



Contribution of civil society to industrial safety and safety culture: lessons from the ECCSSafe European research project

ECCSSafe European research project (2014-2016) has showed that civil society can (and actually did) contribute to safety of industrial activities, including nuclear activities, if favourable conditions are met. It also proposes a programme for further research in this field.

Why initiating research on the contribution of civil society to industrial safety and safety culture?

The interactions between civil society and local actors on the one hand and institutional actors engaged in safety¹ of industrial activities on the other hand are most often addressed either through the general issue of stakeholder involvement, perception studies, risk governance studies or through the more general issue of the exercise of democracy regarding technical issues. Social and human aspects of industrial safety are addressed through the analysis of human and organisation factors of safety that are focused either on the analysis of single organisations (e.g. operators²) and their safety culture or address a safety system where safety is the result of the actions and interactions of operators, regulators and experts.

We can currently observe that some regulators and technical support organisations, in particular in the nuclear field (e.g. IRSN in France, SITEX network in Europe), are developing new approaches where civil society is incorporated in the safety system as an additional layer contributing to safety, moving from a 3-pillar safety approach (operators, regulators, experts) to a 4-pillar conception including civil society.

In this context, the ECCSSafe (Exploring Civil Society Contribution to Safety) research project³, carried out between 2014 and 2016 in the framework of the SAF€RA ERA-NET addressing industrial safety, aimed to further explore the contribution of civil society to industrial safety by providing a theoretical framework for the analysis of this contribution, analysing three concrete cases in the nuclear field and in other industrial fields in Europe and identifying key issues to address in further research and proposing guidelines for a larger scale research.

The 3 case studies analysed by ECCSSafe were:

- The engagement of the Local Information Commissions attached to nuclear sites in the decennial safety reviews of the reactors of Fessenheim nuclear power plant (France)

¹ The concept of industrial safety is defined as the set of technical provisions, human means and organisational measures internal and external to industrial facilities, destined to prevent accidents and malevolent acts and mitigate their consequences.

² In this document, the word “operator” refers to the whole organisation that operates a hazardous facility (e.g. the electricity company operating a power plant).

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- The mobilisation of local actors in environment and safety issues posed by the Dorog hazardous waste incinerator (Hungary)
- The local partnerships for site selection for a low and intermediate level radioactive waste in Slovenia

The contribution of civil society to safety in international guidelines

International guidelines both in the nuclear and chemical field recognize the contribution of civil society to safety and make this a key rationale for supporting the engagement of civil society in safety issues.

In the nuclear field, the IAIE INSAG-20 report on stakeholder involvement in nuclear issues establishes links between issues of stakeholder involvement and safety that were previously disconnected. In effect, stakeholder involvement was previously considered essentially under the prism of the issue of acceptance of nuclear facilities, without links to safety. The contribution of civil society to safety is asserted in the document as early as in the introduction:

“Establish that substantive stakeholder communications contribute to the safe operation of nuclear facilities.”

as well as in the conclusion of the document:

“The active involvement of stakeholders in nuclear issues can provide a substantial improvement in safety.”

Moreover, a specific section (section 2) of the document is dedicated to “*safety relevance of stakeholder involvement*”.

In the chemical field, the OECD Guiding Principles for Chemical Accident, Preparedness and Response insist on the necessity of cooperation between all categories of stakeholders, including “*labour organisations, other non-governmental organisations, research/academic institutions*”, on the basis that all categories of actors share a common role to “make chemical risk reduction and accident prevention... priorities in order to protect health, the environment and property”⁴. In the section “Prevention of chemical accidents” of OECD Guidelines, contributions of several types of civil society actors or local actors (labour organisations, NGOs and local communities) to safety are more precisely described⁵.

The OECD Guidance on Safety Performance Indicators also stresses the contribution of civil society and local actors to safety as a potential partner of the industry and regulators to improve safety.

“Prevention of accidents is goal for all relevant stakeholders from public authorities to industry to the public. These stakeholders, which include trade associations, labour organisations, environmental groups, universities and research institutes, community-based groups/communities, and other non-governmental organisations, have an important role in helping to improve safety at hazardous installations. These stakeholders are in a unique position to [...] work with the industry on innovative ways to improve safety of hazardous installations and reduce risk.”⁶

⁴ See section “Golden rules”, subsection “Roles of all stakeholders” page 21

⁵ See paragraph 4.b.1, 4.b.3, 4.e.1 and 4.e.3 page 81, paragraph 4.e.2 page 82 and paragraph 5.d.1 page 101

⁶ see section B “Guidance to Public authorities”, Chapter B3 “External co-operation”, paragraph B3.3 “Co-operation with Other Non-governmental Stakeholders”, page 132

The 3 case studies of ECCSSafe

The engagement of the Local Information Commissions attached to nuclear sites in the decennial safety reviews of the reactors of Fessenheim nuclear power plant (France)

This case study describes how the Local Information Commissions (Commissions Locales d'Information – CLI), gathering local elected representatives, local civil society organisations, representatives of the workers of the power plant and qualified personalities, commissioned external expert assessment of the decennial safety reviews of Fessenheim nuclear power plant. It addresses

- The engagement of the Local information commission of Fessenheim (CLIS) in the three successive decennial safety reviews of reactors of the Fessenheim nuclear power plant from 1989 to 2012, how the CLIS commissioned external expert assessment of the decennial safety reviews of Fessenheim nuclear power plant and how this process impacted safety of the facility.
- The national process led by the Nuclear Safety Authority (Autorité de Sûreté Nucléaire – ASN) and the Institute for Radiation Protection and Nuclear Safety (Institut de Radioprotection et de Sûreté Nucléaire – IRSN) from 2009 to facilitate the engagement of the engagement of the different CLIs in France in the decennial safety reviews of nuclear reactors.

The mobilisation of local actors in environment and safety issues posed by the Dorog hazardous waste incinerator (Hungary)

This case study describes how the local community of Dorog and the Environmental Protection Association of Dorog (EPAD) mobilised on environment and safety issues following several safety problems posed by a hazardous industrial waste incinerator (illegal waste storage and respiratory diseases, emission and slag problems, serious water pollution...) since 1984 to current days. It describes the strategic shift of local actors from massive civil resistance to cooperation and negotiation with the incinerator and how these successive strategies produced different safety improvements.

The local partnerships for site selection for a low and intermediate level radioactive waste in Slovenia

This case study describes how Local Partnerships (LPs) were established in Slovenia between 2006 and 2010 to serve as the organizing framework for all activities undertaken during low and intermediate level radioactive waste (LILW) repository site characterization and confirmation of potential sites. They were providing a platform for cooperation and, to some extent, for decision-making by local stakeholders. LPs were designed by the radioactive waste agency (ARAO) as an attempt to give the possibility to individual municipalities to redesign the siting approach according to their needs. It describes how the LPs enabled local actors from the municipalities of Krško and Brežice to address various issues related to LILW repository, including safety issues and the limits of this approach.

Key outcomes of ECCSSafe

ECCSSafe showed that, under favourable circumstances, **civil society can and has actually contributed to safety of industrial activities**. The engagement of the CLLs in the decennial safety visits of French nuclear reactors and the mobilisation of civil society on the Dorog incinerator in Hungary demonstrate actual improvements in safety due to the engagement of civil society organisations.

In the three case studies, **different types of contribution of civil society** to safety were identified we have identified:

- Stretching regulators and organisations operating hazardous facilities
- Identifying undetected safety issues
- Pushing to reinforce some dimensions or include new dimensions in safety
- Acting as an additional layer of quality insurance of the safety system
- Contributing to improve the transparency and readability of the safety system

If the cases enabled to identify possible (and observed) contributions of civil society to safety to safety, they also showed that this **contribution of civil society to safety requires favourable conditions to develop**. These conditions include:

- A clear and legitimate governance framework, enabling cooperation between operators of hazardous facilities, regulators, technical support organisations and civil society without blurring roles of these actors.
- Access of civil society to information
- Access of civil society to expertise, including independent expertise and institutional expertise.
- Technical mediation in order that technical issues are presented in a way that is accessible to non-expert actors and that relates to civil society concerns.
- Resources and empowerment of non-expert actors.
- A balance of power between civil society and institutional actors

ECCSSafe also drew lessons related to:

- Sharing of elements of safety culture between civil society actors and institutional actors of safety;
- How safety can be addressed as a common good between the various actors in the safety system (including civil society actors) and how civil society can progressively structure to address safety issues;
- How governance of hazardous activities and safety issues can facilitate the engagement of civil society in safety issues and the processes of co-evolution between civil society and the governance framework
- Controversies and co-framing of safety issues with stakeholders
- Trust and its role in the capacity of civil society to influence safety

ECCSSafe proposition for further research on the contribution of civil society to safety

ECCSSafe is an exploratory study with a limited scope and, as such, it does not have a sufficient empirical basis to deliver an in-depth analysis of the issue of the contribution of civil society to safety and safety culture. If some of the lessons learnt from the case studies are of general application, their reduced empirical basis calls for confirmation through larger-scale research. The project made different proposals for such larger-scale research, which are summed up below.

Identification and characterization of the contribution of civil society to safety and safety culture

ECCSSafe suggests that larger-scale research could refine this identification further and try to establish a more complete typology of the contributions of civil society to safety, based on a wider empirical basis.

Larger-scale research based on a diversified empirical basis could also refine further the identification of favourable conditions for the contribution of civil society to safety, including the cultural, political, structural background conditions of the development of the contribution of civil society to safety. For this, the empirical basis considered should have sufficient historical depth (typically decades) to catch the evolutions of these background conditions.

Safety as a public affair and definition of the “public” associated to safety

ECCSSafe case studies has showed different processes of formation of a “public” associated to safety issues, in John Dewey’s sense of the “public”, i.e. the people affected by an activity, which progressively structure to investigate and influence this activity.

Larger-scale research can investigate further the social and political dynamics of formation of such a “public” and the conditions that facilitate (or conversely hinder) its formation:

- What is the dynamics of co-evolution between the constitution of the public of a safety issue and the framing of the issue at stake?
- How does this public recognises itself as such? How is the heterogeneity of this public dealt with (by this public and by institutions)? Are there collective learning processes or processes of cultural convergence at stake between the actors composing this public?
- What is the role of the divide between expert and lay people in the formation of this public, and how knowledge and expertise are mobilised?

Understanding of safety and safety culture

Larger-scale research can address the question what is the safety culture shared by the different civil society actors engaging on a same safety issue, at the local level (e.g. a hazardous facility) or at the national or supra-national level (e.g. safety in a particular field of activity, or public policies related to safety).

This differs from safety culture in its usual definition, which stems from organisational culture and is most often related to a considered organisation. In order to describe the safety culture of civil society actors, other definitions of safety culture should be used or developed, which are not related to a specific organisations, but to the group of civil society actors engaging in a given safety issue, or the “public” of this safety issue. In particular, the issue of the formation of a public related to a safety issue can be addressed together with the issue of the progressive sharing and development if a safety culture shared within this public.

Finally, dealing with organisation-oriented safety culture and safety culture of the “public of safety issues” raises the issue of the interaction between both types of safety culture and how the corporate safety culture of operators of hazardous facilities, regulators and their

technical support organisations can be influenced by the safety culture of the “public” of the safety issues at stake (and conversely).

Governance of hazardous activities and safety governance

Larger-scale research can rely on a wider empirical basis to perform a comparative study of a variety of governance frameworks aiming to the engagement of civil society in safety issues. A typology of these governance systems could be developed on this basis. The following questions could be addressed:

- What are the rationales for including civil society in the governance of the considered hazardous activity or safety issue? Is civil society considered as a contributor to safety? If it is not the case, how do civil society actors use the existing governance framework for supporting their claims to engage in safety issues and contribute to safety?
- Is safety a common good between all actors in the considered governance framework? If it is the case, what are the formal or informal rules ensuring that this status of common good is preserved and developed?
- How is the governance framework adapted or transformed as a result of the engagement of civil society actors?

Controversies and co-framing of safety issues with stakeholders

Yet, the issue of controversies while safety issues are addressed by a hybrid network composed of both institutional actors and civil society actors is relevant for larger-scale research. In particular, the Actor-Network Theory provides some relevant powerful tools and instruments to analyse this issue. Some questions that can be addressed are:

- How do controversies develop and are dealt with in such networks of institutional actors and civil society actors? Do controversies result in a “social construction of safety”?
- How are technical and non-technical aspects (legal, social, ethical, moral aspects) addressed in these controversies?
- What are the conditions and means for interaction between institutional experts and non-institutional experts? Between expert and non-expert actors?
- What is the role of the function of technical mediation? How is this function implemented and by whom?

Trust

The case studies have shown that trust is an important condition for the joint engagement of institutional actors and civil society actors in safety issues. The type of trust that is at stake is different from confidence (or blind trust); it is an informed trust fuelled by processes of regular testing and checking of the trustworthiness of the actors and regular interactions between these actors. This type of trust is not a given but develops (or is damaged) through the interactions between institutional actors and civil society.

Following Luhman’s and Giddens’ works on trust, larger-scale research can also investigate how trust relations enable integrating the (increasing) complexity of safety issues. Larger-scale research can notably tackle the following issues: how is the intervention of civil society challenging the structure of the safety system? And what are the conditions and means enabling the engagement of civil society actors to recompose the safety system with new trust relations? Are there specific conditions or events that are more favourable to such recomposition?

Larger-scale research can also address the issue of how the engagement of civil society, and possible ensuing recomposition of the safety system and relationships between its actors, influences societal trust in this safety system.