



MAKING SENSE OF SENSEMAKING IN SAFETY CULTURE DEVELOPMENT: A ROMANIAN COMPANY EXPERIENCE

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Abstract: Safety culture is a topic that has been debated for too little time in Romania. Especially in multinational companies, there are numerous programs implemented in order to develop the safety culture among employees. Since in Romania a framework, a culture, which favors the full understanding of the concept of safety at work is not developed, still, in most companies, the term safety at work is assimilated to the set of cumbersome laws and government decisions, instructions and procedures, inspections, helmet and boots. Romania is at the bottom of the list of countries in terms of the number of occupational accidents with incapacity for work, but it is at the top of the list of countries with the most fatal accidents. A paradox, a reality concealed by economic operators by not reporting work accidents with work incapacity, which means that an investigation of the root causes is not carried out, thus leading to accidents that result in death. Accident reporting shows the maturity of the safety culture. The following article discusses the steps taken by Port Operator CHIMPEX to make the transition from a company based on indicators, systems and profit to a company based on people, in this case during implementing and developing an organizational culture based on leadership.

Keywords: safety culture, sensemaking, Bradley curve, leadership, life-saving rules, occupational injury

1. Introduction

Sensemaking' is an extremely influential approach with a substantial following among management and organization scholars interested in how people appropriate and enact their 'realities' [1], [2], [3].

The theory of sensemaking was developed to explain the way in which organizations create their worldviews [4], [5], [6]. Sensemaking in organizations is the process by which they make sense of their environments through a process of intervention [7], [8].

"Safety Culture" was born for the first time in 1986 in the report of the International Atomic Energy Agency, following the Chernobyl disaster [9]. In the same year, after another major accident, the explosion of the space shuttle Challenger immediately after liftoff, the analysis reported the lack of a safety culture. The two catastrophes were cataloged as the result of a gradual accumulation of failures within the organization that had weakened all the protective barriers, one after the other [10]. This was the beginning, since then, most major accident investigations have placed safety culture at the center of attention [11]. The existence of a positive safety culture is now considered a cornerstone on which occupational health and safety performance is built. In companies with a low incident rate, the advantages are considerable: the company is seen as an attractive workplace, people have good morale, and organizational performance is high. [12].

Safety culture is a topic debated for too little time in Romania [13]. Especially in multinational companies, there are numerous programs implemented in order to develop the safety culture among employees. Overall, the safety culture includes two terms that are quite difficult to understand by all participants in the work process, in this case management, workers, contractors, subcontractors. "Culture", a term that, unfortunately, only large companies integrate into the common vocabulary, is essentially based on behaviors and values. "Safety" translates into trust, comfort, both physically and psychologically [14].

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Since in Romania a framework, a culture, which favors the full understanding of the concept of safety at work is not developed, still, in most companies, the term safety at work is assimilated to the set of cumbersome laws and government decisions, instructions and procedures, inspections, helmet and boots. Safety culture, as the literature defines it, is a collection of beliefs, perceptions and values that people share in relation to risks within an organization, a community, including at home. In other words, safety culture means mutual care, responsibility, assumption, personal example, understanding, communication, dialogue [15], [16].

H. W. Heinrich, an employee of the Traveler's Insurance Company, in the 1930s published a number of innovative theories on occupational health and safety. Heinrich, who laid the foundations of Heinrich's Law, in this case the Safety Pyramid, sometimes called the safety triangle, indicates a relationship between major injuries, minor injuries and near misses. It states that 88% of all injuries and incidents are caused by a human decision to perform an unsafe act [17]. Heinrich concluded that by increasing the number of unsafe actions/conditions and near-misses reported/analyzed and rectified, companies could reduce the total number of major accidents (fig. 1).



Fig. 1. The Heinrich / Bird safety pyramid

Contrary to Heinrich's studies, Romania is on the last place in the list of countries in terms of the number of work accidents with incapacity for work, but it is in the top of the countries with the most fatal accidents. A paradox, a reality concealed by economic operators by not reporting work accidents with work incapacity, which means that an investigation of the root causes is not carried out, thus leading to accidents that result in death. Accident reporting shows the maturity of the safety culture.

According to the data provided by the Labor Inspectorate, centralized in table 1, the number of occupational accidents resulting in death has decreased in recent years, while the number of accidents with temporary incapacity for work has remained constant. We can appreciate that this decrease is due to the fact that more and more companies have addressed awareness campaigns and programs, to develop an organizational culture based on safety [18].

Indicator/Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fatalities (FTL)	185	183	163	172	167	182	143	153	99	54
Lost Time Injuries (LTI)	3419	4117	4408	4632	5045	4963	4232	4603	4414	3961

Table 1. The evolution of work injuries in the last 10 years in Romania

The following article discusses the steps taken by the Port Operator CHIMPEX to make the transition from a company based on indicators, systems and profit to a people, in this case an organizational culture based on leadership.

2. Description of the investigated company: CHIMPEX, part of the AMEROPA group

Founded in 1948, Ameropa is a Swiss company with private capital, with international exposure on the agricultural market. AMEROPA is one of the largest companies of agricultural raw materials and fertilizers in Europe, based in Switzerland, business of the Zivy family, started immediately after the Second World War. Headquartered near Basel, AMEROPA today conducts business in 26 countries on five continents (figure 2). In Europe, the Swiss company is the fifth player on the grain trade market, having businesses in Austria, France, Italy, Germany, Spain, Serbia, Croatia and Romania. In Romania, AMEROPA is present through five subsidiary companies: Azomureş, AMEROPA Grains. Promat, Agroind and CHIMPEX, which form an integrated, modern and efficient production and distribution chain, starting from the farm gates and extending to external export markets (figure 3). Due to its activities, size, investments, it contributes to the success and competitiveness of Romanian agriculture, including the logistics infrastructure [19].



Fig.2. Global distribution of AMEROPA

The company is dedicated to supporting innovative agriculture on the agricultural market in Romania, through optimal and sustainable intervention in increasing production, a high-performance logistics system, with collection points at national level, silos and agricultural bases, but above all through the assumed values: strong connection, agility, responsibility and expertise. Involvement in the local community, in education and in the (re)discovery of values is part of the same growth vision applied in all specific policies and processes.



Fig. 3. National distribution of AMEROPA

By Order of the Minister of Chemical Industry no. 1655 of April 1, 1971, "CHIMPEX" Constanța became the legal and sole representative of all foreign trade companies and companies providing export duties in relations with the port authorities and companies competing in the export-import of products belonging to the Ministry of Chemical Industry, being also the sole representative in the commission for coordinating the port activity in Constanța, Galați and Brăila. CHIMPEX, the port terminal of the Group in Constanța, manages all exports of grain and oilseeds of AMEROPA Grains, as well as imports of raw materials, such as be the phosphate rock required for the production of complex fertilizers of the Azomureş Company [20].

It also deals with managing the fertilizer imports of AMEROPA Grains as well as other distributors. Currently, CHIMPEX is a leader in the operation of agricultural products from the port of Constanța and a hub in the fertilizer trade (figure 4).



Fig. 4. Overview, characteristics and services of the Port Operator

The new ultramodern grain terminal (fig. 5) has a storage capacity of 200,000 tons, distributed in 20 vertical cells, it can receive goods both on barges (1 x 400 tons per hour), cars (2 x 400 tons per hour), as well as by rail (1 x 400 tons per hour) and has a ship loading capacity of 2 x 800 tons per hour. The investment of over 42 million euros is part of the company's continuous commitment to provide high-quality services to its customers, to protect the environment, but also to ensure a safe working environment for its employees.



Fig. 5. Overview and operational facilities of the Cereal Terminal

CHIMPEX is a major risk SEVESO operator, as it can store up to 20,000 tons of ammonium nitrate and NPK (hazardous grades). The average number of employees is 290 workers. Starting from the abbreviation of the values C.A.R.E. (Connection, Agility, Responsibility and Expertise), which denotes care and belonging, the company has developed countless campaigns under this motto: C.A.R.E. for Safety; Safety Leadership Training; Celebration of the international day of OSH; Safety themed contests; Safety Seminar; Personalization of personal protective equipment with this slogan; WHICH. for Environment; WHICH. for Education, Community and People [20].

In 2014, the number of work accidents in the premises of the Chimpex Port Operator reached a worrying level. The figures in table 2 refer both to work accidents involving our own employees and those involving contractors. Out of the total of 25 work accidents, 13 of them involved contractors, including all fatalities occurred among contractors.

The causes of work accidents with serious consequences are mainly due to: alcohol consumption, falling into water as a result of resorting to improvisations, not using protective devices for working at height, not following the rules for using work equipment, etc. Also, all work accidents highlighted gaps in the management system. From experience and statistics, most accidents that have occurred in Chimpex are caused by unsafe actions, not unsafe conditions or equipment. People make mistakes, take risks, but not

because they want to get hurt, but because they want to help. This is where the challenge of the company began, how do we do it, what do we do, when do we do it, how much do we do it, so that people no longer take unnecessary risks, and if they do, the colleagues next to them correct the unsafe behaviors, address the risks, without there is also the famous line: "*it's none of my business*".

Indicator/Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fatalities (FTL)	1	0	1	1	0	1	0	0	0	0
Lost Time Injuries (LTI)	8	5	2	1	1	0	1	1	1	1
Lost Time Injuriy Rate (LTIR)	10.69	6.42	1.59	0.83	0.80	0.88	0.93	0.84	0.84	0.84
Total Rate of Injuries at Work (TRIR)	12.02	6.42	2.38	1.66	0.80	0.88	0.93	0.84	0.84	0.84

Table 2. The evolution of work accidents in the last 10 years within Chimpex

3. Implementation of proactive safety culture: paths and targets achieved

3.1. Safety culture. Landmarks of structure and content

To improve safety performance, coherent action is needed in 3 areas: technical aspects, safety management and human and organizational factors. These different "*pillars*" all influence safety culture. It should be emphasized that in any company safety priorities have gone through several phases of chronological development, each new area of concern being added to the previous one to improve safety performance:

- phase focused on technical actions (installation design, equipment quality, redundancy, fault sensors, automatic protection systems, etc.);
- followed by the development of safety management systems (formalization of all processes, procedures and rules implemented to promote safety);
- and finally, more recently, the recognition of the importance of human and organizational factors, or in other words the identification and integration of the factors necessary for a human activity to be carried out efficiently and safely.

In many companies, this area of concern of human and organizational factors remains the one with the most significant possibilities for progress. The three "pillars of safety" (figure 6) - namely the technical, system and people aspects - are of course not independent of each other: well-designed and well-maintained facilities together with clear and enforceable rules contribute to people's safety. In this three-pillar representation, "safety culture" falls under the category of "human and organizational factors", focusing the approach on the behaviors of individuals. But the culture of an organization is also directly influenced by technical aspects and safety management.



Fig. 6. Safety culture and safety pillars

In fact, there is a two-way relationship between safety culture and these three "pillars of safety":

- The safey culture results from the organization's technical safety practices and management systems: faulty technical systems and difficult-to-enforce rules and procedures will be perceived as signs that the organization places little importance on safety and will contribute to a decrease in the interest of all involved.
- The safety culture of the organization influences the decisions that are made regarding the technical design and the formulation of the rules: for example, if the company has a *participative culture*, the operational staff is involved in the process of designing the facility and in developing the procedures.

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It is impossible to change the safety culture without changing the signals the organization sends through the higher or lower quality of what it provides in terms of technical design, safety management systems and the integration of human and organizational factors. Because they address fundamental aspects of the organization, safety culture actions have positive effects on overall company performance. The safety culture approach is a lever for ensuring the longevity of the company, whose survival can be jeopardized by the worst accidents. It can also have benefits that extend beyond improved risk management. It is an opportunity to carry out a strategic assessment of the organization's strengths and weaknesses and its ability to cope with a changing environment.

3.2. The results of the safety culture audit in the investigated company

In the middle of 2015, the company's management decided to conclude a collaboration contract with an external company to carry out an audit regarding the evaluation of the safety culture in Chimpex. The audit was structured in five parts and took place over three months:

- 1. Viewing existing documents;
- 2. Interviews with the management team and employees;
- 3. Surveys regarding safety perception and risk appetite;
- 4. Field visits;
- 5. Defining the action plan.

The conclusions of the audit can be systematized as follows:

- i. Compliance with the minimum legal requirements will not guarantee fewer accidents, additional efforts are needed.
- ii. Safety is a minor part of the integrated management system policy.
- iii. A structured safety audit program will enhance management's role model.
- iv. There is no strategic plan for improving safety outcomes and systems.
- v. Many safety-related activities are still considered a task for safety specialists.
- vi. No training materials are used, except for existing procedures and laws, on paper.
- vii. Employee feedback is not used in a structured way to improve working conditions.

The audit was based on the Bradley Curve (figure 7), created by Berlin Bradley, a DuPont employee, indicating the relationship between workplace accidents and how the company's safety culture affects the occurrence of safety incidents. By plotting the number of incidents against their severity, the Bradley Curve provides a clear picture of an organization's safety performance over time [21]. This information can then be used to identify areas where improvement is needed. Based on this external assessment, *Chimpex ranks 2 out of 5 in terms of safety culture*.



Fig. 7. Dupont Bradley Curve [21]

Assessment results are not an objective measurement that everyone should accept as true. It is an intermediate goal that must be communicated to all involved, discussed, adjusted and modified to arrive at a widely shared diagnosis that will serve as a starting point for a change process. Too many companies conduct safety culture assessments and fail to implement appropriate, concrete actions based on the findings. Chimpex management is committed to improving the safety culture. With the audit report as a starting point, the company's safety culture development journey continued internally.

3.3. The safety team

Until 2015, the safety team was represented by two people. Simultaneously with the safety culture assessment audit, the company strengthened the safety team. From 2016 until now, the same team has been providing management support in the process of growing the safety culture. In pursuit of organizational excellence and commitment to the safety of people and the environment, the QHSE Department was established, in which seven people work. Comprising dedicated professionals with a shared vision for a safe, healthy and sustainable future, the team plays an essential role. Each team member has well-defined responsibilities. Whether it's developing and implementing safety protocols, ensuring product quality, or leading environmental initiatives, team members are dedicated to their specific roles while collaborating to achieve overall goals.

The team is dedicated to continuous improvement, leveraging state-of-the-art technologies and methodologies to continually improve processes. Recognizing that continuous training is the cornerstone of a QHSE specialist, it invests in dedicated training programs. For example, one week of the year, for more than 5 years, is dedicated to the National HSE Seminar, where all Ameropa Romania QHSE Specialists meet and debate issues common to all companies.

3.4. Safety Audit/ Behavioral audit

In 2015, Chimpex implemented the Safety Audit Program. The purpose of safety audits is to proactively measure occupational safety and incident prevention performance by targeting staff awareness and improving behavior while performing work tasks. The safety audit consists exclusively of observations and dialogues, being focused on actions (safe and unsafe) and less on recording unsafe conditions. This type of audit does not combine or replace other activities: inspections, internal/external audits, current surveillance activity, etc. Auditors are the managers who go to the field in mixed teams, from different departments, on a monthly basis, and who audit departments other than the ones in which they work. The goals of this audit are dialogue and observations and not blaming anyone. The behavioral safety audit does not hunt for mistakes: it goes straight to the spot, explaining why and how!

The benefits of this type of audit include:

- Focuses on safety.
- Shows how well it is understood and applied.
- Shows where systems are going well.
- Helps identify weaknesses in systems.
- Helps clarify standards.
- Identify areas where risks are assumed.
- Prevents accidents.

Through this program, Management Commitment in the field of Safety and Health at Work is supported, demonstrated primarily through visibility in the field and personal example. Direct discussions between management and employees are the best way to promote and understand workplace safety issues.

3.5. Implementation of the program "Your idea matters for us - proposals and referrals "

"Your idea matters to us - proposals and referrals" is a program created and implemented to encourage initiative and creativity and also to increase safety culture and awareness through motivation. Any worker, employee or contractor, has at his disposal a form that he can fill in with unsafe actions and/or unsafe conditions observed, proposals for improvement, as well as cases in which an activity is stopped, in this case the "Stop Work Policy" is applied. This form is required to identify all occupational health and safety (OHS) actions/unsafe conditions/suggestions, immediate actions and remedial proposals.

Special boxes are installed in all workplaces to collect ideas / suggestions / complaints. Ideas / proposals / complaints are reviewed by a designated team and the best ideas/proposals are rewarded monthly. Later, the program was updated with the online version. In addition to the printed forms found next to all collection boxes, a QR code has been generated and posted on all boxes. The QR code can be easily scanned by any

phone camera and will redirect the user to the online platform. The implementation of this program led to the collection of an impressive number of improvement proposals, which were later put into practice.

3.6. The training matrix

To ensure that all employees benefit from training programs sufficient to carry out activities in safe conditions, a training matrix was created, used and maintained by Safety and HR managers. The tool supports the planning, tracking and management of the employee training process. The matrix includes details about each employee, such as their name, role, department, and manager, as well as all training programs that employees complete and information about their progress in each program. The matrix includes all work instructions, procedures and policies. Through the Training Matrix, progress is monitored, training gaps are identified and specific training opportunities are offered. The first step in creating the matrix was to identify all mandatory trainings, starting from the legal requirements.

Subsequently, the information from the professional development plans of the employees was used to identify the areas in which the employees need to improve, in order to offer them the appropriate courses. Using another internal tool, the performance appraisal, the matrix was completed with the training programs that the employees requested. Even if the implementation of such a tool involves the allocation of additional resources, time and people, the benefits are numerous, especially in a multi-risk work environment where people need to have up-to-date information about the risks they are exposed to, the activities carried out.

3.7. Life-saving rules

A set of life-saving rules has been implemented within Chimpex. These rules cover the most dangerous activities that can be encountered inside the terminal. Periodically, specialized training is carried out internally for each rule, both theoretical and practical, and annually, specialized external companies provide training that includes practical demonstrations for: *Working at heights* (fig. 8), *Closed spaces* (fig. 9), *Energy sources* and *Barge work* (fig. 10).



Fig. 8. Rescue from height



Fig. 9. Practical training session regarding working and rescuing from closed spaces



Fig. 10. Practical training session regarding working on barges

How these rules are promoted:

- Boards containing the rules were made and displayed at all workplaces.
- These rules apply to TV monitors at workplaces.
- They are the subject of training sessions;
- During safety audits, they are constantly reminded.
- Annually, the description of each rule is revised. Basically, the life-saving rules are correlated with incidents that took place in Ameropa companies, where these rules were not followed;
- A safety calendar is drawn up every year. Each tab in the calendar contains a rule, so that even those who spend more time in the office do not forget them.
- On computer monitors, a rule runs each month.
- Video materials were made with each of these rules, including a message from Top Management regarding the importance of respecting them.

3.8. The "Stop Unsafe Work" policy

Starting from 2022, at the level of the companies within the Ameropa Group in Romania, a Safety Steering Committee was established, coordinated by the CEO of the Ameropa Group. The mission of this working group is to involve and hold Management accountable in shaping the safety culture and to encourage and support employees/contractors in all safety related activities. Thus, one of the first initiatives of this working group was the setting of a Policy whereby any employee, contractor, subcontractor, collaborator, visitor, pupil/student/trainee, etc., has the responsibility and obligation to stop immediately any unsafe activity as soon as it is noticed and ensure that all aspects of Occupational Health and Safety are observed before resuming the activity.

The implementation of the "*Stop Unsafe Work*" Policy was achieved through numerous training campaigns, advertising materials and office products inscribed in this sense, written and video messages of the top management, permanent encouragement regarding the application of this policy during safety visits, inclusion in job descriptions, internal regulations, conventions, etc. It also promotes responsibility among employees, who are responsible for their own safety and that of their colleagues. The results of the implementation of this policy were not slow to appear. The downward trend in the number of occupational accidents and the involvement of a very large number of workers in the application of this policy, denotes that the authority to stop a dangerous activity is a fundamental principle of safety management.

This assumed policy allows people to manage occupational safety issues in real time in all unsafe or dangerous work situations with high accident risk. It is a practical approach, without discussions, without waiting, without repercussions on the person applying it, and with immediate measures.

Challenges in applying this policy:

- Human nature, the level of education and the specifics of the organizational culture are important factors influencing the decision to exercise responsibility and the obligation to stop work/activity when there is an imminent risk of injury. This means that the implementation imagined in the office does not match the reality in the field.
- Managerial pressure causes people to take risks to meet an operating objective.
- The observer unconsciously and irrationally puts productivity and machinery above their own safety.
- Peer pressure not to speak is a practice accepted and encouraged by the group.
- Risky behaviors are evaluated subjectively, because the observer has worked in a similar manner before without being injured.
- The bystander may feel that they do not have the authority to intervene in that particular situation when it is a superior or contractor worker, even if they are at risk of injury.
- The observer may not perceive the situation or action as dangerous because he does not have the necessary expertise and skills.
- When people are in groups of three or more, they may feel less responsibility to get involved. When the observer is unsure of the situation, he looks around to see what others are doing. When no one takes any action, he may assume that others may have already done so, or that the situation probably does not warrant any action on his part.
- Even though stopping work can have negative consequences on productivity, the observer is not always sure that his managers will interpret the situation in the same way and not apply sanctions.

Studies show that most people do not want to initiate action to stop the activity/work when they observe unsafe situations. The main reason reported is fear/fear: fear of trying something new, fear of reprisal, fear of

making a mistake. This fear causes them to decide to wait for someone else to take action. Recognizing and rewarding workers who implement this policy helps increase the number of those who will exercise this responsibility.

3.9. Investments in safety

We can associate Chimpex with a vehicle and the workforce is the driver; its health, safety and wellbeing is represented by lubrication, which prevents the vehicle from breaking down. You checked your oil before a long trip, right? Thus, the company always takes care to ensure the necessary lubrication for our journey in ensuring safe workplaces. Like this, through sustainable investments. Annually, a budget of ~6,000,000 EUR is allocated to investments, and a similar amount to maintenance operations. The main investments refer to:

- i. *The new horizontal storage warehouse* of 25,000 mt of bulk cargo: the warehouse is equipped with a fire detection system and an underground tank that provides fire-fighting water for the entire terminal.
- ii. *Grain Terminal*: Completed in 2017 with a storage capacity of 200,000 tons. The construction work took place over a period of two years and involved the presence of 290 workers on average. Despite the fact that construction work was carried out in the middle of an operational port facility, the project was successfully completed, totaling 760,000 accident-free hours.
- iii. Working at height: with a sheet of paper and a pen in front, the "lifeline" type devices (fig. 11) were sketched for working at height in safe conditions for personnel working on wagons / trucks / tanks. These devices were specially designed for the terminal configuration, being at the same time also mobile, they can be transported with the forklift. The concept belongs to Chimpex, and for the implementation and calculation of the structure, a company active in the field of safety devices was called upon. Later, after a short use, it proved necessary to complete these devices with folding access ladders, so that when changing the position of the wagons, the workers do not have to go down after them. The devices were immediately accepted by all the staff, right from the moment of their presentation, but especially from the moment of the first practical training. Both the practical training and the thorough checking of these devices are carried out annually by a specialized company.



Fig. 11. Lifeline systems

Subsequently, many other devices for the protection of workers at height were installed, such as:

- *devices for working at height*, for situations in which workers have to go down or up from/on the ship to the barge/ship, taking into account heights of at least 4 m.; these anti-fall devices are mounted together with pilot ladder, making climbing/descending safe.
- *port hoppers for loading wagons*, have been equipped with retractable devices that slide with the user, practically monitoring him throughout the operations.
- *the ship-loaders* (automatic installations for loading ships with grain, part of the Grain Silo) are provided with vertical lifeline systems, along the access stairs.
- staff supervising the loading of trucks from a distance, at the same level as the truck bed, use *safe platforms* that ensure good visibility and can be transported by forklift.

To service these devices, high-quality harness-type safety belts, accompanied by certificates of conformity, were purchased. All these devices have been accompanied by specific training with all personnel with responsibilities in these areas.

- *iv.* **LOTO** (Lock-Out / Tag-Out): in order to ensure the safety of maintenance activities, within the Grain Silo of Chimpex, the LOTO project was implemented a few years ago. All production equipment has been audited and equipped with the necessary LOTO equipment.
- v. System for detecting pedestrians in the vicinity of machinery and work areas with a risk of collision: At the same time, on a normal working day, 450 people can be present in the terminal premises. At the same time, the total number of mobile work equipment, in this case machines such as forklifts, front-end loaders and cranes that can move in the Terminal, is 86. In order to prevent possible collisions of workers, as well as to avoid collisions with stationary objects, have installed anti-collision systems. These systems detect pedestrians and obstacles that appear during the machine's reverse maneuver, with a sound signal and a "pedestrian attention" or "attention" symbol in the upper left corner of the display in the driver's cabin. The obstacle detection area has been set up to approx. 6 meters.
- *vi.* **Consolidation of the Phosphate Silo**: for a period of two years, with a multitude of circular scaffolds, heights of over 40 meters, numerous contractors, the consolidation and modernization of the Phosphate Silo was carried out (fig.12).



Fig. 12. The evolution of the consolidation of the phosphate silo

vii. Restoration of crane tracks and railway tracks.

viii. *New changing rooms*: The building is equipped with a state-of-the-art HVAC system that uses heat pumps to transfer heat between the fresh and exhaust air flow. It also includes a dual hot water system that uses both eco-friendly heat pumps and solar thermal panels.

Forklift trucks and front loaders are replaced annually, and starting this year, an extensive project to replace quay cranes begins.

3.10. Synergy Life by DNV (digital solutions and software applications)

The beginning of 2023 is also the beginning of the company's journey towards an effective management of all aspects of QHSE through the digitization of this area. Through this software we collect the right information, process and analyze data, communicate, improve risk management.

Specifically, all QHSE non-conformities, incidents, risks, audits, inspections, suggestions for improvement are managed. In parallel, also with the support of DNV, the implementation of SCAT - Systematic cause analysis technique, the revision of the entire incident management process and the process of learning from incidents, which at this moment are an integrated part of Synergi Life, began. SCAT is a simple tool that helps us investigate the causes of accidents and quickly identify the root causes and determine the corrective actions needed to prevent similar events in the future.

3.11. Safety Leadership Training- C.A.R.E. FOR SAFETY

The multi-year training program "*Safety Leadership Training- C.A.R.E. FOR SAFETY*", was launched in 2022, and is aimed at all workers, regardless of their position in the organization, including contractors, with more than 650 workers participating so far. Also, in addition to the essential role in risk awareness and accident prevention, both at work and at home, it contributes to the creation of a culture of safety within Chimpex, practically promotes an environment where safety is a core value rooted in the company culture.

The objectives and targeted results can be systematized as follows:

- Changing the managerial focus from systems and KPI's to people;
- Moving from the reactive approach, focused on control measures, to a proactive-generative one that includes the psychosocial factors that influence the risk;
- Understanding the role of personal example and influence that managers have on the way people think and make decisions about risk;
- Making participants aware of the need to immediately address and report non-conformities and incidents;
- Equipping participants with the attitudes and skills necessary for behavioral change;
- Use of simple and practical tools for risk assessment at individual level;
- Resuscitating HSE meetings by equipping managers with interactive methods;
- Creating a culture of responsibility and mutual care;
- Increasing the impact and efficiency of safety induction programs;
- Equipping OSH specialists with effective accident investigation methods.

Consequently, safety-based behaviors contribute to the reduction of occupational accidents, as indeed happened in Chimpex. Being a leader in safety is not equal to holding a management position, but this program was started starting from the Management Team.

3.12. Risk perception - practical study

In 2022, before the launch of the Safety Leadership Training project, practical studies on the perception of safety were carried out, in which members of the management team participated. The studies were based on three different poles:

- Safety perception survey;
- Appetite for risk
- Roles and Responsibilities

The questionnaire used for the safety perception survey comprised a set of 12 questions, summarized in Table 3, along with a selection of responses:

		I dete et sujery	1 01 00	pnor	i Questiennan e		
	Incidental causes	Managers	40%		D ann an da	Always	
1		Rules	16%	7	Kewaras	Often	
1	incidents hannen haasuss of	Workers	41%	/	For good safety results we	Seldom	
	incidents happen because of.	Equipments	3%	1	are encouraged/rewarded	Never	
	D 11 1 .	Always			7	All of them	
2	Personal behavior	Often		0	Zero accidents	Most of them	
2	i, personally, respect the	Seldom		0	he may anted	Just a few	
	salety rules	Never		1	be prevented	No one	
	Our safety	Very high				Commodity	0%
2	The number of accidents in	High		0	Violation of rules	Routine	38%
3	³ the company, compared to other similar companies, is:	Acceptable	76%	9	break the rules because of	Ignorance	50%
		Very low	24%		bleak the fulles because of.	Rush	12%
	Discipline	Always			The support of the leaders	Always	
4	All those who violate the	Often		10	My safety comes first to my	Often	
4	⁴ safety rules are subject to	Seldom		10	bosses, they congratulate me	Seldom	
	disciplinary action	Never			when I turn down an assignment	Never	
	The example of leadership	Always			Liability	Direct bosses	
5	Our managers set a personal	Often		11	Responsibility for the safety	OHS experts	
5	example in complying with	Seldom		11	of people and equipment	Workers	
	safety rules, they are a model	Never			belongs:	Managers	
	Compliance with rules	Always			Work conditions	Very good	
6	The safety rules are	Often		12	The working conditions	Good	
0	respected by the employees	Seldom		12	(locker rooms, offices,	Weak	
	and contractors I work with	Never			equipment and tools) are:	Very weak	

 Table 3. Safety Perception Questionnaire

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A summary of the responses received concludes that the role of managers is not fully understood. Also, they still do not know the organization and do not have a clear vision of the needs and requirements of subordinate workers. The role of ignorance in an accident is overrated. Lack of awareness due to routine ("*low risk*") and convenience ("*benefits*", trying to make life easier) are more common. Managers say that people are involved in accidents out of ignorance, but who should train them?

The study also highlighted positive aspects, the role of managers in accident prevention being understood and there being a well-balanced vision of the system. Although there are accidents at work, according to the results, the need for change is small, the current results are accepted.

To *measure risk appetite*, participants viewed 12 photos in 36 seconds, basically 3 seconds for each photo. According to their own perception, each framed the photos in a certain level of risk. Why 3 seconds, because in life, when we face limited situations, the reaction time is very short. The study's findings reconfirmed that risk perception is subjective, dependent on personal experiences (and attention). The study shows that we function better in a team, while individually we still have work to do. Most of the participants believe that certain risks, such as smoking, cannot affect us greatly, although there are many studies that indicate otherwise. On a scale from 1 to 4, the average of the answers is 3, but the differences from one respondent to another are very large, which means that awareness programs are needed (figure 13).



Fig. 13. Interpretation of risk appetite survey results

To establish *roles and responsibilities*, respondents were given a questionnaire with 12 responsibilities (table 4), and were required to mark whether that responsibility rested with the management team or safety specialists.

No.	WHO DOES WHAT?	Management	OSH specialist	
		[%]	[%]	
1.	Coordinates all site safety activities	58	42	
2.	Investigate accidents/incidents	4	96	
3.	Conduct "safety dialogues" in the field	40	60	
4.	Develops procedures to carry out work safely	36	64	
5.	Initiates programs and activities for work safety	12	88	
6.	Training employees on OSH	42	58	
7.	Conducts OH&S training with Supervisors	12	88	
8.	Leads work safety meetings	28	72	
9.	Analyzes site-wide safety needs	38	62	
10.	It determines the objectives and targets regarding work safety	52	48	
11.	Apply the discipline for the aspect of work safety	68	32	
12.	Establish and ensure compliance with work safety rules	52	48	
	AVERAGE	37%	63%	

Table 4. Results obtained from the safety roles and responsibilities questionnaires

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Practically, the results indicate that the management considers that these responsibilities are the responsibility of the safety specialists:

- the results are considered very good, and the need for change is small.
- the concept of prevention is not very well understood.
- reporting all accidents (including "near-misses") and assessing potential risk can increase the need for change.

At this stage of maturity, safety professionals have limited capabilities to improve performance. Leaders should change the safety culture by accepting their responsibilities. Considering all these results, as well as a detailed analysis of what the points obtained indicate, the content of the Safety Leadership Training program was defined for the near and medium term future.

4. Conclusions

For most safety-forward companies, the way forward is to move to a culture that encourages better collaboration between management and workers on safety issues. The safety culture, which reflects the importance that the organizational culture gives to safety, is gradually built by all participants in the work process: the company directors, the different management echelons, the support departments (HSE, HR, procurement, etc.) and workers. For Chimpex "zero accidents" is just a slogan It is strongly believed that "Zero accidents" does not guarantee the existence of safe workplaces! Conversely, a strong organizational culture, in this case a safety culture strongly rooted in company values, leads to a reduction in workplace accidents. Moreover, the company has chosen to view safety not as a cost, but as an opportunity to achieve superior business performance. Not surprisingly, good safety also generates good business results. As a result, Chimpex is the market leader in terms of generated profit, occupying a leading place in the Top Companies in Romania by turnover.

Through numerous awareness programs supported and constantly analyzed, investment projects, and especially through permanent discussions with workers, today the graph regarding the evolution of work accidents has acquired a different look (figure 14).



Fig.14. The evolution of LTIR and TRIR for the last 10 years in the analyzed company

where:

LTIR= rate of accidents with temporary incapacity for work (No. LTI / hours worked x 10⁶) TRIR= total rate of work accidents (No. FTL+LTI+RWC+MTC/ hours worked x 10⁶) FTL: fatalities LTI: accidents with temporary incapacity for work RWC: restricted work cases MTC: medical treatment cases

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However, the implementation of numerous awareness programs, investments in improving working conditions, did not lead to the reduction of work accidents to zero. Accidents happen and will continue to happen. Not all accidents can be prevented, not everything is in the company, but we need continuous commitment, continued investment in people and in improving their working conditions, so that a new, gentler history is written. The journey to strengthen the safety culture continues, it will be long and difficult, with small and sure steps, and it will never end. And because the role of the OH&S expert is to identify those system elements that are partially working, or not working, and to improve them, the journey expands to new opportunities, starting from the following premises:

- Management is responsible
- Employees must be trained, constantly
- Management must do audits/verifications
- All deficiencies must be corrected immediately
- Safety is very important in the workplace
- Safety is good business
- Contractors are our mirror
- People are the most important element

Safety is not a priority! Safety is a value! Because priorities come and go. Safety is not a project or a campaign, it must be continuously supported and integrated into all business processes.

Studies show that the effectiveness of managers in preventing accidents depends on the behavior they demonstrate towards employees. Strong commitment and modeling good and safe behavior involves many facets, including:

- Establishing safety as a value for all workplaces;
- Making decisions that take safety into account;
- Providing all necessary safety equipment and motivating employees to use it;
- Thorough investigation of accidents and correction of identified problems;
- Inspecting the workplace regularly and promptly eliminating hazards;
- Ensuring the necessary training for employees;
- Establishing safety committees to involve employees in solving problems and improving workplace safety;
- Receiving employee suggestions to make the workplace safer;
- Listening seriously to employees when they report dangers and taking immediate action to correct them;
- Encouraging employees to attend safety training.

Another aspect that has proven its effectiveness is communication. Managers must communicate and encourage communication. Safety role model managers also talk about safety—a lot, in fact, as much as they do about productivity. Management should take every opportunity to *provide feedback and communicate* safety information to employees.

Also, face-to-face communication with employees about safety is the most effective method of communication. For example, if a manager is walking through a work area and sees employees wearing mandatory personal protective equipment and following safety procedures, he or she should stop for a minute and send a message of appreciation to that team. And supervisors should always talk to their employees about safety and provide performance feedback—not just at weekly safety meetings or during training sessions, but every day. Managers are the basis for the objective of developing a safety culture, they are the ones who can catalyze this process, and to the same extent, the ones who can slow down or even stop this process. Safety is the responsibility of managers. After an accident, no excuses work...

The role of managers is to lead the organization, controlling all aspects of the business (starting with the safety of people). Leaders are the ones who give direction to the organization and create the environment necessary to achieve the objectives.

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