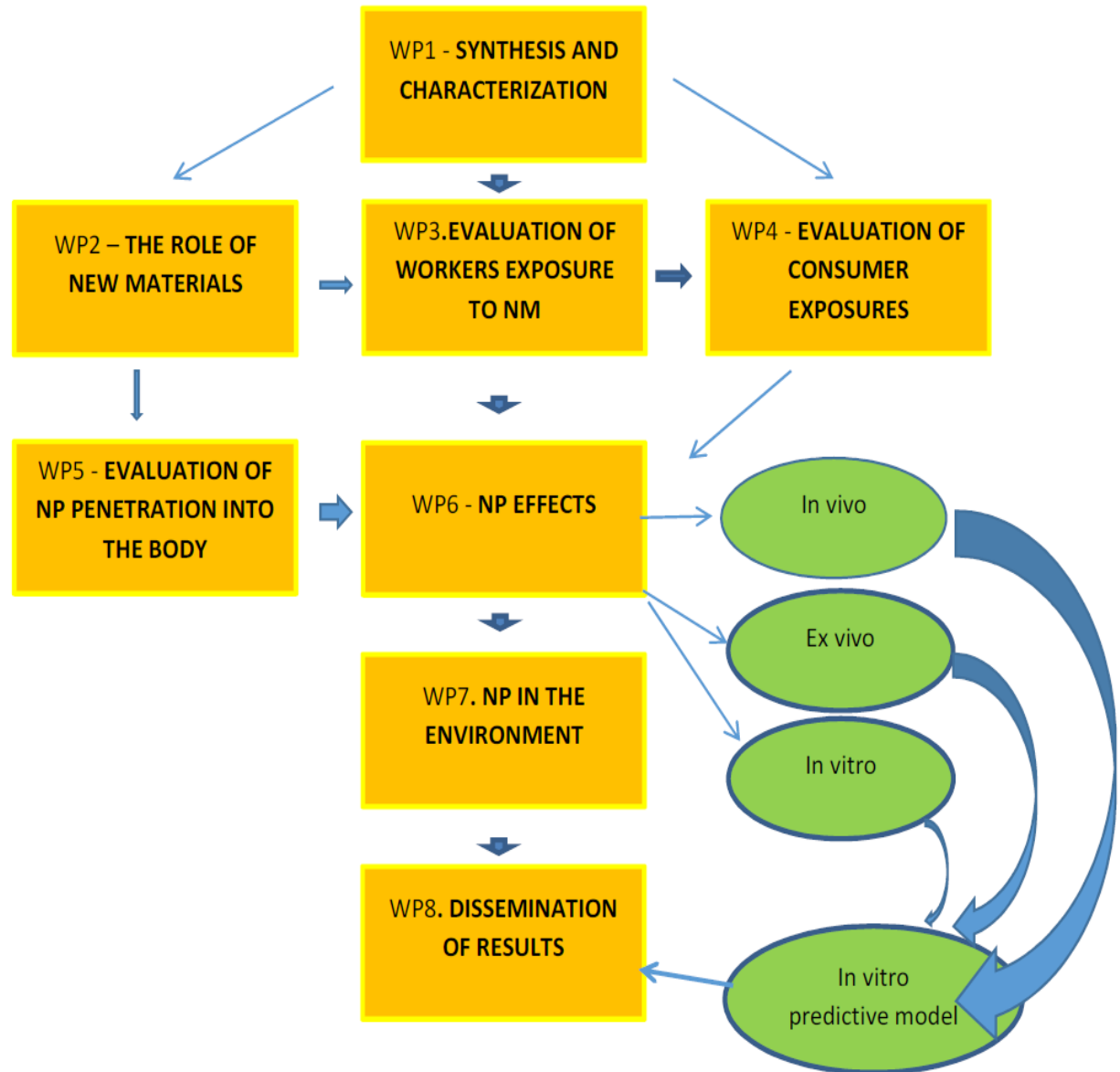
STAKEHOLDERS

- SMEs
- workers
- consumers
- "environment"

CORE MODULE

- MANAGEMENT
- NETWORKING: through AARC and DRC
- KNOWLEDGE DATA-BASE: available to citizens, researchers, etc
- DISSEMINATION: peer review journals, international congress, open access data-base

RESEARCH MODULE



CAPACITY BUILDING MODULE

■ DEFINING THE NEEDS OF THE TERRITORY

the first step in conducting a training programme is identifying its beneficiaries and their needs

■ DEFINING TRAINING MODULES FOR EACH TYPE OF BENEFICIARY

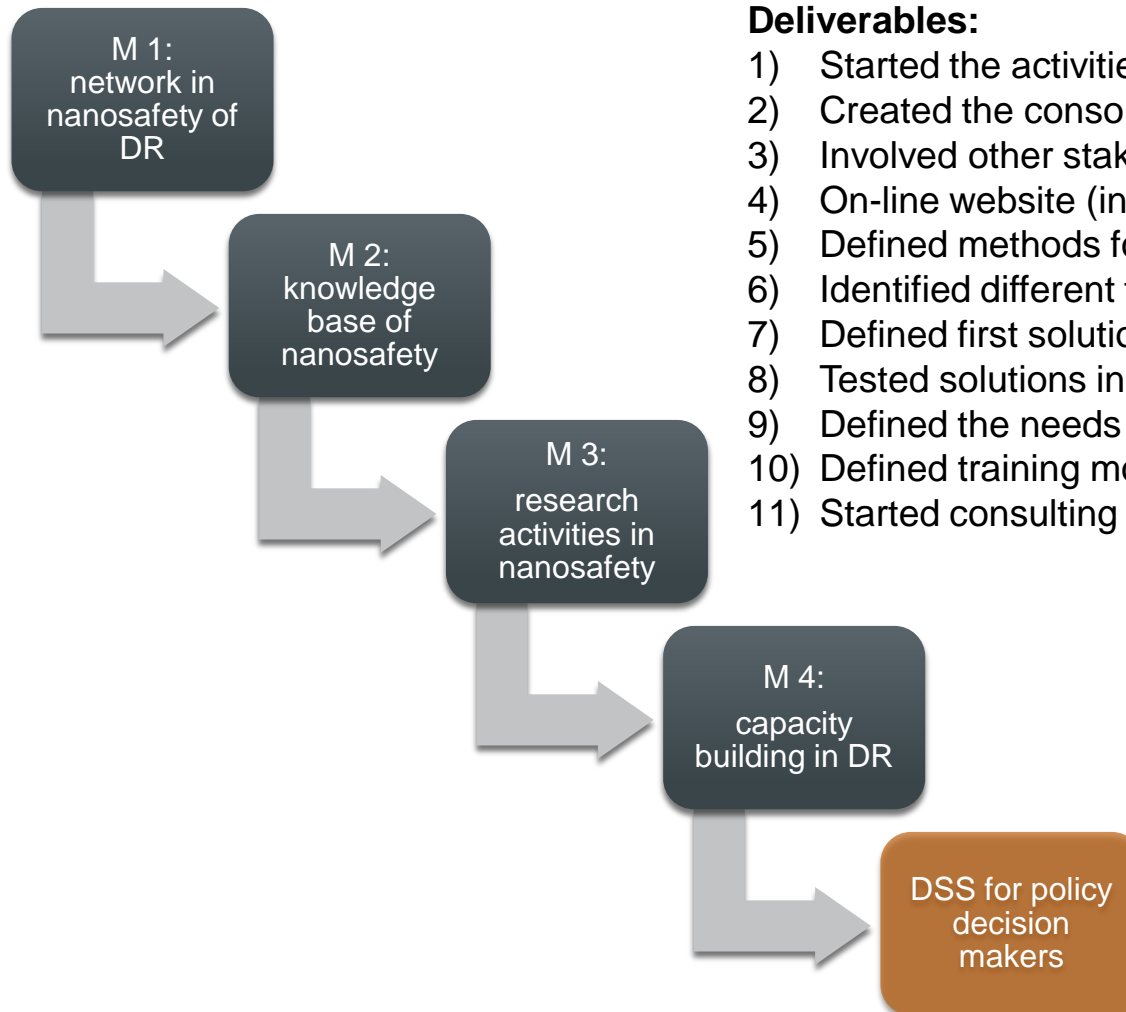
- Workers of SMEs / Industries
- Entrepreneurs
- Health Authorities
- Consumers

■ CREATING CONSULTING SERVICES for Entrepreneurs and Health Authorities

PROJECT TIMETABLE

	2014		2015		2016		2017		2018		2019		2020		2021
semester n.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
CORE ACTIVITIES															
1,1 management	D1 ⊗														
1,2 networking		D2 ⊗					D3 ⊗								
1,3 knowledge-base															
1,4 dissemination in DR															
RESEARCH ACTIVITIES															
2,1 identify toxicity							D6 ⊗								
2,2 define preventive measures								D7 ⊗			D8 ⊗				
2,3 outcomes															
CAPACITY BUILDING															
3,1 define needs								D9 ⊗							
3,2 training										D10 ⊗					
3,3 consulting										D11 ⊗					

MILESTONES / DELIVERABLES



Deliverables:

- 1) Started the activities of Management Committee
- 2) Created the consortium for the research project
- 3) Involved other stakeholders in the Project
- 4) On-line website (including Knowledge-base)
- 5) Defined methods for disseminating the knowledge in the DR
- 6) Identified different types of NPs
- 7) Defined first solutions of preventive measures
- 8) Tested solutions in laboratory
- 9) Defined the needs of the territory
- 10) Defined training modules and started the activities
- 11) Started consulting activities

BUDGET DETAILS

ACTIVITY	MICRO-ACTIVITY	COSTS
CORE	➤ Management	€ 245.000
	➤ Networking	€ 50.000
	➤ Knowledge-base	€ 150.000
	➤ Dissemination	€ 200.000
RESEARCH	➤ Personnel costs	€ 3.890.000
	➤ Laboratory costs	€ 2.840.000
	➤ Dissemination	€ 390.000
	➤ Management	€ 400.000
CAPACITY BUILDING *	➤ Needs of the territory	€ 1.400.000
	➤ Training	€ 2.800.000
	➤ Consultant services	€ 1.400.000
TOTAL ESTIMATED BUDGET		€ 13.765.000

** considering the involvement of all 14 Countries of the Danube Macroregion*

BUDGET DETAILS

Funding sources for future project application during the 2014/2020 period:

- Horizon 2020, “Industrial Leadership” (Leadership in enabling and industrial technologies)
- Mobility funds: ESF, Marie Curie, etc
- European Territorial Cooperation (transnational & cross-border programmes)
- Danube Region Research and Innovation Fund (DRRIF)
- National/Regional funding sources