Application of the Commission's Recommendations: Current Activities of ICRP C4

The evolution of radiation protection philosophy

Celebration of the 60th anniversary BVS-ABR

8 December 2023

Brussels, Belgium

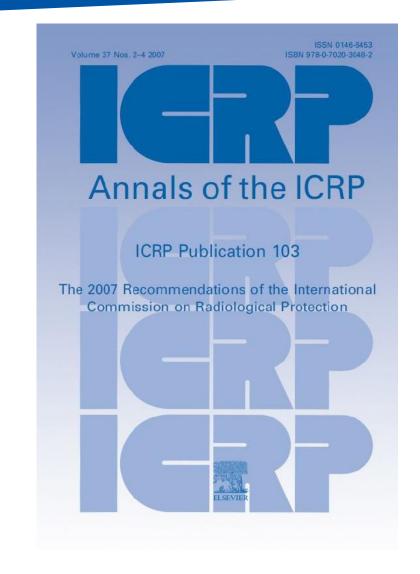
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Thierry Schneider Chair of ICRP Committee 4

Evolution with ICRP Publication 103

- Two main evolutions for the application of the ICRP System:
 - Introduction of 3 types of exposure situations (existing, planned and emergency) with the generalization of the optimization principle in connection with individual dose restrictions (reference levels and dose constraints) to all controllable exposure situations
 - Introduction of "the need to account for the views and concerns of stakeholders when optimising protection"





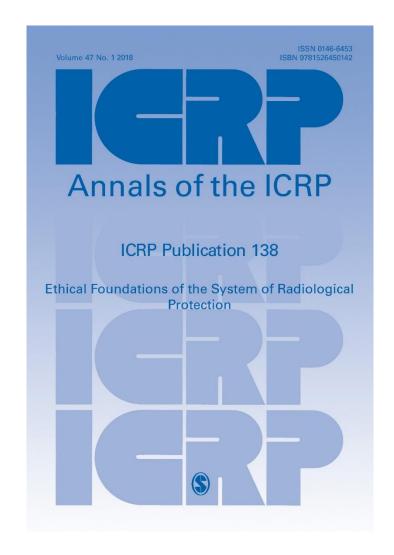
Ethical values adopted in ICRP Publication 138

Core values

- Beneficence/non-maleficence: doing good and avoiding harm
- **Prudence**: in the face of uncertainty, avoid unwarranted risks
- Justice: fair sharing of benefits and risks
- Dignity: respect of individual autonomy

Procedural values

- Accountability: to be responsible for one's own action
- Transparency: to share available information
- Inclusiveness: stakeholder participation



Current developments on fundamental concepts

- Reviewing the application of the approach in terms of exposure situations and categories of exposure
- Application of the justification principles
- Application of the optimisation principle: tolerability of risk and reasonableness
- Radiological protection of the environment: considering the concept of ecosystem services

Reviewing the application of the approach in terms of exposure situations and categories of exposure (ICRP TG 127) (1/2)

- Special attention given to existing exposure situations, where practical implementation has been complex
- Clarification of possible transitions between exposure situations alternatives?
- Adoption of a graded approach? Transparent use of numerical criteria and expert judgement
- Integration of environmental radiological protection, into exposure situations and categories of exposure

Reviewing the application of the approach in terms of exposure situations and categories of exposure (ICRP TG 127) (2/2)

General considerations:

- Not so easy, in practice, to classify all the "activities" dealing with ionizing radiation within one of the 3 exposure situations
- ICRP Publication 103 largely focussed on "planned exposure situation" while calling for a unified approach to all exposure situations
- To what extent additional considerations and specifications are needed for applying the system of radiological protection to existing and emergency exposure situations?
 - How the choice of exposure situation and a category of exposure affect the result?
 - Different level or band of doses?
 - Available resources for the management of a given exposure situation?
 - Level of implementation of regulation
 - ...



Application of the Principle of Justification (TG124) (1/2)

History

- First introduced in ICRP Publication 26 (1976)
- Broken into three levels for medical exposure in ICRP Publication 73 (1996)
- Description in ICRP Publication 103 (2007):
 - Any decision that alters the radiation exposure situation should do more good than harm.

Challenge

- Judgement of justification requires more than scientific and technical rationality
- Consideration of societal and ethical values is becoming increasingly important



Application of the Principle of Justification (TG124) (2/2)

Need of elaboration

- Scope of the decision
- Decision process
- Justification vs optimisation

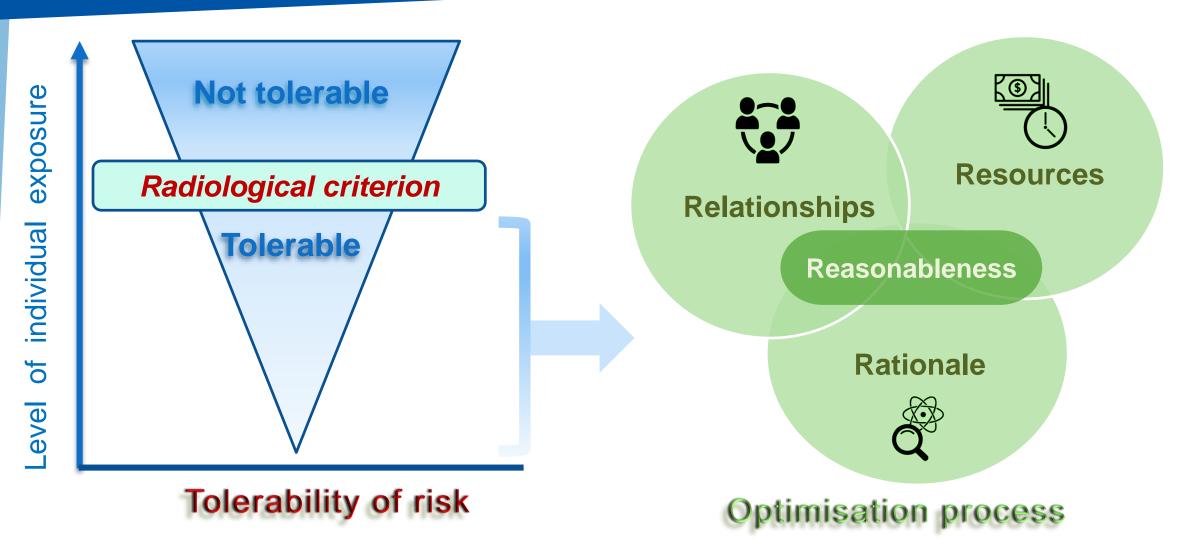
Modern-day challenges

- Ethical consideration
- Holistic approach to well-being
- Compatibility with SDGs

- What "more good than harm" means in society today?
- On what basis the judgement should be made?
- How to consider and value benefit of protecting non-human species and ecosystems?
- How to identify and involve stakeholders in process of justification?



Application of the optimisation principle: Tolerability and Reasonableness (ICRP TG 114) (1/2)



Application of the optimisation principle: Tolerability and Reasonableness (ICRP TG 114) (2/2)

General considerations:

- Emphasis to be put on the "level of protection" with due consideration given to the level of risk associated with ionising radiation under the specific circumstances, but not only
 - Include considerations on well-being, sustainable development, all hazard approach...
- Importance of considering the "process" (reasonably achievable)
- Relationship between justification and optimisation principles
- Considering the prevailing circumstances and the specificities of the situation
- Ensuring the respect of ethical values
- Relying on stakeholder involvement



Radiological protection of the environment: considering the concept of ecosystem services (ICRP TG 125) (1/2)

- Goal is to explore and share knowledge on the potential for ecosystem services to support a holistic approach to environmental radiological protection and to explore how the system of RP contributes to the delivery of sustainable development
- Describe practical examples showing incorporation into RP decision-making
- Understand how other frameworks consider ecosystem services and/or sustainable development.





















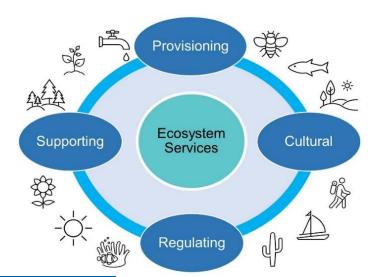












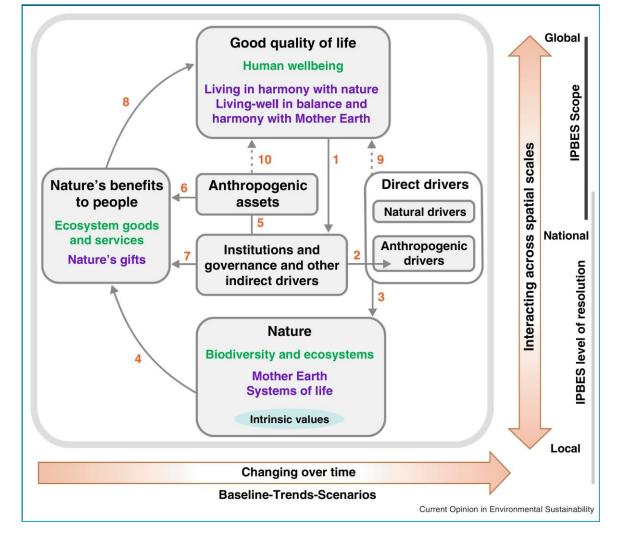
Ecosystem services are the benefits we derive from the workings of the natural world



Radiological protection of the environment: considering the concept of ecosystem services (ICRP TG 125) (2/2)

- Really, a strategy or tool for reflecting on [evaluating] our connection to and influence on our environment and the associated impact to our well-being, i.e., quality of life
- Complementary (with some overlap) to what we would typically refer to as "an ecosystem approach" (i.e., integrity or intrinsic value of nature)

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Conceptual Framework (Diaz et al 2015)





Some remaining key issues for the application of the ICRP System

- Ethical and societal considerations in the implementation of the RP System, including the concept of well-being
- Considerations of the holistic approach, revisiting the principle of optimization with deliberative processes
- Revisiting the concepts of limits
- Addressing the application of the UN Sustainable Development Goals
- Stakeholder involvement, education and training, dialogue and communication

Committee 4: Members



18 members from 13 countries, 1 emeritus member and 4 representatives of SLO



THANK YOU

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