

Urban development and associated cultural heritage management practices: Evidence from the World Heritage Site of Lalibela, Ethiopia

Yezihalem Sisay^{1*}, Ayele Bekerie², Gezae Haile³, and Kassegn Berhanu⁴

^{1*}College of Business and Economics, Department of Tourism Management, University of Gondar, Tel: +251920486061, Gondar, Ethiopia

²Institute of Paleo-environment and Heritage Conservation, Department of Heritage Conservation Mekelle University, Ethiopia

³Gezae Haile, Department of History and Heritage Management, Mekelle University, Ethiopia

⁴Kassagne Berhanu, Department of Tourism and Hotel Management, Debre Birhan University, Ethiopia

Corresponding authors email: yezih134@gmail.com; <https://orcid.org/0000-0003-0341-2740>

Received: 10 June 2022; Revised: 01 December 2022; Accepted: 22 December 2022; Published: 12 April 2023

Abstract

The recent urban development policy discourse highlights the integration of urban development features and the cultural heritage management approach. Further, there is limited study on the existing serious concerns regarding proper heritage management and urban development matters. Therefore, this study was aimed at examining urban development and associated cultural heritage management practises using evidence from the World Heritage Site of Lalibela, Ethiopia. Both quantitative and qualitative exploratory research designs were used to conduct the study. Data were collected using a questionnaire from 126 heritage stakeholders. Data were also supplemented through key informant interviews and focus group discussions with 69 heritage stakeholders. Moreover, 47 years of land use- land cover change detection data were used to analyse urban development patterns. The finding revealed that the World Heritage Site is affected by the rapid population growth and urban expansion that have been observed in the last four decades and above. The processes also contribute to and aggravate the physical deterioration of the cultural heritage. Therefore, failure to monitor the urban expansion directly affects cultural heritage management practises. The implication of the result confirmed that urban development features and the cultural heritage management approach need urgent concern so as not to put the values and properties of the world heritage site at risk.

Keywords: Heritage Management, Lalibela Sculptures, Urban Growth, Urban Development

Introduction

Urbanization is considered an integral part of any development and a sign of modernization of the society. Based on this, UNESCO adopted the first convention in 1954. Since then, UNESCO has adopted several other conventions and recommendations addressing a range of urban development issues. According to Kong (2008), rapid population growth combined with the increasing concentration of people in suburban areas has led to an extraordinary growth of settlements. Heritage protection and management practices have always been a response to the rapid growth of population and urban development (Avrami, 2011).

In the historic town of Lalibela, urban settlement has changed dramatically. The town, as a historic settlement, has been affected by swift urbanisation and various development pressures. Currently, there is continual urban growth in the east, south, and north parts of the town, and most of the central urban area is now surrounded by modern buildings. Yet, as a pilgrimage centre, no specific measures have been taken to ensure the survival of cultural heritage. While developing without any restrictions, the historic area should be protected from potential damages in the name of urban development (Ronald, 2018). The protection of these areas should be part of the overall development and therefore integrated into the urban master plans.

On the one hand, there is a continuous growth of population and urban expansion, which affects the social structural setting of Lalibela town. On the other hand, the town's urban development master plan clearly expresses the need to integrate any development without affecting the properties of the World Heritage Site. Since 2007, the town administration of Lalibela in combination with the World Bank, has been attempting to relocate the local community, which used to reside under the core zone of the cultural heritage site. However, the process brings resentment and objections. For this reason, only 700 household heads are relocated to the north, east, and south parts of the town (World Bank, 2015).

To this end, there are serious concerns regarding proper heritage management and urban development matters, which have been forwarded by academicians, local communities, and church representatives for the last 10 years. At present, continued population growth and construction within the core zone of the world heritage site are the most pressing problems. However, only a few scholars have focused on cultural heritage conservation issues and the causes of heritage deterioration (Woldeyes, 2019; Kidanemariam, 2016; Elene, 2010). Moreover, archaeological studies on the rock churches and the

analysis of rock samples have been covered in several research cases (Bruxelles, and Mensan, 2012; Asfawossen and Ayallew, 2011; Bruxelles, 2010; Bianchi, 1966). Hence, despite the need for heritage conservation and management studies on the World Heritage Site of Lalibela Churches, there is limited study on urban development and associated cultural heritage management practises. As a result, the historic town of Lalibela needs a critical examination regarding the outcome of urban development on cultural heritage management practises to inform efforts to protect the World Heritage Site of Lalibela, Ethiopia.

Materials and methods

Description of the study area

Lalibela town is located in the northern part of Ethiopia (Figure 1). It is placed within the North-Wollo Zonal Administration. The historic town of Lalibela is well known for the excavated sculptures that are now serving a religious purpose (ESTDP, 2019).

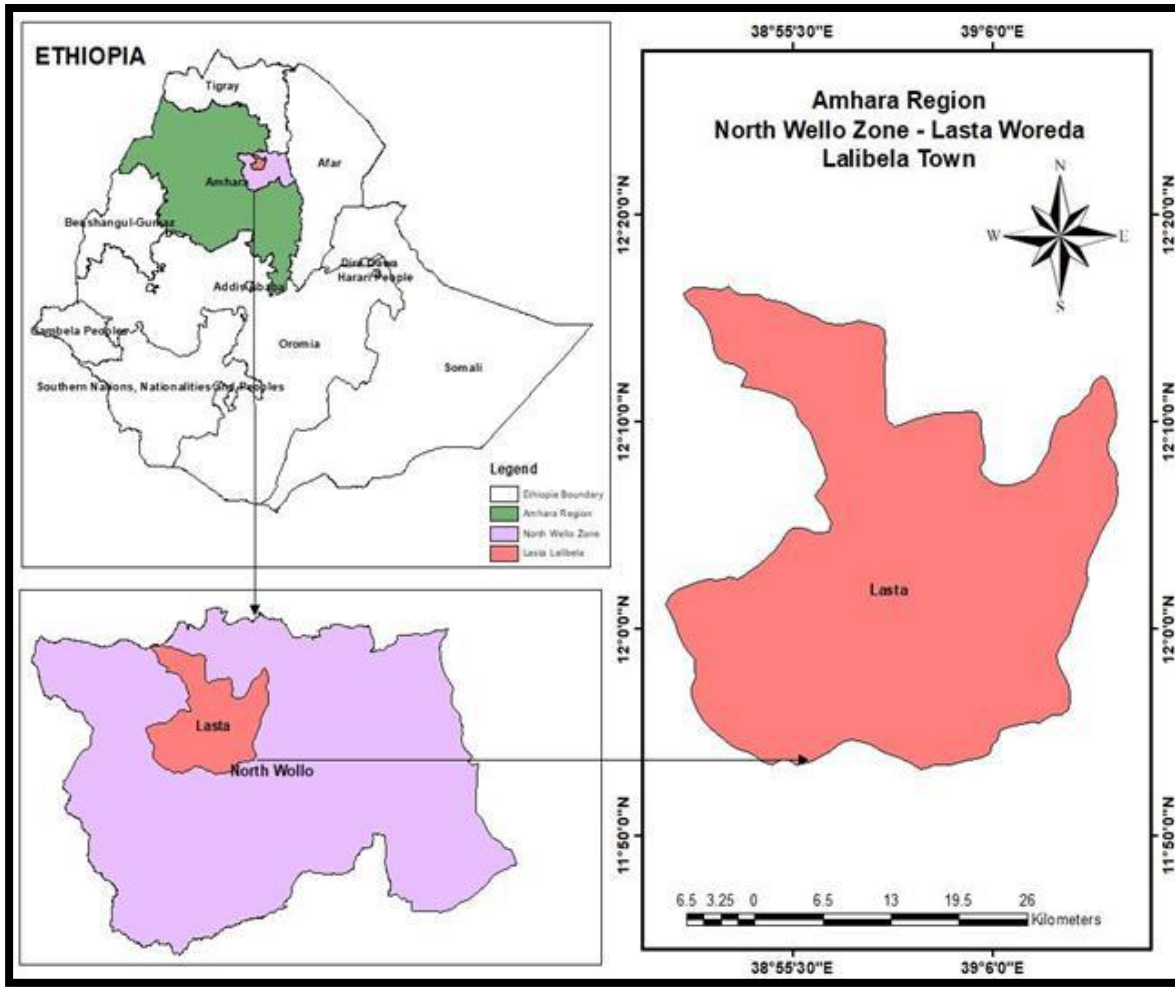


Figure 1. Map of the study area

The town of Lalibela is located 710 km from Addis Ababa, 181 km from the nearby Woldia town, and 360 km from Dessie town. The 2019 estimated total population reaches 46,341 (22,361 males and 23,980 females) (ESTDP, 2019). The place is famous for the Christian pilgrimage centre that has been excavated from the natural hills and mountains inside and outside the town.

Design of the study

Both quantitative and qualitative exploratory research designs were used to conduct the study. This type of research also requires focusing on and understanding the dynamics of a social phenomenon (problem) in its context (setting) through an account of logical inference obtained from a detailed dialogue or discussion with research participants. Due to this reason, the paper employs a case study research strategy with exploratory and descriptive techniques.

Data collection

The data were collected through a questionnaire. The items in the questionnaire were prepared based on five-point Likert scales, which are arranged from strongly disagree to strongly agree. Such a questionnaire is a widely used and useful instrument for collecting survey information, and attitudinal questions are used to determine what people think of it (Dornyei, 2007). The participants of this study were heritage stakeholders, which include heritage managers, local authorities, and municipality office experts, land planners, historians, heritage custodians, culture and tourism offices, consultants, office representatives, heritage planners, local community participants, heritage professionals, architects, and urban development experts. Data were collected using a questionnaire from 126 heritage stakeholders. For the key informant interviews and focus group discussions, 69 heritage stakeholders, including ARCCH heritage managers, regional and zonal culture and tourism office experts, local community representatives, land management and administration office professionals, and Lalibela town municipality office experts, were involved.

Moreover, 47 years (1973–2020) of land use- land cover change detection map data were used to analyse the aerial change. Secondary data were also collected from the Lalibela town administration. This data includes major infrastructure development, land use data, and building expansion patterns.

Data analysis

Tabulation and descriptive statistics were employed to analyse the data using the Statistical Package for the Social Sciences (SPSS) version 23.

Results and discussions

While reacting to whether the current urban development endangered the properties of the world heritage site of Lalibela, it was found out that 61 (48.4%) strongly agreed, 34 (27%) agreed, and 13 (10.3%) were uncertain, whereas 14 (11%) disagreed and 4 (3.1%) strongly disagreed. The majority of cultural heritage stakeholders answered, "strongly agreed or agreed". The respondents to item no. 2 in the table below responded that overpopulation and poor sanitation within the core zone of the world heritage property in Lalibela town needed attention. Accordingly, 78 (61.9%) and 16 (12.6%) of them strongly agreed to the idea. On the other hand, 12 (9.5%) of the cultural heritage stakeholders were uncertain, and 12 (9.5%) and 8 (6.3%) disagreed or strongly disagreed (Table 1). The overall respondents' reports show the level of attention that is given to this World Heritage Site.

Table 1. Cultural heritage stakeholders’ responses on the outcomes of urban development and associated impact on the Medieval Rock Hewn Churches of Lalibela

Statements/Related Items	SD		DA		N		AA		SA	
	F	%	F	%	F	%	F	%	F	%
A. In the town of Lalibela, the urban development plan endanger properties of the world heritage site of Lalibela	4	3.1	14	11	13	10.3	34	27	61	48.4
B. Overpopulation and poor sanitation within the core zone of the world heritage property in Lalibela town needs attention	8	6.3	12	9.5	12	9.5	16	12.6	78	61.9
C. For the better protection of the churches, it is necessity to carry out sensibly by moving people far away from the churches	51	40.4	21	16.6	13	10.3	26	20.6	15	11.9
D. There are incompatible goals among heritage stakeholders within the core zone of the world heritage property in Lalibela	12	9.5	13	10.3	21	16.6	34	26.9	46	36.5
E. The government disregarded the urgency of cultural heritage management (protection) efforts	11	8.7	16	12.6	12	9.5	29	23	58	46
F. Regarding resettlement issues a wide range of criticisms has originated from the local community	-	-	-	-	34	26.9	13	10.3	79	62.6
G. For the last 5 to 10 years the cultural heritage management practice has been succeeded by urban strategies and policies	53	42	31	24.6	23	18.2	8	6.3	11	8.7
H. The historic town of Lalibela became the focus of urban planning strategies by the regional government	12	9.51	23	18.2	22	17.4	23	18.2	46	36.5
I. Coherent urban planning strategies were implemented to ensure sustainable cultural heritage management in the town of Lalibela	60	47.6	21	16.6	20	15.8	18	14.2	7	5.5

J. A detail urban plan are well known by the local community	28	22.2	34	26.9	41	32.5	12	9.5	11	8.7
K. The urban development plan recognized the social and economic value of tangible and intangible heritage site of Lalibela	65	51.5	19	15	24	19	18	14.2	-	-
L. The town is changing due to the progressing urbanizations	-	-	-	-	27	21.4	5	3.9	94	74.6
M. Since the 1960s, the churches of Lalibela are often unwisely destroyed or irreversibly damaged	-	-	1	0.7	16	12.6	42	33.3	67	53.1
N. Due to human intervention a number of churches have been eliminated, superficially replaced or partially damaged	14	11.1	6	4.7	18	14.2	34	26.9	54	42.8
O. The seeping water from the temporary light shelters contributed to weathering and erosion of the rocks	15	11.9	11	8.7	21	16.6	44	34.9	35	27.7
P. The local community and the representatives of the Church have serious concerns on the management and protection works of the Church	6	4.7	19	15	22	17.4	33	26.1	46	36.5
Q. What is being prioritized and identified for protection in Lalibela religious sculptures is identified well	58	46	41	32.5	16	12.6	11	8.7	-	-

Key: SD refers to strongly disagree; DA to disagree; N to Neutral; AA to agree and SA to strongly agree

This may imply that the continuous growth of population within and outside the town starts to affect the core zone of the world heritage property. Then again, data were collected relating to the better protection of the churches if it is still necessary to carry out sensibly moving people far away from the churches. Based on this, 51 (40.4%) express their strong disagreement

and 21 (16.6%) disagreed with the need to carry out resettlement activities to relocate people inside the core zone. Differently, it was found that 26 (20.6%) agreed and 15 (11.9%) strongly agreed about the importance of resettlement issues.

The majority of the respondents were expressing their thoughts regarding the existence of heritage stakeholders' incompatible goals within the core zone of the world heritage property in Lalibela. Based on this, the highest number of respondents in the survey responded that 46 (36.5%) and 34 (26.9%) strongly agreed and expressed their concern for the existing gaps about heritage stakeholders' incompatible goals.

Based on the finding, the local community considered the government's action on the urgency of cultural heritage management a disregarded effort. This result implies that cultural heritage stakeholders still require an important government role in managing the heritage and properly harmonising urban development. Regarding resettlement issues, a wide range of criticisms have come from the local community. On the one hand, the urban development plan has recognised the need to harmonise development in a manner that does not jeopardise the values and properties of the world heritage site of Lalibela. On the other hand, incompatible goals among heritage stakeholders, the growth in population, the need for housing, and poor sanitation within the core zone of the World Heritage Property in Lalibela town need urgent action.

An attempt was made to evaluate the last 5 to 10 years of success in urban strategies and policies regarding cultural heritage management practises. The result proved that urban strategies and policy implementation were rapid. However, ensuring sustainable cultural heritage management practises with harmonised urban development has not been successful. This implies that the historic town of Lalibela became the focus of urban development and planning strategies by the regional government but failed to give appropriate recognition to cultural heritage management concerns. For example, the local community does not believe that the urban development plan has recognised the social and economic value of the tangible and intangible heritage sites of Lalibela. However, locals also considered that the town was changing due to the subsequent urbanisation. Since the 1960s, heritage stakeholders have assumed that the churches of Lalibela are often unwisely destroyed or irreversibly damaged.

While reacting to whether the human intervention affects the Lalibela sculptures or not, 54 (42.8%) strongly agreed, 34 (26.9%) agreed, and 18 (14.2%) were uncertain, whereas 6 (4.7%)

disagreed and 14 (11%) strongly disagreed. The majority of cultural heritage stakeholders strongly agreed or agreed that due to human intervention, several churches have been eliminated, superficially replaced, or partially damaged. This implies that the local community and the representatives of the churches concerns are due to the existing gaps in harmonised urban development and proper cultural heritage management practises.

The research survey participants were asked if they had a clear understanding of the effect of urban development on CHM (cultural heritage management) practises, and FGD6 participants said that: “Even though there is growing concern about current CHM practises in the town of Lalibela, stakeholders pay little attention to this practise. Due to this reason, tangible and intangible heritage that stimulates the recognition of certain values is not well protected. However, the cultural significance is embodied in the place itself, and it needs a collaborative effort to achieve better heritage management practises.”

This concern linked to issues related to the management of significant cultural sites and the physical architectural heritage, although intangible aspects of heritage such as cultural value, aesthetic value, and religious value. The Amhara Regional State Urban Policy focused mainly on urban planning but also called for the protection of buildings on the site. Even though these ideas helped to disrupt the social ties that are essential to the development of a community, the harmonious growth advocated in urban planning was never achieved.

Several strategies and measures have been recommended to address the threats to smaller historic towns such as Lalibela, including respecting the existing scale of the town in all new developments. FGD12 stated that: In the town of Lalibela, urban growth was accepted as inevitable, so emphasis was placed on creating a balance between new and existing structures within the existing settlement. The management of historic towns and urban areas should be an integral part of coherent policies of economic and social development and urban planning at every level.

Furthermore, urban development in the historic settlement of Lalibela has changed at a rapid pace. Growth has exceeded the predictions of regional urban planners and architects. The survey result also shows how concerned residents are about urban expansion and future development, despite

experts' calls to protect historic settlements and cultural fabric. Participants in all focus groups and the interviews engaged in a lengthy discussion and stated the following:

The incompatible goals of heritage stakeholders, overcrowding, and poor sanitation in the WHS (World Heritage Site) core zone are serious issues. Both efficient use and economic viability of heritage are seen as interdependent and important mechanisms of heritage management. What local authorities and urban planning do to manage the cultural heritage in the growing tourism sector must also be understood. Moreover, the implications of heritage management planning in the town should also consider the essential qualities of life of the communities residing there. Current development puts pressure on town structures and building stocks. This has direct or indirect connections with the formulation of public planning and policy interventions aimed at protecting our heritage (LEC33).

Yet, some part (the northern part) of the core and buffer zone is still inhabited, and it will continue to influence socio-economic and cultural changes besides management concerns. Such a situation renders the assessment of authenticity more difficult and any CHM and conservation policy more problematic. For example, the urban footprint of Lalibela extended south along the main road. Traditional houses have been removed in the core area as part of the World Bank-supported resettlement project since 2007. However, building density has increased in the area north of the core and in the southwestern region.

The local community often questions the need to relocate people far from the churches. This means that the local community doesn't believe in the necessity of moving people far away from the churches. Regarding these concerns, the assigned heritage manager by ARCCH in the town provides the following explanation: The continuation of urbanisation has been determined not only by the development of the overall urban environment but also by the measures taken to protect the heritage from this development. Currently, incorporation of heritage management in urban planning policies is often embedded in the urban heritage agenda through urban ordinances, heritage regulations, [re] defined zoning, and protection of the area, as well as taking into account potential development and needs. Yet, it needs successful integration and also redevelopment for commercial activities [shops, restaurants, hotels, or offices for other activities...] (LEC30). Until now, threats were perceived and particular actions were required. As the effects of urbanisation

and uncontrolled development became more visible, attention was focused more on the development issues than the protection of the historic fabric and its harmonious growth.

Land use land cover change patterns

The urban change pattern of the study area during the period from 1973 to 2020 was examined using land-sat data. Four land-sat satellite images and characters are demonstrated in Table 2. The imagery was classified into five land use and land cover classes, i.e., urban areas, shrub and grasslands, rivers, forests, and barren lands, using supervised classification and the maximum likelihood algorithm. Then, the images were divided into built-up and non-built-up areas to account for urbanisation (Figures 2–11). Based on the picture of urban change detection in Lalibela town from 1973 up to 2020, changes associated with land use and land cover properties concerning geo-registered multi-temporal remote sensing data are practically rapid.

Table 2. Detail characteristics of the Land-sat imageries.

S. N.	Satellite	Sensor	Band	Imagery Date	Spatial Resolution(meter)	Path/Ro w	Source
1	Land-sat 5	MSS	7	Jan 31 1973	30.0	169/52	USGS
2	Land-sat 5	ETM ⁺	7	Dec 01 1986	30.0	169/52	USGS
3	Land-sat 7	ETM ⁺	11	Dec 02 2006	30.0	169/52	USGS
4	Land-sat 8	ETM ⁺	11	Dec 03 2020	30.0	169/52	USGS

Source: ESSTI and USGS (2021)

The map also assists in identifying the level of change between two or more dates that are uncharacterized by normal variation. Land-sat ETM+ images for 1973 and 2020 were used to extract temporal changes in the World Heritage Site of Labella. The results show that urban areas have increased in coverage over the past 47 years (1973–2020). Based on this finding, the built-up area in 2020 will have increased by 31.01% since 1973. In 1973, the coverage of the urban area was 31,821 hectares of land, while in 2020 it was 33,403.25 hectares. In 1973, the coverage of urban areas was limited to only 31,821 hectares, the shrub and grassland coverage was only 11,760.73 hectares, and forest land had land coverage of only 12,275.93 hectares.

In 1973, the coverage of urban areas was limited to only 31,821 ha, the shrub and grassland coverage was only 11,760.73 ha, and forest land had land coverage of 12, 275, 93 ha. Then again, in 1986, the urban area coverage of Lalibela town was 29,900.68 ha, and forest land accounted for 10,569.64 ha, which is less than 1706.29 ha from the 1973 land use- land cover change data. In addition, in the year 2000, the urban area coverage of Lalibela town was 30,748.68 ha and compared with the 1986 land area coverage in hectares, an extra 848 ha of land were used for an urban area. However, the coverage of the forest is decreasing due to the continuous growth of the urban area.

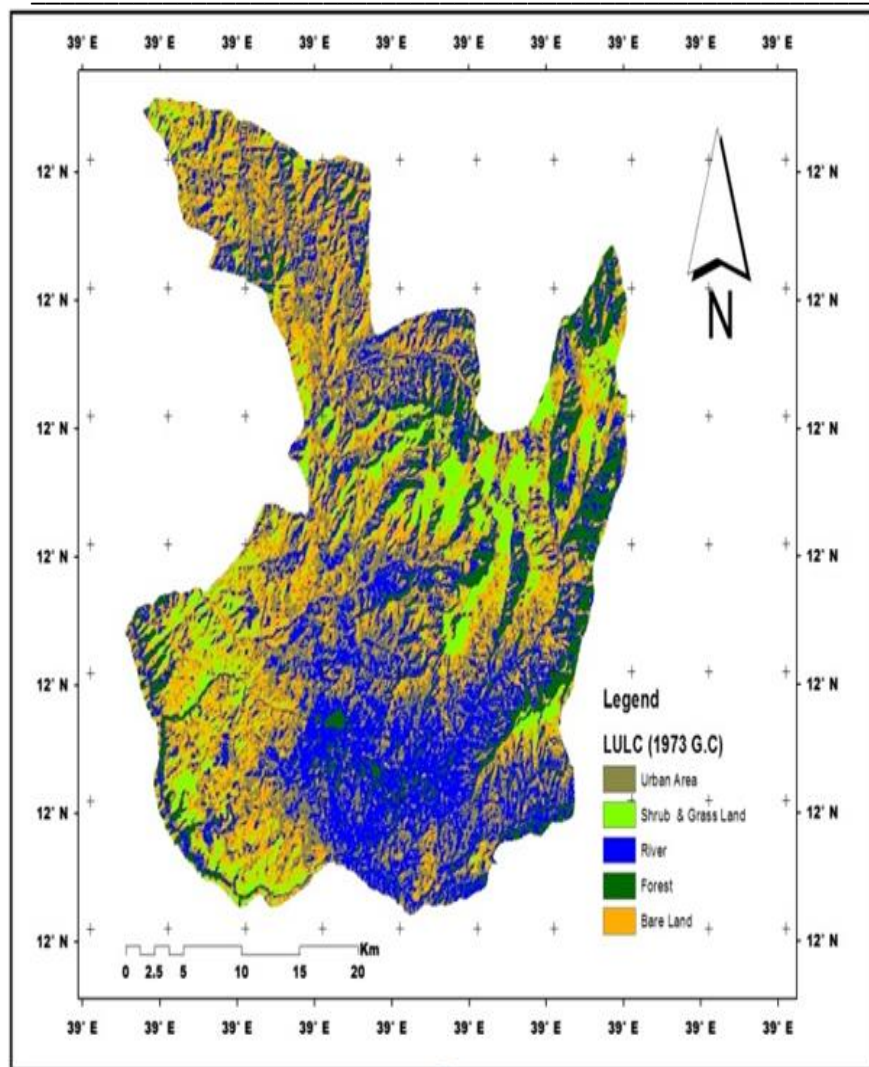


Figure 2.1973 Land Use- Land Cover (LULC) Map

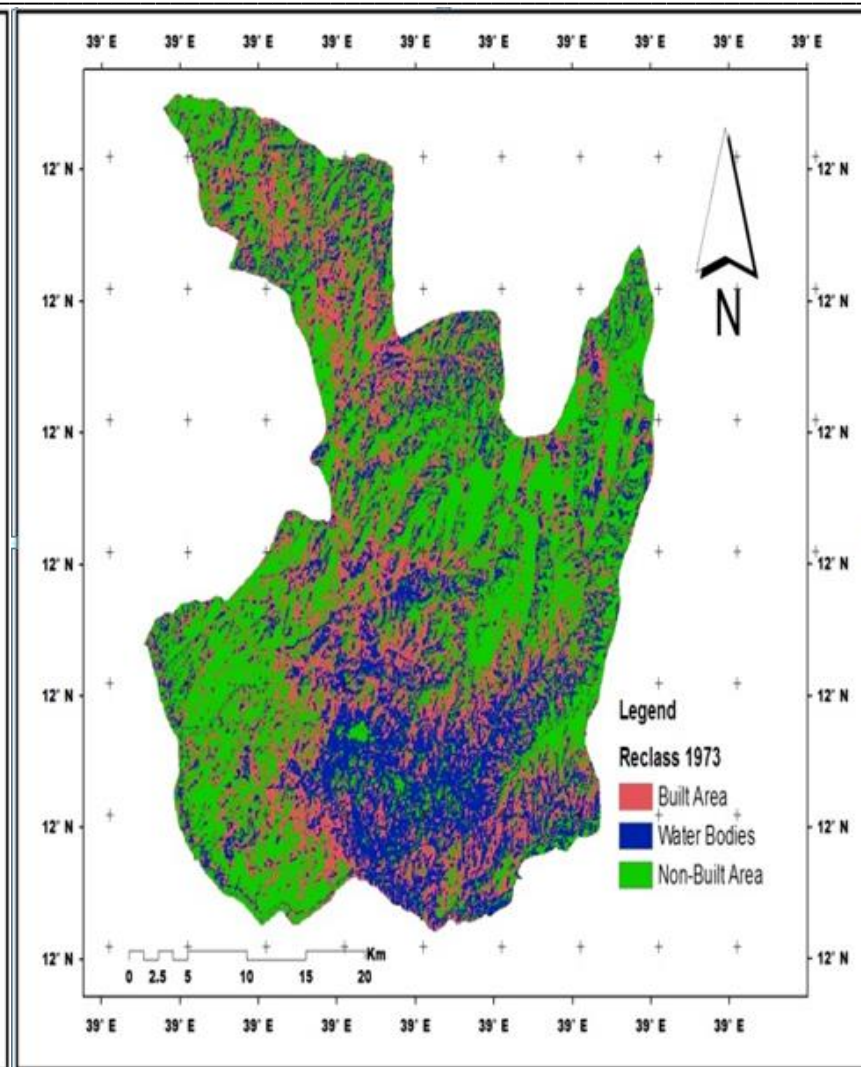


Figure 3. 1973 Land Coverage Map

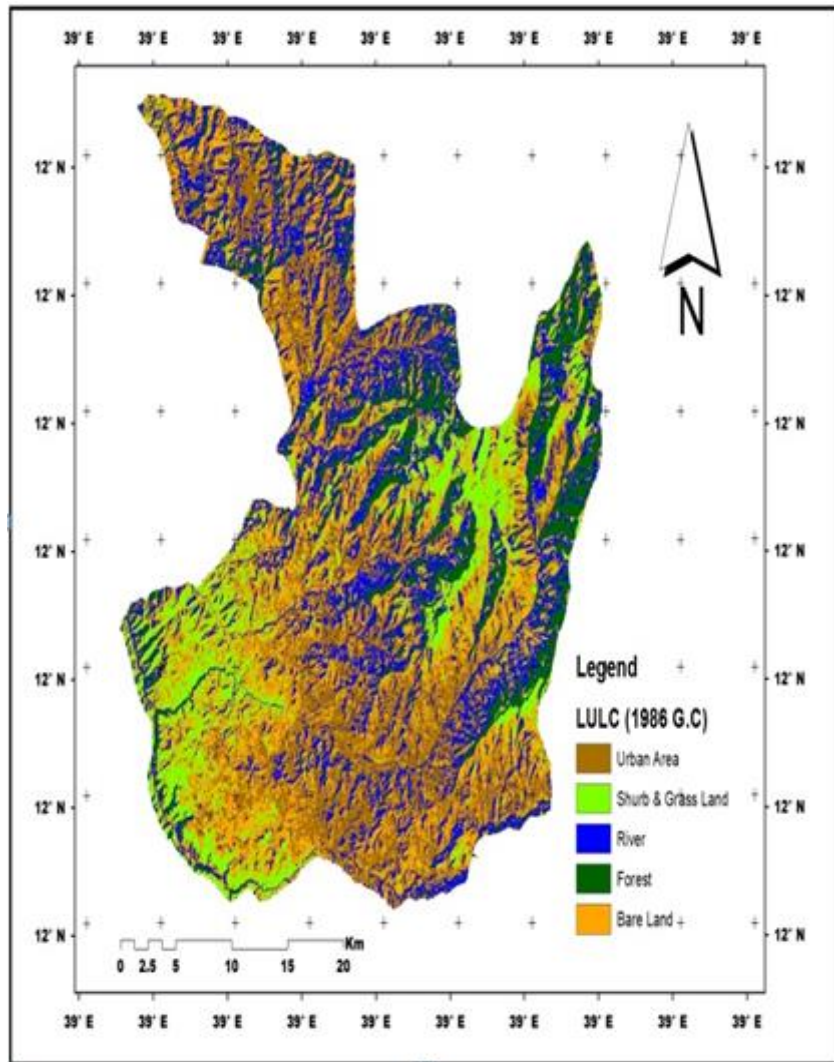


Figure 4.1986 Land Use -Land Cover (LULC) Map

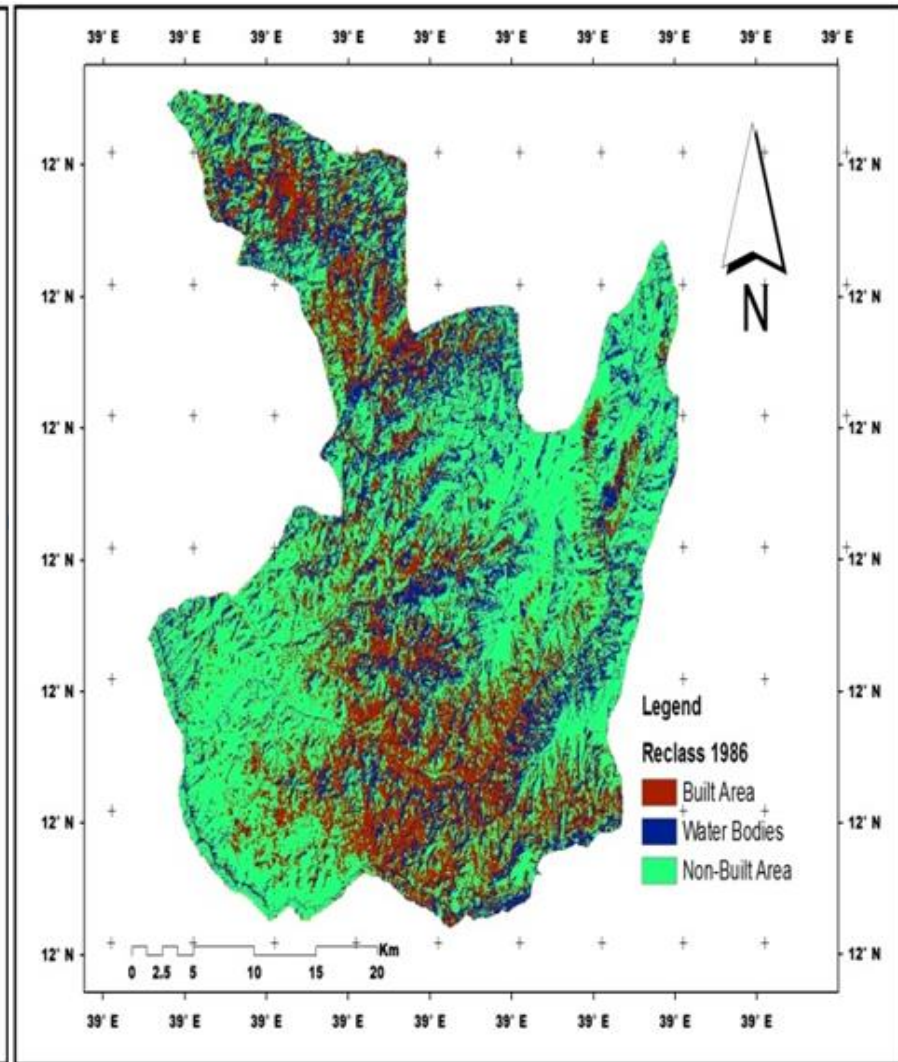


Figure 5. 1986 Land Coverage Map

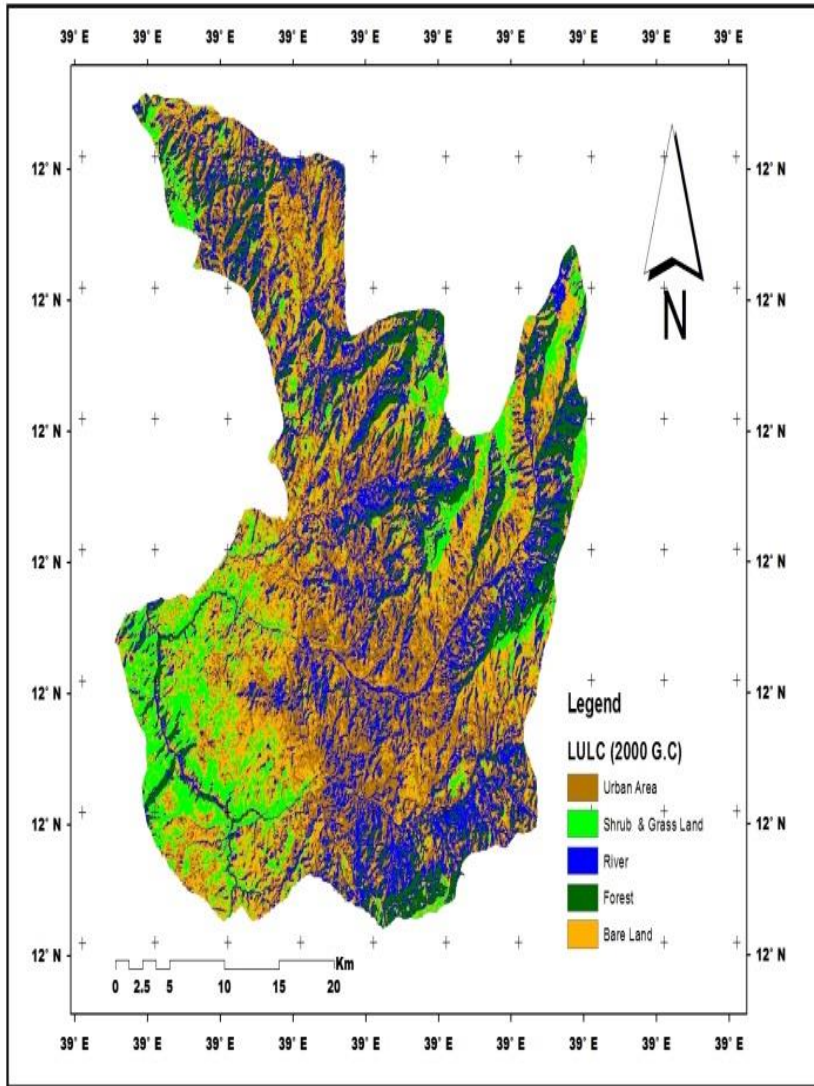


Figure 6. 2000 Land Use- Land Cover (LULC) Map

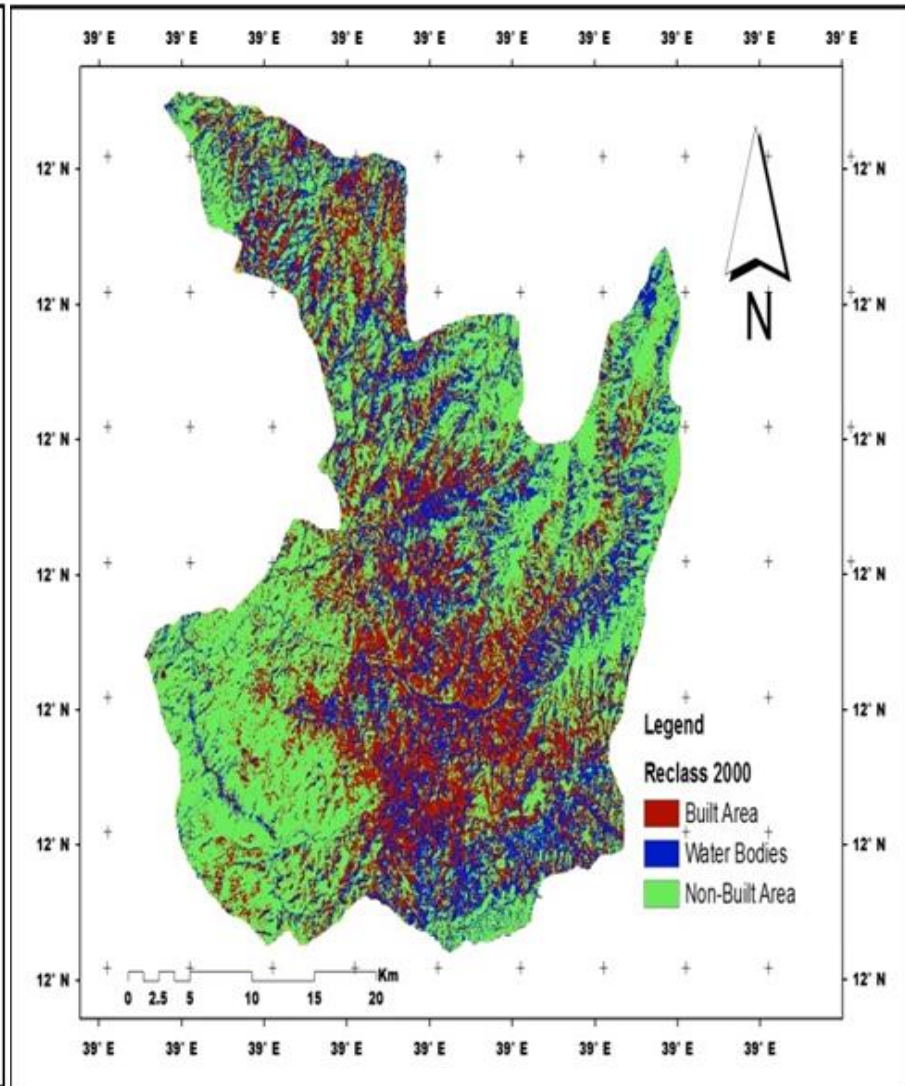


Figure 7. 2000 Land Coverage Map

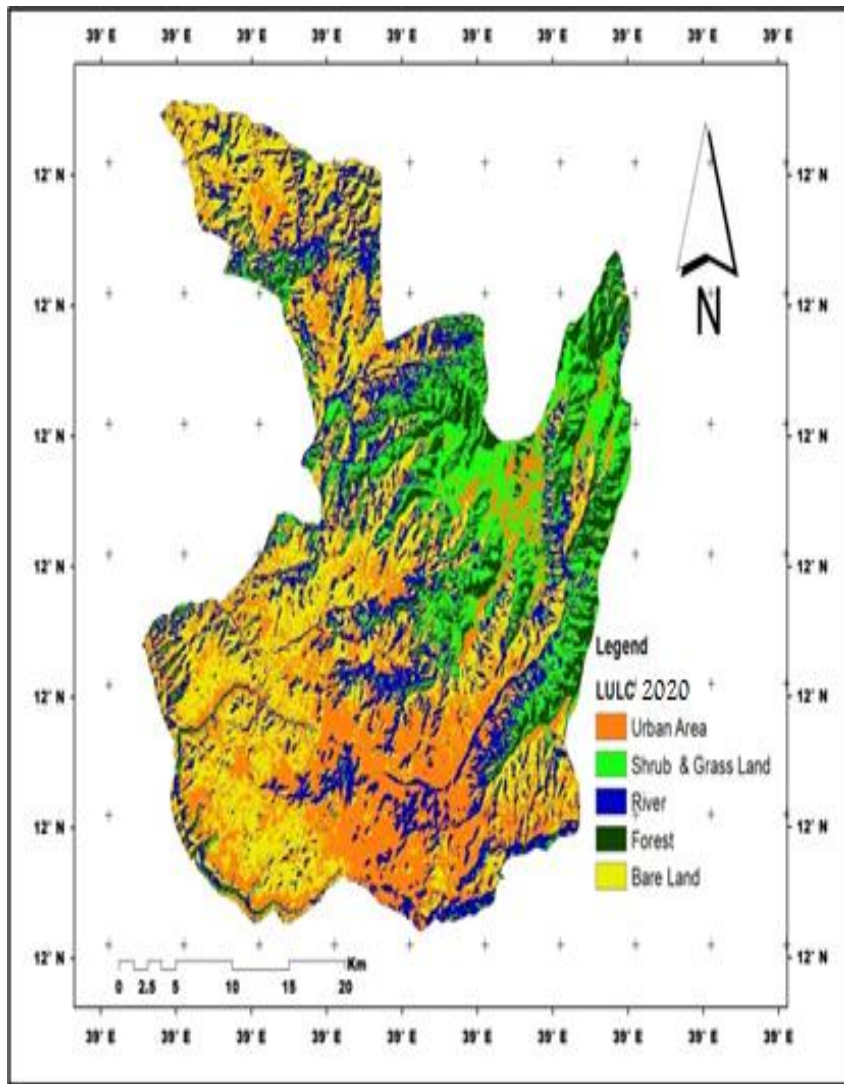


Figure 8. 2020 Land Use- Land Cover (LULC) Map

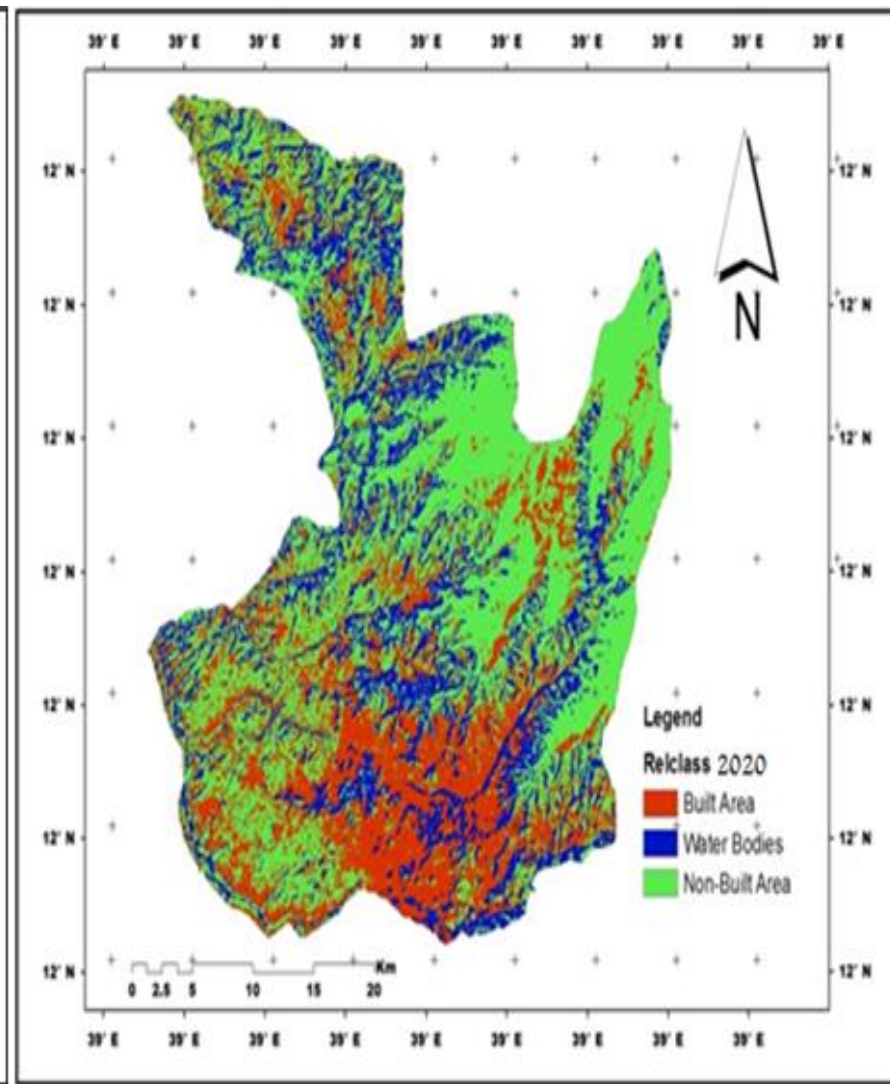


Figure 9. 2020 Land Cover Map

This is due to the fact that urban development has been expanding to the north, east, and south parts of the town. However, the growth in population leads the town to demand balancing the issues of rapid urban expansion, as evidenced by land use- land cover change detection data and a building patterns map. For the need for sustainable development of the town and preserving the tangible and intangible values of the local community, the land use- land cover change map indicates how the values are physically symbolised.

This includes how the local communities interact with and use the spaces in and around the World Heritage Site. The map also proved that the natural landscape and spiritual sites within the core zone are occupied by modern commercial and residential buildings alongside traditional houses. The land use changes in hectares and the percentage of all land use classes and land use reclasses are presented in Table 3.

Table 3. 47 Year Land Use Area coverage of Lalibela Town from 1973-2020

No	Land use	Area Coverage in Hectare				Area change in
		1973	1986	2000	2020	%
1	Urban Area	31,821	29,900.68	30,748.68	33,403.2525	-4
2	Shrub & Grass Land	11,760.73	12,678.48	12,678.48	12,327.75	-4.82
3	River	28,313.41	25,412.33	25,412.33	20,700.855	+73.11
4	Forest	12,275.93	10,569.64	9,275.9	12,327.09	+16.0
5	Bare Land	25,608.94	26,579.83	26,579.83	28,943.3475	+13.02

From the above table, it can be seen that the percentage area change is higher in each 10- and 15-year interval period, and the land area coverage in hectares increases in the urban area and bare land. However, there is a continuous decrease in the land coverage of forests and rivers. This is due to the growth of urbanisation and the construction of new buildings for residential and commercial purposes. At this point, there is a need to address the interactions between the local community and religious pilgrims with urban growth.

The master plan developed by the government, and the management plan developed by the Authority for Research and Conservation of Cultural Heritage (ARCCH) in 2013 indicated the need

to integrate any urban development without affecting the religious values of the UNESCO-registered site. So far, satellite imagery, GIS field data, and interviews with local stakeholders have proven both the positive and negative aspects of urban development.

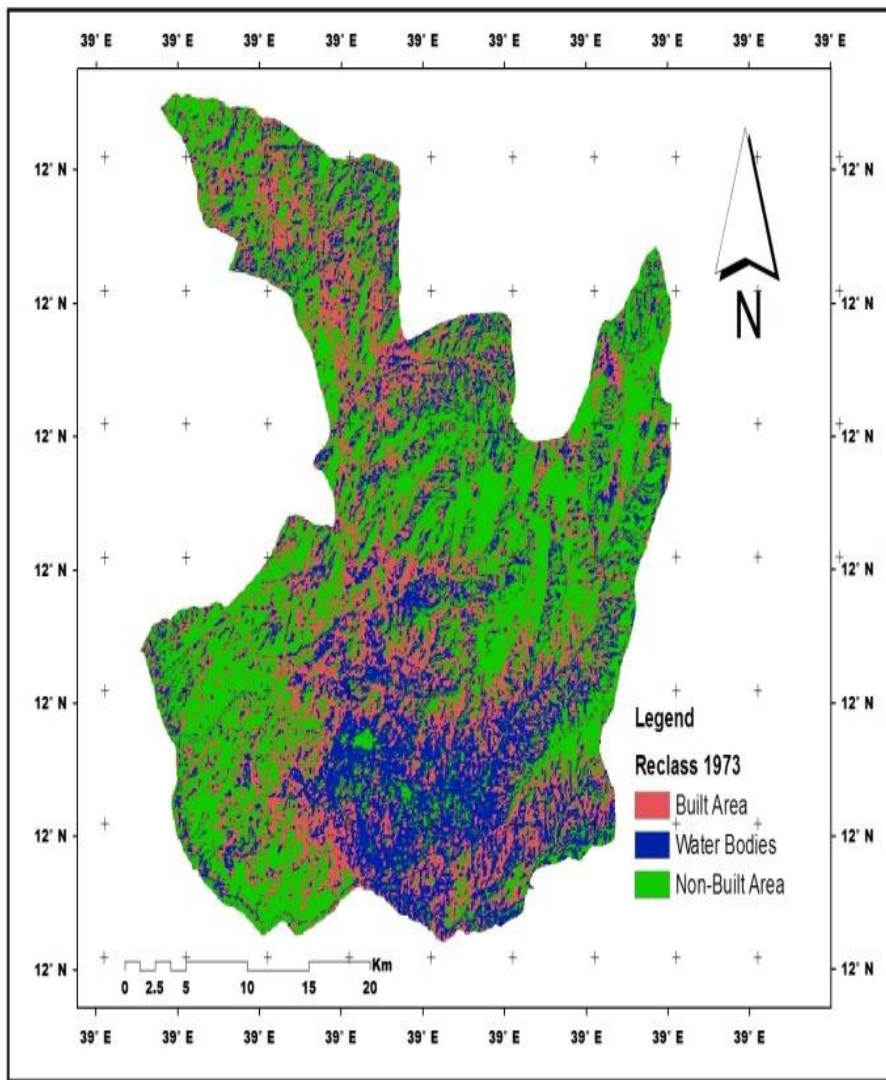


Figure 10. Land Use Change Map 1973-2020

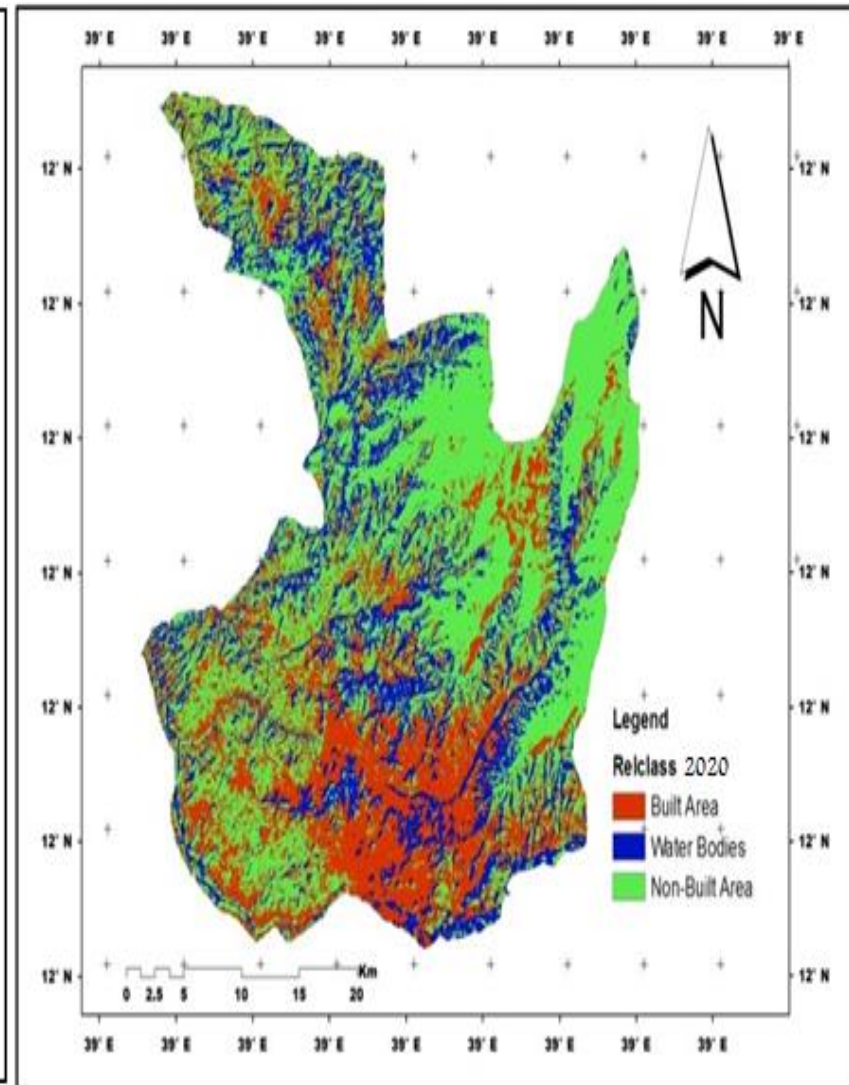


Figure 11. Land Use Change Map 1973-2020

For example, the above figure exposes the land use change from 1973 to 2020 and urban area land coverage that increased from 31,821 ha to 33,403.2525 ha, and the area change accounts for about 4%. All the images were divided into built-up and non-built-up areas from 1973 to 2020 to account for urbanisation (Figure 2–11).

Discussion

Respondents reported that development pressures affected not only the authenticity of the properties but also their integrity. Particularly, the visual integrity of the properties was affected by uncontrolled and illegal construction. Currently, this is among the main factors affecting the visual integrity of properties. Uncontrolled urban growth and urban sprawl are among the consequences of development pressures affecting World Heritage properties (World Heritage Centre, 2007a; World Heritage Centre, 2004c).

The requirement for clear and defined boundaries to the properties of the World Heritage Site (WHS) is to reduce the level of damage as a pre-protection approach (Auclair et al., 2015). It can basically contribute to proper cultural heritage management practises. The interview results exposed that the already existing buffer zone and boundaries for the protection of the properties are considered insufficient. Yet, there are no well-defined boundaries or buffer zones for the cultural properties. Even in cases where a management plan is in place, the interview results show that it is often not coordinated or integrated with protective plans. But at the same time, there are requests from the regional and federal heritage institutes for boundary modifications.

Then again, tourism and development pressures are the main factors affecting the properties (World Heritage Centre, 2007a; World Heritage Centre, 2004c; World Heritage Centre, 2004e; World Heritage Centre, 2004b; World Heritage Centre, 2003b). The town of Lalibela is considered a holy place by the Ethiopian Orthodox Church. The natural rock setting, the surrounding mountains, and the cultural landscape made it a unique pilgrimage centre. In addition, the property also provides a holistic experience consisting of several elements, including the historic church buildings, the courtyards, the bridges, the tunnels, and underground passages dating back more than 900 years.

In order to achieve the need for excellent cultural heritage management, it is important to provide tangible and measurable results. For example, the sanitary conditions of the traditional village need urgent action as a proper land use management technique. Proper sewerage disposal helps protect

the site from environmental pollution impacts. Beyond the properties' boundaries, the means to deal with threats are often found to be non-existent or very limited due to institutional limitations in the mandate. Based on the finding result, of the total installed 1.12km sewerage disposal system, 70% of it is not yet functioning.

Junction roads and installed cobblestone (paving street), which accounts for 0.62 km at present. Based on the town administration, the town's urban expansion is growing by 271%. This is also illustrated by a square mile, which accounts for 1.24%. This is due to the fact that there is a continuous growth of urban populations within and outside the town. For example, based on the Central Statistical Authority projection, population growth is estimated to increase by 2.4–3.4% per year from 2013–2023. Moreover, the growth of the population also demands extra housing and settlement. Such demand starts negatively affecting both the urban development pattern and the survival of the UNESCO-registered site. The construction of residential and commercial buildings within the core zone is a sign of variation and weakness for harmonised urban development and heritage management practises.

The effect of urban development can lead to the deterioration of the heritage sites (Atuhaire, 2009). For successful policy decisions, a careful revision of land use land cover changes is extremely important. The World Heritage system is based on an agreed set of concepts and processes aimed at facilitating the implementation of the World Heritage Convention (Yirga, 2017). Most of these concepts and processes are laid down in the operational guidelines, which are periodically revised to reflect the decisions of the World Heritage Committee. Since, the urban development is a challenge to the spiritual value of the site the WHS should be managed according to the UNESCO conventions, conservation and restoration charters and management guidelines.

Conclusion

Currently, urban development characteristics and cultural heritage management approaches are the identified challenges and concerns of society. In light of urbanisation and development pressures, the research findings proved that the existing heritage site faces distraction threats. The urban expansion pattern required a distinct border under the master plan that included a core and buffer zone. Practically, in the historic town of Lalibela, urban growth is still seen in many ways as opposed to cultural heritage conservation and management approaches. In such cases, the term

development often has a negative connotation. Hence, the type of urban development has to be integrated and harmonised with heritage management, and vice versa. For successful urban development, there is a need to re-examine land use and land cover patterns.

Funding

This work was financially supported by the grant number MU-1667-2019 from the Institute of Paleoenvironment and Heritage Conservation, MU, Ethiopia.

Conflict of interest

The author declared that there is no potential conflict of interest.

References

- ARCCH (Authority for Research and Conservation of Cultural Heritage). 2013. A management plan for the Rock-Hewn churches of Lalibela World Heritage Site Ethiopia. The Authority for Research and Conservation of Cultural Heritage. Addis Ababa: ARCCH.
- Atuhaire H. 2009. Involvement and participation. Practices and perceptions in collaborative resource management: The case of Bwindi National Park, Uganda. University of Osla, Norway.
- Auclair E, Graham F. 2015. Theory and practice in heritage and sustainability: between past and future. New York: Routledge.
- Austin NK. 2002. Managing heritage attractions: marketing challenges at sensitive historical sites. *Int J Tour Res.* 4 (6):447-457.
- Asfawossen Asrat, Yodit Ayallew. 2011. Geological and geo-technical properties of the medieval rock hewn churches of Lalibela, Northern Ethiopia. *J. African Earth Sci.* 59(1): 61–73.
- Avrami E. 2011. Heritage, values, and sustainability. Conservation: principles, dilemmas and uncomfortable truths. London.
- Bianchi Barriviera L. 1966. Restauriallechiese di Lalibelà. *Rassegna di Studi Etiopici* 22, 135–146.
- Bruxelles L, Mensan R. 2012. Contribution de la géo archéologie à l'étude du site de Lalibela (Éthiopie). *Géologues. Revue officielle de la société géologique de France.*
- Bruxelles L. 2010. L'approche géo morphologique du site de Lalibela. *Archéopages – Archéologie sans frontières.*
- Dornyei Z. 2007. Research methods in applied linguistics. New York: Oxford University Press.
- Elene N. 2010. World Heritage Management Program, University, College Dublin, Ireland.

-
- ESTDP (Ethiopian Sustainable Tourism Development Project). 2019. Resettlement policy Framework. Addis Ababa: Federal Ministry of Culture and Tourism.
- Kidanemariam Ayalew. 2016. Heritage management on the ground heritage conservation versus local community in Lalibela (Ethiopia). *History*. ffdumas-01390038.
- Kong P. 2008. The significance of the buffer zone under the World Heritage Convention. *Art antiquity and law* 5(2):177-184.
- Ronald M. 2018. World heritage cultural landscapes: A UNESCO flagship programme 1992–2006. *Landsc Res.* 31(4): 333-353.
- UNESCO. 1976. Recommendation concerning the safeguarding and contemporary role of historic areas (1976 Nairobi Recommendation) WHC Nomination Documentation: 18. UNESCO World Heritage Centre.
- UNESCO. 2010. Mission report. Earthen architecture on the Lalibela World Heritage Site.
- Wirilander H. 2012. Preventive conservation: A key method to ensure cultural heritages authenticity and integrity in preservation process. *E-Conservation Magazine* 24:164-176.
- Woldeyes Y.G. 2019. Lalibela: Spiritual genealogy beyond epistemic violence in Ethiopia. *Genealogy* 3: 66.
- World Bank. 2015. Ethiopia—Sustainable tourism development project. Washington, D.C.: World Bank Group.
- World Heritage Centre. 2003b. Periodic reporting exercise on the World Heritage Convention: African Region, World Heritage Reports no.3, Paris, UNESCO.
- World Heritage Centre. 2004b. Periodic Report and Regional Programme: Arab States 2000-2003, World Heritage Reports no.11, Paris, UNESCO.
- World Heritage Centre. 2004c. Periodic Report: State of the World Heritage in Latin America and the Caribbean, document WHC-04/28.COM/16.
- World Heritage Centre. 2004e. The State of World Heritage in the Asia- Pacific Region, 2003, World Heritage Reports no.12, Paris, UNESCO.
- World Heritage Centre. 2007a. Periodic Report and Action Plan: Europe 2005-2006, World Heritage Reports no.20, Paris, UNESCO.
- Yirga Gelaw. 2017. *Native Colonialism: Education and the Economy of Violence against Traditions in Ethiopia*. Trenton: Red Sea Press.