

Abstract submission form

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Abstract information

Presentation type [1]	Oral
Select one or more topic [2]	Updating handbooks, guidelines and recommendations to support decision making
Subject of the presentation	Towards an improved decision-making process to better cope with uncertainties in the early and transition phases
Participation NERIS Young Scientist Award [3]	
Proceedings of the Workshop 2020 [4]	Yes

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Updating handbooks, guidelines and recommendations to support decision making

Future research needs

Other

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Towards an improved decision-making process to better cope with uncertainties following a nuclear accident - Feedback from the French experience

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Abstract

The Work Package 4 (WP4) of the European Research Project CONFIDENCE (COping with uNcertainties For Improved modelling and DEcision making in Nuclear emergenCiEs) aimed to identify and reduce uncertainties which could emerge in decision making processes, in order to improve the preparedness and response after a nuclear accident. To that end, stakeholder panels have been set up in different European countries to collect their views and questions regarding the decisions to be taken in the event of a nuclear crisis (e.g. review or lifting of the initial protective actions, food and water control, urban decontamination, etc.). Discussions with the panel members were based on hypothetical nuclear accident scenarios developed in the framework of Work Package 1 (WP1) of CONFIDENCE. In France, a panel has been established gathering several decision-makers involved at the national and local levels of the French post-emergency response management. The idea was to assess with them the influence of prior decisions made during the emergency phase over the medium to long term evolution of the situation. The panel focused on two protective actions: i) the evacuation and temporary relocation of populations and, ii) the restrictions on food consumption and distribution. Generally speaking, the national panel meetings have clearly highlighted the following findings and outputs: i) displaying the evolution of the situation over time is confirmed to be useful for decision-makers; ii) beyond radiological issues, decision-makers need various information, notably geographical and socio-economic ones; iii) the transition from emergency to post-accident phases is a challenging period; iv) ownership of the decisions will not rely only on local level, but would also be a political challenge at national or international levels.

Besides these elements, the French national panels also emphasized that emergency situation brings multiple types of uncertainties which should be better considered to improve the living conditions of the affected population and the overall quality of their environment. It turns that the various uncertainties highlighted by the national panels are associated whether with the production of information (i.e. external uncertainties related to modelling, field measurements, calculation errors, etc.) or with the use of information (i.e. internal uncertainties related to the decision itself, its implementation and governance and its possible social and economic impacts). In this context, this presentation aims to present more in detail the various types of internal uncertainties which have been raised during the panel discussions: i) the Governance aspects, ii) the Environmental issues, iii) the Human health and safety issues, iv) the Social aspects, v) the Economic aspects. An additional category dedicated to "Transversal issues" has also been considered. This category refers more particularly to 'external uncertainties', and notably issues related to support of information which can better guide decision-makers. The Figure 1 illustrates the various types of uncertainties which have been raised during the panel discussions.

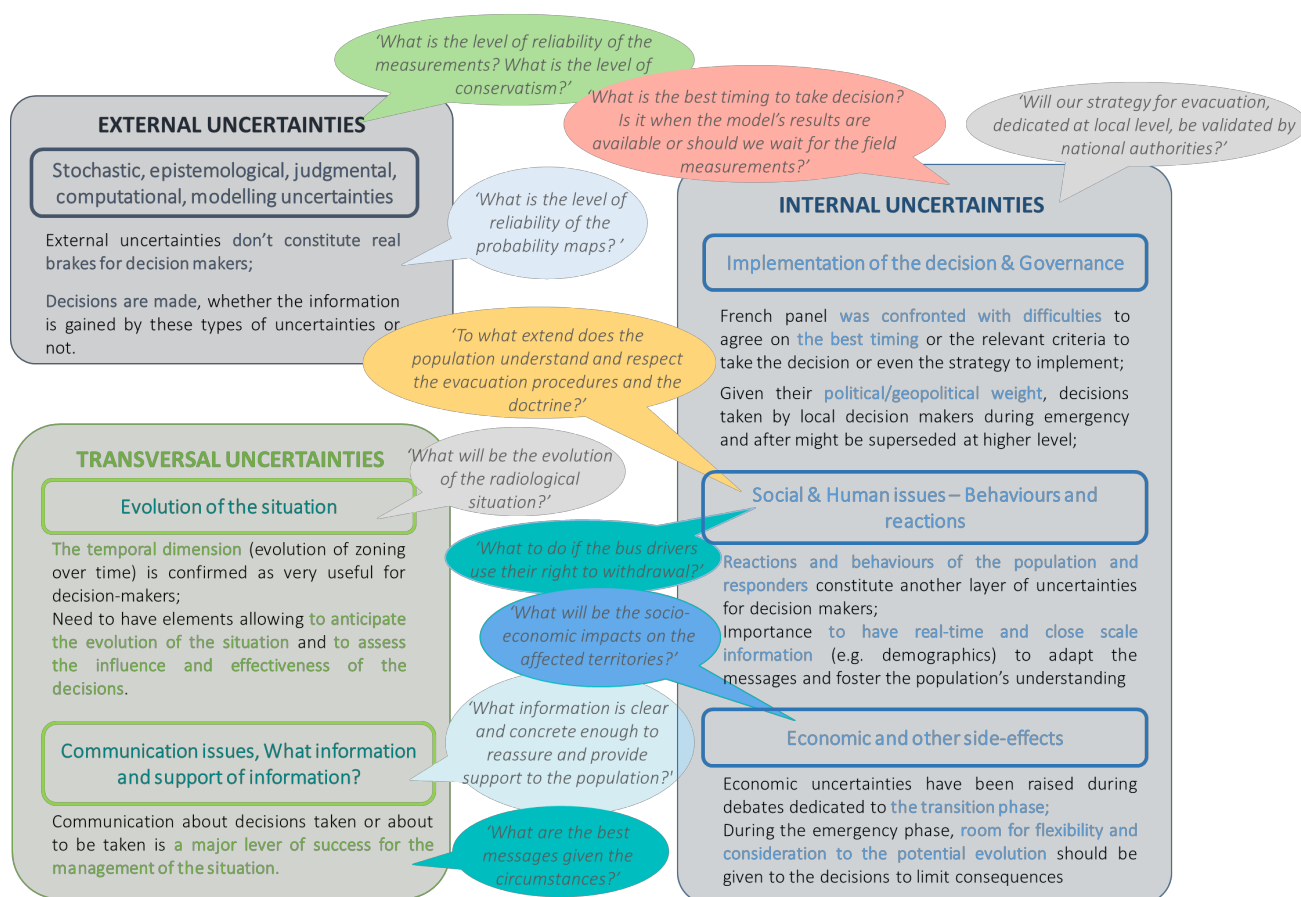


Figure 1: The various types of uncertainties raised by the French national panels

Based on the different categories of uncertainties raised by the French and other national panels, within the WP4, 14 recommendations have been prepared to better consider these uncertainties and so, to improve the decision-making processes in the transition phase or even to help the preparedness for the emergency response. The Figure 2 illustrates the distribution of these 14 recommendations which have been elaborated in accordance with six categories of uncertainties. One of these recommendations, directly in line with the French panel discussions, will be further detailed in the last part of this presentation.

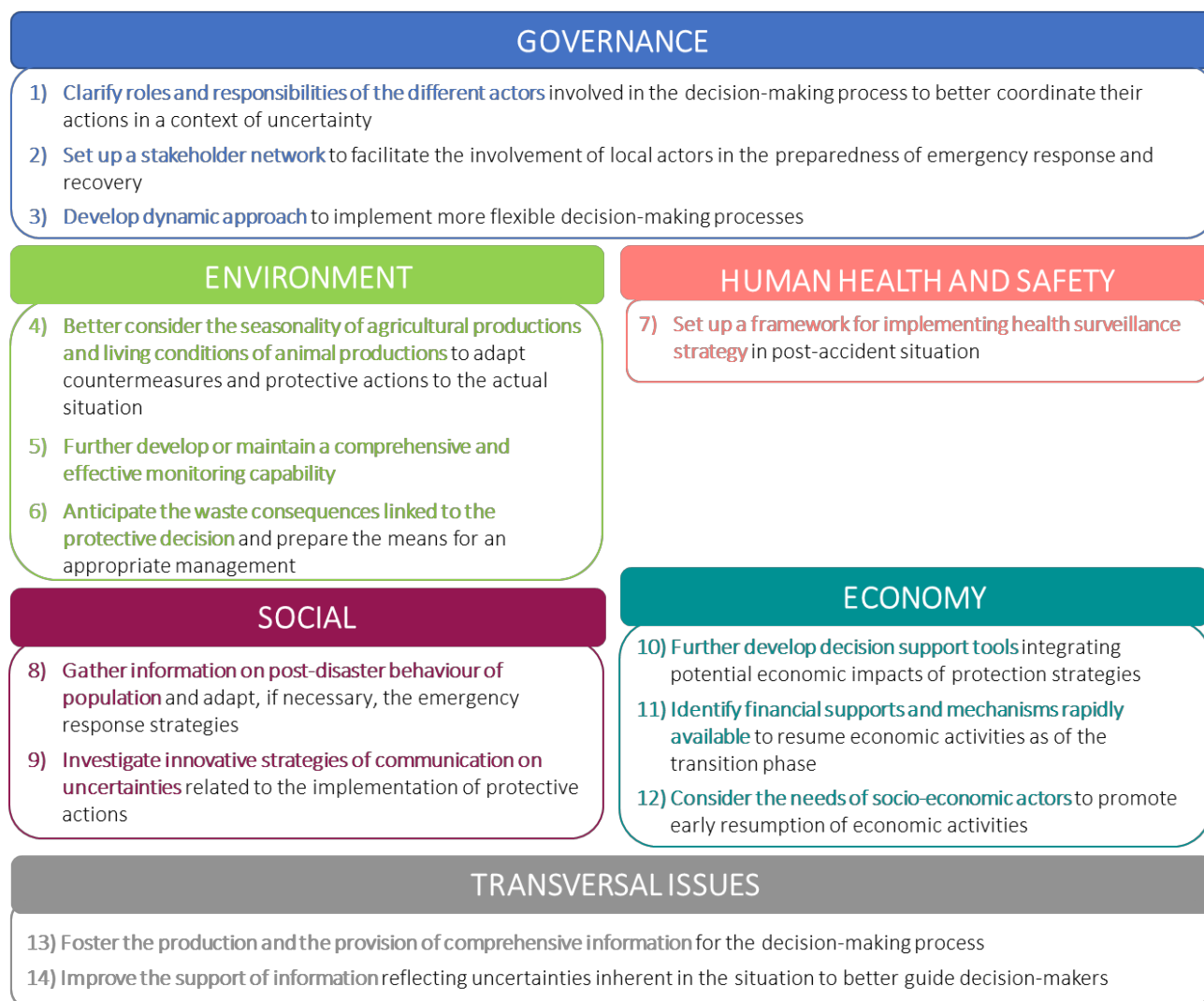


Figure 2: Overall structure of the recommendations to promote best practices in the decision-making process addressing the six uncertainties categories raised by the WP4 national stakeholders' panels.