NMBP-13 NANO RISK GOVERNANCE PROJECTS

NEWSLETTER

Issue 3 | October 2021

WELCOME

Welcome to the 3rd NMBP-13 Newsletter, in which we provide an update on the development of the Nano Risk Governance Council (NRGC) the Nano Risk Governance Framework (NRGF), and the progress of the Data Management tools. The newsletter concludes with a description of some of the public engagement events and activities conducted this year, and a date for your calendars.

ABOUT THE NMBP-13 PROJECTS

Gov4Nano, NANORIGO and RiskGONE are three H2020 projects that have joined forces to address the same goal: to ultimately ensure a sustainable and equitable NRGF and NRGC are developed in Europe and beyond. While each project has its own unique approach and objectives, all share common goals and visions which will be strengthened by constructive cooperation involving all stakeholders.

The partners have a long history of research to understand the impacts of nanomaterials on human health and the environment, and have participated in all major European and National projects dealing with these topics. This ensures a strong and comprehensive knowledge base and engagement with all key stakeholders. The partners are working to develop and establish a robust public policy framework for the use of nanomaterials, based on scientific evidence supporting a clear understanding of risks, their assessment, and management within wider societal considerations.

The coordinated activities across the projects are organised in the following topics:

1. Nano Risk Governance Framework and Council
2. Portal, tools and instruments
3. Stakeholder involvement
4. Data management

These groups meet regularly and have agreed certain common milestones related to the joint expected outcomes:

- An operational, trans-disciplinary Nanotechnology Risk Governance Framework (NRGF) that integrates exposure, hazard and risk assessment tools with those assessing ethical, legal, social, and environmental aspects, and further supports responsible research and innovation (RRI).
- A sustainable European Nanotechnology Risk Governance Council (NRGC) that implements the NRGF and engages with all stakeholders in a proactive, participative and transparent manner – a 'trusted environment' – to address new issues as they may arise.
- A Nano Risk Governance Portal (NRGP) built on sound scientific data and informatics tools, that are validated, standardised, progressive and accessible to stakeholders.

THE PROJECTS

Gov4Nano
meeting the needs of nanotechnology

Website www.gov4nano.eu/
Coordinator: Monique Groenewold
Institution: National Institute for Public Health and the Environment (RIVM), NL

NANORIGO

Website: www.nanorigo.eu
Coordinator: Janeck James Scott-Fordsmand
Institution: Aarhus Universitet (AU), DK

RISK GONE

Website: https://riskgone.eu/
Coordinator: Tommaso Serchi
Institution: Luxembourg Institute of Science and Technology (LIST), LU

FAST FACTS

Financial resources
Budget: € 18.3 million

Duration
January 2019 – February 2023

Collaboration
82 partners
17 EU countries, Brazil, India, Iran, Switzerland, South Africa, Republic of Korea and USA

These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 814425, 814401 and 814530

Blueprint for the Nanotechnology Risk Governance Council

An unprecedented collaborative effort of members of the three projects is culminating in the final stages of production of the Blueprint for the Nanotechnology Risk Governance Council.

Image: Blueprint cover

This Blueprint is a planning document which presents a possible design and role for a new organisation that would be tasked with governing risks from nano-based products, a Nanotechnology Risk Governance Council (NRGC). It has been developed in a co-creation approach with key stakeholders and represents the current view of how such a council could be organised.

What can be the added value of a Nanotechnology Risk Governance Council (NRGC)? What challenges and opportunities should it address? What should its mission be and what goals should it pursue? What activities should it conduct, and how should the Council be organised? The answers to these questions form the building blocks of this document, which describes the goals that the Council could aim at, and why, and the activities and services it could offer.

Its main purpose is to provide a framework to test elements of the council design and further engage with key stakeholders in regulation, industry and NGOs to collect their feedback as possible members of the NRGC. This process will be used to refine the design of the NRGC prior to a possible launch in 2022.

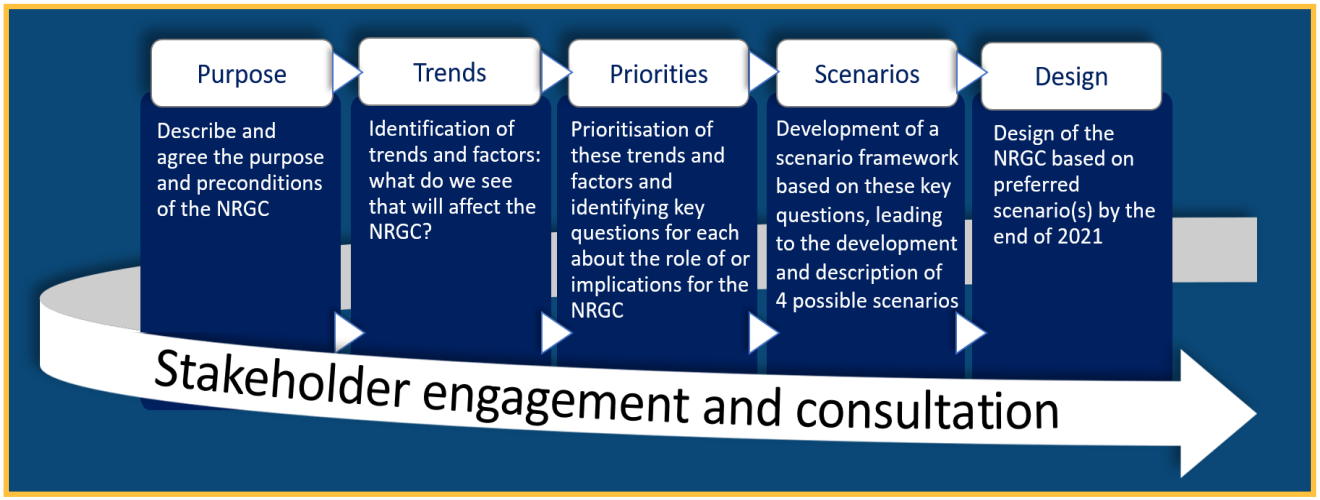


Image: Stakeholder engagement infographic from NRGC poster

The projects are now moving to (a) testing it, (b) refining it, (c) identifying possible members, (d) establishing conditions for its sustainability, (e) launching it and, finally, (f) accompanying it through the first months of activities.

Any representative from regulation, industry and NGOs who is interested in contributing to the NRGC is invited to contact us and join the stakeholder database here , indicating specific interest in the NRGC.

Acknowledgements:
Marie-Valentine Florin
Authors: NMBP-13 Council Task Force: Rob Aitken, Dalila Antunes, Arto Säämänen, Marie-Valentine Florin, Monique Groenewold, Panagiotis Isigonis, Andrea Porcari, Janeck Scott-Fordsmand, Tommaso Serchi .

The NRGF—Adapting the IRGC Approach

It has been widely acknowledged that the risk governance of nanotechnology should be based on a clear understanding of risk, its management practices, and the societal risk perception by all stakeholders. The Risk Governance Framework of the International Risk Governance Center (IRGC) describes processes aiming to provide and structure scientific evidence about a risk in a societal context.

The NANORIGO, RiskGONE and GOV4NANO projects consider this framework along with the ISO 21505 and ISO 31000 standards modified in caLIBRAte to fit nanotechnology, its products and contiguous frameworks.

The NRGF provides guidance for early identification, assessment, management and communication of risks, involving multiple stakeholders, considering the social impacts of the various uses of nanoproducts, and coupling risk benefit assessment.

It integrates selected methods, tools and best practices that can improve or complement existing practices for safety and risk management.

Stakeholder needs, as continuously identified, are incorporated in the NRGF to enable tailored development for multiple stakeholder groups. The NRGF comprises interlinked steps and cross-cutting core functions and serves as the integrator of important concepts and principles, tools and illustrations. The framework will provide web-based solutions that include the use of FAIR data to facilitate its interactive and flexible use.

Acknowledgements:
Arto Säämänen[a], Marie-Valentine Florin[b], Francisco Huertas[c], Arantxa Ballesteros[c], Piet Sellke[d], Anna-Kaisa Viitanen[a], Panagiotis Isigonis[e], Nils Bohmer[f], Dalila Antunes[g], Keld Alstrup Jensen[h]

[a]Finnish Institute of Occupational Health, Tampere, Finland, [b]EPFL, Lausanne, Switzerland, [c]ITENE, Paterna, Spain, [d]DIALOGIK, Stuttgart, Germany, [e]Università Ca' Foscari, Venezia, Italy, [f]Dechema, Frankfurt, Germany, [g]FactorSocial, Lisbon, Portugal, [h]National Research Centre for the Working Environment, Denmark
arto.saamanen@ttl.fi

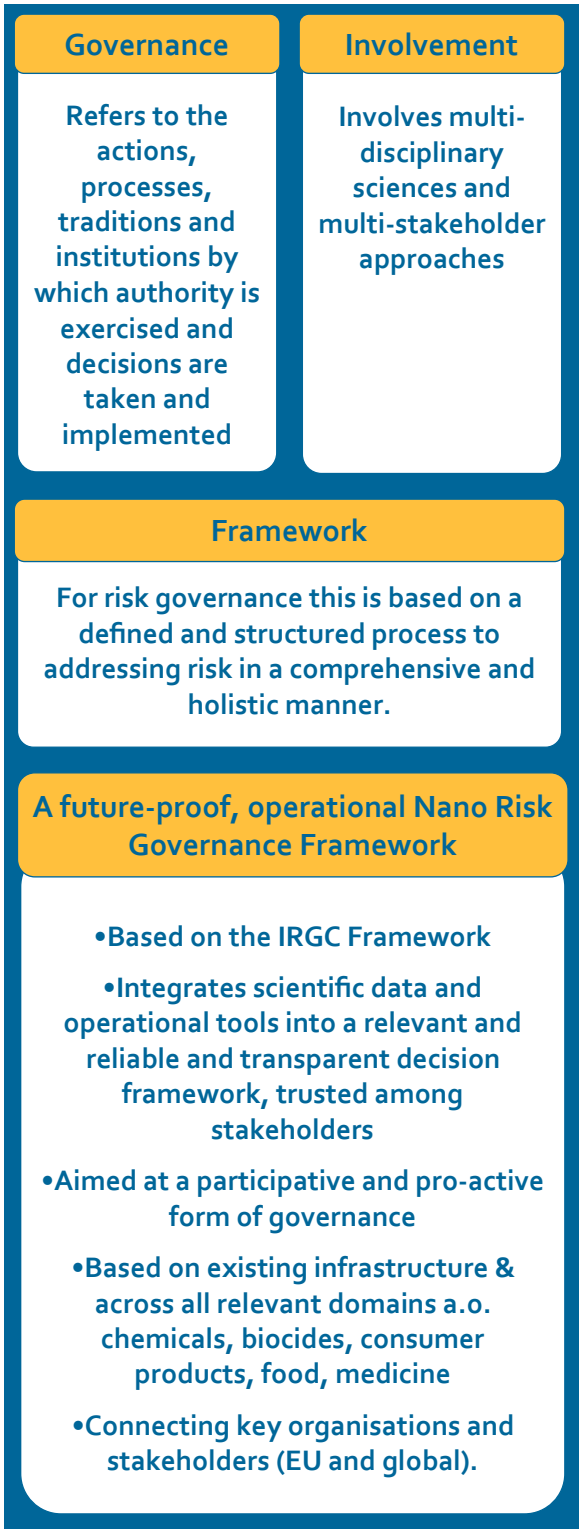
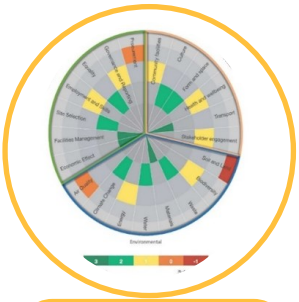


Image: NRGF components infographic from NRGF poster

Update on the Data Management

The data management core group has members from each of the three NMBP-13 projects, and is delivering:

Data management plans
- covering all aspects & all types of data
- how we manage them effectively & efficiently
- alignment across 3 projects.



Quality/fitness for re-use scoring of datasets
- consensus & development of standards
- implementation of tools & workflows

Datasets to support case studies
- integrated datasets will be compiled using agreed standards

Interoperability and automation
- through optimisation of uptake of existing tools and development of "bridging" tools

Image: Data management work in progress

Together the three projects are covering the whole data management area for risk governance of nanomaterials.

Ongoing Activities:

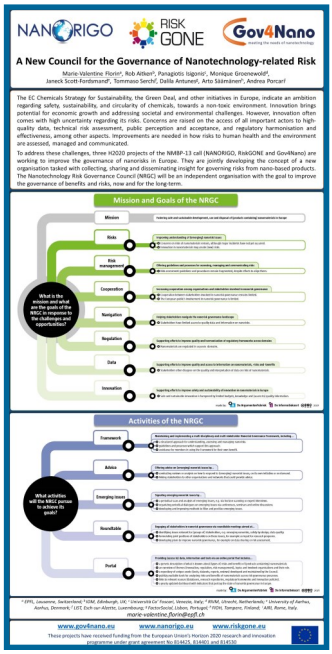
- **Alignment of the data management plans of the three projects**
- **Glossary of key terms related to data management**
  - "Living document" to support needs of all Core groups & projects
- **Prioritisation of databases to make interoperable**
  - Inventory of databases – content / maintenance / API access etc.
  - Inventory of data uses (by NRGC)
  - Analysis and synthesis of priority list in progress
  - Alignment with NRGC Core needs & Cloud Platform Core architecture
- **Agreed access and criteria for curating and verifying / validating older project datasets**
  - Paper in preparation on optimisation and automation of workflows
    - ⇒ for evaluation of dataset quality, completeness and fitness of purpose
    - ⇒ for re-use by diverse end-users and stakeholders
    - ⇒ contributors from NANORIGO, Gov4nano, RiskGone and NanoCommons

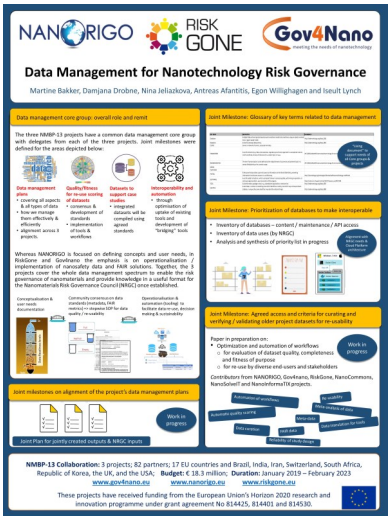
Acknowledgements:
Martine Bakker, Damjana Drobne, Nina Jeliazkova, Iseult Lynch, Janeck Scott-Fordsmand, Egon Willighagen

NMBP-13 at EuroNanoForum 21

The 2021 edition of the EuroNanoForum, held from 5th-6th May, was full of new insights about what Europe needs to recover, thrive, and become more resilient, with the support of Nanotechnology and Advanced Materials. EuroNanoForum 2021 gathered a total of 3640 participants from over 140 countries, providing thousands of opportunities for networking and collaboration through almost 200 scientific posters, 17 exhibitors, five satellite events, and several hours of sessions about topics that the European Nanotechnology community is now even more empowered to intervene upon.

The Core Groups for the NRGC, NRGF and Data Management delivered poster presentations and hosted a virtual exhibition stand to inform and engage with event participants. The materials are accessible from the [Nano Risk Governance community on Zenodo] using the image links below.





Images left and above: NMBP-13 Posters presented at ENF21

NMBP-13 at Achema Pulse Conference

How can we deliver Risk Governance for Emerging Nanomaterials?

The ACHEMA Pulse conference, held on 16th June, afforded the NMBP-13 projects a unique opportunity to engage with chemical industries and researchers, including those developing new processes and those tasked with environment, health, safety, and regulatory aspects. Discussion examined how we can address knowledge gaps in our understanding of the potential risks and societal concerns from emerging nanomaterials, and thereby help ensure that new products containing nanomaterials have wider societal acceptance before coming onto the market.

The interactive session presented the NRGF of tools that can be used to assess potential risks and societal concerns, demonstrating its application through the example of rubber tyres. Moving on to a presentation of the NRGC, its application was illustrated using smart materials as an example. Audience views and opinions were elicited and noted through online polling and discussion.

Acknowledgements
Mark Morrison (OPTIMAT), Arto Säämänen (*Finnish Institute of Occupational Health*), Marie-Valentine Florin (*EPFL*)

Nanosafety Training School 2021

From Basic Science to Risk Governance

This year the Venice Nanosafety Training School celebrated its 10th anniversary in a one-of-a-kind, large-scale event organised by the NMBP-13 projects in collaboration with four other EC funded H2020 projects: Biorima, Gracious, NanoInformaTIX, and PATROLS.

The event, which took place from June 21st –25th, featured keynote speeches, and a variety of hands-on sessions aimed to transfer state-of-the-art knowledge on a range of topics from key experts to the new generation of nano-environmental, health and safety, and biomedicine professionals, using interprofessional education. Finally, networking activities allowed for plenty of time and opportunities to expand networks and foster academic exchange.

Risk Governance—Session 8

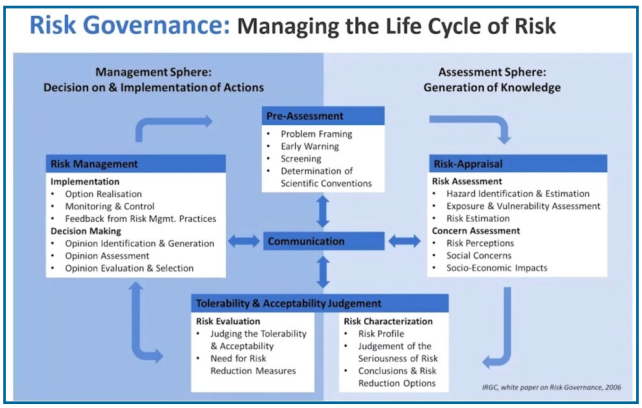
Partners from the 3 NMBP-13 projects built a multi-focused Risk Governance session on the question "Risk assessment with social dimension: how does risk governance differ from risk assessment or management?"

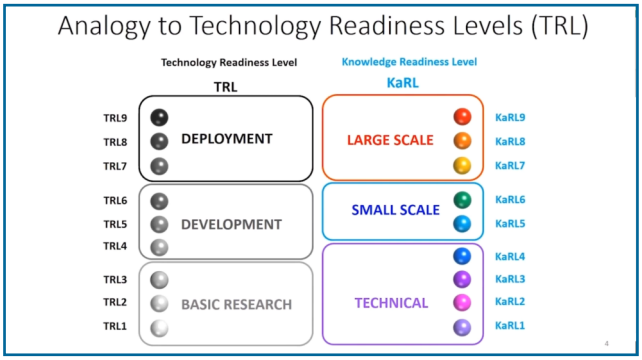
Starting with an introduction to the process of risk governance, discussions examined how data support decision-making, what data are needed, and what researchers can do in order to provide such data. This also covered FAIR databases and quality assurance, defined by the Knowledge Readiness Level (KaRL).

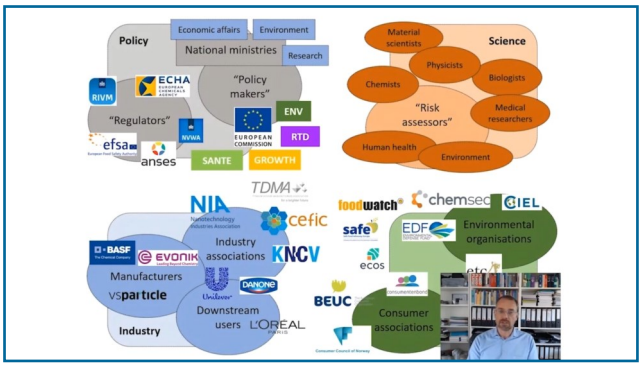
The session culminated by exploring different stakeholder views, focusing on the specific case of Titanium Dioxide E171 safety, and how socioeconomic aspects can be included in the risk governance process to warrant inclusiveness for different values into the risk/benefit estimation.

The Risk Governance session is available here

Watch videos of the sessions:
NanoSafety Cluster YouTube channel







Images: Video stills from Risk Governance session

Acknowledgements:
Martin Himly, Sabine Hofer and Nobert Hofstaetter (University of Salzburg), Dmitri Ciornii (BAM) and Daan Schuurbiers (DPF)

Risk Governance at European Researchers' Night

September saw all three projects join forces in European Researchers' Night (ERN). In Scotland's EXPLORATHON 21, organised by Scottish Universities, a dynamic interactive session titled 'Making Nano Work for us' raised awareness of the exciting potential of nanomaterials alongside the need to develop appropriate tools and governance. Meanwhile in Zaragoza, ERN participants learned about the risks associated with use of nanomaterials, how the presence of nanomaterials may be more common than we think and how we must consider that the physical characteristics of nanomaterials influence their compatibility with organisms, their biodegradability, their accumulation, and their toxic effects.

Image: Building blocks of Risk Governance, as explained at Explorathon 21

Visitors to both events were introduced to the NMBP-13 projects' work in evaluating the possible toxicological risks involved in the use of nanomaterials and how we aim to inform legislation on the production, safety, use, containment and disposal of nanomaterials.

Acknowledgements:
Mark Morrison (OPTIMAT); Ivo Cabral (ECOS)

Governança do riscos da nanotecnologia e nanomateriais

Forthcoming workshop—conducted in Portuguese: 27th October 2021

This forthcoming workshop focuses on the fact that emerging technologies and materials pose multiple challenges: new environmental, public health and safety issues may arise with the development of nanomaterials. It asks: 'What is being done to create more transparent frameworks for the development, application and disposal of manufactured nanomaterials?' The NMBP-13 projects will focus on these issues with audiences to discuss how we can *better* govern production and use. Regardless of what you already know about nanotechnologies and international regulatory mechanisms, find out more about the governance of nanomaterials and share your point of view. The 90-minute online workshop will be joined by nanotechnology experts involved in these three projects, who will address a potential model for a Risk Governance Board and how to implement it.

Image: Promotional banner for Risk Governance workshop

Acknowledgements and further information: Tedora Aibu, Paula Silva and Dalila Antunes
Governança de riscos: Nanotecnologia e nanomateriais – NANORIGO

Survey on the perception of nanomaterials.

Risks of nanomaterials and nanotechnology

How do you feel about nanotechnology? How much do you know about nanoproducts?

We aim to understand people's attitudes towards nanotechnology and nanoproducts and their risks in this survey developed by the three NMBP-13 projects.

The answers provided in this survey are completely anonymous and will only be used for the purpose described above. The survey is available in 12 European languages.

Feel free to share it with your contacts and friends!

https://survey.nilu.no/index.php/538883