

TERRITORIES

A holistic approach of long-lasting radiological exposure situations

Marie Simon-Cornu, Bieke Abelshausen, Stéphane Baudé,
Sylvie Charron, Pascal Croüail, Julien Dewoghélaëre, Silvia German,
Andrei Goronovski, Jérôme Guillevic, Gilles Hériard-Dubreuil,
Ferdiana Hoti, Sergi Lopez-Asensio, Astrid Liland, Dolores Mäekivi,
Mélanie Maître, Ståle Navrud, Christian Oltra, Danyl Perez-Sanchez,
Tanja Perko, Roser Sala, Thierry Schneider, Keiu Telve, Alan Tkaczyk,
Catrinel Turcanu, Michiel van Oudhesden

- ❑ To Enhance uncertainties Reduction and stakeholders Involvement TOwards integrated and graded Risk management of humans and wildlife In long-lasting radiological Exposure Situations
- ❑ 3 year-project (2017-2019)
- ❑ Funded by H2020 EJP CONCERT
- ❑ 11 partners, over 8 European countries



- Recommendations for assessing and managing long-term exposure situations, particularly after a nuclear accident or in NORM situations:
 - Reduction of uncertainties associated with the evaluation of doses to human populations and wild species
 - Consideration of uncertainties and involvement of all stakeholders in decision-making processes.

To Enhance uncertainties Reduction and stakeholders Involvement Towards
integrated and graded Risk management of humans and wildlife In long-
lasting radiological Exposure Situations

Publications: articles and deliverables

TERRITORIES Articles

- [Pedram Masoudi, Mathieu Le Coz, Charlotte Cazala, Kimiaki Saito](#), 2019. Spatial properties of soil analyses and airborne measurements for reconnaissance of soil contamination by ¹³⁷Cs after Fukushima nuclear accident in 2011. Journal of Environmental Radioactivity, 202: 74-84.
<https://doi.org/10.1016/j.jenvrad.2018.11.014>. Open access repository link: <https://hal-irsn.archives-ouvertes.fr/irsn-02109746>
- [Christian Oltra, Roser Sala, Silvia Germán, Sergi López-Asensio](#), 2019. Trust perceptions among residents surrounding nuclear power plants: A descriptive and explanatory study. *Progress in Nuclear Energy* 113:1-6. <https://doi.org/10.1016/j.pnucene.2018.12.012> Open access repository link: <http://documenta.ciemat.es/handle/123456789/436>

TERRITORIES Deliverables

All CONCERT deliverables are shown on <http://concert-h2020.eu/en/Publications>. Among them, TERRITORIES deliverables are also shown here.

2 published articles,
8 published deliverables
To be continued!

TERRITORIES Project News

D9.62 publication "Guidance on uncertainty analysis for radioecological models" has been published

May 14, 2019

See the Publications section for the link to the document

Oxford workshop as described by Horst Monken-Fernandes, a member of the Technical Steering Committee

Apr 5, 2019

"Very glad to have participated, at Queen's College in Oxford, in the workshop and annual meeting of the CONFIDENCE-TERRITORIES Project... (click the title to read further)"

Final agenda of the TERRITORIES workshop in Oxford has been published

Mar 14, 2019

TERRITORIES workshop on assessing risks from radioactive legacy sites and how to better

Scope of the presentation today

- ✓ 30th of June 2019 (yesterday!) was the deadline for submission to EC of 7 TERRITORIES deliverables
- Within 2 weeks approximately, they should be accessible on territories.eu/publications
- **D9.63:** Guidance about exposure scenario: Variability in human and wildlife behaviours and their impact on dose
- **D9.64:** Social and ethical aspects linked to monitoring and modelling: a Socio-Technical Integration Research approach
- **D9.66:** Results of a stakeholders panel about an hypothetical post-accidental situation (France)
- **D9.67** and **D9.68:** Results of 2 stakeholders panels about NORM situations (Belgium and Spain)
- **D9.69:** Results of a Pathway Evaluation Process (PEP) session organized with stakeholders about another hypothetical post-accidental situation
- **D9.70:** Framework for socio-economic analysis, i.e. Cost-benefit Analysis (CBA) and Multi-Criteria Decision Aiding (MCDA), applications to NORM situations



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 662287.



EJP-CONCERT

European Joint Programme for the Integration of Radiation Protection Research

H2020 – 662287

D 9.63 – Guidance about exposure scenarios Variability in human and wildlife behaviours and their impact on dose

Lead Author: Kelly Jones (PHE)

With contributions from: Karine Beaugelin-Seiller (IRSN), Jordi Vives i Batlle (SCK-CEN), Lavrans Skuterud (DSA), Thomas Hamburger (BfS), Jean-Marc Bertho (IRSN), Wayne Oatway (PHE), Justin Smith (PHE), Florian Gering (BfS), Alison Jones (PHE), Antti Kallio (STUK), Rein Koch (UT), Mari Kompered (DSA), Maarit Muikku (STUK), Alan Tkaczyk (UT).

Reviewers: Tiberio Cabcianca (PHE), Marie Simon-Cornu (IRSN), CONCERT coordination team.

Work package / Task	WP 9	T9.3 (TER-)	SST	9.3.2
Deliverable nature:	Report			
Dissemination level: (Confidentiality)	Public			
Contractual delivery date:	M49			
Actual delivery date:	M49			
Version:	0.e			
Total number of pages:	xxx			

Holism (from Greek ὅλος "all, whole, entire") is the idea that a system and its properties should be viewed as a whole, not just as a collection of parts.

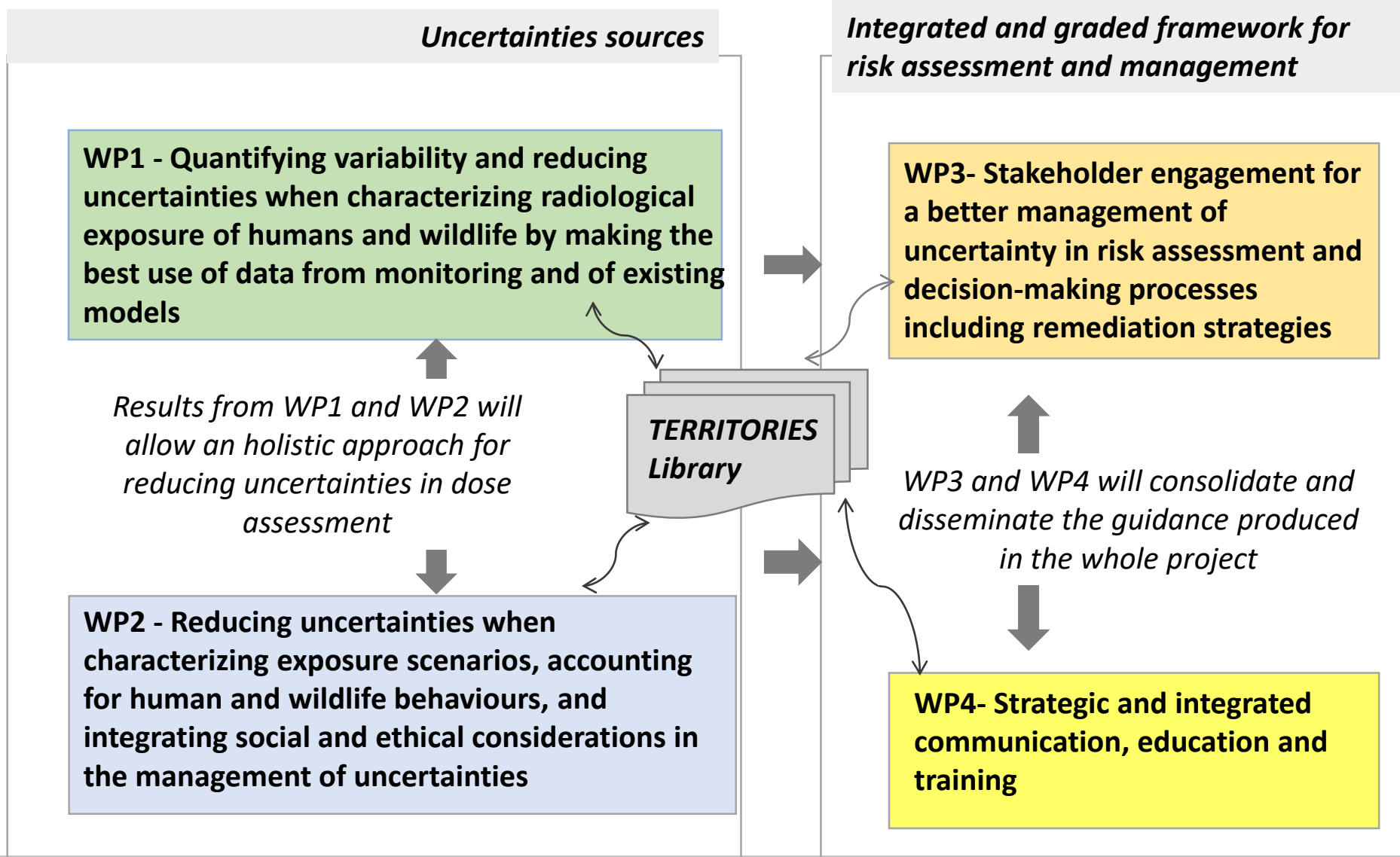
“Many things have a plurality of parts and are not merely a complete aggregate but instead some kind of a whole beyond its parts”

Aristotle

In TERRITORIES, holism=

- A multi-disciplinary research
- Assessing as a whole all decision criteria in socio-economic analyses
- Engaging all stakeholders, through various tools to structure dialogue
- Considering all aspects of life in contaminated territories

A multi-disciplinary research



A multi-disciplinary research



TERRITORIES is thankful to the Provost and Fellows of The Queen's College for this opportunity.
Photograph courtesy of Mariana Costa (Public Health England).

D9.64: Socio-Technical Integration Research

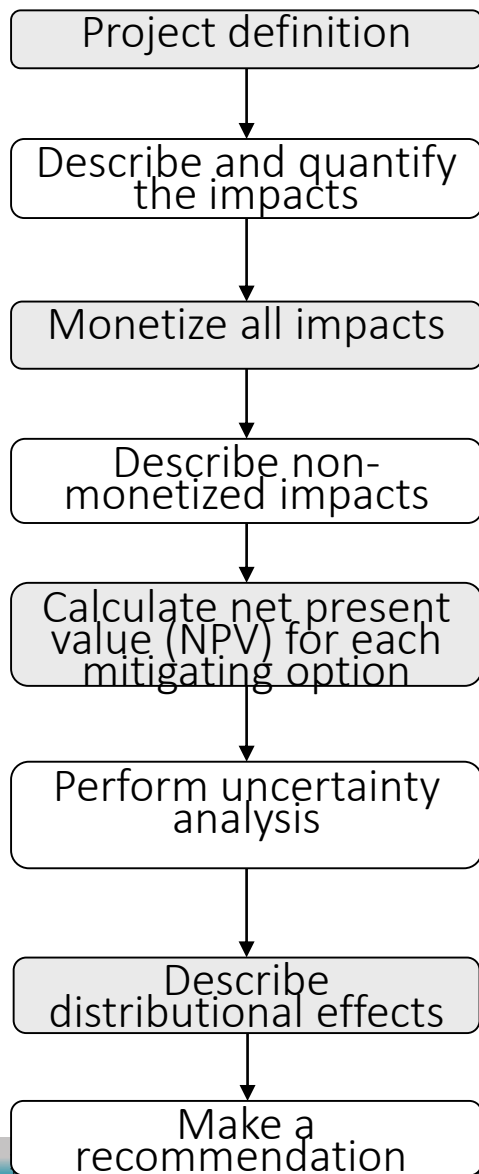
- ❑ STIR=socio-technical integration research, developed by Erik Fisher (Arizona State University) and others, with the aim of assessing and comparing the varying pressures on, and capacities for, laboratories to integrate broader societal considerations into their work.
- ❑ An “embedded” social scientist or humanist interacts with laboratory practitioners by closely following and documenting their research, attending laboratory meetings, holding regular interviews and collaboratively articulating decisions as they occur.
- ❑ The protocol conceptually distinguishes four decision components:
 - opportunities,
 - considerations,
 - alternatives
 - and outcomes

Michiel Van Oudheusden *et al.*

D9.64: Socio-Technical Integration Research

- Participants appreciated this protocol as it enabled them:
 - to 'broaden' the types of considerations that go into their research activities, with one participant exclaiming that, "[STIR] got me thinking about the bigger world in which science fits into."
 - to enjoy the collaborative character of STIR, enabling technical and social experts to learn from one another.
 - to discuss their work to an outsider, which may (indirectly) improve not only the quality of their work but also their work satisfaction
- This work is a proof of concept, illustrating the potential of socio-technical integration research (STIR) to enhance reflexive awareness among technical and social scientists of the uncertainties that accompany radiation protection research, specifically in the processes of modelling and dose and risk assessment.

Michiel Van Oudheusden *et al.*

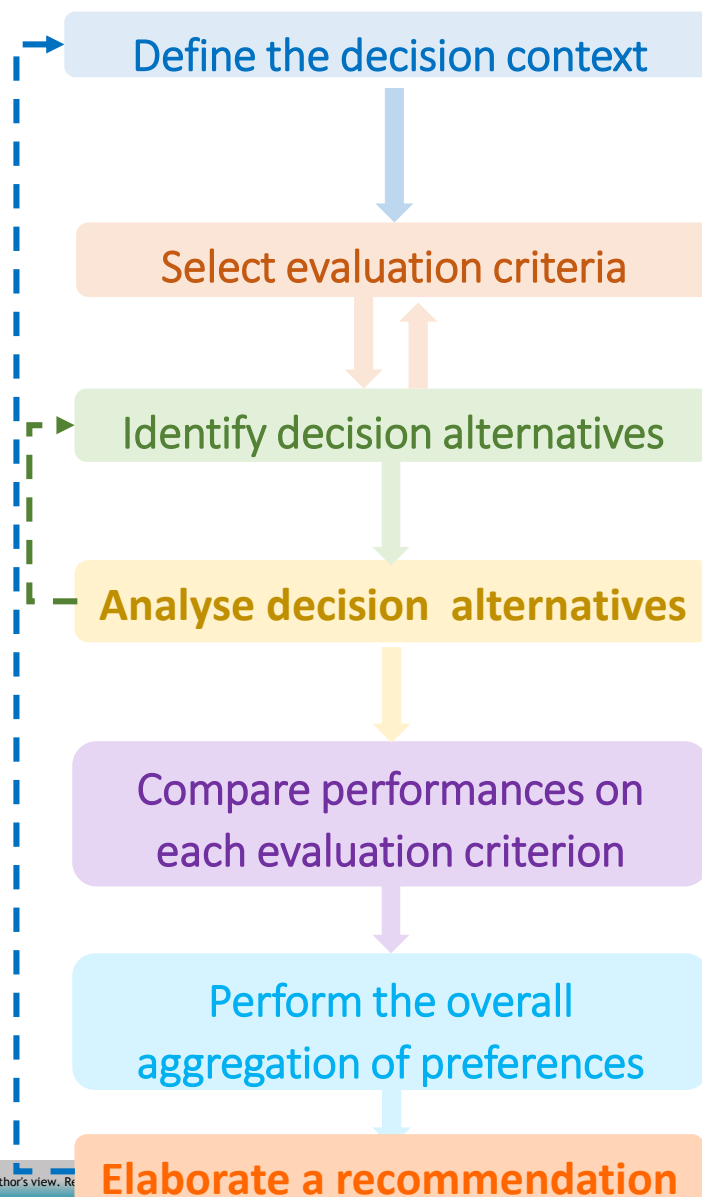


D9.70: Framework for socio-economic analysis

<- (CBA) Part 1
 Cost-benefit Analysis
 Astrid Liland *et al.*

Part 2 (MCDA) ->
 Multi-Criteria Decision Aiding
 Catrinel Turcanu *et al.*

All decision criteria



Engaging all stakeholders

5 events (stakeholders panels or equivalent), analysed in D9.66 to D9.69, were organized

Stakeholders engaged in at least one of these events were representative of:

- ✓ *Industry and industry associations*
- ✓ *Agricultural professionals (farmers, wine-growers, wine industry, chamber of agriculture)*
- ✓ *National authority, TSO*
- ✓ *Research Centres, and Universities*
- ✓ *National, regional, or local administration*
- ✓ *Elected people, political parties*
- ✓ *NGOs (international, national, local)*
- ✓ *Media*



Engaging all stakeholders

Need of tools to structure dialogue.

2 deliverables address an hypothetical situation (long-term after an hypothetical nuclear accident): D9.66 and D9.69 => How to engage stakeholders in a discussion about a situation by which they are not personally concerned?

D9.66: Bordeaux SH panel, December 2018

DAY 1 - Listening and sharing testimonies from Japanese and Belarussian actors

DAY 2 - From an accident scenario at the Blayais NPP, **discussing on the medium and long-term issues and the uncertainties** at stake for the rehabilitation of the affected territories

D9.69: Brussels PEP-PA session, April 2019

PEP-PA: Pathway Evaluation Process in post-accident situations

Pluralistic evaluation exercise = « **serious game** »

Several players around **boards** (representing different situations) and **maps** describing conditions, challenges or changes that may occur in the context of management policy.
! not a role-playing game = participants expected to express themselves sincerely from their **own views and convictions and personal position**.

Exposure assessment is not the only treat characterizing life in contaminated territories

D9.66: Bordeaux SH panel, December 2018

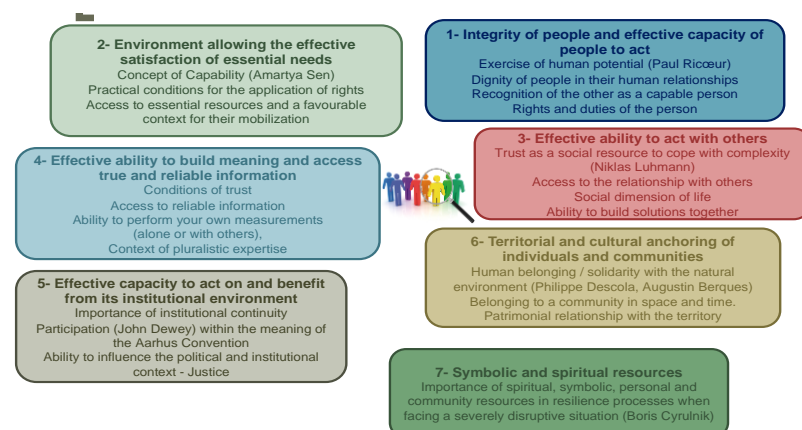
4 topics of discussion on Day2:

- monitoring of the radiological situation of the people and the affected territory (**regain control of daily life**, but lack of interest in the long term)
- becoming of the agricultural sector in the affected territory (countermeasure , control of products)
- challenges of restoring the quality of life in the affected territory (e.g. dislocation of local communities)
- challenges of restoring the quality of life in the affected territory (what future?)

Mélanie Maître *et al.*

D9.69: Brussels PEP-PA session, April 2019

7 dignified living conditions



Julien Dewoghélaëre *et al.*

Exposure assessment is not the only treat characterizing life in contaminated territories

2- Environment allowing the effective satisfaction of essential needs

Concept of Capability (Amartya Sen)
 Practical conditions for the application of rights
 Access to essential resources and a favourable context for their mobilization

1- Integrity of people and effective capacity of people to act

Exercise of human potential (Paul Ricœur)
 Dignity of people in their human relationships
 Recognition of the other as a capable person
 Rights and duties of the person

4- Effective ability to build meaning and access true and reliable information

Conditions of trust
 Access to reliable information
 Ability to perform your own measurements (alone or with others),
 Context of pluralistic expertise



3- Effective ability to act with others

Trust as a social resource to cope with complexity (Niklas Luhmann)
 Access to the relationship with others
 Social dimension of life
 Ability to build solutions together

5- Effective capacity to act on and benefit from its institutional environment

Importance of institutional continuity
 Participation (John Dewey) within the meaning of the Aarhus Convention
 Ability to influence the political and institutional context - Justice

6- Territorial and cultural anchoring of individuals and communities

Human belonging / solidarity with the natural environment (Philippe Descola, Augustin Berques)
 Belonging to a community in space and time.
 Patrimonial relationship with the territory

7- Symbolic and spiritual resources

Importance of spiritual, symbolic, personal and community resources in resilience processes when facing a severely disruptive situation (Boris Cyrulnik)

D9.70: Julien Dewoghélaëre *et al.*

To Enhance uncertainties Reduction and stakeholders Involvement TOwards
integrated and graded Risk management of humans and wildlife In long-
lasting radiological Exposure Situations

Events

Final event pre-registration

12-14 Nov 2019, Aix en provence (easily accessible from Marseille Airport)

TERRITORIES Project News

D9.62 publication "Guidance on uncertainty
analysis for radioecological models" has been
published

May 14, 2019

See the Publications section for the link to the
document

FINAL EVENT

12-14 November 2019 Aix en Provence, France

Time to preregister!