Force field and background analysis of stakeholders with regards to risk governance in nanotechnology

Introduction

Establishing a credible governance of risk as applied to nanotechnology will only be possible with input from a broad range of stakeholders. Achieving this required a significant investment of time and energy by Gov4Nano to establish a meaningful dialogue with stakeholders, raising awareness for the added value of their input and having an eye (and ear!) for incentives and barriers as experienced or foreseen by stakeholders. Understanding the points along a value chain where risk governance becomes an important or essential part of success for the stakeholder is key to establishing the need for risk governance within nanotechnology. An inventory and analysis of stakeholder goals in the field of nanotechnology will identify different areas where workable risk governance can be established.

Description of Work

A "Force Field Analysis and Background Analysis of Stakeholders" was performed to identify interests, positions, needs, barriers, and incentives amongst the different stakeholder groups in risk governance of nanotechnologies. The analysis was based on literature review, including results from relevant finalized and ongoing H2020 projects, and output of stakeholder engagement activities carried out by the Gov4Nano Project. Significant input has also been derived from the EC4SafeNano, caLIBRAte, SUNDs, NANORIGO, and RiskGONE H2020 projects.

Main Results

In order to move ***towards agile/adaptive risk governance, a framework and a design-led thinking model*** are needed. The ***framework*** selected is adapted from the International Risk Governance Council (IRGC) and it comprises interlinked elements, with cross-cutting aspects including pre-assessment, appraisal, characterisation and evaluation, and management. Cross-cutting aspects include communicating, engaging with stakeholders, and putting into context as illustrated in Figure 1.

These elements are considered within a ***design-led thinking model***, consisting of three steps: Understand (emphasize and define), Explore (ideate and prototype) and Materialize (test). This Gov4Nano deliverable focuses on the 'Understand' phase of the design-led thinking model, which concentrates on establishing where risk governance can become an asset and opportunity for stakeholders by analysing their opinions and insights.

Lessons learned from Force Field Analysis and Background Analysis of Stakeholders for Gov4Nano, and available in the full public version of Deliverable 6.2, include:

- ***Pre-assessment, Appraisal, Characterisation & Evaluation (risk assessment)*** (elements identified in the International Risk Governance Council (IRGC) framework): promotion of safe-by-design, improvements in knowledge base with FAIR (findable, accessible, interoperable and reusable) data, tools, guidance and procedures for the characterisation and testing of nanomaterials, and the development of multiparametric approach and methods to address uncertainties in long-term impacts of nanomaterials to public health.
- ***(Risk) management***: the development of transparent and user-friendly decision supporting tools to address the complexity of risk management, and the development of a knowledge-sharing system for the entire innovation process and up to end of life.
- ***Cross-cutting aspects:***
    - The development of strategies to support awareness raising, capacity building and education initiatives toward stakeholders and the general public, and to improve information sharing across the value chain (**risk communication**).

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- The development of strategies to assess the opinions of the public and other stakeholders and strategies for building trust and trustworthiness (**risk perception**).
- The common characteristics of ***Stakeholder engagement*** include inclusiveness, clear communication and well-defined goals and relevance, and were perceived as the most important factors (Figure 1).

- ***Agile/adaptive and sustainable governance*** characteristically includes adaptivity, human-centeredness, inclusivity and sustainability.

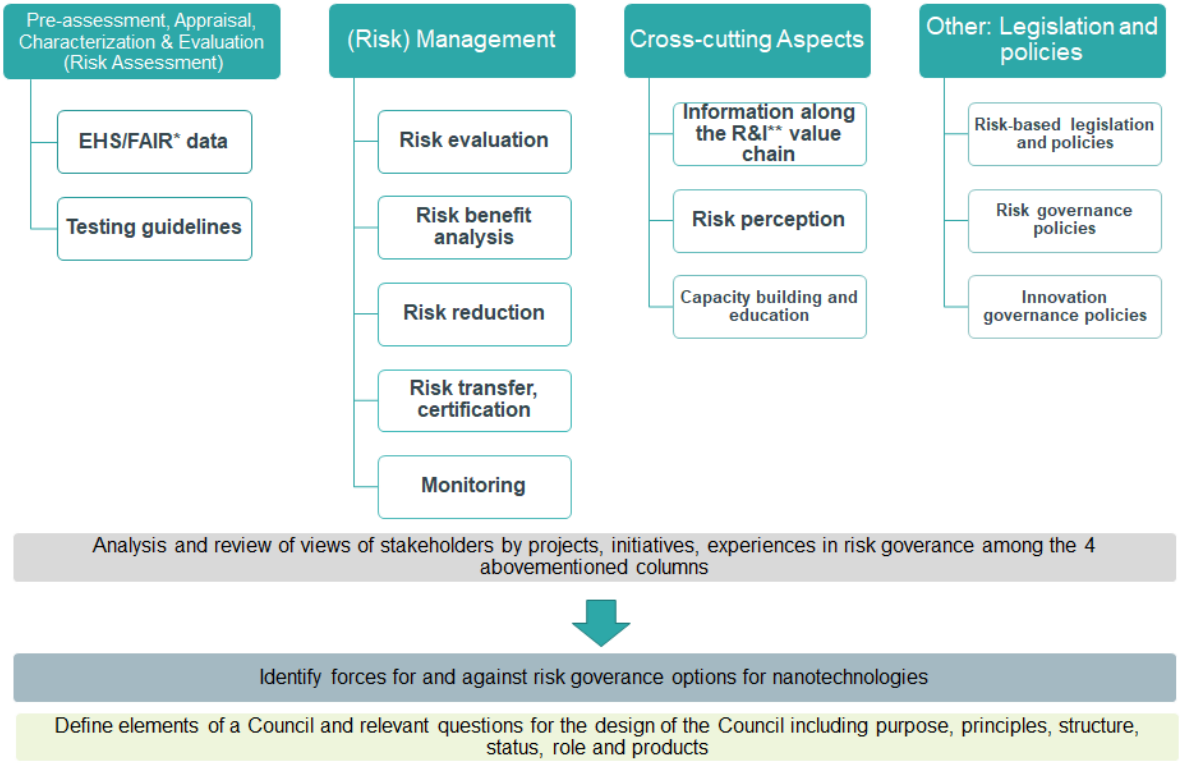

Figure 1: Key factors in Risk Governance which have been considered in evaluating and understanding the needs and concerns of stakeholders, essential to identify forces for and against risk governance options for nanotechnologies and to define elements of a Nano Risk Governance Council (NRGC) and relevant questions for its design.
*EHS/FAIR: Environmental, Health and Safety/Findable, Accessible, Interoperable and Recyclable; **R&I: research and innovation.

Conclusions

Understanding the needs and insights of stakeholders regarding the core themes of risk governance, and exploring the key elements (purpose, principles, status, roles and products) is needed to build a risk governance council for nanotechnologies (WP5), ensuring effective stakeholder engagements (WP3) and developing future monitoring schemes for the risk governance council (WP7). These aspects were compared with the mandates of key European institutions, to evaluate the positioning of the Nano Risk Governance Council (NRGC) in the context of EU policy development.

For more details about the Gov4Nano project please visit the Gov4Nano website. Public deliverables will be made available in due time via this website.