



## WHY MANY PROJECTS IN AFRICA FAIL TO COMPLETE

**Dr. David Ackah, Ph.D.**

*President, Institute of Project Management Professionals*

### INTRODUCTION

The focus of this paper is the exploration of why many projects in Africa failed to complete. That is to investigate the causes that lead to the failure of deliverables obtained after the successful completion of projects. Business leaders and experts have proclaimed that project management is a strategic imperative. Project management provides people with a powerful set of tools that improves their ability to plan, implement, and manage activities to accomplish specific organizational objectives. But project management is more than just a set of tools; it is a results-oriented management style that places a premium on building collaborative relationships among a diverse cast of characters. Exciting opportunities await people skilled in project management. The project approach has long been the style of doing business in the construction industry, U.S. Department of Defense contracts, and Hollywood as well as big consulting firms. Now project management has spread to all avenues of work.

Today, project teams carry out everything from port expansions to hospital restructuring to upgrading information systems. They are creating next generation, fuel efficient vehicles, developing sustainable sources of energy, and exploring the farthest reaches of outer space. The impact of project management is most profound in the electronics industry, where the new folk heroes are young professionals whose Herculean efforts lead to the constant flow of new hardware and software products. Project management is not limited to the private sector. Project management is also a vehicle for doing good deeds and solving social problems. Endeavors such as providing emergency aid to the Gulf Coast devastated by hurricane Katrina, devising a strategy for reducing crime and drug abuse within a city, or organizing a community effort to renovate a public playground would and do benefit from the application of modern project management skills and techniques. Perhaps the best indicator of demand for project management can be seen in the rapid expansion of the

Project Management Institute (PMI), a professional organization for project managers.

Project Management Profession has grown from 93,000 in 2002 to more than 270,000 currently. See the PMI Snapshot from Practice for information regarding professional certification in project management. It's nearly impossible to pick up a newspaper or business periodical and not find something about projects. This is no surprise! Approximately \$2.5 trillion (about 25 percent of the African gross national product) are spent on projects each year in the African Countries alone. Other countries are increasingly spending more on projects. Millions of people around the world consider project management the major task in their profession. Project management is not without problems. The Standish Group has tracked the management of information technology (IT) projects since 1994. This firm's periodic landmark reports summarize the continued need for improved project management. For over a decade the Standish Reports of management of IT projects showed improvements. In 1994 approximately 16 percent of IT projects were completed on time, on budget; in 2004 the success rate moved up to 29 percent.

Failed projects also declined from 31 percent in 1994 to 18 percent in 2004. However, the CHAOS Summary 2009 report shows a small decrease in the numbers. This survey report shows only 32 percent of IT projects were delivered on time and within budget. However, 44 percent were "challenged," which means they were late, over budget, and/or missed meeting performance requirements. In addition, 24 percent failed, were cancelled, or never used. Jim Crear, Standish Group CIO, notes this is the highest failure rate in over a decade. The need for elevating performance continues to challenge the project management profession. The waste on failed projects and cost overruns is estimated in the neighborhood of over \$150 billion! Most of the people who excel at managing projects never have the title of project manager. They include accountants, lawyers,



administrators, scientists, contractors, public health officials, teachers, and community advocates whose success depends upon being able to lead and manage project work. For them project management is not a title but a critical job requirement. It is hard to think of a profession or a career path that would not benefit from being good at managing projects. Not only is project management critical to most careers, the skill set is transferable across most businesses and professions. At its core, project management fundamentals are universal.

The same project management methodology that is used to develop a new product can be adapted to create new services, organize events, refurbish aging operations, and so forth. In a world where it is estimated that each person is likely to experience three to four career changes, managing projects is a talent worthy of development. The significance of project management can also be seen in the classroom. Twenty years ago major universities offered one or two classes in project management, primarily for engineers. Today, most universities offer multiple sections of project management classes, with the core group of engineers being supplemented by business students majoring in marketing, management information systems (MIS), and finance, as well as students from other disciplines such as oceanography, health sciences, computer sciences, and liberal arts. These students are finding that their exposure to project management is providing them with distinct advantages when it comes time to look for jobs. More and more employers are looking for graduates with project management skills. The logical starting point for developing these skills is understanding the uniqueness of a project and of project managers.

### SOME FAILED PROJECTS IN AFRICA

#### 1. International Donor Agencies – Africa

**Project type:** Boreholes and wells (developing community water sources)

**Date:** Jul 2016 **Cost:** \$360M

#### Project Purpose

One of the UN's Sustainable Development Goals (SDG's) is to increase access to clean water and sanitation facilities for communities that currently lack such facilities. In many rural areas of sub Saharan Africa, it is not uncommon to walk a few miles to the nearest borehole to get clean water for daily

consumption. International donor agencies are responding in good measure and although many positive strides have been made, reports indicate that as much as \$360 million USD have been spent on building boreholes and wells that quickly became inoperative (and in some cases irreparable).

Reasons cited for about 50, 000 non-functioning water are amongst others; poor construction, lack of expertise and experience, poor supervision, failure caused by well users, and poor technology choice. "People tend to make assumptions about why water sources fail and blame a lack of spare parts, financing, maintenance problems or climate change, for example. But often, the cause is not clear" (Casey and Carter, Water Aid Global). Those reasons for failure make sense but may not tell the full story.

The UN's 2030 SDG goals call for local community level participation in water and sanitation management projects. Funding initiatives from donors are commendable, however they sometimes fall short where it matters most. Establishing borehole and well infrastructure requires more than just implementation, it requires post project support. In many cases the implementation of water infrastructure projects is a battle half won because the donors/sponsors fail to consider elements that guarantee that projects deliver long-term value. The scope of such projects needs to consider not only the installation, but also the capacity building activities that ensure the infrastructure receives the appropriate servicing and levels of support needed to ensure its long-term viability.

Lack of capacity building underlies many failed donor funded projects. To overcome the problem, sponsors need to direct their efforts and advocate for mandatory project skills related capacity building at local authority level to increase chances that projects deliver on the value they were intended for in the first place. National agencies in respective countries who receive funding and tasked to implement national initiatives, should insist that skills development to ensure sustainability are an integral part of the funding proposition.

Project management training from reputable organizations can increase the financial investment value to establish clean water infrastructure, and more



# IPMP Journal Of Management & Science (IPMP-JMS)

## (Institute of Project Management Professionals)

IPMP-JMS Web: [www.ipmp-jms.org](http://www.ipmp-jms.org) email: [ipmp.jms@gmail.com](mailto:ipmp.jms@gmail.com) / IPMP Web: [www.ipmp-edu.org](http://www.ipmp-edu.org)



importantly add to the sustainability that will guarantee that borehole and well users can benefit over the longer term from clean water.

### *Contributing factors as reported in the press:*

- Operational dysfunction, lack of support to ensure long-term sustainability (Focal imbalance failures), insufficient capacity building at local level,
- Failure to ensure availability of sufficient resources,
- Lack of project management training and support.

**2. Organization:** Nelson Mandela Bay Metropolitan Municipality (NMBMM) – South Africa

**Project type:** Metro bus purchase

**Project name:** Integrated Public Transport System (IPTS)

**Date:** February 2015

**Cost:** R2 billion ZAR (approximately \$130M USD)

### **Project Purpose**

The purchase of 60 buses at a cost of R100 million (ZAR) has left the Nelson Mandela Bay Metropolitan Municipality publicly embarrassed. The buses were purchased in 2009 as part of a program to refresh municipal bus service in Port Elizabeth, South Africa. Although the fleet was used during the 2010 Soccer World Cup, they were parked as soon as the tournament was over. Six years down the line, they remain idle and gathering dust.

The bus purchase was part of a larger R2 billion (\$130M USD) push to implement a Bus Rapid Transit system in Port Elizabeth. The project started in 2008 but unfortunately, 8 years later, there is still no operational system in place. Reports from Port Elizabeth indicate that flaws in the design process have resulted in bus lanes that are impractical, zebra crossings that obstruct traffic flow and design flaws that represent a danger to users of the system.

The busses themselves typify the types of mistakes made. A faulty specification process resulted in the purchase of buses that were too big for the driving lanes. In addition, the failure to identify the need to drop passengers off on “central islands” resulted in the doors ending up on the wrong side of the bus. With funds appropriated by the South African government

for the purchase of the buses, the NMBMM failed to ensure that the investment satisfied its intended long-term purpose of provide a more efficient public transport system to Port Elizabethans.

Challenges in the project have also resulted in significant turnover in key resources working on the project. Local news reporters note that from 2008 to 2013 the project has been through five different Engineering companies and four Project Managers. Such turnover compounds the problems in a project as decision-making gets reset each time a new person or organization joins the team.

The challenges the project has encountered also raises serious concerns over the governance process in use. How could a project go for so long with so much dysfunction?

### *Contributing factors as reported in the press:*

- Lack of oversight (six years after fact the matter is being pursued);
- Poor requirements management and a lack of attention to detail (resulting in faulty requirements); Dysfunctional decision-making;
- Failure to engage stakeholders;
- High staff turnover levels.

**3. Organization:** Ghana-STX Building Project

**Project type:** Housing Project

**Project name:** Integrated Public Transport System (IPTS)

**Date:** December 30, 2011

**Cost:** \$10 billion

The project was supposed to lead to the construction of 200,000 houses in Ghana in five (5) years. The agreement was signed in 2009 and hailed by some as “the best thing ever to happen to Ghana”. A 12-member government delegation led by then Minister of Water Resources Works and Housing signed the STX Housing Project deal in 2009. Failure: Information on its failure and abandonment was disclosed on Friday, December 30, 2011, by the Vice President John Dramani Mahama in the National Democratic Congress (NDC) government when he talked with the Parliamentary Press Corp in Accra.



Many Ghanaians were shocked when they heard in about the failure and abandonment of the \$10-billion housing project between the Government of Ghana and STX Engineering & Construction Limited of South Korea.

#### **Contributing factors as reported by a researcher:**

- Haphazard management of the project by the Ghanaian Government. Effective governance apparently was missing as disunity and quarrels were reported between the Ghanaian and Korean partners of STX Engineering & Construction Ghana Limited, the local subsidiary of STX Korea. The CEO of the Ghanaian subsidiary was B.K. Asamoah.
- Corruption was probably a contributory factor. For example, the consulting architectural concept design allegedly prepared by a professor at the Kwame Nkrumah University of Science and Technology (KNUST), on the orders of B.K. Asamoah, cost the company about \$21 million, when the Koreans claimed they could do it for only \$5 million.
- Poor planning and absence of credible feasibility studies

#### **4. Organization:** Egypt's Toshka

**Project type:** New Valley Project

**Project name:** Integrated Public Transport System (IPTS)

**Date:** December 30, 2011

**Cost:** \$90 billion

#### **Project Purpose**

The Toshka New Valley project was planned to develop agricultural production and to create new jobs away from the Nile Valley by creating a second Nile Valley. The project was meant to help Egypt deal with its growing urban population and was described as the "New era of hope for Egypt". It was intended to house more than three million residents and to increase Egypt's arable land area by 10%. The justification is that about 83 million Egyptians are densely packed into just 3 percent of the land which is arable. Therefore, Egypt's planners are undertaking many projects to redistribute the population by creating new areas that can sustain life by diverting the Nile to the

Sahara Desert, in effect, creating new oases. The South Valley Development project, an attempt to relocate up to 6 million Egyptians was started in the 1980s to convert one million "feddans" (1.038 million acres) of the Sahara Desert into land for agricultural and industrial development and secondarily to promote economic activity that would reduce high rates of unemployment amongst Egypt's youth.

#### **Contributing factors as reported by a researcher:**

However, it appears that not everything was taken into full consideration during planning. For one, the Western Desert's high saline levels and the presence of underground aquifers in the area act as a major hindrance to any irrigation project. As the land is irrigated, the salt mixes with the aquifers and reduces access to potable water. In 2005, the government announced that it was abandoning the second phase entirely and that the deadline for the project's completion was extended to 2022. It is observed that canceling the second phase did not increase the project's chances of success, because so many initial targets had not been met. "(Toshka) was failing so badly in the first place that it didn't make a difference to cancel the second phase," observes Conservationist Mindy Bahaa Eddin. She considers Toshka an example of "disaster planning" in Egypt. She said that there is a greater need for stakeholder consultations when working out details of such large-scale projects, so that potential problems can be understood and resolved ahead of time. For example, she said, Toshka would have caused great damage to the many ancient sites found in Kharga Oasis, in a similar way that water is currently creating problems for sites in Fayoum.

#### **CONCLUSION**

There are many causes of project failure and every failed project will have its own set of issues. Sometimes it is a single trigger event that leads to failure, but more often than not, it is a complex entwined set of problems that combine and cumulatively result in failure. Generally these issues fall into two categories. Things the team did do (but did poorly) or things the team failed to do.

#### **Goal and vision**

1. Failure to understand the why behind the what results in a project delivering something that fails to meet the real needs of the organization (i.e. failure to ask or answer the



# IPMP Journal Of Management & Science (IPMP-JMS)

## (Institute of Project Management Professionals)

IPMP-JMS Web: [www.ipmp-jms.org](http://www.ipmp-jms.org) email: [ipmp.jms@gmail.com](mailto:ipmp.jms@gmail.com) / IPMP Web: [www.ipmp-edu.org](http://www.ipmp-edu.org)



- question “what are we *really* trying to achieve?”)
2. Failure to document the “why” into a succinct and clear vision that can be used to communicate the project’s goal to the organization and as a focal point for planning
  3. Project objectives are misaligned with the overall business goals and strategy of the organization as a whole (e.g. Sponsor has their own private agenda that is not aligned with the organization’s stated goals)
  4. Project defines its vision and goals, but the document is put on a shelf and never used as a guide for subsequent decision making
  5. Lack of coordination between multiple projects spread throughout the organization results in different projects being misaligned or potentially in conflict with each other.

### Leadership and governance

1. Failure to establish a governance structure appropriate to the needs of the project (**classic mistake award winner**)
2. Appointing a Sponsor who fails to take ownership of the project seriously or who feels that the Project Manager is the only person responsible for making the project a success
3. Appointing a Sponsor who lacks the experience, seniority, time or training to perform the role effectively
4. Failure to establish effective leadership in one or more of the three leadership domains i.e. business, technical and organizational
5. The Project Manager lacks the interpersonal or organizational skills to bring people together and make things happen
6. Failure to find the right level of project oversight (e.g. either the Project Manager micromanages the project causing the team to become de-motivated or they fail to track things sufficiently closely allowing the project to run out of control).

### Stakeholder engagement issues

1. Failure to identify or engage the stakeholders (**classic mistake award winner**)
2. Failing to view the project through the eyes of the stakeholders results in a failure to appreciate how the project will impact the

stakeholders or how they will react to the project

3. Imposing a solution or decision on stakeholders and failing to get their buy-in
4. Allowing one stakeholder group to dominate the project while ignoring the needs of other less vocal groups
5. Failure to include appropriate “change management” type activities into the scope of the project to ensure stakeholders are able to transition from old ways of working to the new ways introduced by the project
6. Failure to establish effective communications between individuals, groups or organizations involved in the project (**classic mistake award winner**).

### Team issues

1. Lack of clear roles and responsibilities result in confusion, errors and omissions
2. There are insufficient team members to complete the work that has been committed to
3. Projects are done “off the side of the desk” (i.e. team members are expected to perform full time operational jobs while also meeting project milestones)
4. The team lacks the Subject Matter Expertise needed to complete the project successfully
5. Selecting the first available person to fill a role rather than waiting for the person who is best qualified
6. Failure to provide team with appropriate training in either the technology in use, the processes the team will be using or the business domain in which the system will function
7. Lack of feedback processes allows discontent in the team to simmer under the surface
8. The Project Manager’s failure to address poor team dynamics or obvious non-performance of an individual team member results in the rest of the team becoming disengaged
9. Practices that undermine team motivation
10. Pushing a team that is already exhausted into doing even more overtime
11. Adding more resources to an already late project causes addition strain on the



# IPMP Journal Of Management & Science (IPMP-JMS)

## (Institute of Project Management Professionals)

IPMP-JMS Web: [www.ipmp-jms.org](http://www.ipmp-jms.org) email: [ipmp.jms@gmail.com](mailto:ipmp.jms@gmail.com) / IPMP Web: [www.ipmp-edu.org](http://www.ipmp-edu.org)



leadership team resulting in even lower team performance (Brooks law).

### Requirements Issues

1. Lack of formality in the scope definition process results in vagueness and different people having different understandings of what is in and what is out of scope
2. Vague or open ended requirements (such as requirements that end with “etc”)
3. Failure to address excessive scope volatility or uncontrolled scope creep (**classic mistake award winner**)
4. Failure to fully understand the operational context in which the product being produced needs to function once the project is over (**classic mistake award winner**)
5. Requirements are defined by an intermediary without directly consulting or involving those who will eventually use the product being produced (see also lack of stakeholder engagement above)
6. Individual requirements are never vetted against the project’s overall objectives to ensure each requirement supports the project’s objective and has a reasonable Return on Investment (ROI)
7. The project requirements are written based on the assumption that everything will work as planned. Requirements to handle potential problems or more challenging situations that might occur are never considered
8. Failure to broker agreement between stakeholders with differing perspectives or requirements.

### Estimation

1. Those who will actually perform the work are excluded from the estimating process
2. Estimates are arbitrarily cut in order to secure a contract or make a project more attractive
3. Allowing a manager, sales agent or customer to bully the team into making unrealistic commitments
4. Estimates are provided without a corresponding statement of scope
5. Estimation is done based on insufficient information or analysis (rapid off-the-cuff estimates become firm commitments)

6. Commitments are made to firm estimates, rather than using a range of values that encapsulate the unknowns in the estimate
7. The assumptions used for estimating are never documented, discussed or validated
8. Big ticket items are estimated, but because they are less visible, the smaller scale activities (the peanut list) are omitted
9. Estimation is done without referring back to a repository of performance data culled from prior projects
10. Failure to build in contingency to handle unknowns
11. Assuming a new tool, process or system being used by the team will deliver instant productivity improvements.

### Planning

1. Failure to plan – diving into the performance and execution of work without first slowing down to think
2. The underestimation of complexity (**classic mistake award winner**)
3. Working under constant and excessive schedule pressure
4. Assuming effort estimates can be directly equated to elapsed task durations without any buffers or room for non-productive time
5. Failure to manage management or customer expectations
6. Planning is seen as the Project Manager’s responsibility rather than a team activity
7. Failure to break a large scale master plan into more manageable pieces that can be delivered incrementally
8. Team commitments themselves to a schedule without first getting corresponding commitments from other groups and stakeholders who also have to commit to the schedule (aka schedule suicide)
9. Unclear roles and responsibilities led to confusion and gaps
10. Some team members are allowed to become overloaded resulting in degraded performance in critical areas of the project while others are underutilized
11. Requirements are never prioritized resulting in team focusing energies on lower priority items instead of high priority work



12. Failure to include appropriate culture change activities as part of the project plan (**classic mistake award winner**)
13. Failure to provide sufficient user training when deploying the product produced by the project into its operational environment (**classic mistake award winner**)
14. Failure to build training or ramp up time into the plan
15. Change requests are handled informally without assessing their implications or agreeing to changes in schedule and budget.

### Risk management

1. Failure to think ahead and to foresee and address potential problems (**Classic mistake award winner**)
2. Risk management is seen as an independent activity rather than an integral part of the planning process
3. Risk, problems and issues become confused as a result team isn't really doing risk management.

### Architecture and design

1. Allowing a pet idea to become the chosen solution without considering if other solutions might better meet the project's overall goal
2. Teams starts developing individual components without first thinking through an overall architecture or how the different components will be integrated together. That lack of architecture then results in duplication of effort, gaps, unexpected integration costs and other inefficiencies
3. Failure to take into account non-functional requirements when designing a product, system or process (especially performance requirements) results in a deliverable that is operationally unusable
4. Poor architecture results in a system that is difficult to debug and maintain
5. Being seduced into using leading edge technology where it is not needed or inappropriate
6. Developer "gold plating" (developers implement the Rolls Royce version of a product when a Chevy was all that was needed)

7. Trying to solve all problems with a specific tool simply because it is well understood rather than because it is well suited to the job in hand
8. New tools are used by the project team without providing the team with adequate training or arranging for appropriate vendor support.

### Configuration and information management

1. Failure to maintain control over document or component versions results in confusion over which is current, compatibility problems and other issues that disrupt progress
2. Failure to put in place appropriate tools for organizing and managing information results in a loss of key information and/or a loss of control.

### Quality

1. Quality requirements are never discussed, thereby allowing different people to have different expectations of what is being produced and the standards to be achieved
2. Failure to plan into the project appropriate reviews, tests or checkpoints at which quality can be verified
3. Reviews of documents and design papers focus on spelling and grammar rather than on substantive issues
4. Quality is viewed simply in terms of testing rather than a culture of working
5. The team developing the project's deliverables sees quality as the responsibility of the Quality Assurance group rather than a shared responsibility (the so called "throw it over the wall" mentality)
6. Testing focuses on the simple test cases while ignore the more complex situations such as error and recovery handling when things go wrong
7. Integration and testing of the individual components created in the project is left until all development activities are complete rather than doing ongoing incremental ingratiation and verification to find and fix problems early
8. Testing in a test environment that is configured differently from the target



# IPMP Journal Of Management & Science (IPMP-JMS)

## (Institute of Project Management Professionals)

IPMP-JMS Web: [www.ipmp-jms.org](http://www.ipmp-jms.org) email: [ipmp.jms@gmail.com](mailto:ipmp.jms@gmail.com) / IPMP Web: [www.ipmp-edu.org](http://www.ipmp-edu.org)



production, or operational environment in which the project's deliverables will be used.

### Project tracking and management

1. Believing that although the team is behind schedule, they will catch up later
2. The project plan is published but there is insufficient follow up or tracking to allow issues to be surfaced and addressed early. Those failures result in delays and other knock-on problems
3. Bad news is glossed over when presenting to customers, managers and stakeholders (aka "Green Shifting")
4. Dismissing information that might show that the project is running into difficulties (i.e. falling prey to the "confirmation bias")
5. Schedule and budget become the driving force, as a result corners are cut and quality is compromised (pressure to mark a task as complete results in quality problems remaining undetected or being ignored)
6. Project is tracked based on large work items rather than smaller increments
7. Failure to monitor sub-contractor or vendor performance on a regular basis
8. Believing that a task reported by a team member as 90% done really is 90% done (note often that last 10% takes as long in calendar time as the first 90%)
9. Believing that because a person was told something once (weeks or months ago), they will remember what they were asked to do and when they were supposed to do it (failure to put in place a system that ensures people are reminded of upcoming activities and commitments).

### Decision making problems

1. Key decisions (strategic, structural or architectural type decisions) are made by people who lack the subject matter expertise to be making the decision
2. When making critical decisions expert advice is either ignored or simply never solicited
3. Lack of "situational awareness" results in ineffective decisions being made
4. Failure to bring closure to a critical decision results in wheel-spin and inaction over extended periods of time

5. Team avoids the difficult decisions because some stakeholders may be unhappy with the outcome
6. Group decisions are made at the lowest common denominator rather than facilitating group decision making towards the best possible answer
7. Key decisions are made without identifying or considering alternatives (aka "First Option Adoption")
8. Decision fragments are left unanswered (parts of the who, why, when, where and how components of a decision are made, but others are never finalized) resulting in confusion
9. Failure to establish clear ownership of decisions or the process by which key decisions will be made results in indecision and confusion.

### References

Hanachor, M. E. (2012). *Community Development Projects Abandonment in Nigeria: Causes and Effects*. *Journal of Education and Practice*, 3(6), 33-36.

William Yaw Owusu "STX: Tale Of A Failed Project" *General News, Daily Guide*, 10 January 2012 16:31 CET

Andre Fecteau : "On Toshka New Valley's mega-failure " *Thu, 26/04/2012 - by Egypt Independent*.

David Russell Schilling, *Egypt's \$90 Billion South Valley Project*, By: January 10th, 2013

Rudolph Muller "Failed telecoms projects in SA" - March 24, 2011 in "mybroadband" *Candice Jones-Deputy Editor, Opinion, Top, TechCentral* , 28 March 2011.

Kathryn Cave, *South Africa: Why Have All the Rural Tech Projects Failed?* Editor, *IDG Connect*, June 21 2013

Microsoft Digital Villages, <https://www.microsoft.com/southafrica/community/digital.htm>

Hylton Ferreira: " Failure of projects on Boreholes and wells (developing community water sources), at Jul 2016 Cost : \$360M", CEO at International Project





# IPMP Journal Of Management & Science (IPMP-JMS)

## (Institute of Project Management Professionals)



IPMP-JMS Web: [www.ipmp-jms.org](http://www.ipmp-jms.org) email: [ipmp.jms@gmail.com](mailto:ipmp.jms@gmail.com) / IPMP Web: [www.ipmp-edu.org](http://www.ipmp-edu.org)

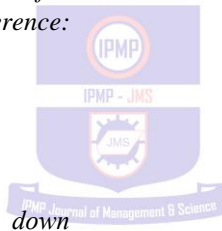
*Leadership Academy Namibia Ltd. International Donor Agencies – Africa, Nov 15, 2016*

*Casey and Carter, WaterAid Global Annie Kelly. “Money ‘wasted’ on water projects in Africa”, Thursday 26 March 2009 13.15 GMT, The Guardian, reference: <https://www.theguardian.com/society/katineblog/2009/mar/26/water-projects-wasted-money>*

*Helfrid M.A. Rossiter, Peter A. Owusu, . et al “Chemical drinking water quality in Ghana: Water costs and scope for advanced treatment” Science of The Total Environment, Volume 408, Issue 11, 1 May 2010, Pages 2378–2386*

*Worldwatch Institute – vision for sustainable growth African Renewable Energy Gains Attention Ben Black, Worldwatch Institute – vision for sustainable growth, African Renewable Energy Gains Attention*

*Kenya's energy revolution: full steam ahead for geothermal power Reference: <https://www.theguardian.com/global-development/poverty-matters/2013/nov/22/kenyageothermal-power-energy-revolution>*



*Mikkel Ostergaard/Panos , “Study breaks down Nigerian solar power failure”; Ref: Nigeria: Study Breaks Down Nigerian Solar Power Failure, published in All Africa, 19 January 2016 Reference: <http://www.scidev.net/global/energy/news/nigerian-solar-power-failure.html> Bolanle Omisore “Nigeria’s Solar Projects Yield Both Failure and Success” written for National Geographic News, November 3, 2011*