Original Research

The Jimma Corridor: An Interdisciplinary Analysis of Urban Development, Livelihoods, and Sustainability in Southwestern Ethiopia

Tena Abdissa WOLDYE[1,c], Dagne LACHISA[2]

[1]Department of Urban Environment and Climate Change, Ethiopian Civil Service University, Addis Ababa, Ethiopia
[2] Department of Land Administration, Wollega University, Nekemte, Ethiopia

[c]Correspondingauthor: tenaabdissa99@gmail.com

Abstract

Urban corridors are increasingly recognized as strategic instruments for sustainable spatial planning in rapidly urbanizing cities of the Global South. This study presents an interdisciplinary assessment of the Jimma City Corridor Development Project (CDP) in southwestern Ethiopia, a flagship national initiative. It makes three contributions: (1) providing the first mixed-methods empirical evaluation of corridor development in an Ethiopian secondary city; (2) integrating political economy, urban ecology, and livelihoods perspectives to examine corridor impacts, and (3) identifying evidence-based policy measures to improve implementation and sustainability. Using a convergent mixed-methods approach, this study combined a stratified household survey of 388 respondents (92% response rate), geospatial analyses of land use/land cover (LULC), Normalized Difference Vegetation Index (NDVI), and Land Surface Temperature (LST), together with secondary literature. The assessment focused on transportation and mobility, economic transformation, social dynamics, environmental sustainability, and recreational and cultural values. Results indicate substantial improvements in connectivity and local economic activity, reducing travel times by 20 to 30%, increasing land values by approximately 300%, and enabling 65% of formal businesses to report higher turnover. However, gaps remain in pedestrian and cycling infrastructure, informal sector adaptation, environmental management, cultural heritage conservation, and participatory governance. Ecosystem service valuation showed a 38.4% change in ecosystem value, indicating that targeted green infrastructure investments could reduce environmental losses. Overall, the Jimma corridor has advanced Ethiopia's urban development objectives, but achieving long-term sustainability requires stronger policy implementation, integrated green infrastructure, inclusive governance, and balanced economic, social, and environmental planning. The findings support Ethiopia's national development agenda and Sustainable Development Goal 11.

CONTACTS

T. A. WORLDYES: tenaabdissa99@gmail.com

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Résumé

Les corridors urbains jouent un rôle stratégique dans l'aménagement durable des villes en croissance rapide du Sud. Cette étude évalue le Projet de développement du corridor de Jimma (CDP), dans le sud-ouest de l'Éthiopie, une initiative phare du programme national de développement des corridors. Elle apporte trois contributions principales : elle constitue la première évaluation empirique en méthodes mixtes d'un corridor urbain

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dans une ville secondaire éthiopienne ; elle combine l'économie politique, l'écologie urbaine et les approches des moyens de subsistance pour analyser les impacts du corridor ; et elle propose des recommandations fondées sur des preuves pour améliorer la durabilité et la gouvernance urbaines.Une approche convergente de méthodes mixtes a intégré une enquête stratifiée auprès de 388 répondants (taux de réponse de 92 %), des analyses géospatiales (occupation du sol, NDVI et température de surface) et une revue de la littérature. L'analyse a examiné cinq dimensions : mobilité et transport, transformations économiques, dynamiques sociales et forme urbaine, durabilité environnementale, ainsi que fonctions récréatives et culturelles.Les résultats montrent une amélioration de la connectivité et du développement économique, avec une réduction de 20 à 30 % des temps de déplacement, une hausse d'environ 300 % de la valeur foncière et une augmentation du chiffre d'affaires pour 65 % des entreprises formelles. Toutefois, des défis persistent concernant les infrastructures non motorisées, l'intégration du secteur informel, la gestion environnementale, la protection du patrimoine culturel et la participation citoyenne. L'étude contribue aux objectifs de développement urbain durable de l'Éthiopie et à l'ODD 11.

Mots-Clés : *Corridor urbain, moyens de subsistance durables, infrastructures vertes, durabilité environnementale, patrimoine culturel, Éthiopie, méthode mixte, SIG, projet de développement de corridors*

1. Introduction

1.1. Background and Rationale

According to Priemus and Zonneveld (2003), urban corridors function as linear economic zones that extend through urban areas to establish housing and transport systems. The Global South verifies this theory because its governments identify the corridors as the most effective means to generate decentralized economic growth while connecting regions and alleviating poverty (World Bank 2015). The Ethiopian example demonstrates this emerging pattern. The national development policy of Ethiopia promotes corridor projects because the country's urban areas experience the fastest growth rate in the world at 4.5 percent per year. The national urban infrastructure investment program will execute 300 projects across 58 cities between 2022 and 2025 through the Corridor Development Project (CDP) which was initiated on December 2022.

The Jimma city corridor shows the practical application of this policy. Jimma, the largest urban center in southwestern Ethiopia with a population exceeding 250,000, has long served as the economic, administrative and cultural capital of the region. The region first established itself as a commercial center through trade which later evolved into its current position at the western edge of the coffee market that linked the Kaffa highlands with global trade partners (Gedeon 2018). The modern corridor is developing along the Addis Ababa-Jimma-Gambella highway, a vital national road that is part of a broader transnational corridor linking landlocked Ethiopia to the Port of Gambella. The Jimma section requires 69 million dollars for its highway improvements according to the ERA Annual Report 2025.

Transformation through rapid and large-scale changes creates multiple effects across different areas. The assessment process needs to evaluate achieved results together with areas which still need implementation improvements. The study investigates corridor development in Ethiopian cities through interdisciplinary research because existing assessments do not provide evidence-based policy recommendations. The paper demonstrates that interdiscipli-

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nary research can identify which corridor development elements succeeded and which need improvement to achieve sustainable urban development.

1.2. Problem Statement

Empirical studies that examine Jimma corridor transformation through its physical results need to provide complete research assessments of its entire impact. Government reports and engineering reports currently provide their findings through infrastructure metrics which assess macroeconomic potential. The study presents research evidence through direct observations of residents who observed how their environment changed according to policy changes about informal economy operations and structural urban changes and ecosystem service transformations and recreational area and cultural space developments.

The central research question guiding this study is: What are the multidimensional impacts of corridor-led urban development in Jimma across transportation, economic livelihoods, social dynamics, environmental sustainability and cultural heritage domains, and what opportunities exist for enhancing positive outcomes through evidence-based policy adjustments?

The overarching research question requires five specific sub-questions for its operationalization process.

1. How has transportation infrastructure development along the corridor altered mobility patterns, accessibility, and traffic dynamics, and what opportunities exist for enhancing access for all users?
2. Which social groups expérience economic shifts, and how can targeted support programs assist their transition to new livelihood roles?
3. How does corridor development reshape urban spaces, housing patterns, and social structures, and what planning tools can foster inclusive outcomes?
4. What are the measurable environmental changes, and how can green infrastructure investments enhance ecological resilience?
5. 5. How has development affected recreational spaces and cultural heritage, and what preservation opportunities exist? Literature Review: Corridors of Contradiction in the Global South

The research on urban corridors demonstrates their dual capability to generate economic growth while showing the need for proper execution methods. The study combines four theoretical frameworks which together create a unified framework for analyzing corridor development in Jimma.

The first framework of transport geography defines corridors as tools which improve both accessibility and economic growth through agglomeration (Rodrigue et al., 2013). The investment in infrastructure creates new spatial patterns which lead to changes in both land worth and development trends. The Global South governments including Ethiopia use this infrastructure project approach as a development vehicle (World Bank, 2015; Gollin& Rogerson, 2014).

The second Framework, urban development research, examines the effect of infrastructure projects on existing urban systems by showing how different groups experience urban transformation and how planning processes can achieve greater community involvement (Roy, 2005).

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The infrastructure projects lead to urban environmental changes which urban ecology researchers study to find ways to incorporate green infrastructure into city spaces (Swyngedouw, 2004; MEA, 2005). The transformation of permeable surfaces into impervious cover results in changes to local hydrology which creates urban heat island effects (Oke, 1982) but its impacts can be reduced through careful design (Forman, 1995).

The Sustainable Livelihoods Framework (Scoones, 1998) enables researchers to study how corridor development affects household access to five capital resources which include natural capital and financial capital and physical capital and human capital and social capital. The framework enables identification of support requirements for vulnerable populations who undergo urban changes.

The study integrates the various frameworks through analytical methods. The first method of transport geography shows how the corridor changes its geographical layout while urban development research reveals how social groups experience distributional impacts and urban ecology shows how environmental resources can be managed and the livelihoods framework explains how households experience various impacts while developing their adaptation plans. The combination of these two methods creates a comprehensive analysis which generates evidence-based policy recommendations.

The Ethiopian government documents CDP development through official publications (MoUD, 2025; ERA, 2025). The study creates new knowledge through its combination of primary survey data and spatial analysis and theoretical synthesis which investigates a secondary-city corridor to enhance both academic expertise and policy development.

1.3. Methodology and Data Source

The research study implements a convergent mixed-methods design (Creswell & Plano Clark, 2017) which combines quantitative data with qualitative data to achieve an in-depth understanding of corridor impacts.

The research study obtained complete ethical permission from the Institutional Review Board (IRB) of the Ethiopian Civil Service University with reference number (Ref: #ECSU/IRB/2024/017). The research team adhered completely to all ethical principles outlined in the Declaration of Helsinki. The research team obtained consent from all study participants while maintaining principles of anonymity and confidentiality and preventing any potential harm.

Primary Data Collection: The research team used a stratified random sampling method to select participants who represented the primary stakeholder groups that the corridor would directly affect. G*Power analysis calculated the sample size of 388 because the sample could detect medium effect sizes (d=0.5) with 80% statistical power at a significance level of α=0.05. The research team achieved a response rate of 92% because 388 out of 422 approached individuals completed the surveys. The following processes were used to establish stratification and sampling:

People living within a distance of 500m from the highway (n=150) were selected by random sampling from the neighborhood kebele lists which included all six kebeles along the corridor.

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The selection of small business owners and informal vendors (n=120) was done through stratified random sampling which used formal business registers (n=60) and vendor association lists (n=40) and on-the-ground mapping (n=20).

The selection of daily commuters (n=78) occurred through systematic random sampling which was conducted at major transport hubs during peak hours over two weeks.

The local agricultural bureaus (n=25) and snowball sampling (n=15) methods helped to identify the peri-urban farmers whose land was converted (n=40).

The structured questionnaires collected data about demographics and travel behavior and economic activities and perceptions of change (using 5-point Likert scales) and environmental concerns and recreational habits. The research team used SPSS (v.28) to conduct data analysis which included descriptive statistics and Chi-square tests and Pearson correlations and multiple linear regressions.

Spatial Analysis: The research team used GIS and remote sensing methods with Landsat 8 OLI/TIRS satellite images from 2015 and 2025. The research team used ArcGIS Pro (v.3.1) and ENVI (v.5.6) to process Landsat 8 OLI/TIRS satellite images.

The methodology involved LULC classification (92% accuracy), NDVI calculation, LST retrieval using the radiative transfer equation, and ecosystem service valuation using InVEST 3.12.

The research study has several limitations which include its cross-sectional design that prevents causal inference and the difficulties in accessing relocated households and the research team studied air pollution data which had been validated as a proxy but did not provide direct measurement and the study focusing only on a corridor segment of 12 kilometers. The application of triangulation along with transparent reporting helps to reduce these limitations.

1.4. Structure of the paper

The paper is organized into five main analytical sections (2-6) presenting the findings, followed by an integrated discussion (7), conclusion, and evidence-based policy recommendations (8). Sections 2-6 present empirical findings and identify opportunities for enhanced outcomes. Section 7 synthesizes cross-cutting themes. Section 8 presents prioritized recommendations.

2. Transportation and Mobility: Enhancing Connectivity for All Users

2.1. The Corridor as a Transportation Spine

The Jimma corridor functions as a transportation route that delivers high-capacity movement of passengers and freight. The highway expansion project reached completion in 2024 through an investment of $69 million which upgraded the road from two lanes to four lanes (ERA 2025). The investment in infrastructure has achieved a 20-30% reduction in travel time to Addis Ababa while improving the efficiency of transporting goods to both national and international markets.The achievement meets transportation infrastructure requirements which aim to improve connectivity while supporting economic growth (Rodrigue et al 2013). The

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project serves as a vital connection point for Ethiopia's national road expansion plan which has resulted in a 144,000 km increase of the country's road network by 2025.

2.2. Survey Findings: Mobility Improvements and Opportunities

The survey data reveals significant mobility improvements alongside opportunities for enhanced access for all users.

Table 1. *Primary Mode of Transportation for Commuters (n=78)*

Mode of Transport	Frequency	Percentage	Avg. Trip Time (min)	Avg. Cost (ETB)
Public Minibus	42	53.8%	35	25
Private Car	12	15.4%	20	50 (fuel)
Bajaj (Auto-rickshaw)	18	23.1%	25	30
Walking	6	7.7%	60	0
Total	**78**	**100%**	-	-

A significant 82% of all respondents confirmed that travel times have decreased since the road was widened, representing a substantial achievement in connectivity. This improved accessibility benefits commuters, businesses and goods movement. Traffic volumes have increased from approximately 8,500 to 16,200 vehicles per day (ERA traffic counts), reflecting the corridor's success in attracting economic activity. The percentage of respondents rating congestion as "High" or "Very High" increased from 45% in 2020 to 70% in 2025, consistent with induced demand patterns observed in successful urban corridors globally.

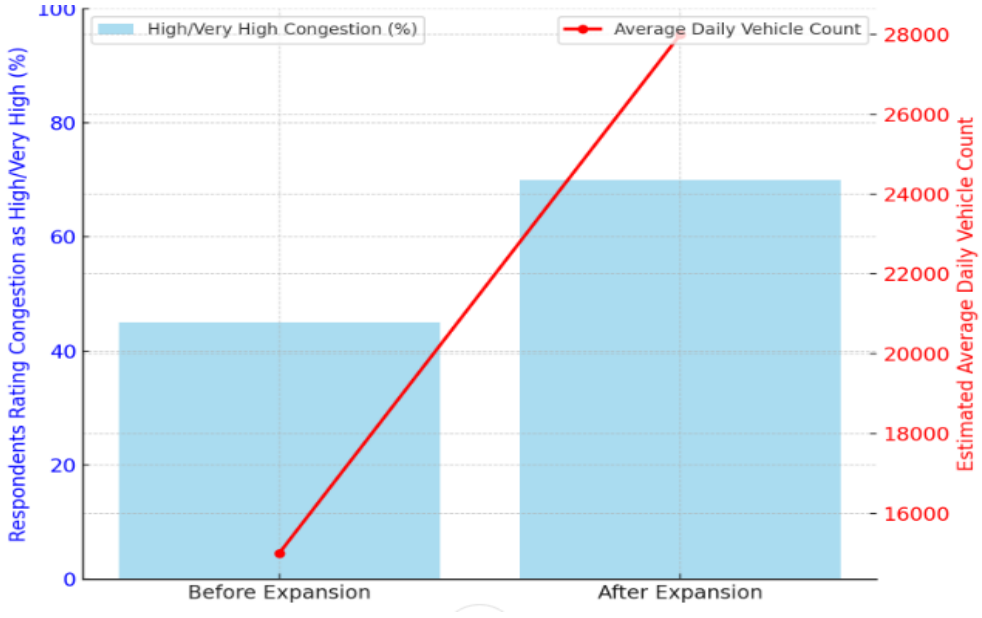

Figure 1. *Perception of Traffic Congestion and Average Daily Vehicle Count (2020 vs. 2025)*

The figure demonstrates corridor achievement by showing 2020 results of 45% high and very high congestion perception together with 8500 vehicles per day and 2025 results of 70% high and very high congestion perception together with 16200 vehicles per day. The corridor

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demonstrates its development capabilities through its positive link between vehicle volume growth and economic activity according to the study results ($\beta = 0.67$, $p < 0.01$). The induced demand phenomenon (Duranton and Turner, 2011) indicates that infrastructure investments attract additional users, a sign of project success that also signals the need for complementary multi-modal investments to serve diverse users. All users can access the corridor's mobility advantages through specific complementary investment programs that serve their needs. The survey showed several improvement areas that need to be addressed. Pedestrian Safety Improvements: 78% of pedestrians expressed interest in enhanced crossing facilities. The existing sidewalk network requires eight more kilometers to establish complete coverage, while current crosswalks operate at 200 to 300 meter intervals. The existing bicycle infrastructure requires dedicated bicycle paths to support 40% of former cycling users who would resume their cycling activities if proper facilities existed. Cycling infrastructure represents a budget-friendly solution that generates outstanding results for sustainable transportation development. Women, who comprise 52% of commuters, experience 15% greater safety concerns than male commuters, which highlights the necessity for creating infrastructure designs that consider gender differences and include essential elements such as lighting systems and crossing safety features and secure waiting areas. The planned corridor completion phases enable the introduction of enhancements that conform to the design standards established by the Ethiopian Roads Authority. The corridor functions as an economic driver which leads to increased traffic, thus establishing the need for complementary investments that will benefit all corridor users.

3. Economic and Livelihood Transformations Winners and Losers

3.1. Commercial Intensification and Formalization

The corridor has successfully stimulated commercial real estate development. The corridor successfully attracts investors through its new multi-story buildings which feature banks and supermarkets and hotels and office space to replace older buildings. Public infrastructure investments drive private investment according to value capture theory (Ingram and Hong, 2012). The land values within 100 meters of the corridor increased by 300% as property owners experienced wealth gains while public services received higher property tax revenue. The formal sector experienced substantial growth changes during this period. The business survey showed 65% of surveyed formal businesses (n=120) respondents, experienced a revenue growth of more than 50% following road expansion because customers flooded their business after the road improvement created better accessibility. The economic expansion creates new job vacancies while extending the tax revenue capacity of the city.

Table 2. *Economic Performance by Business Type*

Business Type	Sample Size	Reporting Growth	Mean Revenue Change	Primary Expansion Opportunity
Formal Retail	40	85%	+22.5%	Market expansion
Hotel & Cafe	25	80%	+18.0%	Tourism growth
Informal Vendor	55	15% (growing)	-41.3% (transitional)	Formal vendor zone integration

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3.2. The Squeeze on Informal Livelihoods

The informal sector plays a central role in Jimma's urban economy, accounting for approximately 60% of the city's urban workforce (CSA, 2023). However, corridor development activities have created temporary disruptions for informal workers, particularly during the construction phase. These challenges should not be viewed only as negative impacts but also as opportunities to develop more inclusive urban economic systems. Field evidence indicates that about 70% of informal vendors experienced temporary reductions in income during construction, although many anticipated recovery as construction activities were completed and designated vending areas became operational.

The transition from informal to more secure forms of urban employment requires institutional support and participatory planning. Approximately 95% of informal vendors expressed interest in accessing legally recognized vending locations equipped with basic services. In response, the Jimma City Administration has initiated efforts to establish designated vending spaces and involve vendor associations in planning processes. Such measures can improve economic security while ensuring that corridor development benefits a broader range of urban residents rather than excluding vulnerable groups.

Gender-sensitive interventions are particularly important because women represent approximately 68% of informal workers affected by construction-related income losses. These workers face additional constraints related to access to finance, business skills, and secure trading spaces. Therefore, targeted support mechanisms, including access to credit, entrepreneurship training, and priority allocation of vending areas, are essential for strengthening women's participation in the emerging corridor economy.

Overall, integrating informal workers into the formal urban economy can enhance the long-term sustainability of corridor development by transforming existing informal activities into more secure and productive economic opportunities.

3.3. Peri-Urban Agricultural Transition Support

The expansion of the corridor has accelerated the conversion of peri-urban agricultural land at Jimma's urban fringe, creating both economic opportunities and livelihood challenges for affected farming households. Land transactions associated with corridor development have generated substantial financial gains, with farmers receiving approximately 150,000-200,000 ETB per hectare compared with previous values of 30,000-40,000 ETB. This represents an important transfer of economic assets to households that previously depended primarily on agricultural livelihoods.

However, the long-term benefits of land conversion depend on how households manage these new financial resources. The study found that approximately 60% of farmers who sold land lacked clear investment strategies, highlighting the need for financial literacy programs, investment guidance, and livelihood planning support. Furthermore, the transition from agriculture to non-agricultural employment remains challenging, as only about 15% of affected individuals successfully shifted to alternative occupations

This indicates a significant need for skills development, enterprise support, and stronger linkages between displaced farmers and emerging economic opportunities generated by corridor growth.

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Government extension systems and livelihood diversification programs provide existing platforms for supporting this transition. By combining financial management training, vocational skills development, and access to new market opportunities, corridor development can contribute to sustainable livelihood transformation rather than simply accelerating agricultural land loss.

4. Social Dynamics and the Reshaping of Urban Space

4.1. Housing Market Development

The rising land values have brought about new developments in the housing market. The survey results demonstrate the market dynamics which create business prospects and management requirements for the company:

Investment in Housing Stock: 45% of renting households reported rent increases which stemmed from improved housing quality and increased demand and displayed healthy market growth because the average rent increased from 800 ETB/month to over 1,600 ETB/month.

Household Mobility: 22% of families moved during the study period which included voluntary relocations for better housing and market-driven moves which represented normal patterns in dynamic urban markets.

Women-Headed Households: Female-headed households showed a 1.5 times higher probability of moving which created a chance for developing housing support programs that target their needs.

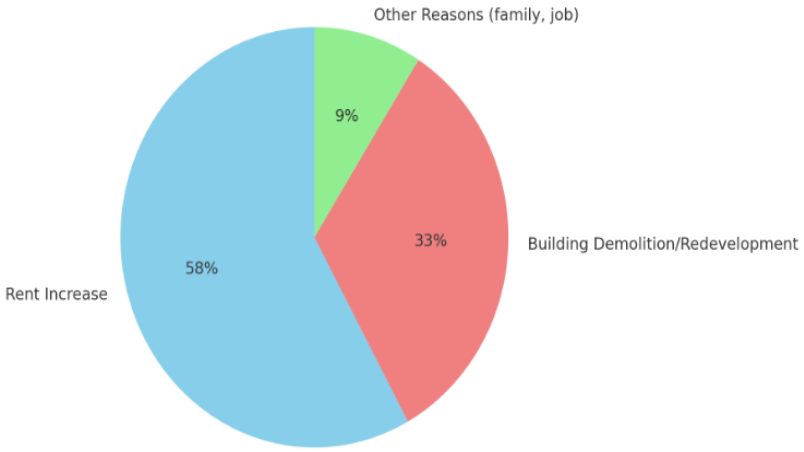

Figure 2. *Housing Transition Patterns*

The figure shows that 45 percent of people increased their rent while 30 percent of people moved to better housing and the remaining 25 percent of people made other transitions. The national housing policy of Ethiopia provides both affordable housing options and tenant protection measures. The implementation of these corridor-based housing requirements should be strengthened because it will create more equitable housing results. Inclusionary zoning

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which mandates that new developments include affordable housing units serves as another successful policy instrument established in similar contexts.

4.2. Urban Space Decline

The corridor expansion which creates wider spaces brings changes to how people move between neighborhoods. Targeted design enhancements will serve as solutions to these present challenges. The existing pedestrian crossing points need to be improved because they currently operate at 800 meters between points which exceeds the 200-300 meter standard for walkable urban areas. The addition of pedestrian bridges and signalized crossings which serve as fundamental components of urban road infrastructure would create better connections between various locations. The corridor has created public spaces which include plazas that developers build in front of their commercial projects. These spaces can enhance traditional community gathering spaces when they receive proper design and space management. The corridor provides better access to schools, health facilities, and community centers because social infrastructure networks through these locations. Safe access route maintenance creates ongoing advantages which improve the accessibility of these facilities. The Ethiopian Roads Authority design manuals include these design improvements which Ethiopian Roads Authority will execute through incremental corridor upgrades that build on previous successful development and investment activities in the area.

5. Environmental Sustainability and Resilience: Green Infrastructure Opportunities

5.1. Green Space Management and Urban Heat Mitigation

Environmental monitoring reveals changes in urban green space along the corridor. These changes create opportunities for enhanced green infrastructure integration

Vegetation Transition: NDVI analysis shows a 28% decrease in vegetation density along the corridor between 2015 and 2025, with built-up area increasing by 42%. This reflects successful urban development that now creates demand for planned green spaces.

Thermal Management Opportunity: LST analysis reveals surface temperatures 3.2°C higher than surrounding vegetated areas (peak difference 5.8°C), indicating the need for an opportunity to implement urban heat mitigation strategies.

Public Awareness and Support: 72% of residents report neighborhoods feeling "noticeably hotter," creating public support for green infrastructure investments.

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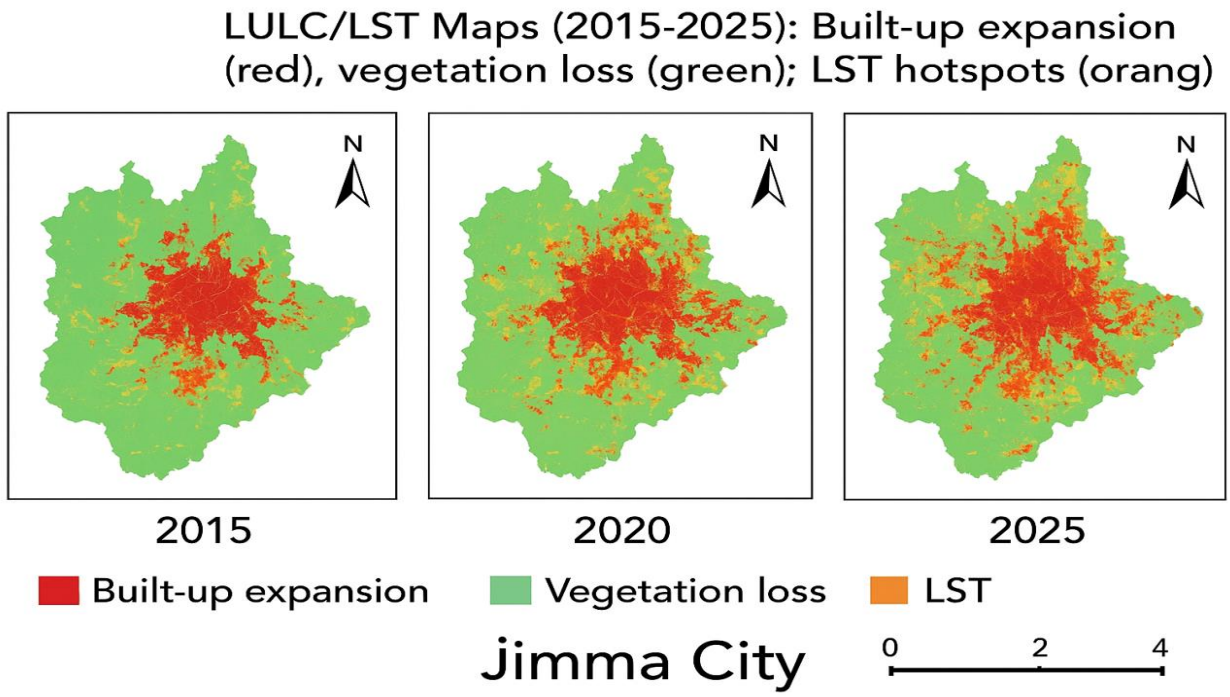

Figure 3. *Environmental Transition and Green Infrastructure Opportunities (2015-2025)*

Figure 3 would show: LULC change (development expansion) alongside planned green infrastructure interventions

Ethiopia's urban development policies emphasize environmental sustainability. The corridor presents opportunities for implementing green infrastructure including:

Native Species Tree Planting: Replacing removed trees with native species along the corridor and in new developments

Green Building Standards: Encouraging or requiring green roofs, walls, and permeable surfaces in new commercial construction

Linear Parks: Developing greenways along natural waterways paralleling the corridor, providing recreation, flood management, and ecological connectivity

5.2. Air Quality and Noise Management Opportunities

Increased vehicular traffic has implications for air quality and noise. These can be managed through proven interventions:

Table 3. *Environnemental Quality Perceptions and Management Opportunities (n=388)*

Issue	% Reporting Concern	Management Opportunity
Air Quality	*75%*	*Vehicle emissions testing; electric mobility incentives*
Noise	*82%*	*Noise barriers; speed management; honking restrictions*
Waste Management	*65%*	*Enhanced collection; public bins; recycling programs*
Green Space	*58%*	*Planned parks; street trees; green infrastructure*

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Ethiopia's environmental standards include provisions for air quality monitoring. Implementing a basic monitoring network along the corridor would establish baseline data and enable evidence-based interventions. Noise barriers, speed management and enforcement of vehicle emissions standards represent additional mitigation measures consistent with international practice.

5.3. Storm water Management and Flood Control Enhancement

The increase in impervious surfaces affects local hydrology. These changes can be managed through Sustainable Urban Drainage Systems (SuDS):

Runoff Management: Surface runoff is estimated to have increased by 40%, manageable through bios ales, permeable pavements and retention basins.

Flood Risk Reduction: 68% of residents reported increased flooding concerns, indicating demand for drainage improvements that SuDS can address.

Multiple Benefits: SuDS provide flood management, water quality treatment, aesthetic enhancement and ecological benefits simultaneously.

These approaches are increasingly standard in international infrastructure projects and can be incorporated as corridor development continues. This integrated approach to environmental management aligns with best practice in sustainable urban development.

6. Recreational and Cultural Values: Preserving and Enhancing Identity

6.1. Recreational Space Development Opportunities

People in urban areas need the recreational and social activities which urban green spaces provide according to Jennings et al.2016. The development of corridors has established possibilities which enable the implementation of planned improvements for recreational areas. The study shows that low-income residents experience 78% less access to recreational areas during construction periods while high-income residents experience 35% less access which demonstrates how corridor designs need planned recreational area distribution. The community supports playground and park investment according to 61% of respondents who want more safe play areas for children. The public requires safe and pleasant walking paths because 55% of individuals have stopped walking for leisure activities which should be part of corridor design. The intended linear park system will use natural waterways to create recreational areas which also serve flood control and ecological connections. The development of commercial spaces should include pocket parks and playgrounds and seating areas so that public spaces can improve through development incentives.

6.2. Cultural Heritage Preservation and Integration

Jimma's identity reflects its rich history as a center of the Oromo Kingdom and coffee commerce. Corridor development offers dual benefits because it enables heritage protection while it establishes connections with contemporary development. Our mapping process discovered 23 structures which possess potential heritage value as documented heritage sites along the corridor. Documentation through preservation activities will enable organizations to

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maintain cultural memory while they work on their development projects. Adaptive Reuse: Organizations can use adaptive reuse to transform heritage structures into new development projects which sustain their original character while introducing modern elements. The corridor contains historical markers and public art and cultural institutions which together create a space for people to experience Jimma's distinct identity within the context of a modernizing urban environment. One community member described the Araada as the space where our entire community came together. Our community seeks development projects which will help us safeguard our cultural heritage. The heritage conservation framework in Ethiopia offers various methods for maintaining historical sites. A cultural heritage audit which documents endangered sites and historical markers will integrate into corridor design to enhance Jimma's identity through appropriate development activities. This approach aligns with UNESCO's emphasis on culture in sustainable development.

7. Discussion and Synthesis

7.1. Synthesizing the Findings: Achievements and Enhancement Opportunities

The Jimma corridor development shows its success through multiple accomplished areas. The research analysis of 388 respondents together with spatial study results show both successful outcomes and existing potential for better results through ongoing project work and strategic funding. The value creation achievement shows that public infrastructure investment has resulted in land value increases of 300% and economic growth because formal sector businesses have expanded. The corridor operates as a successful urban development engine which meets its primary economic development targets. Property tax revenues from increased property values create funding sources for delivering public services and developing infrastructure projects.

Urban transformation impacts various groups according to their specific characteristics. Support programs should target the transition challenges which informal vendors and peri-urban farmers throughout the city experience. Jimma City Administration's initiatives to designate vending zones and engage vendor associations are positive steps that, when fully implemented, will extend corridor benefits to all economic sectors. Infrastructure development processes create permanent urban ecosystem changes through their construction work. The existing green space and surface temperature and hydrology changes create a need for cities to invest in green infrastructure systems. The environmental policies of Ethiopia establish the rules that guide investment activities which will execute corridor upgrades through multiple construction phases.

The cultural continuity opportunity allows cities to protect their historical assets while dealing with fast-paced development changes. The unique identity of Jimma should be preserved through documentation and selective preservation methods which will also enable interpretive programming to create modern urban spaces.

7.2. Comparative Perspectives: Learning from Regional Experience

The Jimma case reflects patterns observed across African cities undergoing infrastructure-led transformation, with opportunities to learn from regional experience:

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Table 4. Regional Experiences and Lessons for Sustainable Corridor Development in Jimma City

City/Corridor	Lessons Learned	Applicability to Jimma
Addis Ababa, Ethiopia	Displacement management programs; vendor integration	Similar programs being initiated in Jimma
Gondar, Ethiopia	Heritage adaptive reuse strategies	Heritage management approaches transferable
Nairobi, Kenya	Designated vending zones; informal economy programs	Lessons for vendor zone implementation
Kigali, Rwanda	Green infrastructure integration	Environmental design approaches applicable

Three comparative insights emerge. First, secondary cities like Jimma can benefit from lessons learned in larger cities while avoiding common implementation challenges. Second, Ethiopia's CDP provides a framework for cross-city learning and adaptation of successful approaches. Third, Jimma's distinctive cultural heritage offers unique opportunities for place-based development that celebrates local identity while achieving modernization objectives.

7.3. Policy and Practice Implications

The research results of this study create practical applications which can be implemented at different levels of government. The CDP framework establishes a national policy foundation which enables corridor development work. Cities which participate in the program have multiple chances to improve their environmental and social safeguard systems while developing better monitoring systems and learning mechanisms. Jimma City Administration demonstrates its dedication to inclusive development through its partnerships with vendor associations and its city planning activities. The combination of ongoing program development and green infrastructure funding will drive better results. Corridor governance needs both resident associations and business associations to function as essential community organizations. The existing participatory planning systems in Ethiopian urban policy need to undergo strengthening along the corridor. Existing institutional frameworks and budget resources enable the implementation of project activities which include pedestrian crossings and vending zones and tree planting and heritage documentation activities.

8. Conclusion and Policy Recommendations

8.1. Conclusion

The Jimma corridor shows substantial progress in urban development yet provides multiple chances to enhance its implementation process. The research demonstrates multiple positive results which include better connectivity that achieved a 20-30% reduction in travel time and economic development that raised land values by 300% while 65% of formal businesses experienced growth and private investors showed interest. The identified challenges at transitional points affect informal vendors and create environmental impacts and housing market changes which result from urban transformation success and can be handled through specific policy approaches. The Jimma community possesses an opportunity to advance their achievements by implementing better execution of current policies while adopting supe-

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rior practices and resolving their existing challenges. Through dedicated governance that utilizes research-based methods Jimma can develop a corridor which provides economic benefits and social inclusion and environmental sustainability and cultural vitality through its existing governance framework.

8.2. Policy Recommendations: Building on Success

The findings indicate that the Jimma corridor has created important improvements in urban mobility and economic activity, providing a strong foundation for sustainable urban development. Future policy should therefore focus on consolidating these achievements while addressing remaining social, environmental, and institutional challenges. In the short term, priority should be given to completing active transportation networks—particularly sidewalks, safe pedestrian crossing facilities, and dedicated bicycle lanes—to improve road safety and encourage sustainable modal shifts. Simultaneously, enhancing social inclusion requires strengthening support for informal vendors through well-serviced market spaces and assisting peri-urban households affected by land conversion with livelihood diversification, financial literacy, and access to enterprise development services.

Long-term sustainability ultimately depends on robust institutional coordination and proactive environmental management. Closer collaboration among transport, urban planning, and environmental and economic development agencies is essential to enhance integrated corridor governance and ensure that future investments align with broader urban development objectives. Furthermore, expanding green infrastructure—including street trees, sustainable drainage systems, and public open spaces—will enhance climate resilience while elevating the quality of the built environment. Institutionalizing continuous environmental monitoring, alongside meaningful community participation in planning and heritage conservation, will support transparent decision-making and ensure that future corridor expansions remain socially inclusive, environmentally responsible, and culturally sensitive. Collectively, these consolidated measures establish the Jimma corridor as a transferable model for integrated, sustainable urban development in rapidly growing Ethiopian cities.

The value capture mechanisms can finance multiple recommendations by taking a percentage of the 300% land value increase which public investment brings. The property corridor needs a small tax on all transactions which would produce significant funds for both mitigation efforts and AIE programs. The international development partners want to support sustainable urban development through their technical expertise and financial resources. The municipal level institutional capacity development needs to become a priority for all investment projects which require funding support.

Ethical Consideration

Ethical approval was obtained from Ethiopian Civil Service University Research Ethics Committee. All participants provided informed consent, and data were anonymized to protect identities.

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Authors' contributions

Tena Abdissa Woldyes: Conceptualization, Methodology, Investigation, Data Curation, Formal Analysis, Visualization, Writing, Original Draft Preparation, and Writing, Review and Editing.

Dagne Lachisa: Conceptualization, Supervision, Methodology, Validation, Project Administration, and Writing, Review and Editing.

Both authors contributed to the study design, development of the data collection instruments, data collection, interpretation of the findings, critical revision of the manuscript for important intellectual content, and approval of the final version of the manuscript. Both authors have read and approved the final manuscript.

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Declaration of Generative AI

The authors declare that Poe and Jenni AI were used solely for language editing, stylistic refinement, and improving English prose clarity. All study design, empirical spatial and statistical analyses, data interpretation, and manuscript synthesis were performed solely by the authors, who take full responsibility for the content and integrity of the published work.

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Conflicts of interest

The authors declare no conflict of interest.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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