




Characterisation of uncertainties in past nuclear emergencies: a case study approach

Tomkiv, Y., Oughton, D., Perko, T., Turcanu, C., Abelshausen, B., Germán, S., López-Asensio, S., Maitre, M., Oltra, C., Sala, R., Schneider, T., Zeleznik, N.



Norwegian University
of Life Sciences



 This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287

Characterisation and response to uncertainty in past nuclear emergencies



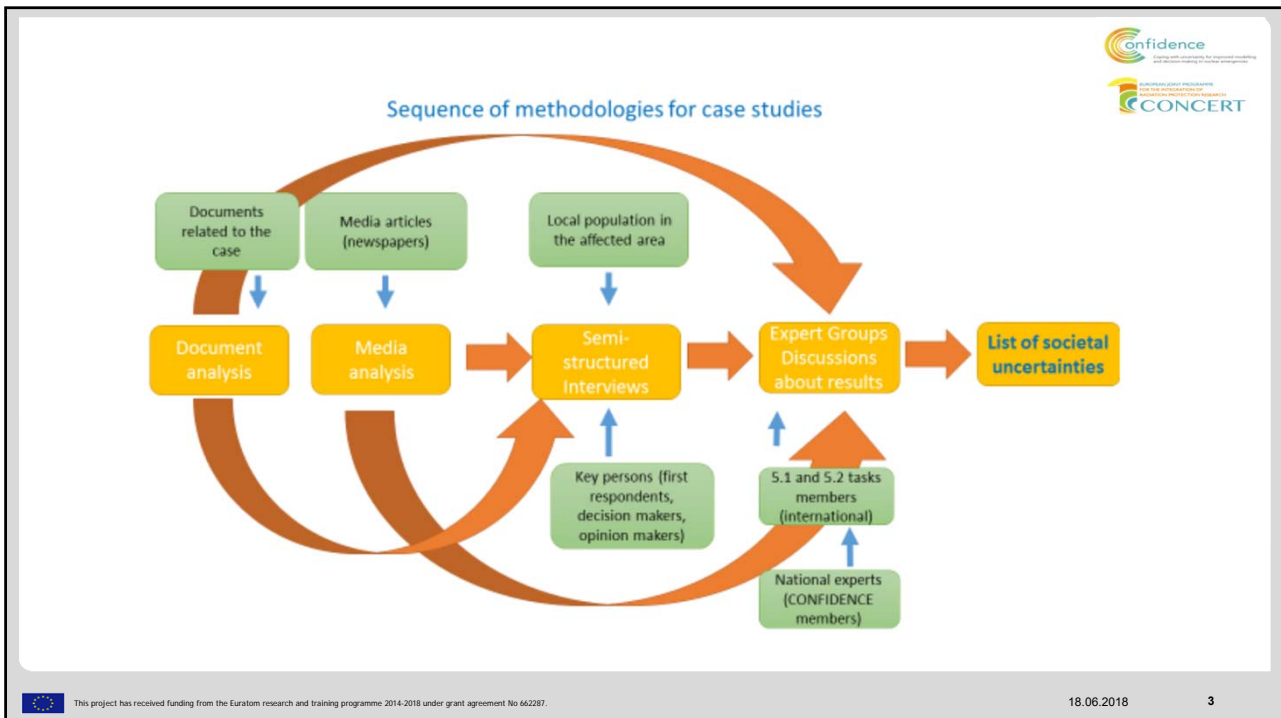
- Identify social uncertainties in past incidents and accidents
- Analyse **implications of different types of scientific uncertainty** (e.g, variability, knowledge gaps, conceptual) **and social uncertainties** and **relationships to ethical issues** (e.g., precaution, fairness, autonomy)
- Elucidate stakeholders' response to uncertainties



 This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287

18.06.2018

2



6 case studies of past emergencies



Chernobyl, (1986)
Iodine release at **Halden** research reactor
(2016)



Fleurus (2008), Iodine release from isotope production facility



Asco (2007), release of radioactive particles from NPP

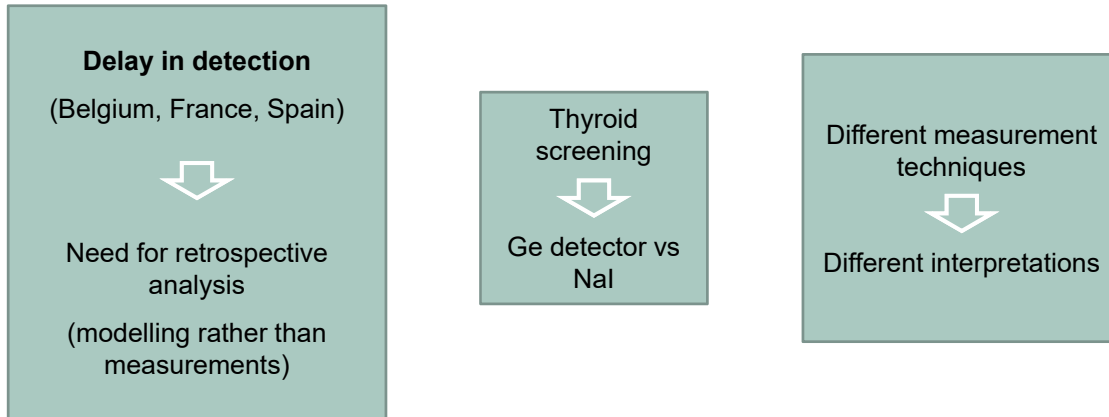


Tricastin (... - 2008), uranium leak into groundwater



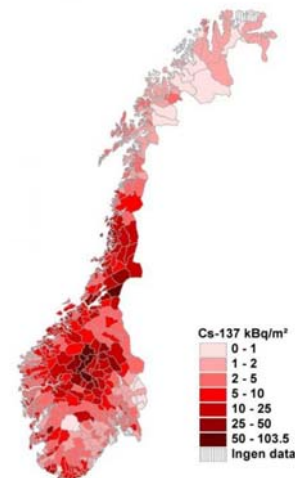
Krsko (2008), unusual event

Measurement uncertainty



Underestimation of the accident...

- Potential consequences
- Duration of the problem
- Variability in distribution of contamination



Contradictory information ^{YT3}



- Permissible limits has been exceeded, but it's not dangerous
- Any increase in radiation causes cancer, but it is insignificant.
- No health danger for locals, but radioactivity tests for citizens who want a check-up of their thyroid
- It is prohibited for citizens to use their self-harvested fruits and vegetables, but local farmers can sell their fruits and vegetables on the market.



Intervention limits

- Use of maximum measured levels, not average
- Variance in intervention limits for different foodstuffs
- In Norway, no actual measurement results presented

Unclarity of responsibilities

1st of September – start of thyroid measurements in Belgium; teachers did not know the kids

Norway, France – Focus on socio-economic consequences + health
Belgium, Spain – Focus on health



Slide 7

YT3 Examples are from Norway and Belgium as I have no access to media analysis from other countries

Yevgeniya Tomkiv; 11-06-18



- Lack of openness and transparency (except for Slovenia)
- Focus on vulnerable populations
- Restrictions for local farmers – compensations

YT2



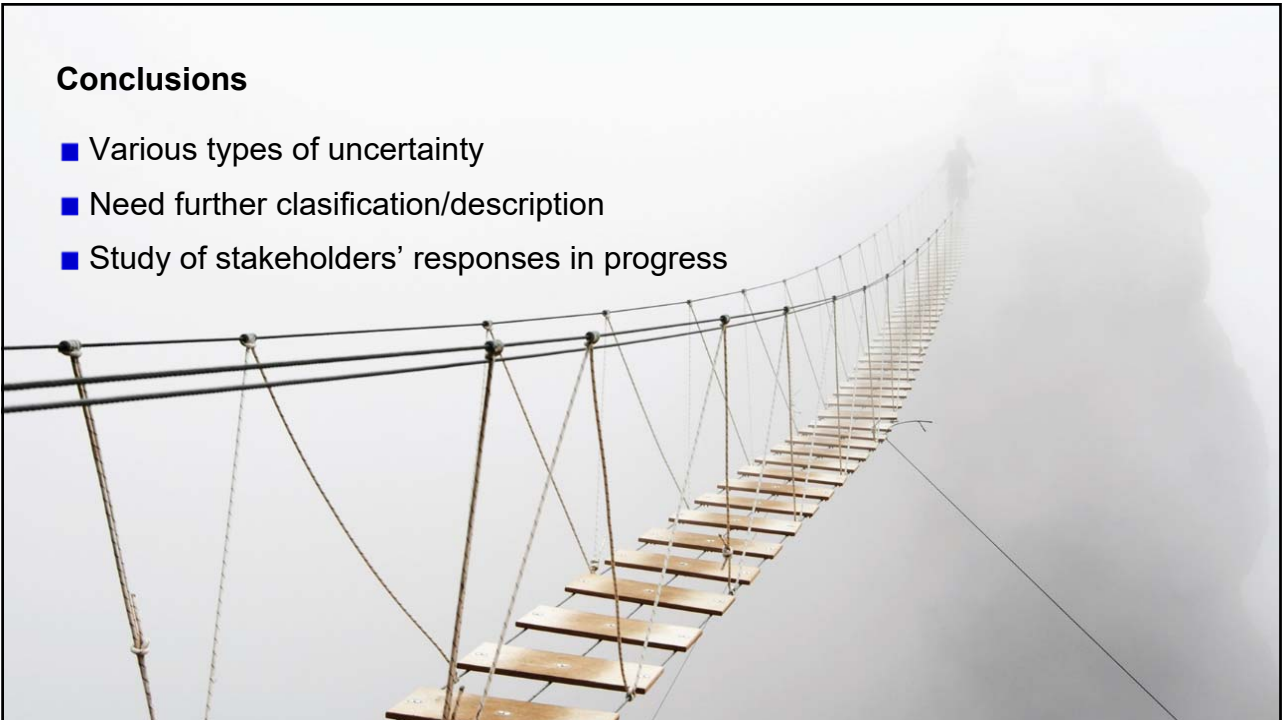
This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.

18.06.2018

9

Conclusions

- Various types of uncertainty
- Need further classification/description
- Study of stakeholders' responses in progress



Slide 9

YT2 Tanja, were there restrictions for farmers in Belgium?


Yevgeniya Tomkiv; 18-04-18

Thank you!



CONFIDENCE
Creating with confidence the next generation of
innovative leaders

CONCERT
EUROPEAN UNION PROGRAMME
FOR THE RESEARCH AND
INNOVATION OF
EUROPEAN RESEARCHERS

 This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.

18.06.2018

11