

Knowledge Readiness Level (KaRL) approach for nanorisk governance and beyond

Dmitri Ciornii^{1,*}, Damjana Drobne^{2,*}, Sara Novak², Eva Kranjc², Nils Bohmer³, Vasile-Dan Hodoroaba¹

¹Federal Institute for Materials Research and Testing (BAM), Division 6.1 Surface Analysis and Interfacial Chemistry, 12200 Berlin, Germany

²Biotechnical Faculty, University of Ljubljana, Jamnikarjeva 101, Ljubljana, Slovenia

³Society for Chemical Engineering and Biotechnology (DECHEMA), Theodor-Heuss-Allee 25, 60486 Frankfurt am Main, Germany

E-mail: Dmitri.ciornii@bam.de; Damjana.Drobne@bf.uni-lj.si

Background

- ❖ Regulatory decisions require reliable data and knowledge
- ❖ One form of knowledge is an actionable document
- ❖ An actionable document is a piece of grey literature prepared from operational data of high technical quality, ready to be used for an action (dossiers, public opinions, proposal, meta-analysis, scoping reviews)
- ❖ Usually, actionable documents are prepared by a third party, e.g. consultancies

Challenges in Nanorisk Governance

- ❖ The quality of an actionable document is argued among stakeholders, consensus on what constitutes a reliable document is missing
- ❖ Public is not involved in decision making → lack of trust in nanotechnology
- ❖ Decisions on nanorisk are not transparent
- ❖ Inefficient knowledge transfer/sharing, usability
- ❖ Sustainability and circularity are not properly addressed by policy

NANORIGO solution – KaRL approach

- ❖ A 9-level scale analogous to TRLs (technology readiness levels), KaRLs (Knowledge, Data and Information Readiness Levels) enable assessment of and guidance on how to enhance knowledge readiness for decision making. KaRLs address SEIN (societal and ethical implications of nanotechnology) principles, circular economy
- ❖ A specialized nanorisk governance council (currently under development, NANORIGO) could perform quality checks of actionable documents
- ❖ KaRLs facilitates traceability of knowledge before its use in decision making → transparency

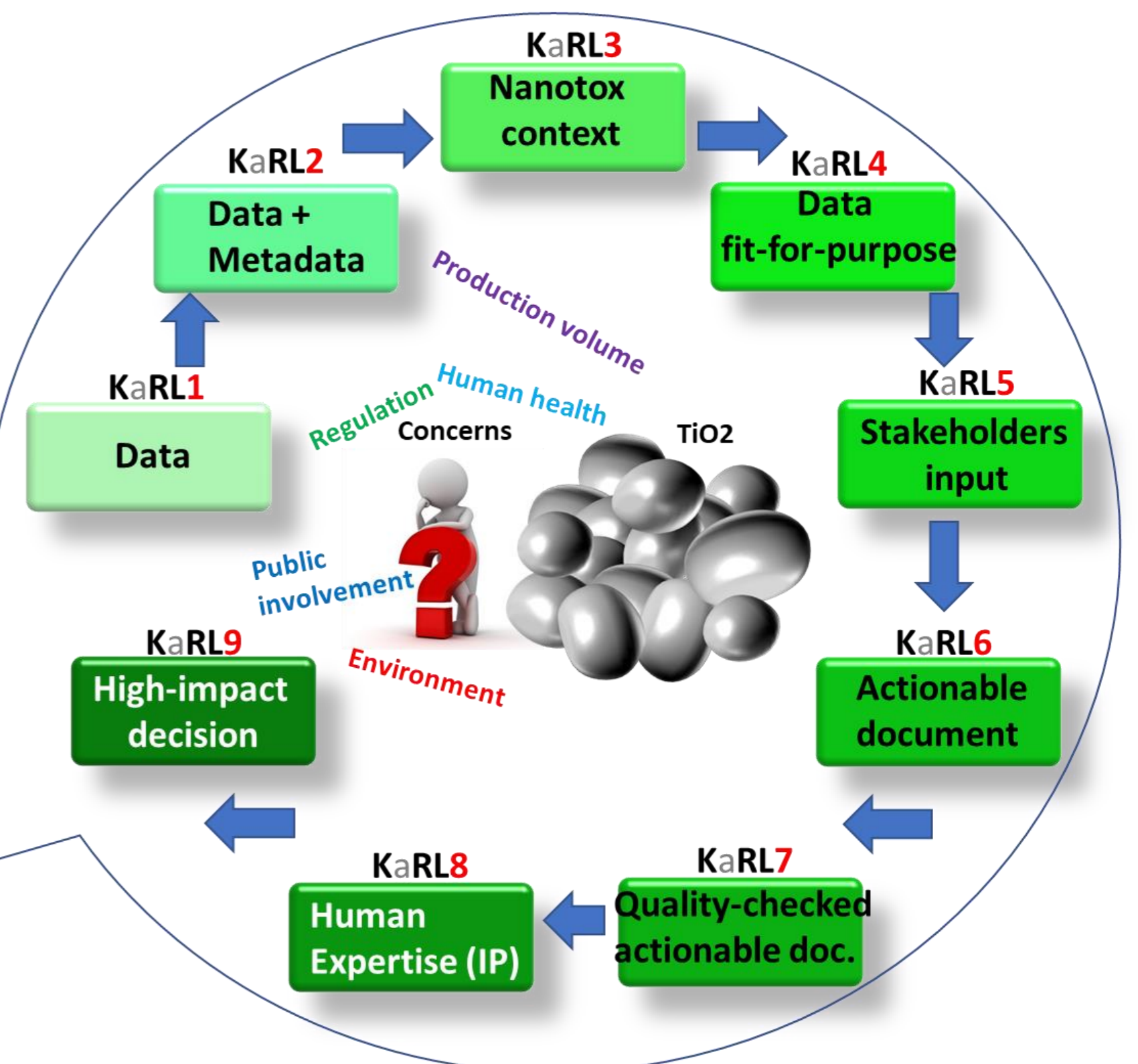
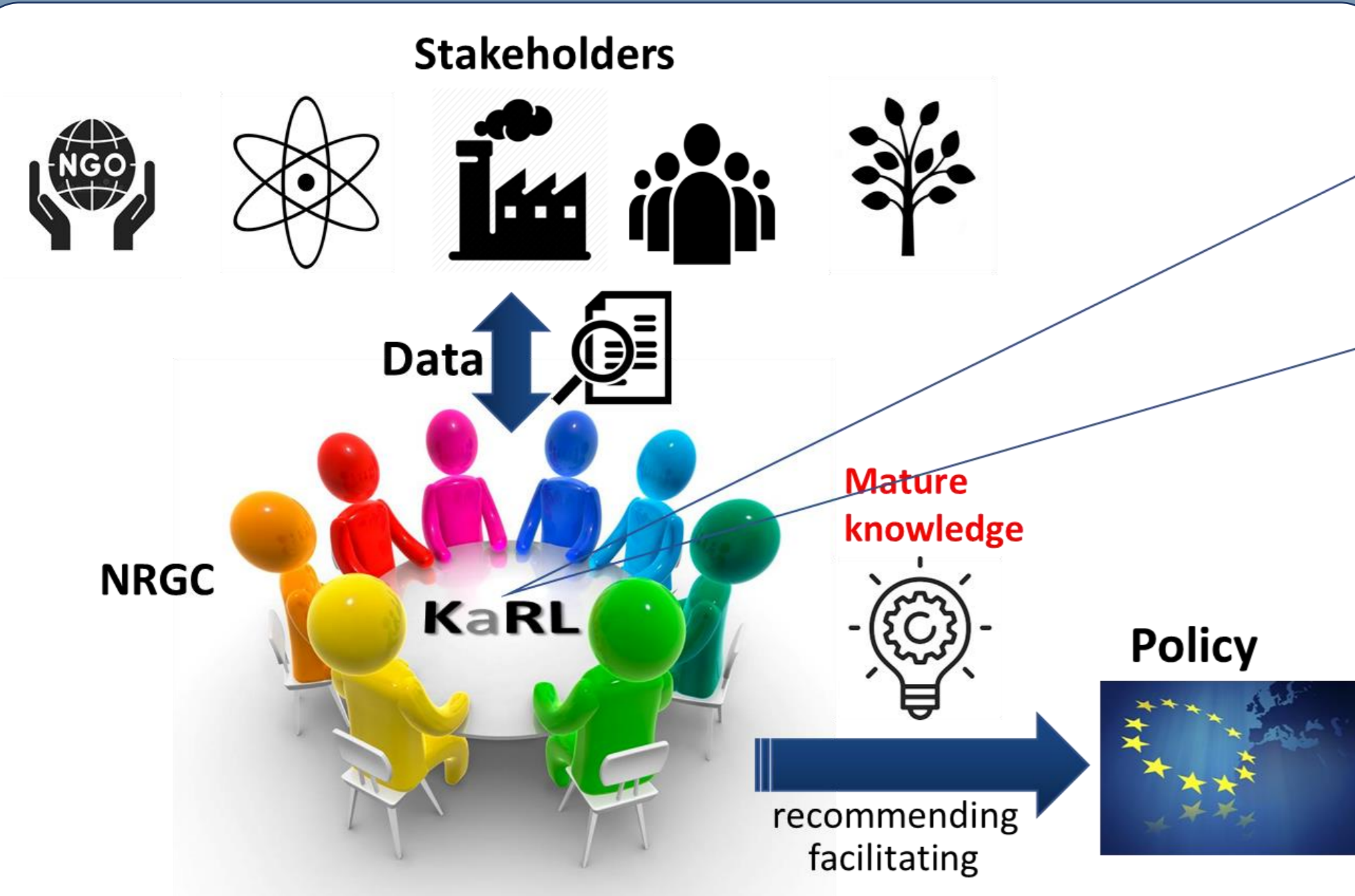


Fig. 1 KaRL approach in the framework of nanorisk governance. Different stakeholders provide data to the specialized nanorisk governance council (NRGC). The KaRL 1-9 system could be used by the NRGC for assessing data and knowledge readiness. Readiness (maturity) increases with each level (right hand-side, green boxes): data, information, and knowledge become more reliable and trustworthy, traceable, and ready for regulatory use.

MORE INFORMATION:

Project Coordinator: Aarhus University, Janeck James Scott-Fordsmand (jfs@bios.au.dk)

Scientific Coordinator: Environmental Assessments, Rudolf Reuther (rudolf.reuther@enas-online.com)



www.nanorigo.eu



@EU_NANORIGO



www.linkedin.com/groups/12232026



NANORIGO has received funding from the European Union's Horizon 2020 Research and Innovation Programme under the grant agreement No. 814530