

***SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACT OF
INFORMAL SETTLEMENTS: (A CASE STUDY OF JIMMA
CITY SELECTED SUB CITIES)***

*A RESEARCH PAPER SUBMITTED TO RESEARCH AND POSTGRADUATE
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***Socio-Economic and Environmental Impact of Informal
Settlements: A Case Study of Jimma City***

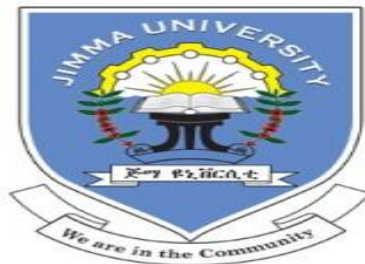
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Jimma Ethiopia

CERTIFICATE

This is to certify that Kerim Mohammed Hasan carried out this research paper entitled the socio-economic and environmental problems of informal settlements. This work is original in nature and it is enough for submission to the partial fulfillment for the award of the degree of Master of Public Management (MPM).

Main Advisor

Date

Signature

Co- Advisor

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Signature

DECLARATION

I undersigned declare that this research report is my original work and has not been presented for a degree in any other university, and all the materials used for this study have been duly acknowledged. This research paper entitled the socio-economic and environmental problems of informal settlements and has been carried out by me under the guidance and supervision of Daniel Amente (PhD candidate) and Firew Mulatu

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Signature

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Table of content

Content	Page
CERTIFICATE.....	ii
DECLARATION	iii
Acknowledgements.....	i
List of Tables	vi
Abstract.....	viii
CHAPTER ONE.....	1
1. INTRODUCTION	1
1.1. Background of the Study.....	1
1.2. Statement of the Problem.....	3
1.3. Research Questions	6
1.4. Objectives of the Study	6
1.4.1. General Objective	6
1.4.2. Specific Objectives	6
1.5. Significance of the Study	6
1.6. Scope of the Study	7
1.7. Limitation of the study.....	7
1.8. Organization of the Paper	7
1.9. Conceptual Definition.....	7
CHAPTER TWO	9
2. LITERATURE REVIEW	9
2.1. Theoretical Literature.....	9
2.1.1. Definition of informal settlements	9
2.1.2. History of Informal Settlements.....	10
2.1.3. Characteristics of Informal Settlements	11
2.1.4. Socio-economic factors.....	13
2.1.5. Socio-economic development and community facilities:	16

2.1.6.	House improvement:	18
2.1.7.	Major Effects of the Informal Settlements	19
2.1.8.	Pollution of Water Sources	19
2.1.9.	Deforestation.....	19
2.1.10.	Pollution from Solid and Liquid Wastes	19
2.1.11.	Flooding	23
2.1.12.	Encroachment of Good Agricultural Land.....	23
2.1.13.	Accessibility.....	24
2.1.12.	The Challenge of Informal Settlements	24
2.1.14.	Factors contributing for the informal settlements	25
2.1.15.	Environmental Challenges	26
2.1.16.	Access to Basic Services in Informal Settlements	27
2.2.	Empirical Review.....	28
2.3.	Conceptual framework.....	30
CHAPTER THREE		31
3.	RESEARCH METHODOLOGY.....	31
3.1.	Description of the Study Area.....	31
3.2.	Research Approach	32
3.3.	Research Design.....	32
3.4.	Sample Size and Techniques.....	32
3.5.	Data Sources	33
3.6.	Methods of Data Collection	33
3.7.	Method of Data Analysis	33
3.8.	Validity and Reliability Assessment	34
3.9.	Ethical Consideration.....	34
CHAPTER FOUR.....		35
4.	RESULT PRESENTATION AND ANALYSIS	35
4.1.	Introduction.....	35

4.2.	Demographic Characteristics of Respondents	35
4.2.1.	Employment Status of Respondents.....	38
4.3.	Descriptive Statistics.....	39
4.3.1.	Socio-economic characteristics of respondents	39
4.3.2.	Environmental problems	44
4.3.3.	Solutions to Reduce Socio-Economic and Environmental Problems	51
4.4.	Findings through Observations	52
CHAPTER FIVE		57
5.	SUMMARY, CONCLUSION AND RECOMMENDATIONS	57
5.1.	Summary of findings.....	57
5.2.	Conclusion	59
5.3.	Recommendations	61
5.4.	Future Research Directions.....	62
Reference		63

List of Tables

Table 4.1, Demographic Characteristics of Respondents	36
Table 4.2.Economic Participation of Respondents	38
Table 4.3. Socio-economic characteristics of respondents	40
Table 4.4.Environmental problems	45
Table 4.5. Solutions to reduce socio-economic and environmental problems.....	51

List of Figures

Figure: 4.1. Photos of slum area taken by Kerim from Bore Kebele.....	46
Figure: 4.2. Photos of slum area taken by Kerim from Kofe Kebele.....	48
Figure: 4.3. Photos taken by Kerim from Bore Kebele.....	49
Figure: 4.4. Photos of slum area taken by Kerim.....	50
Figure: 4.5. Photos of dismissing illegal houses in Ginjo Kebele.....	55

Abstract

Informal settlements are characterized by unauthorized invasion and development of land, illegal subdivision, lack of basic social services and infrastructures. The purpose of this study was to investigate the socio-economic and environmental impacts of Slum Settlement in Jimma City on the Life of Settlers: in Bore, Kofe, Ifa Bula and Hora Gibe Kebele's, Jimma, Ethiopia. In order to achieve the above mentioned objectives, primary and secondary data were collected. Literature review was conducted from available scholarly studies, land management manuals and program documents. Survey Questionnaires, interview and document review checklists were used as data collection tools. The survey questionnaire responses were analyzed by using cross sectional method. The research method used for the study was descriptive and explanatory research involving both qualitative and quantitative data collection approaches. Simple random sampling was used to conduct questionnaire to individual household heads in the areas of illegal settlement and this method was used in conjunction with interviews with municipal officials and questionnaires handed to 265 of informal settlement residents. Descriptive statistics such as frequencies, percentages, tables and charts were used for quantitative data analysis and qualitative data were also analyzed using narration. Research findings concluded that informal settlements do pose socio-economic as well as environmental impacts towards the settlers which desperately needed the development of recommendations for change. The problem of slum settlement could be solved through all-inclusive approach. The government politicians and urban experts on different positions are expected to: build their administrative, financial and institutional capacities in order to carry out their responsibilities successfully, and resourcefully.

Key Words: socio-economic, environmental, informal settlements

CHAPTER ONE

1. INTRODUCTION

This chapter introduces the research task by providing the context within which the study is conducted. It first describes the introductory part of the topics, research problem the research aim and associated objectives. Finally significant of the study, scope of the study and organization of the study will be included.

1.1. Background of the Study

Rural-urban migration is an ongoing phenomenon in the developing world and in the developed countries. “In most developing countries, informal settlements have marked the urban landscape for at least half a century. As cities have expanded, so have the informally developed residential areas. People continuously migrate to the city in search of better opportunities and ways of sustaining their livelihoods, and the number of informal settlements increases (karam, 2006)

Informal settlements can be defined in various ways. Informal settlements can be seen to have two inter-related sides to them. “One relates to the physical environment and revolves around the dwelling that families occupy while the other relates to the families themselves, their needs and circumstances. One side of informal settlements is focused on the natural environment and the physical structure of the settlement, while the other side refers to the residents who occupy informal settlements, and their socio-economic issues (Abote, 2009)

There have been debates on ways to eradicate or decrease the number of informal settlements in the developing cities. The underlying characteristics of informal settlements are poverty and social exclusion. Informal settlers residing in such settlements are caught up in a cycle of poverty and are excluded from society. Informal settlements remain eyesores across major cities in South Africa. The current situation of informal settlements is complex and will not cease as a result of the social challenges South Africa is faced with. A rapid increase in the urban population and the limited capacity of the government to meet the high demand for building plots has led to mushrooming of the informal settlements (Suleman, 2011)

“There are a number of reasons why informal settlements exist apart from urbanization. A lack of access to basic urban services such as water and sanitation can also be taken as an indicator of the prevalence of un serviced settlements (Napier, 2007)

Informal settlements also referred to as squatter settlements or shanty towns are dense settlements built and occupied illegally in other people or state lands .They are temporary but good alternatives of shelter for the urban poor who are denied of access to housing. Informal settlements occur when the current land administration and planning fails to address the needs of the whole community. These areas are characterized by rapid, unstructured and unplanned development. On a global scale informal settlements are a significant problem especially in third world countries housing the world’s disadvantaged. The measures taken by urban land administration authorities vary from countries to countries. Earlier, demolition of informally built houses was a common measure taken, but these days for economic and human right reasons regularization of these settlement is a preferred one (Daniel, a global scale informal settlements are a significant problem especially in third world countries housing , 2011)

A squatter is one who resides on a property to which he or she has no title, right or lease a person who settles in or occupies property with no legal claim to the property. Squatting is generally linked with or affected by factors such as: increasing of rural-urban migration, high cost of formal land market, cheap land market with farmers, economic status, social conditions, custom, traditions, governmental and local urban land and housing policies and geographical conditions. Hence, a concerted and integrated effort of different concerned sectors including the occupants is necessary for effective housing program and improvement This research paper examined the socio-economic and environmental problems of informal settlements. The environment requires added attention due to a rise in pollution, climate change as a result of eco-unfriendly practices, degradation and poor waste management. This causes socio-economic impacts; the impacts which informal settlements have on the environment are harsh and result in extreme detriments for the future. Such impacts range from poor sanitation and waste management, soil erosion and degradation, water and land pollution and the basic environmental health of the area surrounding the settlements (Dwyer, 2011)

1.2. Statement of the Problem

Much has been written about types of tenure in the African context and a number of recent conferences have made important contributions to an understanding of the dynamics of urban informal settlements in Africa. It is evident that definitions of squatting and informal settlement within ‘formal’ cities as used in other country contexts are inappropriate to capture the shades of legality of houses and settlements occurring in many African cities. At the same time, it is clear that residents are regularly exposed to the harsh realities of spatial and environmental marginalization that accompany living in informal (Mark, 2009)

Informal settlement refers to a situation in which dwellers have no security of house, or land tenure, they lack usually basic services, and other socio economic infrastructures, houses in this settings are not congruent with the currents planning standards, and building criteria. From the most excluded forms of informal settlements, slums are the one (Fahmi, 2015).

Increase in population growth, rural urban migration, lack of affordable housing for poor urban people, inadequate government administration in terms of: policy making, planning, urban land management, and failing to give solutions for displacement caused by conflict, natural hazards, and change in climate are from interrelated factors of informal settlements. The current data indicated that about 61.7% Africa’s population lives in slums area. And, by 2050, Africa's urban residents are estimated to have risen from 400,000,000 to 1.2 billion (UNCHSUD, 2015).

The same situation is true in Ethiopia. As compared to the other African countries, urbanization in Ethiopia is at a very low standard; and rapid population growth because of high fertility rate and rural urban migration are from the main challenges of the country’s urban centers (Ashenafi, 2010)

Informal settlement in Ethiopia’s urbanization process has resulted from social, political, and economy related problems. Informal settlements are characterized by: unauthorized invasion and development of land, illegal subdivision, lack of basic social services and infrastructures. Lack of proper land management, inadequate and unclear housing policy, corruption, expansion of illegal land market, lack of political commitment for the poor homeless people are from the main causes of informal settlements in the country (Daniel, 2000)

Before entering the central discussion of the extent and nature of informal settlements in the study area, it is necessary to understand key aspects of the socio-economic context in which they occur. What ‘drivers’ and ‘pressures’ lead to the formation of informal settlements in the first place? Key to understanding and ultimately responding or intervening effectively in such situations is a grasp of how people living with poverty manipulate assets portfolios (Moser, 1998).

The concept of sustainable livelihoods is useful here. “A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (DFID, 2000).

The urban land administration which is empowered with the issuance of the development permit shall ensure that the applicant has a legitimate right to the land to which she/he applied for. This means the requirement of a legitimate building are basically two: One the land on which the development activity (building) is going to be erected must be acquired through legal means (such as government grant, lease contract) as per the existing laws. Second, in order to affect the building activity, it needs a building permit development authorization. This authorization is needed not only for the erecting of new buildings but also for modifying and demolishing them as well (Beri, 2010)

A rapid increase in the urban population and the limited capacity of the government to meet the high demand for building plots has led to mushrooming of the informal settlements. There are a number of reasons why informal settlements exist apart from urbanization (Burns, 2011)

A lack of basic needs and services leads to informal settlements having impacts on the environment. These impacts include inadequate sanitation, which leads occupants to pollution, the use of coal and biomass fuel for lighting, causing air pollution which in turn contributing to the emission of greenhouse gases (Napier, 2007). Waste removal is an issue with which informal settlers struggle. Inadequate waste removal causes land pollution and “emerging and re-emerging infectious disease hazards. Apart from the above mentioned problems, there should be more intervention focused on the housing problem which would subsequently lead to less informal settlements and reciprocally lead to less impact on the environment. The growth of informal settlements compounded the problem of meeting the

demand for housing here is a demand for housing however the projects in place are not meeting the demands (salih, 2013)

Due to poverty, lack of basic services and job opportunities, people are immigrating to the city from rural areas in search of better opportunities to sustain their livelihoods. This means undesirable urbanization which is driven less by economic growth and more by rural-urban migration of the poor and the jobless. These results in people settling informally and impacting on the environment which informal settlers occupy by walking on grass as there are no demarcated foot paths. This cause soil erosion and land degradation. Secondly, people do their washing in rivers and pollute rivers by throwing their waste in and around such water sources (Andrew, 2012)

There is a lack of waste management, so land pollution is the end factor as informal settlers are not registered and do not pay for waste management services. If this issue is not addressed, the environmental impacts will increase causing further damage and contributing to issues such as global warming and climate change which have an impact on the world at large. Ecosystems will be impacted and in turn peoples' socio-economic livelihoods will be disrupted. The health of people residing in such areas will be highly impacted on. Without the basic services being in their close proximity, this in itself will pose another problem (Herero, 2008). Thus the above researchers were missing the Socio-economic problems of informal settlements, the sources of environmental challenges experienced in informal settlements and only they present the solutions to reducing socio-economic and environmental problems which informal settlements have on the environment.

Many literatures have focused on the impacts of informal settlements on the environment and its solution in a general form However, this study aimed to examine specifically the Socio-economic problems of informal settlements, the sources of environmental challenges experienced in informal settlements and present the solutions to reducing socio-economic and environmental problems which informal settlements have on the environment of Jimma city selected sub cities. This study brought about environmental and socio-economic awareness. Through investigating the impacts which informal settlements have on the environment, as well as on the socio-economic issues the study increased environmental and socio-economic issues awareness by illustrating how extreme the impacts of informal settlements.

Hence in this study the researcher tries to identify the problems by penetrating the objectives of socio economic and environmental problems, sources of environmental challenges and the solutions reducing socio-economic and environmental problems of informal settlements in Jimma City.

1.3. Research Questions

Here the research questions are listed below:-

1. What are the Socio-economic problems of informal settlements?
2. What are the sources of environmental challenges experienced in informal settlements?
3. What are solutions reducing socio-economic and environmental problems which informal settlements have on the environment?

1.4. Objectives of the Study

1.4.1. General Objective

The general objective of this study was to investigate the socio-economic and environmental problems of informal settlements; a case study of Jimma City

1.4.2. Specific Objectives

1. To identify Socio-economic problems which are caused by informal settlements
2. To examine the sources of environmental challenges experienced in informal settlements.
3. To investigate solutions to reduce socio-economic and environmental problems which informal settlements have on the environment

1.5. Significance of the Study

Socio-economic and environmental problems of informal settlements are the basic problems especially in developing countries like Ethiopia. Therefore this study will provide more information to the town's administrators that will facilitate the formulation of operational plans and strategies based on the existing realities in order to facilitate supplying of affordable housing to meet the needs of the majority low and middle income people. The study will also create awareness among housing supply agents especially for local governments and public housing agencies about socio-economic impact of the informal settlers. The studies will also uses as an input for policy makers related to land related problems and create interests in researchers to undertake further investigation on the issue.

1.6. Scope of the Study

Thematic scope of this study was focused on socio-economic and environmental problems of informal settlements; a case study of Jimma City selected sub cities, since, study impeach and every aspect of urban socio-economic and environmental problems. The research designs of this study were descriptive and explanatory research involving both qualitative and quantitative data collection approaches. Simple random sampling was used to conduct questionnaire to individual household heads in the areas of illegal settlement. Finally the overall portion of the paper was structure under Socio-economic problems of informal settlements, team work, financial institutions integration and geographical location, sources of environmental challenges experienced in informal settlements and solutions to reduce socio-economic and environmental problems which informal settlements have on the environment.

1.7. Limitation of the study

While conducting this study especially during data collection, the researcher faced different problems. Some of the household heads are not voluntary to answer the questions. Another difficulty is that the researcher exhausted many times to find the reliable data and unavailable data from the study area of the sub cities. However, the researcher cop continuous efforts to minimize the problem faced by the households by announcing or by giving clarification for the household heads about the purpose of the study and by giving the written letter. To overcome complicated problems of the research the researcher cooperating with advisors to avoid the problems of the research reliability and validity.

1.8. Organization of the Paper

This study was organized into five chapters. The first chapter was the introductory part that includes the statement of the problem, objective of the study, scope of the study, research questions, and scope of the study and methodology used, Chapter two deals with literature review and definitions of terms. Chapter three describes about the methodology of the study, Chapter four deals with analysis of the findings of the study. Chapter five is the summary, conclusion and recommendation of this study.

1.9. Conceptual Definition

Squatter settlement: -The definition of squatter settlement varies. However; a common theme is that they are areas where people build home in violation of formal rules about

property rights, zoning types and quality of construction (Epstein; 1972, William; 1985). The defining characteristic is the illegality of tenure.

Informal settlements: Informal Settlements are defined as residential areas of the urban poor more often in the cities of the developing world. They are found on public, private or customary land accessed by invasion or developed against planning, building and ownership regulations (Abbott, 2001). They lack basic social services and infrastructure facilities.

Slums: -Slums are highly congested urban areas characterized; by substandard, housing that is unsanitary buildings, poverty and social disorganization (World Bank, 2002). Encyclopaedia Britannica defined as “residential areas that are physically and socially deteriorated and in which satisfactory family life is impossible”. Bad housing is major index of slum conditions. By bad housing is meant dwellings that have inadequate light, air, toilet and bathing facilities, In Simplified expression slums refer to the environmental aspects of the urban area where a community resides.

Squatters:-Squatters settle on land, especially public or unoccupied land, without right or legal title. Squatters include those who settled on public land under regulation by the government, in order to get legal title to it (World Bank: 2002).

Squatting: - Squatting is the act of squat (setting on a piece of land without permission) or the act of occupying a given piece of public land in order to acquire title to it. The Squatter
A squatter is a person who settles on a new especially public land without title, a person who takes unauthorized position of unoccupied premises (Habitat; 1983).

CHAPTER TWO

2. LITERATURE REVIEW

Introduction

The objective of this section is to present the theoretical part of the literature relating to socio-economic and environmental problems of informal settlements. The second part is the empirical review of the entire paper and the final portion covers the conceptual framework.

2.1. Theoretical Literature

2.1.1. Definition of informal settlements

Informal settlements can be defined in various ways. According to informal settlements can be seen to have two inter-related sides to them. “One relates to the physical environment and revolves around the dwelling that families occupy while the other relates to the families themselves, their needs and circumstances. One side of informal settlements is focused on the natural environment and the physical structure of the settlement, while the other side refers to the residents who occupy informal settlements, and their socio-economic issues (Abbott, 2001)

The 2009 National Housing Code’s Informal Settlement Upgrading Program defines informal settlements on the basis of “illegality and informality, inappropriate locations, restricted public and private sector investment, poverty, vulnerability and social stress” (Housing Development Agency, 2012). Settlements which demonstrate one or more of the characteristics mentioned above are regarded as informal and, in turn, pose negative impacts on the environment as a result of the daily practices of its occupants, including environmental degradation which occurs during the process of developing such settlements.

The above mentioned definition of informal settlements is most suitable for this study as each of the four characteristics which informal settlements are categorized by represent a challenge for the environment. This means that deforestation occurs in order to acquire space for the settlements to be developed. Consequently, land degradation occurs. The settlements are unserviced, resulting in occupants defecating within the settlement, washing their clothes in rivers which are in close proximity to the settlement, and disposing of their waste in and around the settlement resulting in air, water and land pollution.

2.1.2. History of Informal Settlements

The history and evolution of informal settlements are diverse and varied in terms of standard (from slums to standardized residences), location (from suburbs to city center and secure areas) and size (from several small units in settlements for over 50,000 residents), and from single-family houses to multi-story buildings). Among other objective reasons, the flow of migrants from rural areas, but also the influxes of refugees and internally displaced people have contributed to illegal and sporadic construction in larger cities. Apart from addressing urgent housing needs, illegal investments in real estate have been used by many households as the shield' against instability and hyperinflation. Often these areas lack roads, basic infrastructure and social facilities (schools, hospitals, safe access to water etc) thus contributing to the creation of suburban areas (Sasha, 2012).

Likewise, many research findings explained that informal settlement is a global phenomenon and are problematic is not only developing countries, but in developed countries, but the existent, intensity and type and cause of the problem differ from country to country. Even in the same country, an informal settlement known by different names. Recent year has been a dramatic growth in the number of squatters as a result of the urban population have increased in third world countries and lack of good governance, the high cost of formal urban land market and poverty. Squatter households with the most shelter deprivations are highly visible in most African cities, either in the center or on the periphery of cities (Bimalkanta, 2013).

In most countries, the public sector no longer contributes to the provision of serviced land or housing for low-income groups. On the other side, the private sector targets (participation of individual's example investment organizations) its land and housing development activities at high-income and middle-income groups with regular employment and access to formal credit. As a result, the urban poor and large segments of low and middle -income groups have no choice but to rely on the informal land and housing markets for access to land and shelter, thus fostering the expansion of irregular settlements in cities. Residing in the informal area and illegal housing development was the only option for low-income groups as a result absence of formal credit, low income of the residents even within informal settlers there is a great variation, some of the peoples are a wealthy man and some of the peoples are unable to afford basic needs. For at least three decades (ever since the expansion of irregular settlements has been perceived as a lasting structural phenomenon), the debate on housing

policy insistently refers to the question of the informality and illegality of human settlements. A settlement with the same characteristics regarding land, urban planning, and housing (depending on the contexts and public authority interpretations, of course in developed countries informal built houses looks like the smart building in developing and less developed countries), can be considered either as formal or informal (lasserve, 2006)

The different research study indicates that high building standards of the legal houses, late responses, and procedural problems of the legal land provision, and higher housing rents in the city center, in addition, less government control of open spaces. Legal enforcement is the major system to control illegal housing. At that time, peoples did not accept but the benefited people support the ideas of government intervention. Informal settlement develops lack of comprehensive legal responses, legal land provision and the problem of horizontal expansion of the built-up area of the city or town (expansion of urban area without ending area zone such that rural and urban areas merged). Control of government, local municipalities, and planners are did not give timely responses, marginalized and illegal houses are developed through time (Kelemu, 2016).

According to Daniel, the informal settlement has been emerged due to a number of social, economic and political factors. Those of the major important factors are described below, from international perspectives, One, socioeconomic factors such as housing shortage, increasing urban poverty, high rate of rural to urban migration (rural poverty or pushing factors for peoples migrate to urban areas), high rate of unemployment, high or rising cost of living comparing with economic decline. Two, institutional factors, the absence of accountability and transparency, corruption, the absence of capacity (technical man and financial source), poor situational setup and absence of coordination, poor enforcement, unclear regulation and long procedures and misuse of public land. Three Political factors such as lack of political commitment, less emphasis to urban issues, civil war, inappropriate policy, the influence of colonization and lack of timely responses (segregation) etc. (Daniel, 2006)

2.1.3. Characteristics of Informal Settlements

In most cities in developing countries, the spectacular pace of demographic and social change, which gave the ultimate burden for its population and authorities. The government not adequately serviced; the required funding is below the expectation of peoples. Deficiency

of road infrastructure and other essential things is problematic not only the local authorities even if distress situation for foreigner investors. Peoples have built the house on farmland nearest to the city or town rather than in high cost of formal urban land. It may question of management, which calls for active cooperation government, housing services and another sector (Ayman, 2011)

The uncertainty of land, the property right is the risk or forced eviction without due legal process and compensation. The assurance of tenure security is a vital need for residents of informal settlements. Theoretically, insufficient tenure security discourages investment in assets, notably housing, by the residents of informal settlements who would otherwise have the motivation and capacity to do so. Among various factors that contribute to the level of tenure security, a strand of economic theory has focused on property rights. Property rights involve a bundle of rights, including rights to use, occupy, develop, inherit, lease, sell, and mortgage. Aside from the formal property rights backed up by the law, people often enjoy informal property rights that enforced by means other than those that are legal. For instance, housing transactions in Delhi slums take place in front of a group of neighbors who serve as witnesses. What remains unclear is which components among the aforementioned set of property rights, formal or informal, profoundly tied to the level of tenure security and the incentive for housing investment. Based on the associated bundle of property rights, land tenure is classified into those with only limited bundles available (e.g., the group of pavement dwellers, squatters, and tenants in squatter settlements) at the one end and those with full property rights (example Freeholders) at the other end. Conceptually, the level of tenure security may vary when corresponding to such available sets of property rights (Shohei, 2015).

Therefore, efforts directed towards settlement upgrading the existing ones while those that are not available provided. This achieved through preparation of detailed infrastructure network plans for the community with population density being the major index in determining the adequacy. If it is possible, the government design should allow for individual self-funded incremental service connections and affordable capital, maintenance and other costs for services (Ogunlade, 2015).

A subsequent Environmental Impact Assessment (EIA) found that residential properties too close to the reservoir could, in fact, cause contamination by sewage. Furthermore, the EIA

noted, active faults in the area make it vulnerable to earthquakes and construction pressures that could cause the reservoir to leak. Hence, a holistic approach needs to be taken from all sectors, recognizing the value of this natural resource and avoiding such developments that encroach on the nation's valuable water supply. Furthermore, if these potable supplies become contaminated by human waste matter, individuals who consume it may lead to serious illnesses such as cholera and typhoid. These affects public health and safety of individuals. This should be the paramount goal of planners as well as all stakeholders in society these above problems expanding at the periphery of the town (Doneika, 2008)

2.1.4. Socio-economic factors

Rapid urban growth in the developing countries has put the city, as a physical and functional entity, under severe pressure. Resources and opportunities have proved inadequate to cope with the population influx and serious socio-economic problems have emerged. For decision makers, the core problem is the inability of the city to meet, in conventional terms, the need for employment and shelter. The large numbers employed in the tertiary or service sector and housed in popular settlements are frequently cited in support of this argument. Almost inevitably, such problems are associated with migrants, who are commonly considered to be marginal urban residents in all senses of the word- spatially, they are often located at the city's periphery- and socially, they seem tenuously linked to its economy and culture. As a consequence, these settlements are viewed with some suspicion by the authorities as housing for politically unpredictable and unstable groups has stressed that poverty is not only a state of economic deprivation, of disorganization, or of the absence of something. It is also something positive in the sense that it has a structure, a rationale, and defiance mechanisms without which the poor could hardly carry on. It is a way of life, remarkably stable and persistent, passed down from generation to generation along family lines. The 'culture of poverty', a phrase he coined, has its own modalities and distinctive social and psychological consequences for its members (LEWIS, 2011)

It is a dynamic factor which affects participation in the larger national culture and becomes a subculture of its own. For many developing countries the culture of poverty comes into being in a variety of historical contexts. Most commonly it develops when a stratified socio-economic system is breaking down or is being replaced by another, in Egypt and many other developing countries, through the transition from feudalism to socialism and later to capitalism, or during the industrial boom elsewhere. Sometimes it results from imperial

conquest after which the conquered are maintained in a servile status which may continue for many generations. It also occurs in the process of detribalization when the tribal migrants to the cities develop a 'courtyard culture' remarkably similar to that of their rural origins. To a certain extent, the culture of poverty has some universal characteristics which transcend regional, rural-urban, and even national differences. The similarities are in family structure, interpersonal relations, time orientations, value systems, spending patterns, and the sense of community in lower-class settlements which are often the societies of squatters.

This population is characterized by a relatively higher death rate, lower life expectancy, a higher proportion of individuals in the younger age groups; members are only partially integrated into national institutions or political parties at best; most of the poor have a very low level of education, often do not receive any medical care, maternity, or senior citizen benefits and they make very little use of the city services. The economic traits which are most characteristic of the culture of poverty include the constant struggle for survival, unemployment and underemployment, low wages, a miscellany of unskilled occupations, child labor, the absence of savings, a chronic shortage of cash, the absence of food reserves in the home, the pawning of personal goods, borrowing from local money lenders, the use of second hand clothing and furniture (SHAN, 2011)

Although the concept of 'culture of poverty' had achieved widespread popularity, the ideas that the poor remain poor because they are poor and they lack aspiration and the power to improve their life are still questionable. Perlman strongly disagrees with this concept. She believes that poverty serves as a vehicle for interpreting the social reality in a form which serves the social interests of those in power. "In short, they have the aspiration of the bourgeoisie, the perseverance of pioneers, and the values of patriots. What they do not have is an opportunity to fulfill their aspirations (Osham, 2012).

The question is who should give them this opportunity? In the housing context, this tends to mean that only the governments are capable of helping the poor to help themselves. Urban poor respond sensibly and rationally to the choices and opportunities open to them in their housing situation. While they contribute at times to their own poverty, the basic causes of that poverty are beyond their control. Tuner (2009) has shown that the poor understand more clearly the role that housing plays in their lives and they always struggle to consolidate their housing. However, examples of various popular settlements in Third World cities reveal that

while there are slum areas where people are trapped in social problems and a decaying urban fabric, other areas are continuously improving their living conditions. In essence, a generalization cannot help to understand the mechanism of each area. There are particular factors which steer the socio-economic environment of popular settlements and consequently the political influence and physical condition of their life. The first factor to consider is internal, at the level of the settlement itself, which is the degree of social cohesion between the residents which ranges from fragmented to consolidate and solidarity. Hence, structural representation, social control, self-administration and possibility for sound co-operation vary at settlement levels.

The second factor is external; the degree of social integration with the native urban dwellers at the city level is also influential. There might be segregation and alienation, or interaction and assimilation. The last factor to consider is the system and mechanism of the informal economy of the inhabitants in the popular settlements. It is the interrelation between all these factors that affects the standard of life of the squatters, their ability to improve their areas and to participate effectively in a potential upgrading scheme

Land management can be classified as formal and informal. Formal land management or administration systems in many countries are not satisfying the needs of society at an appropriate level. The evidence and reasons for this situation are manifold and vary in different parts of the world (Molen, 2003). In developing countries, the formal systems are based on statutory land law inherited from the colonial era or imported from Western jurisdictions.

These systems are centralized, expensive, inflexible, and involve complex legal requirements and technical procedures (Augustinus, 2004; Molen, 2003). They are inaccessible to many people especially to those in rural areas and low-income residents of urban areas, not to mention to informal settlers. The poor economic performance and weak institutional frameworks in these countries cannot sustain these systems at satisfactory level. The low levels of cadastral coverage in developing countries, particularly in Africa, clearly illustrate this point (Deininger, 2003).

United Nations Task Team on Habitat III (2015) noted that informal settlements and slums are caused by a range of interrelated factors, including population growth and rural-urban migration, lack of affordable housing for the urban poor, weak governance, particularly in the

areas of policy, planning, land and urban management that in turn result in land speculation and grabbing. According to this study, informal settlement is also interrelated with economic vulnerability and underpaid work, discrimination and marginalization, and displacement caused by conflict, natural disasters and climate change (United Nations Task Team on Habitat III, 2015).

Compared to other urban dwellers, people living in informal settlements and slums suffer more spatial, social and economic exclusion from the benefits and opportunities of the broader urban environment. They experience constant discrimination and extreme disadvantage characterized by geographical marginalization, basic service deficits, poor governance frameworks, limited access to land and property, precarious livelihoods, high vulnerability to the adverse impacts of poor and exposed environments, climate change and natural disasters (United Nations Task Team on Habitat III, 2015).

2.1.5. Socio-economic development and community facilities:

Although there are not enough public facilities in Tabya area, access to the existing services is equal to all. Land status does not affect accessibility to services. In fact, this equality can be seen in the mixed land status within the area. Once public services are constructed, laws and religions ban any discrimination. Free educational and health services should be accessible to everyone. Of course disparity in provision of a proper service still exists because of overcrowding and different attitudes among civil servants. Meanwhile, all public services in the Tabya are in bad condition and need urgent improvement.

Two types of service-supply are associated with the Tabya; government supply which targets all the city residents (three public schools, one general hospital, one youth center, and four mosques), or community-supply which is built either by CBOs (seven community centers) or private voluntary organizations (PVOs) (one health center). The residents prefer their own-built facilities, though they are limited in quantitative and qualitative terms.

2.1.5.1. Education:

There are two preparatory schools with 36 classrooms and one secondary school for girls with 10 classrooms. They are used by the Tabya's residents and its nearby vicinities as well. Classrooms designed for a maximum capacity of 36 pupils are overcrowded with 50 pupils. Laboratories, vocational training rooms and libraries have been converted into classrooms to

cope with the increasing number of pupils. The final result is twofold; buildings are deteriorating fast, and the pupils do not acquire efficient education.

2.1.5.2. Health facilities:

Besides the Aswan general hospital, South East of the Tabya, there is a PVO- the Red Crescent Association- which provides casual health care, family planning, and first-aid services at the city level. In fact, residents of the area rely widely on the herbal medicine and limited clinics available at two community centers. The women prefer local midwives for childbirth and gynecological related aspects.

2.1.5.3. Community centers

The area comprises 7 community centers from which only three are formally registered at the Ministry of Social Affairs and therefore they are recognized as CBOs. They were instituted in the late 1960s and each now comprises an average of 200 associates. Registration is costly and requires multiform bureaucratic procedures. However, all centers are ethnically-based and provide their members with various social services, e.g. weddings, three day consolation after funerals, conflict arbitration, and accommodation for short-term visitors. Registered centers provide in addition basic medical care, child care, and vocational training and literacy programs. Only the Halayla people did not succeed in constructing their respective center. After they had embarked on construction, the structure was destroyed by a speculator who claimed the lease of the plot and won the case. All centers are in a medium or bad condition due to the soil condition, poor construction, and lack of maintenance. Some of them can be upgraded and extended, while others have to be utterly rehabilitated.145

2.1.5.4. Community development plan:

Survey of the people's priorities and discussions with the local officials of education, health, and social affairs provided the project with a tangible framework for the envisaged activities for improvement and extension. The project aims at improving the existing services and introducing new facilities at both centralized and decentralized levels. At the central level, the physical structure of the youth center has been improved and extended to include new functions, such as a library, fine arts and vocational training. Meanwhile, a new 19 class secondary school and a 'woman and child activities center' have been executed successfully. Due to the lack of any large spaces in the Tabya, the new 'woman activities center' has been positioned within the premises of the youth center in, and the new school has replaced a putrid green area in section. The 'woman activities center' aims at generating socio-economic

development activities and consequently additional incomes for the residents of the area with a conspicuous focus on the women. Therefore, a concrete vocational training program for the growing young and potentially unemployed inhabitants has been established. The building comprises a small-scale workshop for sport clothes, a kindergarten, rooms for vocational training and the proposed CDA, and the project's site office. On the other hand, the project supports each community center to serve as decentralized a focal point for people's mobilization and participation, and as a nucleus for attainable socio-economic activities and community development. The improvement plan proceeds as follows. The community center is surveyed, representatives express their demands, a new design is prepared and discussed, construction materials are supplied in phases, and then skilled members in each center carry out the implementation work under supervision of the project's architect. The project proposes new socio-economic development functions for each community center and therefore, the new design considers how to support them with new rooms for vocational training, women's activities, child care and literacy programs, medical care and first-aid, and general meeting.

2.1.6. House improvement:

The plot survey reveals a deteriorating housing environment particularly among hectare plots. Some dwellings have neither separate toilet facilities nor a separate kitchen. Because of the shortage of space, there is no separate area for cooking, eating and bathing. The dwellings are poorly ventilated and overcrowded. Although a few dwellings are connected to the main water distribution network (46%), families are likely to store water in their houses because of irregular water supply or poor water pressure. The average plots not connected to the public sewage system (83%). It is infested with a variety of pests, predominantly flies and cockroaches, and the family is likely to use insecticides on a daily basis. Most dwellings were built by the owner and his family or hired local labors. Residents provided shelter for their immediate and extended family. These housing types are usually built by low to lower middle income groups primarily to meet immediate shelter needs rather than for investment in rental units, though the later do exist.

Housing typology in the Tabya reflects the urban adaptation of rural and Bedouin types of design and morphology (Plate 9.11). Most of the dwellings are traditional style; built of adobe, rammed earth and timber (45%). While only 15% can be classified as 'modern' since the main structure is made of concrete, 40% are 'intermediate' where mud or cement is used

as mortar for the stone (Table 9.8). Consequently, an overwhelming proportion of the dwellings has been categorized as 'fair' or need repairing (64%). On the other hand, bad dwellings are difficult to repair and therefore some 15% of the total dwellings must be rehabilitated.

2.1.7. Major Effects of the Informal Settlements

The sprawling of poorly controlled settlement developments has resulted in many environmental and health related problems. Uncontrolled settlement development is causing physical disorder, uneconomical land utilization, and excessive encroachment of settlements into good agricultural land, environmental degradation and pollution risks (COLE, 1995). Also, as explained below, it has become very difficult for the government to send social and economic infrastructure/services to these areas due to the lack of space and accessibility. The most common consequences of the expanding informal settlements include the following:

2.1.8. Pollution of Water Sources

Expansion of the informal human settlements has been the major cause for pollution of ground water sources, most of which are located on the periphery of the Zanzibar Town. Loss of vegetation around water sources reduces water flow while poor disposal of liquid and solid wastes causes water pollution (COLE, 1995). There have been frequent outbreaks of water borne diseases like cholera and dysentery, particularly during high rainfall seasons, due to contamination of the drinking water. A number of water sources including Mwanyanya, MtoPepo and Kinuni have now been surrounded by residential houses.

2.1.9. Deforestation

Natural forests and catchment areas are being invaded by the expanding human settlements. ongoing shrinkage of the Masingini forest on the outskirts of Zanzibar Town due to the expansion of settlements. This practice has reduced the amount of ground water and resulted in environmental degradation.

2.1.10. Pollution from Solid and Liquid Wastes

One of the fundamental problems faced by the residents of Zanzibar Town is the lack of a proper system for waste management. The problem is even more severe in the informal settlement areas. Due to the lack of established collection points, piles of garbage are scattered in and around residential areas which leads to environmental and health problems. Few residents opt to bury or burn their wastes close to their residences (Ameyibor et al 2003).

As there is no centralized sewage system, liquid waste which includes water from washing, laundry, kitchen, bath and other domestic uses is haphazardly discharged on-site. This disposal practice pollutes the groundwater and marine environments and is a major cause of water borne diseases.

2.1.10.1. Effect of Solid Waste Pollution

Solid waste can pollute air, water and soil, and leave various environmental impacts, and because health hazard, due to improper handling and transportation .These adverse effects are seen on health and environment, some of them are as follows:

Environmental impacts

Liachames from refuse dumps percolates into the soil and contaminate underground water, Scavengers and stray animals invade the roadside garbage and litter the waste over large area causing much aesthetic damage to the atmosphere, Waste products when burnt like plastic and rubber pollute the atmosphere with noxious fumes and Organic solid wastes emits obnoxious odor on their decomposition and make the environment polluted.

Health hazards

Vectors like rats and insects invade refuse dumps and spread various diseases, During handling and transfer of hospital and clinic wastes, disease transmission may take place, Water and food contamination through flies causes various diseases in humans as dysentery, diarrhea and amoebic dysentery, Rats dwelling with infectious solid wastes may spread diseases like plague, salmonellosis, trichinosis, endemic typhus etc, Water supply, if gets contaminated with pathogens present in solid wastes, may result in cholera, jaundice, hepatitis, gastro enteric diseases etc. Choking of drains and gully pits by the solid wastes results in water logging which facilitates breeding of mosquitoes and results in the spread of diseases like malaria and plague Minimart-It is a case of human mercury poisoning which occurred in minimart bay in Japan.

A large plastic plants located near the minamata bay used mercury to produce vinyl chloride, the left over mercury was dumped into bay which entered in tissues of fish, which in turn were consumed by people living in that area. The contaminated fish thus caused an outbreak of poisoning, killing and affecting several people, (Keerti Chadar, 2017)

2.1.10.2. Waste Disposal and Management in Informal Settlements

Waste is one of the many challenges which cause informal settlements to impact negatively on the environment. When waste is poorly managed, it becomes a threat to health and a major social and environmental problem. With regard to waste management, there are a number of countries in both the developing and developed world where examples can be drawn, as waste in informal settlements is a global challenge. With the case of Montego Bay in Jamaica, one can note that in terms of solid waste collection, garbage is supposed to be collected twice weekly on specific days in residential areas” (Ferguson, 2013) However, in actual fact collection varies from twice weekly in formal sector residential neighborhoods to never in some of the largest areas of informal sector communities.

There are a number of reasons as to why the collection of waste is such a challenge in informal settlements. Reasons to the above stated problems include lack of road access to large areas of informal settlements, a lack of cooperation by residents, density and inadequate finance (Ferguson, 2013). As a result of a lack of basic services in informal settlements, there are no roads leading to and within settlements, and they are usually densely populated. What this insinuates with regard to waste collection is that waste collection trucks have no access to informal settlements and, therefore, it is impossible to collect waste. This is a global issue as all informal settlements encounter this challenge.

Nigerian informal settlements “lack effective refuse collection services and have no central sewage system therefore; the main mode of solid waste disposal is through cart pushers who eventually dispose waste in unknown destinations on the existing streets” (Olajide, 2010). Waste is a serious challenge for informal settlements as there are no facilities for proper disposal. The disposal of waste in and around informal settlements has a detrimental effect on the health of those who reside in them. Zanzibar is also faced with similar waste disposal and management issues as its informal settlements “lack established collection points and have piles of garbage scattered in and around the settlement” (Ali and Sulaiman, 2006 :).

Some residents choose to bury or burn their waste which is also a challenge in itself. According to Antwi (2008), solid waste management is an expensive process and is a difficult task to manage in developing countries. Solid waste is not often given as much attention as it requires and there is usually insufficient funding and poor cost recovery for solid waste management. It is noted that practically, all local authorities in developing

countries have been unsuccessful in working out cost effective strategies to alleviate the problem of low cost recovery. Apart from the failure of strategies regarding cost-effective waste management, informal settlement dwellers' attitudes towards waste management and ineffective supervision and monitoring of waste management practices in informal settlements by local municipal authorities have an impact on the way in which waste is disposed of and managed in these settlements. On a positive note, some informal communities in the world, such as some in Nairobi, have created solutions and strategies for waste management. Although practiced all over the world, the re-use of refuse has worked for Nairobi's informal settlements.

Recycling and composting are land-saving and pollution reducing strategies" (Peters, 2009). The implementation of these strategies in Nairobi's informal settlements has assisted them tremendously. Nairobi has waste management as one of their biggest environmental challenge which is why in their informal settlements they were found to be undertaking composting as an income generating and environmental management strategy.

2.1.10.3. Control of Solid Waste Pollution:

Disposal

It is done most commonly through a sanitary landfill or through incineration. Landfills- a modern sanitary landfill is a depression in an impermeable soil layer that is lined with an impermeable membrane. In it solid waste is placed in a suitably selected and prepared landfill site in a prescribed manner. The waste material is spread out and compacted with appropriate heavy machinery. The waste is covered each day with a layer of compacted soil, (Singh JS, 2015)

Incineration:

It is the process of burning municipal solid waste in a properly designed furnace under suitable temperature and operating conditions. It reduces the municipal solid waste by about 90% and 75% by weight. Composting: bacterial decomposition of organic components of the municipal waste result in the formation of humus or compost and the process is known as composting. It helps in disposal of solid waste, disposal of night soil, and production of valuable manure for crops; it is also termed as biodegradation,(Singh JS, 2015)

Recycling

It means reusing some components of the waste that may have some economic value. Recycling conserves resources, reduce the energy used during manufacture and also reduce pollution.

Source recovery (pyrolysis)

It is a kind of destructive distillation in which the solid wastes are heated in pyrolysis reactor at 650-1000 degree centigrade in oxygen depleted environment. By this process, the chemical constituents and chemical energy of some organic wastes are recovered. The organic constituents split up into gaseous liquid and gaseous fractions like carbon dioxide, carbon monoxide, tar, methane, charred carbon etc.

Source reduction

It is one of the fundamental ways to reduce waste. This can be done by using less material when making a product, reusing products, designing products packaging to reduce their quantity. Individually one can reduce the use of unnecessary items which causes solid waste (Singh JS, 2015)

2.1.11. Flooding

Construction of houses has blocked many natural water ways and has led to frequent floods during the rainy seasons particularly in the months of March, April and May of every year. Soil erosion and landslides are strongly related to flooding which destroy houses as well as footpaths and unpaved roads (Ameyibor, 2003). Houses and other properties are being washed away by floods forcing the inhabitants to vacate the areas. A high housing density, which most of the informal settlements are characterized by, makes natural seepage of storm water more difficult due to a high share of sealed land. Flooding which results in the overflow of pit latrines and septic tanks is also a major cause for pollution of water sources and marine environments. Due to the non-existence of drainage systems, storm water creates big puddles that become breeding places for mosquitoes which is the cause of malaria.

2.1.12. Encroachment of Good Agricultural Land

Despite being small in geographical size, Zanzibar is still an agricultural economy with over 70 per cent of its population dependent directly on the agricultural sector for their livelihood. The uncontrolled expansion of human settlements has led to conversion of the best agricultural land into settlements. Records show that between 1977 and 1994 the Zanzibar Town has expanded by 2100 hectares (21 square kilometers) mostly into the best agricultural

land (COLE, 1995). There have been genuine complaints and warnings by the Ministry of Agriculture that the agricultural land is consistently decreasing due to over expansion of human settlements.

2.1.13. Accessibility

Lack of access is one of the most common problems caused by and experienced by residents in the informal settlements. Because there are neither the layout plans nor the regulatory machinery, residents tend to build to almost 100 per cent of their plot size. It has become impossible to provide access roads to these areas as there is no space for this. Likewise, no area is left open for social services like schools, hospitals, children's play grounds, etc. Consequently, people and service movement in these areas is very restricted and residents have to walk long distance to obtain services like health, education, transport and the like.

2.1.12. The Challenge of Informal Settlements

Housing is a perpetual challenge globally. Wherever one goes in the world, there is bound to be a form of informal housing present. "Informal development processes have historically generated more and better housing options for the vast majority of the urban population in Brazil and several other Latin American countries" (Fernandes, 2011). Brazil is specific to the study as it clutches similar housing challenges to those present in South Africa.

As with any other country globally, urbanization is one of the root causes for the spread of informal settlements on the fringe of Zanzibar. By virtue land is administered and the planning policies which come with that "have often been seen as rigid and inadequate to meet the increasing demand for housing by the poor majority" These factors have also added to the housing challenge, and contributed to the mushrooming of informal settlements (Ali and Sulaiman, 2006)

Globally, people choose to settle informally as a result of the unavailability of housing in urban areas and the lack of opportunities such as jobs and education in rural areas. A large sum of people chooses to live in informal settlements in urban areas in search of better living conditions, health care facilities, education and opportunities. They are therefore forced to develop and live in informal settlements, due to the lack of housing and the inability to afford the available housing (Abbott, 2002).

The main concern with the housing challenge in Mumbai, used as an example in this study, is the rising real estate prices, which means “more and more people with perfectly respectable jobs cannot find affordable housing to buy or rent, not to mention those who are self-employed or on the lowest strata of society (Patel, 2005).

The housing challenge in Mumbai lies not in an increase in urban population and the need for housing rising, but it lies mainly on the fact that housing is expensive and as a result of urban blight and the stopping of residential construction because of the Rent Act (Patel, 2005).

Examples closer to South Africa include Nairobi and Tanzania. These countries also face housing challenges and the development of informal settlements. In the case of Nairobi and other cities in Kenya, “they have been unable to keep up the pace of planning and developing infrastructure to meet the demands of a growing population with the population (4 to 5 percent average growth per year since the 1990s)” (Nairobi Water, 2009).

In line with the research done by Ebiwari (2014) in informal settlement, absent or deficit of water and sewerage system translated in to a broad range health and sanitation issues, weather through direct exposure to bacterial agents, contaminated drinking water or other channels. According to Shimbarashe, (2012) deficit in public facilities such as a health center, open space and others confirmed, this thought similar to the key informant interview.

2.1.14. Factors contributing for the informal settlements

The growth phenomenon exhibited by informal settlements is a dynamic and complex process influenced by economic, socio-cultural, and biophysical factors. (Sliuzas, Ottenset al.2004) separates these factors into environmental, physical, and socioeconomic. Kombe (2005) highlights social and economic factors. Hakuyu (1995)discusses socioeconomic and physical characteristics of informal settlements in his analysis of spatial growth. The actual volume of housing construction taking place may be a function of house hold’s economic potential at any given time. Population growth alone may not be the best predictor of spatial growth in informal settlements; instead the financial capacity to purchase plots and build houses may be a more adequate way of estimating housing volume.

Economic factors

The economic process itself is affected bya multifaceted set of influences, which may include physical factors at the micro-level and other factors at the macro-level. Physical factors such as proximity to amenities (CBD, roads, health services, schools, markets, industrial sites),

upgrading and land quality will have individual impacts on other factors such as residents' utility and land price, which in turn affect affordability. Land price being determined by intrinsic and external factors reflects the principles of hedonic pricing (Grevers, 2007). Affordability of housing construction may be influenced by the cost of materials and labor (if this is sought externally). Macro-level economic influences on housing construction may include GDP, inflation, and real depreciation. Micro-and macro-level economic conditions would need to be studied in tandem as these are interrelated.

Financial factors

Financial capital can be derived from two sources, one of which is available stocks. The preferred measurement of available stocks is household savings (DFID, 1999). Savings can be held in cash, credit access, bank deposits, or other liquid assets (ibid). Unlike in planned residential areas which may comprise middle to high-income residents with some access to credit, residents in informal settlements, particularly the low-income residents, do not have regular access to credit for housing purposes.

An attempt made through the Tanzanian Housing Bank (THB) was claimed to be unsuccessful in providing access to credit for housing for the urban poor and saw its demise around 1993 (The African Union for Housing Finance). Due to lack of mortgage facilities Tanzanians prefer to acquire plots and construct their houses at their own pace. Sheuya (2004) determined that of the 33 interviewees from two settlements surveyed, almost all used a portion of income to fund housing construction, reiterating that savings remains the main sources of funding. Other sources identified include retirement funds, inheritance, and dowry.

2.1.15. Environmental Challenges

An environmental challenge/problem is any change in the state in the physical environment which is brought about by human interference with the physical environment and has effects which society deems unacceptable in the light of its shared norms. The establishment of informal settlements has immediate impacts on the physical environment, which society deems as unacceptable. The above means that informal settlements on their own are an environmental challenge. The reality is that humans have changed the way the world works in ways that nature never intended. An example is the disruption of the carbon and nitrogen cycles that change the natural flow of life (William and Ross, 2013).

Human activity plays a huge role in the sustainability of nature and the environment. Thus informal settlements impact immensely on the environment. The environmental challenges which the world as a whole faced with result from increases in population, consumption and technology (William and Ross, 2013). Increases in population and the unavailability of job opportunities are the biggest challenges leading to the development of informal settlements, whereby the growth of informal settlements has resulted in many, and complex socio-economic and environmental consequences. The environmental consequences include “pollution, deforestation, flooding, waste of agricultural lands and the like (Ali, 2009)

In 2013, the world’s population reached 7 billion people and is projected to reach 9 billion by 2045 (William and Ross, 2013). With such increases in the population, the demand for land and natural resources will increase as well, leading to negative impacts on the environment. Analyzing environmental challenges in a global context; China was used as an example in this study. China is one of the fastest growing countries with the quickest growing economy in the world, and this is bound to have a large impact on the environment.

With China’s growing economy comes accelerated environmental degradation (Liu and Raven, 2010). In an effort to reduce environmental impacts, China chose environmental protection as a national principle and sustainable development as a national strategy. However, China is still ranked near the bottom among all the world’s countries in terms of environmental sustainability meaning that although the country put policies into place, the policies never became a reality and environmental degradation still exists largely in China (Liu and Raven, 2010)

2.1.16. Access to Basic Services in Informal Settlements

Basic services consist of resources which are vital to the functioning of human-beings and their wellbeing as a whole. Such services are characterized by certain indicators, such as water, sanitation and electricity (Housing Development Agency, 2012). Informal settlements are unplanned and unstructured which therefore paves way for the inability of basic service provision. In South Africa, informal settlement dwellers are largely impacted in terms of the access to basic services. However, this section examines how basic services are accessed in informal settlements on an international level.

Using Nairobi in Kenya as an example, in the case of access to basic services in informal settlements, a group of researchers in Kenya had found possible solutions to the issue at hand.

The researchers found that their possible solutions would have a “wider relevance for Kenya’s urban development policies and well-being among the urban poor” (Muungano, 2015). Above the development of strategies to combat the issue of the unavailability of basic services in informal settlements, there were challenges noted which depicted how informal settlements lack basic services, how informal settlement dwellers access such services, and how that impacts the livelihoods of the dwellers.

Researchers explored the relations between settlement types and service provision as well as examined alternative models of service delivery. The above results means that the research conducted on possible solutions to the issue of the access to basic services in informal settlement found that there is a relationship between the type of settlement and the basic services provided in that area. Other ways in which people living in informal settlements gained access to basic services were also noted (Edar, 2011)

Nairobi is used as one of the international examples, as there are many other countries globally which also hold the challenge of the lack of access to basic services in their existing informal settlements. Another country which we can learn from in the issue of access to basic services is Brazil. In Brazil, informal settlers face challenges as with any other country in the world regarding the access to basic services in their settlements. The way in which water is accessed in Brazil’s informal settlements is by tapping into a water main that runs near the Settlements (Nelson, 2007)

Infrastructure services including power, trans-port, telecommunications, provision of water and sanitation, and safe disposal of wastes are contralto the activities of households and to economic production. This reality becomes painfully evident when natural disasters or civil disturbances de story or disable power stations, roads and bridges, telephone lines, canals, and water mains. Major infrastructure failures quickly and radically reduce communities' quality of life and productivity (Yasmin, 2009)

2.2. Empirical Review

Shows under her study ‘land use and land cover changes in Bahir Dar area’ Ethiopia by applying geospatial and land use change modeling tools. The results of this study have shown that there was an increased expansion of built up areas in the last 25 years from 1.5% in 1986 to 4.1 % in 2001 and 9.4% in 2010 at the expense of agricultural areas. The spatial trend of

built up areas also showed that there was a growing trend in the western part of Bahir Dar relative to other directions. Therefore, the findings of this study could provide as decision making for urban planning and as a weakness the studies time frame was too much wide because of this it may lose the fact on land (Melesse, 2005)

Dejene (2017); examines the extent to which Land-use plan of Adama City functioned from 2004 to 2014 has guided and controlled all spatial developments during planning period by measuring the degree to which actual land-use outcomes over a 10-year period conform to the Plan intention. The findings demonstrate that although the Plan proposed reasonable area, it has met difficulties to control and guide new spatial developments of housing land-uses followed by social services and total urban growth. The limitation is due to combined result of geographic variables, absence of regular monitoring and evaluation, lack of commitment, and political leadership influence. The study would support sustainable spatial policy and direction of spatial development with respect to sustainable urban environment.

Land management in urban Ethiopia during the last decade was in transition and has faced many interrelated challenges simultaneously. Key sources of inefficiencies of land management and transaction have remained the major impediments in land management in the urban centers due to the absence of an independent system of registering or recording real estate transactions, where City Administrations are in charge for recording transactions, certifying property rights, and maintaining records and files; City Administrations are directly involved in routine transactions: where each transaction requires “no objections” from several departments; lack of integrated urban level address system, which created enormous obstacles to identification of properties and availability and reliability of information about prices and professions are at an initial stage of development. So lack of key Legal issues, Institutional framework, urban land policy and Land management practice is a major obstacle for a further efficiency increase. Moreover, there is some general confusion in cities about what can and can't be expected from the land related organizations (MUDIN, 2014)

Daniel (2011); the construction of the informal settlement takes huge amount of money which is considered as wastage. The place will be demolished one day and taking with it all them only invested. That is what happened in the Addis Alem Area. According to information gathered from the settlers, it costs them about 6-7 thousand birr to construct one simple two rooms house. Assuming that the municipality has demolished, at least once, 150 houses in the Addis Alem area, the total amount of money wasted was about 1 million birr.

Another point is that, such informally occupied land would lose its potential value for investors would not prefer it. City administration will not collect all land tax which should be collected otherwise.

Recent literature has focused on out of the socio-economic and environmental problems of informal settlements. However, this study aimed to examine this issue with a different point of view and thus contribute to the production of knowledge in a different manner, not just by consulting the available literature. This study brought about the socio-economic as well as the environmental awareness. Through investigating the impacts which informal settlements have on the environment, the study increased environmental awareness by illustrating how extreme the impacts of informal settlements are on the environment.

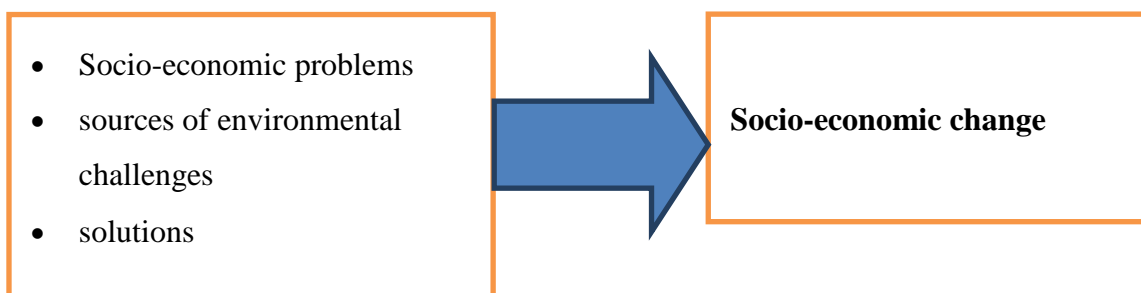
2.3. Conceptual framework

The main objective of this study is Socio-Economic and Environmental Impact of Informal Settlements: A Case Study of Jimma City. Based on the objective of the study, the following conceptual model is framed. As it described previously in the related literature review parts, Socio-Economic and Environmental Impact affected through several factors, however, in this study attempts will be tried to focused on identifying Socio-Economic and Environmental Impact of Informal Settlements factors, specifically Environmental problems and challenges and Solutions reducing socio-economic and environmental problems. According to this idea the study developed the following conceptual frame work: Socio-economic problems

Figure 2, Conceptual Framework of the study:-

Independent Variables

Dependent Variables



Source: survey of 2021

CHAPTER THREE

3. RESEARCH METHODOLOGY

Introduction

This chapter depicts the research methodology used in the study. It was discuss which research method was used for the study, the way in which data was collected, the types of data collected, the research tools used for the study, how the data was analyzed, and what the limitations of the study were.

3.1. Description of the Study Area

The study was conducted in Jimma City, Oromia National Regional State of Ethiopia. The city is located 352 km away from capital city (Addis Ababa) of Ethiopia. The center point of the city is approximately situated at geographic coordinate of 7o41'N latitude and 3650 E longitudes.

The temperature data was collected from Jimma meteorological stations nearby to the Jimma City; the study area has an annual mean temperature ranges from about 12.1oC to 28°C. Jimma city Administration is one of the oldest and historic cities in Ethiopia. It is in Oromia National Regional State, in Jimma zone, located 352 kms to South-west of the Ethiopian capital, Addis Ababa. Geographically, the city is located at 7°40'24.47"N latitude and 36° 5'4.95" E longitude. The study area receives a mean annual rainfall about 1420 to 1800 mm (JMS, 2013). Jimma City lies on a low hill on the left side of the wide alluvial plain of the river Gibe and it is crossed by small streams. Topographically it exhibits features of the upper part of the Gibe-Omo River basin, made up of gentle slopping. Jimma City (the capital of Jimma Zone) is the most important city in Southwestern Ethiopia and the study area has been chosen because of the fast rate of urbanization and informal settlement and little study were made on it. The city has a total population of 195,443, of whom 97,629 are men and 97,814 women with an area of 100.2 km² [Central Statistical Agency of Ethiopia], Central Statistical Agency of Ethiopia 2007). According to Isak (2011) a total of 34, 438 informal house-hold numbers were identified, though participatory inventory of Jimma City administration land development and management. These informal households acquired land illicitly and built on privately owned agricultural land without planning laws and regulations. The informal settlements are living without sufficient infrastructure and services and they are

not able to request the government for service delivery since they know themselves as illegal settlers.

3.2. Research Approach

The research methodology used for this study was qualitative and quantitative. This type of research can be defined as a type of scientific research which seeks answers to a question, systematically uses a predefined set of procedures to answer the question, collects evidence and provides findings that was not determine in advance” (Family Health International, 2015). The reason as to why qualitative and quantitative research was chosen.

3.3. Research Design

The research design of this study were descriptive and explanatory research involving both qualitative and quantitative data collection approaches. The qualitative research approach is concerned with subjective assessment of attitude or perception of the research participants whereas quantitative approach is the one that expressed in numeric value (Baheru, 2002)

3.4. Sample Size and Techniques

Purposive sampling was used to identify the target kebeles of the study in the sub cities of Jimma town. The report of Jimma City planning commission (2012): the total number of squatted houses in the town expected to 795 (in Bore kebele, 338; Kofe kebele, 165; Ifa Bulakebele, 229 and Hora Gibe kebele, 63) which were the target populations. In probability sampling, simple random sampling was used to conduct questionnaire to individual household heads in the areas of illegal settlement. To determine the number of sample household heads the formula developed by Yammen (1967) was used as:

$$n = \frac{N}{1 + N(e)^2}$$

Where n= is sample size

N= is the total target population

e=is error margin (0.05)

N= the total target population is 795

n= sample size of the population

e=sampling error (0.05)²

So n= 265 and from each Keble:

From Bore Kebele, $338 * 265 / 795 = 113$,

Kofe Kebele, $165 * 265 / 795 = 55$,

Ifa Bula Keble $229 * 265/795 = 76$ and

Hora Gibe Kebele $63 * 265 / 795 = 21$

Hence, 265 household heads was selected from the total target population by simple random sampling method.

3.5. Data Sources

Both primary and secondary data was used as sources of data. The primary data sources were key informants and they were interviewed with well-organized predesigned questionnaire such key informants were officers of the town land administration and house and infrastructural development office managers. The secondary sources of data were internet websites, books and Official statistical data as well as organizations annual or quarter report.

3.6. Methods of Data Collection

A. Self-administered questionnaire: After the selection of respondents, the questionnaires were distributed to all study populations with some sort of technical orientations how to fill the questionnaire. Close-ended and open-ended questions on the nature, scale, socioeconomic aspects and situations of illegal settlements were incorporated in the questionnaire to collect necessary data for the study.

B. Interview: Well-organized open-ended questions were designed and administered to face to face interview of concerned administrative officials of the town to gather the data related situations of informal settlement and their infrastructural conditions.

C. Observation: Observation was made to different informal settlement areas to collect data and to confirm the reality on the ground with the respondent's information. Accordingly, the researcher was observed the following things; housing standard, accesses to water, health and toilet, electricity and general physical environment.

3.7. Method of Data Analysis

The study was used both qualitative and quantitative data analysis. The data which were collected through the stated data collection methods compiled, edited, processed, coded and tabulated to draw information from it prior to analysis. Descriptive statistics such as frequencies, percentages, tables and charts were used for quantitative data analysis and qualitative data were also analyzed using narration.

3.8. Validity and Reliability Assessment

The reliability and validity of the outcome of this study was ensured as much as possible by taking the following precautions. The data obtained from the combined use of primary and secondary data and as well as quantitative and qualitative data simultaneously cross-checked by reliability instruments like quantified questionnaire magnitudes and interviews questionnaires and standard data sources cross-checked. Therefore, firstly, qualitative and quantitative data were properly categorized before going to data input to SPSS 20. Consulting knowledgeable persons (experts, advisors, researchers) on issues that require expertise and triangulating information obtained through interviews questionnaires with information gathered from public records and published materials on the issue. Quantitative and qualitative data was properly measure in each research instruments like, open and closed questions as well as interview questions.

3.9. Ethical Consideration

These study“ findings should not cause harm to the participants and society. Privacy and confidentiality shall be maintained at all times, and all findings were portrayed in a confidential manner: no personal or identifiable information recorded or printed in the study. Audio taped interviews were transcribed precise, thus no names were recorded during the interviewing process. Therefore before data collection, a formal letter that were given to the researcher from Jimma University and the researcher showed to the concerned organization and told as the general objective of the study and the concerned organization get permission to collect data. Then, after the researcher explained the purpose of the study to the source of population, finally, they responded the appropriate answer.

CHAPTER FOUR

4. RESULT PRESENTATION AND ANALYSIS

4.1. Introduction

This chapter presented the results and discusses the findings obtained from the questionnaires in this paper. The questionnaire was the primary tool that was used to collect data and was distributed to all respondents. The results presented the descriptive statistics in the form of frequency and percentages, tables and figure. The study was investigate the socio-economic and environmental problems of informal settlements; a case study of Jimma City. The questionnaire was gathered the information from the respondents regarding the socio-economic and environmental problems of informal settlements. The questionnaires helped the researcher to achieve the aim of this study and provided relevant recommendations to improve the manner in which the socio-economic and environmental problems of informal settlements.

The researcher has used frequency and percentages to clarify the study's response rate as well as the demographics of the respondents sampled were presented and described. Analysis of descriptive statistics was conducted and the results presented in form of tables. Additionally, the chapter was presented and explained the results on the expressions of the variables under exploration. A total number of 265 questionnaires were administered and 247 were appropriately filled and sent back.

4.2. Demographic Characteristics of Respondents

Demographic and socio-economic profile of any community such as sex, age, education, marital status, education and Occupation are among the vital inputs in decision making at local (town) and national level in general. Therefore the following findings hoped to help for decision making.

Table 4.1, Demographic Characteristics of Respondents

		Count	Column N %
Sex	Male	208	84.2%
	Female	39	15.8%
Age	18-30	62	25.1%
	31-40	99	40.1%
	41-50	55	22.3%
	50+	31	12.6%
Maritalstatus	Single	58	23.5%
	Married	184	74.5%
	Widowed	1	0.4%
	Divorced	4	1.6%
Education	Primary 1-8	13	5.3%
	Secondary school 9-12	145	58.7
	Vocational	21	8.5%
	Under graduate	64	26%
	PG	4	1.6%
Occupation	Self employed	10	4.0%
	Public servant	62	25.1%
	Business person	13	5.3%
	Others	162	65.6%

Source: Survey Data, (2021)

According to table 4.1 under Item one, gender of respondents with their respective frequencies and percentages. Total of 247 respondents participated in the study. Out of this respondent 208, (84, 2%) of the respondents were male and remaining 39, (15.8%) of the respondents were females. There were more male respondent in the study than female because of most of the female respondent were inconvenient at the time of data gathering. On the other way, there are a number of reasons as to why there are more men than women living in informal settlements. Some of these reasons involve the role which men play in society. Men are expected to take care of women and children, and therefore they leave their homes in search of better opportunities and end up living in informal settlements as a result of a lack in

housing. Women are expected to stay in rural areas back home and take care of children and their homes. Most of the women who live in informal settlements would have encountered problems where they live and moved to urban areas in the hope of experiencing changes in lifestyles. This result corroborates with the survey result which is done in Shashemenne by Azarudin in his unpublished paper, (2015) that males participate more in informal settlements than females. In fact informal settlements activity is very difficult, so, it may be difficult for women's.

Age is one of the most common demographic questions asked in surveys. How old a person is will often determine his/her knowledge and experience with the focus of the survey. So as it presented in Table 4.1 item two, the Age categories of respondents include between 18-30, 31-40, 41-50 and greater than 50 years. As shown in the above table 4.1 the age of the majority of the sample respondents" lies between 31 years to 40 years which was 99, (40.1%) and followed by age category of less than 18-30 years which was 62,(25.1%). On the other way, 55(22.3%) of the respondents are in an age category of years between 41 and 50. Finally, 31, (12.6%) respondents were greater than the age category of 50 years. This shows that 87.5% of the respondents were at age of less than 50 years.

This is an indication that majority of respondents were at moderate age this category more understands the socio-economic and environmental problems than the remaining age category. On the other hand it can be argued that the more productive age group population participates in the urban informal sector because majority of the respondents are categorized in 18-50 age category which is independent age group. Majority of the productive poor people in the town are forced to join and fight poverty due to the socio-economic problems.

As shown in the table 4.1. Under item three, 184(74.5%) of respondents were married and 58(23.5%) of them were single and the remaining numbers 4, (1.6%), 1, (0.4%) were divorced and widowed respectively.

Human capital plays a significant role in the development processes of a country. Education is one of the component human capitals which have direct impact on the development of the socio-economic condition of peoples. According to table 4.1, under item four, 145(58.7%) of the respondents have an educational qualification of Secondary school 9-12 and 64(26%) Under graduate, 21(8.5%) vocational, 13(5.3%) primary 1-8 and 4(1.6%) post graduates respectively. This finding was in line with Katz (1992) finding that those with higher

education have a good knowhow to elaborate the socioeconomic problems and situations as they have more knowledge and have modern managerial skills making them more conscious of the reality of the problems.

As indicated in the table 4.1 item five, 162, (65.6%) of the respondents were from other areas and which shows most of the respondents who are settled in the slum area are too poor in terms of their economic situation. Most of them are unemployed people. Public servant were 62(25%), 13, (5.3%) business person and 10,(4%) were Self employed respectively. This has its own advantage to the researcher to get real information from respondents because they are aware off about the socioeconomic and environmental problems in the study area. On the other hand the majority of the people are engaged in informal economic activities such as day-laborer, small trades, selling chat trade. The income which obtained from these activities is even not enough to eat three times per day. The researcher also observed many children, and elders who are exposed to live over the street.

4.2.1. Employment Status of Respondents

Table 4.2. Economic Participation of Respondents

		Count	Column N %
Employment status of respondents	Employed	156	66.6%
	Un employed	79	33.6%
Employment condition of respondents	Formal	78	33.2%
	Informal	156	66.4%
Monthly income of respondents	3001-5000 ETB	36	14.6%
	5001-10000 ETB	50	20.2%
	Above 10000 ETB	5	2%

Source: Survey Data, (2021)

In the study, respondents were also asked about their employment status prior to the survey data. Table 4.2. Shows that of the 235 respondents, who indicated their employment status, the majority of them 156, (66.4%) were employed and 79(33.6%) were unemployed which means looking for a job at the time of the survey.

As indicated the above table respondents were asked about their Employment condition so out of the 235 respondents 78,(33.2%) were participated on the formal sectors and the remaining 157(66.8%) respondents were participating to the informal sectors. This situation

pushes the community to participate towards to the informal settlements and this is also the main cause of socio-economic problems.

The table also shows about Monthly income of respondents which are distributed into three categories between 3000-5000, 5001-10,000 and more than 10,000. The table shows that higher and lower income groups. So out of the 247 respondents 36(14.6%) of them were between the category of 3001-5000, 50(20.2%) of them were between the category of 5001-10000 ETB,5(2%) Above 10,000 ETB respectively. Here almost more than half of the total respondents were not ready to respond this question

4.3. Descriptive Statistics

The term “descriptive statistics” refers to the analysis, summary, and presentation of findings related to a data set derived from a sample or entire population. Descriptive statistics comprises three main categories – Frequency Distribution, Measures of Central Tendency, and Measures of Variability. Descriptive statistics helps facilitate data visualization. It allows for data to be presented in a meaningful and understandable way, which, in turn, allows for a simplified interpretation of the data set in question. For this study the researcher follows Frequency Distribution

4.3.1. Socio-economic characteristics of respondents

Socio-economic factors: -housing shortage, increasing urban poverty, high rate of rural-urban migration (rural poverty). High rate of unemployment, high/rising cost of living, and economic recession, most households that reside in squatter settlements belong to the lower income group. They are either working as wage laborers or in various informal sector enterprises. On an average, most earn wages at or near the minimum wage level squatters are predominately migrants, either rural-urban or urban-urban (Asim 2002)

Table 4.3. Socio-economic characteristics of respondents

Statement	SD		D		U		A		SA	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Social infrastructure, like water supply, sanitation, electricity, roads and drainage; are below minimum levels.	5	2%	51	20.6%	82	33%	73	29.6%	36	14.6%
Limited access to adequate health and education opportunities	30	12%	41	16.6%	66	26.7%	71	28.7%	39	15.8%
Informal urban environment were a fertile ground for illegal informal activities including violence	17	6.9%	33	13.4%	27	11%	99	40%	71	28.7%
Inhabitants live in a state of uncertainty as they have no tenure over the land they occupy	14	5.7%	42	17%	68	27.5%	73	29.6%	50	20%
There is a social exclusion to the communities under informal settlements	20	8.1%	9	3.6%	74	30%	96	39%	48	19.4%
There is lack of sufficient income to satisfy the basic needs of families	2	0.8%	2	0.8%	9	3.6%	127	51.4%	107	43.3%
There is a limited access to employment opportunities	14	5.7%	2	0.8%	4	1.6%	123	49.8%	104	42%
Inadequate housing and services were common	15	6%	29	11.7%	49	19.8%	61	24.7%	93	37.7%
Rapid urbanization were major causes of informal settlement	0	0.0%	14	5.7%	5	2%	111	45%	117	47.4%
Inefficient land administration were the main causes of informal settlements	1	0.4%	18	7.3%	23	9.3%	50	20.2%	155	63%
There is high/rising cost of living in the informal areas	6	2.4%	4	1.6%	52	21%	72	29%	113	45.7%

Source: survey result 2021

Table 4.3 indicates that social infrastructure, like water supply, sanitation, electricity, roads and drainage; are below minimum levels 82,(33%),73,(29.6%) were agree,36,(14.6%) strongly agree and finally,51,(20.6%) disagree,5(2%)strongly disagree respectively. This shows that communities who are living around these areas were suffered by infrastructural problems. Yasmin (2009), agreed on her unpublished paper as Infrastructure services including power, trans-port, telecommunications, provision of water and sanitation, and safe disposal of was teaser central to the activities of households and to economic production. So, major infrastructure failures quickly and radically reduce communities' quality of life and productivity. Conversely, improving infrastructure services enhances welfare and fosters economic growth.

According to table 4.3. Under item 2, 71, (28.7%) of the respondents have agreed towards the limited access to adequate health and education opportunities, 66, (26.7%) undecided. Those disagree on this were only 41 (16.6%) and 39 (15.8%) of the respondents strongly agree and finally, 30, (12%) strongly disagree. So this problem needs an immediate action from the concerned bodies. In line with the research done by Ebiwari (2014) in informal settlement, absent or deficit of water and sewerage system translated in to a broad range health and sanitation issues, whether through direct exposure to bacterial agents, contaminated drinking water or other channels. According to Shimbarashe (2012) deficit in public facilities such as a health center, open space and others confirmed, this thought similar to the key informant interview.

Respondents were also asked to rate whether informal urban environment were a fertile ground for illegal informal activities including violence and crime. According to the response 99(40%) agree, 71(28.7%) strongly agree, 33(13.4%) disagree, and 27 (11%) were neutral and finally 17 (7%) strongly disagree respectively.

Data was also gathered from respondents with survey questionnaire to evaluate their perception about the Inhabitants have little ability to provide for them/ they live in a state of uncertainty as they have no tenure over the land they occupy. The response revealed that only 73 (29.6%) of the respondents agree and 50 (20%) strongly agree that the Inhabitants have little ability to provide for themselves/ they live in a state of uncertainty as they have no tenure over the land they occupy. Of the respondents, 68 (27.5%) undecided and 42(17%) disagree on this statement, and 14 (5.7%) were strongly disagree. Therefore majority of the respondents believed that Inhabitants live in a state of uncertainty as they have no tenure over the land they occupy in the study area.

Regarding the existence of social exclusion to the communities under informal settlements, 96(39%) of the respondents were agree, 74(30%) undecided, 48 (19.4%) of them strongly agree to the statement and on the reverse 20(8.1%) strongly disagree and 9(3.6%) disagree towards the social exclusion to the communities under informal settlements. Thus social exclusion to the communities under informal settlements needs a special attention from different stallholders, because the final impact of social execution from the community will a cumulative starvation towards the overall community; The existence of social exclusion makes it difficult to achieve particular social objectives, such as reducing poverty and malnutrition, because there are often hidden barriers to reaching those who are socially excluded. Social exclusion also generally involves exclusion in more than one dimension, and these can reinforce each other. For example, a

combination of economic and educational exclusion makes it more difficult to advance on either front

Table 4.3 item six revealed that, there is lack of sufficient income to satisfy the basic needs of families under the study area, so 127(51.4%) of the respondents were agree ,and 107(43.3%)of them were strongly agree 9(3.6%) undecided towards the statement and finally 2(0.8%) strongly disagree and disagree respectively.

On the other hand, under item seven, 123 (49.8%) of the survey questionnaire respondents agree and 104(42%) strongly agree, 4(1.6%)0 undecided on that there is a limited access to employment opportunities. On the other way, 14(5.7%) and 2(0.8%) were agreed towards the strongly disagree and disagree respectively. Therefore limited access to employment opportunities play a negative role towards the socio-economic development of the local area .so the main stalk holders including the government better to re adjust the environment.

Table 4.3, also shows that the respondents were asked as inadequate housing and services were common in the local areas, 93(37.7%) were agreed to strongly agree, 61(24.75) agree and 49(19.8%) undecided .on the opposite list number of respondents 29(11.7%) disagree and 1596%) were strongly disagree respectively. This shows that still urban land informality were continuing to the study areas and because of this the concerned office better to understand more than the informality ,the related consequences in general.

According to item eight under table 4.3, 117(47.4%) of respondents were strongly agree, 111(45%) of them were agreed and 5(2%) undecided to the statement rapid urbanization were the major causes of informal settlement and finally the remaining 14(5.7%) were disagree .so here almost maximum percentage of the respondents were acknowledged that rapid urbanization were major causes of informal settlement. Therefore everybody expected to do more than the strategic plan not lower than the plan. Literatures were strengthening this statement as the causes of informal settlements particularly in developing countries are well known (UN-Habitat, 2003; World Bank, 1999; UNCHS, 1996). However, most of the causes of spontaneous settlements are specific to each country's culture, land tenure system, level of urbanization and development, among others.

On the opposite, Daniel (2006) found that informal housing is caused, among others, due to limitations of the present regulations, high and expensive building standards, poor land delivery

system; long procedures to obtain housing finance from institutions coupled with lack of institutional capacity. However, as informal settlements in the expansion areas of Addis Ababa are concerned, it is very difficult to conclude whether they are poverty driven or not. This is because of the fact that some of these settlements do not have a sign of poverty (rather they are good housing, have a large compound and full services) while others are suffering from lack of services, are highly crowded and located at environmentally sensitive areas. Besides, lack of proper land management, corruption, the absence of clear housing policy, the limited plot of land delivery and bureaucracy are some of the causes of housing problems

Land management is the process of managing the use and development of land resources and the process by which a country's resources are put to good effect (UNECE, 1996; Williamson, et al., 2010). Inefficient land administration were the main causes of informal settlements to this statement 155(63%) of the respondents were strongly agree, 50(20.2%) agree and 23(9.3%) undecided .on the other way 19(7.5%) disagree towards the statement respectively.

Therefore many literatures were agreed to this statement as; Land management can be classified as formal and informal. Formal land management or administration systems in many countries are not satisfying the needs of society at an appropriate level. The evidence and reasons for this situation are manifold and vary in different parts of the world (Molen, 2003). In developing countries, the formal systems are based on statutory land law inherited from the colonial era or imported from Western jurisdictions. These systems are centralized, expensive, inflexible, and involve complex legal requirements and technical procedures (Augustinus, 2004).

They are inaccessible to many people especially to those in rural areas and low-income residents of urban areas, not to mention to informal settlers. The poor economic performance and weak institutional frameworks in these countries cannot sustain these systems at satisfactory level. The low levels of cadastral coverage in developing countries, particularly in Africa, clearly illustrate this point (Deininger, 2003).

Finally, according to the last item under table 4.3, there is high/rising cost of living in the informal areas so 113(45.7%) strongly agree, 72(29%) and 52(21%) undecided respectively. On the contrary, minimum numbers of the respondents 6(2.4%), 4(1.6%) were strongly disagreeing and agree respectively towards the statement.

Generally many researchers were agreed towards the above findings in general; for example United Nations Task Team on Habitat III (2015) noted that informal settlements and slums are caused by a

range of interrelated factors, including population growth and rural-urban migration, lack of affordable housing for the urban poor, weak governance, particularly in the areas of policy, planning, land and urban management that in turn result in land speculation and grabbing. According to this study, informal settlement is also interrelated with economic vulnerability and underpaid work, discrimination and marginalization, and displacement caused by conflict, natural disasters and climate change (United Nations Task Team on Habitat III, 2015).

On the other hand, illegal electricity connections act as the multiple source of energy, for cooking, heating and lighting. There is an escalated livelihood risk associated with illegal connections, such as electrocution, fires which can cause deaths. A number of respondents use gas for cooking. Therefore, the use of these sources of energy does not only have environmental as well as socio-economic impacts but also affects the health of informal settlement residents.

Compared to other urban dwellers, people living in informal settlements and slums suffer more spatial, social and economic exclusion from the benefits and opportunities of the broader urban environment. They experience constant discrimination and extreme disadvantage characterized by geographical marginalization, basic service deficits, poor governance frameworks, limited access to land and property, precarious livelihoods, high vulnerability to the adverse impacts of poor and exposed environments, climate change and natural disasters (United Nations Task Team on Habitat III, 2015).

4.3.2. Environmental problems

Environmental problems which were noted by the municipal officials include pollution, waste disposal, water pipe bursts, sanitation and the lack of open spaces within the settlement. Pollution was seen as an environmental challenge, as a result of residents disposing of waste anywhere and in some cases burning the waste, resulting in air pollution. One of the officials noted that the municipality once provided the settlement with waste dumps called ‘skips’ but the community dumped around the skips and not inside, resulting in land pollution. Residents lack sanitation facilities and therefore, in some cases, use their grounds as sewage systems, resulting in added pollution and exposure to health issues. The settlement has no open spaces, which one of the officials found to be an environmental challenge.

According to Aguilar (2008), the decay in the urban glitches such as environmental impairment has been derived from the inability of local governments to manage rapid urban growth, to offer public goods and services to all social groups, and to indicate suitable technical and political capacities

(Aguilar, 2008). On this issue, two relevant questions arise: first, how are cities moving towards more ecologically sustainable patterns of production and consumption and land-use policy? Second, how can zone and development controls be used not only to protect environmental quality for the rich and powerful but also for the most socially deprived groups? In short, it is obvious that conventional approaches to informal settlements need to be transformed.

As McGranahan, et al., (2008) points out, looking to the future it is clear that steps need to be taken now to avoid a new generation of informally housed settlements from forming, not by halting urbanization, but by accommodating urban growth more efficiently and equitably; local governments should stop regarding informally housed settlements as a symptom of over-urbanization and stop utilizing land-use policies as a means of curbing urban growth (McGranahan, et al., 2008).

Table 4.4.Environmental problems

Statements	SD		D		U		A		SA	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
There is unhealthy living conditions	1	0.4 %	17	7%	85	34.4 %	72	29.%	72	29%
Solid waste pollution were increasing throughout the time	1	0.4 %	15	6%	32	13%	82	33.2 %	11	47.4 %
Pollution of water was the main local agenda at this time	14	5.7 %	24	9.7%	85	34.4 %	68	27.5 %	56	22.7 %
Air pollution was the main local agenda at this time	15	6%	39	15.8 %	49	19.8 %	76	30.8 %	68	27.5 %
Land degradation and deforestation expanded	15	6%	16	6.5%	40	16.2 %	95	38.5 %	81	32.8 %

Source: survey result 2021

Data on the Environmental characteristics of the respondents are shown on Table 4.4. Majority 85(34.4%) of the respondents were agreed to undecided, 72(29%) of them were agreed to strongly agree and agree respectively. On the other hand, 17(7%) and 1(0.4%) of

them were disagree and strongly disagree respectively towards weather there are unhealthy living conditions around the study area and responded as;

Table 4.4. Item two also discusses about; Solid waste Pollution was increasing throughout the time. Here 117(47.4%),82(33.2%),32(13%)of the respondents were agreed towards strongly agree, agree and undecided to the statement respectively. On the other way 15(6%) and 1(0.4%) of them disagree and strongly disagree respectively.



Photo by Kerim Mohammed may 12/5/2021

Figure: 4.1. Photos of slum area taken by Kerim from Bore Kebele

Therefore Solid waste can pollute air, water and soil, and leave various environmental impacts, and cause health hazard, due to improper handling and transportation .These adverse effects are seen on health and environment for example: Scavengers and stray animals invade the roadside garbage and litter the waste over large area causing much aesthetic damage to the atmosphere. Waste products when burnt like plastic and rubber pollute the atmosphere with noxious fumes. Organic solid wastes emits obnoxious odor on their decomposition and make the environment polluted and Rats dwelling with infectious solid wastes may spread diseases like plague, salmonellosis, typhoid, endemic typhus etc...

Therefore a continuous and strategic control of solid waste pollution is needed in the overall urban areas.

Disposal: It is done most commonly through a sanitary landfill or through incineration. Landfills- a modern sanitary landfill is a depression in an impermeable soil layer that is lined with an impermeable membrane. In it solid waste is placed in a suitably selected and prepared landfill site in a prescribed manner. The waste material is spread out and compacted with appropriate heavy machinery. The waste is covered each day with a layer of compacted soil.

Composting: Bacterial decomposition of organic components of the municipal waste results in the formation of humus or compost and the process is known as composting. It helps in disposal of solid waste, disposal of night soil, and production of valuable manure for crops; it is also termed as biodegradation.

Recycling: It means reusing some components of the waste that may have some economic value. Recycling conserves resources, reduces the energy used during manufacture and also reduces pollution.

Source recovery: It is a kind of destructive distillation in which the solid wastes are heated in a pyrolysis reactor at 650-1000 degrees centigrade in an oxygen-depleted environment. By this process, the chemical constituents and chemical energy of some organic wastes are recovered. The organic constituents split up into gaseous, liquid, and solid fractions like carbon dioxide, carbon monoxide, tar, methane, charred carbon, etc.

Source reduction: It is one of the fundamental ways to reduce waste. This can be done by using less material when making a product, reusing products, designing products and packaging to reduce their quantity. Individually one can reduce the use of unnecessary items which causes solid waste.

Table 4.4. Item three; Pollution of water was the main local agenda at this time towards this statement 85(34.4%) of the respondents were not ready to respond to the problem because they agreed to undecided and on the other hand, 68(27.5%), 56(22.7%) agreed and strongly agreed to the existence of the problem respectively while a small number of respondents 24(9.7%) and 14(5.7%) strongly disagreed and disagreed respectively.



Photo by Kerim Mohammed may 12/5/2021

Figure: 4.2. Photos of slum area taken by Kerim from Kofe Kebele

Thus used water is wastewater. It comes from our sinks, showers, and toilets (think sewage) and from commercial, industrial, and agricultural activities (think metals, solvents, and toxic sludge). The term also includes storm water runoff, which occurs when rainfall carries road salts, oil, grease, chemicals, and debris from impermeable surfaces into our waterways and Water pollution occurs when harmful substances often chemicals or microorganisms contaminate a stream, river, lake, ocean, aquifer, or other body of water, degrading water quality and rendering it toxic to humans or the environment. So Water is uniquely vulnerable to pollution. Known as a “universal solvent,” water is able to dissolve more substances than any other liquid on earth. It’s the reason we have Kool-Aid and brilliant blue waterfalls. It’s also why water is so easily polluted. Toxic substances from farms, towns, and factories readily dissolve into and mix with it, causing water pollution.



Photo by Kerim Mohammed may 12/5/2021

Figure: 4.3. Photos taken by Kerim from Bore Kebele

Finally to overcome such harmful situation a joint action will be need from the government as well as from the other stalk holders in general.

Table 4.4. Item four, according to this statement; Air pollution was the main local agenda at this time, 76(31%), 68(27.5%) and 49(20%) of the respondents were agree, strongly agree and undecided respectively towards the statement. On the reverse, 39(16%), and 15(6%) of them were decided to disagree and strongly disagree to Air pollution was the main local agenda at this time. Thus Air pollution is a problem of obvious importance in most of the world that affects human, plant and animal health. So still it is better to create awareness towards the overall community and working jointly within the community.



Photo by Kerim Mohammed may 12/5/2021

Figure: 4.4. Photos of slum area taken by Kerim

Table 4.4. Item five, Land degradation and deforestation expanded here 95(38.5%), 81(33%) were agree and strongly agree but 40(16.2%) undecided respectively. On the other hand 16(6.5%) and 15(6%) were disagree and strongly disagree respectively towards the stated statement. This shows that Land degradation is often not recognized as an unintended consequence of socio-economic development. Even when the link between land degradation and socio-economic development is recognized, the consequences of land degradation may not be given due consideration, which may result in lack of action. Thus an urgent step change in effort is needed to prevent irreversible land degradation and to accelerate the implementation of restoration measures.

4.3.3. Solutions to Reduce Socio-Economic and Environmental Problems

Environmental sustainability involves ecosystem integrity, carrying capacity and biodiversity. It requires that natural capital be maintained as a source of economic inputs and as a sink for wastes. Land resources must be harvested no faster than they can be regenerated. Wastes must be emitted no faster than they can be assimilated by the environment (Kahn, 2013)

Economic sustainability implies a system of production that satisfies present consumption levels without compromising future needs. The ‘sustainability’ that ‘economic sustainability’ seeks is the ‘sustainability’ of the economic system itself.

In the most basic sense, social sustainability implies a system of social organization that alleviates poverty. In a more fundamental sense, how-ever, ‘social sustainability establishes the nexus between social conditions such as poverty and environmental decay (Ruttan, 2012)

Table 4.5. Solutions to reduce socio-economic and environmental problems

Statement	SD		DA		U		A		SA	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Developing and managing the institutional framework for managing the housing issues	21	8.5%	14	5.7%	34	13.8%	56	22.7%	122	49.4%
Develop and implement transparent administrative procedures, regulations standards	23	9.3%	1	0.4%	35	14.2%	66	26.7%	122	49.4%
Awareness creation to everybody about the informality	8	3.2%	43	17.4%	17	7%	58	23.5%	121	49%

Source: survey result 2021

Table 4.5.Item one shows Developing and managing the institutional framework for managing the housing issues; so majority of respondents 122(49.4%) were agreed to strongly agree, 56(22.7%) agree and 34(14%) undecided respectively. On the other hand, 21(8.5%) and 14(5.7%) were agreed to strongly disagree and disagree. Under item two large number of respondents122(49.4%)

and 66(26.7%) were agreed to strongly agree and agree to develop and implement transparent administrative procedures, regulations and standards to administer the overall urban land.

The last item shows that awareness creation to everybody about the informality; so 121(49%) strongly agree, 58(23.5%) agree and 17 (7%) undecided to the statement. Finally 43(17.4%) and 8(3.2%) were disagree and strongly disagree which means according to them no need of awareness creation to everybody about the informality. Thus the major informal actors, as observed in the study area are informal land developers, corrupt civil servants, brokers/ speculators and the urban poor. The same poor people have also involved in speculation.

The so-called professional squatters always leave their shacks (cottage/ small house) after they have been upgraded and or legalized and build new ones at the new periphery. It is, therefore, such kind of practice (by professional squatters and speculators) that makes the solution hard and complex to the concerned bodies in general and it needs to shape the existed land related rules and regulations to benefit especially those poor who doesn't pay to corrupted officials.

Therefore according to the municipal and land administration officials, possible solutions to will awakening the community's conscience by involving the social hierarchy to impose rules and regulations on how to make the settlement more environmentally friendly. The social hierarchy would include the political leaders who are the heads of the community as they are most respected by the community. Other solutions noted were the implementation of awareness campaigns to educate the community on the socio-economic and environmental impacts which the settlement has on the environment. Recycling and the re-using of recyclable goods were also stated as a possible solution

4.4. Findings through Observations

Observation: observation was made to different informal settlement areas to collect data and to confirm the reality on the ground with the respondent's information. Accordingly, the researcher was observed the following things; housing standard, accesses to water, health and toilet, electricity and general physical environment.

The researcher first prepared a checklist to examine the overall situation based on what are the socio-economic and environmental impacts of informal settlements in the selected sampled areas as:

After observing the informal settlements of the sampled areas in terms of the way in which dry and liquid wastes was disposed, it was noted that waste was disposed in and around the settlement and there were areas where some of the waste was burnt and ash was still visible.

All the above show that the land, water and air in the area were highly polluted with different wastes especially plastic wastes. So this it was noted that the rate of land, air and water pollution in the area were challenges and a great cause for erosion and land degradation and also affects ground water; this may be have a great impact to get clear water in the next years. On the other direction, in terms of social, what was observed was the ignorance of the members of the community. The residents in the settlements were observed as the main source of the environmental challenges.

Regarding to the issue of health risks associated with the environmental challenges present in the settlement, what was noted was the potential of residents being exposed to diarrhea from drinking contaminated water and lung diseases from the polluted air as a result of the waste in and around the settlement and beyond these the highly sensitive issues called, Covid-19 was not the issue in the environment. Residents were also observed to be at risk of acquiring water borne diseases as a result of polluted water which they use for bathing and cooking.

4.5. Findings through Interview

People who live in informal settlements have a problem of service delivery. This is due to the fact that they occupy land which does not belong to them, they occupy to the investment area, recreational centers and also to the other social service areas in general. A lack of basic needs and services leads to informal settlements having impacts on the socio-economic as well as environment, like:- inadequate sanitation which leads occupants to pollution, the use of coal and wood for lighting, causing air pollution and in turn contributing to the emission of greenhouse gases (Napier, 2007). Informal settlers also have an issue with waste removal which impacts on the environment as the waste being deposited of results in land pollution and “emerging and re-emerging infectious disease hazards” (Napier, 2009).

The challenge stated above is as a result of “a rapid increase in the urban population and the limited capacity of the government to meet the high demand for building plots” (Ali and Sulaiman, 2006).

How can you understand the Socio-Economic problems caused by informal settlements in your local area? The issue of urban informal settlements, as observed in the study area was broad, complex and dynamic. Much of the complexity around informal settlement has been arising from perception differences. These include the difference observed in defining, identifying the causes and effects and in taking measures so as to alleviate the problem: but for the purpose of this study respondents were agreed as a result of poor water supply in informal settlements, there is no adequate sanitation, suggesting “the disposal of human waste in these settlements is unmanageable. According to the respondents, the way they understand the Socio-Economic problems caused by informal settlements in the local area were; poor sanitation resulting in health risks and environmental degradation associated with the lack of basic services. The way in which settlements are connected to illegal electricity affects the settlers in different perspectives as it is known. This process is a high risk to the residents of informal settlements as this procedure can result in electrocution and adversely death

What are the main causes of these problems? According to the interview result of the key informants, the main courses of informal settlements were: rapid growths of urbanization, population growth, poor urban land management, land lease policy, economic problems to get urban land for housing purposes, and lack of good governance were contributing highly to the expansion of urban land grabbing in general.

Literatures also shows that, One of the main reasons why people develop informal settlements is due to “the poor people who lack access to the financial resources needed to buy houses as existing housing finance systems are not accessible to them and subsidies for housing are not properly targeted” (Gilbert, 2002).

Problems caused by informal settlements in your local area? As the researchers sources shows that ; problems related to peace and stability, losses of revenue, problems related to urban planning and management, sanitation problems, losses of resources and other miscellaneous costs related to manage such problems . therefore other researchers also agreed to this ideas as; The challenge of informal settlements does not only stem from immigration but also from“ escalating housing

prices, limited access to land and housing finance, land regulations which govern sub-division of land, highly regressive land taxation, and low supply elasticity of subsidized housing” (Chetty, 2012). As a result of their financial status, the poor are forced to resort to other means of shelter.

Informal settlements are the result of a failed system regarding the formal housing sectors. Measures taken by the concerned bodies: still the government or the land management offices were focusing to the Eviction and demolishing of informal settlements followed by new curative and preventive practices.



Photo by Kerim Mohammed may 12/5/2021

Figure: 4.5. Photos of dismissing illegal houses in Ginjo Kebele

Environmental Problems caused by informal settlements? Waste is an environmental challenge of concern, “sewage systems in various provinces are failing resulting in water pollution and potentially causing health problems” “Handling of waste from informal settlements is a particular problem owing to the lack of infrastructure and possible the location of the settlement”. There is a lack of infrastructure and basic services in informal settlements which in turn has an impact on the environment in terms of the disposal of waste.

The data obtained from this study also indicated that, in the squatter area, there is no adequate road that used to vehicle transport. During emergency case, the dwellers in the area used human labor up to the main road. The drainage system is too poor. The dominant energy source is obtained from

wood and charcoal. They used electric power only for light purpose. The respondents stated that, they lack access to cover their health cost, because of the expensiveness of medicinal drugs. They are found in health related risks. With regard to education, most of the poor's children are forced to drop out their school education because of lacking of basic educational materials, and other family related problems.

Finally, the interview result revealed that, as compared to the past, there is an improvement in decreasing of crime rate in the study area. But, it does not mean that the area is totally free of crime related activities. People in the slum are participated in different forms of traditional social institutions like Idir, and Ikub. But, as compared to the past, there is a change of culture from informal to the formal one. Before some decades ago, conflicts were solved by local elders, but currently, even a minor dispute is reported to the court.

To overcome such problems what is expected from the community; was, not to participate towards the informal settlements and working with the governmental agencies to minimize the problem and also actively fight the land related corruptions and participating to the activities of environmental related activities. The government also should develop a clear and equitable land policy, reshape the existed land lease policy promoting building of urban houses based on a formal and legal association and building condominiums to the public services as well as the poor in a long term payments.

Because informal settlement have a negative impact towards the community, to government and to the coming generation also and the effects of the proliferated Informal settlements are huge capital requirement for provision of infrastructures and services; government revenue reduction; violation of urban plans; uneconomical use of urban land and critical flooding which cumulatively hamper development of the city. The city government responses mainly focus on demolition. This approach may seem a solution for proliferated Informal settlement; but it never stops squatting in the city. Since causes of squatting are variable as factors from government side and squatters themselves, demolition cannot be the best option.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary of findings

- To set ground for further analysis and achieve the study objectives, the researcher presents results of reliability tests of the goodness of fit of the data gathered. The researcher has used frequency and percentages to clarify the study's response rate as well as the demographics of the respondents sampled were presented and described. Analysis of descriptive statistics and inferential statistics was conducted and the results presented in form of tables. Additionally, the chapter was presented and explained the results on the expressions of the variables under exploration. A total number of 265 questionnaires were administered and 247 were appropriately filled and sent back.
- There are a number of reasons as to why there are more men which is 84.2 than women living in informal settlements. Some of these reasons involve the role which men play in society. Men are expected to take care of women and children, and therefore they leave their homes in search of better opportunities and end up living in informal settlements as a result of a lack in housing. Women are expected to stay in rural areas back home and take care of children and their homes. Most of the women who live in informal settlements would have encountered problems where they live and moved to urban areas in the hope of experiencing changes in lifestyles.
- On the other hand it can be argued that the more productive age group population participates in the urban informal sector because majority of the respondents are categorized in 18-50 (87.5) age category which is independent age group. Majority of the productive poor people in the town are forced to join and fight poverty due to the socio-economic problems.
- Socio-economic situation: The data obtained from 247 interviewed respondents revealed that, most of the city's people who are settled in the slum area 162, (65.6%) of the respondents were from other areas and which shows most of the respondents who are settled in the slum area are too poor in terms their economic situation. Most of them (33.6) are unemployed people. On the other hand the majority of the people are engaged

in informal economic activities such as day-laborer, small trades, selling chat trade. The income which obtained from these activities is even not enough to eat three times per day. The researcher also observed many children, and elders who are exposed to live over the street.

- Social infrastructure, like water supply, sanitation, electricity, roads and drainage; are below minimum levels 82,(33%),73,(29.6%)were agree,36,(14.6%) strongly agree and finally,51,(20.6%) disagree ,5(2%) strongly disagree respectively. This shows that communities who are living around these areas were suffered by infrastructural problems
- Compared to other urban dwellers, people living in informal settlements and slums suffer more spatial, social and economic exclusion from the benefits and opportunities of the broader urban environment. They experience constant discrimination and extreme disadvantage characterized by geographical marginalization, basic service deficits, poor governance frameworks, limited access to land and property, precarious livelihoods, high vulnerability to the adverse impacts of poor and exposed environments, climate change and natural disasters.
- The researcher observed that, the issue of environmental sanitation seems too forgotten by the concerned bodies of the city. The study area is full of human wastes, and polluted drainage system. A key informant interview, which was obtained from administrative office revealed that, the issue of environmental sanitation is become a very risk oriented issue to the dwellers of the area. The dwellers are exposed to various health related issues because of absence of adequate drainage systems for wastes
- Solid waste can pollute air, water and soil, and leave various environmental impacts, and cause health hazard, due to improper handling and transportation .These adverse effects are seen on health and environment for example: Scavengers and stray animals invade the roadside garbage and litter the waste over large area causing much aesthetic damage to the atmosphere. Waste products when burnt like plastic and rubber pollute the atmosphere with noxious fumes. Organic solid wastes emits obnoxious odor on their decomposition and make the environment polluted and Rats dwelling with infectious solid wastes may spread diseases like plague, salmonellosis, typhoid, endemic typhus etc...

5.2. Conclusion

Informal settlement refers to a situation in which dwellers have no security of house, or land tenure, they lack usually basic services, and other socio economic infrastructures, houses in this settings are not congruent with the currents planning standards, and building criteria. From the most excluded forms of informal settlements, slums are the one; Increase in population growth, rural urban migration, lack of affordable housing for poor urban people, inadequate government administration in terms of: policy making, planning, urban land management, and failing to give solutions for displacement caused by conflict, natural hazards, and change in climate are from interrelated factors of informal settlements.

Poor municipal oversight: The local municipal as well as the other supporting entities lan related offices/ hadn't noticed the seriousness of the socio-economic problems, and had not taken any action in its early stages to limit the squatter housing growth, so the result was a wider spread of the phenomenon.

The present regulations, standards and procedures precludes those who seek to involve in housing construction particularly the low-income group not to joint housing co-operative and that is why significant number of co-operatives had dissolved rather than crossing through the needle hole.

Disposal: It is done most commonly through a sanitary landfill or through incineration. Landfills- a modern sanitary landfill is a depression in an impermeable soil layer that is lined with an impermeable membrane. In it solid waste is placed in a suitably selected and prepared landfill site in a prescribed manner. The waste material is spread out and compacted with appropriate heavy machinery. The waste is covered each day with a layer of compacted soil.

Composting: bacterial decomposition of organic components of the municipal waste result in the formation of humus or compost and the process is known as composting. It helps in disposal of solid waste, disposal of night soil, and production of valuable manure for crops; it is also termed as biodegradation.

Recycling: It means reusing some components of the waste that may have some economic value. Recycling conserves resources, reduce the energy used during manufacture and also reduce pollution.

Source recovery: It is a kind of destructive distillation in which the solid wastes are heated in pyrolysis reactor at 650-1000 degree centigrade in oxygen depleted environment. By this process, the chemical constituents and chemical energy of some organic wastes are recovered. The organic constituents split up into gaseous liquid and gaseous fractions like carbon dioxide, carbon monoxide, tar, methane, charred carbon etc.

Source reduction: it is one of the fundamental ways to reduce waste. This can be done by using less material when making a product, reusing products, designing products packaging to reduce their quantity. Individually one can reduce the use of unnecessary items which causes solid waste.

The data obtained from this study also indicated that, in the squatter area, there is no adequate road that used to vehicle transport. During emergency case, the dwellers in the area used human labor up to the main road. The drainage system is too poor. The dominant energy source is obtained from wood and charcoal. They used electric power only for light purpose. The respondents stated that, they lack access to cover their health cost, because of the expensiveness of medicinal drugs. They are found in health related risks. With regard to education, most of the poor's children are forced to drop out their school education because of lacking of basic educational materials, and other family related problems.

As a conclusion, the interview result revealed that, as compared to the past, there is an improvement in decreasing of crime rate in the study area. But, it does not mean that the area is totally free of crime related activities. People in the slum are participated in different forms of traditional social institutions like Idir, and Ikub. But, as compared to the past, there is a change of culture from informal to the formal one. Before some decades ago, conflicts were solved by local elders, but currently, even a minor dispute is reported to the court.

5.3. Recommendations

Strategies used to overcome the socio-economic and environmental challenges of Informal settlements in the study area were:

- Better to improvement of the living environment of this settlement in terms of infrastructure and services, improvement of infrastructure and services need to incorporate the participation of the informal settlers themselves in the form of labor, material, finance and planning.
- Since the emergence of informal settlements is in response by the people to land inaccessibility for housing and in appropriate or unaffordable building standards, therefore, the solution is not only recognizing these settlement to the urban frame work, but also to formulate policy relevant for the low-income group regarding their affordable capacity and making land accessible with less difficulty or acquisition procedures.
- It is better to applying a strategic management system the overall land and related activities including experts because they are cloth to corruption
- The City Administration is advised to focus on Modern Waste management system / to manage wastes; many modern methods will be adopted. They are biological reprocessing, recover through recycling, dumping in sanitary landfill, composting, waste to energy, bioremediation, disposal etc. These waste management techniques make the environment a better place for the living creatures to survive. This also paves the way for the future generation to live in the peaceful and healthy environment. Finding and adopting the best waste management technique is the need of the hour and also necessary for the welfare of the people. By this, the waste management process will become very effective and successful/
- Working effectively to minimize unemployment in the overall city; because unemployment may be the causes of informality and has its own socio-economic impacts towards the community.
- Administrative corruption, bureaucracy, and the unwillingness of the state to apply the laws were major contributors to the socio-economic and environmental problems. This situation created unbalanced development in urban areas so it is better to work jointly with the community.

5.4. Future Research Directions

From the analysis of this study, there are interesting avenues for future research. Such as, with the same topic by increasing the sample size and obtaining empirical pieces of evidence regarding that belongs to urban land management, housing problems, landlessness, Improving service quality in urban land management ,and the impact of institutional capacity in urban land management are critical to extend the research,

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APPENDICES

JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF MANAGEMENT

PUBLIC MANAGEMENT PROGRAM

Dear sir/madam

I am a post graduate student of public management in Jimma University Department of Management. Currently, I am undertaking a research entitled A study on Socio-economic and Environmental Problems of Informal Settlements; a case study of Jimma City.

You are one of the respondents selected to participate on this study. Please assist me in giving correct and complete information to present a representative finding on the current status of the socio-economic and environmental problems of informal settlements.. Your participation is entirely voluntary and the questionnaire is completely anonymous. Finally, I confirm you that the information that you share me will be kept confidential and only used for the academic purpose. No individual's responses will be identified as such and the identity of persons responding will not be published or released to anyone. All information will be used for academic purposes only.

Thank you in advance for your kind cooperation and dedicating your time.

Sincerely, Kerim Mohammed

Note: Questionnaires are prepared only for employee who has one year and above length of service; and employees who are non- managerial position.

Thank you for your time and consideration!

- a. It is not necessary to write your name on the questionnaire.
- b. Please also be informed that the information you give will be kept secret and hence try to express your ideas as much as you can.

Direction

- a. Please try to answer every question in accordance to the instruction provided.
- b. For multiple choice questions, please answer by putting "✓" sign in the box provided.
- c. For questions that require your opinion, please give short, precise and honest answer.

Thank you in advance for your cooperation!

SECTION A

Personal information Settlers

1. Sex a. male b. female
2. Age a. 18-30 b. 31-40 c. 41-50 d. 50+
3. Marital status a. single b. married c. widowed d. divorced
4. Name of your Kebele _____
5. What is the highest grade completed?
 - a. Primary 1-8
 - b. secondary school 9-12
 - c. vocational/technical/commercial/agricultural college
 - d. under graduate
 - e. post graduate
6. What is your current occupation?
 - A. self employed
 - B. public servant
 - C. part time played
 - D. farmers
 - E. business person
 - F. other
7. Employment status of respondents
 - a. Employed
 - b. Un employed
8. Employment condition of respondents
 - c. Formal
 - d. Informal
9. Your annual income
 - a. under 1,000ETB
 - b. 1,001-3,000 ETB
 - c. 3,001-5,000ETB
 - d. 5,001-10,000ETB
 - e. above 10,000 ETB

SECTION B:

Questions related to socio-economic and environmental challenges

Please indicate your responses to each of the following statements regarding

Indicate with a \surd in the appropriate answer box, according to the following code definitions:

Please rate your response as follows:

1= Strongly Disagree (SD) 2= Disagree (D) 3= Neutral 4= Agree (A) 5= Strongly Agree (SA)

No	Statement	1	2	3	4	5
	Socio-economic problems					
1	Social infrastructure, like water supply, sanitation, electricity, roads and drainage; are below minimum levels.					
2	limited access to adequate health and education opportunities					
3	Informal urban environment were a fertile ground for illegal informal activities including violence and crime					
4	Inhabitants have little ability to provide for themselves/ They live in a state of uncertainty as they have no tenure over the land they occupy					
5	There is a social exclusion to the communities under informal settlements					
6	There is lack of sufficient income to satisfy the basic needs of families					
7	There is a limited access to employment opportunities and income					
8	Inadequate and insecure housing and services were common					
9	Rapid urbanization and influx of people into urban areas were major causes of informal settlement					
10	Inefficient public administration, inappropriate planning and inadequate land administration were the main causes of informal settlements					
11	There is high/rising cost of living in the informal areas					
	Environmental problems					
1	There is unhealthy living conditions and hazardous locations					
2	Pollution from Solid and Liquid Wastes were increasing					

	throughout the time					
3	Pollution of water was the main local agenda at this time					
4	air pollution was the main local agenda at this time					
5	Land degradation and deforestation expanded					
	Solutions to reduce socio-economic and environmental problems					
1	Developing and managing the institutional framework for managing the housing issues					
2	Develop and implement clear and transparent administrative procedures, regulations standards					
3	Awareness creation to everybody about the informality					

1. What is the role of the community, to overcome problems related to informal settlements? _____

2. What is the role of the government, to overcome problems related to informal settlements?

3. What is the role of the stalk holders, to overcome problems related to informal settlements?

4. What are the expected solutions to overcome environmental problems of the region _____

SECTION C

Interview Questions

Jimma University College of Business and Economics Department of management

Leading Questions for Selected Interviewees

The researcher is currently conducting research thesis for the purpose of fulfilling requirements of Master of Art Degree in public Management at Jimma University. The following questions will ask about the Socio-Economic and Environmental Problems of Informal Settlements and you are selected because of your role and closeness to the subject. Your responses will be kept confidential and used for academic purpose only. Thank you for participating in this interview!

1. How can you understand the Socio-Economic problems caused by informal settlements in your local area?
 - What are the main causes of these problems?
2. Measures taken by the concerned bodies
3. How can you understand the Environmental Problems caused by informal settlements in your local area?
4. What are the main causes of these problems?
5. Measures taken by the concerned bodies

SECTION D



Photo by Kerim Mohammed may 12/5/2021



Photo by Kerim Mohammed may 12/5/2021

THANK YOU!