



# Industrial Risk in the Lombardy Region (Italy): What People Perceive and What Are the Gaps to Improve the Risk Communication and the Participatory Processes

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Risk communication is of vital importance in today's society, as audiences become ever more questioning about the causes and effects of risk. However, the communication of risk is a complex activity involving many different types of communicators and receivers from scientists, to the media, to government agencies, industry and consumer groups, each of which having its own agendas to fulfil. Such variation across the communication of the same risk can lead to confusion, misunderstandings, misreporting in the media and subsequent conflicts.

The goal of risk communication is to produce an informed public. The personal nature of risk issues and the uncertainty associated with estimating risk can provoke considerable anxiety for the public and make adopted risk management strategies less acceptable.

Lombardy is one of the most densely populated and industrialized regions in Europe and nearly 280 Seveso sites interest it. The Seveso Directive requires specific measures on risk communication to the population. Nevertheless, the Lombardy Region Authorities consider that the implementation of such provisions is too weak. Therefore an exploratory research has been concluded, in order to estimate the gaps in risk communication and to improve the participation of the population in the emergency preparedness activities.

The paper reports the main results of the research and illustrates the potential strategies to improve the risk communication and the population participation and preparedness (ÉupolisLombardia, 2011).

## 1. Introduction

Public risk communication and risk acceptance are critically related issues. The level of conflict generated at local scale by industrial hazardous sites, as well as from many other sources of hazard, mainly depends on the capacity of people to understand the nature of the risk to which they are exposed and to evaluate what level of risk they are ready to accept. Hence, the social acceptance of risks, mainly depends on the capacity of the risk managers or public authorities, responsible for the territorial risk management, to exchange information with the citizens and to communicate about their local strategy and the risk prevention decision-making process. In these terms, risk communication can be seen as a key feature of the risk management process, even if it often deals with different and conflicting perspectives supported by controversial-community members, activists, government officials, scientists, and corporate executives that may disagree about the nature, magnitude, or severity of the risk in question.

Considering the key role of public authorities and hazardous industries operators in the risk management and related prevention activities, it can be argued that they have a huge responsibility to mitigate or amplify potential conflicts among the population and other relevant local stakeholders exposed to industrial risks. An effective risk communication process is crucial to increase the participation of the population to the risk management process and therefore to reduce the potential territorial conflict.

This paper aims to report the experience gained during a research project financed by the Lombardy Region which focused on the identification of gaps and constraints which may affect the involvement of population exposed to industrial risks into the risk prevention process and management. In particular it evaluates the aspects that may trigger a high level of conflict.

## **2. Role of risk communication**

Risk communication is characterized as one way of facilitating more effective, democratic and participatory risk management strategies. An emphasis on formal communication approaches as a mean to improve decisions and decrease conflict highlights the challenge of managing hazards within a culturally heterogeneous society. Communication and participatory strategies will be considered successful only if diverse communities can be engaged as partners in the policy process. Because responses to risk are embedded and evolve within broader social environments, achieving the promise of risk communication across a diverse society may not be possible absent an understanding of how socio-cultural variables and past experiences shape the exchange of ideas or information in any particular situation (Renn, 1991).

Engaging stakeholders and the public at an early stage in decisions about risks can help ensuring that decisions will reflect better the public's values and can reduce the scope for misunderstanding, disagreement and resentment later on. This can make it easier to implement measures to address risks, particularly where these require the public to take action. Providing clear and accurate information about the nature of risks can help people making realistic assessments of the risks they face, and where appropriate, to make informed judgements on how to handle risks themselves. This can in turn help to foster a climate of greater empowerment and reassurance, and reduce the risk of rumours and scares (Slovic, 1986).

On the contrary, a deficit of information or of public involvement may drive to an amplification and distortion of public risk evaluation and the potential generation of conflict. As Kasperson (1992) well investigated "risk amplifiers," i.e concerns over a given risk are more driven by interpersonal communication than by mediated communication, as in the mass media; certain organizational characteristics, such as the lack of organizational commitment to the risk management function or the bureaucratic attenuation of information flow within the organization, serve to attenuate risk signals; and social distrust acts to heighten risk perceptions, to intensify public reactions to risk signals, to contribute to the perceived unacceptability of risk, and to stimulate political activism to reduce risk. According to Kasperson and Kasperson (1996) amplification occurs at two stages: in the transfer of information about the risk, and in the response mechanisms of society. Signals about risk are processed by individual and social amplification stations, including the scientist who communicates the risk assessment, the news media, cultural groups, interpersonal networks, and others. Key steps of amplifications can be identified at each stage. The amplified risk leads to behavioural responses, which, in turn, result in secondary impacts.

## **3. Main Objective of the Research**

Following the accident that occurred in 1976 in Seveso, a village located few kilometres, North of Milan, the European Union prompted the adoption of legislation aimed at the prevention and control of such accidents. In 1982, the first EU Directive 82/501/EEC (EU, 1982), the so-called Seveso Directive – was adopted. On 9 December 1996, the Seveso Directive was replaced by the Council Directive 96/82/EC, so-called Seveso II Directive. This Directive was extended by the Directive 2003/105/EC (EU, 2003). The Seveso II Directive applies to some thousands of industrial establishments where dangerous substances are present in quantities exceeding the thresholds in the Directive. Lombardy is

interested by nearly 280 Seveso sites, nearly a quarter of all Italian industrial sites interested by the Directive.

The Seveso Directive requires specific measures on risk communication to the population.

Nevertheless, the Lombardy Region Authorities consider that the implementation of the Directive's provisions is too weak. Therefore, the Lombardy Region financed an exploratory research in November 2009 and all the research activities ended in February 2011 (ÉupolisLombardia, 2011). The research was conducted in order to estimate the existing gaps in risk communication, the subsequent conflicts and to evaluate how to improve the participation of the population in the emergency preparedness activities. The main goal of the project was to evaluate how to improve the communication of risk to the population exposed to industrial risks, hence to mitigate the related social conflict on the basis of an institutional learning process involving governmental bodies industrial organizations and the population. The project was supported by a multidisciplinary research group, which investigated the following aspects.

- The regional activities regarding the risk communication at local level.
- The nature and status of the main stakeholders groups' perception of the industrial risks and the existing conflicts, collected through interviews and groups 'discussions.
- The analysis of the gaps and ways of improvement related to an effective strategy of communication between industry, population and emergency services. A forum involving all the institutional stakeholders was set to discuss this issue.

The main outcomes are summarised in the following paragraphs.

### **3.1 Risk perception of the public authorities**

In order to evaluate the risk perception, two types of public authorities were interviewed: all the Majors of the municipality, where at least one Seveso industry is located and the Safety Control Authorities, i.e. the Environmental Protection Agency and the Fire Brigade Rescue Services.

In order to evaluate the role of the Majors it should be pointed out that in Italy, the Civil Protection is a "national service" organized on four levels of competencies and responsibilities, thus conceived to identify solutions to different problems. The first level is municipal: the Mayor is the first Civil Protection authority within the Municipality, the one closest to citizens. The role of the Municipality during peacetime is to promote and improve the level of preparedness of the citizens, to set prevention and emergency plans. During an emergency its responsibility is to evaluate rapidly and accurately the severity of the incident and respond appropriately, speeding up the deployment of rescuers. Therefore the role of the Major is one of most crucial within the contest of the full risk management process.

A set of 196 questionnaires was sent to each Major of municipalities interested by at least one industrial site at risk. Of these, 102 questionnaires were returned, i.e. approximately 52% of the reference sample. To summarise the main results of the survey dedicated to the Majors can be summarized as follows: the level of risk is generally low; the presence of industrial site does not imply a particular socio-economic benefit for the local community and improving the knowledge about risk is not useful and can introduce some degree of conflict.

In order to evaluate the perspectives and the needs of the Prevention and Safety Authorities (i.e. Industrial Safety Control Authorities, the Environmental Protection Agency and the Fire Brigade Rescue Services) several meetings were organized. In reality all the different phases of the project and the related activities were preliminarily discussed with them (together with a representative of industrial operators) in order to share the goals and the related expected results. The outcomes of the research activities (i.e. workshops, meetings, surveys) were jointly analysed and discussed as well.

As main result of such experience, it could be argued that these authorities consider as main strategic issue, the possibility of being able to communicate to the public that Seveso industries are subject to stringent inspections and controls. Nevertheless, people have to be aware that even if all relevant control activities, as provided by applicable law, are effectively implemented, a certain degree of risk remains, even if at a very low level. Communicating to people the concept of residual risk has the advantage to force the population to participate and contribute to the process of risk management. Since authorities have taken all the possible technical measures to prevent an accident and mitigate impacts, the population can decrease further its risk only by adopting a proactive approach, i.e. by

understanding the characteristics of hazards and by learning the auto-protective measures that can be adopted during an emergency. Therefore the communication of institutional activities of the safety control authorities can contribute to ameliorate the perception of risk and the level of conflict.

### **3.2 Risk perception of the Seveso industries**

With regard to the generation of a possible conflict with the population, the position of Seveso industries is very explicit and clear. The industry has a vested interest in improve the communication in order to mitigate the conflict. The conflict can significantly affects the local business activities and it could threaten its permanence on the territory. A representative of industrial operators was involved in all the different activities and tasks of the project. During all workshops and meetings, it illustrated its role and the contribution to risk prevention and the needs for a more effective involvement of the population.

Considering the strict controls to which Seveso industries are submitted, the industrial operators declare that they have no reserves to show what is the level of risk to the territory, even because all the relevant information are already public as foreseen by the Seveso Directive.

At the moment the potential conflict with the population is mitigated by compensative measures, i.e. mainly by sponsoring social activities of the local communities. However, the industrial activities still need to be better known by the local population. For this purpose, industries could think to dedicated initiatives that can reduce such gap of knowledge, like for instance, guided tours of the facilities or public meetings where they can illustrate their production activities and the safety measures to prevent accidents. This approach could also improve the relationship with journalists and the media. At the moment, industry suffers from the rather distorted information reported by some local media that in fact can increase the degree of conflict with the local population.

In conclusion, according to the results of the research, the industry sees the opportunity to positively contribute to the training and information of the local population if it can help mitigating the conflict.

### **3.3 Risk perception of the local communities**

In order to evaluate what was the perception of the public exposed to industrial risk, two workshops were organised in a Municipality characterised by a high number of Seveso sites. One workshop was organised in a technical high school, because students can constitute a representative sample of young population of the municipality. The second one was dedicated to representatives of the local population.

A member of each authority involved in the risk management took part to the workshops as well as a representative of the local hazardous industries.

The main outcomes of these experiences are the followings:

- The level of risk perception of population is very low.
- Citizens are aware of the industrial activities in the area but have no particular perception of the risks that these activities entail.
- Citizens are not aware of the existence of an emergency plan, and even if they are aware of it, they consider it too complicated to be made available and usable by the population.
- Participants have no perception about the inspection and control activities made by the authorities.
- Even if industries are controlled and monitored, the participants are not aware that they are still exposed to a minimum and acceptable level of risk (residual risk).
- Participants do not have any perception that the residual risk, as already very low, can be further reduced if they would know the procedures to be followed during the development of a possible emergency.

Finally, the delegation of citizens and students that have participated to the initiative have shown much interest in the issues related to the behaviour of self-protection to adopt in case of an emergency, stating explicitly that citizens would like to participate and contribute more to prevention activities. From these experience the conflict is generated more from the lack of information and scarce attention dedicated by local authorities to this issue, than real risk perception.

### **3.4 Risk perception of local journalists and media**

Journalist and media are one of the most relevant mean that could steer the amplification and distortion of public risk evaluation and the potential generation of conflict. A dedicated workshop was developed to investigate the role they played at local level.

During the workshop, journalists highlighted how the pre-existence of a relationship of trust with the authorities, as well as the access to the already available information, would make their work more efficient and accurate; it would allow the media providing a better information to its readers and more generally, to the community.

For the journalists, the accessibility to information seems to be the most fundamental aspect of the whole process of communication, especially during emergency. They argued that if as a result of an accident, institutions or companies do not provide information, they are forced to seek elsewhere the information, thus risking to find false and inaccurate information.

Based on this consideration the following suggestions were formulated to improve the communication processes:

- It would be important to establish a communication network that involves industries and Municipality figures to better manage external communication.
- If the newspapers speak of prevention 'one off' there is a risk to create only alarmism among the local populations, but if risk communication and related activities involve the general public and journalist as well, according to a carefully structured program, there will be the advantage to disclose important information for all the citizens, but at the same time, to consolidate a partnership between institutions and the media.
- It might be useful to provide training for journalists.

## **4. Conclusions**

The research results showed that the level of risk perception of the population in Lombardy is still too low to define a program of communication without having considered in more detail the mode of involvement of the population. In a context characterized by a distorted perception of risk, the low risk perception could be a sensitive issue that may impend the start of the communication process because it could generate anxiety, alarmism or unnecessary conflicts.

Nevertheless, the experiments carried out showed that the population potentially exposed to the industrial risks, if properly involved, shows particular interest in issues related to prevention and self-protection. According to the main results of research project, the involvement of population into a dedicated programme on risk communication should not present a significant concern and the conflict between the industries and the population does not appear to be a particular obstacle to risk communication. On the contrary it was shown that collaboration could be beneficial for all the stakeholders while the most significant limitation to this process, is the low public perception of the problem.

During the research work and the field activities we mainly understood that the population exposed to industrial risk is willing to participate to the risk management process if properly involved in order to get the factual opportunity to contribute increasing its protection level as well as the protection of the local community. In particular, from all the elements that emerged from the research activity, following aspects can be highlighted:

- Understanding the conflict - All the actors and stakeholders involved in the process of risk management as well as the exposed population have not a rational approach to the evaluation of the risk. This aspect emerged in an evident way during the activities with the students and the public, but also can be recognised in the attitude of Majors and of industries. Therefore, conflict is not generated by the evaluation of evidence but by the differences of an acceptable level of risk. In other terms, the conflict is generated from the different perspectives on the acceptance of risk, real or perceived.
- Implications of conflict for communication - Conflict related to risks derive from an asymmetric level of information and different interpretations and evaluations of risk. It can be resolved by sharing information and interpretation among the different actors involved. These aspects arose from the

difference level of information of the safety authorities from one side, and the local authorities and population on the other side. Any other factors that could affect the conflict and that may not strictly be related to risk (e.g. religious or political motivations) will not be solved by sharing information but by specific communication strategies.

- Vested interests - When the conflict arose from vested interests, the communication should clarify the different interests groups' options and how they affect them. For instance, industries make clear what is their own objective: mitigating the conflict with the territory and the population because it could imply high costs and impact on competitiveness. This approach will help rendering explicit what are the different objectives of each stakeholder and it could contribute to find a compromise.
- Decision-making process - within the limits of available knowledge, to inform adequately the actors involved in the risk communication process and the related conflict does not necessary lead to the best decision, i.e. successful risk communication does not always lead to better risk management decisions, because risk communication is only part of risk management. Success is defined in terms of the information about the nature of the conflict which is available to the decision makers rather than in terms of the quality of decisions. Thus, risk communication does not result in consensus about controversial issues or in uniform personal behaviour but in defining the characteristics of the conflict.

Finally, the public evaluation of risk should be put in perspective. The public have to understand the meaning of to the risk assessment results and to be able to evaluate the risk management process. In particular, it is of very high importance that the population grasps the principle that the "zero risk" solution does not exist.

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