

Dynamic of workplace accidents in Arad County between 2010-2013

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ABSTRACT. According to estimations from the International Labor Organization, about 6,400 workers lose their lives daily in work-related accidents around the world, over 313 million workers are annually incapacitated for work and approximately 860,000 suffer bodily injuries at the work place. In this respect, Romania is on a descending trend from 508 work accidents in 2008, down to 185 in 2014. In 2014-2015 we conducted a retrospective study on work accidents recorded in Arad County during the 2010-2013 timeframe, using materials provided by the Arad Territorial Labor Inspectorate. In conducting this study we sought to determine the annual number of workplace accidents over that period; the number of accidents resulting in death; the index of frequency for the total number of accident victims and accidents resulting in death calculated for one thousand workers; causes of work accidents; consequences of work accidents; time and place of occurrence work accidents; the status of the person suffering a workplace accident; measures required to prevent work accidents according to the law of health and security in labor. The systematic presentation of obtained results and consequences in tables and graphics; the analysis of circumstances in which the workplace accidents occurred; conclusions and measures regarding the avoidance of work accidents reinforce the firm conviction that it is necessary to reconsider the labor safety criterion through continuous education, sound acquisition and application of safety measures and norms specific to each profession, which must prevail over the economic criterion.

KEYWORDS: workplace accidents, health and security in labor

INTRODUCTION

According to data provided by the International Labor Office, each day a great number of workers do not return to their family on account of occupational accidents and diseases. The same source announces that annually 2-4% of the GDP constitutes expenses due to work accidents and occupational diseases.^[2]

This worrying situation requires reconsidering the criterion of labor safety through continuous education, sound acquisition and application of safety measures and norms specific to each profession, which must prevail over the economic criterion.

I. General part – The current stage of knowledge

Legal connotations on safety and health

The noun "connotations", according to the Explanatory Dictionary of the Romanian Language, 2nd Edition, Editura Univers Enciclopedic, București, 1996 – has the sense of: *meaning, significance, importance and value*. In the context of this article, legal connotations on health and safety in labor are a unitary set of imperative legal norms, which seek to govern social relations regarding the organization and control

of work processes, in order to ensure optimal conditions to defend life, bodily and spiritual integrity, to prevent workplace accidents and occupational diseases.^[3] All these have constituted, since ancient times, a human concern to secure existence and create better working conditions.

Workplace accidents

In accordance with art.5 let. g of Law no. 319-2006 on security and health in labor, workplace accidents are "*violent bodily injuries, as well acute occupational poisonings, occurring during the work process or in the fulfillment of work-related duties and which result in temporary work incapacity for at least 3 calendar days, disability or death*"

Characteristics of workplace accidents

The most important characteristic of a workplace accident is the *cause* or *causes* of the accident. Causes are multiple and varied: defective use of equipment by a worker; instantaneous occurrence of a dysfunction in that equipment; explosions; collapsing materials or objects; the worker being stricken or crushed by a means of transportation at the workplace; acute occupational poisoning, etc.

A second characteristic of a workplace accident is the *time and place* in which the workplace accident occurred “*during the work process or in the fulfillment of work-related duties*”. According to art. 30 of law 319-2006, on security and safety in labor, *by means of exception*, accidents occurring under different circumstances can also be considered as workplace accidents.

The *consequences* of a workplace accident define its legitimacy and refer to violent bodily injuries or occupational poisonings. As such, not any bodily injury constitutes a workplace accident, but only an injury that results in temporary work incapacity for at least 3 days, disability or death.

Another characteristic of workplace accidents is the *status of the accident victim*. In principle, the person declared to have suffered a workplace accident must be an employee of that unit, but, according to art. 5 and art. 30 of Law 319-2006 on security and health in labor, the suffering of a person who is under the “*control, direction, supervision, subordination and management of the natural or legal person within whose premises the accident occurred, regardless of the legal nature of the contract of employment concluded*” can also be considered a workplace accident. An exception from the above rule, according to art.30 let. e of Law 319-2006 on security and health in labor, applies to people suffering an accident “*as a result of a voluntary action aiming to save human lives or removing a danger which threatens public property*”.

II. Research part

The purpose of research

This study targeted the following issues:

- The dynamic of workplace accidents in Arad County during the 2010-2013 timeframe.
- Establishing the frequency index (number of workplace accidents recorded for 1,000 workers).
- Identifying the most vulnerable labor sectors in the economy of Arad County, where most workplace accidents were recorded.

- Identifying the most frequent causes of workplace accidents over that period, in Arad County.

MATERIAL AND METHOD

To conduct this study, data from the 2010-2013 timeframe were obtained from Arad Territorial Labor Inspectorate (ITM Arad), based on request no. 6/CCRP of 18.06.2015, and were then processed and compared to official data recorded nationally, establishing a dynamic of workplace accidents, the highest percentage of workplace accidents by business sectors, as well their most frequent causes.

Determinations

In conducting this study we sought to determine the annual number of workplace accidents over that period; the number of accidents resulting in death; the index of frequency for the total number of accident victims and accidents resulting in death calculated for one thousand workers; causes of work accidents; consequences of work accidents; time and place of occurrence of work accidents; the status of the person suffering a work place accident; measures required to prevent work accidents according to the law of health and security in labor.

Statistical data analysis

For an accurate determination of results in this study, data received from ITM Arad were transcribed in writing and stored in a Microsoft Excel database, then coded so that they could be compared with existent statistical data. Results were graphically represented in tables and histograms, continuous variables were expressed as DS average and discrete variables as number and proportions. The Pearson method was used to analyze the relation between linear parameters with normal distribution and the Spearman method was used for non-parameter distribution. Data distribution was checked using the Kolmogorov test.

Obtained results

The dynamic of workplace accidents in Arad County during the 2010-2014 timeframe. (Material processed from ITM Arad records according to address no. 6/CCRP/18.06.2015)

TABLE 1

Year	No. of workplace accidents	No. of accident victims	No. of deaths	Temporary work incapacity	Notes
2010	73	82	5	77	
2011	63	69	4	65	
2012	87	91	5	86	
2013	80	83	2	81	
Total	303	325	16	309	

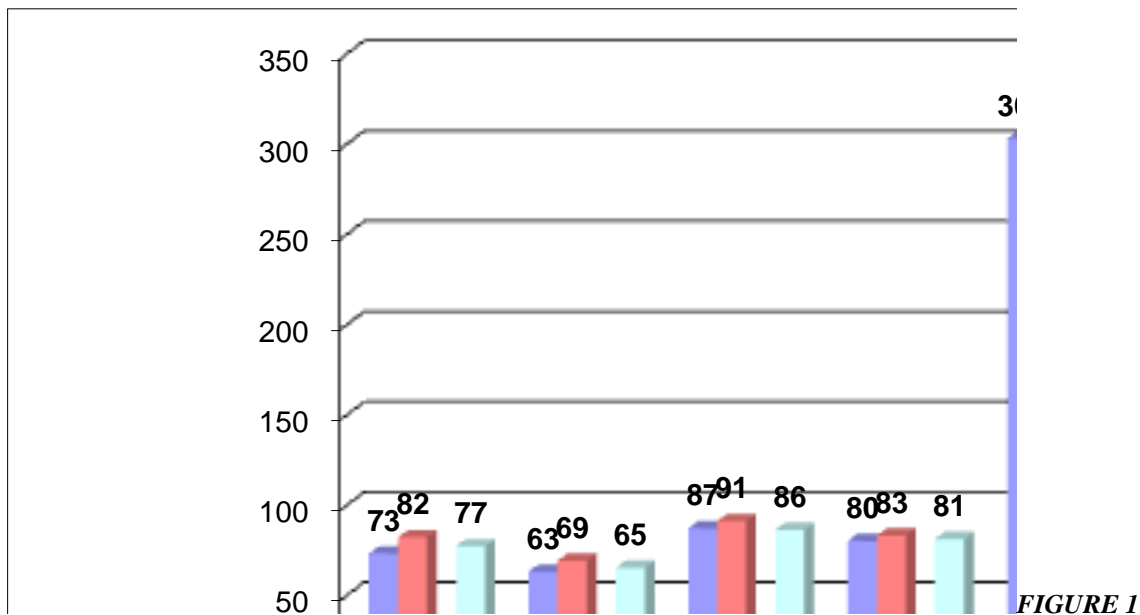


TABLE 2 Accidents investigated in 2010

Investigated accidents	Itinerary work accidents	Road work accidents	Fatal accidents occurring in Arad County	No. of days of work incapacity
73	4	15	5	490

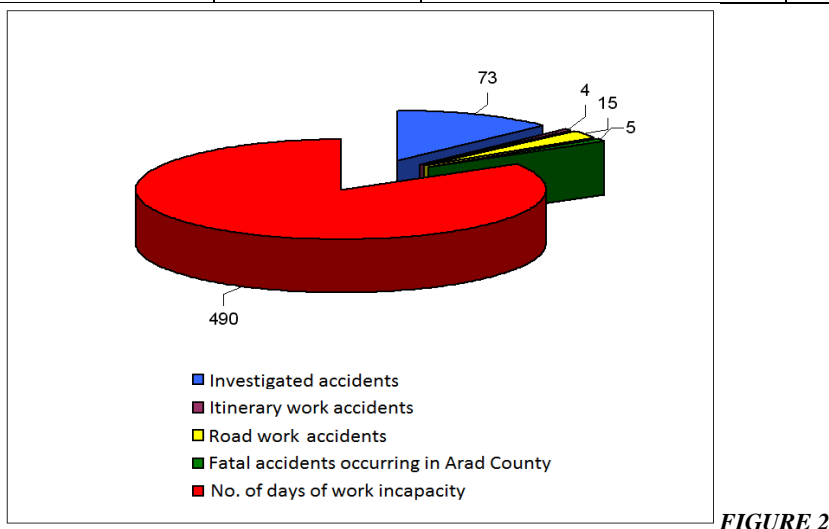


TABLE 3 Accidents recorded in 2010

Accidents recorded	No. of accident victims	No. of deaths	No. of people with temporary work incapacity
73	82; index 0.71‰	5; index 0.04‰	490

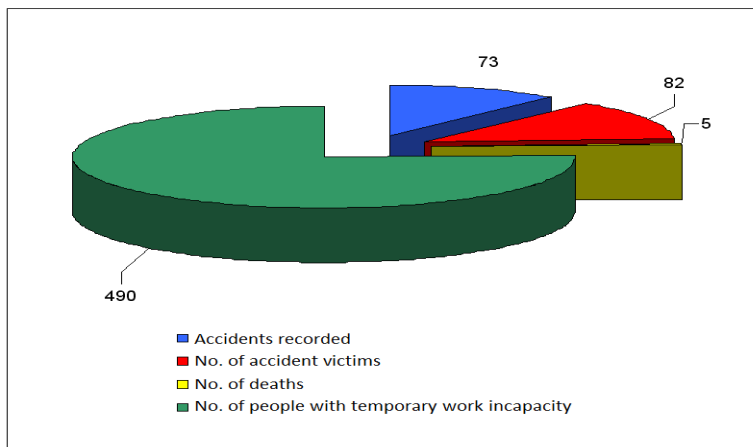


FIGURE 3

TABLE 4 Accidents by business sectors in 2010

Accident victims	Manufacture of furniture	Manufacture of car and engine parts and accessories	Manufacture of rolling stock	Other business sectors
82	14	3	3	62

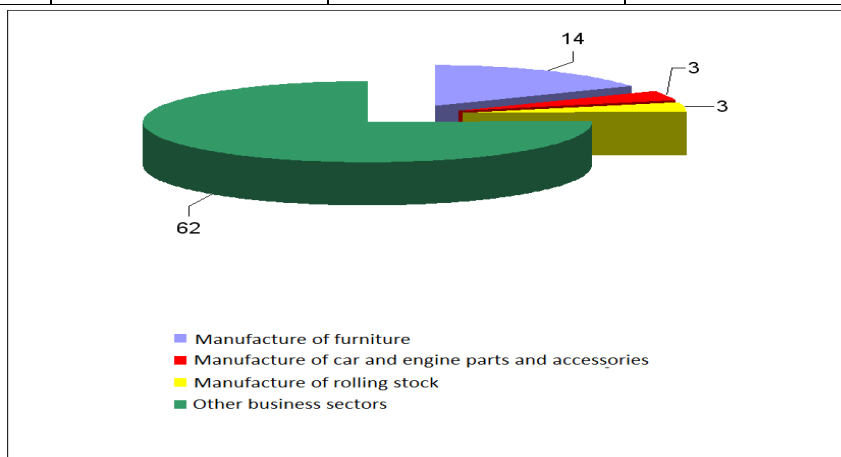


FIGURE 4

TABLE 5 Accidents investigated in 2011

Investigated accidents	Collective accidents	Workplace accidents	Fatal accidents	No. of days of work incapacity
63	1	57	5	551

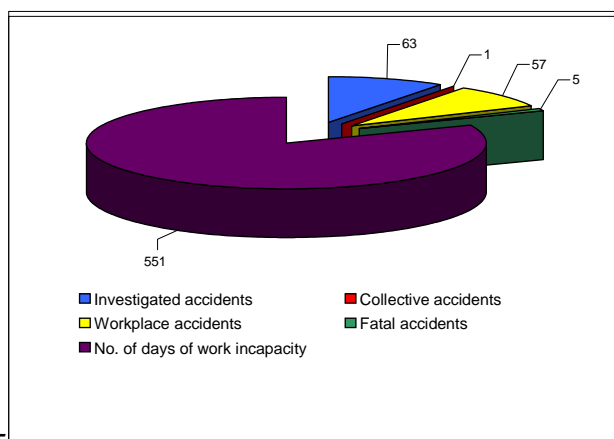


FIGURE 5

TABLE 6 Workplace accidents recorded in 2011

Recorded workplace accidents	No. of victims	No. of deaths	No. of days of work incapacity
63	69; index 0.64 ‰	5; index 0.02 ‰	551

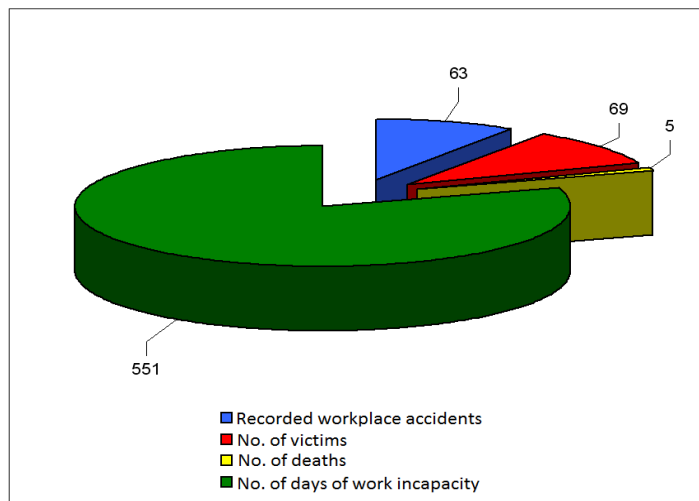


TABLE 7 Accidents by business sectors in 2011

No. of accident victims	Manufacture of furniture	Manufacture of car and engine parts and accessories	Manufacture of wires and electric cables	Other business sectors
69	5	4	3	57

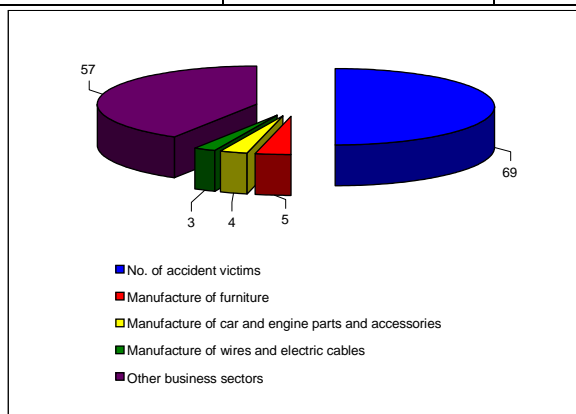


Figure 7

TABLE 8 Accidents investigated in 2012.

Investigated accidents	Collective accidents	Itinerant work accidents	Accidents due to aggression during working hours	Workplace accidents outside the borders of the country	Itinerant work accidents	No. of days of temporary work incapacity
87	1	4	1	2	9	772

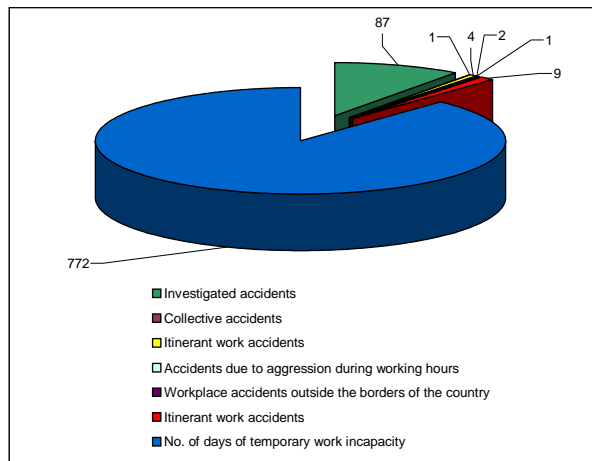


FIGURE 8

TABLE 9 Workplace accidents investigated in 2012

Recorded workplace accidents	No. of victims	No. of deaths	No. of days of work incapacity
87	91; index 0.70 ‰	5; index 0.03 ‰	772

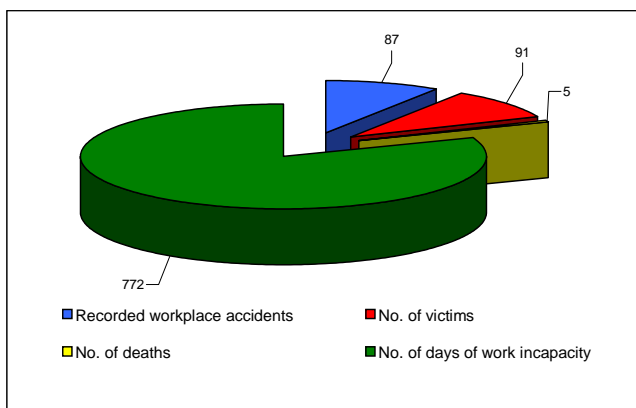


FIGURE 9

TABEL 10 Accidents by business sectors in 2011

No. of accident victims	Manufacture of furniture	Manufacture of car and engine parts and accessories	Manufacture of rolling stock	Other business sectors
87	18	6	8	55

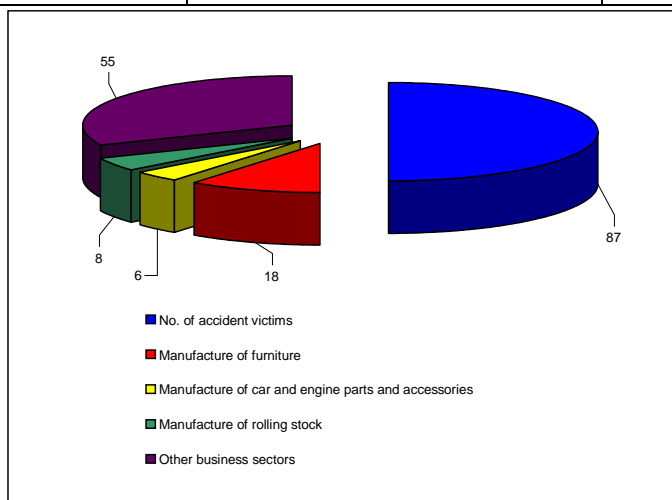


FIGURE 10

TABLE 11 Accidents investigated in 2013

Investigated accidents	Road work accidents	Itinerant work accidents	Accidents due to aggression during working hours	Workplace accidents outside the borders of the country	Fatal accidents	No. of days of temporary work incapacity
80	7	8	4	2	8	1588

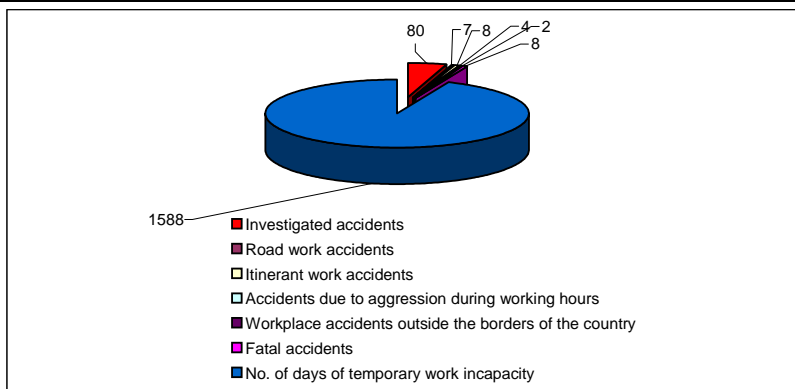


FIGURE 11

TABLE 12 Workplace accidents recorded in 2013

Recorded workplace accidents	No. of accident victims	No. of deaths	No. of days of work incapacity
80	83	2	1588

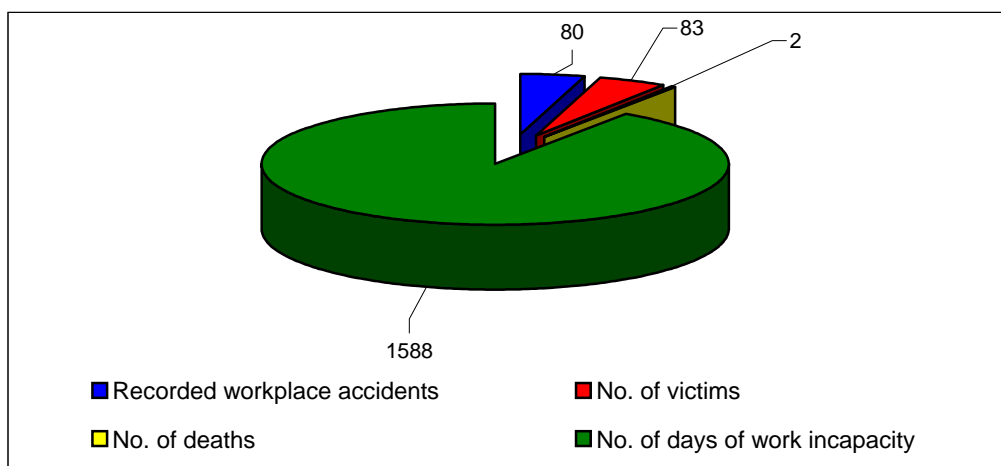


FIGURE 12

TABLE 13 Accidents by business sectors in 2013

No. of accident victims	Manufacture of rolling stock	Manufacture of car and engine parts and accessories	Manufacture of electric cables	Other business sectors
83	3	11	3	66

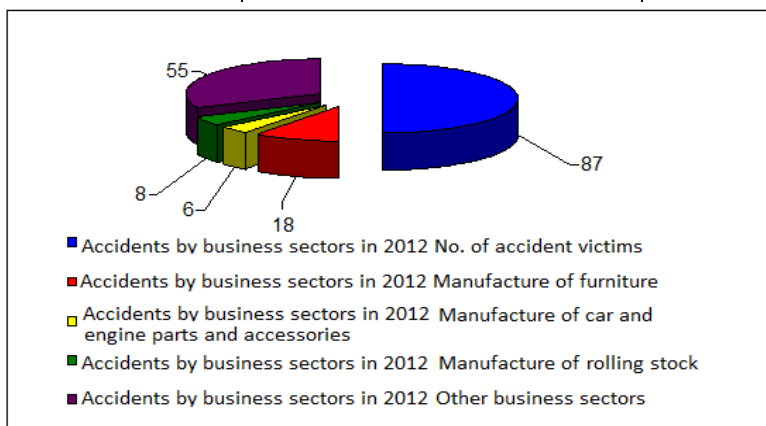


Figure 13

DISCUSSIONS

From researching the data provided by ITM Arad according to the above-mentioned address, the following causes of workplace accidents in the 2010-2013 timeframe are outlined in Arad County:

- Failure to comply with traffic rules regarding speed, overtaking, failure to adjust speed according to weather conditions.
- Careless maneuvers while driving.
- Drivers being tired due to inadequate work and rest timing.

- Pedestrians' failure to comply with public road rules.
- Employees driving as part of their work tasks without having undergone periodical instructions regarding public road rules.

By comparing national and county-level data regarding the index of workplace accidents and mortality due to workplace accidents, the situation is as follows:

Year	2010		2011		2012		2013	
	Arad County index	National index	Arad County index	National index	Arad County index	National index	Arad County index	National index
Accident	0.71 ‰	0.79 ‰	0.64 ‰	0.76 ‰	0.70 ‰	0.79 ‰	0.71 ‰	0.76 ‰
Fatal accident	0.04 ‰	0.06 ‰	0.02 ‰	0.05 ‰	0.03 ‰	0.05 ‰	0.02 ‰	0.04 ‰

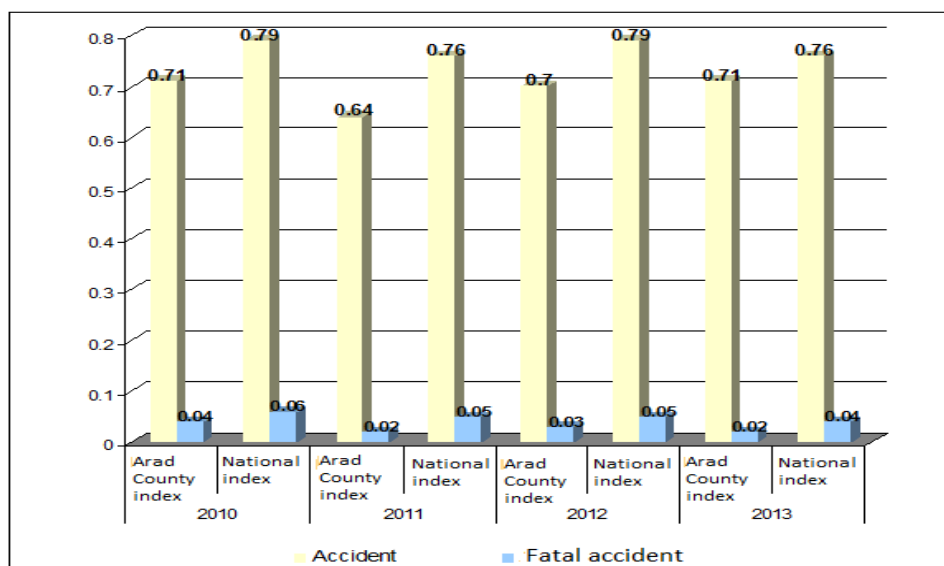


Figure 1 (Material processed from ITM Arad records according to address no. 6/CCRP/18.06.2015)

Another analysis of workplace accidents emphasizes the following circumstances in which workplace accidents occurred in Arad County during the 2010-2013 timeframe:

1. Being caught, stricken or crushed by means of transportations, machines, equipment inside and outside the unit.
2. Falling.
3. Inadequate execution of commands and maneuvers.
4. Failure to complete, in a timely manner, operations that are indispensable to work safety.
5. Inadequate execution of work operations.
6. Inattention during work.
7. Deficiencies in the staff training and instruction system regarding security and health in labor.

8. Being unaware of risk factors and ignoring dangers.
9. Being unaware of and not complying with work technologies and procedures; tolerating deviations from work safety rules.
10. Decreased levels of education and civic conduct in employees operating heavy-duty vehicles.

CONCLUSIONS

Accidents have been largely caused by inattention; deficiencies in the staff training and instruction system; being unaware of risk factors and ignoring dangers; being unaware of and not complying with work technologies and procedures; tolerating deviations from work safety rules; using inexperienced and untrained workers for certain tasks and a downward trend in the level of education and civic conduct. According to the data presented and findings

regarding workplace accidents during the 2010-2013 timeframe in Arad County, the following measures are required:

- Tracking the way in which employers act to avoid hiring or changing workplaces without sound professional training and instruction.
- Organizing and guiding representatives of units with particular problems in implementing work safety measures in order to devise the best methods to prevent risks.
- Scheduling and conducting inspections, with priority for units registering most accidents with an over-average frequency index.

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