TACKLING EMERGING OCCUPATIONAL RISK LANDSCAPE: PROSPECTS AND CHALLENGES

Nicolae ILIAŞ¹², Roland Iosif MORARU², Mihai POPESCU STELEA²

¹Full Member of the Academy of Technical Sciences in Romania  
²University of Petroșani

Abstract: This article is aimed at analysing and summarizing significant information which are available regarding the basic issues of common concern, across Europe and worldwide, regarding the so-called emerging occupational risks, in terms of bodies responsible for prevention, control institutions and social partners involved in working processes. The main goal of our approach is to outline an overview on how the involved parties perceive this subject, certainly extremely important in the field of occupational health and safety. If consensus elements can be extracted, they start from the acknowledgment that defining and identifying the considered emerging risks is, by default, a challenge. Obviously it will not be enough to address them from an opposite perspective with respect to traditional risks. Consequently, we formulate certain principles aimed at emerging risk prevention need awareness in Romanian organizations.

Key words: occupational health and safety (OHS), emerging risk, foresight, prevention principle, management.

1. INTRODUCTION

The national bodies of occupational risk prevention, the European social partners, as the community courts, are sharing very close opinions relating the current developments of the labor market. The world economy is globalizing. Turning to new technologies of information and communication, as well as to new production technologies is a current aspect of the professional activities. These socio-economic changes occur on the background of more open markets and competition that is always keener, forcing the enterprises to permanently search to improve their competitiveness. A recent study of EUROGIP, provide the framework for conceptualizing and classification emerging risk, based on relevant criteria (EUROGIP, 2008). On the other hand, a study by the European Agency for Safety and Health at Work shows increasing levels of occupational stress reported in EU Member States (EU-OSHA Risk Observatory, 2009). The national occupational risk prevention bodies, the European social partners, as well as Community courts share very similar views on the current labour market developments. World economy is globalizing. Use of new productive, information and communication technologies is a matter of current professional activities (Goldan & Moraru, 2011).

Socio-economic change is occurring against a backdrop of increasingly open markets and fierce competition, forcing companies to continually seek to improve their competitiveness. Economic change leads to translation of business responsibilities and requires a certain degree of versatility to the workers. Existing trades and professions do transform in parallel with the emergence of completely new ones. Labour structure and hence working conditions are suffering and profound changes (CEE, 2002).

If widely applied new technologies contribute to improving working conditions, they can generate new risks, little known and poorly controlled among the most eloquent examples hovering nanotechnology. Of high-technology, information and communication generated the development of new jobs, such as phone call centre advisors. In parallel with technological advances, there is a significant trend of "aging" of the population and increase in the share of the female population in the whole working population. Increasing the retirement age legal limit in most European countries, together with general demographic decline, the share of "senior" workers in the total active population grew considerably. The average employment of workers aged between 55 and 64 years must exceed a weight of 50% in 2014 from 42.5% in 2004 (EU-OSHA, 2005).

Also, an increasing proportion of the population is employed in a precarious, unstable employment situation. This category is benefiting from less appropriate levels in terms of working
conditions, training and monitoring of occupational health in relation to permanent employees. These
trends affect organizations development, working conditions and the organization of occupational risk
prevention activities. New stresses of vision, auditory system, physical and mental, musculoskeletal
joint system and the cardiovascular risk without neglecting chemical and biological signals are
constantly being wholly or partly work-related. At the same time, it has also significantly evolved the
perception mode of the occupational risks. They are no longer accepted with fatalism as "being part of
the job". The commissioned bodies with the risk prevention and control, insurers, social partners and
public authorities, both national and European ones, tries to approach the new risks and threats
addressed to the occupational health and safety, risks merged in the word "emerging risks". These
risks, as well as those considered "classics" must be prevented and controlled.

2. EMERGING OHS RISKS: WHAT DO WE FACE?

The term "emerging risk" has generally an ambiguous character, but has the advantage of
allowing a distinction to traditional risks. We must stress that the perception of risks has also evolved
significantly. They are not accepted with fatalism as "part of the job". Bodies responsible for risk
prevention and control, insurers, social partners and public authorities seek to address new risks and
threats to occupational health and safety, risks merged into the vocable "emerging risks"; these risks,
as well as those considered "classic" should be prevented and controlled, based on employers'
obligations under the Framework Directive 89/391/EEC and Directives derived from this (Cioca &
Moraru, 2010).

According to EU-OSHA, an "emerging OSH risk" is any risk that is both new and growing
(EU-OSHA Risk Observatory, 2009). New means that:
● risk was nonexistent before and that is caused by new processes, new technologies, new
types of jobs or social or organizational changes, or
● a very old problem is now considered as a risk because of new scientific knowledge or a
change in public perception.

The risk is growing if:
● number of factors that contribute to the genesis of a given risk is increasing or
● likelihood of exposure to hazards is increasing (level of exposure and / or number of workers
exposed) or
● the effects of hazards on workers' health worsens.

Emerging risks can be characterized by a number of common elements, globally illustrated in
the diagram in Figure 1.

![Fig. 1. Emerging risks common characteristics.](image)

They acquire their emerging character in that they are better measured (quantified, evaluated),
or that sensitize society to their nature and potential consequences. By extension of this way of
definition can be considered as emerging also „older” risks due to the evolution of social perception
on the considered issue. In the general landscape of global emerging risks (see Fig. 2), attention
focuses on lesser-known risks, which are interpreted as emerging, although some of them have been
present before.
3. SUMMARY OF GENERAL EMERGING RISK FACTORS

Precise framing of emerging risks in a rigorous classification is a complex and difficult task as the categories identified and inventoried are sometimes characterized by vague limits, which may even overlap and interpenetrate. Current recurring debate regarding emerging risks multi-factorial character confirms the correctness of such an approach. Concerns of various stakeholders are focused on risks due to the following three main categories of factors:

- evolution of work processes;
- development of new technologies and industries;
- the emergence of new professions, coupled with individual demographic evolution.

**Categorial approach to emerging risks** involves consideration especially for certain categories of workers who are exposed to new and increasing risks than others. New forms of contractual work relationships illustrate the spirit of this approach. Subcontracting in cascade promotes the transfer of risks to other companies, less structured and equipped for the prevention of occupational risks.

**Outsourcing**, resulting in the departure of workers from enterprise, generates similar consequences. Fixed-term employment contracts induce to employment a certain level of insecurity. As a result, a growing number of workers have no occupational health services and health and safety training. This segment of the working population is a new target of the prevention and control approach.

**Rapid fluctuation of personnel** considerably hampers on acquisition of safety culture. This insecurity is characterized by frequent change of job, while the insufficient adaptability time of workers may be the cause of an accident.

Another element to consider in the Romanian EU integration is the **general aging** of the working population due to increased life expectancy and the legal limit retirement. Even though the increase of senior workers in the active population is a declared objective it is admitted that senior workers are one of the most vulnerable groups. In the same category are included also young workers. For these two age groups, to develop and implement a strategy to extend the working life, respectively to provide a safe debut is a necessity.

**Contractual relationships** often have repercussions on health and safety (temporary workers, part-time employees newly established companies). Increasing **feminization** of the workforce raises a broad reflection on the appropriateness of consideration of gender belonging to the prevention policy. Indeed, reflections on risk assessment are more likely to turn on dangerous work tasks performed by men, instead of taking into consideration the essentially feminine industries (Moraru, 2012).

Stress at work, which tends to become a generic term that marks the assembly of psychosocial risks is considered as a manifestation of the existing imbalance between the obligations of the worker
and the means and competences of which disposes to carry out tasks. Difficult to quantify itself, stress at work can be appreciated through the conveyance of some indicators such as absenteeism and staff fluctuation within enterprises. Although it is not recognized as an occupational disease, it is acknowledged the fact that, endured for a long time, stress is capable to induce adverse effects on health, to constitute the cause of some musculoskeletal disorders, metabolic disorders, immune deficiencies and depressions. Also violence in the workplace is an emerging risk, whether it is the actual use of violence or the mere threat of violence. Violence at work is frequently quoted as a major cause of psychosocial risks. The aggressions are situated here, but also various forms of harassment (verbal, moral, physical, sexual), both inside and outside of the enterprise (workers are subdue to the violence of the public or customers). Prevention strategies that follow to be identified will have to concentrate on workers and to address to different dimensions of violence at work.

There is a definite dependence between the organization work mode and the type of enterprise, on the one hand, and workers satisfaction, on the other hand. For example, an economic organization characterized by flexible schedules and a forced work rhythm of clientele corresponds to the enterprise profile in which the workers are more exposed to physical and psychological violence. In contrast, within the companies characterized by a working automated mode, most commonly there are manifested physical, chemical and overloading risks. The mobile telephony represents another risk generating modern technology. In the first phase, the concerns were focused on the absorption consequences by the user of the field and the electromagnetic waves emitted by cell phones and relay antennas. This potential emerging risk caused an ample debate, resulting in numerous specialized scientific researches. However, it has been highlighted that the greatest danger associated to the mobile phone, remains its use while driving a vehicle, especially within the professional frame. Regarding the transmitting antennas, it has been established and enforced security perimeters, whose in practice materialization must be checked thoroughly. From the perspective of the mobile operators control, it must be retained also the fact that the transmitting antennas generate strong doses of radiation, and also the known risk of falling from height. From this point of view, it is developed a definite similarity to the case of wind turbines, the new technology in which the probability of materialization of the risk factor "fall from height" is high.

On the other hand, nanomaterials raises an increasing concern of the international bodies due to the identical structure of nanotubes with asbestos fiber structure. The inhalation of large quantities over a long period of time of these materials might cause respiratory problems by analogy with asbestos.

Research on safety and health at work should include further analysis of the interaction with life outside working hours. Workers experience should be valued, a role in this returning to labour inspectors who must identify concrete ways to facilitate dialogue with affected workers. It can be seen that multiple risk factors are emerging and they are characterized by overlapping and different interactions. Emerging risks appear not by replacing the existing ones, but living together with them. The defining and constant element is the work situations evolving speed.

4. PREVENTING EMERGING RISKS: THE NEED FOR A NEW PHILOSOPHY

Risk categories identified as emerging are vast and their causes and consequences are often intertwined. Isolate them without consideration of economic and social context that gives them the emerging character is a delicate endeavour. Their origin, often multifactorial, is an important feature, which is increasingly taken into account in terms of detection, prevention and control. It warrants a multidisciplinary approach, especially in terms of nanotechnology risks (Moraru & Cioca, 2011).

It is necessary to continue studies, research, information exchange especially with regard to subcontracting, psychosocial risks, long-term effects of stress and nanotechnologies. A number of basic principles can guide preventive approach to emerging risks to the safety and health of workers, namely:

i) Promoting safety starts with education and attitude change: promoting safety requires positive attitudes. Integration of safety culture is closely related to attitudes and behaviour. This should be done as early as possible and it is essential to promote safety ideas to be integrated into education systems.
ii) **Promoting safety goes beyond legal compliance:** while preventing the accident can be a legal obligation, promoting safety is closely linked to the introduction of innovation in the initial process. Promoting security may not be imposed by law.

iii) **Promoting safety and accident prevention are complementary:** We need to add elements of good practice to the requirements of law. Examples of good practice are becoming increasingly important in Romania, as the legislation does not provide only a general framework.

iv) **Applied benchmarking on safety performance:** many companies worldwide compare their own safety performance with the competition. Comparative analysis allows us not only to compare statistics, but also to look for examples of good practice.

v) **Safety at work is a human and corporate value:** is necessary to develop a culture of positive risk management (Zohar & Luria, 2004). Safety should be integrated in the early stages of the production process such as design phase.

## 5. CONCLUSIONS AND PROSPECTS

The concept of emerging risk can be ambiguous and, therefore, misunderstood or misinterpreted. It tends to consider that the risks are opposed to each other and, in particular, to „classical” risk, when in fact some are induced by the others. It would not be more appropriate to speak of risk in general, whose development is paced by professional activities that reduce physical demands but generates higher psychic constraints for a growing number of workers? Then there would be a more suitable framework for development of tools able to manage change, to organize ourselves in order to creation ad hoc prevention mechanisms to determine reactive and performance monitoring indicators, to adapt attitudes to the ever-changing conditions and to be prepared to meet unpredictable in so far unexplored areas of expertise.

Moreover, limiting ourselves only to prevent and "redress the consequences" of confirmed risk is an imperfect and insufficient response to the demands of society. Work situations are rapidly changing and the same bodies traditionally responsible for occupational hazards must face them. New risks call for a forward-looking attitude and a constant level of vigilance to identify and evaluate them. Given this situation, occupational risk prevention bodies should be organized to predict and reduce the amount of time

Finally, it seems a movement is emerging in the logic of prevention and control risks to safety and health. Mostly, institutions and industries face complex risks sometimes still unconfirmed scientifically, sometimes with multifactorial origin against which, as a precaution, they try to develop preventive measures; for some of them debates are quite around the professional nature and origin of risk. The difficulty will be to ensure a consistent safety and health policy centred on-the-worker in an increasingly complex world of work, in perpetual and rapid change, which requires workers more flexibility. Overcoming this difficulty will involve the concept of anticipation and the precautionary principle.

## REFERENCES


ABORDAREA RISCURILOR EMERGENTE IN PEISAJUL OCUPATIONAL: PERSPECTIVE ŞI PROVOCĂRI

Nicolae ILIAŞ¹², Roland Iosif MORARU², Mihai POPESCU STELEA²

¹Membru titular al Academiei de Științe Tehnice din România
²Universitatea din Petroșani

Rezumat: Acest articol are ca scop analiza și sintetizarea informațiilor importante care sunt disponibile cu privire la aspectele de bază de interes comun, în Europa și în lume, în ceea ce privește așa-numitele riscuri emergente, în ceea ce privește organismele responsabile pentru instituțiile de prevenire, control și partenerii sociali implicat în procesele de lucru. Scopul principal al demersului nostru este de a contura o imagine de ansamblu asupra modului în care părțile implicate percep acest subiect, cu siguranță extrem de important în domeniul sănătății și securității la locul de muncă. Dacă elementele de consens poate fi extras, ei pornesc de la recunoașterea faptului că definirea și identificarea riscurilor emergente considerate este, în mod implicit, o provocare. Evident, acesta nu va fi suficient pentru a le aborda dintr-o perspectivă opusă cu privire la riscurile tradiționale. Prin urmare, formulăm anumite principii care vizează prevenirea riscurilor în curs de dezvoltare au nevoie de conștientizare în organizațiile românești.