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St. Mary's University, Ethiopia

**ST. MARY'S UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**

**CHALLENGES OF ROCK-HEWN CHURCH  
CONSERVATION PROJECTS: THE CASE OF  
CHURCHES IN LALIBELA, ETHIOPIA**

**BY**

**YORDANOS GEBREGZIABHER (SGS/625/2011A)**

**JUNE, 2020**

**ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO THE ST. MARY UNIVERSITY, SCHOOL OF  
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JUNE 2020

ADDIS ABABA, ETHIOPIA

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**APPROVED BY BOARD OF EXAMINERS**

\_\_\_\_\_  
Dean, Graduate Studies

\_\_\_\_\_  
Signature

Maru Shete (PHD, AssoC. Prof)

\_\_\_\_\_  
Advisor

\_\_\_\_\_  
Signature

\_\_\_\_\_  
External Examiner

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Internal Examiner

\_\_\_\_\_  
Signature

## Declaration

I, the undersigned, declare that the thesis is my original work, prepared under the guidance of **Maru Shete** (PhD, Assoc. Prof). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

**Yordanos Gebregziabher**

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Name

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Signature

**ST. MARY'S UNIVERSITY, ADDIS ABABA**

**JUNE, 2020**

# ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Maru Shete (PhD, Assoc. Prof)

Advisor

**ST. MARY'S UNIVERSITY COLLAGE, ADDIS ABABA**

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Signature

**JUNE, 2020**

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## **List of Acronyms**

AFCP: Ambassadors Fund for Cultural Preservation

ARCCH: Authority for Research and Conservation of Cultural Heritage

EOTC: Ethiopian Orthodox Tewahido Church

EU: European Union

ICOMOS: International Council on Monuments and Sites

IFM: International Fund for Monuments

PMBoK: Project Management Body of Knowledge

UNESCO: United Nations Educational, Scientific and Cultural Organization

WBS: Work Breakdown Structure

WMF: World Monuments Fund

## **Abstract**

The Lalibela rock-hewn churches are still deteriorating even though efforts to address the problems exist. This research explores the causes of the problems the churches encountered especially because of the conservation efforts. In view of this, a sample size of 100 respondents was chosen for the study. Questionnaire survey approach was adopted for the study. More so, data generated from the survey were further analyzed, using Relative Importance Index. The findings of the survey indicated that the problems in communication management are critical variables which influence the conservation project. It is recommended to involving the community and practice proper communication between each stakeholder in the project. And the implementation of an integrated management to make projects successful in the future is also recommended. Practicing the project management bodies of knowledge effectively and efficiently could help to solve the problems to happen and minimize the risks.

# CHAPTER ONE: INTRODUCTION

## 1.1. Background of the Study

The Lalibela rock-hewn churches are cut out of living rock more than eight hundred years ago. They were constructed by King and priest Lalibela (1167–1207) (Delmonaco, Margottini, & Spizzichino, 2009, p.137). The churches are located in the middle of the Lalibela town. All the churches have distinctive architectural features. They have drainage system and sloping roofs to carry out the rain water away from the churches which ensured their preservation for centuries (Acts of Lalibela, 2010, p. 207).

The churches are a sacred landscape that welcomes several religious pilgrims all the times especially during the holidays of the Ethiopian Orthodox Tewahido Church like that of “*Beza kulu*” which is a festivity of Christmas and also the birthday of King Lalibela at *Bête Mariam* and the “*Sibar atsimu*” at *Bete Giorghis*. The Lalibela churches and their surrounding area are one of the first sites to be designated as UNESCO World Heritage Since 1978 and have also attracted many visitors from around the world and is now one of the top tourism destinations areas in Ethiopia (GSAPP & AAU-EiABC, 2017, p.6).

The churches have been exposed to wind, rain, sun and different kind human activities for many years. Because of those exposures the churches are in severe degradation in which most of the churches are now in a critical condition. But the conservation of the Lalibela churches attracted the interest of the international community (Delmonaco et al., 2009, p. 138).

Restoration efforts of the Lalibela rock-hewn churches were carried out in 1920 for the first time (Delmonaco et al., 2009, p. 138). The European Union (EU) funded the project ‘Temporary shelters over five churches in Lalibela’, headed by UNESCO which involved the building of four temporary shelters to shield the five rock-hewn churches from the erosive effects of rainfall and shade from the sun effect so as to protect from further degradation and formulate a long term conservation and preservation plan for implementation (UNESCO, 2006), which five of the churches are protected by four shelters for above twelve year until now.

These shelters projects have encountered many management challenges. Initially a design change of the shelters was made without making an integrated change control. The local community has been put aside and their concerns were consistently ignored. The project team also failed at involving the local community. Different structural, cultural, spiritual aspects of the churches were not considered in the design and planning stage.

The estimated time duration of the churches is over but they couldn't be dismantled and are in risk of collapse as they are showing many problems.

The monitoring and evaluation management failure is one of a reason for the challenges. The heavy weight of the shelters is a serious concern as it has been there without any follow up for above twelve years. The shelters are showing signs of age and creating fear of collapse to the society. The projects also failed manage the risk of these projects, the community is in fear. The Lalibela church administrations' petition and the community's protest to various Ethiopian authorities and to the UNESCO to save the churches have been ignored (Afememhir Getaye, personal communication, May 30, 2020).

In the *Bete Gabriel-Raphael* restoration project Planning and implementation problems was encountered. The community also believes that there was lack of stakeholder involvement in the project. The same was at the recent *Bete Michael* churches restoration project. Due to these reasons the conservation effort is showing some failures of crack. This is a project thought to be implemented in other churches in the future but it has failures. Details of the problems encountered will be discussed in the next section. These problems were the main reasons that initiated the researcher to do this research.

## **1.2. Problem Statement**

The churches are facing deteriorations of the heritages making their history and beauty fade away affecting the spiritual life and country's tourism. According to Dr Yirga Gelaw Woldeyes "The conservation works did not follow best practice, and many locals, clergy members, academics and conservation experts have expressed considerable concerns about the future preservation of the churches" (Woldeyes, 2018).

The conservation projects main purpose of the projects was to protect the churches from further deterioration and to conserve using different conservation techniques. But currently due to different reasons the churches are in bad condition, being deteriorated and the projects done to conserve these churches couldn't be sustainable. The problems will be discussed in detail as follows:

To start with, there was a failure of project communication management in the conservation projects. The stakeholders failed to manage different aspects of the project. Initially the original shelter design that was abandoned was approved through an international bidding competition but was replaced with a new design without the consultation of the church members' and community (AfeMemhir Getaye, personal communication, 2020).<sup>1</sup> Local community have been put aside and their concerns were consistently ignored (Woldeyes, 2018, p.4), there was lack of stakeholder involvement in the project. The church officials reflect that the structural natures of the underground spaces especially on, *Bete Amanuel* and *Bete Mariam*, were not fully explored by the shelter construction team as they didn't communicate the church members for further information on the churches.

Thousands of people in Lalibela held a protest to request the government and other responsible bodies to prevent the damages of the conservation projects encountered to the churches. Letters to different authorities has been ignored many times (See Appendix A and B). Lack of transparency and accountability is serious commitment questions for the Ethiopian government, ARCCCH, and the international organizations involved in the conservation projects which encountered damages and risks of collapse to the churches (Woldeyes, 2018, p.7) (See Appendix C).

The other serious issue that happened is the project risk management failure. The heavy weight of the shelters above underground channels and on the roof of *Selassie* chapel has a significant risk of collapse (Afememhir Getaye, personal communication, 2020). Because of the heavy weight of the shelters and lack of scientific monitoring and evaluation by the concerned party, the shelters are showing signs of age such as the widening of gaps in the beam support of the pillars, and creating fear of collapse to the community as a whole. The church officials stated their concern of the potential negative impact of the shelters' structural integrity and lack of

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<sup>1</sup> Interview with Afe Memhr Getaye Haregu, Priest, Lalibela church ( May 30, Lalibela)

monitoring and risk analysis measures on the conservation project made the current problems happen. The shelters were originally made to serve for five years but there were no conservation measures done until now except on *Bete Gabriel-Rafael*, which is not sheltered, and no monitoring measure were done on the shelters (Woldeyes, 2019, p. 20). The UNESCO Mission reported that the shelters made the clay rock to dry out: as a result of the microclimate that has existed under the shelter; the completely dry environment has led to significant crumbling of the roc (p. 4). In addition, the mission has observed at several locations a widening of the joints between the flanges of the columns (p. 33). Those all risks were not considered at first and no measures were not taken to manage those risks (UNESCO 2018, p.33).

The other point to be raised here is that the project implementation failed to provide planned conservation items. The American Embassy funded restoration project at the Gabriel-Rafael church produced positive outcome of preventing water from dripping inside the church but project implementation failed to provide planned conservation items. The main consultant headed by ARCCH failed to monitor the implementation process and the scientific committee failed to conduct regular meetings as provided in the project document. In the *Bete Gebriel-Raphael* church “The restorers replaced materials specified in the project plan with low quality items (such as changing fluid Xb with fluid Xa), they failed to provide planned conservation items such as cleaning materials to remove past conservation efforts and stainless steel to strengthen pillars, and occasionally used unapproved chiseling and nailing to clean the walls” (Woldeyes, 2019, p. 3) (See Appendix C). This project is also affected by these practices and now many problems encountered and a competition for the original architectural design of the shelters were open in 1999 and a suitable design was selected in 2000 (Ayalew, 2016). Later in 2007, “the World Heritage Centre, in collaboration with the Ethiopian Government and the European Commission, had succeeded in changing the design of the shelters, making them both smaller and reversible” (UNESCO, 2007a). The original shelters design was the foundations to be outside of the tuff bedrock to avoid land sliding risks but for reasons that the local community don’t know, the original design was replaced with a heavy shelter that stands on courtyard of the churches (Yirga, 2019, p.11)

Resource management failure has also caused serious problems to the churches. Modern restoration methods introduced foreign objects to the churches. As the researcher has observed,



the walls of the *Bete Amanuel* and *Bete Medhaniale*m churches were nailed and made to accept cement and red paint in 1954. The community members reflected that the paint used to swell and the bituminous layer fall off the walls and that those materials don't completely go with the nature of the rocks. The author has also seen some remaining red paints on *Bete Medhanealem*. Restoration project by the Italian architect Angelini, which aimed to restore the original image of the churches, made the red ochre paint and cement to be scrapped and the nails were pulled out which left massive fractures and cracks on the *Bete Amanuel* and *Bete Medhaniale*m churches (Ayalew, 2016). The EU funded shelters made dependency on foreign experts as it is beyond the capacity of the local people to remove the shelters. The Ethiopian Minister of Culture and Tourism Dr Hirut Woldemariam stated that dismantling the shelters will cost about 20 Million USD (Amhara Mass Media Agency, 2017). This shows the problems of human resource management in the projects. As stated earlier the project couldn't also involve the local community in the project work.

There were also quality management problems in the projects. The projects are causing many risks of collapse and damages rather than being successful and problem solving. The projects caused additional damages and are not relevant enough to protect the churches. The team couldn't leave information about the project documents and plans that could explain if projects followed best practice and how the current damage have occurred (Woldeyes, 2018, p. 18). As observed the gap among the beam support that carries the shelters is widening over time and there are serious concerns about the quality and strength of the shelters. During the conservation work the churches were damaged because of lack of quality methods of working. Some of the windows of *Bete Amanuel* were broken. The shelters are showing clear failures: The foundation steel beam support is widening. This is a sign of structural instability in the shelters.

The projects were lacking time management practices. The estimated time duration for the shelters has passed but the shelters couldn't be removed. According to the Chief Architect Claudio Baldisserri "the shelters were originally built to protect the churches from sun and rain and permit restoration that could absolutely not be postponed" (Teprin Associati, 2010 [2003 et.c], p. 5). But no restoration work was done after the shelters. Conservation efforts must have urgently addressed the concerns regarding the thin roof joining the *Selassie* Chapel and the *Bete Mariam* courtyard, which Associate Professor Esayas G. Yohannes (Executive Director AAU-

AAiT, V/President for AAU) specified as in “great danger of collapse” and a “disaster in waiting” in his report to ARCCCH (Ref A1714\_SAR). He also recommended that this issue “should be addressed before any intervention starts in the *Gologotha-Mikael* churches”, but nothing was done until now. Prioritizing activities were not done even when the churches condition is in need of immediate restoration work.

Scope management issues failed to be implemented in the shelters project. The completed project deliverables was not done as the projects are not completed. Asfawossen Asrat and Esayas Gebreyohannes (2014) discussed that:

The Temporary Shelter Project was not properly implemented (especially during the construction and post-construction phases), nor properly completed. The temporary shelters were planned to be a means to temporarily protect the seriously affected churches until a long-term preservation and conservation programme is implemented. However, this major component of the project has never taken off. As a result, the temporary shelters become the end, instead of the means to the end.

The shelters are causing problems and risks of collapse. Had it been the project was completed, the problems the churches are facing because of the shelters wouldn't have occurred and as a result the churches would have been free of damages and risks of collapse.

Different researchers have studied different aspects of these projects in Lalibela churches at different times. A certain study was done in the Lalibela to examine the town evolution and to evaluate the general concern of the church and to envisage the most urgent interventions to prevent damage (Bidder, 1958).

A report was produced by students in Columbia University's Graduate School of Architecture, Planning, and Preservation (GSAPP) and by students in Addis Ababa University's Chair of Conservation of Urban and Architectural Heritage, Ethiopian Institute of Architecture, Building Construction, and City Development (AAU-EiABC) to get a basic understanding of how land use, buildings are regulated, how cultural heritage and tourism are managed, and how community development is approached into the management structures and approaches at a

range of sites through relative case histories that help to reveal possible practices from which Lalibela might benefit (GSAPP & AAU-EiABC, 2017).

A paper by Dr. Elene Negussie, highlighted the need for an integrated site management plan for future protection of the site with bringing together of tourism interests and development pressures in a way that ensures long-term conservation which benefits for the local community and consideration for religious practices and that this requires sustained commitment from all the stakeholders and support from the international community (Negussie, 2010).

Evaluation of these projects was done by many researchers; Asfawossen Asrat (PhD *and* Esayas Gebreyohannes (PhD) , have done inspection and evaluation of the Shelters in 2014. This showed the problems the conservation projects had and the challenges the churches encountered. Different reports by Dr Yirga Gelaw Woldeyes, aimed to express the concerns of community and church members whose concerns have been ignored, showed the damaging nature of the conservation projects conducted on the rock hewn churches of Lalibela and examines the shelters project and the conservation works on the Gabriel-Rafael church ( Woldeyes, 2018).

Different historical, archeological, geological and architectural aspects of the Lalibela rock-hewn churches were also dealt by many researchers.

This study is different from the other researches in that it deals with the management aspects of the projects. It examines the challenges the churches encountered because of the management failure, results of the shortcomings, how the challenges happened and which body of knowledge was most contributing factor for the challenges. It will further deal with what should be done for a successful future projects.

This paper primarily deals with the challenges of the conservation project on the rock-hewn churches of Lalibela. Those challenges encountered many problems to the churches, the community and as a whole to the country. Mainly, EU funded shelters project over five churches in 2008, the American Embassy funded conservation projects on the Gabriel-Rafael church and the conservation project carried out at the Golgotha-Selassie Church are studied here. We will deal with the challenges the churches encountered by the conservation projects, the possible management factors that caused the challenges and how it should be corrected.

### **1.3. Research Questions**

- What aspects of project management bodies of knowledge failed at the conservation projects?
- How does the failure in project management affect the projects?
- What was the most contributing body of knowledge for the project failure?
- How did the communication management failure affect the project out come?
- What could be a possible solution for the project failure?

## **1.4. Objectives of the study**

### **General Objectives**

The main objective of the study is to examine the conservation project challenges of the Lalibela rock-hewn churches of and put possible solutions for future practices.

### **Specific Objectives**

1. To assess their current situation and examine the impact of the project management failures in the project.
2. To identify the most contributing management factor for the challenges in the conservation projects.
3. To draw a lesson for the future conservation activities.

## **1.5. Significance of the Study**

As a result, the significance of the study is, then, to recommend on how the project communication management be advantageous to safeguard the heritages from inappropriate conservation interventions and make the concerned bodies in the project be responsible of each steps of the project life cycle. This study will also be advantageous as it provides guidance for the possible project management success measures to conserve projects and give possible suggestions on how the risks could be minimized. And finally, it attracts for further research on this related areas.

## **1.6. Scope and Limitation of the Study**

This study is on the challenges of Lalibela rock-hewn churches conservation project. The limitations of this study are the inadequacy of information source and time due to the COVID-19 pandemic. Government organizations were not working as usual which made the information access difficult. It was difficult to interview as many respondents as possible because of the pandemic. Visitors were not allowed to enter to the churches except on early in the morning.

## **1.7.**

### **Organization of the Study**

The thesis is organized in to five chapters. The first chapter, the introduction part, comprises statement of the problem, objectives of the study, scope of the study and methodology of the study as major elements. Chapter two is the literature review includes the historical backgrounds, architecture, and history Lalibela rock -hewn churches. In chapter three the methodology of the study .The fourth chapter focuses on the results and discussion. Finally conclusion and recommendation are set in the fifth chapter.

# **CHAPTER TWO: LITERATURE REVIEW**

## **2.1 Application of the Project Management Bodies of Knowledge in the Conservation Projects**

The Project Management Body of Knowledge (PMBok, 2007) defines project management as, “the process by which projects are defined, planned, monitored, controlled and delivered so that agreed benefits are realized.” Here we will discuss the relation they have with conservation projects.

### **2.1.1. Project Integration Management**

It is stated that “Project Integration Management includes the processes and activities needed to identify, define, combine, unify and coordinate the various processes and project management activities within the project management process group” (PMBok, 2007, p.69).

It involves developing project charter which is the process of developing a document that formally authorize a project and develop project management plan, the process of documenting the actions necessary to define, prepare, integrate and coordinate all subsidiary plans. In addition directing and managing the project execution process of performing the work defined in the project management plans, monitoring and controlling project work, performing integrated change control and closing project of phases is also the overview of the project integration management (PMBok, 2007, p. 70).

#### **2.1.1.1. Project Planning and Implementation/ Execution**

The PMBoK (2007) defines planning as ‘the process of identifying the means, resources and actions necessary to accomplish an objective’. Good project planning is critical to project success. Planning starts immediately after the identification of need for a project and go throughout the project life cycle. The emphasis changes from strategic planning through detailed planning to monitoring and control using the plan, and while the project is being implemented action may be required to maintain the plan and to re plan if necessary.

On the Report of the UNESCO/ICOMOS/ICCROM Advisory mission to Rock-Hewn Churches, Lalibela (Ethiopia) (2018), it was reported that work within the premises of the church is prone to interruption on a frequent basis. This is due to a number of factors:

- Numerous religious rituals that take place regularly within the churches as well as religious holidays during which work cannot be performed by local staff
- Unanticipated interruptions due to perceived issues with materials and methods being used on the site. This often leads to the cessation of work, which is only allowed to continue once an understanding has been reached with the clergy community
- Access denied to the churches for ad hoc reasons; this can directly affect conservation, monitoring and maintenance activities. (p.18)

But it also stated on the same report that:

All activities executed on the World Heritage property require the consent of the clergy community represented by the Church Parish Council as the owner of the property. The Church has its own canons and regulations to which all activities on the church premises must adhere. Therefore the Church has and executes a “veto” right on activities that are incompatible with the church practices. Decision processes on current matters related to the public authorities are complex and made on an ad-hoc basis based on consultations within a “Local Scientific Committee” composed of local politicians, churchmen, and local government officials (including engineers and architects working at the local level). The original function of the site as a pilgrimage place still persists and provides evidence of the continuity of social practices. The intangible heritages associated with church practices are still preserved. (p.11)

As long as the conservation project is focused on the churches and preserving their heritage; the overall churches activities, social practices, canons and regulations should have been included in the project plan so that it would not be a problem in the implementation process.

The church’s practices which are the intangible heritage should not also be interrupted to preserve the tangible so as it continuous to the future generation and also for tourists to flow each day. Interrupting these would impact the overall social practices, the heritage and tourism.



Project managers need to make a project plan that would not affect both the intangible heritage and the conservation processes. They need to consider the churches practices and regulations so that conflicts would be solved and the conservation project continuous without a problem.

Even if the shelters are removable, it is not easy to disassemble them. The operation needs highly qualified workers and means rebuilding heavy scaffolding which needs to call back the people who set them up. The disassembling operation is expensive and dangerous more than the building the operation.

Temporary lightweight shelters have been installed over five churches. These shelters impacted the visual integrity of the churches and the site. Architecturally, the elements added to the site should have been designed to be integrated with the site and churches in color, material, size, texture and other architectural elements so as they wouldn't disturb the view.

On the Report of the UNESCO/ICOMOS/ICCROM Advisory mission to Rock-Hewn Churches, Lalibela (Ethiopia) "the original project design the shelters' foundations should be away from the tuff bedrock and from locations that were close to the cliff or that presented land sliding risks were required. The construction materials should be light, and heavy machinery that produces vibrations should be reduced" (UNESCO/ICOMOS/ICCROM, 2018, p.11).

The Temporary Shelter Project was not properly implemented (especially during the construction and post-construction phases), nor properly completed (Authority for Research and Conservation of Cultural Heritage (ARCCH), 2007, p.38). There are currently many problems in the shelters. There are also remaining conservation works to be done and the dismantling of the shelters is not done yet.

The visual integrity and the site experience of the site after the conservation projects should have been considered when initiating the plan and the design process. This area remains unstudied; further researches and design recommendations are required from professionals in the area for the conservation projects.

## 2.1.2. Monitoring and Evaluation

As stated in PMBOK (2007):

Monitoring is the systematic, regular collection and occasional analysis of information to identify and possibly measure changes over a period of time. M&E also builds greater transparency and accountability in use of project resources. It is a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development or relief intervention with indications of the extent of progress and achievement of objectives and progress in activities and results generated by the use of allocated funds. (p. 105)

The churches are in a different environment for a long time with no rain and sun exposure which makes them dry for longer period of time causing decay that will result in structural damage to the churches (Warrack, cited in Woldeyes, 2018, p.16).

The shelters are creating a new microclimate below them constituting a protection for birds that will leave their eroding guano (ARCCH, 2007).

In 2008 the State of Conservation report stated that the recommended monitoring of the microclimatic effects of the shelters on the churches and their general effectiveness in reducing the decay factors which is threatening the churches is matters of concern (UNESCO/ICOMOS/ICCROM, 2008, p.12). There is no environmental monitoring system of conditions inside and outside of the churches.

A Maintenance and Monitoring Plan was drawn by ARCCH and World Monuments Fund after the completion of the work on *Bete Gabriel-Rafael* in 2016 (UNESCO/ICOMOS/ICCROM, 2018, p. 12). This couldn't be effectively practiced as there are no enough personnel to do the work and needs a serious attention from the government in making the resource available as it is costly for the church to get the resource which is not available inside the country.

### **2.1.3. Project Scope Management**

The PMBoK (2007) defines Project Scope Management as:

Includes processes required to ensure that the project includes all the work required, and only the work required, to complete the work successfully; managing the project scope is primarily concerned with defining and controlling what is and is not included in the project which is done by collecting requirements, defining scope, creating WBS, verifying scope and controlling scope. (p. 129)

The Temporary Shelter Project was not properly implemented and properly completed because the temporary shelters were planned for long-term preservation and conservation programme to be implemented but no preservation work done (Asfawossen & Esayas, 2014). The work that was required to be done in this project was not done; the conservation work and the dismantling of the churches were not done at the planned time. Without completing the intended tasks the project is considered as unsuccessful.

### **2.1.4. Project Time Management**

It includes the processes required to manage timely completion of the project and overviews of project time management includes the process of identifying the specific actions to be performed to produce the project deliverables, the process of identifying and documenting relationship among the project activities, the process of approximating the number of work periods needed to complete individual activities with estimated resources and the processing of monitoring the status of the project progress and managing changes to the scheduled baseline (PMBOK, 2007, p. 173).

The overarching objectives of the EU financed project were to protect selected churches from further degradation, formulate an integrated and participatory long term conservation and preservation programme for implementation, endorsed by and involving all stakeholders, and to identify donors for the programme implementation (ARCCH, 2014, p. 7). The shelters were to be temporary and to be removed after successful completion of conservation works. But the estimated time for the shelters which is five years have passed; now it has been more than a decade. The planned time for the conservation works of the sheltered churches couldn't be done

on time. This is making the shelters to be more of risk full as time goes by and the churches that were to be conserved are further deteriorating.

### **2.1.5. Project Quality Management**

Project quality management includes the processes and activities that determine quality policies, objectives and responsibilities so that the project will satisfy the needs for which it was undertaken and it implements the quality management system through policies and procedures with continuous process improvement activities conducted throughout the project life cycle, as needed, an overview of the project quality management process includes plan quality, perform quality assurance and perform quality control (PMBok, 2007, p.271).

The pillar foundations supporting the shelters of *Bete Mariam Bete Mesqel*, *Bete Amanuel* and *Bete Aba Libanos* are generally unstable. Most of the concrete bases of the pillar foundations are weathered and deteriorating; the steel plates in many of the pillar foundations are displaced and widening in between implying structural instability settlement of the pillars and the shelters and The shelters of *Bete Medhane Alem*, *Bete Amanuel* and *Bete Aba Libanos* leak during heavy rainfall implying ineffective and causing further damage to the churches (Asrat & Gebreyohannes, 2014). These are the reasons that are causing a serious concern and fear in the society. This shows that the quality management processes were so weak.

All the rock-hewn churches are strongly deteriorated and the shelters are not helping to lessen the problem (Asrat & Gebreyohannes, 2014). Quality assurance activities lack in this project. Rather than protecting the churches the shelters are causing a serious problem to the shelters. Quality controlling activities were not also properly done.

The shelters are horizontal that couldn't solve the problem of rain carried by the wind which will hit the churches from the sides (WMF, 2008).

### **2.1.6. Resource Management**

PMBok (2007) defines “Project Resource Management includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project which help ensure that the right resources will be available to the project manager and project team at the right time and place” (p. 307).

The use of inappropriate, unplanned or unapproved materials in conservation work, for instance, in the Bête Gabriel-Rafael church, Fluid Xa was used when the plan indicated that Fluid Xb should be used (Woldeyes, 2018, 199).

Report of the UNESCO/ICOMOS/ICCROM Advisory mission to Rock-Hewn Churches indicated (2008):

Regarding the technical issues that were used or have been specified in the work on *Bete Golgotha Mikael*; a specially formulated epoxy resin (sometimes mixed with micronized silica) was being selectively used both as an adhesive, grout and as filler. After the visit of the UNESCO mission, discussion with the on-site conservation director from the World Monuments Fund, this particular methodology was made to cease, that epoxy resin will no longer be used for grouting. And also new parapet stones have been secured by fiberglass dowels set into rebates filled with mortar cut into the top surface of the stone and the dowels are embedded in epoxy resin. There is some concern that this fill mortar might deteriorate and the epoxy is likely to become brittle in time. It would be better to consider securing the stones by using helical dowels drilled into the vertical face of adjacent stones. (p. 36)

This kind of decisions of material selection should have been made based on prior study, as they were being corrected after they have already damaged the heritages.

#### **2.1.6.1. Project Human Resource Management**

In the case of the churches there is a lack of sustainability of projects due to the lack of personnel and activities to ensure maintenance and continued use of the resources. Removing the shelters is not easy; which needs highly qualified workers and it is expensive and dangerous, as much as the constructing operation was, may be more (WMF, 2008). This aspect should have been considered when planning and designing. As the shelters were planned to protect the churches for a shorter time, they could have been made easy to disassemble with available resource. Now it is risky for the churches as the structures are heavy and requires highly advanced technology. The project could gain a lot if the local communities have participated in the process and now after the completion in the maintenance.

### **2.1.7. Project Communication Management**

Includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information and overview of project communication management includes identifying stakeholders, planning communications, distributing information, managing stakeholder's expectations and reporting performance (PMBok, 2007, p.359).

There was no proper communication and consultation with the local stakeholders during the implementation of the construction phase of the projects. The local stakeholders were not allowed to get involved in the project implementation. Lack of communication and not involving the society caused many failures throughout the project life cycle and now in the maintenance.

### **2.1.8. Project Stakeholder Management**

PMBok (2007), "Project stakeholder management is a processes required to identify all people or organizations impacted by the project, analyzing stakeholder expectations, and impact on the project, and developing appropriate management strategies for effectively engaging stakeholders in project decisions and execution" (p.503).

In this specific project there have been stakeholder management problems which till now the community questions. The interest of the local community has been ignored. These issues made serious impacts to the heritage site as stakeholders' participation have a big role for the successful project completion.

In 2015 the "Monolithic Churches of Lalibela World Heritage Reserved Area Designation Council of Ministers Regulation No. 344/2015", Federal Negarit Gazeta:

A new management structure for the management of the World Heritage Property in Lalibela; it proposed the creation of an Advisory Committee consisting of several members that would make more efficient decision-making process. Chaired by the Lalibela Town Mayor, it would receive administrative assistance through a site manager installed by the ARCCH.

This management structure could prevent the conflicts currently raised by the local community and could contribute to the project success if it had been set up on time.

Control stakeholder engagement is the process of monitoring overall project stakeholder relationships and adjusting strategies and plans for engaging stakeholders. In the case of Lalibela churches conservation project; no special legal framework is provided to protect the Rock-Hewn Churches except the general law, Proclamation No. 209/2000, which has also established the institution in charge, the Authority for Research and Conservation of Cultural Heritage (ARCCH). The ARCCH has a representative in Lalibela with the Ethiopian Church as a partner but main difficulty is the effective coordination between the parties and the different projects. Had there been a special legal frame work such as regulation or directive to specify each stakeholder's responsibility; it would help in the successful project implementation.

Stakeholder satisfaction should be managed as a main project objective as it is critical for project success to identify the stakeholders early in the project.

### **2.1.9. Project Risk Management**

Includes the process of conducting risk management planning, identification, analysis, response planning, and monitoring and control on a project and objectives are to increase/decrease the probability and impact of positive/negative events; an overview of project risk management includes planning risk management, identifying risk performing qualitative risk analysis, performing quantitative risk analysis, plan risk response and monitoring and controlling risk (PMBok, 2007, P.395).

According to Asfawossen Asrat and Esayas Gebreyohannes (2014), “On the basis of cautious considerations made without specific knowledge on the structures, we can affirm that the shelters seem to be solid but the reticular structure that was chosen makes them vulnerable to any small mistake in setting them up or to the collapse of even only one of their junction points” (p.12).

There was no geotechnical investigation of the ground where the pillars rest on courtyard and this could cause further structural instability to the shelters and damage to the churches which requires serious attention (Asrat & Gebreyohannes, 2014).

These types of risks should have been considered prior to the construction, in the planning and analysis phase. And now the monitoring and controlling risks should be performed to minimize risks.

## **2.2. Historical Literature of the Project**

### **2.2.1 Ethiopia**

Ethiopia is an ancient nation with admirably diversified culture including intangible and tangible heritages which have modern and traditional cultural expressions. These remarkable heritages should be preserved and transferred for the next generations. To transfer heritages to the future generation and exploit their values heritage management is necessary though full task of heritage management is hindered by various challenges. Among the heritages of Ethiopia 12 cultural and natural heritages are registered by UNESCO as world heritage sites (Messele, 2015, p.15).

### **2.2.2. Architecture**

#### **2.2.2.1. Rock-hewn Churches Architecture in Ethiopia**

Rock hewn churches are icons of Ethiopia. In Ethiopia, it was during the 12<sup>th</sup> century AD that most of the rock hewn churches are constructed although few of them date back to 5<sup>th</sup> and 6<sup>th</sup> centuries AD (Mesele, 2015, p.2).

Though there were rock hewn churches during *Axumite* period, they are more advanced and widespread during the *Zagwe* period.

At that time constructors were more attracted with rock churches than masonry and wood since they have known that they were hard to destroy. In Lalibela, many of the churches are carved out of solid rocks either partly or completely separate from bed rocks.

#### **2.2.2.2. Medieval Period (*Ze'agwe* Period) Architecture (ca. 9<sup>th</sup> – 12<sup>th</sup> AD)**

Ethiopian architecture sustained to expand from the *Aksumite* style and gradually include new traditions with the expansion of the Ethiopian state. In the center of the country and the south, further wood and rounder structures were used in commoner's architecture and these



artistic influences were shown in the building of churches and monasteries (Mesele, 2015, p. 18).

During the medieval period, the impacts and monolithic tradition of *Aksumite* architecture were continued. Particularly, from the 10<sup>th</sup> to 12<sup>th</sup> centuries, churches were hewn out of rock all over Ethiopia, especially in Tigray, which was the center of the *Aksumite* Empire though, in the 15<sup>th</sup> century, rock-hewn churches were also built at *Adadi Maryam*, around 100 km south of Addis Ababa (Microsoft Encarta, 2008). Among the most popular Ethiopian rock-hewn architecture are the rock churches of Lalibela which are eleven plus in number.

### **2.2.3. King and Priest Lalibela (Jan.7, 1109 – Jan.18, 1205G.C)**

Lalibela was born from his father *Jan Seyum* and his mother *Kirewerna Redei* which were from *Tembene* and *Agew* in *Bugna* woreda at *Roha* and the name Lalibela so called by his mother was derived from *Agaw* word “*Lal-Yebela*” meaning “honey eater”, to indicate that he was infested by a swarm of bees’ colony when he was born (Acts of Lalibela, 2018, p.10).

He was ordered by God to carve the churches from rock for those who used to travel long distance to visit Jerusalem as pilgrim and built the rock-hewn churches of Lalibela to represent Lalibela. As stated in the Acts of Lalibela book written by the Lalibela church council, King Lalibela was very much devoted in the spiritual life and religious practices rather than the politics. And he died on June 18 (*Sene 12*) for this reason the EOTC dedicated him as a saint and celebrates his death on this special day.

### **2.2.4. The Lalibela’s Rock-Hewn Churches**

The rock hewn churches of Lalibela were carved out of rock by King Lalibela. As the researcher has observed the architectural works of Lalibela have similar features as *Axums*. And it is a complex landscape that is biblical narration which represents main elements of Jerusalem. There are three groups of churches in which the first group representing Earthly Jerusalem, the second group is representation of Heavenly Jerusalem, and the third group consist one church that stands alone; the three groups are connected by the Jordan River.

These churches and tombs were carved out of volcanic tuff rock in a variety of styles. Some of the churches were chiseled top to down into the face of the rock and others stand isolated from the rock. A complex system of drainage trenches, tunnels and passageways connects the underground structures as circulation paths (GSAPP and AAU-EiABC, p. 34).

The forms of Lalibela churches are square or rectangular with cruciform plans. Steep paths and steps which lead visitors upward into the churches are carved trenches and paths. The floors of the churches are hewn that vary in height to identify different holy zones which follows the EOTC custom. The pillars inside the churches support flat ceilings and semicircular arches that dominate the interior spaces reflecting Ethiopian architecture (GSAPP and AAU-EiABC, p. 34). Inside *Bete Mariam, Amde Brhan* meaning a Pillar of Light, which is a single central pillar completely covered by a white traditional cloth. It is a mysterious pillar that features unique belief.

There is a great variety of ancient crosses in the Lalibela; the famous cross in is the *Afro aygeba* that God had given to King Lalibela and it has unique features as the author have seen.

Lalibela was designated among the very first UNESCO World Heritage Sites in 1978; for its churches as well as the surrounding vernacular architecture (UNESCO, 1978).

## **2.3. Current Situations of the Churches**

The churches are endangered and in need of urgent measures. They are in a serious condition; the cracks in every part of the churches are making failures and affecting the durability of the rocks (See figure 13). Different investigations could be done to find out and propose solutions on the factors that affected the churches. Many researchers have studied on the challenges the churches encountered; and in this research the project management failures for the challenge will be discussed. There are different factors that are the causes for the damage of the churches.

### **2.3.1. Manmade Factors**

There are various man made factors which threaten the well existence of the heritages. Physical deterioration has occurred on numerous parts of the rock hewn churches due to graffiti which has the effect of reducing the aesthetic value of the churches (Mesele, 2015, p.109).

Maintenance and other conservation activities had also affected the wellness of the churches. For example, without detail study mortar was used to fill cracks in churches like *Bete Mariam* and *Bete Medhanealem*.

### **2.3.2. Natural Factors**

Weathering is the major natural factor for the deterioration of the churches. The moistening and drying cycles have the effect of fragmentation of volcanic agglomerates and scoriae (Mesele, 2015, p.109). *Aba Libanos* and *Bete Gabriel-Rufael* churches are affected by weathering.

The degradation of roofs of *BeteMerkoreos* is highly affected by the natural soil formations due to raindrops on roof of the churches and *Bete Medhanealem* and *Bete Amanuel* are also dominantly affected by water caused deteriorations. Natural factors like rain water and resultant flood, water seeping through roof and walls of buildings and biological causes are also other most important factors threatening and destructing most of the rock hewn churches (Delmonco et al., 2010).

## **2.4. Previous Restoration Projects at Lalibela**

The deterioration of the churches was a concern for long period of time. The local residents' used to maintain the churches with negligible intervention and by avoiding foreign materials to the nature of the rock (Ayalew, 2016). When Ethiopia's foreign relation became more advanced, the Government of Ethiopia repeatedly asked for foreign assistance and expertise for the better protection of the churches; to restore *Bete Amanuel* and *Bete Abba Libanos*, for example, a Greek architect was appointed by Empress *Zewditu* (Batistoni & Milena, 2008).

There were no written records of the Lalibela churches restoration projects until the Architect Sandro Angelini repair and restoration works from 1967 to 1970, (UNESCO, 1978).

## **2.5. Sandro Angelini's Restoration Project**

From 1967 to 1970, comprehensive restoration project managed by the International Fund for Monuments and by the Ethiopian Committee for Conservation for all of the Lalibela Churches which aimed at removing previous restoration works to bring the churches to their original state and detailed cleanup of all superstructures, deposits accumulated over the years of enormous

amount of work and archaeological excavations, a cleanup of trenches and drainage systems was done (Woldeyes, 2018, p.8).

Angelini's restoration project was very destructive; *Bete Amanuel* and *Bete Medhanealem* were considerably damaged (Ayalew, 2016).

## **2.6. Projects after Angelini's Restorations**

World Monuments Fund (WMF), formerly known as the International Fund for Monuments (IFM), had initiated conservation work on the churches since the mid-1960s and in collaboration with the Government of Ethiopia, a Committee for the Restoration and Preservation of the Churches of Lalibela was established (GSAPP & AAU-EiABC, 2017, p.41).

Preservation project at *Bete Gabriel-Raphael* was also launched in 2009 by the Authority for Research and Conservation of Cultural Heritage (ARCCCH) in cooperation with UNESCO and After the successful completion of the *Bete Gabriel Raphael* project, similar conservation project has been started by WMF at *Bete Golgotha Mikael* (GSAPP & AAU-EiABC, 2017, p.41).

## **2.7. The Temporary Shelters Project**

The temporary shelters project known as the "Preservation and Conservation of the Lalibela Churches" financed by the EU which addressed preserving of five churches which were strongly deteriorated because of direct rainfall and the main objectives of the project was also for the long term conservation and preservation programme to be implemented (UNESCO, 2007b, p. 3).

UNESCO (2007a) stated, "Starting from 1994, the EU assisted Lalibela on an action plan to conserve the Lalibela churches and in 1997, they provided €9.1MM for the construction of shelters over the churches" (p. 9).

The purpose of these shelters was to protect the churches from rain water and sun which are some of the causes of their deterioration. As the author has observed project addressed the preservation of 5 rock-hewn churches which had urgent problem and were strongly deteriorated by constructing four temporary shelters over them.

In 1999 UNESCO launched the International Architecture Competition for temporary shelters designs to protect *Bete Medhanealem*, *Bete Mariam*, *Bete Amanuel*, *Bete Aba Libanos*, and *Bete*

*Ghiorgis* but UNESCO modified the design of the shelters as the winning shelter design had the pillar of the shelter outside of the courtyard and the shelter pillar were moved within the courtyard to be a more reversible and stable. By 2007, the funds for the shelters exhausted with only four of the five planned shelters built and *Bete Gabriel-Raphael* was left unsheltered (UNESCO, 2000).

## **2.8. The *Bete Gebriel-Rafael* Restoration Project (Potential Shelter Alternative)**

In 2009, World Monuments Fund (WMF) (2016) launched a project at Lalibela:

World Monuments Fund, “working with the Authority for Research and Conservation of Cultural Heritage (ARCCH) and UNESCO, launched a program in 2009 to find alternative conservation methods for the preservation of *Bete Gabriel Raphael*. The project sought to carry out comprehensive conservation at the church, test solutions that are appropriate but not visually intrusive, develop techniques that could be replicated across the site, and train a core group of craftspeople who could maintain these conservation techniques in the future.

This has been extended to the *Bete Golgotha* and *Selassie* churches (often known as the *Bete Mikael* churches).

The project was completed in December 2015, and the alternative approach for protecting the roof of the church using layers of geo textile and a specialized lime-based mortar has been met with approval and satisfaction by local users of the church. This conservation work done at *Bete Gabriel Raphael* by WMF is perceived by locals and non-locals as more true to the authentic experience of the church.

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1. Research Design and Approach

The research design used in this study is descriptive and exploratory type formulated based on mixed approach in which qualitative and quantitative data are explored. This research will obtain information on the current situation of the churches and describe it in respect of the project management bodies of knowledge. Both primary and secondary data were used for the study. It starts from critically reviewing the relevant documents, books and journals which are focused on the rock hewn churches of Lalibela, their history, architecture and progressive conservation practices and challenges. From these literature reviews the researcher will identify and describe generally accepted project management knowledge and the challenges the churches faced from the conservation projects that took place in different times. To identify the main causes of the challenges faced and to know the perceptions of the stakeholders' field survey has been conducted by observation of the churches, and interviews of different respondents at Lalibela, Bahirdar and Addis Ababa. Questionnaires have also been administered for respondents to elicit their views on the variables (factors). In addition, the current conditions of the churches emphasis to the researcher the damage that occurred on the churches. The data will be analyzed using the relative importance index RII method.

## 3.2. Data Source and Data Collection Method

### 3.2.1. Sources of the Data

The methods to be employed to achieve the objectives of the research are:

#### Primary and Secondary Data

- **Site Observation, Assessment and Investigation:** includes

Taking actual site visit to observe the damages occurred and the current state of the churches. Finding out the changes occurred by comparing the current states with earlier states of the churches using photographs. Making investigation on the actual churches if they were conserved

as planned in the project documents. This will include both unstructured and participant observations.

- **Interview**

Interviewing different scholars who studied on the area, governmental authorities, church clergy and the surrounding community using the personal interviewing

- **Questionnaires**

Questionnaire for respondents to elicit their views on the variables (factors) identified from literature to have contributed to challenges in the conservation project

- **Community opinions:** opinions from different stakeholders about Lalibela rock-hewn churches and the conservation projects.

The researcher took opinions from different parts of the society on the impacts of the conservation projects; furthermore the researcher studied the detail conservation projects applied on churches and their implementation on site. By doing this the researcher will get to understand impacts of the conservation projects and their consequences.

A further questionnaire survey approach was adopted. Questionnaire were administered to community, the church servant, tourist guides, the government bodies and people involved in the project to elicit their views on the variables (factors) identified from literature to have contributed to the challenges of the conservation project.

In all, 100 participants were used for the study. The sample size taken was using the stratified random sampling. The stratified random sampling technique was used to categorize the respondents into groups. The respondents were stratified into groups to help make the data gathering easier. The classifications are the community members which involve the church community and the society, the tour guides, the government officials and the experts.

### 3.3. Data Analysis Method

The participants in the study were selected because they were the most concerned bodies by the challenges the churches encountered. Accordingly, thirty three (33) key variables which were identified in the literature review to have influenced the conservation project to solicit their views. On each of the 33 variables, respondents were asked to indicate the extent to which that variable influences site and churches, based on a five-point scale where:

1- Highly insignificant, 2- Insignificant, 3- Neither, 4- Significant and 5- highly significant

In order to empirically ascertain the factors accounting for challenges encountered to give an understanding as to the extent to which each factor contribute to damages the churches encountered, both by itself and in combination of the other factors, the Relative Importance Index (RII) was employed. Relative Importance Index or weight is a type of relative importance analyses. RII was used for the analysis because it best fits the purpose of this study.

In the calculation of the Relative Importance Index (RII), the formula below was used:

$$RII = \frac{\sum W}{A*N}$$

Where, W—weighting given to each statement by the respondents and ranges from 1 to 5; A- Higher response integer (5); and N-total number of respondents.

Though, the findings of the paper may be a true representation of what went wrong in the Lalibela conservation projects in project management aspect and may be helpful to authorities concern and researchers.



# CHAPTER FOUR: RESULT AND DESCUSSION

## 4.1. Result

### 4.1.1. Respondents Position

The position of respondents amongst other things, determines a respondent's level of concern and involvement. In view of this, respondents were asked to indicate their position. The categories were "the church's servant" referring to those who own, know the church and the projects impact well, "community member" referring to those who own the churches and observe the impacts well, tourist guide" referring to those are always related to the churches professionally, "Authority for Research and Conservation of Cultural Heritage (ARCCH) experts" who know the projects challenge "experts" professionals.

Accordingly, Figure 4.1 summarized the respondents' position: (35%) were "community member"; (35%) were "the church's servant"; (10%) were "ARCCH", (10%) were "tourist guide" and (10%) experts. This is to show that the church servants and community members are the most affected parts by the challenges; spiritually and economically.

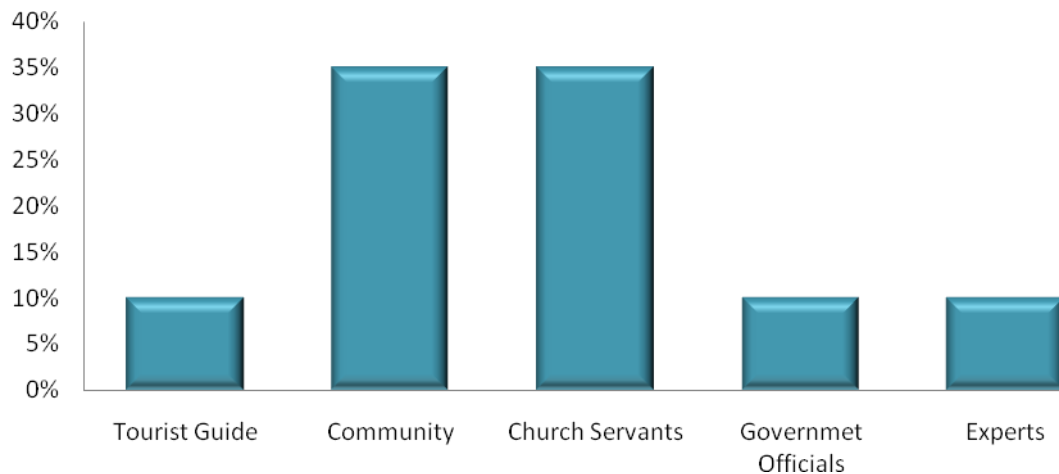


Figure 4.1: Respondents Position

## **4.1.2. Challenges related to the Management of the Conservation**

### **Projects**

Accordingly, the group index is the average of the relative importance index for the variables in the various groups. The values 0.7726, 0.714, 0.6965, 0.644, 0.606, 0.605 and 0.5035 indicate respectively, the RII values of Project Communication Management, Project Planning and Implementation/ Execution, , Project Time Management, Project Quality Management, Resource Management and Project Scope Management factors, as shown in Table 1. Likewise, the RII values indicate that, primarily, Project Communication Management, Project Planning and Implementation/ Execution, Project Risk Management, Project Time Management, Project Quality Management, Resource Management and Project Scope Management factors influence the churches conservation project. Similarly, it suggests that, Project Communication Management factors ranked the first significantly influential factor that accounts for challenges happened in the conservation projects. This was followed by Project Planning and Implementation/ Execution factors.

#### **4.1.2.1. Project Communication Management Related Challenges**

The Project communication management factor grouping variable was ranked the first significantly influential factor that accounts for challenges the conservation project faced by the respondents. Individually, problem on identifying stakeholders was ranked the highest variable under project communication management factor. This indicates that, problems on identifying stakeholders is more critical to challenges happened in the conservation projects than the other variables in the group of project communication management factor. The implication is that, the works on identifying stakeholders is low, thus, there is the need to identify stakeholders; their interest, involvement and impact on the future conservation projects not to repeat the challenges again.

There has been miscommunication about the planned duration of the shelters as church officials claim that they were told that the structures would only be in place for five to seven years. However, the official's in Lalibela suggest that materials of the shelters were intended to last

closer to fifteen years, and possibly longer (Habtamu, personal communication, May 29, 2020).<sup>2</sup> Regardless of ambiguity, the shelters were always meant to be temporary and they are showing a clear signs of age; structural instability in the beam bases and the membrane shelter.

Local members on the scientific committee were not given the opportunity to participate in the meetings (See Appendix C). The project didn't work on involving the main stake holders in the project. The local community was ignored.

Table 4.1: Challenges Related to Project Communication Management

No.		1	2	3	4	5	W	RII	RANK	
	<b>Project Communication Management related factors</b>								<b>0.7726</b>	<b>1</b>
1.	Identifying stakeholders	7	8	11	14	50	362	0.804		
2.	Planning communications	8	11	13	20	38	339	0.753		
3.	Distributing information	10	11	12	17	40	336	0.746		
4.	Managing stakeholder's expectations	11	9	6	25	39	342	0.76		
5.	Reporting performance	3	11	11	23	42	360	0.8		

#### 4.2.2. Project Planning and Implementation/Execution Related Challenges

The respondents ranked project planning and implementation/execution group of variables as the second significantly influential factor that account for challenges of the conservation projects. Individually, the highest variable under project planning and implementation/execution factor is project execution problems. As the respondents opinion the designs in the plan couldn't be executed. The planed materials couldn't be used in the actual conservation work. And the initial plan couldn't be implemented completely.

The actual shelter construction work involved erecting four separate metal framework pillars supporting a rectangular shelter; prior to these shelters the old wooden shelters with zinc roof had to be removed and now as observed there is one older, smaller shelter left over from the

<sup>2</sup> Interview with Mr. Habtamu Tesfawu, Heritage Conservation and Tourism Development Team Leader, Lalibela Cultural and Tourism office, Lalibela church ( May 29, Lalibela)

FINNIDA project in the mid-1990s. As observed in the site and heard from churches community, the wooden shelters used to block the churches view and were not durable enough (Wende, personal communication, May 29, 2020).

According to Mr. Wende Brhan and Mr. Getaye Arke, a local resident in Lalibela who know the churches more than fifty years, is an eye witnesses who have seen the poster of the designs which were very advanced, easy to dismantle and do not affect the integrity of the buildings. They said the contractors often show plans and designs which doesn't relate to the actual works to the society.<sup>3</sup> An integrated change control mechanism was not implemented. Many of the community members think that they have been deceived and the first winning shelters would have been better.

Each shelter has four supporting pillars inside the churches' surrounding courtyard, with the exception of *Bete Aba Libanos* two of the pillars were placed further behind the church on the level of the roof of the church because of the church's configuration. In placing the pillars there were not enough investigation of the locations of the underground tunnels and churches.

The other issues raised by the community in the planning and implementation aspect of the shelters are:

#### **4.2.2.1. The Site Experience**

The other point to be considered is the shelters create a sense of distance between the site and the sky which is a crucial part of prayers. The large structures over the churches catch the attention of first comers to the site which destructs the attention and site experience of visitors (Samuel, personal communication, May 27, 2020).<sup>4</sup> As one could see, churches used to blend in with their environment, but now the white roofs of the shelters dominate the environment. It is evident upon arrival that the shelter's scale and form contrast with Lalibela natural landscape. This should have been considered in the planning and design stages of the design.

#### **4.2.2.2. Structural**

The church clergy worry about structural integrity of the shelters. According to Afe Memhr Getaye Haregu, a priest who serves in the churches for many years and now specifically at *Bête*

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<sup>3</sup> Interview with Mr. Brhan and Mr. Getaye Arke, Community member, (May 29, 2020, Lalibela)

<sup>4</sup> Interview with Samuel Werku, Heritage Conservator, Amhara National Regional State Cultural and Tourism Bureau, (Bahir Dar, May 27, 2020)

*Medhanealem*, the weight of the pillars in the churches courtyard is above the underground tunnels and chapels, especially *Bete Amanuel* and *Bete Mariam*. The shelter over *Bete Mariam* is impacting the *Selassie* chapel underneath one of the pillars; the chapel is being deteriorated inside due to the heavy weight of the shelter on its roof. The church official believes that the structural natures of the underground areas were not fully explored by the shelter construction team. Their greatest concern is the risk of potential collapse due to the weight of these shelters. “I would rather die than seeing the collapse of the churches” (Afememhir Getaye, personal communication, May 30, 2020).<sup>5</sup> The researcher have seen that the pillars being inside the courtyard is risky as the rocks can’t bear the heavy weights and there are some conditions where there is open underground chamber and tunnels. The overall structure is heavy and could cause serious risks. An advanced designs could have been made which considers the churches overall conditions.

#### **4.2.2.3. Cultural**

As observed, the pillars of the shelter over *Bete Mariam* lies in the path of an important religious ceremony that circulates from *Bete Meskel* around *Bete Mariam* which interfere with the religious services around the churches. The church officials noted that the pillar of the shelter over *Bete Mariam* directly interrupts the circulation of the sacred services. This shows the lack of collaboration with church leaders and the local community during the planning stages of the shelters. There are forbidden places to enter like that of the *Selassie* chamber; this kind of issues could have solved by communicating with the church officials who have full access to the churches. Communicating the community should be included in the planning processes to make things easier. The shelters purpose was to preserve the spiritual value of churches by protecting the spiritual belongings. But, the spiritual practice is negatively impacted by the shelters because they affect the religious experience in many ways. Many people in the community have negative feeling of the shelters because of these reasons. The successful planning should take into account the cultural and spiritual aspects of the society which this project also failed at.

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<sup>5</sup> Interview with Afe Memhr Getaye Haregu, Priest, Lalibela church ( May 30, Lalibela)

#### 4.2.2.4. Aesthetics

The community and other professionals believe as the shelters have a negative impact on the aesthetics of the site. Professionals believe that the visual integrity of the site was not considered in the planning with the shelters as the size of the shelters dominates the churches, fading the beauty they originally had. The physical characters like the form, color, size and aesthetics of the shelters contrast with the red rock of the churches (Samuel, personal communication, May 27, 2007).<sup>6</sup> It can be clearly seen that the shelters have extremely impacted site experience and visual integrity. This should have been addressed in the planning stage of the project. Architects and other professionals in the planning stage should consider the aesthetics in the design part.

In the case of *Bete Gabriel-Raphael* restoration project, the respondent, this project created more comfortable conditions for church use as it integrates with churches nature. The community perceives as the conservation work at *Bete Gabriel-Raphael* to be more safe and secure. The conservation solved the problems of rain infiltration and had a positive impact on their spiritual aspects of the users (Melkamu, personal communication, May 27, 2020).<sup>7</sup> The goals of this project were to set an example for future conservations on the other churches. But the implementation process of the project lacked consistency with the project plan for example, Fluid Xa was used but the plan specified that Fluid Xb should be used and that the conservation work started without having required materials for cleaning which resulted in additional damage by nailing which were not in the plan (Muchaw, personal communication, May 30, 2020).<sup>8</sup>

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<sup>6</sup> Interview with Samuel Werku, Heritage Conservator, Amhara National Regional State Cultural and Tourism Bureau, (Bahir Dar, May 27, 2020)

<sup>7</sup> Interview with Mergeta Melkamu Alemu, office head, Lalibela Cultural and Tourism office, (Bahir Dar, May 27, 2020)

<sup>8</sup> Interview with Muchaw Derbe, Tour Guide, Lalibela church, (Lalibela, May 20, 2020)

Table 4.2: Challenges Related to Project Planning and Implementation

No.		1	2	3	4	5	W	RII	Rank
	<b>Project Planning and Implementation/ Execution related factors</b>							<b>0.741</b>	<b>2</b>
1.	Project management plan	8	12	35	14	21	298	0.662	
2.	Perform integrated change control	11	7	13	15	44	344	0.764	
3.	Project execution	7	11	17	10	45	345	0.766	
4.	Monitor and control project work	6	12	19	17	36	335	0.744	
5.	Close project of phase	9	11	17	10	43	337	0.748	
6.	Design problems	18	9	17	33	13	284	0.631	
7.	Funding problems	8	6	34	22	20	332	0.689	

### 4.2.3. Risk Management Related Challenges

Risk management factor, ranked the third influential factor that accounts for the challenge. Individually, lack of monitoring and controlling risk was the critical variable that influences the conservation projects outcome. We can all see that the dismantling of the heavy shelters is a big concern and could damage the churches if not done properly. The shelters are showing observable problems but there are no measures taken. And the risk of not conserving the churches as planned could have been considered, the churches have been in deterioration for twelve years after being sheltered. To prevent further risks the shelters need to be monitored appropriately until the dismantling work is done.

The pillars are inserted in a 2x2m concrete blocks supported by layers of steel plates which is placed on the courtyards floor. The underground churches and tunnels are in risk of collapse as the weight of the steel layers, the pillars and the roof is heavy (Wende, personal communication, May 29, 2020). As the researcher observed there is a pillar of the *Bete Mariams* shelter on the roof of Slassie chapel. Inside the Slassie chapel there are signs of deterioration. No digging

works have been conducted in order to avoid modification of the ground and to guarantee the principle of full reversibility. But the concrete blocks are being deteriorated and on some of these the local community is trying to maintain these using cement mortars. This is a serious sign of structural instability and risk. The other problem in the steel plates is, the gap in between the layers is being widened and widen from time to time. This is also a sign of structural instability in the shelters which the community is concerned about. The risks should have been identified in the earlier stages of the project so as they could be managed.

The community also believes that shelters are unsafe for the churches and the people. They fear that high winds vibrations might cause the shelters to damage the churches. The age of the shelters and the problems in the shelters due to the age are also causes of fear. The pillar above the Selassie chapel is a potential threat (Afememhr Getaye, personal communication, May 30, 2020).<sup>9</sup>

Most of the interviewed respondents felt that the shelters had impacted the churches. The respondents perceived the shelters to be unsafe and poorly maintained, destroying the sacredness of the churches and impacting their use of the site negatively.

This aspect should urgently be addressed to minimize the risk and save the churches from further damage.

Table 4.3: Challenges Related to Project Risk Management

No.		1	2	3	4	5	W	RII	RANK
	<b>Project Risk Management Related Factors</b>							<b>0.6965</b>	<b>3</b>
1.	Planning risk management	8	35	12	14	21	275	0.611	
2.	Identifying risk	11	7	13	25	34	334	0.742	
3.	Performing qualitative risk analysis	9	11	17	20	33	327	0.726	
4.	Performing quantitative risk analysis	18	9	27	23	13	274	0.608	
5.	Planning risk response	7	11	22	10	40	335	0.744	

<sup>9</sup> Interview with Afe Memhr Getaye Haregu, Priest, Lalibela church ( May 30, Lalibela)



6.	Monitoring and controlling risk	6	12	17	19	36	337	0.748	
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#### 4.2.4. Project Time and Scope Management Related Challenges

Respondents ranked Project scope management factor seventh influential factor contributing to the challenges happened. Verifying scope was the critical variable from the project scope management factors. Respondents believe the process of formalizing the acceptance of the completed project deliverables was not done as the projects are not completed. This led to further deteriorations and damages in the churches. In the process of formalizing acceptance of the completed project deliverables, the project team should have controlled the status of the project and made the desired conditions and agreements before acceptance. Many internal and external factors in the site remain unconsidered and uncompleted in the conservation work of the churches; the rainfall and sunlight impacts were not even the main causes which were given priority.

Table 4.4: Challenges Related to Project Time and Scope Management

No.		1	2	3	4	5	W	RII	RANK	
	<b>Project Scope Management related factors</b>								<b>0.5035</b>	<b>7</b>
1.	Problem in collecting requirements	30	20	20	18	2	212	0.471		
2.	Defining scope	29	27	18	9	7	208	0.462		
3.	Verifying scope	11	27	21	19	12	264	0.586		
4.	Controlling scope	31	18	20	9	12	223	0.495		
	<b>Project Time Management Related Factors</b>								<b>0.644</b>	<b>4</b>
5.	Defining activities	22	18	13	9	28	273	0.606		
6.	Sequencing activities	16	12	19	15	28	297	0.66		
7.	Estimate activity duration	17	11	10	17	35	312	0.69		
8.	Controlling schedule	13	12	32	19	14	279	0.62		

Project time management factor, ranked the fourth most influential factor that accounts for challenges of the conservation projects. Individually, problems of estimating activity duration were the critical variable contributing to conservation projects.

The shelters couldn't be dismantled as planned and are showing observable defects. The life span of the shelters were up to five years and some say it's up to ten years but it have been over twelve years now. If this continuous soon the shelters will not serve their purpose, protecting the churches from rain water and sun, and could cause a serious damage. The conservation activity which was to be done the in the time of the shelters couldn't be done on time. The estimated activity duration was not fulfilled. In the future projects, to prevent additional challenges activities should be done on time. The responsible body should properly control the schedule to prevent such damages.

#### **4.2.5. Project Quality and Resource Management Related Challenges**

According to the respondents response Project quality management was ranked fifth influential factor for the conservation projects challenges. And individually, the problem in performing quality control was critical variable contributing to the conservation projects challenge. Controlling the quality of the work done was lacking in the projects which lead to challenges and the problems still happening to churches because of the quality deficiency. Quality need to be considered when working on such valuable heritages.

The pillars support the shelters, which are a metal frame covered in membranes in which the upper waterproof and translucent and the lower perforated. They are sloped in order to let rainwater runoff into the drain and be carried away from the courtyard by means of a conduit. Two of the shelters include a water container each that accumulates rainwater from the roofs. This water is used for some vegetation in the site. From observation, the membrane covering the metal plates is being teared, for example in the shelter covering *Bete Mariam*. This is a clear sign of age. The quality control aspect failed at checking the materials durability.

As the author has observed in the site, the restoration projects at *Bete Gabriel-Raphael* are showing significant flaws and the same is in the *Bete Mikael* churches. The community believes as this happened because of the problems of material usage. This needs further investigation before it is implemented in other churches.

Table4.5: Challenges Related to Project Quality and Resource Management

NO.		1	2	3	4	5	W	RII	RANK	
	<b>Project Quality Management</b>									
	<b>Related Factors</b>								<b>0.606</b>	<b>5</b>
1.	Planning quality	19	18	21	28	4	250	0.55		
2.	Performing quality assurance	18	9	28	22	13	273	0.606		
3.	Perform quality control	11	10	20	37	12	299	0.664		
	<b>Resource Management</b>									
	<b>Related Factors</b>								<b>0.605</b>	<b>6</b>
4.	Developing human resource plan	18	20	20	30	2	248	0.55		
5.	Acquiring project team	9	18	20	31	12	289	0.642		
6.	Developing project team	11	21	19	27	12	278	0.617		
7.	Managing project team	9	18	29	27	7	275	0.611		

Resource management factor rank sixth influential factor in the projects. Acquiring project team was critical variable from the resource management factors. The respondents believe that the project couldn't allow the local community to participate in the overall works. This would have solved many problems of the projects that we have seen in this paper.

The local community believes that there were local committee involved in the *Bete Gebriel-Raphael* restoration project but the full project document was not provided to them, because of this they identified several mistakes in the implementation process.

The scientific committee failed to manage the project team to perform their stated duties to monitor work at the site and resolve issues between the local community and the contractor. They couldn't meet or conduct its duties as specified in the scheduled plans (See Appendix C). The scientific committee failed at acquiring the concerned project team which should involve the members of the local community.

## 4.2.6 Current Conservation Efforts

Currently, following the questions to the government and protests done in Lalibela; the Ethiopian Prime Minister Dr. Abiy Ahmed visited the site twice and the second visit was with France president Emmanuel Macron. Accordingly the France government promised of dismantling the shelters and conserving the churches (Habtamu, personal communication, May 29, 2020).<sup>10</sup>

The government is trying to make detail studies and investigation Local professionals are being involved in the pre conservation studies which were not done on the previous works (Melkamu, personal communication, May 27, 2020).<sup>11</sup> But the community still fears that this might also be just a study without action as it was being done for many times in the past.

As the researcher have observed, studies are being done on the churches for the conservation practice to begin. For example crack measuring instruments are placed on the churches. This need to be controlled and monitored on time to get the accurate information needed. Further investigations and studies should be done and the management should follow best practices to avoid repeating the same failure of the past projects.

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<sup>10</sup> Interview with Mr. Habtamu Tesfawu, Heritage Conservation and Tourism Development Team Leader, Lalibela Cultural and Tourism office, Lalibela church ( May 29, Lalibela)

<sup>11</sup> Interview with Mergeta Melkamu Alemu, office head, Lalibela Cultural and Tourism office, (Bahir Dar, May 27, 2020)

# CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

## Conclusion

This study deals with the challenges the EU funded shelters and the American Embassy funded conservation work on *Bete Gabriel-Rafael* and *Bete Golgotha* and *Selassie* churches. It has shown that the conservation project has many challenges and caused damage to the churches. It also shows how those challenges were caused from the opinions of local community, church officials, government officials and experts and related literature.

The problem on identifying stakeholders is a critical challenge happened in the conservation projects than the other variables in the group of project communication management factor which is the major challenge found in this study. The implication is that, the works on identifying stakeholders is low, thus, there is the need to identify stakeholders; their interest, involvement and impact on the future conservation projects not to repeat the challenges again. The opportunity to fully participate in the decision-making processes around the conservation of the churches should be given to the local community and the church as they are the custodians and owners of the site.

The project planning and implementation/execution is the second significantly influential factor that accounts for challenges of the conservation projects. The planed methods and materials couldn't be used in the actual conservation work and the initial plan couldn't be implemented. Due to these challenges many problems happened in all the conservation projects implemented. This caused a significant damage to the churches and made them be in risk of collapse. The people in Lalibela are always in fear and sorrow.

Lack of monitoring and controlling risk was also a critical variable that influences the conservation projects outcome. We can all see that the dismantling of the heavy shelters is a big concern and could damage the churches if not done properly. The shelters are showing observable problems but there are no measures taken. And the risk of not conserving the churches as planned could have been considered, the churches have been above twelve years in

deterioration after being sheltered. To prevent further risks the shelters need to be monitored appropriately.

Problems of estimated activity duration contributed to the conservation project challenges. The shelters couldn't be dismantled as planned and are showing observable defects. The conservation activity which was to be done in the time of the shelters couldn't be done on time. Activities should be done on time in the future projects to prevent additional challenges.

Controlling the quality of the work done was lacking in the projects which lead to challenges and the problems still happening to churches because of the quality deficiency. Quality need to be considered when working on such valuable heritages.

The project couldn't allow the local community to participate in the overall works. This would have solved many problems of the projects that we have seen in this paper.

Respondents believe the process of formalizing the acceptance of the completed project deliverables was not done as the projects are not completed. This led to further deteriorations and damages in the churches.

To conclude with, the conservation project of Lalibela churches had many failures of project management which contributed to the challenges the heritages encountered and are still facing. Quick measures should be done to save the churches from further deterioration and damage by the concerned body.

## **Recommendations**

The shelters must be dismantled from the rock-hewn churches as quickly as possible to minimize the risk. Measures that could minimize the risk should be studied and implemented as soon as possible. They also need monitored until other conservation activities are implemented to stop further deteriorations.

The management plan needs to identify objectives based on stakeholder participation and effective communication on the future conservation activities. The local people need the churches to survive; they feel a sense of ownership so it is important to involve the church officials, local community and local experts in the conservation projects. This will allow

transparency and accountability among the stakeholders. It would also be difficult for foreigners to understand the local culture; by involving locals knowledge could be shared between them making the process easier.

Pre conservation studies and investigations should be done before the planning stage which will help solve problems that had happened in the previous activities. Church officials and the locals should be consulted on every stage as they know the churches more than anyone else.

Planned methods and materials should be used in the implementation phases to save the heritages from further damage. The concerned bodies should monitor every aspects of the project to check for problems. The use of inappropriate, unplanned or unapproved materials in conservation work, For instance, in the Bête Gabriel-Rafael church, Fluid Xa was used when the plan indicated that Fluid Xb should be used, should not be repeated in future conservation projects.

Enough preparations should be done before conservation works are started and the required materials should be ready. For instance, cleaning materials to remove past conservation efforts and stainless steel to strengthen pillars, as specified in the plans, were not provided at all in the *Bete Golgotha –Selassie* restoration project.

The introduction of new, unplanned conservation methodologies without the approval of the scientific committee shouldn't be repeated as it is causing failures in the work and damages to the churches.

The project's team should attend the site of conservation work frequently in the life span of the project as specified in the work plans provided. And the scientific committee should be an independent body constituting conservation experts and members of the local community.

The project plan must feature a provision for accountability, for any damage done to the churches during conservation work. No one has ever been made accountable for the significant damage that has been done to the churches in past restoration projects. Provisions must be made to ensure that any damage caused is addressed.

The conservation works on the *Bete Golgotha* and *Selassie* churches should not continue until a full investigation is conducted, as it is showing problems of crack.

Finally, conservation efforts must urgently address the concerns regarding the thin roof joining the *Selassie* Chapel and the *Bete Mariam* courtyard, which Associate Professor Esayas G. Yohannes (Executive Director AAU-AAiT, V/President for AAU) specified as in “great danger of collapse” and a “disaster in waiting” in his report to ARCCCH (Ref A1714\_SAR). He also recommended that this issue “should be addressed before any intervention starts in the Golgotha-Mikael churches”, but nothing was done until now. *Bete Amanuel*, the roof of the *Selassie* Chapel and the *Bete Mariam* courtyard, and all other areas of the churches in need of emergency restoration work should be quickly addressed. Priorities should be given to the churches in danger.



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...drive unnecessary impacts on the beneficiary churches from the shelters  
...because of long years service and existence of the churches, the magnitude of demolition of church  
...are severe on house of Emanuel, house of St. George and house of savior of the world. But, past  
...restoration intervention did not consider the magnitude of the problem in each church to give priority  
...for the acute problems. For example, the upcoming restoration trial for the house of Golgotha by the  
...embassy of the United States of America in Ethiopia is not that much proper in prioritizing when we  
...consider the critical problems which are exist on house of Emanuel and house of St. George.

◆ The core and the Buffer area, which was taken away from the dwellers, are still vacant and never  
developed infrastructurally as the the heritage site needed. Rather, it becomes a waste dumping site  
for people nearer to the vacant area. We are still struggling to protect the area by giving education  
when there was preaching in the church as well as through hiring guards but still it is not sufficient as  
it should become clean and set as the heritage site part. The people who were evacuated and relocate  
from their professor area are disappointed and asked us for what they reside and relocate from  
their original place. So, it shall be developed infrastructurally to make it better and attractive for  
tourists as well as to give answer for the people who asked us.

◆ Most of the church treasury is in our small Museum but it is under the expected standard since we do  
not have any capacity to make it as the expected standard. So, to make it standardized and better, we  
need your relentless assistance more than previous time.

Therefore, as a nearest keeper of those wonderful heritage sites, we strongly and kindly asking  
your esteemed organization to remove those problem posing shelters, give timely and proper  
conservation intervention for the house of churches which are nearly on the verge of demolition  
before history accuse us and to make the vacant area to be developed as the heritage site needed.

CC:

◆ To world Monument Fund

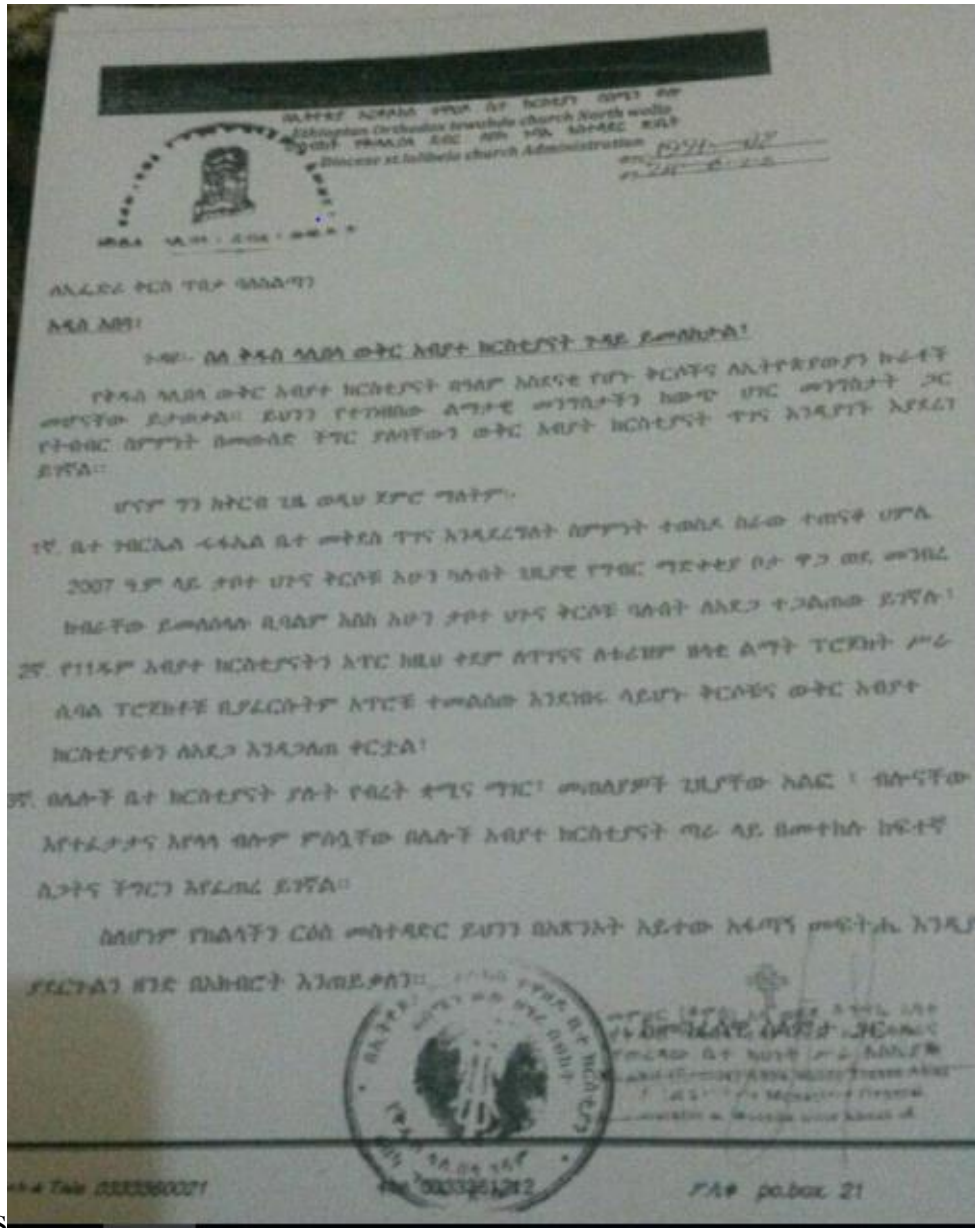
Washington DC, USA



May God bless the entire world!!

Dr. Ababa Yared M. M. M. M.  
Secretary General of the  
University of the District of Columbia

**Appendices-B: Letters from the Lalibela Church to Ethiopian**



Authorities













**Appendix C:** Draft letter prepared for the launch of the *Golgota-Selassie* (USA funded) project

Reference No: \_\_\_\_\_

Date: \_\_\_\_\_

To the Authority of Research for Culture and Heritage Conservation, Addis Ababa

**Subject: Request for transparency re: Lalibela Church Conservation**

Firstly, we would like to appreciate your great concern for the preservation and restoration of our world heritage site, the ancient rock churches of Lalibela, which constitute one of the holiest places in Ethiopia. We would like to thank all of the stakeholders in this conservation project, especially the people and government of the United States of America.

However, the St. Lalibela Church Administration and the surrounding community would like to express considerable concerns with the nature of the upcoming work on the Bête-Golgotha and Michael churches, especially given that conservation work on Bête Gabriel-Rafael did not follow best practice. We are therefore writing to request a written response to our concerns below and that we are fully informed of and given the opportunity to fully participate in the decision-making processes around the conservation of our churches. We hope that such a dialogue will allow all stakeholders to come to a common consensus and create trust between the project contractors and the local community and church, who are the custodians and owners of the site.

Our concerns are as followed:

6. We need an assurance from the Authority that all the problems which we encountered in the conservation work on the Bête Gabriel-Rafael church will not happen in the Bête-Golgotha and Michael churches. These problems include:

- The use of inappropriate, unplanned or unapproved materials in conservation work. Though we were not supplied with the full project plan, we were given weekly work plans that detailed which materials should have been used. For instance, in the Bête Gabriel-Rafael church, Fluid Xa was used when the plan indicated that Fluid Xb should be used.

- Conservation work started without having required materials. For instance, cleaning materials to remove past conservation efforts and stainless steel to strengthen pillars, as specified in the plans, were not provided at all.

- Introducing new, unplanned conservation methodologies without the approval of the scientific committee.

- The failure of the project's main consultant to attend the site of conservation work for the entire life span of the project. As specified in the work plans provided, the main consultant should have attended the site approximately 14 times. He only visited the site once.

- Lack of commitment from the scientific committee, who did not perform their stated duties to monitor work at the site and resolve issues between the local community and the contractor. The scientific committee did not meet or conduct its duties as specified in the scheduled plans, and attempts to deal with problems were only ever made at a distance and with little effort. Local members on the scientific committee were not given the opportunity to participate in the meetings. We also believe the scientific committee should be an independent body constituting conservation experts and members of the local community.

7. The full project plan of the conservation work on Bête Gabriel-Rafael was never provided to us. We need to have a copy of the full project document for the Bête-Golgotha and Michael churches in order to follow and monitor the project. Ideally, these should be provided in both Amharic and English.

8. We need to ensure that the local committee is given the chance to fully participate and provide input into the conservation process. All changes to the project should be made in sincere consultation with the local committee and church administration.

9. The project plan must feature a provision for accountability, should any damage be done to the churches during conservation work. No one has ever been made accountable for the significant damage that has been done to the churches in past restoration projects. Provisions must be made to ensure that any damage caused is addressed.

10. Finally, conservation efforts must urgently address the concerns regarding the thin roof joining the Selassie Chapel and the Mariam courtyard, which Associate Professor Esayas G.

Yohannes (Executive Director AAU-AAiT, V/President for AAU) specified as in “great danger of collapse” and a “disaster in waiting” in his report to ARCCH (Ref A1714\_SAR). He also recommended that this issue “should be addressed before any intervention starts in the Golgotha-Mikael churches”.

As you can see, we have considerable concerns for our churches. We kindly ask for your genuine response in written form and insist that no further conservation work continue until the local community and church is properly consulted. This is vital to ensure the project is successful and that we may preserve our holy, ancient churches for future generations.

Kind regards,

CC:

The Embassy of the United States of America in Ethiopia

The Minister of Tourism and Culture, Addis Ababa

The Amhara Regional State

The Office of Tourism, Culture and Parks, Bahir Dar

## **Appendices- D**

### **Questionnaire**

#### **ST. MARY'S UNIVERSITY**

#### **SCHOOL OF GRADUATE STUDIES, MA IN PROJECT MANAGEMNT**

#### **QUESTIONNAIRE TO BE FILLED BY THE CONSERNED STAKEHOLDERS**

**Dear respondent,**

I am doing my thesis entitled “**Challenges in the Conservation Projects of Rock-Hewn Churches: in the case of Lalibela, Ethiopia**” in partial fulfillment of the Requirements for the Degree of Master in Project Management at St. Mary’s University.

This survey questionnaire is prepared in an effort to collect data concern on **factors for the challenges of the conservation projects** in Lalibela churches. In this regard, the researcher seeks your honest and enthusiastic cooperation to fill this questionnaire. The information gathered will remain confidential and be used for the intended purpose only.

Please note that:

1. No need of writing your name.
2. Please indicate your answer by putting “√” mark.
3. Your cooperation to complete and return the questionnaire is highly appreciated.

Yordanos Gebregziabher

Contact address: Mobile: +251914163872

E-mail: [\*\*yordanosgebregziabherr@gmail.com\*\*](mailto:yordanosgebregziabherr@gmail.com)

Thank you in advance, for your cooperation!

**Part I: Personal Information**

1. Respondents position

- Community member
- Authority for Research and Conservation of Cultural Heritage experts
- Tourist guide
- the church’s servant

2. How were you involved in the conservation project? \_\_\_\_\_

3. Indicate your area of profession expertise:

- Engineering  Management
- Architecture  Technical supervisor
- Others (please specify) \_\_\_\_\_

**Part II: General Information**

4. Do you think the conservation project was challenging?

- Yes
- No
- I do not know

5. If your answer is ‘Yes’, indicate the intensity of the cause for the challenge.

	High	medium	low rare
Project Planning and Implementation/ Execution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitoring and Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Scope Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Time Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Quality Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resource Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Communication Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Stakeholder Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Risk Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



6. Among the above which one takes the major share of the challenges and why?

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7. Who is the most responsible side for challenges of the conservation projects?

Contractor  Society

Government

Authority for Research and Conservation of Cultural Heritage experts

Other (please specify)  \_\_\_\_\_

**Part III: Specific Information**

**Please indicate the significance of each factor for the challenges by ticking the appropriate boxes.**

5 = extremely significant; 4 = very significant; 3 = moderately significant; 2 = slightly significant; and 1 = Not significant at all

No		1	2	3	4	5
	<b>Project Planning and Implementation/ Execution related factors</b>					
8.	Project management plan					
9.	Perform integrated change control					
10.	Project execution					
11.	Monitor and control project work					
12.	Close project of phase					
13.	Design problems					

14.	Funding problems					
<b>Project Scope Management related factors</b>						
15.	Problem in collect requirements					
16.	Defining scope					
17.	Verifying scope					
18.	Controlling scope					
<b>Project Time Management related Factors</b>						
19.	Defining activities					
20.	Sequencing activities					
21.	Estimate activity duration					
22.	Controlling schedule					
<b>Project Quality Management related factors</b>						
23.	Planning quality					
24.	Performing quality assurance					
25.	Perform quality control					
<b>Resource Management related factors</b>						
26.	Developing human resource plan					
27.	Acquiring project team					
28.	Developing project team					
29.	Managing project team					
<b>Project Communication Management related factors</b>						
30.	Identifying stakeholders					
31.	Planning communications					
32.	Distributing information					
33.	Managing stakeholder's expectations					
34.	Reporting performance					

	<b>Project Risk Management related factors</b>					
35.	Planning risk management					
36.	Identifying risk					
37.	Performing qualitative risk analysis					
38.	Performing quantitative risk analysis					
39.	Planning risk response					
40.	Monitoring and controlling risk					

41. What are the effects of the challenges on the projects?

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42. Do you have any additional point to mention regarding the challenges of the conservation projects of the Lalibela churches?

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Thank you very much; your response is highly appreciated.

## **Appendix E**

### **Key informative interview guideline**

#### **ST. MARY'S UNIVERSITY**

#### **SCHOOL OF GRADUATE STUDIES, MA IN PROJECT MANAGEMENT**

##### **Key informative interview guideline**

Using semi structured interview guide interview will be held with purposely selected experts as key informant to collect in-depth information about the factors of challenges of Lalibela churches conservation project.

1. Among the factors to challenges, which one(s) you think is the major contributing factor and why?
2. Are project planning and implementation/ execution problems contributing factors to the project challenges?
3. Do you think the project was successfully in completing all the work required?
4. Do you think the project management team and government were fully responsible in the conservation projects?
5. Do you believe that there was timely managed completion of the projects?
6. Do you think that the project satisfied the needs for which it was undertaken?
7. Do you think the project quality contributed to the challenges in the conservation projects?
8. Do you think the resource management issues were a matter of concern to the projects challenges?
9. Do you believe that the concerned governmental body is well aware about the factors for the challenges? If so, why remedial action is not taken for a long period of time?
10. Do you believe that involving the society could have been advantageous to the projects?
11. Do you believe that taking risk measures could sustain the churches from further damage? If so, why isn't the government taking action before it is too late?