

"The Role Of Training Programs In Reducing Occupational Risks Within The Economic Enterprise In Light Of Foreign Partnership" Case Study: National Drilling Enterprise "Enafor" And Eni – 2024 –

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Abstract:

Training is one of the main responsibilities entrusted to human resources management, as mandated by labor laws, particularly concerning occupational health and safety, as stipulated by Decree 02/247. To comply with these laws, companies of various statuses implement training programs for their workers. Many of them organize training programs tailored to the nature of the work and the tasks assigned to the workers to raise awareness of occupational hazards in their work environment. This includes the control of safe working methods and best practices for using machinery and equipment. Any lack of knowledge on these aspects or insufficient training on hazards and ways to avoid them can potentially lead to situations and behaviors resulting in accidents. This study aims to diagnose the reality of the training process within the national drilling company located in Hassi Messaoud, in light of the foreign partnership. It also seeks to understand the role of training programs in reducing and preventing workplace accidents and occupational hazards.

Keyword: Training, prevention, occupational risk, foreign partnership.

Introduction

Current organizations face multiple challenges related to competitive forces, globalization, market openness, the technological revolution, and the constant search for human resources to remain competitive, hence the importance given to human resource training.

Occupational risks, which include various hazards inherent to specific jobs, pose significant threats to the health and safety of workers. These risks can result from

physical, chemical, biological, ergonomic, and psychosocial factors present in the work environment. Implementing effective training programs is a crucial strategy for mitigating these risks and ensuring a safer workplace.

Today, training occupies a central place for survival and to meet economic and industrial challenges. Protecting individuals from occupational risks means protecting the national economy and society. If we examine the available statistics on workplace accidents and their consequences, such as deaths, permanent or temporary disability, and other negative impacts on various human, social, and economic aspects, the importance of this issue becomes clear.

Organizations today strive to bring about positive changes in employee behavior by investing in health and safety education to instill the necessary flexibility to establish a professional culture and improve health and safety performance.

Workplace accidents represent a crucial problem, necessitating a thorough study of causes and preventive measures. The success of these efforts depends on the quality of training programs, taking into account the specific needs of individuals and the organization, and they must be evaluated.

Given the damage caused by workplace accidents and injuries, both for the individual and the company, our study attempts to answer the following questions:

- 1. What are the different causes that lead to their occurrence?
- 2. What are the means to reduce their occurrence?
- 3. What is the impact of training programs on occupational risk prevention?

1- The definition of training:

- 1-1- Training is a systematic process of enhancing the skills, knowledge, and competencies of individuals to improve their performance in a specific job or task. It typically involves organized activities and programs designed to equip participants with the necessary abilities to meet the demands of their role or to advance in their careers (Armstrong, M. 2006).
- 1-2- Goldstein's perspective, training is defined as a systematic approach designed to foster learning and development in order to improve individual, team, and organizational effectiveness. It involves a comprehensive process that includes needs assessment, development of training programs, and evaluation of their effectiveness, all aimed at enhancing human capital within organizations (Goldstein, I. L., & Ford, J. K. (2002).

2- The adopted definition:

It is a planned activity undertaken by the company to develop the skills of its individuals, providing them with knowledge, experiences, and behaviors so they can perform their tasks effectively and efficiently while avoiding accidents.

3- The legal definition of workplace accidents:

Algerian legislation defines a workplace accident in Article 6 of Law 13/83, published in Official Journal number 28 on July 5, 1983, as any accident causing bodily injury due to a sudden and external cause within the context of executing a work relationship, whether it occurs at the workplace and during working hours or immediately after, or during the treatment of its consequences. (The Official Journal of Algeria, number 28, dated July 5, 1983).

It is also mentioned in the legal text (Chapter Three of Labor Law number 28 of 1994): "A workplace accident is considered as such if it occurs due to work or during work for any worker while in the service of the employer or multiple employers. Similarly, a workplace accident is considered as such for the worker during travel between their workplace and residence, provided that the travel is not interrupted, or the route altered due to personal interest or for a reason unrelated to their professional activity."

4- Occupational hazard :

- 4-1- According to OSHA, it is one of the risks present in the workplace, encompassing physical, biological, chemical, and psychosocial dangers. The hazard can be short-term, such as certain minor injuries, or long-term, such as occupational diseases like lung cancer or heart disease (www.osha.gov).
- 4-2- An occupational hazard is a risk or danger that is inherent to a particular job or work environment, potentially causing injury, illness, or other adverse health effects. These hazards can stem from various sources, including physical, chemical, biological, ergonomic, and psychosocial factors, and require appropriate safety measures to mitigate their impact on workers (Goetsch, D. L. 2019).

5- The adopted definition :

It is an unexpected event that occurs directly at the workplace or during travel to and from work, or that originates from the worker themselves, such as their poor behavior, attitude, or preparation.

6- Importance of Training Programs

Training programs are designed to enhance employees' knowledge and skills, enabling them to perform their tasks safely and efficiently. By providing workers with the necessary education on potential hazards and the proper procedures to avoid them,

training programs play a pivotal role in reducing occupational risks. These programs often cover topics such as:

- **Hazard Recognition:** Educating employees on identifying various types of hazards in their work environment.
- **Safe Work Practices:** Instructing on proper techniques and procedures to minimize exposure to risks.
- **Emergency Response:** Training on how to respond to emergencies, including spills, fires, or accidents.
- **Use of Personal Protective Equipment (PPE):** Demonstrating the correct use and maintenance of PPE to protect against specific hazards.

7- Benefits of Training Programs

- 1. **Increased Awareness:** Training programs raise awareness among employees about the potential hazards they might encounter and the importance of following safety protocols.
- 2. **Skill Development:** Workers develop the necessary skills to handle equipment and materials safely, reducing the likelihood of accidents.
- 3. **Enhanced Safety Culture:** Continuous training fosters a culture of safety within the organization, encouraging employees to prioritize their well-being and that of their colleagues.
- 4. **Compliance with Regulations:** Training ensures that organizations comply with occupational safety and health regulations, avoiding legal penalties and promoting a safer work environment.
- 5. **Reduction in Accidents and Injuries:** Well-trained employees are less likely to be involved in accidents, leading to a decrease in workplace injuries and related costs.

8- Case Studies and Examples

Research and real-world examples highlight the effectiveness of training programs in reducing occupational risks. For instance, a study by the Occupational Safety and Health Administration (OSHA) found that companies with comprehensive training programs reported significantly lower accident rates compared to those without such programs. Additionally, industries such as construction and manufacturing, where hazards are more prevalent, have shown marked improvements in safety records following the implementation of targeted training initiatives.

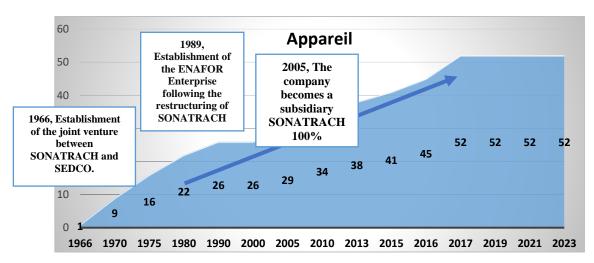
9- The definition of foreign partnership

A foreign partnership refers to a business arrangement where two or more entities from different countries collaborate and share resources, risks, and profits. This type of partnership can involve various forms of cooperation, such as joint ventures, strategic

alliances, or other business agreements, with the goal of achieving mutual benefits while navigating the complexities of international markets (**OECD 2008**).

10- Presentation of the Company :

On April 28, 1966, ALFOR, a joint venture between SONATRACH and SEDCO, was created. The capital of this company is held 51% by SONATRACH and 49% by SEDCO. The National Drilling Company (ENAFOR), resulting from the restructuring of SONATRACH, became an autonomous company in the form of a SPA on November 26, 1989.



Evolution of Equipment from 1966 to 2023

11- Missions assigned to the structures under the General Management :

Human Resources Direction (HRD):

- Consolidate and plan the training needs expressed by the various structures of the Company,
- Ensure their evaluation and monitoring in accordance with the Company's annual training and learning plan;

ENAFOR Drilling School Direction (EDSD):

- Develop and implement training programs to ensure the professionalization of existing human resources and new recruits;
- Consolidate and plan training needs for external entities, ensure their implementation and evaluation;
- Provide external training (seminars, short and long-term training with external organizations);

Quality, Health, Safety & Environment Direction (QHSE):

- Develop and implement the Company's policy on quality, health, safety, and environment following the recommendations of the General Management, in accordance with current regulations;
- Implement the necessary material and human resources to preserve the safety and health of the Company's workers, and apply current regulations;
- Ensure the availability and maintenance of intervention means, monitoring, control, and renewal of safety equipment;

12- Normative references, definitions, and abbreviations:

ENAFOR's QHSE management system refers to the following requirements:

- 1. **ISO 9001/2015:** Quality management system Requirements
- 2. **ISO 14001/2015:** Environmental management system Requirements and guidelines for use
- 3. **ISO 45001/2018:** Occupational health and safety management system Requirements and guidelines for application



- 1. Transfer safety knowledge (K or S) to learners through teaching;
- 2. **Organize** practical training that uses this knowledge to acquire the initial skills (**S or SF**) needed to perform a task;
- 3. **Use** the skills acquired at work to gain experience and improve capabilities (**A or SE**) so that the learner can excel.

14- Stages of Training in the Organization

The stages of training in the organization go through four main phases, summarized as follows:

14-1- Needs Identification Phase

The process of identifying needs in the organization begins with a letter issued by the Training Department in mid-year to all departments of the organization. This letter aims to determine each department's training needs for the upcoming year, and departments must respond within 30 days of receiving the letter. The letter includes a technical training form and a training identification questionnaire form, which each department is required to fill out and return to the Training Department.

14-2- Training Needs Study and Analysis Phase

This phase involves preparing all the needs received from various departments, then analyzing and studying them individually. Bilateral meetings are held with all heads of departments to review and classify the proposed needs. These meetings conclude with the signing of a minutes document between the parties that documents the agenda and agreed-upon points. Ultimately, the proposed needs are prioritized.

14-3- Annual Training Plan Preparation Phase

After prioritizing the needs, a meeting is held at the Training Department level to present and review the needs one last time by all Training Department executives. This aims to avoid any errors or redundancies. Subsequently, a draft annual training plan is prepared for approval by the Human Resources Director, who then presents it to the organization's CEO for final approval, provided there are no reservations or comments. After that, the Human Resources Director publishes the original version of the plan to all departments and sections of the organization.

14-4- Plan Activation and Training Implementation Phase

This phase begins with the signing of contracts and agreements with active training institutes and schools at the national or international level, in accordance with applicable decrees and laws in this field. Needs are then grouped by field to facilitate the classification of institutes based on the needs that fall within their scope of activity. The institutes propose a training schedule based on which the training process officially begins, either at the organization or the institute itself, with priority given to national institutes and schools.

15- The four types of training provided by the National Drilling Company:

- Managerial Training;
- ➢ HSE Training;
- Professional Training;
- > Certification & Qualification Training;

16- Training evaluation levels:

- 1- **OSHA** and **ANSI** have both adopted, to some extent, the **Kirkpatrick** and **Phillips** models to evaluate the quality of safety training.
- 2- **Reaction** : Did the learner like the safety training ?
- 3- **Learning** : Did the training increase the learner's safety knowledge, skills, and abilities (KSA) ?
- 4- **Application** : Did the learner successfully apply the KSAs on the job ?
- 5- **Results** : Did the safety training have a positive impact on the company's key performance indicators (KPI) ?
- 6- **Return** : Did the company show a positive return on investment in training, expressed as a cost/benefit ratio ?

As you can see, the five-level model creates a "chain of impact" at five levels. Through the "**Five Whys**" analysis technique, the evaluator can determine the root causes of the results. If a negative return on investment results from the training investment, it is possible to precisely determine the cause(s).

17- Continuous improvement and the goal:

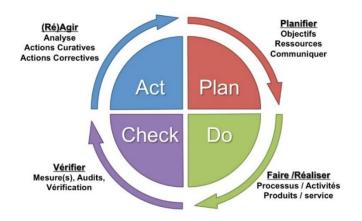
There is always room for continuous improvement in any safety training program.

However, if your evaluation indicates that the training program is effective, but employees do not follow the learned procedures and practices, the root cause is likely a lack of training support in the safety culture. Here are some examples that indicate a possible lack of cultural support for safety training:

- ✓ Supervisors ignore employees who do not follow safety procedures.
- ✓ Employees are not recognized for using safety procedures.
- ✓ The culture promotes the idea that working quickly is more important than working safely.
- ✓ Managers do not emphasize the importance of safety and training during meetings.

Therefore, continuous improvement of the safety culture through better support in training, resources, enforcement, and/or supervision may be necessary when employees do not follow safety procedures and practices.

Ultimately, improving safety training is primarily about change management. Effective change management is essential for long-term success.



The Deming Wheel for Continuous Improvement

18- Operational platforms for the GSE client:

	ENF-54	ENF-55	ENF-50	ENF-58
Start date	07/10/2020	28/03/2021	17/04/2021	10/01/2022
Realization	09 Wells	10 Wells	10 Wells	06 Wells
The manufacturer	DRILLMEC	DRILLMEC	BENTEC	DRILLMEC
Current well	HDLE-3	RRBN-7	HDLE-6	NAHE-3

19- HSE Policy ENAFOR & GSE (Sonatrach-Eni Group)"



20- HSE training required by the Client:

- **20-1- RIG PASS :** This training is designed to provide participants with information on inherent operational risks and the skills needed to work safely on a Rig. It covers the following aspects:
 - Mastering safe work procedures ;
 - Mastering emergency situations ;
 - Preserving the environment.
- **20-2- Work Permit** : The training covers the work permit procedure and specific preventive measures for each type of work. Educational objectives: This training covers the following aspects:
 - Understanding the work permit procedure ;
 - Assessing the risks associated with the work ;
 - Taking preventive measures;
 - > Performing the work according to the work permit.
- **20-3- Working at Height** : Working at height training is mandatory for anyone required to work at height, to learn and master the necessary preventive measures and

implement them to ensure their protection against falls safely and effectively. Educational

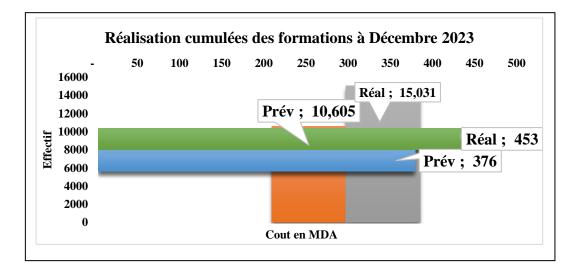
Objectives : At the end of the training, participants will be able to:

- Master regulations related to working at height;
- Identify and prevent risks related to working at height;
- > Master the use of equipment and techniques for working at height.
- **20-4- Firefighting**: This training complies with regulations and aims to prevent accident risks.

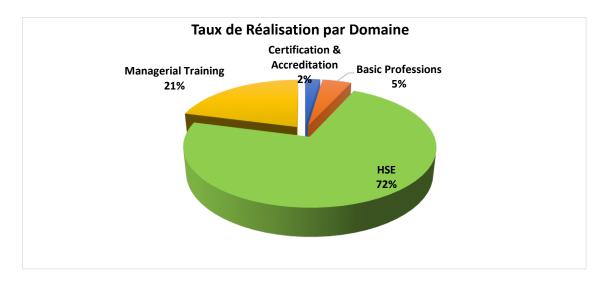
Educational objectives: This training covers the following aspects:

- Acquiring knowledge about fire-related risks;
- > Developing skills in fire risk prevention;
- > Implementing appropriate prevention actions.

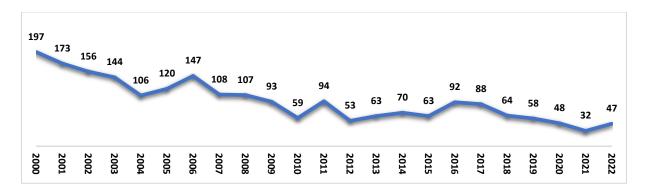
21- Implementation of the training plan for the year 2023:



Implementation of the training plan for the year 2023



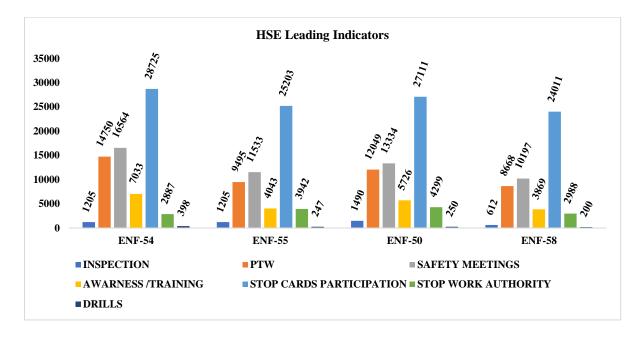
Implementation of training for the year 2023 by Domain



Evolution of the number of accidents with stoppage - 2000-2022

22- HSE Leading Indicators

Name of the	ENF-54	ENF-55	ENF-50	ENF-58
Inspection	1205	1205	1490	612
PTW	14750	9495	12049	8668
Safety Meetings	16564	11533	13334	10197
Awarness /Training	7033	4043	5726	3869
Stop Cards participation	28725	25203	27111	24011
Stop Work Authority	2887	3942	4299	2988
Drills « Simulation exercise»	398	247	250	200

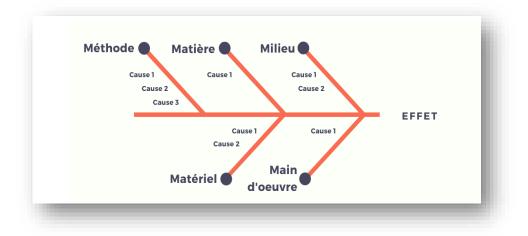


HSE Leading Indicators

23- Analysis of the causes of accidents recorded in 2023 using the Ishikawa Diagram

23-1- The Ishikawa Diagram :

Also called the cause-and-effect diagram or fishbone diagram, it is a business problemsolving tool. Designed by Kaoru Ishikawa, this diagram takes the form of a tree with several branches (or a fishbone). The effect, the problem the company faces, is at the head, and the causes are represented by branches. These causes, the "5 Ms," each represent a component of the company.



Ishikawa Diagram

Analysis by 5 M	Nbre of cases	10% 1%
Workforce	81	15%
Method	52	45%
Environment	26	
Equipment	18	29%
Material	1	Workforce Method Environment Equipment Material

Ishikawa Diagram Analysis of the causes of accidents recorded in 2023 using the Ishikawa Diagram

23-2- Results of the cause analysis :

Workforce Issue	Case	
Poor working position	19%	
Physical condition	16%	
Rules/Procedures not followed	14%	
Unsafe behavior	10%	
Lack of communication	9%	
Haste	6%	
Lack of supervision	5%	
Lack of concentration	4%	
Failure to assess risks	4%	
Poor posture/Movement and posture	2%	
Lack of knowledge/Qualification	2%	
Inattention	2%	
Lack of knowledge/Qualification	1%	
Poor behavior	1%	
Poor communication	1%	
Lack of control & verification	1%	
Failure to wear PPE	1%	
Lack of experience	1%	

Method	Case	
Poor working method	42%	
ncorrect planning & organization	40%	
Lack of control means	8%	
Failure to assess risks	6%	
Inadequate design	4%	
Environment	Case	
Poor workplace layout	35%	
Cluttered workspace	31%	
Restricted workspace	19%	
Slippery surface	8%	
Working environment (noise, inadequate lighting)	4%	
Degraded surface	4%	
Equipment	Case	
Inappropriate equipment/tools	50%	
Faulty equipment/tools	17%	
Lack of equipment	22%	
Non-compliant equipment/tools	6%	
Outdated equipment/tools	6%	
Material	Case	
Hazardous chemicals	100%	

Results of the cause analysis

23-3- Root causes of workplace accidents related to the position in 2023:

Incorrect planning & organization; and underestimation of associated risks;

Incorrect, misunderstood, and/or sometimes ignored rules and procedures;

- Faulty, outdated (in poor condition), or inadequate equipment/tools, and sometimes non-existent;
- Unsafe behavior (inappropriate actions, gestures, and positions);
- Haste, overconfidence, and failure to assess risks;
- Lack of knowledge/qualification;
- Lack of communication;
- Insufficient and/or absent supervision;
- Poor workplace layout;

24- What are the means to reduce their occurrence ?

Managerial Actions

Motivation / Initiative

- ✓ Implement a bonus system for good safety practices among the 04 drilling teams
- ✓ Review the circular on HSE performance rewards, valuing them according to market context
- ✓ Disciplinary Measures
- ✓ Instant disciplinary measures for any breach of standards, instructions, and procedures, as well as unsafe acts/situations

Coordination meeting / Technical days / Managerial visit / Coaching visit

- ✓ Conduct managerial visits, coaching sessions, and technical days for sites that have recorded a high number of undesirable events.
- ✓ Ensure the triggering of relevant points (undesirable events, inspections, regulatory compliance) and their follow-up during structured and basic CPHS meetings.
- ✓ Ensure the initiation of relevant points (undesirable events, inspections, regulatory compliance) and their follow-up during structured and foundational CPHS meetings.

Training

- ✓ Ensure personnel training according to the HSE matrix
- ✓ Launch additional training on lifting operation techniques for forklift and crane operators and D.T.M supervisors
- ✓ Conduct a Work Permit training for key personnel on sites
- ✓ Launch awareness campaigns on common workplace accident risks and display posters for various hazards
- ✓ Conduct a Stop Work Authority policy campaign
- ✓ Ensure availability of PPE & appropriate safety tools for different operations

- ✓ Schedule and conduct awareness sessions for Enafor and subcontractor personnel according to the annual awareness plan
- ✓ Rigorous follow-up on recommendations triggered by adverse events (flash alerts and warning bulletins)
- ✓ Utilize flash alerts for lessons learned discussions with operational personnel at sites and ensure follow-up on triggered actions

Conclusion

Most companies place paramount importance on the development of their human resources and strive to ensure their safety by providing maximum health and safety measures in the workplace. Aware of the significance of this aspect in enhancing individual performance, they have sought to develop training programs as an activity encompassing education, practice, and the acquisition of skills and knowledge, particularly in the field of occupational health and safety. This enables staff to understand the occupational hazards that surround them and take safety measures.

This is what we can confirm in conclusion of our research, in which we have attempted to highlight the importance of training programs in reducing and preventing occupational hazards within the economic enterprise in the context of foreign partnership. Despite the company's efforts to reduce workplace accidents, particularly through training, they are not sufficient as they interact with several other factors such as organizational climate, workplace safety culture, and the motivation system. In this regard, managers must take these factors into account to achieve their financial objectives while preserving their human resources.

Training programs are an essential component of occupational risk management. By equipping employees with the knowledge and skills needed to recognize and mitigate hazards, these programs contribute to creating a safer and more productive work environment. Employers must invest in ongoing training and ensure that it is tailored to the specific risks associated with their industry to achieve the best results.

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