

## Lack of Infrastructural Maintenance Culture and its effects on the Development of North-eastern Nigeria

Umar Iliya<sup>1</sup>, Momsiri B. Maigari<sup>2</sup> & Ndoya Tsun-Dudaya Ishaku<sup>3</sup>

<sup>1</sup>Department of Public Administration

Adamawa state polytechnic, Yola

*Corresponding author:* umarjiliya@gmail.com

<sup>2</sup>Department of business and management,

Adamawa state polytechnic, Yola

<sup>3</sup>Department of banking and finance

Adamawa state polytechnic, Yola

### Abstract

Infrastructure have been one of the major sources of development of any country in the world, Nigeria inclusive and north eastern Nigeria in particular but lackadaisical attitude of north eastern zone on maintenance culture has negatively affected infrastructural development which is critical and essential to development of the zone. Poor maintenance culture has drawn north eastern Nigeria backward and one of the stride actions that could salvage the zone from the total mess of infrastructural decay is maintenance. From observation, the issue of the deployment in the zone is not completely the issue of infrastructures but the existing once are not been properly maintained This paper aimed at examining lack of maintenance culture through review of archival materials and participative observations. Poor leadership, corruption, attitudinal problem and lack of maintenance policy were identified as major causes of the menace. some of the objectives among others are: to inculcate the habit of maintenance cultures in the north eastern zone, to examine the extend at which relevant authorities help in project maintenance, to determine the importance of maintenance culture in the zone In conclusion, the paper recommends the inclusion of maintenance culture in national educational curriculum, maintenance policy formulation and appointment of facility managers among others as necessary steps towards making the zone to develop.

**Keywords:** Culture, Infrastructure, Maintenance, Development.

### Introduction

North eastern Nigeria is a zone that is comprises of six states which include the following; Adamawa, Taraba, Gombe, Bauchi, Yobe and Maiduguri. For the past years the zone faces challenges of Boko haram menace, herdsmen activities, communal crises, and lots of others which have affected the infrastructures of the zone because many destructions have been done, despite such destructions, the remaining existing ones are not properly maintained for development to continue in the zone. Therefore, Maintenance culture in this study suggests the habit of regularly and consistently keeping a building, machine, facilities, equipment, infrastructures that are built by government, non-governmental and individuals etc in good and working

condition. In support of this assertion, Suwaibatul Islamiah, Abdul-Hakim, Syazwina, & Eizzatul (2012) posited that maintenance culture is the values, way of thinking, behaviour, perception and the underlying assumptions of any person or group or society that considers maintenance as a matter that is important and practices it in their life. If a nation must develop, it is imperative that installation as well as maintenance of its existing facilities be given priority. This is more so for developing nations like Nigeria where there is a huge gap between the supply and demand for such facilities due to high rate of population growth and other factors.

### Literature Review

Nigeria n government, according to Eti,

Ogoji, & Probert (2006), took certain economic steps towards being among the best twenty economies in the world by the year 2020. Attaining sustainable infrastructural development by successive governments and cultivation and practicing maintenance culture are essential in achieving this vision. Infrastructure facilities generally referred to as economic and social overhead capital which includes education, water supply, sewage systems, and energy. Others are postal and telecommunication services, transport system, hospitals and roads (World bank, 1994; Oluwasegun, Okorie, Dabara, & Abdulazeez, 2013; Dabara, Lawal, Adebowale, Ankeli, & Gambo, 2016). Governments (Federal, State and Local), private organizations and individuals need to have a strategy on how to maintain their infrastructural facilities to ensure sustainability of same. This can be achieved through maintenance culture which is said to have a correlation with national development. It is common knowledge that the deplorable state of public facilities in north east poses great concern to stakeholders.

Facilities at Nigeria's airports, hospitals, schools, roads etc would give indication that the society lacks an agent that would have helped manage, ensure effective and efficient functioning of the facilities as well as fostering national development. Probert (2006) and Omotehinshe, Dabara, & Guyimu, (2015) had suggested the deteriorating nature of public facilities in terms of street lights that were erected some years back by the past and present governments that would have served as means of beautification and illumination in our society, but due to lack of maintenance culture in terms of bulbs replacement or fixing minor faults has turned our roads to death traps and hubs of illicit games, such as arm robbery stations. Contribution of private organizations into national development cannot be over-emphasized in term of facilities construction (industrialization), environment conservation, employment generation and assisting government businesses through

prompt payment of taxes.

These, opined Nahimah (2008), are achievable when companies' operational facilities (machines) are continuously reliable, available and maintainable throughout. Eti et al. (2006) opined that a developing society needed to adapt to change and faster creativity. To these authors, there are needs for consistent implementation of maintenance and continually year in year out. They further argued that challenges in maintenance management among Nigerian industries resulted in low availability of materials, and productivity which eventually could lead into the closure of certain industries. Assets and facilities are essential to an organisation's resources, thus improving the working environment and well-being of their maintenance is an important aspect that should be given serious attention. This is where there is need for adequate and constant maintenance awareness for all the members involved in the organisation's facility management towards achieving the cooperate goal of the firm.

British Standards Institute (1974) considered maintenance as the combination of technical and administrative actions taken to preserve or protect a structure, system or equipment to function properly. While Kumar & Suresh (2008) postulated that maintenance is an action taken to prevent a device or component from failing or to repair normal equipment degradation experienced with the operation of the device to keep it in proper working order. This paper therefore considers maintenance as a process of preserving an asset or facility in its state of continuous use and function, above a minimum acceptable level of performance, over its design span life.

Poorly maintained equipment may conversely lead to more frequent failure of the equipment, low utilization rate and delaying of production schedule. Equipment that is malfunctioning or misaligned may cause a higher scrap rate or produce products with a questionable quality. Swanson (2001) considered poorly maintained equipment as a necessary evil. This is contradicted by Alsyouf (2007) who

saw regular facility maintenance as a source of profit making rather than just unavoidable and unpredictable expenses. Needs for Maintenance A thorough adherence to a well-defined and developed maintenance strategy will take care of facility breakdown or malfunction thereby allowing facility managers to concentrate on capitalisation (Omotehinshe et al., 2015a; Akinyemi, Gambo, Ankeli, & Dabara, 2016). In the absence of this, measurable time will be required to develop and define a maintenance strategy, communicate it, and last focusing on the tactical choice, for how to achieve it. Tactics are the actual activation needed to implement the strategy, which concerns the management of processes, people, and physical asset infrastructure (Campbell & Reyes-Picknell, 2006). The management's objectives must be realized in accordance with safety, environmental regulations and also in a cost-effective way. The integration of machines, men, methods and means into a well-designed strategy requires indispensable managerial capacity (Waezenberghad & Pintelon, 2002).

North eastern Nigeria is battling presently with the problems of high level of unemployment as a result of damages done by the activities of hood looms which causes much damages in all ramification, which affected electricity, roads, communication that forced the closure of many companies in which people were gainfully employed. Much of those companies were closed as a result of infrastructural decayed in the zone and that can be attributed to the lack of maintenance culture of the existing infrastructure that can easily been maintained

### **Benefits of Maintenance Culture**

Below are some of the accruable benefits if maintenance culture is embraced in our society: Keeping assets in utmost working condition in order to minimize downtime and disruption to services, Keeping facilities in a state of good repair for the owner's health and safety Keeping assets from deteriorating in appearance and aesthetics, Keeping facilities so as to

optimally achieve their full potential service life, Leveraging efficiencies that can be reflected on the owner's statement of financial position, Satisfying a legislated duty that is owed to owners, occupants and guests on the property, Preventing unnecessary damage to assets or facilitation that may result in their performance failure Maintenance Taxonomy There are many philosophies of maintenance.

### **Types of Maintenance**

However, this paper intends to unveil its itself to the following system of maintenance in which it will help the stake holders or relevant authorities in the zone on which type of infrastructures that needed a particular maintenance formular which include the following: Planned maintenance: The maintenance organized and carried out with fore thought, control and the use records to a predetermined plan. Unplanned maintenance: The maintenance carried out to no predetermined plan. This is the restoration of sudden defective facility to its functional state. Preventive maintenance: The maintenance carried out at predetermined intervals or corresponding to research criteria and intended to reduce the probability of failure or the performance degradation of an item. Preventive maintenance is an action performed on a time or machine run based schedule that detect, preclude, or mitigate degradation of a component or system with the aim of sustaining or extending its useful life though controlling degradation to an acceptable level (Kumar & Suresh, 2008).

This approach to maintenance management is predominantly recurring or time-driven tasks performed to maintain acceptable levels of availability and reliability (Mobley, 2002). Comprehensive preventive maintenance programs schedule repairs, adjustments machine rebuilds for all critical equipment while more limited programs only consist of minor adjustments and lubrication. The scheduling guideline for these programs is the common denomination due to the fact that, all preventive maintenance management programs assume that equipment will

degrade within a certain period of time (Mobley, 2004). The strategy is cost effective, energy saving as well as increased component life cycle and reduced equipment or process failure. The problem with the preventive approach to maintenance is that the operation mode and plant specific variables have a direct impact on the normal operating life of equipment.

**Corrective maintenance:** The maintenance carried out after a failure has occurred and intended to restore an item to a state in which it can perform its required function. This maintenance strategy is simple and straightforward, “fix it when it breaks” (Mobley, 2004) i.e. the defective items are fixed either after failure or during failure (Moubay, 1997). The corrective technique does not take any maintenance action until failure occurred. This maintenance management philosophy is rarely used altogether without any preventive tasks, (lubrication and adjustment). Still, in a corrective environment, the equipment are not rebuilt nor repaired in greater extent until it fails to operate (Mobley, 2004). This enjoyed low cost investment for maintenance and few staff is required. **Emergency maintenance:** The maintenance which is necessary to put in hand immediately failure occurred to avoid serious consequences, (Mobley, 2004). This is sometimes referred to as day-to-day maintenance, resulting from such incidences as gas leaks and damage. **Schedule maintenance:** The preventive maintenance carried out to a predetermined, say, interval of time, number of operations or mileage. **Condition-based maintenance:** The preventive maintenance initiated as a result of knowledge of the condition of an item from routine or continuous monitoring,

### Conceptual Overview

**Culture:** There is no single universally accepted definition of culture (Omotehinshe et al., 2015b) because it is difficult term to define. Definitions tend to vary from one author to another. What is

morally acceptable in one country may be abominable in another. Culture is that complex which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society (Tyler, 1870). Culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiment in artefacts. Essential core of culture consists of traditional (historically derived and selected) ideas and especially their attached values

Culture system may, on the one hand, be considered as product of action or as conditional elements of future action (Kroeber & Bluckohn, 1952). Culture is a fuzzy set of basic assumptions and values, orientations to life, policies, procedures and behavioural conventions that are shared by a group of people, and that influence (but do not determine) each member's behaviour and ones interpretations of the 'meaning' of other people's behaviour. Therefore, culture consists of (overall activity of) attitudes, values, basic assumption, arts, customs, belief, and embodiments that shape the behaviour of individuals in a given society. In simple term, people's culture is the summation of their complete way of life.

**Maintenance culture:** According to Suwaibatul et al. (2012), Maintenance culture is the values, way of thinking, behaviour, perception and the underlying assumptions of any person or group or society that considers maintenance as a matter that is important (priority) and practices it in their life. When a person or group has maintenance culture, they would have the attitude to maintain, preserve and protect the public facilities. Maintenance culture is not universal in nature, Florence (2011) postulated. It is usually derived or learns through a person making maintenance a natural daily practice that can be followed and emulated by others. According to Mark et al. (2006), the concept of maintenance culture is the internal environment between management and staff in ensuring effective maintenance

through the sharing of ideas, beliefs, and values of each member in an organization. Developing and embracing maintenance culture through effective leadership, sound policy, attitudinal development among others would not only enhance national development but also enlist our country among the comity of developed nations.

**Development:** Development is considered as a change or transformation into a better state and the indications of the quality of life (Dabara, Okorie, Ankel, & Alabi, 2012; Omotehinshe et al 2015b; Ankeli, Dabara, Gombo, Lawal, & Agidi, 2016). Indications such as infant mortality and maternal mortality rate; shifts in social status; employment opportunity; life expectancy; decrease in fertility; housing; water supply; nutrition and education would improve the well-being of all citizens if properly managed. Development is an attempt at improving the condition of human existence (Gboyega, 2003). This implies improvement in the material well-being of all citizens in such a way that the future is secured. Development is determined by the rate at which a country accumulates social, cultural, industrial, technical and other artefacts, (Rostow, 1960). Development is partly a process, whereby a country can achieve reasonable self-sustaining growth which facilitates and enhances industrial and technical progress in the interest of people, (Rostow, 1960). Development is usually taken to involve not only economic growth, but also some notions of equitable distribution, provisions of health care, education, housing and other essential services all with a view to improving the individual and collective quality of life, (Naomi, 1995).

**Infrastructure:** The success or otherwise of economic development process depends largely on the available resources and an enabling environment. Resources such as capital, manpower and technology are necessary inputs in the growth process. However, the efficiency of these inputs and the sources of economic growth endeavours largely depend on the

available enabling environment as defined in part by the available infrastructure. Infrastructure are public goods and services that goes into the production process as Complementary inputs for traditional factors of production such as capital, labour and Enterprenure. They help to increase returns on investment by reducing production cost and improving transition efficiency. The availability of infrastructure facilities and services as well as the efficiency of such services to a large extent determine the success or otherwise of all other production endeavours. Investments in infrastructures such as energy, water, transportation and communication technologies promote economic growth and help to alleviate poverty and improve living conditions in developing countries (OECD, 2006).

#### **Causes of Poor Maintenance Culture**

**Causes of Poor Maintenance Culture** The following are some of the identified factors responsible for the poor maintenance culture in our society:

**Leadership:** Good and effective leadership is essential to national development. Ability to formulate policy, transform potential to reality and proper leadership to subordinate are the major features of a sound leader. Leadership is the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objective (Yukl, 2006). Leadership also is the shifting of owns vision to high sights, the raising of man's performance to higher standards, the building of man's personality beyond its normal limitations (Peter, 1977). Few among our leaders are up to the tasks whereas majority of them really have no ingredient of effective leadership which may account for why most of the Nation's facilities are in shambles and decay. It is a general believe that one cannot give what one doesn't have. Most of our leaders lack maintenance culture, vision, passion and empathy (Omotehinshe et al., 2015b) which are some of the leadership ingredients

required to influence and stimulate people's behaviour towards maintaining and sustaining existing facilities. Attitudinal problem: More worrisome is Nigerians attitude towards government property as well as their private properties.

Public office holders, according to Peter (1977), hardly rehabilitate their official buildings or facilities until when such assets stand the danger of risking the life of the users. It is common knowledge in Nigeria that most incoming governments make little or no efforts in keeping existing facilities in a proper shape through maintenance and rehabilitation rather they would abandon the inherited facilities and embark on new ones with a view to draining the little resources of the state. Nonchalant attitude, noted Omotehinshe et al. (2015), of individuals towards their health, building, cars amongst other had made them to spend huge amount of money on things that ought to have been prevented or rehabilitated through the act of maintenance program.

**Corruption:** Obayelu (2007) defines corruption as an effort to secure wealth or power through illegal means for private gain at public expense; or a misuse of public power for private benefit while Lipset & Lenz (2000) compared the growth of corrupt practices, in all its manifestations with human race. Ogundiya (2009) in his work saw corruption as the exploitation of public position, resources and power for private gain. Corruption is not only found in democratic and dictatorial politics, but also in feudal, capitalist and socialist economies. Christian, Muslim, Hindu and Buddhist cultures are equally bedevilled by corruption (Obayelu, 2007). Corruption has threatened our national development because there is no effective and functional mechanism that can control the menace. A sitting government awards projects (without means of its completion) only to be abandoned by its successor due to personal gain. One government would award projects and build infrastructural facilities while successive government who should maintain and consolidate on existing ones would totally abandon them because they

believed that awarding new projects at inflationary cost would profit the administration rather than the public.

**Lack of policy:** Another reason why most of our public and private facilities are in total state of mess is non-existence of maintenance policy. Policy is a law, regulation, procedure, administrative action, incentive or voluntary practice of governments and other institutions. There is no single blue print, program or scheme is it federal or state level on how public facilities should be maintained. Our elected legislators, both at the federal and state levels, are yet to take concrete steps in promulgating effective laws that would take cognisance of major maintenance problems encountered in the administration of public facilities. On their own part, executive arms are busy inaugurating ad-hoc committees or agencies on how to sustain, maintain and rehabilitate the nation's facilities in order to handle the national development. 3. Observations Educational infrastructure Sound and qualitative education is no doubt one of the catalysts of national development. This could be only achieved in a safe, orderly and conducive learning atmosphere that is hardly found in our society. Devastating state of infrastructural facilities from the basic schools to the higher institutions is worrisome.

Socio-Economic Rights and Accountability Project (2013) opined that many pupils in this kind of schools continue to sit on the bare floor in some classes while lessons are going on. The classrooms are overcrowded with several broken chairs and desks. Pupils were also reportedly forced to work in order to repair defective chairs and desks, something which, according to the author, amounted to forced labour. This could not support the claim of government providing quality education to its citizenry. This may, again, kill the zeal of students to attain best in their academic pursuit. Absence of equipped and modern library, other sport facilities to keep students physically and mentally fit may affect the standard and quality of education which in turn can mar the national development.

**Poor leadership**, lack of maintenance policy, attitudinal problem and corruption are identified among others as the major causes of poor maintenance. Different maintenance strategies that could be adopted to retain and continuously keep facilities in a safe and good working condition were examined. Also suggested in the paper are formulations of maintenance policy, inclusion of maintenance culture in our educational curriculum, appointment of facility manager – all towards ensuring Nigeria is better positioned in the accomplishment of her vision 2020 goals.

### Conclusion

From the research it is revealed that the lack of maintenance is on the increase in the north eastern part of Nigeria because so many projects have been abundant as a result of minor repairs. Especially the ones emanated from activities of insurgency and communal crises. Secondly, most of these capital projects can easily be maintained without many funds spend on them. Therefore, this has happened to serve as an eye opener to community in order to see the needs for maintenance for their uses. Finally the study helps to uncover the benefits of maintenance as a bed rock for development.

### Recommendations

Maintenance culture is very paramount in this economic hardship; therefore, we must develop the habit of it in order to enjoy the best of our assets with a view to enjoying the best of life. How well we use and enjoy our facilities such as buildings, machines, cars, households' equipment, furniture or public physical assets or our bodies depend, largely, on how well we imbibe the culture of maintenance (Ajibola, 2009). Based on the above observations, the following recommendations are hereby considered:

There should be National policy on maintenance culture that would be effective at the three tiers of government

Maintenance culture, as a course of instruction, should be introduced into all levels of Nigeria Education Curriculum

Each state should, as a matter of duty, formulate maintenance policies that would

guide its operational activities to enhance effectiveness and efficiency

Leadership selection should be by merit rather than favouritism or tribalism because accomplishment of maintenance goals hangs on leadership.

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