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Heritage management on the ground heritage conservation versus local community in Lalibela (Ethiopia)

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To cite this version:

Kidanemariam Ayalew. Heritage management on the ground heritage conservation versus local community in Lalibela (Ethiopia). History. 2016. dumas-01390038

HAL Id: dumas-01390038

https://dumas.ccsd.cnrs.fr/dumas-01390038v1

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UNIVERSITÉ PARIS I – PANTHÉON SORBONNE

Master Erasmus Mundus TPTI

(Techniques, Patrimoine, Territoires de l'Industrie: Histoire, Valorisation, Didactique)

Heritage Management on the Ground
Heritage Conservation versus Local Community in Lalibela (Ethiopia)?

KIDANEMARIAM AYALEW

Sous la direction de : **Guillaume Blanc**

Paris, août 2016

ACKNOWLEDGEMENTS

La réalisation de ce travail n'aurait pu être possible sans l'aide précieuse et bienveillante de mon directeur de mémoire, M. Guillaume Blanc. Je tiens ici à le remercier pour tous ses conseils et encouragements. J'ai eu beaucoup de chance de l'avoir à mes côtés ces derniers mois.

Ce mémoire marque la fin de mon parcours au sein du Master TPTI, coordonné par Mme Anne-Françoise Garçon. Je la remercie pour m'avoir donné l'opportunité d'avoir accès à une telle formation, ainsi que pour ses enseignements.

Je suis également très reconnaissant envers tous les enseignants et les secrétaires des Universités de Paris, Padoue, Evora et Alicante. En nous délivrant des enseignements de grande qualité et en facilitant nos séjours, ils nous ont permis de profiter pleinement de ces deux années de master.
J'adresse un remerciement tout particulier à Elisabeth (Padoue) pour ses cours d'histoire orale qui m'ont beaucoup aidé dans mon travail personnel.
Je remercie également Evelyne et Anne-Sophie, l'équipe du Master à Paris, pour tout le travail d'accompagnement et d'organisation dont nous avons bénéficié pendant ces deux années. Merci aussi pour leurs encouragements quotidiens pendant la préparation du mémoire !

Bien évidemment, je n'aurai pu suivre une telle formation sans la bourse qui m'a été attribué par le programme Erasmus Mundus, auquel je dois donc beaucoup. Je remercie LA Commission européenne pour la mise en œuvre de telles initiatives.

L'aide de Marie-Laure Derat m'a été très précieuse, bien au-delà de ce mémoire et des archives auxquelles elle et Claire Bosc-Tiessé m'ont permis d'avoir accès. J'ai beaucoup appris en travaillant à ses côtés à Lalibela. Elle m'a donné l'envie de reprendre mes études et de me lancer dans cette aventure du Master. Merci beaucoup !

Pour toute leur amitié et leur solidarité, merci beaucoup à mes copines TPTI : Nevena, Nevena, Anne, Indira, Dana, Suzanne !

Merci aussi à tous mes amis et à ma famille en Éthiopie et en France, pour leur soutien dans cette aventure.

Enfin, merci à Marie qui m'a encouragé et soutenu dans mes pérégrinations européennes, qui m'a poussé à donner le meilleur de moi-même et a cru en moi depuis le début.
Et surtout, merci à mon petit Alem, d'avoir été si cool et calme, comme son grand-père…

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PERSONAL PROJECT

Heritage management on the ground

Heritage conservation versus local community in Lalibela (Ethiopia)?

Abstract: Through the case study of Lalibela (Ethiopia) and with a long time perspective, this master thesis aims at questioning heritage management and the mismatches induced by the encounters of several scales of actors and powers. In the first chapter I trace how Lalibela's churches became internationally known. None of the early Lalibela's foreign discoverers intended to achieve a heritage study but they directly contributed to build up the internationalization of Lalibela. I also demonstrate that Lalibela occupies a very special place in Ethiopia, being a historical place of pilgrimage for ordinary Christians but also for numerous kings and governors. In the second chapter I mainly focus on the monuments. I argue about the techniques of restoration used on these monuments. Before the onslaught of modern conservation techniques, the community used to conserve the churches with their own masons and artisans' skills. These kinds of conservation practices are nowadays idealized in the elders' memories. The churches' structural fragility combined to their internationalization attracted several and international actors. Most of the times kept out of the recent conservation program, the local community systematically criticizes any intervention on the monuments. Here, the controversy seems to revolve around a lack of intermediate body between the heritage institutional actors and the local community. In the last chapter, I addressed the question of the modern management of the site. Lalibela has become a political and economic tool for the country, especially through tourism. This shift has pitted heritage valorization and local community against each other, as the *Ethiopian Sustainable Tourism Development Project* shows. The local community is endengandered by such programs, which often question the necessity of moving people far away from the churches. Not only conservation and valorization programs bring some kind of disregard towards local people's, but they also disseminate the perception that the very existence of the local people is a threat to their own heritage – the churches in the case of Lalibela.

Résumé : À travers l'étude de cas de Lalibela (Éthiopie) et dans une perspective historique, ce mémoire ambitionne de questionner la gestion du patrimoine culturel et les problèmes induits par divers jeux d'acteurs et de pouvoir. Dans le premier chapitre, je reviens sur les étapes de l'internationalisation des églises de Lalibela. Aucun des premiers visiteurs de Lalibela n'ambitionnait de produire une étude scientifique mais ils ont en revanche tous contribué à faire connaître Lalibela. Je montre aussi que Lalibela occupe une place très particulière en Éthiopie, à la fois en tant que haut-lieu de pèlerinage pour tous les Chrétiens mais aussi pour de nombreux rois et gouverneurs. Dans le deuxième chapitre, je me concentre principalement sur les monuments. Avant l'arrivée des techniques de conservation dites modernes, les populations locales restauraient les églises grâce aux compétences de leurs maçons et artisans. Ces pratiques sont aujourd'hui idéalisées dans les mémoires des anciens. La fragilité structurelle des églises combinée à leur internationalisation précoce a attiré de nombreux acteurs nationaux et internationaux du patrimoine. Généralement tenus à l'écart des récents programmes de conservation, la communauté locale critique systématiquement ces interventions sur les monuments. Le problème semble se nouer autour d'un manque d'acteurs intermédiaires entre les acteurs institutionnels du patrimoine et la communauté locale. Dans le dernier chapitre, je questionne la gestion contemporaine du site. Lalibela est devenue un outil politique et économique pour le pays, tout particulièrement à travers le tourisme. Valorisation patrimoniale et habitants sont désormais incompatibles, comme le montre l' *Ethiopian Sustainable Tourism Development Project*. Les habitants sont fragilisés par de tels programmes qui établissent la nécessité d'éloigner les populations des églises. Les programmes de conservation et de valorisation n'apportent pas seulement un certain mépris envers les populations locales, mais ils répandent aussi l'idée que l'existence même de ces populations est une menace pour leur propre patrimoine, les églises dans le cas de Lalibela.

INTRODUCTION

Lalibela inhabitants believe that their churches are alive. They keep strong daily as well as occasionally relations with them: they may pray every day in their courtyards; they must stay for days and nights during the main holidays for long celebrations inside the walls of these rock-hewn churches; they should cross themselves every time they pass in front of them.

Beyond of Lalibela's community, these churches are a major sacred place for all Ethiopian Orthodox Christians. Lalibela is considered as a main destination of pilgrimage and as a path from earth to heaven. Any Ethiopian Christian whose feet trace the land of Lalibela will be blessed and his seven coming generations so. The site remains very attractive in Christian Ethiopia nowadays. Local people believe that their ancestors have safeguarded the churches and their holy treasures since they were hewn during the 13th century around. Then, since 1920's international and national actors are involved in Lalibela's monuments conservation and valorization.

Fig. 0.1. The church of Bete Maryam (Lalibela) during Christmas' pilgrimage[1]

[1] All the pictures have been taken by Kidanemariam Ayalew and Marie Bridonneau, during common fieldworks from 2011 to 2015.

Through the case study of Lalibela (Ethiopia), this master thesis aims at questioning heritage management and the mismatches induced by the encounters of several scales of actors, powers and logics. This introductive section aims at introducing the general background of the study, then the research questions I address and the methodology I employ to answer it.

Heritage and Heritagization from Europe to Africa and Ethiopia

From Heritage to Heritagization

The history of modern heritage management goes back to the early 18th century. Its development was associated with the concern for safeguarding the past from further destruction. Such public interests gradually got the attention of central authorities that led to the establishment of national heritage protection offices and the drafting of legal frameworks. In the Netherlands for example, this started in the early first quarter of 19th century with the establishment of the National Museum of Antiquities, whose appointed director was later involved in the documentation and inventory of archaeological sites. This was followed by the emergence of regional organizations, which were actively involved in research, documentation, and preservation of archaeological sites. In the late 19th century, heritage policy appeared at national level in Netherlands (Willems, 2000).

Following Rodney Harrison, I here consider that heritage is "a collective agreement of an expert heritagization, […] since this is a question of 'who and what is involved in the process of 'making' heritage, and 'where' the production of heritage might be located within contemporary societies" (Harrison, 2013: 32). The notion of heritagization appeared in social sciences a few decades ago. At the same time multiple buildings have been transferred for reutilising by keeping the story of the past. For instance after the second industrial revolution, the destruction of many unused former industrial buildings was expansive and often the choice was made to protect them and to convert them into heritages. In most of the western countries, heritagization, heritage management and conservation works had been dealing, first, with the construction of national, regional and/or local memories, then, with the philosophy of sustainable development

The making of heritage in Africa

We can broadly examine the development of the African heritage over two timescales: the colonial and post-colonial periods. In the colonial context, the African cultural achievement was minimized, the heritage narrative of nations referring to external influences. The long-lived cultural achievement of the Ancient Egypt, for example, was long 'de-Africanized', as were the neighboring northeastern African lands of Nubia and highland Ethiopia (Reid, 2003). While these complex urban and literate cultures existed – and while a long history of Christian history and contact with Europe was found – this achievement was removed from the African historical context. Indeed, these African societies used more oral narratives. For instance, in southern Africa the magnificent stonewalls of Great Zimbabwe were explained away through reference to mechanisms of diffusionism or migrationism rather than indigenous origin (Pikirayi, 2001: 1-36; Fontein, 2006).

Within post-colonial Africa, and after the seismic political events of the 1960's onwards, newly independent African States (which were mostly artificial creations originated from the 1880s colonization (Davidson, 1992) adopted a different attitude regarding their heritage, which essentially could now be used as an anti-colonial tool. Archaeology in the museums and the field, and the teaching of African formal and informal history could now be used to emphasize new State heritage narratives (Schmidt 1995, 2009; McIntosh 2005; Lane 2011). In the newly-independent Zimbabwe of the early 1980's, for example, attempts by Peter Ucko, a British archaeologist, to establish museums based upon localism and heritage of individual ethnic groups – such as the Shona, Ndebele or Venda – fell of the national Government, which actually preferred to portray Zimbabwe as a historically unified ethnic entity (Ucko, 1994). The creation of a heritage had thus become an empowering tool in post independent African States.

Heritage in Ethiopia: a specific case in Africa?

This master thesis focuses upon Ethiopia: a multiethnic African nation, which defeated the Italian army in the 1890s and was occupied by Italy for only a relatively short time between 1936 and 1941. This nation – under the guise of Abyssinia, Aethiopia, or the realm of Prester John – had long exercised a hold on the Western imagination. Ethiopia possesses an historic social memory that traced its existence back to Biblical origins, and the union of King Solomon and the Queen of Sheba (Toggia, 2008). Ethiopia is an African nation; however, the Ethiopians do not think themselves as African for several reasons (Finneran, 2013). These reasons include Ethiopia's status as one of the oldest Christian States in the world, with an

indigenous writing system and Semitic official language, a long history of contacts with Asia and Europe, and crucially a brief yet brutal episode of European colonization. Ethiopians thus set themselves apart from their southern neighbors and connect more with their neighbors in northeastern Africa and western Asia (Finneran, 2013). Highland's Ethiopians, predominantly Orthodox Christians and speakers of Semitic languages, have also historically developed and formed the modern Ethiopia. As such, the dominant socio-cultural voice in Ethiopia is the one of the highland's Christian communities at the expense. This overwhelming cultural, social and economic domination of a highland, Christian, Semitic-centric people had also been reflected historically in the creation and the development of mythic pan-Ethiopian heritage products, reflected its partialities in historical and archaeological research (Brandt and Fattovich, 1990). We now turn to this issue.

Artifact of the northern heritage Christian roots, the rock-hewn churches of Lalibela have become the leading tourist and pilgrim destination in Ethiopia, but also a main fieldwork for international researchers. However the making of Ethiopia's heritage has far deeper roots than medieval rock-cut churches of Lalibela. As far back in history as archaeology can go, Ethiopia has some of the earliest stone tools found in the world. Slightly older, the skeleton of 'Ardi' (Ardipithecus Ramidus) lauded as the earliest hominid has also been found in Ethiopia in 2009 by the American archaeologist Tim White. Moving later into the last centuries BC, we have evidence from the Ethiopian highlands of some of the earliest towns in Africa. Later still, at the beginning of the first millennium, was the flowering of the Aksumite polity, an international trading Empire, and Christian since the 4th century AC. Aksum too is linked with the ancient Ethiopian story of King Solomon and the Queen of Sheba, whose son Dawit allegedly brought the Ark of the Covenant to Ethiopia in the distant past, thus making Ethiopia a promised land in the eyes of God according to religious beliefs. All of these threads, some mythical, others being revealed by archaeological researches, have come together to form a rich and compelling heritage making process. I now propose to examine individually some facets of this heritage making process, and to focus explicitly on how it helped to define identity at the greater State level, and more recently, at a more localized level.

Making heritage: What for? Who for?

Heritage-making process is never pursued simply for the sake of preserving and safeguarding. Over their lifetime people keep their heritage and pass it to the next generation to transfer its members of a memory, a history, a belief and so on. Many actors of different persuasions are needed to pull off a successful heritage nomination, and those with a "pure" interest in protecting a rare archeological site, landscape or a unique cultural testimony will invariably mingle with actors pursuing goals for which heritage holds strategic potential. Heritage nominations can be mobilized for several purposes, such as economic development or nation-building process. States may use heritage listings to enforce plans for urban renewal and touristic "clean-up" (by removing inhabitants from their homes and land), acting for some kind of "image buildings". In Lalibela hundreds of householders were forced to leave their house in order to reinforce the touristic attraction of the site (Bridonneau, 2014). In the Ethiopian Semien Mountains National Park, another world heritage site in Ethiopia, farmers were forced to quit their villages in order to save a so-called wild nature (Blanc, 2015). Development incentives play a role in the international actors co-operations, though here the donors institutions hope to build cultural and political capital as well as economic influence is not to be underestimated. Economic development is a heritagization incentive for many actors also striving to mitigate poverty from the nations, especially in depopulated areas and sites unable to attract another economical dynamics. The heritage card holds a promise that might bring tourism even if, in the reality, actors evolving into the heritage site are often dominated by the local politics, and can hardly enter the tourism game.

On the ground, the society that produced and has been preserving this heritage continues to change over the course of time. In the other hand, while every international, national and regional institution are seeking to conserve *one* heritage, this entanglement of scales of actions and decisions might lead to undermine for the local inhabitants the meaning and the potential of *their* own heritage. Yet, heritage remains particularly valuable and its conservation strongly needed. The international NGO's and organizations' intervention on the cultural heritage – in particular through sustainable development programs and restoration – has made a controversy among the community.

Uses of heritage: from scale to scale

This assertion is especially valid in Ethiopia. On an international scale, not only heritage and its promotion by institutions such as Unesco, Icomos (International Council on Monuments and Sites), European Union or World Bank can strengthen transnational cooperation; they can also drive several funding agencies to implement other kind of development projects. Here the recognition of African cultural heritage is just as crucial. Today, while 80% of "Cultural World Heritage" sites ranked by the World Heritage Center are located in Western countries, 75% of the "Natural" ones are located in Africa. Reproducing a pattern according to which African countries such as Ethiopia are more a place of wild nature than a place of men's creations (Holdgate, 1999), such a casting inherited from an elapsed time must be overwhelmed. On a national scale, heritage conservation might be even more important. While Ethiopia is a Federal Republic since 1995, the distribution of power between all the 11 State-Regions remains to be fulfilled. The involvement of regional stakeholders in national and international networks can be an effective way to enhance the decentralization process. Finally, on a local scale, heritage conservation raises several social, economical and cultural stakes. It allows individuals to fall within the time and the territory of their community, it offers this whole community a powerful touristic tool for economic development and, last but not least, through the globalization of values that is reshaping countries such as Ethiopia, heritage can provide people a strong way of conserving their identity as a cultural group.

Heritage from the ground

It is a misconception to believe that there was no system of heritage management and conservation in pre-colonial Africa and parts of Asia (Joffroy 2005; Wijesuriya, 2003). When the Western ways of management were first instituted, both regions were replete with heritage sites and landscapes, and most of which were in a sound state of preservation and management already. In some parts elders, priests or other custodians were looking after important heritage resources such as sacred groves, temples, and churches. Such a system not only protected cultural heritage, it also resulted in the conservation of the natural environment and a balance between nature and culture. In fact, there was a deep sense of community ownership as different sections of communities took part in conserving different sections of the heritage, be it royal palace walls or revered shrines (Wijesuriya, 2005). Without ingenuously stating that pre-colonial period were a time of harmony, this pre-colonial history leads us to consider heritage as a notion possibly coming from the ground. Before knowing

the policy of heritagization, before seeing tourists coming to the site as a "flood," before hearing about heritage politics and "global heritage," communities have been building their own structures to perceive and conceive *their* heritage.

Then an effective integrated conservation project lays at least on two criteria. First, heritage managers need to be well aware of the society they are about to interact with. If they ignore the social mechanisms that make a society a society, and tangible and intangible objects the core of a heritage, how can they conserve it in a way that will benefit to the community? Then, we must emphasize the need of the scientific and practical formation, especially when we are dealing with a place where stand "World Heritage" objects. Knowing its own society can't be enough. Without the knowledge and the know-how of heritage, conservation projects might fail. These issues are at the very core of this master thesis.

Questions of research

The main motivation to choose Lalibela as a case of study is the intervention of a huge number of international as well as national actors and organizations since the end of the 19th century. Most of them have been involved in the conservation and/or the valorization of the rock-hewn churches. All heritage works in Lalibela have had pass through many difficulties and controversies. On the one hand the conservation works and the management of the heritage have been planned by international organizations (such as World Monuments Fund (WMF), then UNESCO or even European Union) according to global criteria; on the other hand the responsible Ethiopian bureaus (local, regional and national) have built some knowledge about the heritage sites (partially) apart from the international stakeholders methods and methodologies. Above all, some knowledge and competences of conservation grounded in local practices have existed since the churches have existed locally in Lalibela. And many works implemented on the rock-hewn churches or related to local cultural development failed because of mismatches between the different actors and stakeholders involved in churches conservation and restoration.

These mismatches raise the need to assess and question the different conservation works implemented in Lalibela through a long time perspective (from the 19th century to the present time). Who was involved on this site? Who benefited from the different missions that had been led there? Who was investing on what? What kinds of impact the conservation works

had brought to the town of Lalibela? Why did these heritage development programs create controversy among the local inhabitants?

Beyond these issues, I a am trying to assess a more specific interrogation: why the international and national stakeholders have (almost) never taken into consideration the local and grounded knowledge, skills and cares? What kind of political games and power relationships need to be understand to explain this permanent feature in conservation works in Lalibela? Through the heritage conservation issues and the Lalibela case I would like to offer a thought about the ongoing gap between the ordinary people interests and (inter)national actor's heritage and development policies.

Methodology

To lead this research work, I have used several methodological approaches through different times. Thanks to a fieldwork that I carried out in July-August 2015 in Lalibela, I was able to lead semi-directive interviews and to collect different documents of grey literature (projects proposals, reports, etc.).

For interviews firstly, I selected some individuals, from local associations and local offices representatives, to priests and ordinary inhabitants who keep strong attachments and relations with the churches. I especially conducted interviews with the head of the Lalibela church administration; the representatives of the local funeral associations (called *eder*); the representatives of governmental organizations and structures (Youth Association, Women Association…); but also with some churches servants, civil servants, hotel owners, tourist guides, etc. I intended here to meet the different local stakeholders involved in heritage conservation and valorization projects. For instance, youth and women associations representatives are often consulted by international actors before implementing any development project – including heritage project. For the same reason I met the church administration head and some workers from the Lalibela Culture and Tourism Office. These two local actors are the main intermediaries between the local community and heritage actors for any conservation, valorization or research projects related to the churches in Lalibela. I have also collected numerous local narratives from ordinary people. There, my point was to collect perceptions rather than "true" informations. By using local narratives, I am perfectly aware that they can be a reification of the past.

Secondly, regarding to the grey literature and archives I managed to gather a lot of unpublished documents produced by international (UNESCO, WMF, World Bank, FCES (French Center for Ethiopian Studies), EU for instance), national (ARCCH), regional (Amhara National Regional State[2]), and local (Lalibela town administration, etc.) actors.

If conservation works in Lalibela have a long history, it is after the end of the Derg regime[3] in 1991 that more and more actors started to be highly involved in the conservation and the valorization of Lalibela's cultural heritage. Consequently a huge number of researches have been conducted, and numerous written reports have been produced. It striked me that in a country like Ethiopia that attracts nowadays a lot of international donors and NGOs, heritage interventions were numerous and growing, especially in Lalibela. I was eager to analyze the meanings and intentions of international actors while intervening on the conservation of rock-hewn churches of Lalibela. Moreover I intended to use these documents to figure out the relations between these international actors and the complex system of Ethiopian actors in a context of federalism and authoritarism. Last but not least I had a specific, long and diverse experience of Lalibela, Lalibela's churches and heritage. As I was born and grew up in Lalibela, I first used to play as a kid in the churches trenches and courtyards. Then I myself witnessed the transformation of the village into a town. While I experienced the fast spatial changes and the rapid population growth, I also observed the strong hierarchy systems structuring the local community, the power of the clergy over both the individuals and the local society. I also have a professional background in Lalibela's heritage management, as a local expert in the Lalibela Culture and Tourism office under the authority of the Amhara National Regional State. At that time it was a newly structured office. After the 2005 elections, the government indeed decided to joint culture and tourism and to cut off culture from sport. From 2006 to 2012, I have been working on different places of duty, from an expert in cultural development to the position of director of the new cultural center that I contributed to open in Lalibela. Through time I faced and studied the problems and opportunities related to the different actors interventions on the conservation, valorization of cultural heritage and to the implementation of sustainable culture and tourism policies. In order to assess the gap between the international action and the local community I should call up this life experience and carrier.

[2] The Amhara National Regional State is one of the 11 State-Regions of Ethiopia since the implementation of the ethnic-federalism in 1995).

[3] The Derg was a socialist military regime ruling Ethiopia from 1975 to 1991.

To answer my research question I will deal firstly with the internationalization through heritagization of Lalibela. Then, in a second chapter I will try to analyze the different churches conservation programs. Last but not least, my chapter 3 will assess the effects of heritage valorizations projects on the local community, through a specific case study.

CHAPTER 1
HERITAGIZATION OF THE MONUMENTS, INTERNATIONALIZATION OF THE PLACE

This first chapter attends to shed light on the historical background of Lalibela through the study of some major texts that have contributed, first to the internationalization of Lalibela monuments, then to their heritagization. I will pay particular intention to the intervention of national and international actors who have been working for the valorization of the cultural heritage and have contributed to the transformation of the village into a touristic place.

1. Lalibela as a historical "haut-lieu"

አይኔ አለምአየእግሬ ደርሷ የድንጋይ ውጋግራየድንጋይ ምሶሶ

I saw the new world with my naked eyes
The house of God built up from one rock

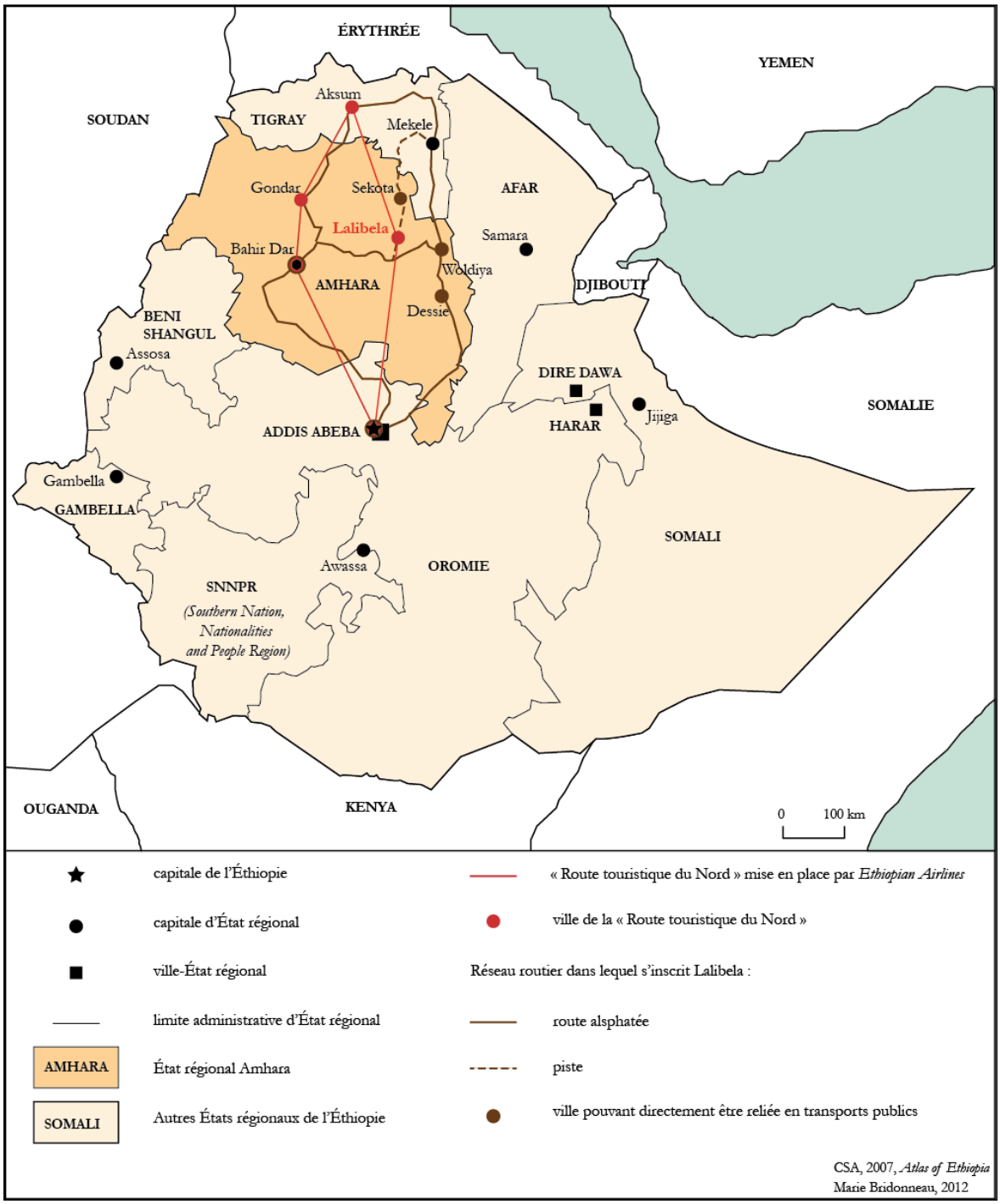
Short poem sung by the pilgrims coming to Lalibela

Lalibela is located in the current Amhara National Regional State, in the North-Wolo Zone, 700km north from the capital city of Ethiopia, Addis Ababa (fig 1.1). The history of Lalibela is steeped in the Ethiopian Orthodox Christian tradition[4] and its unique ecclesiastical architecture. Lalibela has seen much change throughout its history, particularly from the reign of King Lalibela in the early 13th century. Local tradition maintains that the town of Lalibela, first known as the city of Roha, was founded during the 6th century AD as a part of the expansion of the Christian Aksumite Empire by King Kaleb. The southern expedition

[4] I should notice here that while "tradition" can be seen as a cultural and political reinterpretation of the past (Hobsbawm, Ranger, 2006 [1983]), I here choose to accept it as the perpetuation of some practices and cultural perceptions.

undertaken by the Aksumite emperor would have led to the construction of a church in the ancient Roha, on a mountainous site known as “Kedemt”. The church was named “Kedemt Mikael” and was said to have been constructed in imitation with the architectural form of Aksum Tsion Church, which was later demolished, in 1535, by the Muslim troops of Ahmed lbin Ibrahim, locally known as the “Gragn.” Subsequently, the church of Kedemt Mikael would have become the basis for the establishment of the town of Lalibela (Mengistu, 2004).

Fig. 1.1. Location of Lalibela in Ethiopia



The next important step for the development of the town of Lalibela was the construction of the rock-hewn churches. As mentioned above, the creation and subsequent development of this important ecclesiastical center and pilgrimage destination is traditionally attributed to the King Lalibela, a king of the Zagwe dynasty (1137-1270). The province of Lasta was the homeland of the Zagwe dynasty with its political capital in Adafa and its religious center in Roha/Lalibela. It is believed that King Lalibela established his capital at Roha and transformed it into the symbolic 9 strongholds of his theocratic dynasty. However, at the end of the 13th century, shortly after the death of King Lalibela, whose reign was followed by the restoration of the "Solomonic Dynasty", the royal town appears to have ceased to be the political capital of Ethiopia. As a result of Lalibela's death, power passed from the Lasta-based Zagwe dynasty to the emerging Showa-based kingship, and the royal town of Lalibela became both an inward looking ecclesiastical and monastic center and a place of pilgrimage.

The absence of sufficient sources of information presents a significant problem in understanding the historical development of the town following the death of King Lalibela, when Roha/Lalibela was separated from royal affairs and became entirely devoted to religious activity. Indeed, Lalibela became a place of pilgrimage for Ethiopian Christians. Moreover, over the course of time, many of the trenches surrounding the rock-hewn churches filled up with soil and it is possible that much of the heritage resource has been lost and forgotten. The oral history holders, i.e. the elders of Lalibela, tell us that the people often have had to abandon the site in the past because of natural disasters like drought, social conflicts, wars, etc. While it happened, before leaving the place and in order to protect their churches, the local people used to cover all the monuments with debris (interview, Lalibela, 2015). However, these repeated abandonments of the churches and the restricted access due to filled trenches could have led to the preservation of rich moveable ecclesiastical items.

Lalibela has gone through major transformations over the 900 years of its existence. Historical evidences show that Lalibela was founded as a political and religious center. Today, Lalibela and its environs are characterized by impressive features, partly due to the natural curve of the landscape and the natural setting of the town, but primarily due to the eleven rock-hewn, monolithic, semi-monolithic and hypogeal churches. Currently, the town of Lalibela is a major pilgrimage site and a touristic attraction. It is also an urban center that is expanding at a significant rate (Bridonneau, 2013). Moreover, since 1978, the designation by Unesco of the rock-hewn churches of Lalibela as a World Heritage site has attracted a large number of international visitors. This is more pronounced during the Christmas and Epiphany

festivals, which respectively celebrate the birth and the baptism of Jesus Christ in the Ethiopian Orthodox Christian tradition. The increased number of visitors and the development potential that goes with it led to a substantial growth of the urban population, which adversely impacts the site and creates numerous conservation challenges. From the 1950's multiple international actors have intervened in Lalibela for heritage conservation or tourism development, encouraged by the government of Ethiopia, and especially by the emperor Haile Selassie and its will to create a national historical "route" in order to promote tourism. Nevertheless, the international publication of the site traces back to the early 16th century. I will now deal with the early internationalization of the monuments of Lalibela.

2. First foreigners in Lalibela: the roots of the international renown of the monuments (16th – 19th centuries)

"So great is my desire to make known this splendor to the world"

Francisco Alvarez, 1540, p 123.

Almost every Ethiopian Christians know and acclaim the name of Lalibela. It is the main sacred place in Ethiopia. Pilgrimage to Lalibela is quite mandatory once in a lifetime for those who are able to. Nowadays Lalibela has become a pride for Ethiopians and a symbol for the nation used as a benchmark by the different regimes throughout the 20th and 21st centuries. The 900 years old churches and the town of Lalibela have passed through several changes and under many difficulties, threats and opportunities. Comparing to the other small Ethiopian rural towns, Lalibela has now a very rapid growth. Since the 2000's the site has attracted more and more tourists and several tourism and heritage development programs are implemented in the town.

2.1. Descriptions from Francisco Alvarez (16th century): the early internationalization of Lalibela

We can find the roots of the international renown of the Lalibela's churches in the description written by Francisco Alvarez in his *Verda dera inform acam des terras do preste*

joam[5] in the 1520's. This chaplain of king Manual the 1st of Portugal was part of an embassy sent to Ethiopian in 1515, in response to another one sent to Portugal earlier by the Queen of Ethiopia Helena. The mythical Priest John, who the crusaders had heard reigned over the Christians beyond the Muslim countries, was identified as the king of Ethiopia at the beginning of the 14th century. The Portuguese attempted to make contact with him, hoping to establish an alliance against the Muslims. The embassy has stayed in Ethiopia for six years from 1520 to 1526, which has given to Alvarez an opportunity to gather a considerable knowledge of the country (Mercier and Lepage, 2012). Moreover, historians repeatedly quoted Francisco Alvarez as the first foreign observer to have recorded his descriptions of the churches of Lalibela. His writings illustrate the strong impression of early visitors: "I am weary of writing more about these buildings, because it seems to me that I shall not be believed if I write more, and because regarding what I have already written they may blame me for untruth, therefore, I swear by God, in whose power I am, that all that is written is the truth, and there is much more than what I have written, and I have left it that they may not tax me with its being falsehood*"* (cited in Pankhurst, 2001, p. 49). These descriptions had a tremendous contribution to the internationalization process of Lalibela. Nowadays magazines, journals, guidebooks, and so on, as well as historical research works keep quoting Alvarez while writing about Lalibela. Even if his description does not provide a very clear and precise image of Lalibela, Alvarez offered a picture of the monuments of Lalibela to the rest of the world. Alvarez indeed made several mistakes and omissions regarding the names of the churches but as the first western discoverer and writer to announce the site for the world, his contribution is valuable.

2.2. A "visit" of Lalibela during the conquest of Abyssinia by Ahmed "Gragn"

In the chronicle *Futu Al-Abasha*[6], Arab-Faqih wrote that Ahmad Ibn Ibrahim al-Ghazi "Gragn"[7] and his Muslim army had passed by Lalibela on their way to Tigray, i.e to the

[5]"True information of the land of Priest John"
[6]"The conquest of Abyssinia".
[7] Ahmad Ibn Ibrahim al-Ghazi (1506-1543) was an Imam and General of Adal who defeated Emperor Lebna Dengel of Ethiopia. Nicknamed Gurey in Somali and Gragn in Amharic, both meaning "the left-handed," he embarked on a conquest, which brought three-quarters of Ethiopia under the power of the Muslim Kingdom of Adal during the Ethiopian-Adal war from 1529 to 1543. He was known as Sahib al-Fath (the conqueror) among his Muslim subjects, and widely as Imam Ahmad. He used Ottoman Empire military tactics to train his soldiers. Imam Ahmad's success in Ethiopia led to an early European intervention in Africa when the Ethiopian Emperor asked the assistance of the Portuguese to repel the Muslim army. He is remembered by Somalis, Harriers, and Ethiopian Muslims

Northern part of Ethiopia, in 1533. Indeed, during the campaign, Imam Ahmed has heard that Christians had assembled near some churches called "Lalibela." Then, according to his chronicler, he marched to them through the mountains, using a very difficult road during continued rains. Some of the soldiers died of cold. They reached the churches where the monks gathered to die on the defense together. The Imam examined the churches and found that he had never seen this kind of monuments. It was cut off from rock, as were the columns that supported the buildings. There was not a single piece of wood in all the constructions. There was also a cistern hewn from the rock. The Imam called the Christians together and ordered them to collect and bring wood. They lighted a fire, and when the fire was hot, Ahmed said to them "now let one of you and one of us enter" wishing to see what they would do and test them. Then their chief said, "willingly I will go in" but a woman who had adopted the religious life arose and said, "He was the one to expand to us the gospel, shall he dies here before my eyes?" and threw herself into the fire. The Imam screamed, "Take her out". His men took her out, but a part of her face was burned. Then the chronicler said that Imam burned their shrines, broke their stone idols and took all the gold plates and silk textures he found. Raffray (see below), who gave an account of his visit in Lalibela in 1882, was astonished to find the churches so intact because when Christian Abyssinia had to succumb under the Muslim invasion from 1527 to the 1540's, the sultan Ahmed Gragn, to cancel every trace of Christianity, had buried all these churches. It was only when Muslims were driven out that it was possible to dig the churches up and to restore them to pray (Angelini, 1970). The local oral history transmitted through inhabitants, from generation to generation, also said that the churches had been hidden several times to protect them from different kinds of damages and invasions (Anfray *et al.*; 1995). Let us remind here that the "visit" of Ahmed Gragn in Lalibela has contributed to the renown of the churches, especially through the *Futu Al-Abasha*.

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as a hero, and by Ethiopians Christians as a ferocious and unwelcome conqueror. Whether someone is a hero or a villain depends on who tells the story, or on who writes the history. His empire ended with his own death. Initially, it is thought that the Imam attacked Ethiopia in retaliation for an attack on his own Sultanate, and then continued to subjugate Ethiopia. His motive appears to have been religious, since he called for a jihad against Ethiopia, which can be regarded as a defensive war, or as a call to extend the borders of the Islamic world. Al-Ghazi is used as a title by Muslim soldiers who help to spread the faith of Islam. The Imam military force had controlled the most part of the Ethiopian Christian highlands. His chronicler was following and wrote about several places subjected during the war (Venosa, 2007).

2.3. European visitors during the 19th century

No other foreigner is known for having visited Lalibela for some 320 years after the Portuguese expedition and the "conquest of Abyssinia" by Ahmad Gragn. Lalibela was forgotten by the western world. Starting from the late 19th century, many Europeans started to write about this site. These works have had a significant contribution to the internationalization of the rock-hewn churches of Lalibela. Whether most of the writers spent a very short period of time on the sites and lacked historical background, some spent a great time on the site and analyzed both the natural situation and the historical background of the churches and the province.

From those people who traced their historical footprint on the site we can quote, first, Achille Raffray, who was attached to the French council of Massawa[8] (Buxton, 1947). Achille Raffray, accompanied by Gabriel Simone, a cavalry officer, penetrated mountains of Lasta. Both left records of the red city in books published in 1882 and 1885. During his first visit, Raffray made measured drawings. Even if Raffray and Gabriel Simone came together and for the same mission, their published records differed much from one to another. Raffray examined manuscripts there. According to him, one page written in three languages contained a text of Sidi-Maskal, who seems to have been the architect or the foreman of the builders. The text of this page is a deed of gift by King Lalibela to the monks and clergies who were to be attached to the churches, with sufficient land to maintain them. Raffray's drawings had a very illusive contribution to understand the local community conservation works like on Bete Aba Liabanos. Raffray's memory and interpretation of the three-languages page preserved in Medhane Alem church were incorrect, according to Monti Della Corte (1940), a further European expert visitor of Lalibela[9]. The German explorer Gerhard Rohlfs followed them. After the war of "Meqedla" between Tewodros the Second and the British troops in the early 1860's, Gerhard Rohlfs arrived at Lalibela in early May 1868, after having accompanied the Napier expedition. He intended to go from Mekdela to Gondar but by mistake, he happened to

[8] Massawa is nowadays the main port of Eritrea, on the Red sea.

[9] Monti Della Corte used the assistance of an expert named A. Van Lantschoot in the Biblioteca Vaticana who concluded that:

- Text one, in Coptic (and not in Greek as Raffray said), is a short statement written by Abuna Bartolomeo who visited Lalibela during the reign of Dawit 1380-1409;
- Text two, in Arabic, is longer and is a charter confirming certain rights of the church;
- Text three, in Ge'ez, is written at least a century later and mentions the reign of Lebna Dengel 1508-1540.

There is nothing of what Raffray narrated about Sidi-Maskal and church builders from Egypt (Monti della Corte, 1940).

come to Lalibela. There he brought the news of the death of Emperor Tewodros II. In his book he briefly described the churches and the condition in which they were found and the invaluable objects they sheltered (Rohlfs 1869, in Phillippson 2009: 201).

After Rohlfs, it appears that there were no more western caravans till the French minister at Addis Ababa, Monsieur de Coppet, and his wife, passed through Lalibela on their way to Asmara (Eritrea) in 1923. They were followed by an American, Mr. Harlen, and later by M. Junes, those were caravans. On the 8th of March 1925, a young British traveler Rosita Forbes McGrath arrived by caravan at Lalibela with a photographer named Jones. They left Lalibela after 24 hours, having seen only four or five of the churches. Most of McGrath's printed descriptions are based on earlier writers but also contain mistakes of her own. She gave an analysis by comparing the old documents of Raffray and her own observations (McGrath, 1925).

Most of the visitors have written about the sites and they all contribute to the international renown of the place, by introducing the rock churches to the external world. The drawings and texts made by these explorers and published in the western world opened the eyes of researchers.

3. Internationalization during the 20th century: an intensification of the foreign presence in Lalibela

3.1. Lalibela as a place to welcome international missionaries

Whether few missionaries have visited and settled in Lalibela during the 20th century, they had a direct impact on the place. During the 1930's, the governor of Lasta, named Ras Kassa and based in Addis Ababa, gave the permission for the protestant and missionary organization "Serving in Mission" (S.I.M) to open a hospital in Lalibela. The S.I.M station was established in 1934, and before the Italian attack it had a staff of four people in the hospital, and the opening of a primary school was planned. The American missionary Mrs Oglesby who took part in opening the hospital was killed while travelling in Sudanese territory during an Italian air force attack on Kurmuk (Baudendistel, 2006). Dr. Lambie, from the S.I.M. administration, visited Lalibela in the early 1930's: "At long last we reached Lalibela, our destination. […] It was a delightful country, with charming people. Our presence at Lalibela was resented by the Ethiopian orthodox priests, who reside in great numbers there,

but in later years much of their misunderstanding of us was removed by the patient, loving work of our missionaries, especially the dear Oglesbys, Nystroms, and Mr. Luckman, and Miss Blair" (Lambie, 1939). Nowadays, the place where the mission was established is still named “American village” by the inhabitants.

Before the Italian occupation, the Swedish missionary Anna-Lena Jönsson was the first of her country to visit Lalibela. She made a long caravan trip in mid-1934 and arrived at Lalibela after a wide loop to the eastern and northern Ethiopia. She had observed a number of pilgrimage groups on the road to the “Ethiopian Jerusalem”. She narrated that the head priest, named Memhir Heruy, lived in a round two-storeys stone house of the local type, the traditional house of Lasta at that time. She described the "reception hall" upstairs as beautiful. The priest gave her “short and concise orders about camping” and received the female foreign visitor “in a friendly way” (Röstin, 1936). Memhir Heruy had recently come back from a visit to Addis Ababa, so he offered biscuits from the capital with the coffee. In the meantime there was a short court hearing during which a young man, who had been kept captive for three days, was ordered to take care of his aunt who was a leper (and both were offered *tej* – honey liquor – after having received the sentence). Anna-Lena noticed that recent repairs in Bet Maryam were not very good restoration and that the work to re-erect fallen pillars on the outside of Medhane Alem had been left unfinished, with reinforcement bars jutting upwards. It would not have been allowed for a woman to see the man-sized holy relief sculptures inside Mikael-Golgota, but the Memhir told Anna-Lena exactly where they were and then "had a little errand to do" while Anna-Lena sneaked inside and saw them. The Memhir read to Anna-Lena from a large Ge'ez manuscript on the history of King Lalibela, but Anna-Lena had with her the book written by Blattengeta Heruy and printed in Amharic. Memhir Heruy had never seen that book, so the differences were discussed. The visitor found that practically no coins were used for trade in Lalibela, mainly as weights only. Many nuns carried small scales with which they could weigh goods exchanged against each other. The nuns were happy to acquire incense from Anna-Lena, but she on her side was happy to leave Lalibela which to her seemed to "smell disease" everywhere (Röstin, 1936, p. 190-216). At that time, there was no provinces governor who lived in Lalibela. When the travelers arrived on the site, the church community welcomed them.

Even if they faced a language barrier to communicate with the local community, the missionaries were the first to try to understand the community life and to narrate about it in their publications.

3.2. Lalibela churches under the Italian occupation: a forced opening to the world

In April-May 1939, during the Italian occupation, following Raffray discovering and attempt to analyze the site, an Italian archaeological expedition to Lasta was led by Prof. A.A. Montidella Corte, assisted by his student Lino Bianchi Barriviera who published engravings several times afterwards (Monti Della Corte, 1940). They gave the first rigorous and full description of the churches. During the Italian occupation of Ethiopia, L. Bianchi Barriviera who was a painter and an engraver, spent several months studying and drawing plans of the Lalibelas's churches and of their surroundings. The occupation helped the researchers to enter to holiest part of "Selassie", the trinity chapel, and to discover the cell of Jesus. Indeed, due to the occupation, the clergy was not able to prevent Italians from entering into the holiest parts of the churches, usually closed to the public. The rules regulating the uses of the churches were wrecked. Inside the Mariam Church also, there is a holly pillar, which is respected as "tabot ze door[10]". This pillar has always to be covered with a shawl called "shema" but was taken off by the Italian archaeologist. However, these intense works were important to understand the complex monuments. In 1939, Monti Della Corte had prepared the first complete study for the Lalibela's churches. His work had given a new development for the systematic description of the churches, their overall conditions at the time of their discovery. Bianchi Barriviera's drawings have been very useful too (Buxton, 1947).

Regarding the practices of the believers and according to the local narration, the pilgrimage trips to Lalibela were not interrupted during the occupation period. However, the Italians tried to keep lepers away from the pilgrims. This fact has strongly remained in the local memories since, according to the community beliefs, whoever comes to the doors of Lalibela's churches, would be blessed and healed by the will of God and the mercy of Saint Lalibela, without any discrimination or stigmatization.

The Italian occupation of Ethiopia provides some huge archaeological works that have become a base for works done aftermath. But in the community memories this period reminds as a time of big frustration and fear of the armies. According to the local memories, these works were done without respecting any of the churches norms and rules.

[10] "The holy name of Mary".

4.3. Lalibela under the eye of numerous foreign experts

Since the middle of the 20th century, many international researchers have come to Lalibela to study the site, such as Findlay (1944) and Buxton (1947; 1971). We can also quote Irmgard Bidder[11], who was able to carry out her research into the Lalibela monoliths with the support and encouragement of the highest government authorities (1958); or Gerster (1968) who studied and made the plans and sketches of the churches of Lalibela, and other rock churches in the province. According to Phillipson (2009), the works of Irmgard Bidder, which had included some restoration works at Bete Amanuel and Bete Medhane Alem, are particularly important. Moreover, famous illustrated books edited by Irmgard Bidder (1958) or Georg Gerster (1968) have familiarized the churches of Lalibela to the outside world. Apart from his description, Buxton (1971) also tried to study and investigate about the origins of the architecture of the Lalibela churches and noted some foreign influence from countries like South Arabia, Syria and Egypt (Abebe, 2010).

All of these written documents had contributing to the international renown of Lalibela even if most of them contain mistakes regarding to both the site and the life of the community. Most of the early visitors of Lalibela were passing through Lalibela on their way to Asmara with a caravan, and only some of them were going to the site in order to see the place they read about. The literature produced by all these early "discoverers," "visitors" and "researchers" represented a first step towards the valorization of Lalibela's heritage undertaken by the successive Ethiopian governments.

4. International valorization of Lalibela through international and national actions

4.1. An early special care of Ethiopian kings and governors for Lalibela (18th – early 20th)

Not only the ordinary Orthodox Christians but also the royal family has undertaken pilgrimage trips to Lalibela during the 18th and 19th centuries. Moreover, the conservation and the protection of the site were undergone and controlled by the governors in charge of administrating the place. For example, Emperor Tekle Giyorgis (1779-1795), after having been seized and imprisoned for three years, went to Lalibela when he was freed around 1792.

[11] Bidder was the German Ambassador's wife in Addis Ababa.

Another great example is the secret trip to Lalibela undertaken by the Emperor Menelik the Second (1889-1913). Menelik went to Lalibela in order to ask the mercy of God when a dramatic epidemic stroke the northern part of Ethiopia. Indeed, at that time, Ethiopia was facing a devastating famine caused by rinderpest. The origin of the epidemic seems to have been some infected cattle from India unloaded at Massawa by the Italians as food for their troops. The cattle disease was seen as "a scourge sent by God to punish Ethiopia for laxity of faith" (Prouty, 1986). Therefore, King Menelik and Queen Taytu (not crowned emperor and empress until November 1889) went to Lalibela to pray for the people but "Menelik's and Taytu's pilgrimage to ask God's mercy went unrewarded" (Prouty, 1986: p 63). In the churches of Medhane alem and Mariam we can still find some artifacts donated by the queen, testifying of a strong relationship between Taytu and the Lalibela churches.

Another unexpected royal visit was very impressive for the clergy and inhabitants of Lalibela. In 1936, after he lost a battle against the Italians, Haile Selassie passed through Lalibela. After having given a five-hour feast to his soldiers at the residence of the governor of Lasta, immediately after the Easter holidays, the Emperor arrived late in the evening on April 11th 1936 in Lalibela and went to the church of Asheton Mariam, up in the mountain above Lalibela, to pray for the country and to meet the hermits. He stayed there for two days in prayer and meditation (Steer, 1936, p. 330). The emperor's flight from reality assumed such proportions that his entourage, Ras Kassa in particular, publicly blamed his conduct. By tarrying at Lalibela, the emperor allowed the Italians to occupy Dessie and Wore Ilu before he could get there. When he resumed his retreat toward the capital, he was forced to pursue a wildly circuitous route (Spencer, 1984, p. 57-59). Ethiopia was finally defeated by the Italian troops.

4.2. Lalibela as a touristic destination: an imperial project undertaken by Haile Selassie (1960's)

The endorsement of heritage on a larger scale was conceived in Ethiopia from the 1960's onwards and can be understood within the context of the development efforts undertaken by both the imperial government and a dense network of varied international actors. In both cases, the suggestions and recommendations offered by early visitors and writers had much to do with the imperial regime will to develop the site of Lalibela, in order to foster tourism and to build a positive image of the country. Later on, the increasing flow of foreigners to Ethiopia encouraged the imperial government to include the tourism industry in

the second Five Year Plan for Economic Development (1963-1967). The Ethiopian Tourism Bureau opened in 1961 (Sissay Ayalew, 1992).

The beginning of tourism in Ethiopia really started in 1964, when the Proclamation No. 36/1964 established the Ethiopian Tourist Organization. Some of the most important objectives of the Ethiopian Tourist Organization were to plan and implement programs for promoting heritage, and to foster the establishment and maintenance of tourist facilities. Several cultural and natural heritage sites had been selected as leading sites. Lalibela was one of them. A first guidebook entitled "Antiquities of the North" was published in 1965. A "historical route" had also been drawn at this time along the main heritage sites of northern Ethiopia such as Lalibela, Gondar and Axum (Jäger, Pierce, 1974).

As the local memories testify it, before the facilities were settled for tourists, the villagers of Lalibela and especially the head of the churches used to host them. Indeed, until the beginning of the 1960's there was no hotel or any accommodation for the tourists. The first hotel, the "Seven Olives Hotel" was built by Hirut, the granddaughter of the Emperor Haile Selassie. At that time, Lalibela's administration was pulled out of the clergy.

4.3 The birth of an international heritage and a touristic place (1960's – 1970's)

Until the 1950's, the clergy administrated Lalibela[12]. Any religious, political or social clash was to be solved by the church administration. The head of the church, the "Memhir" controlled the farmlands owned by the church around Lalibela. The church administrative structure was also in charge of the local court. Then, since the head of the church was the administrator of the province, the head and leader of the clergy was also the judge of the court. This administration has its own hierarchy, with for instance, the archpriest "liqekahnat," the archdeacon "liqediakone" and the secretary of the Memhir "AfeMemhir." At the end of the 1950's, the modernization of Lalibela started. Then, the clerical administration system was replaced by a modern public administration. Posted by the

[12] In the beginning of the 12th century, the head of the priests "liqekahnat" – named Ze Worwor – administrated Lalibela. He was a prominent figure in the administration system of Lalibela, which had the second place of honor next to the head of Axum church. Later on, during the period of lords "zemen mesafent," (1769-1885), at the time of Ras Ali Gugesa of Gojam "Ali the great", celibate monks administrated the churches of Lalibela. Indeed, as local memories narrate, Ras Ali came to visit the site and was welcomed by the clergy. As he was pleased with the design and the beauty of the churches, he established a new administrative structure by thinking that a monk will be more respectful and dedicated to God and the churches than a married priest. Then he replaced the "liqeKahnat" by the "Memhir" as the head of the churches administration (Birhanemeskel, 1958).

emperor, coming from the region of Shoa (nearby Addis Ababa), the first administrator of the province was named Abebe Seyum. At that time, offices were built, and some people were employed as civil servants to make up the newly organized administrative structure. Most of them were members of clergy because they could write and read. Thus, a first resettlement occurred in Lalibela: in order to build the province administration offices, some inhabitants were displaced from their farmlands and houses. The Church administration lost the farms located around Bete Maryam church where the health center had been built. In fact, the Church lost its power and authority over the whole province of Lasta. As a compensation, Haile Selassie promised for the Church of Lalibela 4000 ETB per year. After having taken the power over Lalibela, the public administration registered the people leaving in the immediate surroundings of the churches and planned to forbid new arrivals in this area fort the safeguard of the monuments. Later on, at the end of the 1960's, the Italian architect Sandro Angelini demarked and identified a core and buffer zones around the churches (Angelini, 1967) (see chapter 3). Indeed, the valorization of Lalibela's heritage was not only thought and handled by the national government: some international actors and bilateral organizations were involved.

Then a fast urbanization occurred. In a report prepared for the Ethiopian Tourism Organization, about 900 existing houses were registered in Lalibela in early December 1968 (ETO, 1968). Regarding the kind of houses, it should be noticed that by the end of the 1950's, there were only three private two-storeys houses and two public buildings (school and health center) with corrugated iron sheets roofs (fig. 1.2).

Fig.1.2. Lalibela's village in the 1960's

Source: Angelini's archives, World Monuments Fund

During the 1960's, around 50 corrugated iron sheets roofs were introduced every year for private houses (for square houses and even for circular traditional two-storeys houses). The main new buildings were made of stones, contrary to the traditional houses made of wood and mud. For instance, the province governor's office was made of red stone masonry with sheet roof painted in red; the Seven Olives Hotel was made of stone and white plaster, with a traditional-type dining hall roof; the school (with this 6 classrooms) was also made of red masonry (Jäger, 1965). Along with these first urban and modern buildings came unusual transport infrastructures. Indeed, even if Ethiopian Airlines had no office in Lalibela at the end of 1950's, the first scheduled flights Addis Ababa - Lalibela started in May 1959, as a part of Haile Selassie's tourism development plan. But the Ethiopian Airlines flight service to Lalibela as part of the "Historic Route" for tourists was only inaugurated on February 1965, and it did not operate during the rainy season. The first tourists coming to Lalibela were travelling neither with a tourism agency nor with an organized group: they were individuals, such as Barbara Toy who narrated her journey in a published book (Toy, 1961). They obtained their travel permission from the Governor of Lasta (province of Lalibela) who was in Addis Ababa at the time and who sent from Addis Ababa the High Priest of Lalibela "to look after them". (Toy, 1961). At that time, the Seven Olives hotel just opened, as well as the airstrip that just became functional (fig. 1.3).

Fig.1.3. Lalibela's airstrip in the 1960's

Source: Angelini's archives, World Monuments Fund

Haile Selassie came to Lalibela in 1964, for the Ethiopian Christmas Day (January 7) in order to inaugurate all the new infrastructures (school[13], health center, airstrip, hotel, etc.). According to the Ethiopian Herald (Lindahl, 1968), 6000 members of the clergy came with the Emperor in order to celebrate Christmas in Lalibela. Nevertheless, according to Otto Jäger (1974), there wasn't at that time any regular post service in Lalibela, neither phone nor radio. The royal family used the single hotel and visitors had to bring their own tents. In 1968, Emperor Haile Selassie came again to Lalibela to escort the (non-Christians) Mohamed Reza Pahlevi, Shah of Persia, and his consort Farah Diba for a visit to the churches. In 1969, Queen Juliana and Prince Bernhard of the Netherlands, accompanied by Emperor Haile Selassie, also visited Lalibela. During the 1960's, the king visited the site three times using the small village of Lalibela as a tool to show the medieval Christian civilization of Ethiopia to the rest of the world.

Regarding to heritage policies, the Committee for the Restoration and Preservation of the Churches of Lalibela was formed in 1965, with Princess Hirut Desta (cf. box 1.1.) as a chairman and seven other important people as members such as Dr. Sandro Angelini (from the Archaeological Museum of Bergamo, Italy) who was in charge to make a first study visit in June 1966. In 1969, some selected clergy members, led by their head Memhir Afe Work, went to Asmara with some handful church treasures in order to display the Lalibela's heritage as testified Afe Memher Albachew, who was one of them (interview, 2015). In June-July 1968, the Ethiopian television broadcasted two films made by a British TV team about the history of the rock-hewn churches, their religious value and the restoration works made there. It was the first time that Lalibela churches were promoted on the national TV.

Box 1.1. Princess Hirut, a main character for the internationalization of Lalibela

Princess Hirut grew a special interest into the preservation of Lalibela's rock-hewn churches when she was in the United States for her education. One day, her professor showed her a picture of rock-hewn churches and asked her if she knew where it was found. She replied that it might be in Rome or in Greece. The teacher chastised her for her ignorance of her own country's heritage. Remorseful, she asked her grandfather, Emperor Haile Selassie and the

[13] In 1968, Kidus Lalibela (St. Lalibela) primary school had 262 boys and 171 girls, with 8 teachers. The teachers were members of clergy who had a pedagogical training in Asmara (current capital of Eritrea).

latter told her about it. He promised to show it to her when she came back (Ethiopian observer, 2013).

"A young woman who wore white trousers with light t-shirt was walking every morning to the mount Olive", "she was working all daylong and discussing with the workers", and "she was pretty young, hard worker, enthusiastic and very democrat". The local memories described a young woman who provided a lot for the village. The Princess was well educated and knowledgeable in a range of areas. She was described as down to earth, enthusiastic, hardworking and respectful of the traditions. While her role in the formation of the Committee for the restoration of the churches of Lalibela was her greatest work (cf. chapter two), she was also involved in different successful activities in culture and education, fields that she enjoyed herself. Moreover, she arranged the construction of the first electric light and the first millstone – which was installed nearby the Saturday market – to upgrade the life of Lalibela women.

The princess visited Lalibela for the first time at the end of the 1950's with one of her friend, the British princess Anna. In 1964, she stayed in Lalibela for a year and half after the inauguration of the different new infrastructures by Haile Selassie. She used to work as a chairperson of the Committee for the Restoration of the Churches of Lalibela, and spent her time in the village working for the construction of the first hotel and towards the improvement of the lives of the villagers. She was credited for having made the town made accessible with a modern road connected to it, and was credited for introducing electricity and potable water to the town. In her hotel she hired people who have been working for its construction and she trained them in service, by acting herself as a hostess in the traditional manner... After the hotel construction completed, she granted it to the Saint Lalibela Monastery Diocese Office. The National Geographic reporter, Nathaniel T. Kenney who visited Lalibela at that time described her as a « trim, most democratic of princesses, » who « was not above grabbing a tool from a workman, I suspect, and showing him how to use it » (Ethiopian observer, 2014). Only few negative memories remained, some members of the community blame her for losing some icons belonging to the churches. She took these icons with her for restoration, but instead to send them back to Lalibela churches she donated them for the Institute for Ethiopian Studies based in Addis Ababa University (Afe Memhir Alebachew, interview, 2015).

During the 1960's, Ethiopia had strong relationships with Sweden. Bernhard Lindahl and Karl Åkerblom from the Ethio-Swedish Institute of Building Technology arrived on November 1968 to conduct some studies for the Ethiopian Tourist Organization. They prepared a town map. Aerial photographs taken by the Mapping Mission (established in 1965) were available. Their scale was established by measuring the length of the Seven Olives Hotel. Lindahl stayed a little longer and also made his own private studies, trying to figure out the excavation technique used for the Lalibela churches. He came to believe that most probably trenches were excavated first, for drainage, and that the whole western front of a church would have been excavated rather early, permitting interior hollowing out to proceed from the main entrance along the symmetry axis (Lindahl, 1968).

4.4. The fall of the empire: a gap to the internationalization of Lalibela?

In 1975, following the fall of the Empire due to the revolution, some tourists had a narrow escape at Lalibela airport when an Ethiopian Airlines plane was, at the last moment before landing, "waved over" by police, who found that ditches had been dug across the airstrip and then camouflaged (Thomson, 1975: 143). After the fall down of the regime, several hundred men, led by Dejazmach Berhane Meskal Desta, the governor of Lasta, took control of Lalibela after an encounter with the small police force there. Dejazmach Berhane Meskel Desta used to own much of the land of the Lalibela area and "took the mountains" in November. He occupied Lalibela and held it for nearly six months until the army routed him in late 1975 (Ottaway, 1978: 88). This time was very memorable for the local society. The rebels, i.e. those who kept loyal to Dejazmach Berhane Meskel Desta, took also control of the airfield. When an Ethiopian Air Lines DC-3 touched down at the landing strip on a regular flight from Kombolcha, the rebels attacked the plane and set it on fire. The aircraft's security guard was killed. Two more security men and one rebel were killed in subsequent fighting (Ottaway, 1978). The rebels agitated the inhabitants of Lalibela and its environs by threatening that the junta, who took over the power in Ethiopia, had no religion and would be dangerous for the churches.

Nevertheless, during the *derg* time, the heritage making process went on. The Unesco registration process, started under Haile Selassie with national and international actors ended in 1978: Lalibela was inscribed on the World Heritage List. The ICCROM, the International Centre for the Study of the Preservation and Restoration of Cultural Property, based in Rome,

organized an international symposium on stone conservation, held on 5-12 April 1978, in Lalibela itself. Stone chemists, geologists, painting restorers, seismologists and micro-botanists attended the symposium (Unesco, 2012).

From the 1950's up to the 1970's, the royal family was handling the development of Lalibela. By doing so, they were trying to connect themselves with King Lalibela and the legendary solomonic dynasty. Before the 1960's, the regime was working with the international actors especially to valorize Lalibela as a worldwide image of Ethiopia. From the 1960's onwards, after most of the African countries came to be independent, the royal family started to connect itself with a new historical and religious roots. The aim of these heritage making process and development of the site were to compete the European civilization, showing that Ethiopia has/had a great history.

CHAPTER 2

HERITAGE CONSERVATION VERSUS LOCAL DEVELOPMENT

Since the Athens Charter[14] was adopted in 1931, the significance of heritage conservation has increasingly been renowned throughout the world (Vecco, 2010), and heritage conservation systems, including legal frameworks, have been implemented in many countries. Various studies have been conducted about both the intrinsic value and the socioeconomic importance of cultural heritage (Greffe, 2001; Throsby, 2010; Timothy, 2011), and the process of cultural heritage conservation (Elsorady, 2011; Joffroy, 2005; Techera, 2011). The great gap between the goal of the conservation system and the actual implementation may pave the way for the deterioration of cultural heritage (Greffe, 2004).

On this part of my study, I will discuss first, the environmental situation of the Lalibela monuments, second, the natural vulnerability of the rocks and other threats, and later then, I will focus on conservation works. As I tried to show on the first part of my work, books and other published materials from discoverers, travelers or researchers have attracted national and international actors in Lalibela, especially from the beginning of the 20th century. In this part, I will assess both "modern" restoration and the community old traditional conservation works in order to analyze the relations between every actor concerned by Lalibela's heritage. In this view, I will stress the community practices and skills regarding to the churches protection.

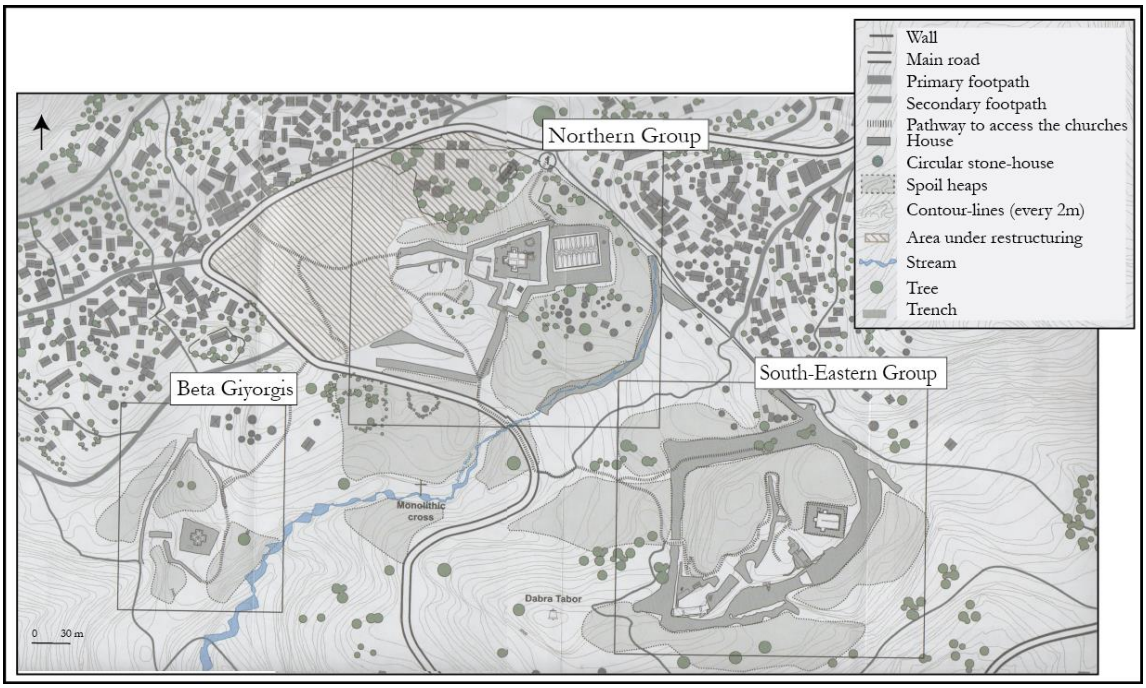
[14] The Athens Charter for the Restoration of Historic Monuments was produced by the participants of the First International Congress of Architects and Technicians of Historic Monuments organized by the ICOMOS and held in Athens in 1931. The seven points of the manifesto were:

- to establish organizations for restoration advice
- to ensure projects are reviewed with knowledgeable criticism
- to establish national legislation to preserve historic sites
- to rebury excavations which were not to be restored.
- to allow the use of modern techniques and materials in restoration work.
- to place historical sites under custodial protection.
- to protect the area surrounding historic sites.

1. The "rock" site of Lalibela

The Lalibela complex is usually divided into three groups of churches (fig. 2.1). The first group, located in the northern part of the site, includes five monuments (listed here in the order they are usually visited): Medhane Alem, Maryam, Denagel, Mesqel, and the complex of Debre Sina/Golgota/Selassie that comprises three churches. This northern group is separated from the eastern group by the seasonal stream, the "Jordan river" ("Yordanos" in amharic), which runs in a deep gully that collects water from the entire surrounding massif. This gully shows evidence that it is partly man-made. The eastern group holds five monuments: Gabriel-Rufael, Bethlehem, Merqurious, Amanuel, and Libanos. Another group, to the west, only comprises the church of Saint Giorgis. The churches lie on 3,6 hectares of basalt rock and the character and architecturally design of the churches are monolithic and semi-monolithic (Derat, 2011).

Fig. 2.1. The churches complex of Lalibela

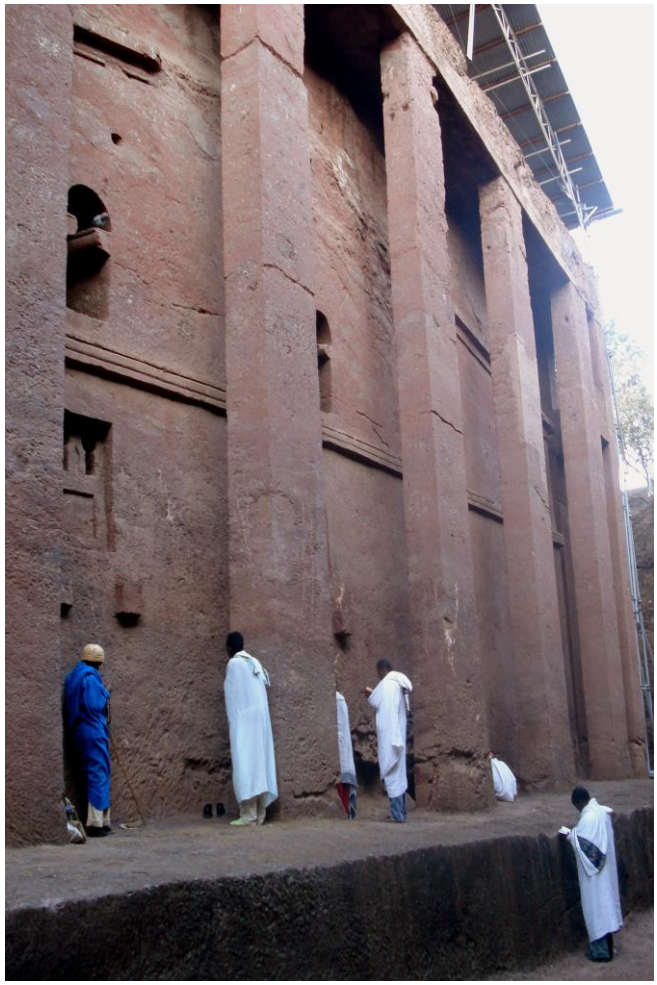


Source : Lalibela, Ethiopia, Plans and Site Topographic Map, 2011, Addis Abeba, CFEE

This complex contains two types of geological materials. These are basic volcanic rock types and recent sediments. The whole environment of Lalibela, except the church ground, exhibits dark-colored basalt rock. But the scoria basalts are available around the church complex

where the churches were carved out. It is the volcanic rock, which is dominant on the church ground and this rock is usually referred as “red tuff”. It is manifested by its fresh red/pink or weathered brown color. Therefore, the scoria basalts are clearly identified in almost all areas where churches were carved out (Asrat *et al*. 2008; Asrat and Yodit, 2010) (fig. 2.2).

Fig. 2.2. The church of Medhane Alem



2. From structural fragilities to dangerous conservation works

Lalibela monuments are hewn out of this soft tuff rock that rests upon bedrock basalt. Therefore, they belong to a complex of rock-hewn architecture. Within it, the peculiarity of the Lalibela churches is that they are monolithic. To precise, only some of the monuments are true monoliths or in other words, separated from the mother rock on four sides and top. Indeed, among Lalibela churches there are some monolithic structures, semi-monolithic structures and some other are hypogeum. This classification of the rock church art has been

recently studied by researchers specialized in Ethiopian rock art (Philippson, 2009; Fauvelle-Aymar *et al.* 2010). All agree to assure that edges of the rocks and sequences are barely different from the past, from what previous archeological asserted. The structural deficiency and external factors left the monument in a very difficult condition. Archaeologists, geologists and stone cut specialists agree that a long aged process has made the monuments as they are now. The structure of the churches has changed due to human and environmental factors (Del Monaco *et al.* 2009). (fig. 2.3)

Fig. 2.3. The natural crack on Bete Gabriel's roof

A number of factors have contributed to the deterioration of the churches (Asrat *et al.*, 2009). Erosion and water infiltration due to heavy rainfalls are the first ones, in combination with cracks from inherent faults in the stone and stresses from carving, and chemical phenomena such as the presence of salts as efflorescence on the surface and concretions under it, have caused the disintegration of the rock churches. Biological phenomena such as microbiological attack and human factors have also caused deterioration. Several efforts have been made to protect and restore the churches in the past, although some of the early interventions are considered to have damaged the structures, such as the bituminous coating to the external surfaces (Icomos, 2010).

Furthermore, the different conservation works on the rock churches of Lalibela carried out by hook or by crook aggravated the fragility of the rocks and damaged the monuments. Thus, many reconverting, renewing, rebuilding and restoring works took place under both international and local authorities. However, these works were disjointed and no any skill

were neither shared nor transferred from one scale of actors to another. For instance, during the 1960's, the Italian architect and conservator Sandro Angelini observed and discussed the conditions of the church. He noticed many failed pillars, cracked walls and roofs. According to him, part of the crack was due to the geological nature of the rock whilst others were caused by movements of general structure. Angelini was unable to find valid information about any past earthquake in the zone, and even less about their eventual intensity. However, Bete Maryam, Bete Amanuel and Bete Medhane Alem showed worrying signs of static crippling. "After patiently questioning the priests and the inhabitants of the village," Angelini and his team came "to the conclusion that cracks have no increased over the past 50 years" (1966). Whereas many national and international actors concerned by the vulnerability of the monuments carried out a huge number of restorations of Lalibela churches, those were not fully documented neither by the State nor by any international restorer. The restoration experts mostly came from outside and not only they didn't cooperate with the local community, they also didn't let any report of their action for the next generation of conservation works.

Most of the times, throughout the 20th century, conservation and restoration works on these monuments were ill-informed and largely unscientific, even though well meant. Previous restorations made new major restorations work on collapsed walls, pillars, porches and cracking roofs very difficult. Most of these works were unsystematic and not well approached, due to a misinformed interpretation of the site that we can analyze as a product of external experts rather than of the indigenous people. Moreover, modern materials such as cement were used to stabilize the walls without taking into account side effects and damages, especially for the roofs. Regarding modern conservation standards and, more importantly, ethical standards, most of what was done was outrageously inappropriate: not only endogenous materials were introduced into the original structure, the intervention measures were also not reversible. An additional problem with these early efforts was the failure to fully address the aims of the conservation: for whom the monuments were being preserved? The programs were undertaken in an outside context in which the local communities were not seen as relevant because this peculiar aspect of their cultural heritage was not seen as belonging to them. This misconception still goes on, especially regarding the sheltering of the rock churches, which the local community sometime considers as even worse than all the older interventions (Shadreck, 2013).

In the early 20th century, some international actors carried out three very pragmatic but not much documented campaigns. Initiated by the royal family these restorations works took

place during the 1920's, the 1950's, and the 1960's. The first restorations of 1920 and from 1954 to 1959, which were undertaken without scientific precautions and with recourse to cement, aggravated the situation. Since the end of the Ethiopian civil war, in 1991, numbers of international actors and national partnerships have been coming to the city for the conservation and valorization of cultural heritage. Firstly, a Finnish cooperation program that collaborated with the Ethiopian Ministry of Information and Tourism (MIT) initiated a program dedicated to the environmental rehabilitation of the Lalibela site. At that time a first modern shelter was made for the Medhane Alem church, with metal scaffolding and a corrugated iron shelter, in addition to a eucalyptus wooden structure. Five churches are today sheltered by some gigantic structure of four shelters and corrugated iron sheets and wooden scaffolding cover the Bethlehem church. Although they fulfill their purpose of protecting the churches, these roofs and scaffolding considerably disfigure the monuments and "should be considered as temporary stopgap measures" (UNESCO, 1996: 14–15). Thus, the situation in Lalibela remains extremely delicate.

Whereas these briefly mentioned interventions have a significant effect on the Lalibela churches, their impacts have not been seriously measured. Moreover, both national and international actors have mainly rejected the traditional conservation works, that means the one that the local community used to carry out. I am now going to detail both community works and international programs in order to assess the scalar gap within heritage policies.

3. Community conservation for Lalibela's churches

As mentioned in the introduction, I have utilized the local memories, narrated from generation to generation, to study the local practices of heritage conservation. To this goal I have focused on the elders and the priests. I should notice here that my father was born and grew up in Lalibela region and has celebrated his one hundred years old on August 2016. As he spent most of his life in Lalibela, I use here some of his narratives. I also use the testimony of Afe Memhir Alebachew Erta, one of the elder members of Lalibela's clergy. Moreover I have lead interviews with more than 50 people who used to serve and guard the churches. Most of those who I interviewed are aged and have lived in Lalibela for decades. These people of Lalibela shared what they know about the local conservation practices regarded to the churches and its treasures.

The conservation works are not recent phenomena in Lalibela: before the "modern" methods came up to the site in the mid-20th century, dominated by national and international actors, the local community took responsibility for safeguarding their churches. People were used to take care of the churches, to keep them alive and functional for the coming generations. All kind of conservation works carried out by the elders were based on attentive observation and study of the fragility of the rock churches. Some members of the clergy, as well as local artisans and masons, were used to clean but also to restore the churches and repare the dismantled parts. Nowadays, elders frequently narrate that their parents and grandparents were dedicated most of their time to these precious churches and holy treasures. Specific beliefs or prohibitions ensure that the churches were preserved but don't protect some changes. For instance, direction and opening of drainage could have been decided or, on the contrary, that access could have been restricted to teach the people how to behave and to take care of the site with reverence. Moreover, technical practices specifically related to the physical requirements of maintenance and protection were transferred from generation to generation (interviews with the Church head; with Abebe, an old guide of Lalibela; with the priest Kiss Alemu Biraga, from Gabriel Church, August 2015).

These traditional practices were very variable, depending on the type of damages. They were organized according to a specific community's social structure. For example, the *elder* group, gathering the renowned and respected aged people of the community was in charge of identifying damages on the churches. The funeral cooperative associations, known in Ethiopia as "*eder*," used to ask their members a financial contribution in order to fund small restoration works, but also their cooperation to watch and guard the churches. They also used to do some gardening around the churches. Regarding women associations, their members were often in charge of bringing the water and collecting the stones during the restoration works. More specifically, the priest school students were in charge of restoring the manuscripts and the holy books. These conservation practices were often connected with special events that aimed at reinforcing the social cohesion of a community. This social unity expressed itself through a collective and symbolic effort to conserve and control the churches antiquities and their structure. To protect the churches properties from looting and vandalism, the clergy had a careful approach, developed with the community. The clergy coordinated the community members to guard the churches whilst the clergy members protected the properties, especially by duplicating the manuscripts.

Moreover, the celebrations of Christmas and Epiphany in Lalibela, which are now nationally renowned and recognized as a national heritage, were preserved and passed from generation

to generation by the good will of the community. Aba Gebre Yesus Mekonnen, the late Church of Lalibela head testified that this heritage carries important values. The special event is a specific ceremony entirely dependent on the beliefs of the community. The transmission of this intangible heritage is mainly due to their indigenous skills of conservation, and it has occurred before western researchers studied the churches and even before the notion of heritagization process showed up on the site.

Indeed, the elders narrate a very impressive and pretty rational conservation work done by the ancestors. First of all, the traditional practices of conservation and restoration were carried out with full respect of the religious and social value of the churches, perceived as a sacred site. The conservation works were carried out during ordinary days only, holidays being dedicated to religious feasts and sacred activities. The conservation works took also place according to the seasons: for instance, to protect the infiltration of rainwater from the roof of the churches, during the dry season (most of the time in May) the community leaders selected the necessary material such as remains of animals[15] (skin, fat and the bone-marrow are preferable with their adhesive nature). As they precisely and daily observed the churches, clergy members knew the damages and cracks in need of maintenance. Then, they mixed the fat with red clay sand and plastered the leaking roof, to protect the water infiltration. Besides, small plants and algae growing in the rock aggravate and accelerate the churches damages. In this condition, the locals knew when to remove the plants without harming the rock churches. The technique was to water animal urine on the small vegetation and small plants grown on rocks, which simply killed the root of the vegetation and protected the rock churches from further damages (Interview with Kes Almeye, Kes Kassa, 2015).

The clergy also used some of the donations made by the believers. Indeed, Ethiopian Orthodox Christians are used to offer gifts to the church as an acknowledgment for their granted prayers. Actually, it is more a deal made "between" the believers and the churches called "holy take and give:" if somebody has a wish to make, he will go to the church and make his demand in the face of the churches. He will promise that, if he got what he asked, he will come back with his present that could be holy books, tents, money, cereals or carpets. Those local carpets made from animal skin and hairs are used for at least two purposes in the churches: during the dry season, they are put on the floor for the ceremony; but when the rainy season comes, they are used to cover the roofs in order to protect the church from rain, and more specifically from infiltration.

[15] They should be from sheep, goat, and cow.

The local masons also contributed to the transmission of theses heritage through times. They were the ones to rebuild the collapsed walls of the churches by utilizing the fragments, which were originally carved out from the rock churches (fig.2.3). They used to mix the clay soil with water and straw; then to let the mixture for months and months, and to turn it up and down every three days for remixing. Since the soil in Lalibela had a clay nature, strongly adhesive, they could use the mixture to plaster the cracked part of the rock and rebuild the collapsed part of the churches wall. For instance, masons had conserved and served for a long time in Bete Merqurios and Bete Gabriel and in the porches of Bete Mariam. When Raffay, in the late 19th century, arrived in Lalibela where he had stayed for a few years, he identified the masonry work on the south-east part of the Bete Aba Libanos; the sheltering of the rock with thatch on the porches of Bete Maryam and on the left corner of Bete Aba Libanos.

Fig.2.4. Community conservation in Merqurios church

Source: Angelini's archives, World Monuments Fund

Last but not least, from the time the rock was curved to build them, the churches have always been occupied. Local people are familiar with the threat of erosion, due to heavy rainfall causing not only cracks on the roof but also water infiltration generating moisture, and droplets aggravating the erosion on the basement of the walls and pillars. The local community was used to protect the flashing water against the wall and the pillars. They attentively studied the heavy dropping waters from the roof to the courtyard. They used to dig

small holes in order to avoid the potential moisture by reaching the bedrock. Then they were able to elude easily the water droplet flashing and by doing so, to conserve the monuments.
To conclude, let us say that both the inhabitants and the clergy had a clear awareness of the sites they had inherited from the past generations. Up to recently, the local community used to transfer knowledge and skills regarding to these simple but efficient churches conservations techniques through times.

4. Modern conservation and restoration programs led by international and national actors (1954-1991)

Modern conservation programs have begun in the late 20th century and were mostly carried out by international and national actors. Some of these missions being barely documented, even if I managed to gather some archives produced by the different programs I decided to analyze these conservation works through oral sources and more specifically through local memories. Then, for this part of my research work, I interviewed some elders of Lalibela, some members of the clergy but also archaeologists and conservators who intervened in Lalibela. Direct observations were also important. For example, we can see in the west porch of Bete Maryam the inscription "1919" that refers to the year of a restoration work. As several elders of Lalibela testify, "Arabs" carried out this conservation works. At this time, southern and western pillars of Bete Medhane Alem collapsed and this conservation team engraved the pillars with metal wire to harness the collapsed parts. In the churches of Bete Denagele and Bete Golgota the roof was plastered with cement.
There have been so many interventions from international and national actors involved in the restoration and conservation of the rock-hewn churches that I had to select those which are the most accurate regarding my research question. It also appears that the local people I interviewed have a strong memory of the 1950's and 1960's restoration works: I will strongly underline this period and the local memory associated to it.

4.1. 1954 restoration program: "Redden the red rock"

Afe Memhir Alebachew and Kes Melesse, the latter being the main priest of Bete Maryam, were young deacons in the 1950's. They remembered the restoration works made at that time. According to them, the cement was not only used for the roofs of the Bete Medhane

Alem and Bete Amanuel churches. The “conservators” also used cements for the churches walls. Indeed, they were nailing the walls before mashing and plastering them with cement and wires. Then, they were painting the walls with wax and red ink. Both of the priests have a terrible memory of these works. They remembered that it smelled so bad that it was hard to cross the churches and to pray. Nowadays they still don’t accept this much of ignorance and ask how it could have been possible to paint the rock with red painting. Not only it didn’t help at all to protect the churches, but most of all it added some damages.

Fig. 2.5. Plastering and painting the walls of Bete Amanuel and Medhane Alem

Source: Angelini’s archives, World Monuments Fund

During this 1954 restoration program, a bituminous layer was also applied to the external surfaces of Bete Medhane Alem and Bete Amanuel. Then this layer was washed with a red ochre painting. Later, it appeared that the bituminous layer was swelling and getting detached from the rock; after a few rainy seasons, the red color was also washed away (Unesco, 1978). Regarding Bete Medhane Alem rock structure, the northeastern and southern pillars as well as the ceiling arches were also rebuilt. However, not only the restoration work didn’t help to prevent the infiltration of water, but it also blocked the natural breathing of the rock (Angelini, 1966).

The techniques used harmed the structure of the churches and generated additional cracks. Bete Medhane Alem’s pillars were reduced to about half of their original height and rebuilt with squared stone. Even the missing moldings were rebuilt with reinforced concrete. The third window from the east was completely remade and several patches of the façade were plastered up with mortar.

This pretty unknown mission enlightens the lack of knowledge and the misconception regarding the nature of the rock. The conservators didn't work with the community to assess the conservation issues and to gather information about the methods used in the past. Moreover, the problem of the rock church was a structural one of infiltration from the roof of the monuments: there was no need of applying the bituminous layer on the walls.

4.2.1956 Ethio-Swedish restoration program: plastering and sheltering the roofs

In 1956, the late ESIBT, the Ethio-Swedish Institute of Building Technology, laid provisional roofs of corrugated sheets on the churches of Bete MedahneAlem and Amanuel. Professor Thure Alvemark and two of his students led the mission. A caravan came from the town of Woldiya (160 km away from Lalibela), carrying 800 roofing sheets. It was the first sheltering work on these two churches. The wooden structure used to hold the iron sheet had been erected on the roof of the churches, without any preliminary study. These temporary roofs were kept for about ten years and were removed when a new restoration program was carried out in 1967-1968 (see below) (Angelini, 1970). These works were also overlaid on the old "restoration work" from 1954-1955. Again, some of the pillars were rebuilt with squared stone. According to the priest Tegegne (85 years old), who remembered this conservation work, it quickly appeared that the too heavy wooden scaffolding erected on the head of the churches aggravated the vulnerability of the churches.

Fig. 2.6. The sheltering of Medhane Alem

Source: Angelini's archives, World Monuments Fund

4.3. 1958-59: the first "Italian" restoration work

Among the different bids opened by the Ministry of Public Works in June 1956 for Lalibela's churches restoration, one was won by the Italian engineer Sebastian Consoli, although his offer of Eth$ 24,360 was not the cheapest. Consoli's mission in Lalibela remains almost unrecorded. The only existing record was collected from Angeleni's archives. Besides Angelini, some inhabitants also remembered this restoration work. It affected the churches of Bete Maryam, Bete MedhaneAlem, and Bete Amanuel. Some mortar works were carried out one the ceilings and the roofs of Bete Amanuel and Bete Medhane Alem. The chapel of Bete Mariam was plastered with cement. The work was completed within two years. The Bete Mariam church carried a huge quantity of concrete on its roof and again, the conservators decided to nail, mash and plaster the walls with cement and then to paint them. According to the local witnesses, these restoration works damaged the rocks. Though, Consoli's intervention in Bete MedehaneAlem intended to respect the original appearance of the church by plastering the great monolithic pillars "restored" in 1954 with squared stones. A clear testimony of the intervention could come from the comparison between Raffray's drawings and Angelini's first photographs in the early 1960's.

Kes Alemu Edage (89 years old) has lived in Lalibela and served its churches for more than 80 years. According to him, Consoli and his team came with the governor and a permission paper signed by the Emperor. In a very short time, they plastered most of the churches. In Bete Maryam, they removed the traditional conservation works on the three porches and again restored them. They didn't use any of the community's skills. Whereas most of the time they employed daily laborers to assist them, they were not able to fully communicate with them.

After Consoli's intervention, the roofs appeared to have been patched up in several places: this suggests that the cracking up started a long time ago. Consoli poured concrete and planted iron roads in the rock in order to harness his coating to it. The red painting already used on the façade was supposed to be used on the roofs too. A premature interruption of the works prevented this operation from being carried out (Del Monaco, 2009).

The 1919 and the three 1950's consecutive works were not based on a scientific research neither on a preliminary study. Church were molded and plastered with cement; the concrete mortars were heavy; the nailing, plastering and painting of the walls harmed the monuments. Some parts of the churches were seriously damaged and increased the rock natural fragility. "Professionals" were coming to the site with their general construction skills without any knowledge of the specific context of Lalibela.

4.4. "Restoration of restoration": Angelini's contribution to Lalibela (1960's)

He [Sandro Angelini] came with a mission: to destroy our churches. He dismantled and closed the church of Bete Merqurios. He had a plan also to demolish the churches of Bete Libanos. Our fathers protected him not to do so. He used some chemicals in Bete Maryam. He looted some of the treasures from the churches. He used a big machine in Bete Amanuel. He removed all the cemetery without respecting the dead.

Kes Melesse, Head priest of Bete Mariam, 2015

Fig.2.7. Angelini's workers using chemical in the church of Medhane Alem

Source: Angelini's archives, World Monuments Fund

This interview's excerpt is one of the numerous criticisms raised by the community of Lalibela about the 1960's restoration project funded by the International Fund for Monuments (IFM)[16]. The works were carried out and lead by the Italian Architect and conservator Sandro Angelini. Nowadays, after more than 50 years, these conservation works had gone to the local memories as a huge "default" work.

The International Fund's concern about the churches dates back to 1965, date of the letter His Imperial Highness Merid Asfa Wossen, Crown Prince of The imperial kingdom of Ethiopia,

[16] The World Monuments Fund was initially named as the "International Fund for Monuments". It was established in 1965 as a private non-profit organization working to assist in the safeguarding of endangered cultural heritage (WMF, 2005).

sent to Professor John O. Brew, Chairman of UNESCO's Committee on Monuments: he was asking for a financial and technical assistance for Lalibela's churches restoration and preservation (Negussie, 2010). In the words of the IFM's former Chairman Charles M. Grace, at that time a group of individuals "recognized the need, long expressed by UNESCO, for an organization to assist in the costs of preserving monuments in those countries which lack the financial means of doing so alone. Furthermore, he stated, "The project in Lalibela is a splendid example of this arrangement. It is a joint effort involving close collaboration with the Imperial Ethiopian Government on a fund-matching basis" (IFM, 1967: 6). Thus, the rock-hewn churches of Lalibela became one of the first restoration projects to receive sponsorship from the organization. The project involved the assistance of a team of Italian conservators, including documentation, stabilization efforts and initiative to remove a bituminous coating from the external surface, preventing the natural breathing of the rock, thereby causing deterioration (Icomos, 2010).

The first survey was completed in July 1966. After the Ethiopian Committee and the International Fund for Monuments subsequently approved it, Angelini was authorized to proceed with the work. He recruited a team of five technicians, all from Bergamo, and took them to Lalibela. Actual work began on December 19, 1966, and was halted on March 31, 1970, well ahead of the rainy season that renders the area inaccessible (Angelini, 1970). In 1965, Angelini's task consisted in assessing the problems and figuring out the previous conservation works, which were traditionally carried out by the local community and then, from 1920's to 1050's by international actors. He identified the buried trenches, the blocked tunnels, the covered rocks and cemeteries on the rock echelon. He analyzed the damages caused by previous works. For example, he considered that because several works, such as the construction of stairways and partitions, were carried out for the convenience of the priests, they disturbed the artistic integrity of the churches. For instance too, in the two cases of Bete Amanuel and Bete Medhane Alem, the exterior walls were coated with tar and then covered with an incongruous red paint - a treatment which halts the natural breathing of the rock (see above). The roofs of these two churches were sheltered with corrugated metal, completely destroying their original monolithic appearance. Here and there cornices and pillars were rebuilt with little grace but with much cement (Angelini, 1966). The work also involved diging and cleaning the sediments, removing the old restoration works, relocating the graves and some part of the cemetery out of the churches. Angelini also carried out some archeological excavation. Besides, he provided an electric installation inside the churches. Last but not least, he produced plans of the site and the surrounding village. Angelini also

designed a tourist plan, bringing for instance some ideas about how to hewn a museum from the rock itself (Angelini, 1966).

Fig.2.8. Angelini's workers digging the trenches

Source: Angelini's archives, World Monuments Fund

The local narratives suggest that Angelini's restoration works remain as a very horrific destruction of the monuments[17].

Kes Alemu Genzebi, 89 years old, was the head of Bete Medhane Alem at that time. In his opinion, the situation was a nightmare:

In every corner there were excavations in the tunnels as well as on the "heads" of the churches. In the churches of Bete Medhane Alem, Bete Amanuel and Bete Merqurious, the interventions were particularly hideous. The daily waged workers were farmers. Angelini paid them 0,25 birr[18] per a day. They were not skilled. They only had a hammer and a chisel in their hands. They chiseled the rock churches all round. They also used chemicals. I saw them spraying chemicals around Bete Maryam. There was a problem of communication because of languages. Besides, their timescale was very short then they employed too many peasants to accelerate the work. Sometimes it looks like they were coming with the mission of destroying the churches and spoiling our rules, our faiths. They didn't respect our holidays and worked during the sacred days. More specifically, I can't forget what happened in Bete Merqurios: this church was fully destroyed by the working activities; the service was

[17] In 2015, I conducted several interviews in the Ethiopian language « amharic », that I translated to English for this paper.

[18] The birr is the Ethiopian currency. Nowadays one USD is 22 Ethiopian *birr*.

interrupted; the holy treasures and the Tabot[19] *were transferred to the church of Bete Amanuel, which is adjacent. They told us it would be back after they finished drawing and understanding the building process but they didn't. That is why we used to call him "Agelni*[20]*" instead of* Angelini *because he respected neither his promise nor our churches.*

Kes Melesse, 75 years old, head of Bete Maryam and former deacon, remembered Angelini:
Angelini was a messenger of daemon. He did not only destroy the structure of the churches but also the paintings on the southern wall of Bete Maryam. In the name of restoration, they added workers who were farmers even if they were not traditional masons. Those farmers chiseled the walls to remove the old restoration works in all the monuments. The paintings on the walls of Bete Medhane Alem and Bete Amanuel were chiseled by unskilled manpower. For sure, it had been hardened with wire stuff and nailed by previous restoration works but when Angelini's workers removed the old work without any technical intrusion, the result was worse. But it was a part of heritage making and valorization process, as it was mentioned in the permission letter. The churches were healed under the umbrella of the monarchy through the Ethiopian committee for the conservation, chaired by princess Hirut, the granddaughter of the imperial Haile Selassie.

Aba Akane, 89 years old, used to work as a timekeeper and a translator for Angelini. He was also his personal hunter:
According to me, it was basically a better work than the old ones carried out in the 1950's.I disagree with the priests and the community who blamed the restoration work as a destruction of the churches. The problem was that work and time were not balanced: there was a huge work to do but the time was very short. […] During the first excavation works in trenches and tunnels, strong human power was demanded and many works were done in once: removing the old restoration works, removing the paintings from Bete Amanuel and Bete Medhane Alem, removing the nails and wires and, the worst, removing the cemetery from the Mikaeal compound. This one made the people to hate and fear any conservation work. But at that time, it was hardly possible to complain: the royal family ordered this conservation work. Yet, king's words were respected as Bible's words, then the mission came with strong words...

[19] "Tabot" means the replica of the arc of covenant.
[20] Which literally means "he made us foolish."

Afe Memhir Alebachew, 96 years old is respected in Lalibela as a local historian and intellectual. He was also a timekeeper in the 1960's restoration works:

As far as I know Angelini's work was very interesting. He cleaned up the area: the excavation was basic to clean the caves from wild animals and dead bodies. However, his work was not well-organized. His main purpose was to remove the old restoration works from all the churches. Secondly he was excavating to find out the Jerusalem of king Lalibela. He wanted to show the mount Tabor, which was hidden; to clean the "Mikael area," which was a cemetery; to clear the Jordan River, which was sedimented. The churches of Bete Libanos and Merqurios were also almost sedimented. Angelini was also looking for Adam's tomb and the gate from the village to Bete Medhane Alem. These all what I mentioned were excavated and opened by Angelini. Yet, I don't mean that there was no problem with his work. When he and his team removed the old restoration works they didn't take any measure not to damage the bedrocks. Likewise, when they removed the paintings from the walls, they simply chiseled out the nails and wires: then, it damaged the church structure and aggravated the cracks. Moreover, the findings of archaeological works carried out in the courtyard of Bete Merqurious were stored in Angelini's house, which was fired by accident. It was a big loss for the churches and for the community.

To conclude, we can assert that Angelini's restoration works holds a huge place in the community memories. The obsession of Angelini for "authenticity" prevented him from understanding the strong and complicated relationships between the community and its churches. There was a complicated interrelation between Angelini and the local community who, for instance, didn't see the point in detaching the old conservation materials from the rock. There was no report to explain to the public why the rehabilitation works were important for the churches. However, this "re-restoration" work remains as the hugest restoration program undertaken in Lalibela in the 20th century. During my fieldwork, I met the chief conservator and architect Negussu who has worked in the Ethiopian Authority for Research and Conservation of Cultural Heritage for the past 30 years. As an expert, he asserts that the conservation work lead by Angelini had a great scientific value regarding the Ethiopian rock conservation. From his point of view, there may have been a lack of communication between the Italian architect and the local community. Negussu underlines the lack of intermediate body between the two parties in order to share conservation experiences and perceptions.

It has to be noticed that the negative interpretation of Angelini's work among Lalibela's clergy and inhabitants rolled until the current generation. Here we need to analyze the anger that is still shaping the local perceptions. For Lalibela's people, Angelini's behavior symbolizes the disrespect of most of the heritage actors toward their beliefs and practices. Considering Lalibela as a sacred place, they couldn't accept any restoration works that were irrespective of their practices. Besides, they refused to see their specific visual design of the churches twisted and their practices undermined.

However, they were barely able to protest against these works since the Ethiopian Emperor, who had an absolute power over the country, ordered them. Mostly, the churches were embedded in socio-political agendas and strategies built with wider societal and political goals. Resistance against the conservation works would have been considered as a confrontation with the Emperor. Then, while the anger and sadness were hidden they have crossed the generations and remain in the community.

The IMF's works were halted in 1970, unfinished. We have found two possible explanations for this desertion. Some of our interviewees in Lalibela assert that in Bete Amanuel courtyard workers started to use a machine to grain the rock, which generated inhabitants' anger and rebellion. But most probably, the main cause of this premature departure was due to a shortage of funds. Indeed, in Angelini's archives, we have found a letter written by the Committee for the Restoration and Preservation of the Churches of Lalibela to the IMF: the letter explained that because of a budget issue, the Committee had to interrupt the work (Angelini, 1970).

This restoration project, entrusted to the architect Sandro Angelini with funding from the International Fund for Monuments and under the supervision of an international committee, was renown with the name of its project manager and locally remembered as a mission of destruction of the churches.

4.5. Restoration works at the Derg time: a proactive local community

In the years following the 1974 revolution, the collective representations of Ethiopian history sanctioned by the Derg, the military junta who took over the power, were the opposite of those promoted during Haile Selassie's reign. Indeed, under the Ethiopian Empire, Orthodox Christianity was favored as the State religion, while other religions were relegated to the periphery. But the Derg's official attitude was that all religions were equal (Tony, 2013). While Haile Selassie commissioned restoration works, believing that the heritage

promotion work would be in favor of the Orthodox Church and his own genealogical line, the Derg demanded to incorporate all the cultural institutes into the national heritage. Besides, quickly came up an opposition to the Derg. Uprising started from the central towns of Ethiopia and flowed to the northern part of the country. Thus, Lalibela became a war front. In this context, we could easily imagine that since 1974, apart from the usual punctual operations carried out upon the request from the clergy and the ordinary cleaning up of the courts, there was no any significant intervention.

However, in 1974, the Center for Research and Conservation of Cultural Heritage (CRCCH) was created. Between 1974 and 1982, a joint project launched by UNESCO and CRCCH aims at promoting some cultural and historical objects, but also at preserving various Ethiopian historical sites, including Lalibela. Bete Amanuel was subject to a piezometric survey and 4 hygrometers were installed in the churches in order to test temperatures and humidity levels. In 1986, the CRCCH built the first corrugated iron sheet shelter to prevent the rainwater infiltration problem on the roof of Bete Maryam with eucalyptus tree wooden scaffold. The war didn't stop the CRCCH experts to come from Addis Ababa. Indeed, in the 1980's, national experts were working in the site and used to employ local carpenters and day-waged workers. Besides, in the 1980's, the clergy also demarked the core zone and constructed a fence with rectangular stones all around the zone. Aba Berhan Selassie, the head of the church administration, was responsible for this decision.

As the region was disrupted by the war, the international actor's interventions were shut down. Lastly, in 1989-1990, the Derg military halted governing most of the northern Ethiopia, including Lalibela. Then the clergy and the local community took in charge the safeguarding of the churches. In September 1989, after the military retreat back to the south, the elders and the clergy made up a committee to administrate both the town and the monuments of Lalibela. They also organized themselves to prevent their heritage from vandalism. In 1989 and 1990, before the fall of the Derg in 1991, community and clergy also took measures to rebuild the dismantled church of Bete Merqurios, which hadn't served for 20 years.

Belaynesh, 41 years old, was a Sunday school student in Lalibela and actively participated in these restoration works (interview, 2015):

The movement was lead by Aba Zekaryas who passed away a decade ago. He was a very well known monk and preacher. He agitated the inhabitants and the clergy in order to restore what he considered as Angelini's mistake: the destruction of our churches. By quoting Angelini, it was easy to convince the inhabitants! After the agreement of the community, the committee identified its human resources and its capital. They selected masons and

stonecutters to rebuild the churches; money collectors to fund the restoration works. Every member of the community got involved in the restoration of the churches. The masons worked without asking any payment; the young Sunday school students were devoted and helped a lot. In order to put back the church into the service, the community stood up and showed off their anger by rebuilding the church of Merqurios. Technically, the masons rebuilt the churches with the traditional conservation methods. However they had to use rectangular stones for the façades, plastered with mud. It was our success and it is still in a good condition. Aba Zekaryas went to heaven. His contribution is already written in the church of Bete Merqurios.

5. Culture and Heritage as development tools for the EPRDF regime (1991-2016)

Ethiopia has a history of complex cultural dynamics, which have been reflected in and manipulated according to the political motivations of successive governments. For the first time in Ethiopia, a federal cultural policy was endorsed in 1997. This policy was adopted not only to conserve the cultural heritage but also to enhance the role of cultural heritage in the development endeavors of the country. Ensuring citizen participation into cultural activities, creating favorable conditions for artists and researchers working in the cultural sector, promoting the culture of the different "nations, nationalities and peoples" of the country, and abolishing harmful traditional practices were amongst the major objectives of the policy (Cultural Policy of Ethiopia, 1997). Noticing that culture was narrowly taking into account by the previous two regimes, the current government has indicated the importance of giving consideration to the sector.

In 1991, the military junta was overthrown and since then, the Ethiopian People's Revolutionary Democratic Front has been ruling the country. The regime has implemented an ethnic federalism, dividing the country into 11 "ethnic" regions. A decentralization policy has been implemented. For instance, except for central political issues, all the non-governmental organizations working with any developmental have to sign an agreement with the regional government. As a part of the Amhara National Regional State, Lalibela's cultural heritage is now managed by a Regional Bureau. However, because Lalibela is registered as a World Heritage site, the federal authorities, and more specifically the ARCCH (cf. Box 2.1.), are answerable for the site. Then, the entanglement began when policies have to be implemented.

Box 2.2. The Authority for Research and Conservation of Cultural Heritage (ARCCH)

The history of the present Authority for Research and Conservation of Cultural Heritage starts with the establishment of the Institute of Archeology, in collaboration with the French Archaeological mission in 1952. In 1966, the Government of Ethiopia set up the Ethiopian Antiquities Administration with various functionaries (e.g. archaeological research, preservation, restoration of monuments and antiquities as well as museum management). In 1974, the administration became a department of the Ministry of Culture and Sports Affairs, with additional responsibilities for arts and all aspects of traditional culture. An Inventory and Inspection section was added in 1978 as a section of the Center for Research and Conservation of Cultural Heritage (CRCCH). When the Ministry of Culture and Sports Affairs merged with the Ministry of Information in 1995, the Center became an autonomous institution, directly accountable to the Ministry of Information and Culture.

Finally, the center was upgraded as the Authority for Research and Conservation of Cultural Heritage (ARCCH) by proclamation No 209/2000. Since October 16th 2001 the accountability of the Authority has been transferred to the Ministry of Youth, Sport and Culture, due to a restructuring program. The Authority is organized under six departments, namely: The National Museum of Ethiopia, Archaeology and Paleontology, Cultural Anthropology, Heritage Restoration and Conservation, Inventory and Inspection of Cultural Heritage and Heritage Research & Central Documentation. The Authority has also a Coordinating Office for the National & World Heritage Sites of Ethiopia (http://www.mysc.gov.et/ARCCH.html).

In the 1990's, the new government's instability and the top-to-bottom reorganization of the country put preservation efforts on hold. Since then, several projects have been designed but they remain on the drawing board. Nevertheless, various Ethiopian authorities, as well as the Church administration, or the European Union and the UNESCO remained involved in restoration programs. That adds up to a heck of a lot of people and organizations. Indeed, bureaucracy and the Ethiopian civil war have not been the only stumbling blocks. After the decentralization measures implemented in 1995 and 1996, heritage preservation fell to the federal Ministry of culture, but projects and local planning schemes were directly transferred to the region. Since then, Lalibela's monuments have been supervised by the ARCCH and with the collaboration of UNESCO. The Lalibela town administration barely intervened on

the conservation works. Though, the Lalibela church administration was the one to safeguard the church properties with the collaboration of the community.

5.1. The "Tarija" project: the local success of an inclusive program?

While the European Union and the UNESCO were studying some sheltering projects for 5 of the Lalibela churches in collaboration with the ARCCH, the Finland Cooperation Agency signed an agreement with the Regional Bureau of Culture and Information. This agreement was based on the decentralization policy but the controversy of implementation between the levels of actors and the loss of "intermediate" came engraved. The Finland project started in 1994 and was officially entitled "Environmental rehabilitation and upgrading of the historic site in Lalibela." Locally, the project was nicknamed upon the project leader's name, "Tarija." The project work plan included urban planning and environmental rehabilitation in relation to the preservation of the physical heritage. The implementation period was defined from 1994 to 1997. The financial sources were divided between the Ethiopian government (1,5 million *birr*) and the Finnish Ministry of Foreign Affairs (14,5 million *birr*). The main objectives were to create a balance between the cultural value of the area and the improvement of living conditions for the local people. The project was based on participatory city planning, and to fulfill this goal the Finnish Ministry of the Environment provided expert help (Finneda, 1998).

At the same time, UNESCO was drafting plans to renovate the churches of Lalibela. Even though the Finnish project was not about the buildings themselves, Finland funded the construction of a protecting roof for the badly eroded, leaking church of Bete Medhane Alem. Local people took this gesture as a friendly one. At the same time, Finnish experts conducted excavations in the area. The project also involved the Finnish theologian and architect Paul de Hesse who had been sent to observe the cultural layers and value systems in the area – in other words, the relation between spiritual content and the physical shape. De Hesse further studied this theme in his doctoral dissertation (Finland Evaluation report, 2002). Thus, the cultural cooperation between Finland and Ethiopia has also deepened in the academic field.

The project added several works to upgrade the village to a medium town: construction of offices for the town administration, meeting halls and office facilities, training for the youth on language studies. Besides, the first resettlement of Lalibela's population was undertaken nearby Bete Medhane Alem and Bete Gabriel churches. For the first time, 40 households were resettled in the outskirts of the town within small houses built up by with the project funding.

The purpose of the resettlement was to rehabilitate churches surroundings. Even if the project motivated the youth and helped the administration structure, the Regional Bureau of tourism and information halted it for unclear reasons (Bridonneau, 2013).

This project remains as a very important one in the local memories. Ato Derje Zerfu, 55 years, is a former Culture and Sport officer (interview, 2015):
I worked with the Finish project until the end. The Regional Bureau forced them to terminate the project. Despite the discomfort of the regional politicians, the project was successful and well accepted by the inhabitants. The inhabitants renamed the project as the "Tarija project," on the name of the project coordinator. The cause of the premature termination of the project is political. In this period, the decentralization process was just started and the federal government had huge budget issues. Then, when this kind of project was arriving in the country, region had started to compete to get these sorts of "additional budgets" for development works. Other powerful regions, closer to the regime [i.e. Tigray] wanted this project and got jealous... Every region leaders, and inside the region every city administrators were jealous when they realized that the project had offered the town vehicles and other accessories, before dealing with the project application and realization".

Ato Abebe Kassie, 42 years old, is a local guide and an inhabitant of Lalibela (interview, 2015):
I would like to affirm that the project was locally fully accepted and that concrete works were done and they were participatory. The project was to rehabilitate the very degraded land of Lalibela and to conserve some of the churches. It was well integrated with the local inhabitants and they were reutilizing the conservation local skills. They also cared about the eroded landscape of the core zone. Works started by opening the debate among the project leaders and local inhabitants. The local community, the clergy and the students participated in the project. Conservation and rehabilitation works were done. A resettlement program was implemented. But there were some clashes among the regional administrators and they forced them to stop the work.

Ato Cheru Abebe, 46 years old, is a hotel owner and was a driver for the project (interview, 2015):
We all accepted the work because our ideas were listened by the project coordinators before the work started. The community participated in most of the steps of the project. Thus, we

accepted it, as it was our project. The period also matters: at that time the town was totally eroded and the project arrived aftermath. This was a great advantage for our place. We could rehabilitate the environment, conserve the churches and make the historical site suitable to attract the tourists. Even if there was a new municipality, the town was unable to produce a master plan. The project did it. The community was pretty happy with the project implementation. But I don't know why the regional Bureau had stopped the project. They didn't explain for the community. What I know is that the project manager was forced to leave the site in a short period.

The official reason for interrupting the project was that it was not allowed to host two projects on one specific issue. As the European Union and the UNESCO were studying the site, the Finnish project had been considered as useless. Afterwards, the heritage site started to be managed only by ARCCH.

5.2. The European Union restoration program: the inhabitants' "nightmare"?

The European Union conservation program resulted in the building of huge shelters for five of the Lalibela churches. This project was the result of a long process of exchanges and discussion between the Government of Ethiopia, represented by the Authority for Research and Conservation of Cultural Heritage (ARCCH), the European Union Delegation in Addis Ababa and other stakeholders, in particular UNESCO, which verifies that all norms are respected in order to preserve the World Heritage label, and the Ethiopian Orthodox Church (based in Addis Ababa) who manages the site, at least in its religious dimension. The coordination of all stakeholders took many years. Thus, the first European Union Delegation (EUD) letter giving an agreement of principle for financing the protection of the churches dates back to 1995. The EUD, concerned by the urgency to provide a solution for the deterioration and risk of irreversible damage to the churches, had then decided to finance a project dedicated to the protection of the most endangered rock churches (McClure, 2007). The shelter structure design and technical specifications were the results of an international architectural design competition launched in 1999. The selection process involved an international jury composed of representatives of the Ethiopian Government, UNESCO designated members, the International Association of Architects and the European Union. The result led to the selection, in 2000, of a project presented by an Italian architect cabinet, which first provided the design of the shelters, then supervised all works pertaining to the project. It

has to be noted that due to new technical requirements issued by UNESCO World Heritage Centre in 2006, the original design had to be significantly adjusted, which provoked further delay (Jeretic, 2012).

Fig. 2.9. The "European Union's shelters"

Mamite Gelaw, 56 years old, lives near by the churches. She described in these words the churches shelters funded by the European Union (interview, 2015):

We live with the fear. For real, we don't sleep. It is a nightmare for us. When the heavy wind blows and when it rains, we have to pray the Almighty to bring us a better solution and to remove the giant shelters from our holy churches. They told me that UNESCO made these structures but why did they put us in this terrible situation? Anyways, the solution should come from the sky, not from the humans.

Mother Alemitu, 61 years old, belongs to the Lalibela Women association. About the shelters, she considers (interview, 2015):

The situation was better ten years ago, with simple corrugated iron sheets. Instead of the shelters, it was better to wait until the doomsday. God promised King Lalibela that the churches would stay alive forever. We should trust him more than "the Ferengi[21]." As you

[21] "Ferengi" is an Amharic term that means « the foreigner », « the White ».

know it, the one who was named Angelini attempted to destroy all the churches, especially Merqurios, which has been closed for more than 30 years. Recently, again, a new "Ferengi" has arrived. When they dismantled the old shelters they didn't invite our carpenters who have an experience in sheltering the churches. They started to cut the wooden scaffolding and it damaged the Amanuel church. Then they tried to hide the mistakes they did in Medhane Alem church: indeed they used a jack to fix the scaffolding on the head of the church because of these and damaged the rock. There was a strong conflict between the contractor workers and the inhabitants of Lalibela. The people believed that the workers were here to destroy our churches. In order to resolve the conflict a committee was settled: it incorporated clergy members, Culture and Tourism Bureau experts, and some of the elders[22].

Indeed, while the shelters were wrongly installed and the scaffolding erected on the church of Bete Medhhane Alem, the clergy and some inhabitants stood against the construction work. According to Habtamu, a Lalibela Culture and Tourism office expert, a big fight blew up and the works had been stopped for a week (interview, 2015): *"none of the foreign engineers explained us the need of these shelters to preserve the churches from further degradation. According to me, most of the international actors who are coming to conserve or for development are not clear. They don't explain us their projects. Sometimes, they feel they have a better knowledge of our place than us.*" According to the former head of the Lalibela church administration, Aba Gebreyesus (interview, 2015), the sheltering project didn't consider the immense spiritual, cultural, historic, artistic and economic value of the churches.
As a I were a member of the committee formed by the town adminstration to identify the problems occurred by the shelters, I got a chance to meet and to make an unofficial conversation with one of the project consultant, Dawed Mohamed who supervised the quality of the work. Our discussion focused on the inhabitants and clergy's trepidation regarding the strength of the structure. According to him, all the materials came from abroad and when they arrived in Ethiopia there was an authorized office to control the quality of all metals and equipment, which were used to conserve the churches. However, Dawed recognized: *"I can't say that there was no problem. There was a cultural and religious gap. Unknowingly, the foreign experts break the local rules. In addition to that, these workers didn't have any background in heritage conservation. They came from an engineering company".*

[22]I personally represented the Culture and Tourism office in the committee working to resolve the conflict between the community and the contractor.

It has to be noticed that the project couldn't stop the irreversible process of deterioration that had been going on for centuries due to natural degradation of the rocks. But the contractors should have considered the major problem of water infiltration. Moreover, they didn't consider the structure responsiveness: for instance, the pillars of the Bete Maryam and Bete Meskel's shelter stood over the other church of Bete Golgota. The Pillar for Bete Libanos' shelter stood on the top line of the tunnel connecting Bethlehem church with Bete Merqurios. They didn't consider that the structures built to carry the shelters were too heavy for the rock. No study was conducted to assess the negative impacts of the shelters on the integrity of the buildings themselves. Finally, the concept of *reversibility* to be applied when working in a historical environment has not been respected (Jeretic, 2011).
Few years later, the EUD appointed an independent consultant, Patricio Jeretic, to assess the Lalibela restoration program. According to him, "all works had to be completed in a very brief period, basically during the year 2007, since the project's implementation phase expired on December 31, 2007. This short period of time and shortcomings in the technical evaluation of final work led to some minor technical problems in the works. These technical problems should be corrected in order to ensure efficacy and sustainability of the project" (Jeretic, 2011).

Lack of proper studies and preparation, overambitious original project considering institutional capacity at a national level, overlapping of several stakeholders with different interests and poor coordination can explain the fact that the project was badly implemented. Finally, we can't really say if the project had whether a negative or a positive impact on the churches. But we can affirm that once again, the community felt deeply hurt by these conservation works.

CHAPTER 3
HERITAGE VALORIZATION AGAINST LOCAL COMMUNITY

Beyond churches conservation, recent programs have aimed at rehabilitating the site as both a landscape and a place. The local community seems to be endengandered by this kind of programs, which often question the necessity of moving the people far away from the churches. The displacement issue pushes further our questioning: conservation and valorization programs don't only bring some kind of disregard towards local people's skills but also consider people as dangerous for the churches. In order to pursue our study, we will now consider the last important valorization programm undertaken in Lalibela, the *Ethiopian Sustainable Tourism Development Project* (ESTDP).

Since 2009, Lalibela has hosted this huge development program, which aims at enhancing the tourism flow, at developing a sustainable tourism and at safeguarding the heritage by evacuating more than 700 households from the site "core zone." Thus, within the collaboration of national and international actors, the old neighborhoods, which surrounded the churches, have been destroyed and the inhabitants forced to leave. More than 4 hectares of land have been "cleared" from the late dwellers. Only few vernacular houses remain, as they are considered and registered as a part of the World Heritage property. The major discussion of this study focused on the impact of a tourism development program on the local community.

1. The "Ethiopian Sustainable Tourism Development Program:" heritage as a development endeavor

The ESTDP project intended to address poverty and development issues in Ethiopia, through selective tourist destination sites. This approach is consistent with the tourism development objectives outlined in the PASDEP (Plan for Accelerated and Sustainable Development to End Poverty) and in the draft tourism policy of Ethiopia elaborated in the 2000's. The project

is funded by a World Bank loan of 35 million USD (Wub Consult, 2011).The ESTDP encompasses four main components:

- Component 1: Integrated Destination Development
- Component 2: Market Development
- Component 3: Institutional Development and Capacity Building
- Component 4: Program Implementation Support

Component 1 supports the objective according to which historic and cultural sites need to become productive sources of jobs, income and economic growth. This should be achieved through the development and the implementation of integrated destination development plans (IDDP) in three key places in Ethiopia: Addis Ababa and environs, Axum and Lalibela. The activities will be carried out in two phases: project development, and implementation. One of the major operations of the ESTDP was the resettlement in Lalibela. The component 2 aims at promoting strong market presence and goes hand in hand with product development activities of Component 1. The third component aims at providing technical assistance in various areas of tourism strategy development, policy and planning, marketing and promotion, and other tourism related development activities. Component 4 is planned to provide financial management, procurement and monitoring, and evaluation support to a program management office to be placed under the authority of the Ministry of Culture and Tourism. These components are interlinked and need to be carried out as integral parts of the tourism development program (ESTDP, 2011).

The World Bank and the Ethiopian government signed the project agreement in December 2010. The World Bank defines ESTDP as a development project, which aims at “contributing to improve the quality and variety of tourism products on target destinations in order to increase the tourist capacity” (World Bank, 2009). To achieve this goal, the World Bank stresses the need to meet the expectations of tourists who want to discover the sites well preserved and well presented. The cleaning up of the site’s surroundings is then seen as an “adjustment” necessary to “maximize the potentiality of Lalibela as touristic center” (World Bank, 2009).

2. Displacing the community for churches valorization?

A long time ago, maybe one hundred years ago, our families left their farms and came here for guarding and serving the holy churches of Lalibela. Then, our grandparents and parents grew up and passed away here. They were so lucky not to see this disaster. We were with Saint Lalibela day and night. When the bell rang, we were ready to go to the mess, early in the morning. What did we do wrong to him? As our local administrators told us, we are dirty and dangerous for the churches. That is why they moved us to the farmlands. We used to be important for the site.

Melkam, 74 years old, widow, former dweller of the Mikael gebbi (interview, 2015)

Fig. 3.1. The evacuation of the churches' surroundings (2015)

Since 2009, the "resettlement" program undertaken by the ESTDP aims to displace about seven hundred households surrounding the churches. Such a reorganization of urban space responds to the concerted effort of several actors to turn a residential and commercial space into a heritage and touristic space. The promoters of this program use two main arguments to convince the people to move: a need for heritage preservation and a need for economic development. The local community, ordered to leave the churches area, did indeed face two major categories of actors, "Ethiopians" and "international". The Ethiopian government intervenes in its central and decentralized forms (national, regional and local). In

addition, the Lalibela Orthodox Church acts as the guarantor of the sacred nature of Lalibela, but also as a local economic leading actor.

World Heritage sites attract many international heritage actors. For decades, some of them have made a stand for a cleaning up of Lalibela's site. Thus, following successive international recommendations, the Ethiopian public actors have gradually legitimized a displacement project in Lalibela.

2.1. The local community as a danger for the churches

In Lalibela, people have heard about a reorganization of the churches surroundings since the 1960's. Rumors of eviction probably arose with Sandro Angelini's stay in Lalibela. In 1966, he was writing that "the presence of people who lived in the houses around the churches for many generations and who, because of the necessities of daily life, have lighted fires, consumed water, and so on, have contributed to the damage in certain parts of the monolithic structure" (Angelini, 1966). At the same time, the architect appreciated the round houses with thatched roofs surrounding the churches. Angelini wanted to keep these "tukuls" for craftsmen who could sell there some products to tourists. In his conservation plan, he suggested to prohibit corrugated iron sheet roofs nearby the churches. In 1978, following the registration of the churches as a World Heritage site, Unesco has become the cornerstone of heritage policies in Lalibela. However, Unesco barely participates in the funding of conservation works. Yet, its representatives monitor, validate, warn and coordinate other stakeholders' actions. In the 1990's, Unesco cooperated with the Finnish Ministry of Foreign Affairs who took in charge an "environmental remediation" of the city (see chapter 2). The "resettlement of a number of families from the historic site," was considered. Although the project stopped prematurely, several dozen of people were evicted from the churches surroundings at that time.

A few years later, an expert from Unesco carried out a mission in Lalibela (UNESCO, 2007). His report alludes to the wish of the Orthodox Church of Ethiopia's patriarch to move the residents living near the churches of Lalibela. The report discusses a complicated issue since on the one hand"the traditional village of which a small part is within the church property is part of the World Heritage site", but on the other hand the "local population" should be "the main beneficiary from the conservation and development of Lalibela" (UNESCO, 2007). Moreover, according to this document, "today's urban development in Lalibela endangers the integrity of the archaeological site; […] new housing areas are located in the vicinity of the

churches within the site's buffer zone" (UNESCO, 2007). The distortion between the concern for the village and the rejection of the urban development reveals the contradictions of Unesco's positioning. In 2010, the World Heritage Committee also "expresses concern about uncontrolled urban encroachment that threatens the property and urges the State party to stop this encroachment" (UNESCO, 2010).

The national positioning fits into the framework provided by the international actors. Between 1984 and 1987, a wall was erected to demarcate a "church compound." Inside the "compound," local authorities forbade residents to renew and extend their house. In the 1990's, according to the first Lalibela master plan, the "church compound" and the surroundings neighborhoods are "preserved zones." Those regulations generated a gradual freezing of the neighborhoods that caused landscape degradation. These evolutions later contributed to legitimate the inhabitants' displacement. In the 2000's, local and regional authorities, and specifically the authorities in charge of tourism and heritage clearly express their will for a resettlement plan. In 2008, the head of the Lalibela Culture and Tourism Office stated in the *Courrier de l'Unesco* that his "main concern [...] is the poor people who live on the site and deteriorate it. It is imperative to relocate as soon as possible these 270 families." The church authorities also encouraged the eviction of the inhabitants. In 2009, the arrival of the World Bank offered the opportunity to implement the cleaning up of the churches surroundings. The World Bank considered the people's relocation as a component of a development project that will benefit the entire local community (Bridonneau, 2013).

For both national and international actors, the main objective was to strengthen the tourist attraction in Lalibela by offering a more attractive site landscape. All actors converged here to promote a rehabilitation program that will free the sacred site from its dirty urban slum.

2.2. A local community endangered by heritage valorization

Since 2009, about 700 hundred households have been displaced from the churches surroundings and relocated in the outskirts of Lalibela. The resettlement has affected a pious and poor local community. In these neighborhoods, most of the household's heads are women, what is usually considered as a sign of fragility in the Ethiopian society. Most of them are widows, nuns or former prostitutes. Nevertheless, some researchers have shown that there is some social diversity among the community (Bridonneau, 2013). Out of about one hundred interviews led with inhabitants who had to experience the displacement, the geographer Marie Bridonneau (2013) considered that a dozen of families were pretty rich

ones. These ones had a large house and own a quite prosperous business. At the other end of the social scale, many households only have income from small farmland they own in the surrounding countryside or from a very small business. Many women sell homemade alcoholic beverages at home. Some elders or disabled only survive with their neighbors' assistance. The middle group stands out by an access to regular and sufficient income to meet basic needs. Beyond this social diversity, people mostly live together as a community, especially by belonging to associations. For instance, most of the households belong to a funeral association, named *eder*. Behind the apparent slum, people are part of a socially heterogeneous group organized through associations.

In May 2009, some residents of the "Mikael gebbi[23]" local social housing, rented by the local administration to the poorest households, were relocated in the outskirts of Lalibela. In January 2010, some owners had to destroy their own homes. As a compensation for their forced eviction, they received a plot of land 5 kilometers away from the churches, and some cash. At that time, a very old woman, widow and childless, explained that she had already built her house in the resettlement area. She was cutting down the walls of her former house, saying she wanted to get materials to build latrines in her new house. She was wondering how she could carry these materials to her new place, few kilometers away. She also reported that the local authorities ordered the destruction of houses within the week, otherwise they would come with bulldozers (Bridonneau, 2013). This testimony highlights the violence endured by the community affected by the displacement. In April 2010, only the vernacular round houses remained in the Mikael gebbi. Empty, they have been locked and renewed by the local Tourism and Culture office. Then the *resettlement* will be pursued up to 2015 in the other parts of the church compound.

Fig. 3.2. The "*tukuls'* restoration" in the Mikael gebbi

[23] The "Mikael gebbi" is a part of the Church compound, the first to be affected by the "cleaning up."

3. Lalibela, a sacred site without its people

In 2015, the last inhabitants resisting to the eviction have been moved from the Church compound after long negotiations regarding their compensation fees and plots of lands. In the site "cleared" from its inhabitants some renewed vernacular houses and dismantled materials remain today. Besides, here and there, some abandoned domestic animals still roam on the site.

Ato Belete, 43 years old, was the coordinator of the ESTDP for Lalibela (interview, 2015):

The main goal of the project was in a short-run to make of Lalibela a model destination in the country. Besides, in the near future we aim to make of Lalibela a very competitive touristic destination in the world. Our project is under the umbrella of the Ministry of Culture and Tourism and we work hand in hand with different governmental and nongovernmental organizations. Our work on the site was to "collaborate" for resettling the people from the Church Compound by fulfilling their basic needs in the resettlement area (water, electricity and road). Indeed, the heritage site was densely populated, and there were different activities there, which were not congruent with the sacred and touristic churches life. We have worked on this project from 2009 to 2015. Totally, we relocated 700 households. The people were a burden for tourism development and an obstacle for the site's conservation and rehabilitation, as well. Because of them, the site was getting dirty and unpleasant for the visitors. As we are working to enhance a sustainable tourism and to give a better life for the dwellers, a huge part of the World Bank's grant went for the development of the resettlement sites. However, we [ESTDP] weren't responsible for the compensation fees. It was the regional government's duty. Nowadays, we are working to beautify the vacated land. Some Italian consultants studied the site and proposed a new landscape design. Now we are working on the ground: cleaning and paving the paths inside the core zone, etc.

The radical changes caused by the church compound's cleaning up are also embedded in the place names. Within the churches surroundings most of the historical neighborhoods names have disappeared. Yet, these neighborhoods were the firsts of Lalibela next to Kedemt Mikael (located in the North of Lalibela's current town). In 2009, the inhabitants affected by the first resettlement's stage have named their area the "Mikael gebbi." This area used to encompass three neighborhoods names: "Wanzaw sefer" ("the acacia village"), "Sebat weyra" (the "7 olive trees"), and Chifrigoch ("the dense neighborhood"). Losing their community life, these neighborhoods have simply disappeared and been replaced by the unique name of "Mikael gebbi" which means "the compound of Mikael [church]." The old neighborhoods that used to

be the scale of local association life only remain in the local memories. Then, following the next resettlement stages, some other affected neighborhoods have disappeared. The different core zone's areas are now named after the different churches. The old neighborhoods have been eliminated, not only physically but also in their names.

Nowadays, Lalibela's places renaming not only affects the Church compound but also the other areas that welcome visitors (hotel's areas especially). For instance, the main Lalibela's street connecting the churches and the town has been renamed "Honey Street" in 2012. Such a name is meaningless for the inhabitants. It has been chosen only to be easily understandable by tourists (ESTDP Final Report, 2011).

This street name appeared in a report produced by a consultant for the ESTDP (ESTDP Final Report, 2011). Penetrating the core zone from the northwest to the southeast, this street has been paved with rectangular stone slabs in the early 2000's. Then, the ESTDP carried out a re-paving of the street with a proper drainage system along it (fig. 3.3). Ato Mamo, 45 years old, architect and conservator, has been in charge of the landscape design's implementation. He believes that "*the project intends to pave the street, to plant some trees in order to make the site more comfortable for tourists. In this way, we hope to increase our heritage's value and to extend the tourists' stay in Lalibela"* (interview, 2015).

Fig. 3.3. Repaving the "Honey street"

This street also plays a very specific part in many religious and cultural ceremonies such as Timket (Epiphany), Kana Ze Gulila (Saint Mikael Fest), Sebar Astmu (Saint George Fest) or Ashendiye (cultural young girls music fest). During these events special religious processions take place along the street where fourteen celebration spots are located, starting from Roha Hotel area (in the southern part of the town) up to the Meskel's square (in front of the churches' main gate). This main street is also used for funeral processions: family members carry the coffins from Meskel Square to the cemetery located along the street. The project's designers want to keep and to use these religious activities as a part of the touristic attraction. Ato Daniel, 39 years old, is an engineer also working for the landscaping (interview, 2015): "*From this street we can feel the sacredness of Lalibela, not only materialized by the churches but also in the natural features which surrounds the churches: the hills (Debre Tabor, Debre Zeit, Mekan Zeeba), the Jordan river, the liturgical pools in the churches' courtyards, the reservoirs, the valleys and the gullies surrounding the site and hosting cemeteries, etc. All are incorporated in the development program, all of them being associated with religious beliefs and community's daily life. These spots form an outstanding cultural landscape with deep sacredness. At these sacred places, various religious rituals and practices have taken place for centuries, especially during religious festivals such as Meskel (the true cross finding), Genna (Christmas), Timkat (Epiphany). And they remain some active stages today. These sacred places retain an extremely high degree of authenticity, in terms of tangible and intangible. They include religious rites and distinctive lifestyles, customs and habits that reflect how the spiritual world is related to people's daily lives. That is to preserve this sacredness that people had to be relocated out of the site.*

The landscape design also aims at providing further detailed explanations through signs about these religious ceremonies. Conservation, interpretation and presentation of the religious, historic and natural sites were included. Development of articulated tourist paths with appropriate interpretation and presentation tools, necessary tourists facilities, rest areas, areas for meditation and contemplation, planting and landscaping have been foreseen. Thus the only measures allowed in these areas would be material conservation and site presentation. The interventions which could be allowed were low impact ones: visitors paths with ramps, steps, decks, railing as needed, some interpretative panels with shadows, benches, information signs. Tourists' facilities should be kept close to the "Honey street" (ESTDP Final Report, 2011).

Fig.3.4. Landscaping cultural heritage: staging Timket (Epiphany)

Birhanu, 51 years old, is an engineer and the ESTDP infrastructure specialist. He explained us that *"the objective of the project was not only to collaborate to resettle the inhabitants. We were deeply working on the site's development, especially in the core zone. Nowadays, the site is free from the old houses. We've only kept the tukul houses. There are no more inhabitants. To be clear, it is not anymore a village. It is a sacred and touristic site. Therefore, we are working on different kind of infrastructure: paving the road with cobble stones, opening the tranches, and constructing the drainage. Besides, we have already built nine tourist standard toilets: these toilets keep the vernacular tukul architecture; it is easily harmonized with the site and very comfortable for the tourists. All the construction and beautification of the places aimed to increase the number of tourists"* (interview, 2015).

The present boundaries of the core area have been confirmed by the ARRCH in 2013, as well as the site management plan. Any enlargement of these boundaries, which has been proposed by some actors can here be seen as detrimental to the integration between the strict conservation area, i.e. the core area, and the rest of the town, i.e. other urban areas of ordinary life and where various activities take place. It would thus produce an isolation and a separation of the core zone, which contradict the holistic concept of a "sacred landscape" and the context of a living culture and vibrant place (ESTDP Final Report, 2014).

Nevertheless, through the destruction of old neighborhoods and the new landscaping of the site, we can see the aim of a higher and better use of the place. The dwellers now live

away from the churches. The main visitor's paths will present the sacred landscape in all its aspects, tangible and intangible, religious, historic, and natural, in the attempt to have the visitors experiencing the "spirit of the place" (ESTDP Final Report, 2014).

CONCLUSION

This study has focused on archives analysis, direct observations and community testimonies. I have divided this master thesis into three chapters in order to question the heritage management mismatches through the case study of Lalibela (Ethiopia).

In the first chapter I have traced how Lalibela churches became known and valued by most of Ethiopian Christians. The internationalization of Lalibela started with Francisco Alvarez's description in the 16th century. He was the first one to set up Lalibela in the western libraries. After a long break, other Europeans rediscovered Lalibela at the end of the 19thcentury. These people were not historians neither archaeologists. For instance, Gerhard Rohlfs, who arrived at Lalibela by accident in 1868, was an explorer by vocation; Achille Raffray was the French Consul in Massawa; Monti della Corte was a professor of Political Science, etc. None of them intended to achieve a heritage study: rather than scientific researches, the documents they produced were testimonies of people who observed the site and recorded their impressions. Nevertheless, they directly contributed to build up the internationalization of Lalibela.

Lalibela also occupies a very special place in Ethiopia, being a historical place of pilgrimage for ordinary Orthodox Christians but also for numerous Ethiopian kings and regional governors such as Emperor Tekle Giyorgis (1779-1795), Emperor Menelik (1889-1913) and, above all, Haile Selassie. Not only Haile Selassie's visits were impressive for the clergy and the inhabitants of Lalibela, but they also strengthen the political interest for the conservation and the valorization of the site: Lalibela soon became a place of national interest ruled by a public administration. Subsequently, in the 1960's Lalibela was not only a religious and sacred place anymore. Urban development grew fast: schools, health center and administration offices opened. Besides, Lalibela was considered as the main Ethiopian touristic destination to become: an airstrip was used for scheduled flights and an international standard hotel opened its doors to tourists. The heritage making process went on during the

Derg (1974-1991). The Unesco registration process, started under Haile Selassie with national and international actors along ended in 1978: Lalibela was inscribed on the World Heritage List.

In the second chapter of my study I have mainly focused on the monuments' changes. I have argued that the structural problems of the churches appealed multi restorers from the international and the national communities as well. Then, I have focused on the techniques of restoration used on these monuments. Before the onslaught of modern conservation techniques, the community used to conserve the churches with their own masons and artisans' skills. These kinds of conservation practices were fully accepted by the communities and are nowadays kept as ideal in the elders' memories. The churches' structural fragility combined to their international attracted several national and international actors, who carried out a huge number of restoration works. They were very pragmatic but not much documented campaigns. Fostered by the original interest of the royal family these restorations works took place in the 1920's, the 1950's, and the 1960's. The first ones were undertaken without scientific precautions and with recourse to cement: instead of preventing the churches from degradation, they aggravated the situation. From 1990's onwards, Lalibela hosted several heritage conservation and development works. Among those, the "Finnish" project (1994-1997) has been quite unique. Not only its representatives involved the local inhabitants, but they also considered them as the owners of the churches. Unlike the other programs, the local community mostly accepted this one. From 2000's indeed, a sheltering project for five of the churches, funded by the European Union, created an endless controversy among the community. Most of the times kept out of the recent conservation program, on the one hand the local community members narrate their own conservation techniques and practices: they explain how their former practices used to safeguard the monuments throughout the centuries. On the other hand, they systematically criticize the modern restoration intervention on the monuments. Here, the controversy seems to revolve around a real lack of intermediate body between the heritage institutional actors and the local community.

However, all across the world, a large number of places have been treasured, destroyed, rebuilt, visited, and appropriated for new purposes. As heritage sites evolve through processes of creation, neglect, rediscovery, preservation, interpretation, and public presentation, economic development is frequently presented as a foe to conservation (Lisa, 2014).

In the last chapter, I addressed the question of the modern management of Lalibela as a multi scalar heritage and landscape. The meaning of Lalibela's heritage changed through time. Today the use of the monuments does not only refer to the main pilgrimage destination in Ethiopia as it did in the 15th century: Lalibela has become a political and economic tool for the country, especially through tourism. This shift has pitted heritage valorization and local community against each other, as the *Ethiopian Sustainable Tourism Development Project* shows. Beyond churches conservation, recent programs have aimed at rehabilitating and shaping the site as a landscape. The local community seems to be endengandered by such programs, which often question the necessity of moving people far away from the churches. Around the Lalibela's churches, the ESTDP planned and organized a displacement programm. Since 2015, once the project was completed, the site was "cleared" of 700 households resettled several kilometers away from the churches, the evacuated land remained with few vernacular houses and some abounded domestic animals. The renaming of the places' names also followed the changes of the landscape.

Thus, the resettlement issue pushes further our questioning: not only conservation and valorization programs bring some kind of disregard towards local people's, but they also disseminate the perception that the very existence of the local people is a threat to their own heritage – the churches in the case of Lalibela.

Neither the modern restoration works nor the current sustainable development programs include real grass roots local community participation. In other words, local communities are not involved in heritage conservation endeavors. Yet, local involvement is crucial because inhabitants of the place are the daily heritage actors beyond the governments, researchers and developers. Most of the heritage development or conservation interventions offer no role to these communities subsequently reduced to be mere spectators of the protection of a heritage they cherish. Scientists, experts and other institutional representatives tend to carry out their work without involving local people or by merely employing them as laborers. If we look for local people's support in heritage conservation, more effort must be invested in programs aimed at bringing them onboard.

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History of Electric Transformer

Transformation of power

Key words: electric transformer, energy, invention, industrial revolution, light, war of current, lamination, voltage

This work presents a study conducted with master's program Erasmus Mundus TPTI. The program was run by three European universities : University of Paris 1 Panthéon Sorbonne (France), University of Padova (Italy) and University of Evora (Portugal) whose main objective is to form professionals on different fields and in skills related to the conservation and valorization of industrial heritage. In this master's program, in addition to activities linked to individual training, site visit and report writing, understand the theoretical and practical background of each course, the group project works are the very pragmatic and helpful to understand the grassroots problems of group working. On these paper just I am dealing with a group project which is a very remarkable project which helps me to understand the change of technique and the development of technology due to the industrial revolution through the invention and use of electric transformer. The groups worked on the different matter but working together on the project, dividing the main subject to subtopic of individual interest and agreement, these project named as a group project or collective project as project tutoré, which aimed to allow the development of collective works into tow main teams : the *electrical transformer* and *tramway*.

The study line of this work dealing with the *history of the electric transformer* and the team was grouped from students coming from different countries and has no knowledge or partial information about electric transformers but has a background in different disciplines. At the beginning, the group created by five students, unfortunately after tow semester of intensive works together two of the group members and our colleges drop out from the team, and we forced to squeezes the works and adjust the team to incorporate the leftover works. Finally the work team members Anne Pernet her educational background is from political science origin France, Nevena Tatovic landscape designer from Serbia and kidanemariam Ayalew, cultural studies from Ethiopia, with our tutor David Colepeper. Even if we are coming from different background and country through the tow years interactive training and coaching by our professors, we developed and boast the great experience.

First steps into the group project…

Let me start in a lighter vein and tell you of an incident during the start of a compilation of this search. As one of the sources for this work, we were supposed to search different materials and bibliography then looking for library, and to know the objects we were visiting electric museum (in Paris, Italy and Portugal) when we visit the old and abandoned industrial site we took a photo of an electric transformer, asking professors was interesting time on the past two years. This all were sometimes pushed the group to search more and more to understand and further knowledge about the objects. Then most of the libraries didn't have a book which it can help us. Even if, we visited the museums we saw an electric transformer as an object but the explanation is somehow void. The main information tool were searching through internet, went to the Internet and searched for "History + Transformer". The first search gave me two groups of results. The first was about the history of Jefferson's transformers[24], which when we went more deeply into was found to be mainly for toys. This obviously was not what we were looking for. The next result filled our pleasure. It had the title "The full history of the transformers". From this, I personally learned that the transformers were produced over a million years ago, what? run it again and checked for the second times, of course, it said a million year ago. The transformers described and pictured did not look like any of the transformers I had seen and I did not fully understand what they were talking about. So I copied the first paragraph of the article. "Millions of years ago, the planet of Cybertron was made by the Quintessons as a production plant for the robots they needed[25]. At the start they experimented with creatures partially robot and partially organic, later they made real robots. There were two types of robots; military units and consumer goods - Transformers". "They learned to adapt to anything." From another article, I learned that transformers are "robots toys that transformed into vehicles and such". I subsequently managed to find some more articles on "transformers" and especially on "distribution transformers" from the Internet and from the library. I also managed to obtain some books

[24] Besides making clocks, Jefferson also made many different kinds of transformers including toy (train) type, http://www.roger-russell.com/jeffers/jeftran.htm historical pages of Jefferson toy transformer

[25] Millions of years ago, Cybertron was a planet of peace...until the Decepticons, lusting for power, began a terrible war… http://tfwiki.net/wiki/Cybertronian_Civil_Wars

and articles from the Institution of Electrical Engineers in Evora(Portugal) library of engineering.

The rest of my presentation is based on these and other such articles rather than on the "complete history" I found earlier. Finally I got the history of the electric transformer as the beginning of our research from “Edison teaching center[26]” however, it was a new idea for most of the people who we meet, interviewed and informal discussion, we were not stopped to dig, took a picture and asked the information. Some people of our interviewee considered the object (electric transformer) a” dim-witted” part of electric. However, after we got research point and was important identifying the study part and divided the study by minimizing from five main parts and the work enclose the remaining or the leftover works from our ex-collegues.

Justification of the study

Our study is based on the history of transformer, the history of transformer incorporated the three phnomena the first on is to understand the importancy, like why we need and when it istarts? This qustion send us bak to the industirial rvolution to overlook the need of energy plus the prctical application and use of the electric transformer which this document embark. the other one the inventers (men behaind transformer) it was significant for the group members and for this reserch documents leads us and showed who is the inventers, the thired one the exhibition and the modern art of aboundend transformer and our justiffication how ever our study will not fullfill the history, be we belived that our wevpages will help for those people are intersted about object.

Our works which are developed on our website has three main pages

1, the transformation of energy : this pages are dealing with the need of energy from the industrial The industrial revolution and the change of transformer :was dealing with the time scale the history of transformer electric and the change of the city and street lights and war of currents

2 The inventors (the man behind the transformer) dealing with the inventors within the world

3 The heritage (exposition of transformer) transformer from ancient exhibition

[26] a transformer is a devise which transfer electrical energy from one circuit to anther through indicatively coupled conductors http://www.edisontechcenter.org/Transformers.html

The ***Electric Transformer Story*** is a biography of the electric transformer invention, from **the** scientific and technical legacy of the first industrial revolution **to the** faces **and** events that shaped its trajectory**.** Embark on a virtual Route of the Electric Transformer Discovery to learn more about the chronological and geographical background of the device invention that permeates the complex network of the history of electricity and science. To get to know about the role of patents, publications, and exhibit encounters, browse the visual history collections**.**

The missing link for low-cost transmission of electricity over long distances, the use of electric transformer has opened a new chapter in the development not only of science but industrial and technological advancement, and everyday life of ordinary people. The whole 20th century could be explored as an exciting era of its evolution, through numerous and diverse changes of the design, materials, and application. The story of its discovery, however, was written over the last decades of the 19th century. Taking place in very different geographic, economic, political and cultural circumstances, it was shaped by many elements beyond the circulation of scientific and technical knowledge, from the role of places and exhibitions in reaching the general public, to intriguing life stories and innovative, visionary entrepreneurship.

However, An electric transformer was not appeared in one night as any science findings coming through a long time taken and backbreaking works, the process as well. Electric transformers in this movement are familiar with a society and served from the single electronic equipment (like cell phone and laptop) to a multi-production company. In early industrialization to discharge the need of energy was a very time consumer, subsequently to achieve the consumption of energy were forced the period that generation to change from one kind of energy to another kind, this process was protracted and had passed through a long process. Then on this part of study we believe that to understand the objects and its purpose we further study the history of energy and the changes of the city life were enclose on my studies.

Nowadays, we are living in the machinery world, to make the life easier the technology is running, one goes after the other. After the second industrial revolution, electric become a

leader in the sector for the search of alternative energy[27], the invention of electric transformer helped the electric happen to accessible for industry and house use. The early period of industrial revolution energy needs was modest in the world. For heat, they relied on the sun on—and burned wood, straw, and dried dung when the sun failed them. For transportation, the muscle of horses and the power of the wind in their sails took them to every corner of the world. For work, they used animals to do jobs that they couldn't do with their labor. Fetching water from river or stream and collecting firewood was on the shoulder of women and children. Water and wind drove the simple machines that ground their grain and pumped the water were the beginning of the change in the history of energy. People made goods on small-scale from their homes, or in small workshops beside their house, the whole family would be involved in producing and selling the products. It was safe to work at home as they only used hand tools and simple machinery, these worked by hand or foot. In some situation, a few bigger machine were used, and waterwheels were used as a power source (Williams, 2006).

The need of energy and transformation of power embark on, at the beginning of the first or British industrial movement. In this selective personal paperwork is focused on the legacy of industrial revolution, this part is not stopping or strongly deal about the life of this industrial revolution more selectively investigated on need of energy and transformation of power through time: the consumption of energy among and along the community more or less electric energy was the main point to hold and invent the electric transformer, if then I am going through energy transformation, rise of city and need of electric city, augmentation of city and street light , the first electric transformer Faradays ring transformer , the war of currents and the function of electric transformer tinted. From this study I am dealing with, how the line were crossing up and letting the light for the invention and discovered a new objects and a path to arrive to transformer and its development.

[27] Electricity: Like chemistry, electricity was a field in which totally new knowledge was applied to solve economic problems. The economic potential of electricity had been suspected since the beginning of the nineteenth century. Humphrey Davy had demonstrated its lighting capabilities as early as 1808. Relying on the scientific discoveries of scientists such as the Dane Hans Oersted and the American Joseph Henry, Michael Faraday invented the electric motor in 1821 and the dynamo in 1831. The first effective application of electricity was not in power transmission, but in communication. (Joel Mokyr)

British industrial revolution, this revolution were known with manufacturing goods and inventing energy for transportation[28], on the other hand, this changes and movement of industrialization were with the little or no scientific base on its general invention. It created a chemical industry without chemistry, an iron industry without metallurgy, power machinery with no thermodynamic engineering, medical technology agriculture all were without the science[29]. The domestic system moved aside for more complex machines, and new methods were invented, which were powered by steam and gathered together in factories to produce more goods. It means that people would work regular hours and not when they wanted too.

This Industrial Revolution was a period when new sources of energy, such as coal and steam8, were used to power new machines designed to reduce human labor and increase production. The move to a more industrial society would forever change the face of labor. Mass production was achieved by replacing water and animal power with steam power, and by the invention of new machinery and technology[30]. Among other innovations, the introduction of steam power was a catalyst for the Industrial Revolution. Machinery could now function much faster, with rotary movements and without human power. Coal became a key factor in the success of industrialization; it was used to produce the steam power on which industry depended. Improvements in mining technology ensured that more coal could be extracted to power the a" factories and run railway trains and steamships. Britain's cotton and metal working industries came over internationally famous

One of the result and most long- lasting features of the Industrial Revolution was the augment of cities. In pre-industrial society, over 85% of people lived in rural areas with farming[31]. As migrants moved from the countryside, small towns became big cities. By 1850, in world history for the first time, an excessive number of people in a lived in cities than in rural areas

[28] The industrial revolution was fundamentally a technological revolution, and progress in understanding it can be made by focussing on the sources of invention. This subject has been opened up for economists by the researches of Joel Mokyr (1990, 2002) , and I will examine his views on macroinventions, the scientific revolution, and the industrial enlightenment. (Robert C. Allen,2006)

[29] The first industrial revolution and it production

[30] The changing character of work was closely related to the classic technological innovations of the nineteenth century and the beginning of modern economic growth. Innovations in energy use were particularly influential. (Dictionary of American History | 2003)

[31] Industrial revolution and groth in population were the factors for the viligaiization

Of great Britain. As other countries in Europe and North America industrialized, they too continued along this pathway of urbanization. By 1920, a majority of Americans lived in cities. In England, this process of urbanization continued unabated all throughout the 19th century. The city of London, the population, grew from two million in 1840 to five million forty years later (Hobsbawm, *Industry and Empire* 159).

The population growth in the city, the augmentation of small villages, created a great demand for energy. For the production and manufacturing of goods was not enough working a day and used the natural energy was unsatisfactory. For huge consumption and the need of the population, for these reasons, a need for alternative energy became a fundamental issue. So, searching of alternative power was not stop process.

Apparently, the search for alternative energy sources started almost as soon as the Industrial Revolution introduced. However, it was a very slow process, and it was not until the middle of the 19th century that these alternatives began to situated into use. In some cases, they started life as just interesting experiments, with seemingly no practical application. Only after an extensive period did they emerge as the useful power.

Many activities were simply done in the daytime. The use of electricity fundamentally changed the way worked and lived[32]. The first efficient commercial electrical generator was used in the 1870s[33]. Baltimore was the first city in the United States that started using gas for streetlight in 1816 while Paris started gas illumination of its streets in 1820. Gas was led through pipe installations to the gas lanterns that were placed on poles. Every evening the lamplighters, men whose job was to take care of the gas streetlights, were lighting the lanterns and every morning they were putting them off. This was done until the invention of the mechanism that lit the lamps when the gas was released in the lamp. After that came electricity and made street lightening even more efficient. Thereafter electric become the main sources of street light in different European cities and in united states of America. Paris

[32] The expansion of energy services is found to be a major factor in explaining economic growth in Sweden, especially before the second half of the 20th century. After 1950, labor-augmenting technological change becomes the dominant factor driving growth though energy still plays a role. (David I. Stern* and Astrid Kander)

[33] Electricity found its first practical use not in generating mechanical work but in lighting, with the arc light (invented in the first decade of the 1800s but not commercial for another 50-70 years) and, starting later but ultimately killing off arc lights, the incandescent bulb (with different designs patented by a number of inventors in the 1870s, of which Edison's was the most practi- cal, allowing him after 10 years of patent litigation to get declared the father of electricity). (EJ Moyer,2010) (http://geosci.uchicago.edu/~moyer/GEOS24705/Readings/ElectricityReading.pdf

laid claim to the world’s first electric streetlights. Its arc lamps, also known as Jablochkov candles, were installed in 1878. Three years later, 4,000 of these electric lamps were in use, effectively replacing gas lanterns mounted on poles. Russian engineer Jablochkov, lighting system based on a set of induction coils, where primary windings were connected to a source of alternating current and secondary windings could be connected to several "electric candles". As the patent said, such a system "allows to provide separate supply to several lighting fixtures with different luminous intensities from a single source of electric power". Evidently, the induction coil in this system operated as a transformer.

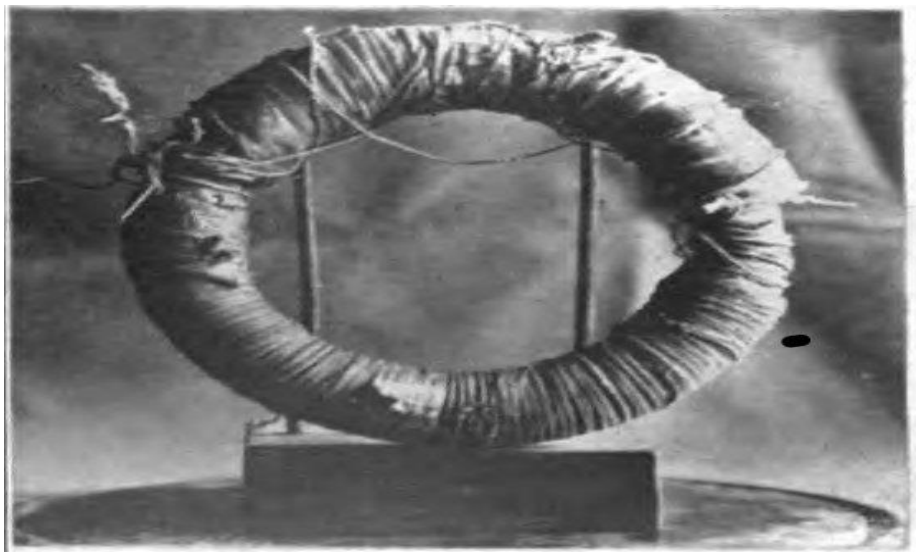
Back to the mid of 19century, In 1831, Faraday (EMF) made the fundamental discovery that an electric current was persuaded in a coil of wire when a magnet placed nearby the coil, was moved as a direct current[34]. By this discovery, he underlined the close relation between the sciences of electricity and magnetism. This relationship had first had been demonstrated by Oersted(Øersted) was a Danish physicist, he had revealed that an electric current produced a magnetic field, eleven years earlier[35]. Faraday went to show that the induced current could be produced in various ways; for instance, the coil could be moved at the same time as the magnet remained stationary, or a current could even be produced with no any movement if an electromagnet, which could be switched on and off, was used. Several of the changes that occurred during this period had to do with new products just substituting old ones but on his discover, Faraday found that a current of electricity flowing through a coil of wire wound around a piece of iron would convert the iron into a magnet and that, if this magnet were inserted into another coil of wire, a galvanometer connected to the terminals of the second coil would be deflected, the iron ring would with tow wire coils with which faraday made discovery of the induction of electric currents.

Farady's first Electric transformer made from two coils of copper wire insulated with cotton and wrapped around a soft iron ring.

Fig.1 Faraday's first electric transformer

[34] Faraday first observed that when he ran a current through a wire near a magnet, he could generate a force that pushed on the wire. The current appeared to produce its own magnetic field, which repelled the magnet, This observation became codied as \Ampere's law," as Ampere rushed to publish (in 1821) his explanation of others' experiments that he had read about.

[35] It is important to note that Oersted's discovery of electromagnetism was the result of an intentional experiment, inspired by his philosophical convictions. https://skullsinthestars.com



Source: http://www.richannel.org/levitating-barbecue

The apparatus Michael Faraday constructed in 1831, by which he invented electromagnetic induction, contained all the basic elements of transformers: tow independent coils and a closed iron core.[36] Nevertheless, anther years were supposed to pass the appearance of the transformer energy distribution networks that are generally used today from then the first electic transformer till the time of battle of currents there were many kinds of electric transformer was invented (Jeszenszky S, 1996) my point is not to talk about all small additional things on the invented object or about the inventers,my point is to see the material working progress. However after the Faraday's the invention run strong and the need of energy well to open energy plants, and in united states the Nigeria dam came with a controversy among the inventors that period renew for the currents war by bring a computation to chose the alternative and direct current for alternative energy (Moyer, 2011).

3.1.Many inventors were involved on the invention of electric transformer

[36] During that half-century, several induction devices were constructed that were similar to the heavy-current transformers, but they were different in their construction or operating method. On the basis of these differences, the transformer must be regarded as an independent invention. http://ethw.org/Archives

Gaulard and Gibbs first exhibited a device with an open iron core called a 'secondary generator' London in 1882 and then sold the idea to a company Westinghouse. They also exhibited their invention in Turin in 1884, where it was adopted for an electric lighting system. Their early devices used an open iron core, which was soon dumped in favor of a more competent circular core with a closed magnetic path.

As I already discussed on the candle lighting, Russian engineer Pavel Jablochkov in 1876 invented a lighting system based on a set of induction coils, where primary windings were connected to a source of alternating current and secondary windings could be connected to several "electric candles". As the patent said, such a system "allows to provide separate supply to several lighting fixtures with different luminous intensities from a single source of electric power". obviously, the induction coil in this system operated as a transformer. (Halacsy and Fuchs, 1961)

In 1885, William Stanley, an engineer for Westinghouse, built the first commercial transformer after George Westinghouse had bought Gaulard and Gibbs' patents. The core was made from interlocking E-shaped iron plates. This design was first used commercially in 1886.

Fig.2. The first commercial electric transformer made by William Stanley

Source: http://edisontechcenter.org/WilliamStanley.html

Hungarian engineers Zipernowsky, Bláthy and Déri created the efficient "ZBD" closed core model in 1885 based on the design by Gaulard and Gibbs Their ELEN 3441 Fundamentals of Power Engineering Spring 2008 -core model in 1885 based on the design by Gaulard and Gibbs. Their patent application made the first use of the word "transformer". Another Russian

engineer Dolivo-Dobrovolsky developed the first three-phase transformer in 1889. Finally, in 1891 Nikola Tesla invented the Tesla coil, an air-cored, dual-tuned resonant transformer for generating very high voltages at high frequency pave the road to war of currents… (JR Lucas, 2000).

Fig.3. Secondary generator by Gaulard - Gibbs and Transformer of Zipernowsky, Déri and Bláth sorces

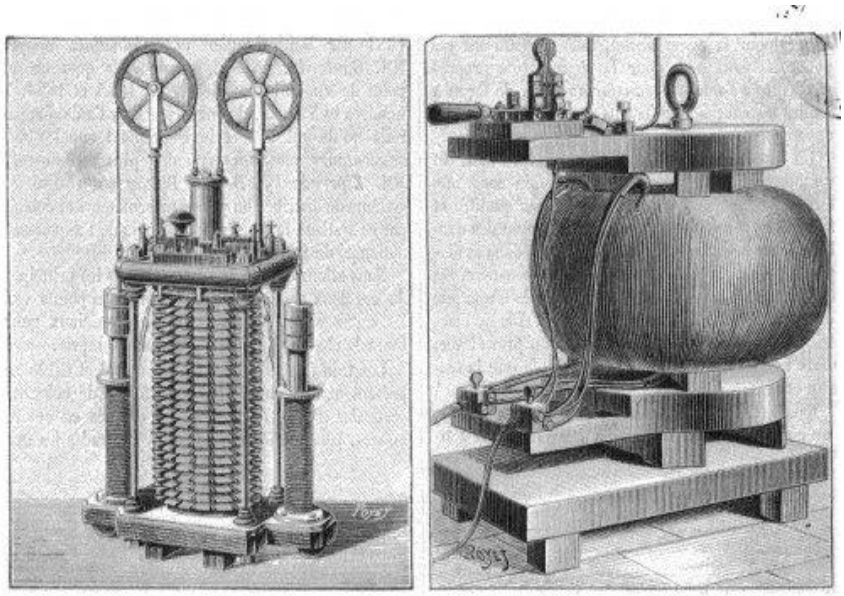


Fig. 1. — Transformateur dit *générateur secondaire* de MM. Gaulard et Gibbs.

Fig 2 — Transformateur de MM. Zipernowski, Déri et Bláthy.

Sources : http://www.edisontechcenter.org/Transformers.html

3.2. Niagara falls and war of currents

In the later year of the 1880s. lighting and electric power escalating rapid in the united states and Europe. Over thousands small factories had been assembled in the united states in decade the demand of power were increased, the electric power need and use of electricity were rising fast , demand was growing, as 1880 approached, less than 10 years After Edison's first commercial station, a group of financiers raised private funds to built a massive electric power station at Negara falls that would capitalize on apparently eternal energy of the falling

water[37]. (Stern, 2014) They had an ambitious plan to produce 74,600,000 watt, which is equivalent to the power of all the station together, twenty-six miles away to Buffalo. Although small hydropower stations had been built, and some of them had been transmitted energy a distance, nothing had ever been done on this scale. (Allison, 2014)

Despite the fact that the project leaders did not have a plan for the plant, a massive tunnel at Niagara falls was dug divert the falls water into the yet unplanned hydro plant[38]. The tunnel was immense, a result of high production voltage, the work were huge and ended with questioning. http://library.buffalo.edu/projects/cases/niagara.htm online article .

What are we Appling over this grand dam, should we generating electric with alternative current (AC)or direct current(DC)? Was a factor of inventive abnormal computation and the controversy grows , finally the war of current borne

The battle starts on the spot of the computation between the alternative and direct current business owners and it dragged for a long time[39]. War of currents are the culmination of the Niagara falls dam power station. As it stood, Edison only the one he used the direct(DC) current and Westinghouse on the Tesla's support advocated the alternative current (AC) system. The result is so long and too much dispute? Ruthless companies using different system competing for business. Not sure which was better for their station, the Niagara falls power company solicited ideas. ..

Then Edison continued to the war and he advocated and fabricated the lay denounced that the AC mortal death, he employed the scientists and working hard to disprove the alternative currents, Edison wouldn't like to lose his glory and money the war continues to keep the royalties and earning from his direct current patents, began a campaign to discredit alternating current[40]. He spread misinformation saying that alternating current was more dangerous, even going so far as to publicly electrocute stray animals using alternating current to prove his

[37] The Niagara falls power projects came as a result of pure technological optimism in 1895 after many attempts and efforts of harnessing the power of the water falls since the first pioneer sawmill had been built there in 1725. But schemes for extracting power had never been adequately conceived ....(http://teslaresearch.jimdo.com)

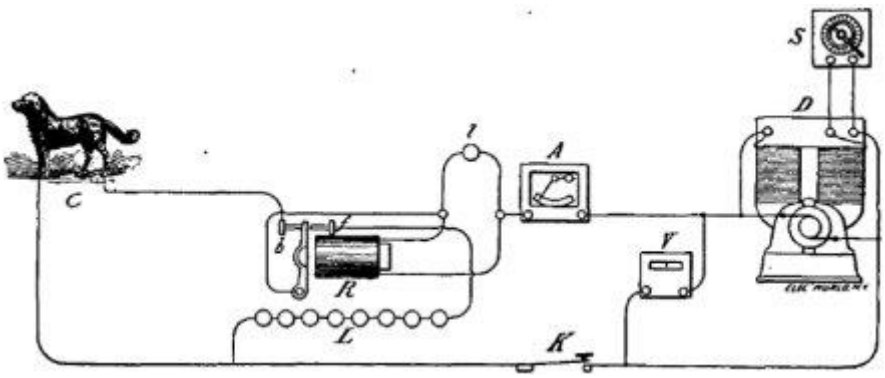
[38] The new technology won out in the end. By 1895 the Niagara Falls Power Company began generating alternating current (AC) from three 5000-horsepower generators

[39] the so-called War of the Currents then raging between proponents of AC and advocates of continuous or direct current (DC). But the problem with AC was that it lacked a practical and efficient motor

[40] advocated supplying direct current and fought to keep the country powered by DC for a number of selfish reasons.

point, by disproving and showing how the AC was dangerous Edison were employed kids for his experiment dogs cat and farm animals and killed with electric, public killing of animals and lobbing against the use of AC in the state legislatures[41]. Edison directed his technician to preside over several AC drive of animals primarily stray cats and dogs but also unwanted cattle and horses. This war took a lot of energy and money of Edison, he opposed capital punishment, but his desire to disparage the system of alternating current led to the invention of the first electric chair. P. Brown, Edison's employee, built the first electric chair. For the state of New York to promote the idea that alternating current was deadlier than dc[42].

Fig.3. Animals were victims in Edison laboratory



Sources : http://www.executedtoday.com/tag/direct-current/

However, Edison run from one objection to the other brutal action, AC system was a winner, since(footnote) Westinghouse company mainly utilized AC, and finally Westinghouse was the winner of AC in the "War of the Currents" then raging between proponents of AC and advocates of continuous or direct current (DC). But the certain problem with AC was that it

[41] In order to sway public and government opinion toward DC, Edison engaged in unethical and inhumane stunts. He lied about AC deaths and arranged for the electrocution of animals—cats, dogs, and farm animals. An early practitioner of Luntz-like language manipulation, he tried to popularize calling electrocution "being Westinghoused"!

[42] That reporter's description for the *New York Herald* graphically captures humanity's first horrible encounter with this "humanitarian" machine, beginning with the prisoner's parting remarks… http://www.executedtoday.com

lacked a practical and efficient motor. The AC systems then in action were primarily lighting systems. In 1888, finally Nikola Tesla had patented an idea for an AC motor, and Westinghouse promptly bought up the patents and was working on developing the motor. But the motor wasn't ready yet[43]. Niagara power--on the scale that it would have to be developed for the project to make sense--would be mainly for industry.

3.3. AC on transformer rather than DC

The principal benefit of AC was an accessibility of transformer for raising the voltage for distribution and lowering it for safe use[44]. This meant that AC could be sent on thin wires whereas dc required thick copper conductors as distribution had to be at low voltage. Then Ac was preferable not only to send energy without losing of electrons but also it could decrease and raises the voltage depends on the necessary question of the client. then 1893, the Niagara Falls Power Company decided to award Westinghouse -- who had certified Tesla's polyphase AC induction motor patent -- the contract to generate power from Niagara Falls. Although some hesitation that the falls could power all of Buffalo, New York, Tesla was convinced it could power not only Buffalo but also the whole Eastern United States[45].

Of course, what drove Edison to this unwarranted measure could also have been the fact that Westinghouse's AC companies were fast grown and become like-minded with Edison's dc companies. The major advantage of dc was that they possibly will not only be used for street lighting but the availability of DC motors for traction and manufacturing. Another advantage was that batteries could ensure continuity of supply when the generators were not running[46]. The chief weakness of DC was the lack of economical transmission because of the absence of ready step-up and step-down devices, then the transformer needed by the consumer to have a long travel without losing the electrons. Very early electrical installations were local: The

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[43] Tesla invented the alternating-current generator that provides your light and electricity, the transformer through which it is sent, and even the high voltage coil of your picture tube. The Tesla Coil, in fact, is used in radios, television sets, and a wide range of other electronic equipment - invented in 1891, no-one's ever come up with anything better.
http://www.kerryr.net/pioneers/tesla.htm

[44] A simple AC transformer is basically a dual electromagnet with two sets of wires wound around it for the input and output voltages… http://www.school-for-champions.com/science/ac_transformer

[45] The new technology won out in the end. By 1895 the Niagara Falls Power Company began generating alternating current (AC) from three 5000-horsepower generators.

[46] The electric motor was first developed in the 1830s, 30 years after the first battery. Interestingly the motor was developed before the first dynamo or generator. http://www.edisontechcenter.org

sites of generation and consumption were at most a handful of kilometers apart: Direct connections from the steam- or hydro generators to the consumers were in the range of hundreds of volts. Previous to 1880s, for example, the "Edison Illuminating Company" supplied 59 customers in Lower Manhattan with electricity at 110 V DC(power and productivity, ABB special report, 2012). But the energy demand of the fast growing cities and industrial centers called for an increase in power transmission capability[47].(Jack Foran,2014 online article, http://library.buffalo.edu/)

3.4. Electric transformer as a tool of transmition of energy

"The heart of alternative current" William Stanley

In the history of industrial revolution Electric transformer was an extraordinary science legacy on the energy sector[48]. A transformer is simply an apparatus used to change the voltage of electric power. Power plants generate power at a low voltage, but power needs to be at a very high voltage for the long trips down the wires from the generator or a power plant to our house, street, factories. At a residence, the voltage of the power has to drop back down again so that it will not be dangerous and so appliances will not be blown out. A transformer allows the power to change voltages from place to place without losing an electron.

Today, with a presence in all over the world, there are numbers of transformer factories and service centers(ABB spacial report, 2012). History of transformers dates back to the end of the nineteenth century. The world's first full AC power system, invented as well functioned by Tesla and built by William Stanley on the Westinghouse company, was demonstrated using step-up and step-down transformers in 1886. The transformer played a critical role in the outcome of the war of currents , tilting the balance in favor of Tesla's AC vision[49].

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[47] In 1878, he formed the Edison Electric Light Company in New York City. The following year, he demonstrated his incandescent light bulb for the first time. The first commercial application of the bulb was in Columbia, the new streamer of Oregon railroad and Navigation Company.
Read more at http://www.thefamouspeople.com/profiles

[48] s a static machine used for transforming power from one circuit to another without changing frequency. This is a very basic **definition of transformer**. Since there is no rotating or moving part so transformer is a static device. Transformer operates on ac supply. Transformer works on the principle of mutual induction…http://www.electrical4u.com

[49] Tesla's AC current can be seen all over the place in our world today. For instance every electrically powered object that has a electric wire such as a toaster, TV, lamp, Massage Chair, or printer uses the

3.5. The basic principle of the transformer and its function

To understand the function of electric transformer principally don't need a very complex physics calculation , we need to see how A transformer can be likened to a mechanical gearbox(the gearbox of electric transmission is a power transformer) the power transformer made of many size, but all of them are rather large, varying from a few cubic meter in volume to the size of villa. Power transformers are primarily used, which transfers mechanical energy from a high-speed, low-torque transfer to a lower-speed, higher-torque shaft, but which is not a source of energy itself. A transformer transfers electrical energy from a high-current, low-voltage circuit to a lower-current, higher-voltage circuit[50]. By using its windings, that coiled with the wire (copper or aluminum) [51] .(ABB special report, 2012)

Basically, a transformer consists of two sets of coils or windings. Each set of windings is simply an inductor. AC voltage is applied to one of the windings, called the primary winding. The other winding, called the secondary winding, is positioned in close proximity to the primary winding, but is electrically isolated from it. Then, this windings are not connected with the wire they have a gap which filed by the electromagnet[52].(footnote)

The alternating current (AC) that flows through the primary winding establishes a time-varying magnetic flux, some of which links to the secondary winding and induces a voltage across it, always the changes depend on the neighboring flux to increases or decreases[53] . The magnitude of this voltage is proportional to the ratio of the number of turns on the primary winding to the number of turns on the secondary winding. This is known as the "turns ratio."

AC current. So remember, every time you use the toaster or a lamp, you have Mr. Nikolas Tesla to thank. http://schoolworkhelper.net

[50] The reason for transforming the voltage to a much higher level is that higher distribution voltages implies lower currents for the same power and therefore lower I^2R losses along the networked grid of cables. http://www.electronics-tutorials.ws

[51]Transformers wound with aluminum or copper coils have similar losses and performance. http://www.hammondpowersolutions.com/files/HPS-CoppervsAluminumWindings.pdf

[52] Electromagnetic fields are created when electric current flows: the greater the current, the stronger the magnetic field. An electric field will exist even when there is no current flowing. If current does flow, the strength of the magnetic field will vary with power consumption but the electric field strength will be constant. http://www.who.int/peh-emf

[53] The transformer does this by linking together two or more electrical circuits using a common oscillating magnetic circuit which is produced by the transformer itself. http://www.electronics-tutorials.ws

It balanced the loss of electrons, and we can simply say a ravenous way of sharing or loaning electrons. (Edison tech center online: https://www.youtube.com/user/EdisonTechCenter)

To maximize flux connection with the secondary circuit, an iron core is often used to supply a low-reluctance conduit for the magnetic flux. The polarity of the windings illustrates the direction in which the coils were wound onto the core. Polarity resolves whether the flux produced by one winding is additive or subtractive with respect to the flux produced by another winding[54] .(R. Fehr) it has to revise or totally changed, then if we will learn in detail on the next chapters.

3.6 How the transformer functional to transmit power?

Their fundamental task of transformer is to transform or adapt voltage levels stepping them up for long-distance high-voltage transmission without losing high electric from the power plant, and stepping them down for distribution to consumers in houses or steeping up

Now there's another interesting fact about electricity too. When a magnetic field fluctuates around a piece of wire, it generates an electric current in the wire. So if we put a second coil of wire next to the first one, and send a fluctuating electric current into the first coil, we will create an electric current in the second wire. The current in the first coil is usually called the **primary current** and the current in the second wire is (surprise, surprise) the **secondary current**. What we've done here is pass an electric current through empty space from one coil of wire to another. This is called **electromagnetic induction** because the current in the first coil causes (or "induces") a current in the second coil. We can make electrical energy pass more efficiently from one coil to the other by wrapping them around a soft iron bar (sometimes called a **core**)[55] .(footnote, reference)

To make a coil of wire, we simply coil the wire round into loops or ("**turns**" as physicists like to call them). If the second coil has the same number of turns as the first coil, the electric current in the second coil will be virtually the same size as the one in the first coil. But (and here's the clever part) if we have more or fewer turns in the second coil, we can make the

[54] The voltage may be stepped up or down depending on the number of turns of conductor in the primary and secondary windings. http://www.cromptonusa.com/Transformers%20Theory.pdf
[55] The larger amount of current, the stronger the magnetic field. When a magnetic field fluctuates around a piece of wire, it generates an electric current in the wire. http://cie-wc.edu/Transformers9_21_11.pdf

secondary current and voltage bigger or smaller than the primary current and voltage. (http://www.allaboutcircuits.com)

One important thing to note is that this trick works only if the electric current is fluctuating in some way. In other words, you have to use a type of constantly reversing electricity called **alternating current (AC)** with a transformer. Transformers do not work with **direct current (DC)**, where a steady current constantly flows in the same direction. Chris Woodford, 2016).

3.6.1 Step-down transformer

If the first coil has more turns that the second coil , the secondary voltage will *smaller* than the primary voltage: This is called a **step-down transformer**. If the second coil has half as many turns as the first coil, the secondary voltage will be half the size of the primary voltage; if the second coil has one tenth as many turns, it has one tenth the voltage. In general: The current is transformed the opposite way—increased in size—in a step-down transformer:

So a step-down transformer[56] with 100 coils in the primary and 10 coils in the secondary will reduce the voltage by a factor of 10 but multiply the current by a factor of 10 at the same time. The power in an electric current is equal to the current times the voltage (watts = volts x amps is one way to remember this), so you can see the power in the secondary coil is theoretically the same as the power in the primary coil. (In reality, there is some loss of power between the primary and the secondary because some of the "magnetic flux" leaks out of the core, some energy is lost because the core heats up, and so on.[57]

3.6.2 Step-up transformer

Reversing the situation, we can make a **step-up transformer** that boosts a low voltage into a high one:

[56] The coiled wire are the factors on the creation of electric magnate flux

[57] Magnetic flux is a measurement of the total magnetic field which passes through a given area. It is a useful tool for helping describe the effects of the magnetic force on something occupying a given area. https://fr.khanacademy.org/science/physics/magnetic-forces-and-magnetic-fields/magnetic-flux-faradays-law/a/what-is-magnetic-flux

This time, we have more turns on the secondary coil than the primary. It's still true that: when the secondary voltage divided to the primary voltage it is equal to the number of turns in secondary divided by the secondary voltage.

In a step-up transformer, we use more turns in the secondary than in the primary to get a bigger secondary voltage and a smaller secondary current.(Chris Woodford, 2016: http://www.explainthatstuff.com/transformers.html)

After more than 135 years of travel, the basic principle of electric transformer is not changing. By the 1880s, electric motors that refined Faraday's concept were fabricating energy on a large scale, with electric generators powering everything from industry to transportation to -- with the invention of the carbon filament lamp in the 1870s -- domestic lighting. Especially in America, the electric motor became a mighty force for industry; unlike Britain, which had an ingrained coal-gas infrastructure, the developing America was able to embrace electric power wholeheartedly. As such, the electric motor played a key role in a “Second Industrial Revolution” that lasted from about 1870 to 1914. The alternating current was the one winning and applying on the electric transformer (Chris Woodford, 2016).

3.7. Construction of transformer

3.7.1. Lamination of the wires

As, I have given you an information earlier of these study focused on the introduction part of the tool(electric transformer) this part will continue and more paying attention on simple theory on the construction, outcome and procedure of the electric transformer . Then here the study focused in detail on the construction technique of electric transformer. first of all transformer constructed according to its use and varies one from anther. Transformers for use

at power have cores made of many lean laminations of silicon steel[58]. By absorbed the magnetic flux, more of it is usefully linked by both primary and secondary windings. Since the steel core is conductive it, too, has currents induced in it by the changing magnetic flux. Each layer is insulated from the adjacent layer to reduce the energy lost to eddy current heating of the core. The thin laminations are used to reduce the eddy currents(tiny losses of current), and the insulation is used to keep the laminations from acting as a solid piece of steel. The thinner the laminations, the lower the eddy currents, and the lower the losses. Very thin laminations are generally used on high-frequency transformers. The cost goes up when using thinner laminations mainly over the labor in stacking them[59].

A typical laminated core is made from E-shaped and I-shaped pieces, leading to the name "EI transformer". In the EI transformer, the laminations are stacked in what is known as an interleaved fashion[60]. Due to this interleaving, the second gap in parallel (in an analogy to electronic circuits) to the gap between E and I is formed between the E-pieces. The E-pieces are pressed together to reduce the gap width to that of the insulation. The gap area is very large, so that the effective gap width is very small (in analogy to a capacitor). For this to work the flux has to gradually flow from one E to the other. That means that on one end all flux is only on every second E. That means saturation occurs at half the flux density. Using a longer E and wedging it with two small Is will increase the overlap and additionally make the grains more parallel to the flux (think of a wooden frame for a window). If an air gap is needed (which is unlikely considering the low remanence, (reference and foot note) available for steel), all the E's are stacked on one side, and all the I's on the other creating a gap.

The cut core or C-core is made by winding a tiny steel strip around a rectangular form. After the required thickness is achieved, it is removed from the form and the laminations are

[58] laminated sheets of steel, with minimum air-gap between them (to achieve continuous magnetic path). The steel used is having high silicon content and sometimes heat treated, to provide high permeability and low hysteresis loss. http://www.electricaleasy.com/2014/03/electrical-transformer-basic.html

[59] One common design of laminated core is made from interleaved stacks of E-shaped steel sheets capped with I-shaped pieces, leading to its name of "E-I transformer". http://www.liquisearch.com/transformer/construction/cores/laminated_steel_cores

[60] These lamination stampings when connected together form the required core shape. For example, two “E” stampings plus two end closing “I” stampings to give an E-I core forming one element of a standard shell-type transformer core.

bonded together. It is then cut in two forming two C shapes[61]. The faces of the cuts are then ground smooth so they fit very tight with a very small gap to reduce losses. The core is then assembled by placing the two C halves together, and holding them closed by a steel strap. Usually, two C-cores are used to shorten the return path for the magnetic flux resulting in a form similar to the EI. More cores would necessitate a triangular cross-section[62]. Like toroidal cores, they have the advantage, that the flux is always in the oriented parallel the grains. Due to the bending of the core, some area is lost for a rectangular winging.

A steel core's remanence means that it retains a static magnetic field when power is removed. When power is then reapplied, the residual field will cause a high inrush current until the effect of the remanent magnetism is reduced, usually after a few cycles of the applied alternating current. Over current protection devices such as fuses must be selected to allow this harmless inrush to pass. On transformers connected to long overhead power transmission lines, induced currents due to geomagnetic disturbances during solar storms can cause saturation of the core, and false operation of transformer protection devices.(footnote, reference)

3.7.2 Insulation of windings

The turns of the windings must be insulated from each other to ensure that the current travels through the entire winding. The potential difference between adjacent turns is usually small so that enamel insulation is usually sufficient for small power transformers. The supplemental sheet or tape insulation is usually employed between winding layers in larger transformers.

The transformer may also be engrossed in transformer oil that provides further insulation. Although the oil is primarily used to cool the transformer, it also helps to reduce the formation of corona discharge within high voltage transformers. By cooling the windings, the insulation will not break down as easily due to heat. To ensure that the insulating capability of the transformer oil does not deteriorate, the transformer casing is completely sealed against moisture ingress. Thus the oil serves as both a cooling medium to remove heat from the core and coil, and as part of the insulation system.

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[61] The cut core or C-core is made by winding a silicon steel strip around a rectangular form. After the required thickness is achieved, it is removed from the form and the laminations are bonded together. It is then cut in two forming two C shapes.

[62] individual coils being stacked together and separated by insulating materials such as paper of plastic sheet. Sandwich coils and windings are more common with shell type core construction. http://www.electronics-tutorials.ws/transformer/transformer-construction.html

Certain power transformers have the windings protected by epoxy resin. By impregnating the transformer with epoxy under a vacuum, air spaces within the windings are replaced with epoxy, thereby sealing the windings and helping to prevent the possible formation of corona and absorption of dirt or water. This produces transformers suitable for damp or dirty environments, but at increased manufacturing cost.

3.7.3. Shielding, protecting

Where transformers are intended for minimum electrostatic coupling between primary and secondary circuits, an electrostatic shield can be placed between windings to reduce the capacitance between primary and secondary windings. The shield may be a single layer of metal foil, insulated where it overlaps to prevent it acting as a shorted turn, or a single layer winding between primary and secondary. The shield is connected to earth ground.(reference, foot note)

Transformers may also be enclosed by magnetic shields, electrostatic shields, or both to prevent outside interference from affecting the operation of the transformer, or to prevent.

3.8. Transformer types and uses

There is many types of transformer and function, here I am willingly and brifly visit the basic transformer .

In general there are two major types of transformer the audio and power transformer, this paper from the beginning dealing with the electric transformer which transit power from one plant to home or to in I am focusing on the power transformer types, from these I selectively discussed with the on which essentially functioned.

Moreover, as transformer works on the industry, street light on the transport, transformers are basically we used on our daily life, I have tried to assess the transformer in our houses work places possibly simply transported with our bag pockets, As we've previously seen, there are lots of massive transformers those works in a factory or for a big need of energy in towns and cities where the high-voltage electricity from incoming power lines is converted into lower-voltages. But there are lots of transformers in your home also. Big electric

appliances such answering machine and dish washers utilized relatively high voltages of 110–240 volts, but electronic devices such as laptop, computers and chargers for music players and simple cellophanes use relatively tiny voltages: a laptop needs about 15 volts, an iPod charger needs 12 volts, and a cellophane typically needs less than 6 volts when you charge up its battery . So electronic appliances like these have small transformers built into them (often mounted at the end of the power lead) to convert the 110–240 volt domestic supply into a smaller voltage they can use. If you've ever wondered why things like cellophanes have those big fat chunky power cords, it's because they contain transformers! From what I observe and reading hundreds of articles from the websites and interviewed friends and teachers (Woodford C, 2013).

As we said that impossible imagining our life without electricity, most of the appliances functions on electric current; and to supply this electricity to our home and offices, electric transformer is used. Electric transformers have become an essential part of our day-to-day life. It is equipment that supplies electricity to domestic and commercial properties

Nowadays an electric transformer are not visible in the city: on the street, on the tram way it is not visible most of the transformers are hiding in the ground, in our daily life electric transformers had and have a greater place on serving and controlling daily life the machines and the audio material for the music are also accustomed the electric transformer

As a conclusion of this work, it developed a virtual exhibition to allow the general public access the information grouped by this project .thus, this structured to provide general information of the-the job, scoring what is meant the technology of electric transformer , the criteria that the group considered for the selection of each case of study In each of invention finally the group tried to realise what understood on the each study of the objects on its timeline, and figur out the inventors the result of the experments and the interst group those were/are working on the electrofication of the objects were adorned the group.

Moreover, for better data collecting and analyses on our project website, we used the university platform developing our line through omeka that platform collected the data and stored for further study, then the website what we developed is not difficult to access for any interesting group who are willing to visit www.historyelectrictransformer.com that has three parts which elaborated and highlighted the long journey of transformer and its legacy. The group devotedly arranged an activities web designing and text writing, the langue which we selected for our website is English and somehow we incorporated french as well both languages are the languages are an official language of TPTI, plus it will help people to understand what meant our project works.

At last not least, observing the contents of the website, it was possible to understand that this work proved relevant precisely because it enables new investigations into the cases selected for the research. Researchers and people interested in the technic, technology and use of the electric transformer could access the information which available on the website, then if , it allowed and invited the interest group of the object for further investigation. It was the very enthusiastic group to investigate and collaborate each other for new experience, on the selected individual study sharing the new breakthrough ideas and thanks for this great collaboration to built a strong pillar among us to built a very peculiar and spectacular project.

However, this collective project is just a small contribution for the researchers in chiefly it is one part of study from the tow years master tpti project, on the other hand this project provides us a challenge and a way to solve problems the groups were from different country different culture and different discipline, challenge with compromisation finally we successfully done.

Combining different types of sources to communicate and interact with the audience, the *electric transformer story* project has been brought with a hope not just to offer information, but to inspire the audience to bring new questions to the research in this field. Moreover, it is its aim to encourage people to actively participate in sharing the memory about the technology (and the people behind) that has largely shaped the world we inhabit today. Last but not least of the project work on my personal paper work I have had an intensive knowledge of the electric transformer I was assessing and analyze here.

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