

# **NATIONAL SAFETY CULTURE AS A VERITABLE TOOL TO HUMAN AND NATIONAL SUSTAINABLE DEVELOPMENT**

## **CHAPTER ONE INTRODUCTION**

### **1.1 BACKGROUND TO THE STUDY**

The perceptions of communities and organisations of Health, Safety and Environment programs as cost rather than benefit to the organizations and communities, lack of fund and expertise, especially in the case of small organizations, Commitment from shareholders on the need for action, politics, economic instability and a host of other factors have been largely responsible for the poor national safety culture in the country (Kalejaiye, 2013) and this community of factors has relegated human and sustainable development to mere paper talk. It can be clearly seen that the myriad of safety related challenges plaguing the Health sector, the environment, Agriculture, industry, Energy, etc require that a national safety culture is implemented as a way of responding to results of a crucial root cause analysis into these national challenges. This is the driving force behind this study on the impact of a positive safety culture on human and National sustainable development.

### **1.2 PROBLEM STATEMENT**

When the word development is mentioned, what comes to mind is growth, increase, change, impact and so on. Even as that is mentioned, there is work towards sustainability. For developmental efforts to stand the test of time, core occupational safety needs to be practiced at the design, installation phases, operation and maintenance phases and decommissioning phases of developmental projects, as the need arises. Government facilities have continued to decay to public use in a poor maintenance culture which is a clear symptom of an ailing safety culture. This research is an effort towards revealing the unsafe practices in our dear nation which constantly jeopardize developmental strides.

Lots of questions come to play: – when development takes place, do we have proactive and even reactive measures in place to ensure that the impact of the so called development do not

have an adverse effect on the health of the people these developments is brought to and most importantly the environment? During the design phases of these projects, do we make provisions for safety devices, risk assessments, personal protective equipments, hazard communication signs, etc? Safety is everybody's responsibility, as development experts, are we safety conscious? How many people have tried to bring about a change and ended up losing their lives in the process and even put their family at risks? How many of these impacts have been injurious/disastrous to the people that it is being brought to, how many of such has caused war between the community and neighbouring communities and how many has left the environment worse than it was before.

### **1.3. RESEARCH QUESTIONS**

- I. What are the safety related challenges to sustainable development in Nigeria?
- ii. Who are the stakeholders involved in occupational health and safety (safety culture)?
- iii. What are the stakeholders perceptions on occupational health and safety (safety culture)?
- iv. What is the level of organisational safety culture in Nigeria?
- v. What are the impacts of organizational safety culture on national safety culture?
- vi. What are the perceptions of stakeholders towards a positive national safety culture as a veritable tool to sustainable development in Nigeria?
- vii. What are the effective recommendations for the implementation of a positive national safety culture towards attaining the millennium development goals?
- viii. Do we really see safety as being necessary, do we employ safety professionals or caution to our impact and assessment of situations?
- ix. Where is safety necessary and is it really necessary?
- x. How do we make it a national lifestyle?
- xi. Are there legislations to guide public interaction and safety?
- xii. Are there contingency management plans in place? How efficient are they?
- xiii. How safe are our airways, waterways and roads?

- xiv. How about agricultural practices?
- xv. Are large public buildings still being set up without fire detection and protection facilities?
- xvi. Are new roads and bridges still being built without guarded drainages?
- xvii. Are telecommunications masts sited within residential areas?
- xviii. If the answer to all these is negative, then, the next crucial question is how shall we develop as a country?

#### **1.4 RESEARCH OBJECTIVES**

The general objective of this study is to create the awareness of safety culture as a veritable tool to human and national safety culture.

The specific objectives are:

- i. Identify the respondents by socio-demographic characteristics of respondents
- II. To identify safety related challenges to sustainable development in Nigeria
- iii. To investigate the knowledge of stakeholders on occupational health and safety (safety culture)
- iv. To find out stakeholders perceptions on occupational health and safety (safety culture)
- v. To assess the level of organisational safety culture in Nigeria
- vi. To assess the impact of organizational safety culture on national safety culture
- vii. To find out the perceptions of stakeholders towards a positive national safety culture as a veritable tool to sustainable development in Nigeria
- viii. To provide effective recommendations for the implementation of a positive national safety culture towards attaining the millennium development goals.

## **1.5 JUSTIFICATION OF THE STUDY**

As identified in Agenda 21(1996), the most serious problems confronting cities, towns and their inhabitants include: Inadequate financial resources, lack of employment opportunities, spreading homelessness and expansion of squatter settlements, increased poverty and a widening gap between the rich and poor, growing insecurity and rising crime rates, inadequate and deteriorating building stock, services and infrastructure. Other problems include lack of health and educational facilities, improper land use, insecure land tenure, rising traffic congestion, increasing pollution, lack of green spaces, inadequate water supply and sanitation, uncoordinated urban development and an increasing vulnerability to disaster. All these have seriously challenged the capacity of government at all levels to realize socio- economic development and environmental protection, which are all components of sustainable development. There is therefore, a need to evolve a national culture which produces individuals with a psyche that is focused on an aggressive national turn around, while enforcing a national policy on occupational safety and health towards overcoming these challenges and repositioning the nation for greater strides in sustainable development.

## **1.6 SCOPE OF THE STUDY**

The study site for this research is Nigeria with its target being workers in various companies. Nigeria, officially referred to as the Federal Republic of Nigeria with a legislative structure constituting of the house of senate and the house of representative has a total area of 923,768 km<sup>2</sup> and 356,669 Square mi a percentage of 1.4 being water. A total population estimate of 174,507,539 (National Bureau of Statistics, 2013) and a density of 188.9/km<sup>2</sup> and 489.3/square mi. With Urban – Rural population being Urban 49.6%, rural 50.4% (Values as at 2011). The life expectancy at birth of the average Nigerian is male 46.4 years and female, 47.3 years (Data as at 2007), with the male having the highest percentage of 71.5% while the female 48.8% based on the population of age 15 and over literate (Data as at 2008).

Nigeria consists of 36 states viz; Abia, Adamawa, Akwa Ibom, Anambra, Bauchi, Bayelsa, Benue, Borno, Cross River, Delta, Ebonyi, Edo, Ekiti, Enugu, Gombe, Imo, Jigawa, Kaduna, Kano, Katsina, Kebbi, Kogi, Kwara, Lagos, Nasarawa, Niger, Ogun, Ondo, Osun, Oyo, Plateau, Rivers, Sokoto, Taraba, Yobe, Zamfara and Abuja as the Federal Capital Territory.

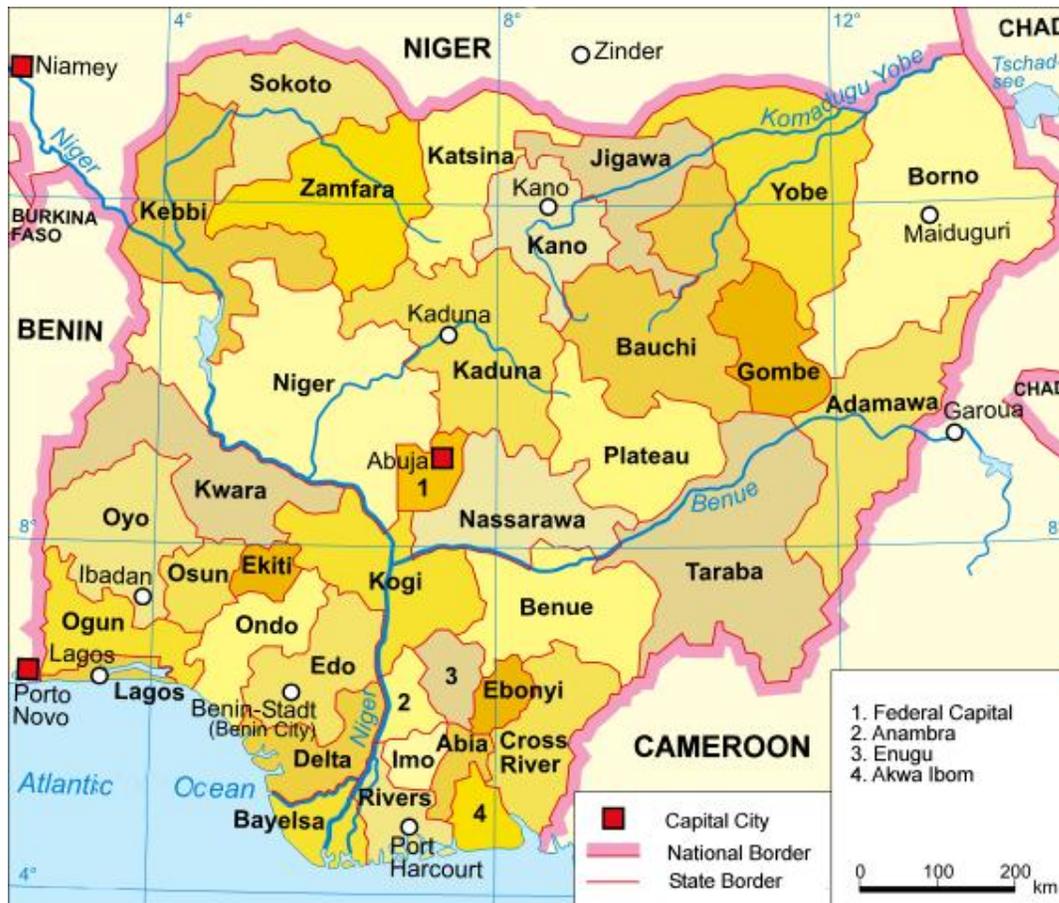


Figure 1.1: A clickable map of Nigeria exhibiting its 36 states and the Federal Capital Territory.

Source: Adapted [www.wikipedia.org/wiki/States\\_of\\_Nigeria](http://www.wikipedia.org/wiki/States_of_Nigeria), retrieved 15<sup>th</sup> December, 2014.

The Country has workers serving in various Government Establishments, Private parastatals, Foreign agencies based in the country, whether in the offices, sites and even houses as long as deliverables are met. Usually people from different states and tribes working together in areas where there might or may be indigenes to meet their common goal or that of the Government or establishment employed. This interaction made possible by the Lingua Franca of Nigeria, which is English, is imbibed by all even if it has to be pidgin English for the not too educated.

## **CHAPTER TWO**

### **LITERATURE REVIEW, THEORETICAL/ CONCEPTUAL FRAMEWORK**

#### **2.1 LITERATURE REVIEW**

##### **2.1.1 Safety Culture and sustainable development**

Sustainable development is a global challenge. Rapid urban expansion without effective environmental consciousness means that in virtually every urban centre, a substantial proportion of the population is at risk, from natural and human-induced environmental hazards and other occupational safety and health hazards, hence, requiring development experts to collaborate with Safety professionals to secure positive organizational safety cultures as an indispensable work environment for sustainable development. (Lawanson, 2006).

According to Anthony Lake, UNICEF Executive Director, April 2013; the world is entering a decisive phase to accelerate efforts and honour the Millennium Promise embedded in the MDGs. But while this promise is time bound, our collective responsibility does not expire. After 2015, new borns and growing children will have at least the same needs in terms of health, safety, learning, good nutrition, and protection as the “MDG generation” – and much will remain to be done to meet our responsibilities to give them all a fair opportunity to live full, healthy lives; no matter where they live or what barriers they face.

Children’s rights and well-being should remain at the centre of the post-2015 agenda. Investment in children is a fundamental means to eradicate poverty, boost shared prosperity, and enhance inter-generational equity. It is also essential for strengthening their ability to reach their potential as productive, engaged, and capable citizens, contributing fully to their families and societies. Sustainable development starts and ends with safe, healthy and well-educated children.

In a paper published by UNICEF on a post 2015 world fit for children, the second section was dedicated to the following three key messages as proof of the importance of a safety culture in the growth of sustainable development:

1. Sustainable development starts with safe, healthy and well-educated children;
2. Safe and sustainable societies are, in turn, essential for children; and

3. Children's voices, choices and participation are critical for the sustainable future we want.

In Nigeria, industrialization and mechanization are increasing while occupational health problems are becoming prominent. These health problems are caused by exposure to harmful chemicals, biological agents, physical, mechanical and ergonomic hazards. Health problems resulting from such hazards may appear to occur less frequently than other major disabling diseases, due to lack of knowledge and pattern of illness of such hazardous diseases (Kalejaiye, (2013). These workplace hazards have tremendous negative impacts on National development and are a major draw-back to the achievement of the United Nation's Millennium Development Goals. Occupational health (OH) is a branch of health services specifically concerned with health, safety and welfare of workers of all categories. It is a health service which demands that employers, both government and private, should show concern for practical measures of protecting the health of workers or employees (Adeniyi, 2001). Therefore, occupational health deals with the well-being, safety and comfort in the workplace.

### **2.1.2 What is safety?**

Safety has been defined as the condition of being free from danger of harm (Gray, 1990). It also implies a state of relative security from accidental injury or death due to measures designed to guard against accidents (Burdine and Mc Leroy, 1992). Folawiyo (1995) asserted that safety problem of today are enormous in contrast to those of yesteryears. He stressed further that we must depend more on our versatility in a social setting where element of intelligence, tolerance, courtesy and emotional stability have become important. Due to rapid scientific and technological advances, an imposing list of new hazards has been added to our daily lives. According to Encyclopedia America (1998), safety is the condition of being free from danger or harm. Safety in broadest sense is a condition of being free from injury or risk. Safety is the state in which the risk of harm to persons or of property damage is reduced to, and maintained at or below an acceptable level through a continuing process of hazard identification and risk management. ([www.nou.edu.ng](http://www.nou.edu.ng))

Based on the above review, occupational health and safety deals with all aspects of health and safety in the workplace and has a strong focus on proactive prevention and control of workplace hazards. Organizations which practice a good workplace principle of proactive hazard prevention are said to have a positive safety culture or otherwise a negative safety culture.

### **2.1.3 The Concept of Safety Culture**

The concept of Safety culture was first coined in the International Nuclear Advisory Group's (INSAG) summary report on the Chernobyl accident, published by the international Atomic energy Agency (IAEA) in 1986. Although it has been widely used since then, there is no clear cut definition of the term safety culture and numerous definitions have been developed in the academic literature for it (Choudhry, (2007)). It is used to describe an organizational culture in which safety is understood to be and is accepted as the top priority (Cooper, (2002)). Cooper (2000) refers to it as the observable degree of effort by which all organizational members direct their attention and actions towards improving safety on a daily basis, while Richter and Kotch (2004) describe it as the shared and learned meanings, experiences, and interpretations of work and safety which guide people's actions towards risk, accidents and prevention. In a nutshell, a strong safety culture is formed when the values espoused by management are consistent with the behaviour of employees (Vredenburg, (2002)), when safety is regarded by all as an issue that concerns everyone (Choudhry, (2007)).

Empirical studies have been carried out by researchers to determine the indicators which reflect safety culture studies (Mearns 2003; Ostrom 1993). Despite several inconsistencies in the peculiar labelling of safety culture indicators, two factors – employees' participation and management commitment to safety - appear to be replicated across several studies (Cox and Cheyne; 2000; Fernandez-Muniz 2007; Macfaden 2009). Hence, in this study, a positive safety culture is defined as one in which managers are committed to and reinforce safety as an organizational priority and employees adhere to safety rules and guidelines and participate in their establishment and improvement.

With a concentration on the 'person dimension' from the investigation into the Chernobyl accident, it appeared that inadequate organisational safety-culture was a possible major contributor to the accident. Retrospectively, it was also considered a possible contributor towards many historic accidents where the root cause was not necessarily due to less than optimum engineering design or equipment failures, but people's 'poor' human performance. Safety-culture theories indicate that different levels of an organisational hierarchy have different influences on the safety-culture. These levels need to be differentiated. In this study an organisation is considered as having four levels:

1. Executive and senior management
2. Middle managers
3. Supervisors
4. The workforce teams. (These can be plant designers, the plant operators, maintenance engineers, technicians and contractors, and so on, who are assumed to work under a supervisor.)

The employees, or the staff, are the aggregate of the workforce and management. (Taylor, 2010)

#### **2.1.4 Components of a safety Culture**

Reason (2008) has suggested that safety culture consists of five elements:

- An informed culture
- A reporting culture
- A learning culture
- A just culture
- A flexible culture

In an *informed culture* the organization collects and analyses relevant data, and actively disseminates safety information.

A *reporting culture* means cultivating an atmosphere where people have confidence to report safety concerns without fear of blame. Employees must know that confidentiality will be maintained and that the information they submit will be acted upon, otherwise they will decide that there is no benefit in their reporting.

A *learning culture* means that an organization is able to learn from its mistakes and make changes. It will also ensure that people understand the Safety Management System (SMS) processes at a personal level.

In a *just culture* errors and unsafe acts will not be punished if the error was unintentional. However, those who act recklessly or take deliberate and unjustifiable risks will still be subject to disciplinary action.

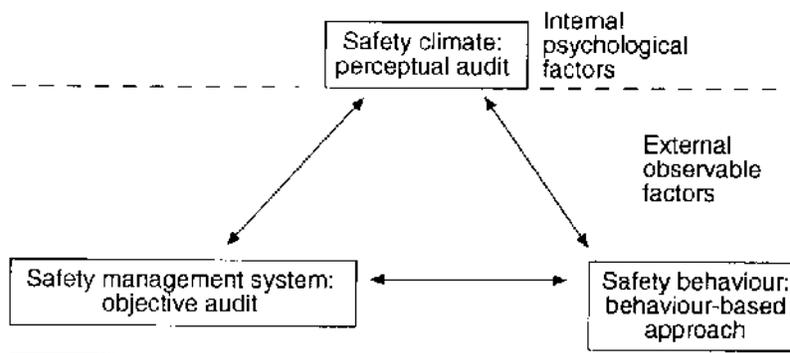
A *flexible culture* is one where the organization and the people in it are capable of adapting effectively to changing demands.

### 2.1.5 Safety Culture Models

There have been many contributors to safety-culture theory with various models arising; a useful framework based on the work by Cooper (2000) is to distinguish between three interrelated aspects of safety culture, specifically:

- Psychological aspects (often referred to as ‘safety climate’),
- Behavioural (or ‘organisational’) aspects,
- Situational (or ‘corporate’) aspects.

This approach is summarised in the figure below;



Source: Cooper (1993a)

Figure 2.1: Cooper safety culture model

The psychological aspect of safety culture refers to ‘how people feel’ about safety and safety management systems. This encompasses the beliefs, attitudes, values and perceptions of individuals and groups at all levels of the organisation, which are often referred to as the safety climate of the organization. This can be measured subjectively through the use of safety climate questionnaires which aim to uncover the workforce’s attitudes and perceptions at a given point in time.

Other approaches were by Turner 1998, Rasmussen 1997, Reason 1997 and Leveson 2004. However, to enable a practical understanding of the phenomenon, a culture model attributed to the original work by Schein (2010) in his study of business culture is introduced. For this text it is termed the ‘generic culture model’, as the key elements of the model can be

considered universal to most culture types. The theory suggests that organisational culture arises from shared beliefs. These beliefs driving an organisation's collective behaviours are not always overt but in reality are buried beneath observable supportive layers of values, attitudes and artefacts. It is suggested that beliefs and hence culture can only be assessed and interpreted indirectly through observing human behaviours.

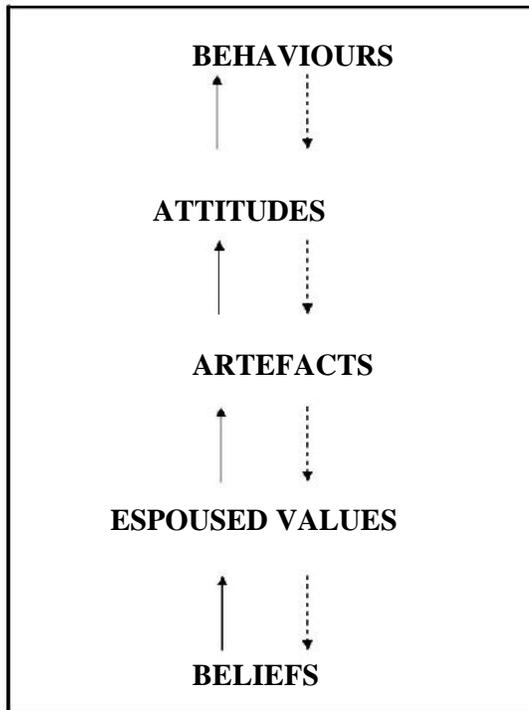
The layered generic model's culture elements can be summarised as:

- beliefs
- espoused values
- attitudes
- artefacts
- Behaviours.

This is shown schematically in Figure 2.2 below.

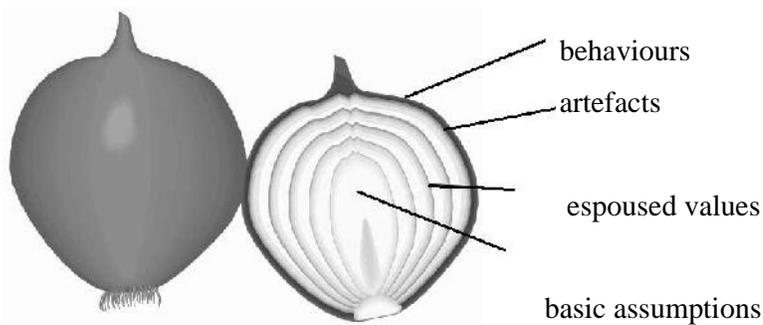
As a combination of the elements; beliefs, values, attitudes and artefacts, the culture manifests itself through behaviours or human performance. Although behaviours have strong links to the culture elements, the generic model suggests that an organisation's shared beliefs in particular mould staff behaviours. In addition, if a set of shared beliefs and associated behaviours deliver organisational 'success', their validity will be reinforced leading to a stable and enduring culture.

An alternative presentation is given in Figure 1.3. Here organisational culture is considered to be like onion layers. Within are hidden shared beliefs. To understand a culture, the elements or the layers have to be peeled back or more practically, each layer needs to be analysed to reveal the basic organisational beliefs. Within the context of organisational safety-culture, if the safety-beliefs cannot be revealed then little can be concluded about an organisation's safety-culture or the motivation behind its members' safety-behaviours.



**Figure 2.2 Safety-beliefs and espoused values leading to attitudes and safety-behaviours**

*Source:* Schein, E. (1992)



**Figure 2.3 Schematic of safety-culture layers**

**2.1.5.1 Beliefs**

Beliefs are emotions and assumptions that something is true. They can become deep seated to the extent that a person unconsciously subscribes to them. Because they are deep seated and

fundamental they are usually stable. ‘Good’, shared safety-beliefs, if unconsciously adopted with associated good safety-behaviours, can deliver business success. On the other hand, ‘poor’ shared beliefs can give a perception of business success. Usually this is illusionary as the associated poor safety-behaviours may eventually lead to a severe event or the progressive deterioration of the business. Beliefs as ‘truths’ cover many aspects of human experience. Religions, politics, various social interactions and family cohesion are based on belief platforms. This arises from people’s life experiences being evaluated, and over time influencing the collective sharing of cultural social beliefs. Within an industrial organisation safety-beliefs of individuals are influenced not only by general experiences but more specifically by the work environment. This is a natural extension of concept of learnt beliefs. Examples of ‘good’ shared organisational safety-beliefs are:

We believe:

- • The safety of staff, contractors and the public is our number one priority in all circumstances
- • Accountability for safety rests at all times with managers
- • Responsibility for safety rests with all employees
- • In safety vigilance at all times
- • Human error is normal and can be expected
- • Our engagement in safe behaviours is necessary for safe operations
- • Human errors are a learning opportunity
- • People are fallible and will make mistakes
- • Legal compliance is a minimum requirement and we strive to do better in a ‘just’ safety-culture and that people do come to work intending to do a good job.
- Good safety beliefs contribute to a positive organisational safety culture which can in turn affect the national safety culture positively.

#### **2.1.5.2 Artefacts**

The robustness of an organisation’s safety-culture can be indicated by the presence or absence of artefacts. These contribute to establishing a safety climate as a reminder to all staff of their shared safety-beliefs, values and behaviours. Whereas safety-behaviours are considered to be the informal dimension of safety-culture, artefacts can be the formal, documented and physical reminders dimension. Artefacts can include aspects of the informal dimension such as organisational safety activities and rituals. A significant formal artefact is

an organisation's documented safety-management system with its safety policy and supporting procedures. This is normally integrated into the business quality management system.

### **2.1.5.3 Espoused values**

Espoused or spoken safety values are central principles held by the organisation's members and around which decisions are made, tested and actions occur. Managers and workforce place importance on them as preferred desirable conditions that assist in fulfilling beliefs. Values enable an organisation's shared safety-beliefs to be upheld. For example, if the belief 'safety is our top priority' is a conviction this leads to supporting safety values that enable the belief to be fulfilled. Values gain particular strength when espoused and practiced by the senior managers within their role of culture shaping.

Safety values are spoken but they can also appear in documents, an intranet or posted around a facility. In this way they become embedded organisational artefacts. Safety values like beliefs need to be specifically generated, owned and shared by an organisation. Developed with senior management, this is an important cross-organisational activity in which most employees can engage. The beliefs and values, as an integral part of a management system, would be periodically reviewed and rejuvenated to meet the changing needs of the business.

Although values are specific to meet an organisation's safety needs, the following are some examples:

We value:

- • Our individual attention to safety is a condition of employment
- • That everyone is responsible for safety, our own, others' safety and the protection of the facility
- • That respect is given to all safety views as everyone has the right to question and report safety issues
- • People's interventions to ensure all potential health and safety incidents are prevented
- • Everyone has the right to challenge on safety issues

- • That the organisation strives for an open dialogue culture

An issue for the workforce is the interpretation of managers' espoused values. On occasions managers' spoken values can be misleading if the subsequently observed safety-behaviours are misaligned. For example, if 'team working' is an espoused value yet receives no management recognition or acknowledgement then a contradiction arises. For the employees the observation is 'what is said', not 'what is done'. A behaviour that fails to align with the stated safety value degrades the efficacy of the value. The collective safety values of an organisation's management to safety affect the safety culture which in turn influences safety culture in the community where they live.

#### **2.1.5.4 Behaviours**

By establishing good safety-beliefs, safety-management becomes a matter of influencing and directing good safety-behaviours. Clarke (2006, p. 278) states that the safety culture is not only observed within the "general state of the premises and conditions of the machinery but in the attitudes and behaviours of the employees towards safety". These are the most visible expressions of safety-culture, and are integral to this study on national safety culture as they are the physical expressions of attitudes which are invisible.

#### **2.1.5.5 Attitudes**

Attitudes can be considered as a state of mind towards a subject or an object. For example, consider a maintenance team that experiences no negative feedback from gaining a personal or collective advantage from poor safety-behaviours. These may be rushing tasks to save time by taking procedural short-cuts or using unapproved equipment to do the task. With no negative feedback it may become an embedded team belief, a state of mind, that the adopted behaviours are condoned by supervisors and managers. No feedback becomes positive feedback for belief reinforcement leading to a less than diligent attitude towards maintenance tasks. This lack of diligence, a careless attitude, can become an accepted group norm and ignoring procedures or using inappropriate equipment can become an unchallenged part of the team's cultural behaviour. This poor behaviour can, if not arrested, pass to new generations of maintenance workers.

Some unsafe attitudes that can develop are:

- • Past personal performance justifies current and future performance
- • Heroics
- • Invulnerability
- • The best in the field, we have nothing to learn – arrogance
- • Look after ‘our’ group not the organisation
- • Eleventh-hour excitement (lose safety focus and become careless close to task closure)
- • Love a crisis; ‘fire-fighting brings out the best in people’
- • The facility is inherently – safe nothing can go wrong
- • The engineering and systems will always protect us
- • Lack of safety unease
- • Financial decisions affect only the balance sheet, not safety
- • Organisational structural changes have no effect on safety; they just improve efficiency and competitiveness
- • Procedures can occasionally be ignored.
- Some attitudes that can contribute to good safe behaviours:
- • Safety questioning
- • Safety challenging
- • Conservative safety attitude to resolving problems
- • Unease about safety
- • Mindfulness, continual vigilance at all times to identify deviation from normal operations or practice
- • Supportive of team problem-solving
- • A concerned attitude for one’s personal and others safety
- • A ‘nothing is routine’ on a high-hazard facility
- • We can always learn and improve – humility
- • There are inherently safe features, not inherently safe plant
- • The engineered systems as safety defences are only as good as the people nurturing them
- • Systems can and will degrade
- • Cooperative attitude – dialogue culture

- • Supportive attitude towards individual team members – dialogue culture
- • Readily open to discuss our safety problems to seek resolution – dialogue culture.
- • For hazardous industries positive attitude expectations are required to be communicated as a frequent daily diet.

Attitudes and perceptions are the basic foundations of an organisation's safety culture, so we measure safety culture by looking at the sum total of employee and management attitude to safety.

### **2.1.6 Defining safety climate**

Zohar (1980) coined the term safety climate in an empirical investigation of safety attitudes in Israeli manufacturing, and defined it as

‘...a summary of molar perceptions that employees share about their work environments’ (p. 96). More recent definitions echo this, for example, Niskanen (1994b) defines safety climate as ‘...a set of attributes that can be perceived about particular work organizations and which may be induced by the policies and practices that organizations impose upon their workers.’ (p. 241). Additionally, Cabrera, Isla and Vilela (1997) conceptualise safety climate as organizational members’ shared perceptions about their work environments and organizational safety policies.

Therefore, the definitions of safety climate are clearly related to those of safety culture. For example, Guldenmund (2000) points out that shared aspects are stressed in both sets of definitions. The main differences in the definitions are that whereas safety culture is characterised by shared underlying beliefs, values, and attitudes towards work and the organization in general, safety climate appears to be closer to operations, and is characterised by day-to-day perceptions towards the working environment, working practices, organizational policies, and management. Thus, safety culture and safety climate appear to operate on different levels and this reflects the origin of the concepts in the organizational psychology literature of the 1980’s and earlier social and behavioural psychology. As many of the definitions of safety culture and safety climate have common elements, safety climate may reflect the underlying culture of the work-group or organization, although its focus is actually much narrower than safety culture. More specifically, safety culture is seen as a sub-facet of organizational culture (Cooper, 2000) and exists at a higher level of abstraction than safety climate (Reichers & Schneider, 1990). It seems plausible that safety culture and safety

climate are not reflective of a unitary concept, rather, they are complementary independent concepts.

### **2.1.7 Measuring safety culture**

It is important to note that conceptual differentiation between safety culture and safety climate dictates that measuring safety culture and safety climate requires different methods. A number of qualitative methods have been used to measure safety culture, including interviews; focus groups, audits, and expert ratings. Studies that have measured safety culture have generally used a case study format to report findings. Thus, there are case studies of high reliability organizations, comparisons of high and low accident plants, and narratives of organizational crises. Studies that have measured safety culture have generally rejected quantitative methods such as questionnaires as an inappropriate means of data collection. However, a number of studies have used qualitative methods to investigate safety culture, and then developed quantitative methods on the basis of those results Lee, 1998).

Clarke (1999) used a series of interviews to measure safety culture in the UK railway industry, in order to create a novel quantitative measure to assess safety culture. This measure allowed employees to respond to questions about safety culture from the viewpoint of different organizational levels as a means of assessing shared perceptions of culture. Interviews and focus groups are often also used in the development of safety climate questionnaires. Expert ratings are another method that has been used to measure safety culture. Roberts, Rousseau and La Porte (1994) report a study where experts rated the manifestations of safety culture such as communication of symbolism and beliefs, rites and ceremonials as a way of gaining insight into the safety culture of two US nuclear aircraft carriers. This gave insight into the performance of an organizations safety culture whether positive or negative.

### **2.1.8 Building the Foundation for a Sustainable Safety Culture**

Culture change in an organization of any size is not a simple process. When it comes to workplace culture, many elements contribute to creating and sustaining a strong culture of safety. While it is likely that some of these elements vary from organization to organization, there are four distinct keystones that create a foundation on which a more effective safety

culture can be built, despite complexity and variability among organizations. These are; Leading indicators, forward looking accountabilities, good relationships and discretionary effort. Agny J. (2013).

### **2.1.8.1 Leading Indicators**

How safety is measured can fundamentally change how safety is managed, and how safety is managed is a primary contributor to an organization's safety culture. In companies with strong safety cultures, safety is embedded in daily management; it is part of the fabric of daily activity. It infuses every interaction, every decision and every behaviour.

Unfortunately, in many organizations, leaders only attend to safety during safety meetings, audits and reactively, when there is an incident. The reason lies in metrics. Managers attend to what they are measured on because those measures are associated with consequences (positive and negative).

Too many organizations still measure safety largely or exclusively via incident rate (or similar lagging metrics such as DART, lost-time case rate, severity rate, etc.). Such measures tell us how many people got hurt and how badly, but they are not good measures of what leaders are doing to prevent accidents and incidents.

When there are measures of what leaders do on a daily and weekly basis to prevent accidents, immediate and certain consequences can be engineered in to ensure those activities occur. This ensures that safety is attended to all the time, not just when there are incidents. Daily and weekly accountabilities will raise safety to an equal playing field with other business objectives and help infuse safety into all parts of work.

### **2.1.8.2 Forward-Looking Accountability**

Accountability is essential in all aspects of business, but particularly for safety. Unfortunately, accountability too often is synonymous with blame and negative consequences. In successful safety cultures, accountability has a different focus. Virginia Sharpe, in her studies of medical errors, has made an important discrimination between what she calls "forward-looking accountability" and "backward-looking accountability." backward-looking accountability is about assigning blame; finding the individual who made the mistake and delivering punishment. While sometimes this is the right thing to do, there

are many downsides to such action, and blaming and punishment seldom results in a safer workplace.

According to Sharpe, forward-looking accountability acknowledges the mistake and any harm it caused but, more importantly, it identifies changes that need to be made, and assigns responsibility for making those changes. The accountability is focused around making changes – building safe habits and a safe physical environment – that will prevent a recurrence, not on punishing those who made the mistake.

Effective safety cultures accept that mistakes are an inevitable part of the workplace, but are relentless about learning from those mistakes. Forward-looking accountability helps minimize the fear too often associated with the reporting of mistakes and ensures that organizations have the opportunity to learn from them.

#### **2.1.8.3 Good relationships**

Relationships matter a lot in safety. Great safety cultures are characterized by good relationships at all levels, which enable open, honest conversations about what is working, what is not, mistakes that have been made and what needs to change. As noted above, mistakes are great opportunities to learn, but workers must trust that if they tell management what really is going on, management won't overreact. This trust most likely is found in the context of good working relationships.

Many leadership behaviours contribute to creating good relationships, setting clear expectations, providing helpful feedback, acknowledging good work, seeking to understand problems/issues rather than blaming, active listening, following through on commitments, removing roadblocks and asking for feedback on your own effectiveness are some of the ways leaders can build and sustain good relationships. Having a good relationship doesn't mean being nice all the time or being soft on safety. Good relationships include accountability and constructive feedback. Positive employee-management relationships include mutual trust and respect as a foundation for a partnership around safety.

#### **2.1.8.4 Discretionary Effort**

Discretionary effort is that extra effort employees can give at work, but don't have to. Discretionary effort is going above the basic requirements, many people think of safety as a

compliance issue – getting people to comply with safety rules, regulations and procedures. However, if you want to go beyond compliance and create a high performance safety culture, discretionary effort is a requirement.

Truly exceptional safety requires that people don't just follow procedures, comply with standards and wear personal protective equipment (PPE). Exceptional safety happens when people look for and report hazards, give peers feedback on safe and at-risk behaviour, volunteer for safety committees, make suggestions for improvement and, most difficult of all, admit when they have made mistakes so lessons can be learned.

Discretionary effort is created through the use of positive reinforcement. Research shows that when people are recognized for what they do well around safety and when reporting problems and concerns is met with reinforcing consequences (such as joint problem solving and problem resolution), employees will be more engaged in safety, in other words, they will give discretionary effort.

## **2.1.9 HOW FAILURE IN SAFETY PRACTICE AFFECTS SUSTAINABLE DEVELOPMENT IN NIGERIA**

### **2.1.9.1 What is sustainable development?**

Sustainable Development has been defined in many ways, but the most frequently quoted definition is from *our common future*, also known as the Brundtland report:

*"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:*

- *The concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *The idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

When we think of the world as a system over space, we grow to understand that air pollution from North America affects air quality in Asia, and that pesticides sprayed in Argentina could

harm fish stocks off the coast of Australia, some parts of Africa and end up in other parts of the world.

And when you think of the world as a system over time, you start to realize that the decisions our grandparents made about how to farm the land continue to affect agricultural practice today; and the economic policies we endorse today will have an impact on urban poverty when our children are adults.

We also understand that quality of life is a system, too. It's good to be physically healthy, but what if you are poor and don't have access to education? It's good to have a secure income, but what if the air in your part of the world is unclean? And it's good to have freedom of religious expression, but what if you can't feed your family? (International Institute of sustainable development, 2013). This also means that poor perception of the vast majority of the people to occupational safety and health practice

The concept of sustainable development is rooted in this sort of systems thinking. It helps us understand ourselves and our world. The problems we face are complex and serious—and we can't address them in the same way we created them. But we *can* and have to address them.

Sustainability became a topical issue globally in 1987 when the World Commission on Environment and Development (WCED), a commission formed by the General Assembly of the United Nations, submitted its report which it titled 'Our Common Future'. Further expansion on this concept are easily seen on international agendas as shown in themes of conferences, seminars, symposiums and researches by various institutions and national bodies. The Millennium Development Goals (MDGs) adopted by the United Nations (UN) in September 2000 committed the international community to an expanded vision of development. The MDGs promote human development as the key to sustainable social and economic progress in all countries and they include:

1. eradication of extreme poverty and hunger;
2. achievement of universal primary education;
3. promotion of gender equality and empowerment of women;
4. reduction of child mortality;
5. improvement of maternal health;
6. combating HIV/AIDS, malaria, and other diseases; and
7. ensuring environmental sustainability by the year 2015 (United Nations Development Programme, 2003)

What this implies is that all development must, while meeting the immediate needs of the present, allow for future expansions with minimal or no negative consequence. The review below gives deep insight into safety culture related challenges to the attainment of sustainable development in Nigeria.

### 2.1.9.2 Review of Safety Related Challenges to Sustainable Development in Nigeria.

This section will address concepts noted in Kjellen Diamond of sustainability shown below with a view to demonstrating the negative impacts of a poor safety culture on the Nation's development:

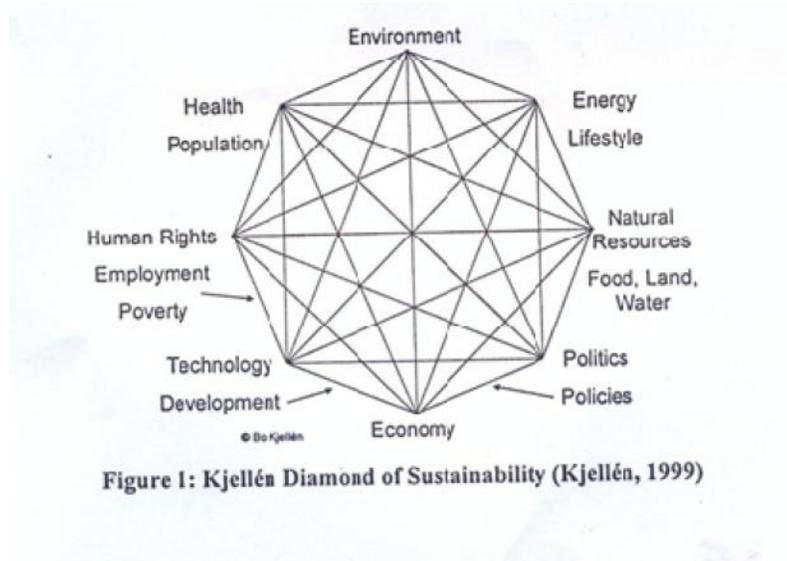


Figure 2.4 Kjellen Diamond of sustainability

### Energy

Nigeria is Africa's energy giant. It is the continent's most prolific oil-producing country, which, along with Libya, accounts for two-thirds of Africa's crude oil reserves. It ranks second to Algeria in natural gas. Sambo AS (2008) Most of Africa's bitumen and lignite reserves are found in Nigeria. In its mix of conventional energy reserves, Nigeria is simply unmatched by any other country on the African continent. it is not surprising therefore that energy export is the mainstay of the Nigerian economy. Also, primary energy resources dominate the nation's industrial raw material endowment. Oyedepo, S. (2012). In spite of this wealth of resources, the Central Bank of Nigeria (2000) has identified nine problems

associated with the National Electric Power Authority (NEPA) (now PHCN) which are primarily due to the absence of a positive National safety culture:

1. Lack of preventive and routine maintenance of PHCN's facilities, resulting in huge energy losses.
2. Frequent major breakdowns, arising from the use of outdated and heavily overloaded equipment and electrical fires.
3. Lack of coordination between town planning authorities and PHCN, resulting in poor overall power system planning and overloading of PHCN equipment.
4. Inadequate generation due to operational/technical problems arising from machine breakdown, low gas pressure, and low water levels.
5. Poor funding of the organization.
6. Inadequate budgetary provision and undue delay in release of funds to PHCN.
7. Vandalizing and pilfering of PHCN equipment.
  - In the oil and gas industry, research findings from opinion surveys among operators, suggest that the factors which negatively influence safety culture in Nigeria's oil and gas sector include:
    - lack of a legal and regulatory framework
    - ineffective enforcement agency
    - inadequate training of site workers on Health Safety and Environment (HS&E) issues
    - lack of adequate technology to monitor and evaluate HS&E trends and indicators
    - poor risk assessment processes
    - poor management processes
    - poor analysis of the business environment.
    - Workers work in an unsafe environment
    - HS&E practices are not benchmarked to international standards
    - Poor maintenance of oil pipelines and flow lines
    - HS&E practices are not adequately enforced

- HS&E management is not considered relevant during business environmental evaluation
- Technology and innovation is not considered relevant to HS&E management
- Oil and gas industries in Nigeria do not encourage research and development in HS&E management. Furter, E.(2013)

It is very clear from the Nigerian energy sector review that the energy demand is very high and is increasing geometrically while the supply remains inadequate, insecure, and irregular and is decreasing with time; the mix has hitherto been dominated by fossil resources which are fast being depleted apart from being environmentally non-friendly. Oyedepo S (2012). Inculcating a positive National safety culture into the development equation can only make things better.

### **Healthcare**

The following are current challenges of the public healthcare sector in Nigeria as observed by Dr. Osahon Enabulele and other sources as quoted. These are primarily based on poor attitudes and perceptions of Nigerians (Ruling Class and populace) to occupational and public health and safety.

1. Poor governance at most levels of government;
2. Political instability, policy inconsistency and evident lack of political commitment to health by most state and local governments in Nigeria;
3. Monumental corruption and infrastructural decay;
4. Undue politicization of the health sector coupled with declining professionalism and non-adherence to best practices;
5. Poor constitutional and legal framework for health in Nigeria, particularly the absence of a National Health Act that clearly makes the health rights of the people justiciable; that defines the roles and responsibilities of healthcare professionals, as well as the roles and responsibilities of Local, State and Federal Governments in the management of the three levels of healthcare;
6. Poor co-ordination, integration and implementation of health policies, programs, projects and donor support;

7. Poor funding and budgetary provisions for health, far less than the stipulated 15% of the National budget as prescribed by the World Health Organization and affirmed by the 2001 Abuja declaration of African Heads of State;
8. Poor Health Human Resource (HHR) Development Plans and Reward System in the health sector, including poor remuneration, poor working conditions and poor motivation of the health workforce; as well as inadequate numbers and inequitable distribution of the health workforce;
9. Worsening poverty and low level of Health Coverage for all Nigerians;
10. Inadequate involvement of health professional associations and communities in the planning, implementation, monitoring and evaluation of health policies, programs and projects; as well as in budget monitoring;
11. Weak private health sector coupled with inefficient utilization of healthcare resources;
12. Pervasive quackery in the health sector with poor enforcement of extant laws;
13. Poorly developed data base and Health Management Information System, coupled with poor use of Information Communication Technology, particularly e-Health in advancing access to healthcare;
14. Conflicting professional regulatory laws/Acts in the health sector which has been a major factor responsible for disharmony in the health sector;
15. Weak Primary and Secondary levels of care with a weak Referral System, attributable to evident lack of commitment to the development of the primary and secondary healthcare systems by most local and state governments; and
16. Poor state of other social and physical infrastructure, including roads and power supply.
17. Lack of planning based on staffing projection needs resulting in an overproduction of some categories of health workers and a lack of others (Federal Republic of Nigeria HRH Strategic Plan 2008-2012).
18. Non – implementation of strong HSE practices in hospitals to meet world class standards.

### **Occupational health risks (OHRs) in Nigeria**

Risk is the probability of the occurrence of an undesired event together with a measure of its adverse consequences (severity). (Institute of Safety Professionals of Nigeria, 2013). Thus, risk is equal to hazard exposure. Because of the enormous number of people usually affected, the impact of air pollution on cardiovascular disease represents a serious public health

problem. In fact, results from NIEHS funded studies (National Institute of Environmental Health sciences (NIEHS, 2010) demonstrated a strong relationship between levels of airborne particles sulphur dioxide, and other fossil fuel emissions and risk of early death from heart diseases.

Pollution occurs as a result of man's activities in the environment, resulting in the emission of harmful substances that have deleterious or toxic effects on humans. The presence of pollutants in the atmosphere causes occupational health risk on the worker or residents that are in close proximity with the pollutants. Common atmospheric pollutants encountered in different occupational sites include: sulphur oxide, oxides of nitrogen, hydrogen sulphide, carbon monoxide, sulphur dioxide, hydrogen cyanide, ammonia, particulate matter, heat radiation and noise (Axelong, 2000). A good case can be found in the Uyo metropolis where there are a number of industrial/occupational sites. Due to industrial processing, project construction activities, petroleum products marketing, industrial and municipal waste disposal, etc. these sites may generate atmospheric pollutants that pose serious risks/threats to human health. Ekop (2004) has documented environmental problems of Uyo metropolis. The study showed that people living in the more polluted parts of the city had a higher risk of hospitalization and early death from lung cancer than those living in the less polluted parts of the city (NIEHS, 2010).

Several cancers have been reported in association with exposure to specific classes of pesticides, e.g. soft tissue sarcoma, leukemia and some myelo-lympho-proliferative disorders, cancer of the prostate, gonads, liver, digestive tract, brain, bladder and kidney. Cancer is established in pesticides containing arsenical compounds and lung cancer. Neurobehavioral effects have been reported following the exposure to organophosphorus compounds but overall proof of effects on the central nervous system is still scarce. Occupational exposure to nematocide, 1,2-dichloro-3-chloropropanol (DBCP) in large banana commercial farmers in Costa Rica caused testicular dysfunction which is characterized by oligospermia. The disease can lead to azoospermia and infertility with increase stimulation of follicular stimulating luteinizing hormone. Odukunle (2014).

## **Environment**

Generally, environmental problems are mostly due to developmental processes and are of local, regional and global effects. These effects are viewed as consequences of human

activities, and are most often harmful on human beings, livelihoods, animal and plant lives presently or transferred to posterity (Simond, 1994; Acho, 1998; Danish International Development Agency, 2000; Kjellstrom and Mercado, 2008). This has far reaching implications on sustainable development, most especially in the face of declining economic fortunes.

Layi Egunjobi of the centre for urban and regional planning, University of Ibadan asserted that in Nigeria, an increased level of consciousness is observable with regard to the complex relationship that exists between development and the quality of the environment. However, there remains much to be done by way of developing the mechanism and legislative backing for reconciling environmental imperatives with developmental goals. Nigeria, like many other developing countries is beset with such environmental problems as desertification, deterioration of urban physical quality (through the release of toxic fumes into the atmosphere and poor maintenance activities on machinery), land degradation, human activities created in the quest to achieve a higher level of development. The implication is that sufficient precautions have not been taken to balance development objectives against the need to maintain desirable environmental quality.

- Nigeria has many environmental problems. Indeed, you will find as many of these problems and challenges as you care to name. Some of these challenges include the following:
  - Deforestation, illegal logging, bush burning, over grazing
  - Desertification
  - Industrial pollution, chemical pollution
  - Oil pollution- including oil spills, toxic wastes and gas flaring
  - Mining issues
  - Solid waste management/medical wastes/electronic wastes/plastics
  - Erosion – gully, coastal, etc.
  - Floods/droughts – most of our cities lack drainage plans. The rural communities are at the mercy of the elements.
  - Water pollution
  - Sanitation
  - Land grabs

- False climate solutions – agrofuels, REDD (Reduced Emissions from Deforestation and Degradation). Nnimmo Bassey, (2013). We can add noise pollution to this list.
- The careless attitude of the citizenry adds to the problems. A casual look around shows plastic water sachets all over most of our cities and even police/military checkpoints on our highways. These block drains, dirty the environment and are not biodegradable.

All these are possible because of the absence of a positive National safety culture. In a positive safety culture, an environmental management plan is developed and strict awareness created among the public on waste reduction measures towards effective environmental management.

### **Agriculture and Natural Resources**

Agriculture as carried out today is a dangerous occupation, with millions of workers sustaining injury and death throughout the world. Batami (2003). The issue of health and safety in agriculture in a developing nation like Nigeria is still at a lower ebb or non-existence despite the fact that agriculture is still the mainstay of her economy in spite of its decline in the 70's due to oil boom.

Health and Safety has been identified to have a strong influence and invaluable to any sector of the economy agriculture inclusive. Effective management of health and safety can help deliver improved productivity and efficiency. Health and safety has been tie to positive performance indicators (PPIs) ([http://www.dol.govt.nz/publications/research/good-sense/good-sense\\_06.asp](http://www.dol.govt.nz/publications/research/good-sense/good-sense_06.asp)). "Agriculture" covers not only farming but also many other associated activities such as crop processing and packaging, irrigation, pest management, grain storage, animal husbandry, construction and domestic tasks (carrying water or fuel-wood, etc.). Agricultural work — and this is one of its distinguishing characteristics — is carried out in a rural environment where there is no clear-cut distinction between working and living conditions. As agricultural work is carried out in the countryside, it is subject to the health hazards of a rural environment as well as those inherent in the specific work processes involved (ILO, 1996). Due to the nature of the agricultural work, workers in this sector are prone to many hazards, hence a need for health and safety in Agriculture. Recent innovation in agriculture has added drastically to the dangers or hazards faced by farm workers. The use of chemicals would expose them to chemically related toxic material

dangerous to health. The use of machinery exposes them to excessive noise pollution, the cumulative effect of all these hazards associated with new technologies would on a long run affect the wellbeing of these workers, if effective health and safety programme is not put in place to mitigate the effect of such hazards.

### **The most frequent hazards in agriculture in Nigeria**

- • Machinery such as tractors, trucks and harvesters, and cutting and piercing tools;
- • Hazardous chemicals: pesticides, fertilizers, antibiotics and other veterinarian products;
- • Toxic or allergenic agents: plants, flowers, dusts, animal waste, gloves (chrome), oils;
- • Carcinogenic substances or agents: certain pesticides such as arsenicals and phenoxy-acetic herbicides, UV radiations, parasitic diseases such as bilharziasis and facioliiasis;
- • Transmissible animal diseases: brucellosis, bovine tuberculosis, hydatid disease, tularaemia, rabies, Lyme disease, tinea, listerioses;
- • Other infectious and parasitic diseases: leishmaniasis, bilharziasis, facioliiasis, malaria, tetanus, mycosis;
- • Confined spaces such as silos, pits, cellars and tanks;
- • Noise and vibration;
- • Ergonomic hazards: use of inadequate equipment and tools, unnatural body position or prolonged static postures, carrying of heavy loads, repetitive work, excessive long hours;
- • Extreme temperatures due to weather conditions;
- • Contact with wild and poisonous animals: insects, spiders, scorpions, snakes, and certain wild mammals. (Safe work, ILO, 2000)

**Soil erosion** caused by water and wind, a lack of development and the dependence on imported foods all hinder the development of agriculture in Nigeria. Ravanth 2010 stated the following points as challenges with Agriculture in Nigeria.

## **Soil infertility**

The main problem that affects soil fertility is soil erosion. Wind erosion, in particular, is quite damaging. Overtime, strong winds expose seedlings and crop root systems by blowing away loose, fine grain soil particles. Another effect is the accumulation of soil particles in drifts, which can cover crops. Also, wind erosion changes the texture of the soil. The particles responsible for water retention and fertility, such as clay, silt, and organic matter are generally lost, leaving behind a sandy soil.

Wind erosion can be greatly reduced by planting trees near farming areas. The trees will absorb most of the wind, which will prevent the loss of soil particles.

Another type of erosion that affects fertility is water erosion. There are two types of water erosion: splash erosion and rill erosion. Splash erosion occurs when rain drops impact the soil, and rill erosion occurs when channels of water carry soil downstream. Water erosion is reduced when the soil is covered with a canopy. Also, improving the soil structure by adding organic matter greatly reduces water erosion.

- **Irrigation Problems**

The low-lying flood plains are very fertile during the rainy season, but the lack of rain during the dry season hinders agricultural development. The lack of water management systems in these areas is a concern for many farmers by adding irrigation canals and access roads to these areas, yearly production yields are expected to increase.

- **Food Processing Issues**

It is estimated that about 20-40% of the yearly harvest is lost during processing. The primary cause is the lack of efficient harvesting techniques. Most farmers harvest crops by hand, instead of using machines. Also, storage methods are not generally up to standards. Most of the crops are lost to physical damage caused by insects, bacteria, or fungus.

- **Impact of Imported Food**

Nigeria is a net importer of food. The country does not produce enough food to meet the demand of its people. This produces a lot of problems with regard to agricultural development. Generally, there is less incentive for local farmers to grow local foods, when cheaper, more palatable foods are imported. This forces local farmers to reduce prices, which reduces the income generated by the farm the consequence is decreased farm production.

To combat the effects of imported food on development, several initiatives are suggested, including providing farmers with micro-credit that is subsidized and increasing tariffs on imported food.

- **Lack of investment**

The problems of agriculture in Nigeria are also caused by a lack of investment. The government budget for agriculture is not enough to meet the challenges. International aid groups have supplemented the funding of the government, but most of the funds don't reach the local farmer.

### **Poverty**

In today's Nigeria, one of the Major Problems of Food Production is Poverty. On the other hand, one of the Simplest and a Doubtless Truth that you can easily know about Nigeria is the fact that over 75% of Her Rural Dwellers are Full-time Farmers.

Chuks Orji (2013) also posited that the following points are further challenges to agricultural development.

### **Ignorance**

Nigeria of today is a Country where Agriculture is still greatly and relatively undermined; and or even Over-looked as a mere "Back-yard Business ". Some Nigerian Youths even regard Farming as: "An Odd Job that is meant only for the Illiterate Rural People ". Farming is, Ignorantly Underrated or Abhorred as: "Poor Peoples' Job ". This is a poor safety culture.

### **Illiteracy**

The greatest number of Dedicated Full-time Farmers in Nigeria can neither Read nor Write. The Local Farmers there are even as uninformed as they lack Modern Agricultural education. The climax of illiteracy there, is Nigeria's Total Negligence and, or Her Non-usage of Native languages in the Nation's Pursuits for Modern Education. For in this Modern World, People that still Study in Foreign Languages have not really started Learning. And this Level of Illiteracy and Unawareness do often constitute some serious Set-backs, even in Nigeria's Food Production Efforts. Illiteracy affects risk perception negatively and creates wrong attitudes to safety.

### **Use of Manual Farm Tools / Methods**

The Average Nigerian Farmer is still making use of only the same Out-dated Manual farm Tools - like Cutlass and Hoe - as their Fore-fathers used since many Centuries ago instead of using some affordable Modern Agricultural Techniques or Simple Machines; the Farmers in that part of the World have Changelessly, adhered to various Archaic Agricultural Methods and Practices that were Copied from their Ancestors. In short, their use of these kinds of archaic implements.

### **Lack of good Roads; Water; & Electricity**

The Rural Farming Communities in Nigeria have neither Road nor Water nor Electricity. Some do not even have Hospitals or Schools around them. Then imagine the Pains and the Labours, and to what extents the Farmers from such areas can contribute in Food Production?

### **Lack of Food Storage or Processing Facilities**

Many Delicious and Juicy Fruits, Vegetables, and Cash-Crops are largely Produced from Nigeria's Local Farming Communities. But, Do you know that a very great Percentage of these Delicious Organic Farm Produce often get Damaged and, or Wasted before they reach their Final Consumers?

### **2.1.10 Safety Culture and Human rights in Nigeria**

Domestic laws usually apply in internal security operations, but this is however influenced by the rules and standards of international law. Domestic laws provide the basis for military involvement in internal security operations while international human rights law regulates the conducts of operations, military or otherwise in those situations. International laws do not contain provisions for when the military can perform internal security operations but they provide regulations for the conduct of actors" during such periods. International human rights law applies both during armed conflicts and in peacetime. This applies to both armed conflicts of international and domestic nature. Its aim is to protect the rights of individuals against State authorities. Those rights are set forth in international treaties such as the ICCPR, and in regional conventions such as the African Charter of Human Rights (Epiphany, 2013).

The Amnesty International has the following to say about Safety culture and human rights in Nigeria; the lack of adequate protection of human rights remains an issue. From pollution as a result of extractive industry activity in the Niger Delta, to forced evictions in Port Harcourt and Lagos, and with communal violence and armed conflict across the country, documenting the human rights concerns in Nigeria is a challenging endeavour. These pressing issues, coupled with widespread police abuses and a penal system that sends scores of people year-including children-to death offer no shortage of challenges to human rights protection in Nigeria. The police regularly commit human rights violations; include unlawful killings, torture and other ill-treatment, and enforced disappearances. The justice system is under-resourced and riddled with delays. Prisons are overcrowded; the majority of inmates are pre-trial detainees, some held for many years. Hundreds of people remain on death row, many sentenced after unfair trials. Conflict in the Niger Delta threatens the safety and lives of residents. Human rights defenders and journalists face intimidation and harassment. Violence against women is widespread and the government fails to protect the rights of children. Forced evictions take place across the country.(www.eyesonnigeria.com)

#### **2.1.11 Challenges facing organizations in implementing and managing HSE in the workplace in Nigeria**

With all of the above stated points, the next question should now be: why have organizations not implemented a positive safety culture? Kalejaiye (2013) gave the following position as to the challenges facing organizations in implementing a positive safety culture which would in turn create a positive National culture that will speed up sustainable development efforts in Nigeria:

1. Management perception of HSE programs as cost rather than benefit to the organization.
2. Organization culture and values for HSE programs.
3. Lack of fund and expertise, especially in the case of small organizations.
4. Commitment from shareholders on the need for action.
5. How to provide and support medical care counselling and alternative working arrangement.
6. The sensitivity of the issue of HSE in the workplace and how to deal with employee's negligence for safety rules' such as not wearing protective equipment provided for their safety.

7. Building ergonomics into occupational health and safety; this concerns the appropriateness of building ergonomic insights into occupational health and safety. Ergonomics has also pointed out the fallacy in the idea of an average worker.

8. Promoting more active cooperation between workers and employers; this is the need to promote more active cooperation between workers and employers on occupational safety and health. This processes to improve safety, workers' health, working condition and the working environment should come naturally, but it still does not happen in Nigeria.

9. Encourage the extension of safety culture in education, in the family and at work-extension of the scope of occupational safety and health, bringing it into the field of culture.

10. Achieving better analysis, recording and reporting of accidents and occupational diseases; these challenges relate to the study and recording of accidents and to the procedures for reporting them. When the causes of accidents are analyzed, there is a built-in tendency to go for the figure that will point to him failing. "Human error" is the usual expression, and 90% of accidents are said to be due to operator error. (Heinrich, 1930)

11. Convergence of occupational health safety and environment standards among the states of the region.

#### **2.1.12. The role of Safety Culture in Sustainable Development.**

Although there is some uncertainty and ambiguity in defining safety culture, there is no uncertainty over the relevance or significance of the concept. Mearns stated that "safety culture is an important concept that forms the environment within which individual safety attitudes develop and persist and safety behaviours are promoted". Incidents like the NAFDAC building fire, the great insurance building and all the myriad of road traffic cases have raised awareness of the effect of organisational, managerial and human factors on safety outcomes. As several reports of major disasters have identified, safety culture is a factor that decisively affected the outcome. Over the years, a lot of attention has focused on the causes of occupational incidents. When incidents occur in the workplace it is important to understand what factors (human, technical, organizational) may have contributed to the outcome in order to avoid similar incidents in the future. Through developing an understanding of why and how incidents occur, appropriate methods for incident prevention can be developed (Williamson and Feyer 2002).

In the past, any attempt to improve workplace safety or to control workplace risks in places where they have existed has focused on technical aspects (i.e. design of safer systems) and on

the direct influence of human behaviour (i.e. operator error). However, a number of major disasters have brought attention to the impact of organizational factors (that is policies and procedures) on the outcome of safety performance, with numerous inquiries identifying safety culture as having a definitive impact on the outcome of the disaster. Such incidents as the 1986 Chernobyl nuclear accident, King's Cross, and Piper Alpha which were cited earlier on are all examples of how organizational and human factors can have an impact on safety performance. Following the Piper Alpha explosion Lord Cullen said that, "it is essential to create a corporate atmosphere or culture in which safety is understood to be and is accepted as, the number one priority". In that same year a report into the Space Shuttle Challenger disaster identified numerous "flawed" decisions on behalf of NASA and Thiokol management as contributing factors to the disaster.

With every major disaster a large amount of resources are set aside in order to establish exactly what factors contributed to the outcome of the event. These inquiries pay particular attention to detail and prove to be an invaluable source of information in identifying factors that "make organizations vulnerable to failures". From such inquiries, there are some clear observations that can be drawn, for example, organizational accidents are not a result of 'operator error', chance environmental or technical failures alone. Rather, the disasters are a result of a breakdown in the organization's policies and procedures that were established to deal with safety. The Piper Alpha disaster, for example, was a fatal combination of failure of individuals to perform their duties, breakdown in documented systems and managerial failure. This has been the case with several incidents in Nigeria, the failures in regulatory frameworks lead to safety not being taken seriously by investors who take inadequate steps to handle employee safety and end up in preventable accidents.

There is now a move to apply the concept of safety culture at the individual level. Mearns . Highlight that although safety culture was a concept originally used to describe the inadequacies of safety management that result in major disasters, it is interesting that the concept is now being applied to explain accidents at the individual level. As worker's behaviour is influenced by the safety culture of an organization, such culture could become a determinant of worker injury involvement. Although the overall culture of an organization may have an impact on the behaviour of employees, much research has focused on the impact of more localised factors (that is supervisors, interpretation of safety policies) in the specific culture of individual workplaces. Glendon (2006) refer to this as the "Local safety climate,

which is more susceptible to transition and change” (p. 367). This would also suggest that safety climate operates on a different level than safety culture. In a national scale, we can define a positive safety culture as one in which leaders are committed to and reinforce safety as a National value and citizens adhere to safety rules and guidelines and participate in their establishment and improvement.

All the challenges caused by the lack of safety practice can be surmounted with the passing and enforcement of the Occupational safety and health bill which is still being debated in the National assembly. Without a proper understanding and inculturisation of these policies, and globally tested and proven professional steps, it would be difficult if not impossible to create the level of National risk perception and safety attitude that is required to support sustainable development efforts and achieve the United Nation’s Millennium Development Goals.

## **2.2 Theoretical and conceptual frameworks**

### **2.2.1 Review of relevant theories**

There have been many contributors to safety-culture theory with various models arising, for example Turner 1998, Rasmussen 1997, Reason 1997 and Leveson 2004 were all typical examples with only slight variations. A useful framework based on the work by Cooper (2000) is to distinguish between three interrelated aspects of safety culture, specifically:

- Psychological aspects (often referred to as ‘safety climate’),
- Behavioural (or ‘organisational’) aspects,
- Situational (or ‘corporate’) aspects.

However, to enable a more useful understanding of the phenomenon a culture model attributed to original work by E. Schein in his study of business culture is introduced.

### **2.2.2 The generic Culture model by E. Schein.**

When incident investigations are considered beyond engineering failures, this brings into focus the performance of ‘the individual’ designing, constructing, installing, managing or operating hazardous facilities. This embraces the psychology of why people behave as they do in the workplace and how they interface with complex technology. In addition, the work environment’s social factors that shape people’s beliefs and attitudes towards safe operations become important.

Safety-culture theories indicate that different levels of an organisational hierarchy have different influences on the safety-culture. These levels need to be differentiated. Here, an organisation is considered as having four levels:

1. executive and senior management
2. middle managers
3. supervisors
4. The workforce teams. (These can be plant designers, the plant installers, maintenance engineers, technicians and contractors, and so on, who are assumed to work under a supervisor.)

The employees, or the staff, are the aggregate of the workforce and management. (Taylor, 2013)

The theory suggests that organisational culture arises from shared beliefs. These beliefs driving an organisation's collective behaviours are not always overt but in reality are buried beneath observable supportive layers of values, attitudes and artefacts. It is suggested that beliefs and hence culture can only be assessed and interpreted indirectly through observing human behaviours. This is equally the case in a country when the leadership class is seen as the top management team with the different strata in public service management representing the different levels of management involved in an organization.

### **2.2.3 Conceptual framework**

The concept of safety culture is no longer something defined and enforced by the management or ruling class in this case; rather, it becomes the right and responsibility of each and every employee. When workers embrace safety standards and practice better behaviours, they can regulate their own safety much more effectively and consistently. Every organization has a safety culture, operating at one level or another. However, not many organizations have succeeded in achieving a high level positive safety culture while others

have poor safety culture. Symptoms of poor safety culture can include: widespread, routine procedural violations; failure to comply with the company’s own Safety Management System; and management decisions that appear consistently to put production or cost before safety.

### 2.2.4 Levels of Safety Culture

Safety culture maturity can be described through five levels; from a culture where safety hardly is prioritised to a culture where safety is given high priority (Bergerson, 2003).

### Elements of Safety Culture

Reason (1997) has suggested that safety culture consists of five elements: an informed culture; a reporting culture; a learning culture; a just culture; and a flexible culture as already discussed in chapter two.

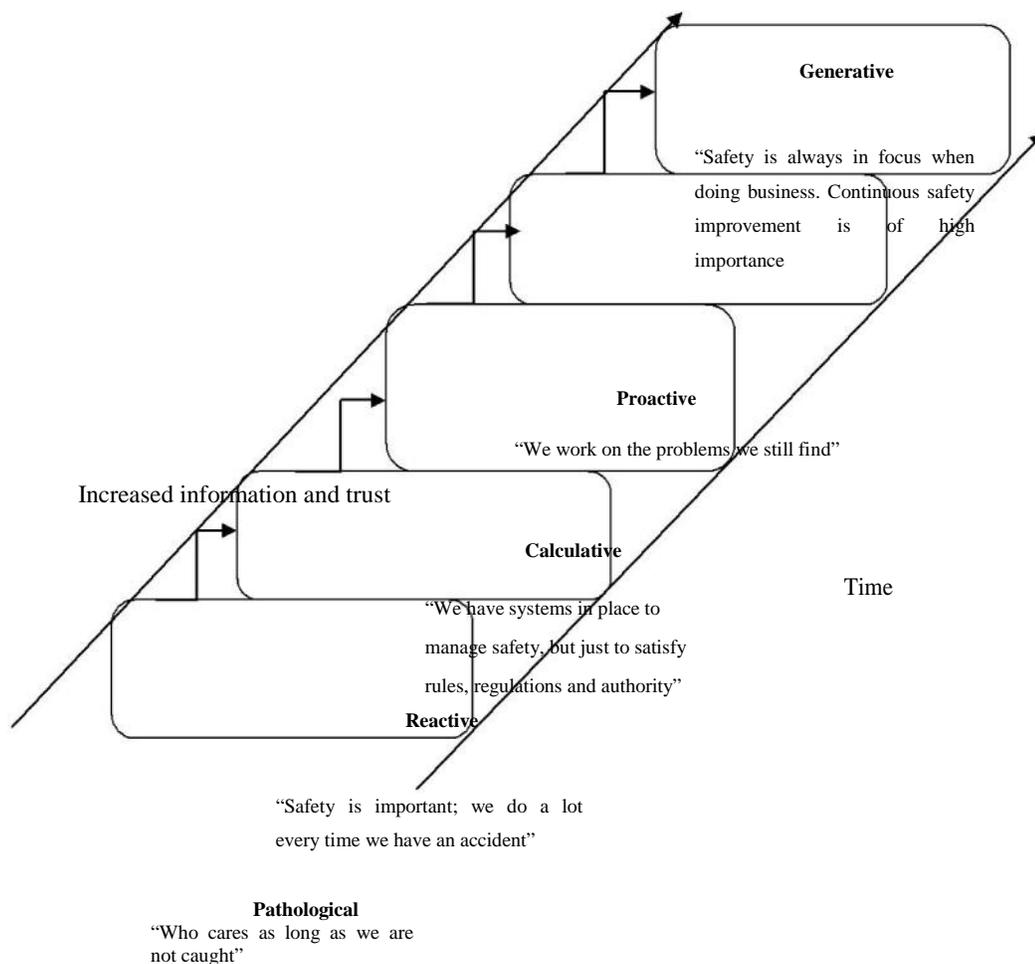


Fig. 1: The safety culture and maturity model (Hudson and van der Graaf, 2002).

### **2.2.5 The role of Safety culture in Sustainable development**

It has been estimated that 75% of accidents are caused by unsafe acts, 23% by unsafe conditions and 2% by natural calamities (Jain & Rao, 2008). This assertion underscores the importance of behavioural safety. Human unsafe Acts are anti – sustainable development, hence, reducing these unsafe acts would drastically improve the sustainable development effort. On the other hand, changing people’s negative behaviours reduces unsafe acts, hence, improving the safety culture. Sustainable development can therefore be attained by improving the safety culture through the following ways:

#### **Commitment at all levels**

The nation must adopt safety and health as core values and actively care for the workforce. An organisation’s commitment to safety can be reflected by three major components: Safety values; Safety fundamentals; and Going beyond compliance (Humphries, 2012). The attitude is evident throughout the country from the Presidency through to the youngest and most in-experienced citizen. Ministers, teachers, Heads of Departments and Parastatals should be seen willing to drive the process.

#### **Safety and health are treated as an investment not a cost.**

Safety and health issues are not treated as a cost, but as a way to improve the performance of the nation towards attaining the millennium development goals and sustainable development. Safety and health is reported on as part of the budget development process and funded accordingly. As a matter of fact dedicated approach to safety is a cost saving not a cost.

#### **Safety and health is part of continuous improvement.**

If safety and health is integrated into every sector of the economy then it becomes part of the continuous improvement process. This means that resources and time is set aside to ensure that the nation can identify the weaknesses and develop strategy.

## **Training and information is provided for everyone.**

People who are provided with regular information about safety and health at work are more likely to be mindful of safety and health issues and the ways in which their actions can affect themselves and others. Posters, warning signs are not enough. Safety and health discussions and information distribution should be built into all aspects of the work process from Federal Executive Council meetings to individual interactions. Training should be behaviour-based. Behaviour-based safety education and training enables efficient national learning and adoption of best practices (Honeywell, 2013). The language and rate of assimilation by different classes of individuals should also be considered.

## **A system of workplace analysis and hazard prevention and control is in place.**

Management systems, safety systems and individual attitudes and perceptions can be researched, measured and analysed to gain a picture of the current state of the organization and reveal barriers that prevent people from performing at their best. This is often referred to as climate survey and assists in establishing a baseline for the organization to start from. Climate surveys are conducted at regular intervals in organizations that strive for a good safety culture to measure successes.

### **2.2.6 The role of Leadership in Creating a Safety Culture**

Assigning responsibility and accountability for safety is a critical leadership role. This requires that upper management need to take personal responsibility for bringing the vision to fruition. Also responsibility and accountability needs to be cascaded throughout the entire organizational employee culture.

Front line managers should be vigorously encouraged to correct any and all unsafe acts when seen; identify unsafe conditions; discuss safety with the work group each and every day; close any outstanding remedial actions; conduct safety training and risk assessments; provide feedback on safety issues to the workgroup; and praise or acknowledge people who are doing things safely. How people are approached about safety will generally determine their subsequent behaviour and values. All levels of management or government in the different states and local governments must actively show they care about the well-being and safety of every citizen. Socio-technical leaders are transformational leaders. Their qualities include: ability to create, communicate and implement a new vision; and ability to instil in others the capability to create common values around safety goals.

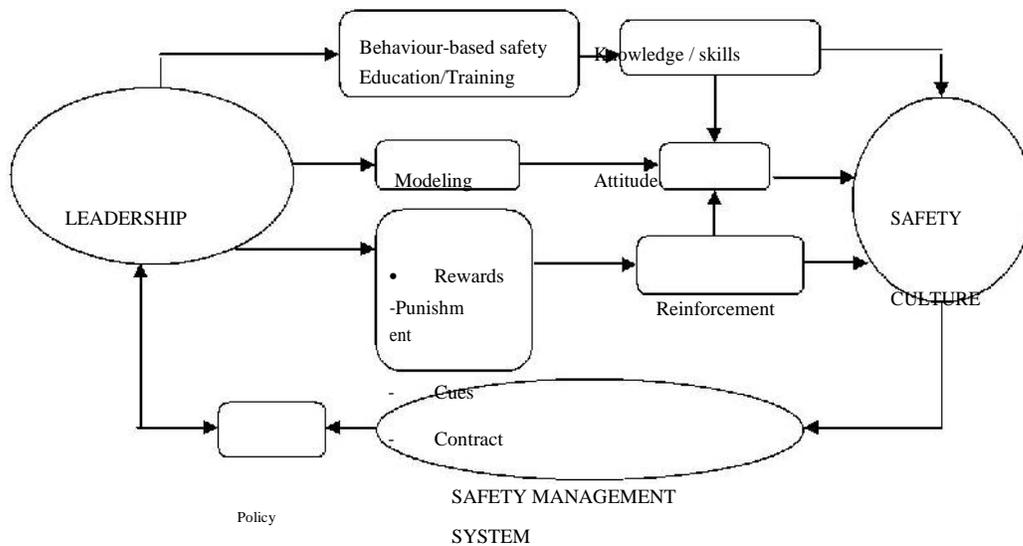


Figure 2.6: *Safety Culture Framework (Ekenedo, 2013)*

Fig 2.6 explains how a safety culture is formed. This model positions leadership at all levels at the centre of the framework. Leaders in the workplace and communities are seen as the drivers of safety culture by developing, enabling, modelling, inspiring and reinforcing good safety behaviours that meet with the policies emanating from the safety management system in three basic ways. First, by providing education and training that improves knowledge and skills necessary for safety practices. Adequate knowledge and skills are basic requirements for behaviour and attitudinal change. Secondly, leadership models good safety practices which in turn positively influences followers' attitude to safety. Thirdly, leadership ensures that work safety is practiced by providing the needed cues, contracts, rewards and punishment that reinforce positive safety practices. With such a culture in place, people would treat the environment in a safe manner and conduct work in such a way as to prevent harm to other people, damage to assets and nurture the environment, hence, impacting sustainable development.

### 2.3 RESEARCH GAP

From the literature so reviewed, many authors have published works on the context of safety

culture and its frameworks, origin and world views, barriers to implementation and strong indicators of a positive safety culture. The elements of a safety culture were also stated as reporting culture, learning culture, informed culture, flexible culture and just culture. Different safety culture models have also been reviewed in a rich literature which elucidates the term safety culture from different views and perceptions.

Literature reviewed in this work were able to trace certain global incidents like the Chernobyl disaster and piper alpha incidents to the presence of a poor or negative safety culture, the methods of investigation which lead to the discovery of this fact were highlighted and the impact this has had on the life and business of the organisations involved.

However, there was hardly any reference to Nigeria in most of the works cited, so, the peculiarity of the Nigerian workspace with its diverse cultures which have impact on organisational cultures and the complex relationship which exists between organisational cultures and communal cultures were not clarified. This research has increased the amount of literature available with reference to safety culture in Nigeria and the interaction between communal and National cultures and how this interaction can be positive or negative.

This study has also directly connected safety and sustainable development, gauging the strong views of the average Nigerian on the impact of a positive safety culture on sustainable development within the Nigerian workplace; this was missing from the literature reviewed. It was able to prove the fact that there is currently a generally negative national safety culture which if improved can assist with the attainment of the millennium development goals.

Thus, it was recommended that safety should be included as a course of study in all strata of the academia in the country to boost awareness and the relevant agencies should be strengthened to enforce existing legislations in occupational safety and health while the proposed National policy on occupational safety and health should be signed into law for effectiveness. With these findings from the study, relevant temperature with regards to safety culture and sustainable development and safety related challenges to development have been extended.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 INTRODUCTION**

Developmental projects in a nation are geared towards enhancing the lives of its citizens, the environment and most especially leaving a safe world for the future generation. Some of these projects remain sustainable only while at the design phase, issues like poor attitudes and perceptions of the populace have hampered sustainable implementation of such beautiful blue prints. It is however advised that to have development that is sustaining, a proper safety culture has to be imbibed. As such this study sets out to showcase a positive safety culture as a veritable tool to national Sustainable Development in Nigeria.

#### **3.1 RESEARCH DESIGN**

This research is a quantitative study designed to showcase a positive safety culture as a veritable tool to human and national sustainable development. The choice of this design was based on the usability of representative data and result generated to make generalizations to the entire population. The design adopted is a descriptive cross-sectional survey design. It was also based on the researcher's ability to describe the parameters involved as they exist without manipulating any variable as well as the ability to effectively manage the target population during focus group discussion and questionnaire distribution.

#### **3.2 SOURCE OF DATA**

For the purpose of this research, two sources of data were employed; A primary source of data and a secondary source of data.

- The primary data made use of the qualitative and quantitative approach, the qualitative approach made use of in – depth interviews and Focus Group discussions while the quantitative approach had well structured interview.
- The Secondary data was obtained from textbooks, Periodicals, Journals and the Internet sites.

### **3.2.1 SAMPLE SIZE DETERMINATION**

The research focuses on the whole of Nigeria and as such the probability and non probability sampling technique were used. The probability sampling enabled the researcher to get respondents from a conference and some respondents were drawn from October 2014 annual gathering of the Institute of Safety professionals (ISPON) which had 430 registered persons in attendance and was held in Port Harcourt, Rivers state. The Annual gathering comprised of Safety professionals, Site Supervisors and Workers, Title holders (Rural heads), Company representatives, Agencies, Parastatals, Non Governmental Agencies, Government representatives and civil servants from various fields, states and Local Government Areas of the country. During the plenary session, the gathering was separated into three halls with each hall having a concentration of a particular field based on the topic discussed and presenters. Focus group discussions and in – depth interviews were held with five of these groups with a total of 130 questionnaires administered at the gathering. Respondents were also gotten from power generating sites in Rivers, Lagos, Aba, Owerri, Benin.

Another batch of respondents featured development practitioners and those who had benefited from development projects and these were drawn from Lagos state, Oyo state, Abuja, Cross River state, Akwa Ibom state, Delta state, Maiduguri and Niger state. In all, the total number of questionnaire returned was 218.

The research used the purposive sampling method selection based on the study purpose and understanding of Nigeria. With these in mind, the criteria for sample section included:

- Working class adults in various fields
- Both male and female workers
- Community heads
- Safety and management experts.
- Development experts and beneficiaries
- Politicians

### **3.2.2 METHOD OF DATA COLLECTION**

The study utilized the effort of research assistants, who were knowledgeable on the happenings of the sites used. They were inducted on the objectives of the study. Focus group discussions and in – depth interviews were held for the purpose of developing the questionnaire and gathering of information otherwise not stated in the questionnaire. The researcher and in some cases research assistants administered the questionnaires. The questionnaire administered during the conference were either filled and returned on the same

day or some preferred returning the next day, this was allowed so as to give respondents enough time and the right frame of mind to answer the questions. Where clarity was needed, the researcher was contacted most times while returning the questionnaire, as such question would have been asterisk waiting clarity. Those administered on sites where collected the same day as they were being instructed to fill them during their break period and where some of them were not well learned to complete the questionnaire, interpretations were given to them in pidgin English and some filled for them by the interviewer. The essence of this was to prevent others influencing the answers and avoiding comparison. For some respondents, especially developmental practitioners, the questionnaire were sent by email. Most of the questionnaires distributed were collected by the researcher. It is worthy of note that not all the copies of questionnaire distributed were returned. The response to the questionnaire were tallied, their frequencies, percentages and cumulative percentages tabulated as would be seen in Chapter five of this research. With the data analysed using the Statistical Package for Social Science (SPSS).

### **3.2.3 INSTRUMENT USED FOR DATA COLLECTION**

Qualitative and quantitative methods of data collection were used in this study.

- a. The Qualitative approach being the Focus Group Discussion
  - o Fifteen in-depth interviews were conducted with six being Focus Group discussions.
  - o As a guiding rule, the Focus Group Discussions questions produced information which the questionnaire could not.
- b. The Quantitative approach being the structured interview - Questionnaire
  - o The questionnaire was formed based on review of literature, and research questions used by some earlier researchers especially ICAO SMS 2000. It was however modified into a fresh questionnaire for the purpose of this study.
  - o The questionnaire had both the closed – ended and open ended type and was made up of six sections as follows:
    - Section A: Socio – Demographic Characteristics
    - Section B: Knowledge of Occupational Health and Safety (Safety Culture)
    - Section C: Perception of Occupational Health and Safety (Safety Culture)
    - Section D: Obtainable Organisational safety culture survey

- Section E: The impact of Organizational Safety Culture on National Safety Culture
- Section F: Safety Culture and Sustainable Development

All the above mentioned sections had clear instructions on how the questionnaire was to be completed, and were constructed in such a way that the respondents answered based on their personal experiences and observations.

### **3.3 METHOD OF ANALYSIS**

The results gotten from the field were analysed using the Statistical Package for Social Sciences (SPSS).

### **3.4 VALIDITY AND RELIABILITY OF INSTRUMENT**

To ensure the validity of the Instrument used in this study, the project supervisor's wealth of experience was brought to bare in achieving a formidable project. It was further ascertained using very vital information gotten from the Focus Group Discussions (FGDs). The instruments were pre – tested with 10 respondents from the Institute of Safety Professionals. The essence of this was to ensure an adequate and reliable data.

### **3.5 ETHICAL CONSIDERATIONS**

For the purpose of the research, Ethical principles guiding a non-biomedical research were obeyed to protect the integrity of the researcher and respondent. As such the purpose and procedures of the study were explained to them, their informed consent gotten, confidentiality was strictly adhered to, information gotten was used mainly for academic purpose and the researcher avoided any form of bias by not hiding result findings or exaggerating findings. There was no risk imposed on the respondents in terms of discomfort, abuse or harassment and neither was there any direct benefit attached. There were separate groups for the discussants.

### **3.6 LIMITATIONS OF THE STUDY**

The study would have been limited by not being able to get development experts or people who had benefitted in developmental projects across the country but this was surmounted by getting respondents via emails and phone calls, video chatting (Skype) and webinar.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSIONS**

#### **4.0 INTRODUCTION**

This section presents the results and discussion of the findings of the study on safety culture as a veritable tool to human and national sustainable development.

#### **4.1 SOCIO – DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS**

The results, as presented in table 4.1, reveal the socio-demographic distribution of respondents. On the questionnaire, respondents were instructed to indicate male or female as appropriate. 24% of respondents were female and 76% were male. The male population is clearly larger than the female because most of the activities are strenuous and require physical strength and issues of pregnancy and childbirth usually act against the female.

Age is important in the assessment of safety culture as it reflects the active circle of individuals in the Occupational Health and safety profession since it involves a lot of physical activities from site safety inspection to safety tours and surveys. This was reflected in the fact that a greater population of the respondents (42.2%) were aged between 21 – 30 years. About 26.6% were aged 41 -50 years, 19.7% were between the ages of 31 – 40 years and 11.5% of the respondents were 51 years and above. The youngest set of people involved in the profession are from 21 years old while the eldest fell less than 60 years; this demonstrates the fact that the profession attracts people in their energetic years.

About 82.1% of the respondents were married, while 17.9% were single. This follows from the predominant age grouping that marriage in Nigeria is a respected institution that bestows on people the social status and recognition which makes a person to be considered responsible (Ahmed, 2000). And this happens in the predominant age grouping of respondent which is considered the age of social maturity for especially the male population.

The respondents were highly educated, with 69.3% holding post graduate qualifications and several professional qualifications and affiliations which are clear prerequisites for growth in the professions and 26.1% having had first degrees across different disciplines from higher institutions. Only 4.6% of respondents have ordinary national diploma/certificates. This shows that a positive safety culture is driven by knowledgeable and skilled professionals who are made competent through training and certification in the implementation of Health Safety

and Environment Management System (HSEMS) which improves an organisation safety culture.

**Table 4.1: Percentage Distribution of Respondents' Socio-Demographic Characteristics**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Female	53	24.3
Male	165	75.7
<b>Total</b>	<b>218</b>	<b>100.0</b>
<b>Age</b>		
21-30	43	42.2
31-40	92	19.7
41-50	58	26.6
51-60	25	11.5
<b>Total</b>	<b>218</b>	<b>100.0</b>
<b>Marital status</b>		
Single	39	17.9
Married	179	82.1
<b>Total</b>	<b>218</b>	<b>100.0</b>
<b>Highest level of education</b>		
Diploma/certificate	10	4.6
University degree	57	26.1
Post- graduate	151	69.3
<b>Total</b>	<b>218</b>	<b>100.0</b>

## **4.2. KNOWLEDGE OF STAKEHOLDERS ON OCCUPATIONAL HEALTH AND SAFETY (SAFETY CULTURE)**

Fig shows the knowledge of stakeholders on safety culture. It is obvious, that 87.2% of the respondents have heard of safety culture while about 12.8% have not. This is expected among safety professionals, as the problem with attaining a positive safety culture has been largely due to the non implementation of available precautions and hazard control measures rather than a general awareness of the very existence of the culture of safety.

### **4.2.1. Establishment of safety department in work places in Nigeria**

From responses gathered, it was inferred that 87.5% of respondents had safety departments in their establishments where they work while 11.5% had none. This is possible because the

larger population of safety professionals would themselves be working from a safety department. However, on a large scale the presence of this safety department have not tremendously improve the national safety culture because most employers of labour are more bent on achieving contractual requirement rather than implementing the spirit of the law. Furthermore, it is not the complete absence of legislations guiding occupational safety and health but the lack of implementation and enforcement by relevant agencies of government that is responsible for the generally negative national safety culture.

**Table 4.2 Effectiveness of safety culture of your work place**

	Frequency	Percent
very effective	18	8.3
less effective	74	33.9
not effective	86	39.4
Effective	30	13.8
don't know	10	4.6
Total	218	100.0

As seen in table 4.2 (above), it is clear that irrespective of the fact that there is a high level of safety culture and the high presence of safety departments in organisations within the country, a greater population (39.4%) of respondents believe that the safety culture in their workplaces is ineffective. This follows from the fact in the section above that the safety culture efforts in organisations only end up in safety manuals and are released only during safety audits for the purposes of acquitting contracts from multinational corporations. Majority of the employers are reluctant to go through the rigours of enforcing a positive safety culture because of the erroneous conception that safety is only a cost factor.

**4.3. PERCEPTIONS OF STAKEHOLDERS ON OCCUPATIONAL HEALTH AND SAFETY (SAFETY CULTURE)**

The perception of respondents to safety culture was assessed using tick boxes, yes or no questions and filling the gaps options and respondents were instructed accordingly. These came up with the following fascinating statistics: 98.2% of respondents felt it was important for an organisation to have a safety culture while 1.8% felt otherwise. Demonstrating the fact that a greater percentage perceives safety culture as a necessity, on where safety culture should be practiced, responses gathered at different points shows that 26.1% felt the home

should be best place to practice safety culture, 28.0% felt it should be the office, 32.6% felt the construction companies, 25.7% ticked the government legislators, 28.0% said development practitioners, and 91.3% said it should be practiced everywhere. This is apparent due to the fact that the climes in the world with the best safety culture are those who have implemented it from the bedroom to the boardroom. This result is illustrated in the table below;

**Table 4.3: Stakeholder perception of Occupational Safety and Health**

Perceptions of stakeholders on safety culture	Frequency	Percentage (%)
Having a safety culture is important	214	98.2
Having a positive safety culture is a thing to be worried about by everybody	209	95.9
Where safety culture should be practiced:		
a. Home	57	26.1
B. Office	61	28.0
C. Construction Companies	71	32.6
D. Government Legislators	56	25.7
E. Development Practitioners	61	28.0
f. everywhere	199	91.3

#### **4.3.1. Responsibility for safety culture implementation**

Evaluating the responsibility for safety culture implementation in organisation, the following results were gathered from respondents in a typical yes or no type question per category. 11.5% said yes to junior management, 20.2% allocated the responsibility to senior management, 11.5% said yes to government law enforcement agencies and churches/mosques, while 89.0% agreed that it is the responsibility of everyone. This result is expected because of the popular saying that safety is everyone’s responsibility and also based on the fact that as stated during the focus group discussions one part cannot succeed in isolation when it comes to matters of safety culture. It is more so because the very essence of a safety culture is interdependency where employees work in such a way as to prevent harm or injury to themselves and their colleagues as both a moral, legal and economic obligation.

Table 4.4: Responsibility for safety culture implementation

<b>Responsibility for safety culture implementation</b>	Frequency	Percentage
a. Junior Management	25	11.5
B. Senior Management	44	20.2
C. Government Law Enforcement	25	11.5
D. Churches/Mosques	25	11.5
E. Everyone	194	89.0

#### 4.3.2. Causes of poor safety culture in Nigeria

53.2% of respondents asserted that the poor safety culture in Nigeria is a consequence of the Ignorance of the workforce and populace, while 23.4% blames it on laxity, 25.2 on lack of monitoring, 33% on Government policies while other factors which respondents made reference to were; attitudes, lack of enforcement of available safety policies and legislations, wide spread economic corruption, a generally poor maintenance culture and lack of management commitment. These parameters are presented in table 4.5 below;

Table 4.5: Causes of poor safety culture in Nigeria

<b>Causes of poor safety culture in Nigeria</b>	Frequency	Percentage
a. Ignorance	116	53.2
b. Laxity	51	23.4
C. Lack of monitoring	55	25.2
D. Government policies/the lack of it	72	33.0
e. Others		
- Attitudes,	183	83.9
- lack of enforcement of available safety policies and legislations,	18	8.2
- wide spread economic corruption,	8	3.8
- a generally poor maintenance culture	4	1.8
- lack of management commitment.	5	2.3

#### 4.4 ASSESSMENT OF THE LEVEL OF ORGANISATIONAL SAFETY CULTURE IN NIGERIA

**Table 4.6: The level of organisational safety culture in Nigeria.**

	Strongly agree		Strongly disagree		Agree		Disagree		Not sure		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
A. Managers get personally involved with safety improvement activities	9	4.1	27	12.4	67	30.7	105	48.2	10	4.6	218	100.0
B. Managers are aware of the main safety problems in the workplace.	72	33.0	9	4.1	103	47.2	9	4.1	20	9.2	213	97.7
C. Managers recognise when employees are working unsafely.	5	2.3	33	15.1	79	36.2	91	41.8	10	4.6	218	100.0
D. Managers stop unsafe operations or activities.	9	4.1	47	21.6	51	23.4	91	41.7	20	9.3	218	100.0
E. Managers view safety as a very important part of all work activities.	4	1.8	28	12.8	57	26.1	109	50.0	25	11.7	218	100.0

F. Managers do all they can to prevent accidents.	84	38.5	5	2.3	86	39.4	33	15.1	10	4.7	218	100.0
<b>Employees and workplace</b>												
A. Employees are properly trained to do their tasks safely.	19	8.7	42	19.3	50	22.9	87	39.9	20	9.2	218	100.0
B. There are procedures to follow in the event of an emergency in my work area.	111	50.9	10	4.6	83	38.1	9	4.1	5	2.3	218	100.0
C. Employees do everything they can to prevent accidents.	60	27.5	14	6.4	86	39.4	28	12.8	30	13.9	218	100.0
D. All employees are given enough opportunity to make suggestions regarding safety issues	15	6.9	45	20.6	59	27.1	74	33.9	25	11.5	218	100.0
E. Employees always encourage each other to work safely.	68	31.2	68	31.2	32	14.7	20	9.2	30	13.8	218	100.0
F. All new employees are provided with enough safety induction prior to work commencement.	14	6.4	75	34.4	33	15.1	91	41.7	5	2.3	218	100.0
G. All employees are kept informed of any changes,	68	31.2	10	4.6	78	35.8	37	17.0	35	11.4	218	100.0

which may affect safety.												
H. Employees follow safety rules almost all of the time.	59	27.1	5	2.3	60	27.5	69	31.7	25	11.4	218	100.0
I. Accident investigations look out for the root cause of accidents, rather than just blame the people involved.	5	2.3	113	51.8	25	11.5	47	21.6	28	12.8	218	100.0
J. Any defects or hazards that are reported are rectified immediately.	9	4.1	73	33.5	41	18.8	51	23.4	44	20.2	218	100.0
K. There are near misses, hazards, and incident report forms in place in my work area for me to report safety deficiencies.	10	4.6	74	33.9	32	14.7	77	35.3	25	11.5	218	100.0
L. After an accident has occurred, appropriate actions are usually taken to reduce the chance of reoccurrence.	5	2.3	93	42.7	29	13.3	81	37.2	10	4.6	218	100.0

#### **4.4.1. Obtainable Organisational safety culture.**

From table 4.6 above, a greater population of respondents disagreed to the survey inquiry implying a positive organisational safety culture around the country. The range of questions evolved from senior management commitment to employee health and safety, the activities of employees in the workplace which serve as a positive influence on the attainment of a positive safety culture in the work place. These activities range from a response to accident prevention trainings, provisions of adequate personal protective equipments, workplace safety inductions, accident reporting, investigation and recovery preparedness and safety audit, review and feedback measures in place in the workplace. These are expected to create an environment of care which increases employee morale towards better productivity. This result is largely due to the fact that safety culture is being paid a lot of lip service in Organisations around the nation, and speaking to Managers reveal the fact that safety is perceived as a mere paper concept used as part of documentation and since there is no strong national enforcement for it in this part of the world, Organisations can only fulfil the letters of existing laws and avoid the spirit of the same.

#### **4.5 ASSESSMENT OF THE LEVEL OF IMPACT OF ORGANIZATIONAL SAFETY CULTURE ON NATIONAL SAFETY CULTURE**

It was observed from data received from respondents that the safety culture in their organisations was sometimes the same with what obtains in the local community. This is expected in a multifaceted local community with organisations with varying degrees of compliance to safety rules and regulations, some, even self regulating as there are no strong legal enforcement frameworks to drive the existing occupational health and safety legislations. A greater percentage of respondents also asserted that sometimes their organisations safety culture has influence on the safety culture of their local community, because of hired labour workers who are hired to work temporarily in the organisations and the type of safety induction trainings delivered to them other times also, the workers neglect these safety practices easily because they are not practiced by permanent employees of most of the organisations. It was also deduced from respondents, as shown in figure... below that the culture of the local community sometimes has its own influence on the organisation's culture as employees allow certain aspects of their local culture to affect the interpretation of certain safety regulations. Most Employees of the few safety conscious Companies are always personally influenced by the cultures of their organisations to act safely at home and

in the community while the greater population of respondents from organisations which pay lip service to safety see it as a hypocritical ritual which is to be performed shabbily in the office and nowhere else. Respondents also agree that the level of structured safety practice in their organisation can sometimes be implemented in the local community. Respondents also agreed that sometimes they receive negative reactions from members of the local community when they act or promote safe behaviour; this would be largely due to ignorance to health and safety practise and an addiction to unsafe work practices. These results are demonstrated in the table below:

**Table 4.7: The level of impact of organizational safety culture on national safety culture**

	Always		Sometimes		Never	
	Freq	%	Freq	%	Freq	%
The safety culture in my organisation is the same with what obtains in the local community	39	17.9	39	17.9	33	15.1
My organisation's safety culture has influence on the safety culture of the local community	63	28.9	30.1	52.3	32	14.7
The culture of the local community has influence on the safety culture of my organisation	34	15.6	117	53.7	63	28.9
I am personally influenced by my organisation safety culture to act safely at home and in the community	57	26.1	147	67.4	14	6.4
The level of structured safety management implemented in my organisation can be deployed to local community	97	44.5	99	45.4	13	6.0
I receive negative reactions from members of the local community when i act or promote safe behaviour	30	13.8	133	61.0	46	21.1
The local community generally has a negative impression of safe work practice	39	17.9	136	62.4	34	15.6

#### **4.6 STAKEHOLDERS PERCEPTIONS OF A POSITIVE NATIONAL SAFETY CULTURE AS A VERITABLE TOOL TO SUSTAINABLE DEVELOPMENT IN NIGERIA**

**Everyone is a stakeholder in the business of safety. The popular saying goes that safety is everyone's responsibility. 97.7% of respondents agree strongly with the fact that:** human and national sustainable development can be achieved if a positive safety culture is implemented in the community. 76.1% agree strongly that safety professionals are interested in deploying safety knowledge to the attainment of sustainable development goals and 40.8 % strongly agree that development practitioners imbibe safety practices in executing developmental projects. 36.2% which is quite a low percentage assert that there is currently a synergy between safety and sustainable development practitioners towards human and national development. As observed from data received, despite the synergy, the limitations to attaining a positive national safety culture and hence, sustainable developments are as follows:

66% of respondents strongly agreed that the absence of a strong legislative framework to enforce available policies on occupational safety and health is responsible for the non actualization of sustainable and developmental goals. This is largely because the factories inspectorate division of the federal ministry of labour which is saddled with this responsibility has not been up and doing. 60.1% of respondents strongly agreed that national politics influences safety culture and sustainable development through widespread corruption, bribery, thuggery and general insecurity which can really set the nation backwards. Table below illustrates stakeholder's perception about the need for a synergy between safety and development practitioners towards the attainment of sustainable human and national development and a few limitations currently preventing this from being realised. The next section presents recommendations for effective implementation of a positive national safety culture towards attaining the millennium development goals

#### **4.7 RECOMMENDATIONS FOR EFFECTIVE IMPLEMENTATION OF A POSITIVE NATIONAL SAFETY CULTURE TOWARDS ATTAINING THE MILLENNIUM DEVELOPMENT GOALS**

45.4% of respondents are of the strong opinion that the academia supports safety culture and sustainable development, hence, safety and sustainable development should be built into the academic curriculum at all levels so as to help create awareness. Creating awareness is seen as a crucial first step in achieving a positive national safety culture in Nigeria because the absence of it is largely due to ignorance and poor perception of safety as a cost factor and not a core business earner.

It is also recommended that among other things, government agencies and parastatals with the relevant authority should implement a robust safety management system and act as a model to private organisations. This would then present the government in good moral light as an enforcer.

Periodic public safety bulletins should also be published to further create awareness on prevailing communal safety issues within common areas.

Other recommendations made from the study are found at the recommendations section in chapter five below.

## CHAPTER FIVE

### SUMMARY AND CONCLUSIONS

#### 5.0 SUMMARY

As revealed in the literature, Nigeria, along with the international community is geared towards sustainable development although facing a myriad of challenges due to the hazards involved in these developmental processes. The poor attitudes, beliefs, perceptions and disposition of citizens to occupational safety and health (which form our safety culture) have dealt a tremendous backward blow to the attainment of wholesome sustainable development in Nigeria.

It was due to the above revelations that the researcher decided to carry out a study of safety culture as a veritable tool to human and national development in Nigeria. The study was based on the following objectives:

- i. Identify the respondents by socio-demographic characteristics. The essence of this was to find out how gender, age, education, marital and work status influenced a positive safety culture. It was amazing to discover that the predominant age of people in the health and safety profession was between 31 to 40 years old, greater population being responsible married males with a passion for the implementation of global best work practices.
- ii. To investigate the knowledge of stakeholders on occupational health and safety (safety culture) and its relevance to the attainment of sustainable development in Nigeria. Results collated proved that there is relative awareness of workplace safety practices in the country, available written legislation which are not implemented due to the absence of formidable legal enforcement framework.
- iii To find out stakeholders perceptions on occupational health and safety. Respondents asserted the fact that safety culture is generally a nice to have, but its not readily implemented in the workplace because of complacency, cost of implementation and low awareness in some quarters about the contributions of a sustainable safety culture to business viability. These factors add up to engineer a negative safety culture which is the major draw- back to the attainment of the millennium development goals in Nigeria.
- iv. To assess the level of organisational safety culture in Nigeria thereby demonstrating the extent to which a positive safety culture can shape the attainment of organisational goals and

objectives while preparing the workers to be more responsible citizens in the country. It was observed from data collected and analysed that a greater percentage of Organizations in Nigeria have a generally poor organisational safety culture, because the factories inspectorate division of the federal ministry of labour has failed in its responsibility to enforce available safety legislations.

v. To assess the impact of organizational safety culture on national safety culture as a way of relating safety culture and the environment. Greater percentage of Respondents agreed strongly that the safety culture of Organisations has tremendous impact on the safety culture of the host communities, this follows that there is a generally poor national safety culture because a good number of the organisations do not have a positive culture and the impact of the existing negative safety culture in these organisations is being felt in the host communities.

vi. To find out the perceptions of stakeholders towards a positive national safety culture as a veritable tool to sustainable development in Nigeria. Respondents, who are also stakeholders in the safety culture discussion admit that there is more lip service paid to safe work practices which has relegated it to a mere paper tiger which needs to get up and walk.

vii. To provide effective recommendations for the implementation of a positive national safety culture towards attaining the millennium development goals. Having made the findings referred to above, it is pertinent to set the stage for the attainment of wholesome national and human sustainable development in Nigeria since respondents have identified safety culture as an indispensable tool to achieving this much needed development. It is therefore recommended among other things that more enabling legislations like the national policy on occupational safety and health which is still awaiting presidential assent, should be signed into law and the factories inspectorate should swing into action to adequately enforce these laws.

Quantitative and qualitative instruments were used. The quantitative methods which were used mainly for data collection had open and closed ended questions which were further analysed using Statistical Package for Social Sciences (SPSS). The results and discussions are stated in Chapter four above.

## **5.1 CONCLUSION**

This study has revealed that a positive safety culture is a veritable tool to human and national sustainable development in Nigeria, that the millennium development goals are yet to be achieved because of a generally poor national safety culture which is occasioned by the absence of strong regulatory enforcement frameworks to enforce the available safety legislations in Nigeria. The poor enforcement of available legislations leads to the poor implementation of occupational health and safety requirements in workplaces, giving rise to a negative safety culture which impacts the host communities. The communities also affect the organisations negatively as negative traditional cultures are transmitted into work patterns as citizens are employed into organisations or are hired as contractors or casual labour.

Organisational and national safety cultures have been shown in this study to have a level of interdependency; safety conscious organisations with positive safety cultures would normally operate a Community Affairs Safety Health Environment and Security (CASHES) policy. This provides an interface between the host community and the organisation, enabling the organisations to impact the communal safety culture in many positive ways, but this is lacking in a vast majority of communities in Nigeria.

The national safety culture situation in Nigeria is not totally hopeless as the study has also identified in the next section, recommendations to the development of a positive National safety culture towards the attainment of sustainable human and national development in Nigeria.

## **5.2 RECOMMENDATIONS**

In order to achieve a positive national safety culture which would bring about the attainment of national and human sustainable development in Nigeria, the following has been recommended:

1. The Institute of Safety Professionals of Nigeria should partner with the centre for Sustainable Development, CESDEV, University of Ibadan to complement sustainable development efforts by fortifying all the courses with safety awareness while including occupational safety and health in the General study series for all students.

2. Safety should be taken to the local level in town hall meetings, Landlord Associations, Village Union meetings, Youth Organizations, etc. to build it into our culture as a way of life, this campaign can be championed by the institute with funding from different well-meaning individuals, corporate members and other groups who may want to carry out unique activities for Corporate Social Responsibilities.
3. Government at all levels should enforce core occupational safety and health practice in schools, roads and all public places as an exemplary stride towards the attainment of this crucial National requirement.
4. Radio jingles, community mass training initiatives, multilingual safety video clips and large scale advertisements are necessary to continue to sow the safety seed in the mind of society.
5. Organisations should be seen to be involved in community mobilization and other corporate social responsibility initiatives towards positive cultural transfer.
6. The factories inspectorate division of the federal ministry of labour should ensure that all available occupational health and safety legislations are adequately enforced and violators clearly prosecuted to deter other organisations or individuals from defaulting. Strict safety inspections of workplaces should be performed regularly and findings implemented to the letter.
7. The National policy in Occupational safety and health which has been proposed and signed by the National assembly and currently awaiting president accent should be signed into law and followed up with enforcement to further strengthen available legislation and enhance the culture.

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