

# Diverse Facets of Sustainability in Slums

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Slums are considered to be informal settlements with dire living conditions that are occupied illegally causing serious impediment to the growth and development of any place. Therefore it is important to transform these areas into potential zones, that adds a positive impact to the process of urban development. Slums are characterized by defective physical, social and economical environment that exacerbated the living condition of the people residing there. In order to devise a holistic approach to address the situation it is necessary to understand the various elements of slums to attain sustainability. This paper looks into those varying aspects of sustainability in slums and identifies the diverse factors contributing to the attainment of the same.

**KEYWORDS:** environmental impact, informal settlements, social equity, sustainability, urban development

## Introduction

Urbanization is a global phenomenon that has transformed the landscape of cities, causing unprecedented growth and development. However, this rapid urban expansion has also given rise to informal settlements, commonly known as slums, which pose unique challenges to sustainable development. As these marginalized communities burgeon in size understanding and addressing various aspects of sustainability within slums become imperative for fostering inclusive and resilient urban landscapes. It helps to understand and mitigate environmental impacts, promote social and economic inclusion, and help empower the local communities.

Slums form in many parts of the world due to several reasons. Some of them include rapid rural-to-urban migration, economic stagnation, high unemployment rate, poverty in low income areas, issues in city planning, politics, natural disasters and social conflicts. Although there are various slums upgrading programs and approaches to address this urban poverty in developing countries, the condition still remain stagnant and the problem is expected to become worse. Most of the policies opt to eradicate slums and do not consider the resources and the potentials within the slums. This intend the need to change the procedures followed in the development processes. Slums face numerous problems, including those related to its socio-economic life and environmental conditions. The emergence of slums in a city is due to failed city planning along with the economic transformation associated with urbanization, and the inability of the government in providing proper housing facilities to people with low income in urban areas.

Lack of fundamental facilities are considered to be the main feature of slums across the world. The unavailability of electric supply, road networks, footpaths, and improper lighting and drainage facilities are also other prominent features of slums. Poor infrastructure with low quality materials, cause unhealthy living conditions, lack of sufficient space, over crowding and security issues. Impoverished sanitation facilities and health issues related to it are a greater cause of these unregulated and unplanned settlements.

Lack of proper source to income and access to these facilities also affect the socio economic life of these slums.

In this context, sustainable development is the main outlet to achieve a real solution to develop slums in an integrated manner. Those aspects of sustainability could be broadly divided into three, mainly, environmental, social and economical sustainability. It thus become necessary to understand the various elements with respects to these aspects in order to improve their living condition and foster an inclusive urban development.



**Fig. 1.** Different aspects of Sustainable Development

## METHODS

In order to attain the outcome, the study follows stepwise analysis starting from a general understanding on slums to comparing the conditions and variation between its diverse aspects, help achieve a sustainable solution to its issues. Major findings of the study, states a number of suggestions that deals with the improvisation of slums, which will inturn create a balanced and sustainable living environment to the slum dwellers. These aspects of slums are discussed in this paper, thereby understanding its potentials and implying an inclusive solution to the same.

### 1.Environmental Sustainability

Sustainable development is that which aims to improve the present living condition of the people without compromising the interest of the future generations. Environmental sustainability requires the use of environmental resources in such a way that the requirement of the future generation is not in danger. It is based on creating a balance between various factors like energy conservation, use of renewable energy, design and planning for energy efficiency, usage of locally available materials and practicing methods of reuse, recycling, rainwater harvesting and safe disposal of waste. Lack of access to clean water, improper sanitation facilities and poor waste disposal, overpopulation and pollution, are the main determinants of the environmental health status for the people residing in slums. The residents often need to cope with clogged drains, stagnant ponds, poor water supply and inadequate waste disposal and sanitation within the settlements.

### 1.1 Factors affecting environmental sustainability in Slums

- Inadequate financial resources for urban development
- Poor maintenance
- Overcrowding and poor housing
- Water scarcity and lack of basic amenities
- Lack of human resources for urban planning
- Political instability

Addressing these factors requires holistic approaches that integrate environmental considerations into urban planning, provide access to basic services, promote sustainable waste management practices, and prioritize the well-being of slum residents while safeguarding the environment for future generations.

### 1.2 Measures to attain environmental sustainability



**Fig. 2.** Basic measures to ensure Environmental Sustainability in Slums

- Environmental education
- Human resources management
- Upgrading and improvement of existing housing
- Implementation of suitable and functional land use plans, as well as implementation of environmental planning laws.
- Environmental sanitation, this should be accompanied by enactment and enforcement of environmental laws
- Poverty alleviation
- Crime reduction
- Effective waste management

Thus in order to improve the menace of slum in our cities, individual's professional bodies, governments, non-governmental organizations, as well as community based organizations should work in collaboration with the community and ensuring its participation.

## 2. Social Sustainability

Social sustainability is the process of achieving equal participation of the various groups in all stages of the development processes. It is important note that low-income people are not excluded in the same. This is especially critical in developing countries where low-income people are often excluded in the formal planning processes, often affecting the people belonging to informal settlements and poor living condition. Social sustainability is the process of attaining equality in the participation of various communities living in slum areas in all stages of its development activities. Social sustainability may be

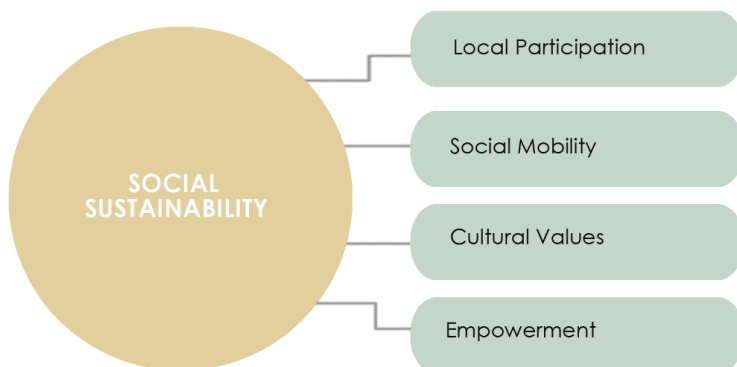
attained by improving activities, and give them a feeling of being a part of the society and also as citizens that have equal accessibility to all the requirements of livelihood. The link between among social sustainability and community participation is ensured by the engagement of its inhabitants in the urban slum design to assure in fulfilling their basic wants and needs.

### 2.1 Factors contributing to Social Sustainability in Slums

- Increase in social differentiation and heterogeneous communities in urban areas: education, consumption and culture.
- Unsecure tenure of slum dwellers.
- Lack of essential services like safe water, sanitation, and secure occupancy safeguards against forced evictions contributes to social sustainability in slums
- Socio economic factors like poverty, lack of infrastructure, and inadequate governance contribute to the growth of slums and pose challenges to social sustainability
- Insustantial participation of low-income groups in the upgrading programs.

Social sustainability can only be achieved by enhancing these activities and give the people a sense of belonging to society and right to all the necessary amenities by being valued as citizens with equal access to livelihood. Engagement of inhabitants in the development processes is an important way to ensure their requirements and assure social sustainability.

### 2.2 Methods to achieve Social Sustainability



**Fig. 3.** Factors leading to Social Sustainability in Slums

- Social inclusion - it include the participation of the residents in their upgrading process
- Participation - it require the empowerment of its local citizens to achieve the same
- Empowerment – this leads to community mobilization
- Community mobilization - where the local people become part of the upgrading, throughout the process even after its completion.

Social sustainability could be achieved through these upgrading processes, where they tend to give the people the feeling of being a part of the society and make them understand their value as citizens that deserve equal rights to livelihood needs such as food, clean water, clothing, shelter, healthcare, education, transportation and other public services. Social inclusion refers to meeting the basic needs of the dwellers of the informal areas so that people can live in dignity. It provide equal opportunity for all the groups within the society and rejects the stigma linked to informal areas and their residents. The link between social sustainability and participation is done through the involvement of inhabitants in the urban design of their communities to ensure their needs and desires. Effective and sustainable social development involve considering its residents as partners in the development process not mere as beneficiaries. Resident's participation in the upgrading processes involves all the stages of the development processes, including planning, implementing, monitoring, and improving facilities and services. Poor urban areas may also have sites rich in cultural diversity and socio political identities. And these cultural identities in these settlements should be considered as the slum dwellers may have a sense of place should have the rights to preserve them. This sense of place contributes to social inclusion and solidarity, and subsequently leads to sustainable regeneration.

### 3. Economical Sustainability

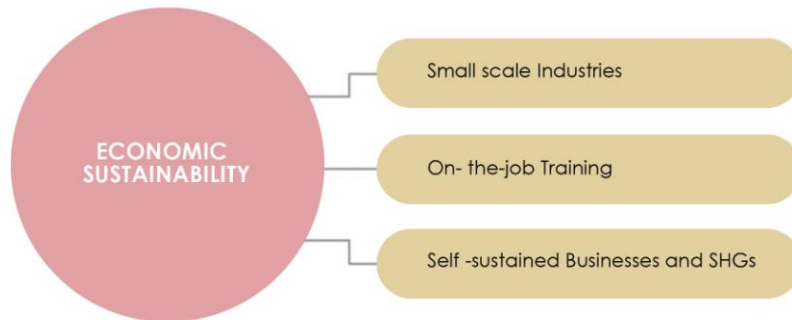
This informal economy is producing a very large portion of the economic value of the nation, but it lacks the proper measures to fully utilize or attain the same. The informal settlements amidst of the dire living conditions, poverty, infrastructural developments and access to basic amenities, fail to achieve its true potential and attain economic sustainability within them. The primary means of alleviating poverty is economic advancement. Slum economies play a significant part in meeting the needs of residents in slum regions all over the world for a means of subsistence. With their limited workforce, they have also made notable contributions to the expansion of urban economies. They have helped to provide urban services like rubbish collection and the formation of both local and global markets. Giving the underprivileged a respectable work that provides both a stable source of income and economic power is equally important. It is crucial to improve access to development in terms of economic status, personal well-being, and the eradication of poverty via employment. The only asset that poor people may use to improve their living situations is their work. Therefore, creating work opportunities is quite beneficial in achieving poverty reduction and long-term economic growth. It will eventually cater to achieve the sustainable development plan's objectives. Labour, social security, and the right to work are typically addressed in strategies for reducing poverty along with equality, safety, and self-esteem.

#### 3.1 Factors of Economical Sustainability in Slums

- Access to proper Housing and infrastructure facilities become key factors of the economic production and function of cities yet the national budgets for investment are generally too low.
- Global inequality between rich and poor.
- Cities are the centers of productivity but also of increasing poverty linked to a lack of housing and infrastructure services among its informal settlements.
- Formal financial institutions have no interest in general to go down-market and extend their lending to lower income group.

- Access to jobs and economic hubs in the city trigger economic value and local economic development processes Improve tenure security local economic training, Integrate job creation and vocational training.

### 3.2 Means to attain Economic Sustainability in Slums



**Fig. 4.** Measures to achieve Economic Sustainability in Slums

- By encouraging self-sustaining activities within slums can help residents manage their economic challenges effectively, contributing to the sustainability of these communities.
- Governments play a crucial role in providing the necessary political and administrative support to ensure economic sustainability in slums. This involves pooling resources, coordinating tasks, and creating a master plan based on decentralization.
- Community-led projects focused on slum upgrading have proven successful than mere slum clearance, providing economic, social, and basic services to its residents.
- Recognizing and investing in the positive aspects of slum communities, such as their vibrant traits and entrepreneurial activities, can foster economic growth and sustainability within these neighborhoods.

Progress in terms of economic viability is the main activity for the removal of poverty. The economies of slum have an prominent role in satisfying the livelihood requirements of the people residing in slum areas across the world. They also have contribution in providing urban services, namely, waste collection and the production of both domestic and international markets. It is important to give the poor with the dignified jobs that cover both secure source of income and economic empowerment. The improved accessibility to development in terms of economic status, well-being of the people, and eradication of poverty through the work is crucial from the social point of view. For the poor people, labor is the only valuable asset they may utilize to enhance their livelihood conditions. Therefore, the generation of employment chances is considerably effective to attain reduction in poverty and sustainability in economic development. It will contribute effectually in attaining the goals of the sustainable development plan.



#### 4. Challenges

Achieving sustainability in slums is a complex and multifaceted challenge that requires a comprehensive approach to address the various issues prevalent in informal settlements. Urban slums face a multitude of challenges ranging from inadequate housing and water scarcity to lack of basic services like sanitation and waste management. These conditions not only contribute to poor living standards but also intensify environmental degradation within these communities. The rapid urbanization process, driven by factors such as population growth and insufficient urban planning, further compounds the sustainability challenges faced by slums.

Achieving sustainability in slums presents several challenges :

Firstly, slums typically suffer from poor access to essential services such as clean water, proper sanitation, and reliable waste removal systems. This leads to severe environmental degradation, including pollution and unsanitary living conditions.

Secondly, slums tend to experience high rates of crime and violence, particularly against women and children.

Thirdly, slums face challenges in terms of economic sustainability, as many residents struggle to find stable jobs and earn enough money to lift themselves out of poverty.

Finally, slums often lack sufficient legal protections, leaving residents vulnerable to exploitation and abuse. Overcoming these obstacles requires concerted effort from governments, NGOs, and local communities to develop sustainable solutions that address the root causes of slum existence and improve the lives of those who live there.

To address these challenges effectively, a holistic and integrated approach is necessary. Sustainable development initiatives in slums should focus on improving economic opportunities, enhancing social cohesion, implementing resilient urban planning strategies, and prioritizing health interventions. By tackling the diverse facets of sustainability in slums comprehensively, it is possible to create more livable and sustainable communities that promote the well-being of residents and contribute to overall urban development goals.

#### RESULTS

The research on sustainability in slums has yielded significant insights into the challenges and potential solutions for improving the living conditions and overall sustainability of informal settlements. The findings emphasize the importance of addressing economic, social, environmental, and health aspects to achieve sustainable development in slums effectively. One key result highlighted in the research is the critical role of economic sustainability in poverty eradication within slum communities. The economies within slums are vital for meeting the livelihood needs of residents in developing countries. Additionally, the research underlines the need for sustainable slum upgrading practices that focus on using construction elements to reduce environmental impacts, minimize maintenance burdens, and enhance the quality of life for residents.

Moreover, the study emphasizes the significance of social cohesion and community well-being in promoting sustainability within slums. Recognizing the positive aspects of slum communities and making use of their strengths can lead to more sustainable urban development practices. By empowering residents

and considering them as part of the solution rather than solely as a problem, sustainable development initiatives can be more effective.

Furthermore, the research sheds light on environmental challenges faced by slums, such as pollution, inadequate infrastructure, and lack of access to clean water sources. Sustainable slum development requires resilient urban planning, disaster preparedness, and sustainable resource management to address these environmental concerns effectively

The research outcomes underscore the importance of adopting a holistic approach that integrates economic development, social well-being, environmental sustainability, and health considerations to achieve sustainable development in slums. By implementing policies and practices that address these diverse facets of sustainability comprehensively, it is possible to transform slums into more livable, resilient, and sustainable communities that benefit all residents.

## Discussion

The major discussions in the research on sustainability in slums revolve around several key factors that are crucial for understanding and addressing the challenges faced by these informal settlements:

1. The research point out the causes and consequences for the emergence and growth of slums, highlighting factors such as rapid urbanization, population growth, and inadequate urban planning as key drivers of slum settlements.
2. The study emphasizes the need to develop a sustainability agenda that encompasses economy, environment, and social factors within slums. By focusing on these three main aspects, the research aims to create a framework for sustainable development in these informal settlements.
3. Discussions also centers around the critical importance of addressing health issues within slums as part of sustainable development efforts. Creating a healthy society is identified as a fundamental aspect of sustainability that must be prioritized to improve the well-being of its residents.
4. The research underscores the role of slum economies in meeting livelihood needs and emphasizes the need for economic development strategies appropriate to informal settlements.
5. Environmental degradation in slums is a significant focus of discussion, with an emphasis on sustainable practices that reduce environmental impacts, and enhance quality of life for residents.
6. The research marks the importance of social cohesion and community well-being in promoting sustainability within slums. Upholding the positive aspects of slum communities and empowering residents are identified as key strategies for sustainable urban development practices.

## Conclusion

The research on sustainability in slums state the interplay of economic, social, environmental, and health factors that shape the challenges and opportunities within the informal settlements. The findings highlight the urgent need for an integrated approach to sustainable development in slums, addressing the root causes of poverty, environmental degradation, health disparities, and social inequalities. By recognizing the importance of economic sustainability in uplifting slum communities and promoting livelihood opportunities, sustainable development initiatives can empower residents and foster economic resilience. Moreover, prioritizing social cohesion and community well-being within slums can enhance social capital and create a sense of belonging among residents, leading to more sustainable urban development practices. Environmental sustainability emerges as a critical aspect of transforming slums into resilient



and livable communities. By implementing sustainable practices that mitigate environmental degradation, improve infrastructure, and promote resource management, it is possible to create healthier and more sustainable living environments for slum dwellers. By prioritizing health interventions and promoting well-being among residents, sustainable development efforts can significantly impact the overall quality of life in informal settlements. The research marks the importance of adopting a comprehensive approach that integrates economic development, social well-being, environmental sustainability, and health considerations to achieve sustainable urban development in slums. The various findings from the study to achieve a sustainable living environment within the slums include:

- Establishing a balanced sustainable master plan to achieve sensitive redevelopment.
- The preservation and enhancement of local culture.
- To rebuild with new technology, provide public services, create opportunities to continue intergenerational lifestyles and trades, and at the same time open doors that lead to transitional development.
- Bringing stakeholders to discuss the implications under various scenarios and implementation of redevelopment plans.
- Ensure economic activity is maintained well.
- Cost-effective projects and programs that provide considerable welfare gains for slum residents.
- Adopting the Organic Model of Redevelopment – that promotes empowerment, integrated urban development, and social cohesion, as well as the environmental upgrading and economic development, it requires planners and city policy makers to recognize the value in slum settlement patterns, new technologies for infrastructure upgrading and maintaining the community, overall the model contributes an upgrading that is self-sustaining rather than requiring massive government intervention.

This paper serves as a foundation for future initiatives aimed at improving the living conditions and overall sustainability of slums worldwide, emphasizing the transformative power of sustainable practices in creating more equitable and resilient urban environments for all residents.

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